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Civil Engineering

**OPERATION AND MAINTENANCE OF
WASTEWATER SYSTEM**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFD 32-70, *Environmental Quality*. It establishes base policy, assigns responsibility for wastewater system oversight, operation and accomplishment of monitoring and reporting requirements as specified by the Moon Township Municipal Authority. This regulation applies to domestic and non-domestic wastewater treatment and pretreatment systems, including but not limited to collection systems, industrial wastewater treatment, oil/water separators and grease traps. It applies to all discharges and emphasizes eliminating, reducing and controlling non-domestic wastewater. The base wastewater is discharged into the Moon Township Municipal Authority Treatment Plant (National Pollution Discharge Elimination System (NPDES) Permit Holder), which in turn discharges into the Ohio River. The 911th Airlift Wing, Pittsburgh International Airport ARS, is classified as a "user" and is not required to obtain a Wastewater Discharge Permit from the Moon Township Municipal Authority.

SUMMARY OF REVISIONS

It updates and streamlines previous guidance. A bar (|) indicates revisions from the previous edition.

1. References. AFI 32-1067, *Water Systems*, AFI 32-7041, *Water Quality Compliance*, AFI 48-119, *Medical Service environmental Quality Programs*, Moon Township Municipal Authority Sewer Use Regulations, Moon Township Municipal Authority Industrial Waste Pretreatment Program Pretreatment Resolution, Clean Water Act, and 40 CFR 403 EPA Pretreatment Standards.

2. Purpose. The emphasis on environmental pollution prevention and abatement requires all base activities, including contractors and tenants who generate wastewater, to review their processes that generate waste and their disposal procedures. All activities must reduce waste by employing the following pollution prevention strategies (given in order of preference): reduce or eliminate the pollutant at the point of generation, recycle or reuse the pollutant, treat the pollutant, or control pollutant discharge. An effective base program for eliminating, controlling and treating wastewater requires the full support and cooperation of activities that generate the wastewater. The objectives of this regulation are:

- 2.1. To outline a scoping process for identifying and characterizing waste from point sources on base and to implement a waste minimization, control, and treatment program to reduce and prevent pollution.
- 2.2. To prescribe segregation, control, treatment, pretreatment, and discharge procedures for domestic and non-domestic wastewater.
- 2.3. To prevent the introduction of pollutants into the municipal wastewater system, which will interfere with operation of the system or contaminate the resulting sludge.
- 2.4. To prevent the introduction of pollutants into the municipal wastewater system, which will pass through the system, inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system.
- 2.5. To improve the opportunity to recycle and reclaim wastewaters and sludges from the system.
- 2.6. To prevent the introduction of pollutants which would burden the municipality with providing additional treatment steps.
- 2.7. To designate offices of primary responsibility (OPRS) for various tasks.

3. Definitions. Terms and definitions used in this regulation are intended to be consistent with those defined in 40 CFR 122 through 136, 40 CFR 401 through 471, 40 CFR 501, and applicable state and local regulations. Terms of interest in this instruction include the following:

- 3.1. **Domestic wastewater.** Liquid waste from domestic laundry, food preparation, and sanitary facilities in housing, commercial and administrative buildings, industrial facilities and institutions.
- 3.2. **Industrial user.** Any facility which discharges industrial wastes. They are classified according to the latest edition of the Standard Industrial Classification Manual, Office of Management and Budget of the Federal Government of the United States.
- 3.3. **Industrial waste.** Any wastes resulting from the process employed in industrial, manufacturing, trade, or business establishments as distinct from domestic wastes.
- 3.4. **Interference.** The inhibition or disruption of the Wastewater Treatment Plant (WWTP) treatment processes or operation, which contributes, to the violation of the NPDES permit. This includes the prevention of sewage sludge use.
- 3.5. **National Pollutant Discharge Elimination System (NPDES) permit.** A permit issued pursuant to Section 402 of the Clean Water Act (33 U.S.C 1342).
- 3.6. **Non-domestic wastewater.** Any storm water and any wastewater other than that covered under the definition for domestic wastewater such as that resulting from industrial production, paint stripping, metal plating, maintenance and repair, aircraft and vehicle cleaning, power or heat plant operations, photographic processing, boiler and cooling water discharges, and oil and solvent recovery operations.
- 3.7. **Pass-Through.** The presence in the treatment plant effluent of any pollutant, which enters the WWTP or exits without treatment or chemical change. This occurs when pollutants are introduced to a WWTP that is not designed to remove them.
- 3.8. **Pollutant.** Any substance, often regulated by environmental protection standards, that may have an adverse impact on the environment, such as the chemical and biological constituents of sewage,

garbage, sewage sludge, chemical wastes, other biological materials, radioactive materials, heat, oil, grease, solvents, heavy metals, suspended solids, surfactants, or any toxic or hazardous material discharged into water.

3.9. **Pretreatment.** The reduction of the amount of pollutants, the elimination of pollutants, the alteration of the nature of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the WWTP. The reduction or alteration can be obtained by physical, chemical, or biological processes or process changes or other means, except as prohibited by dilution (40 CFR 403.6(d)).

3.10. **Sanitary sewer.** A sewer intended to receive primarily domestic sewage and non-domestic sewage as permitted by this regulation.

3.11. **Storm sewer or storm drain.** A sewer which carries storm or surface waters and drainage but excludes sewage and industrial wastes.

3.11.1. **Discharge Point Manger.** The Hazardous Waste Accumulation Point Manger is designated discharge point manger. In lieu of an Accumulation Point Manger, the Building Manager is designated the Discharge Point Manager. The Discharge Point Manager is responsible for controlling all non-domestic waste discharge in their area (ref: Hazardous Waste Management Plan).

4. **Scope.** This regulation is consistent with and augments the following base plans.

4.1. Hazardous Waste Management Plan.

4.2. Hazardous Waste Minimization Plan.

4.3. Hazardous Material Emergency Planning and Response (HAZMAT) Plan.

4.4. Pest Management Plan.

4.5. Pollution Prevention Management Action Plan.

4.6. Stormwater Pollution Prevention Plan

5. **Policy.** Base Policy is as follows:

5.1. Comply with Federal, State and local requirements pertaining to permitting, management, treatment and discharge of wastewater. The above requirements take precedence if they conflict with this regulation. Assure timely sampling and analytical reports, as required, are submitted to Moon Township Municipal Authority or Regulatory Agencies to avoid regulatory non-compliance.

5.2. Ensure and implement the best management practices for the collection of wastewater and operation of wastewater treatment systems. Eliminate the discharge of pollutants that are not permitted by the Public Owned Treatment Works (POTW) and cross-connections between wastewater and stormwater collection systems.

5.3. Conduct wastewater characterization and other studies to determine the non-domestic pollutant characteristics as required by the POTW.

5.4. Develop consistent base-wide approaches to non-domestic wastewater management, which apply to all base as tenant organizations.

5.5. Enforce wastewater discharge policies through the use of point source monitoring, shop survey, and administrative action to prevent treatment system interruptions and discharge violations. Compli-

ance problems with non-domestic discharges will be addressed and resolved at Environmental Protection Committee (EPC) meetings.

5.6. Utilize waste minimization, source reduction techniques, and wastewater pretreatment at or near the waste generation point to the extent needed to protect collection, treatment facilities, and processes from damage, upset, excessive cost, or discharge violations. Where feasible, source waste reduction through material substitution, process change, or administrative change shall be preferred over pretreatment.

6. Organizational Responsibilities.

6.1. Installation Commander.

6.1.1. Signs NPDES permit application.

6.1.2. Serves as point of contact for all official communication with the regulatory community.

6.2. Base Civil Engineer (BCE).

6.2.1. Establishes and publishes technical policy and guidance through this regulation to base organizations for the collection, treatment, storage, and disposal of domestic and non-domestic waste along with restrictions on what can be discharged and at what volumes and concentrations.

6.2.2. Identifies and maintains a list of all non-domestic and industrial generators with discharge requirements by organization, discharge location, and discharge point manager.

6.2.3. Is the approval authority for requests from organizations that generate non-domestic wastewater, reviews the wastewater constituents to determine if the discharge should be prohibited, require pretreatment, or have other restrictions or controls prior to discharge to the collection system.

6.3. Chief, Environmental Flight (CEV).

6.3.1. Serves as the focal point for all activities concerning discharge to the sanitary system.

6.3.2. Works with all generators to control and eliminate all non-domestic waste discharges to the sanitary sewer system.

6.3.3. Provides initial training regarding sanitary sewer discharge for Discharge Point Managers and refresher training as necessary.

6.3.4. Assures wastewater facilities are in compliance with regulatory and base requirements, initiating corrective actions where needed.

6.3.5. Coordinates negotiations for discharge and pretreatment limits, monitoring locations, and reporting requirements as required.

6.3.6. Ensures compliance monitoring and reporting is conducted, reviewed, and submitted as required.

6.4. Bioenvironmental Engineering Office (SGPB).

6.4.1. Assists BCE with required environmental monitoring and identification and characterizations of non-domestic wastewater discharges.

6.4.2. Conducts periodic sampling and analysis as requested.

6.4.3. Takes samples for analysis at request of BCE.

6.5. Generating Activity.

6.5.1. Division Chiefs through their Group Commander, appoint a Discharge Point Manager who is responsible for controlling all non-domestic waste discharges in their area. The discharge point manager's name, telephone number, area of responsibility, and pollutants must be provided to the BCE. Provide BCE with updates when any wastewater information changes, especially discharge characteristics.

6.5.2. Contact the BCE for approval, guidance, and non-domestic discharge restrictions prior to initiating any discharge. Where pretreatment is required, arrangements must be made clearly stating who will inspect, operate, maintain, and do compliance monitoring at the pretreatment facility.

6.5.3. Prevent any non-domestic discharge not specifically approved by the BCE. Take a proactive approach to reducing the volume and concentration of discharges through the pollution prevention programs by waste elimination, product substitution, recycling, process changes and, when necessary, pretreatment.

6.5.4. Notify the BCE of any spills or discharges of non-domestic waste.

6.5.5. Ensure all personnel working in areas which generate discharges are aware of the discharge restrictions. General restrictions and specific non-domestic discharge requirements are listed in [Attachment 1](#) and [Attachment 2](#).

F. BAXTER LANE, Colonel, USAFR
Commander

Attachment 1

GENERAL RESTRICTIONS FOR ALL ACTIVITIES

The following are general restriction guidelines for discharge into the Moon Township Municipal Authority sanitary sewer in accordance with *Moon Township Municipal Authority Sewer Use Regulations* and *Industrial Waste Pretreatment Program Pretreatment Resolution*. This information is intended as guidance only, specific questions regarding discharge to the sanitary sewer should be verified with the stated regulations and/or Moon Township Municipal Authority representatives.

A1.1. Any liquids, solids, or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion, including but not limited to, wastetreatment with a closed cup flashpoint of less than 140 degrees Fahrenheit (60 degrees Celsius) using 40 CFR 261.21 test methods, or be injurious in any other way to the POTW or to the operation of the POTW. At no time shall two successive readings on an explosion hazard meter at the point of discharge into the system (or at any point in the system) be more than five percent (5%), nor any single reading over ten percent (10%) of the Lower Explosive Limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohol, ketones, hydrides, sulfides, and any other substances which the Authority, the State, or the EPA has notified the user is a fire hazard or a hazard to the system.

A1.2. Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities, such as but not limited to, grease, garbage with particles greater than one half inch (1/2") in any dimension, paunch, manure, bones, hair, hides or flushings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, waste paper, wood plastics, gas, tar, asphalt residues, oil, mud, glass grinding, or polishing wastes.

A1.3. Any wastewater having a pH less than 5.0, or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the POTW. Materials subject to this provision include but are not limited to acids, sulfides, concentrated chloride and fluoride compounds, and substances which will react with water to form acidic products.

A1.4. Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure, to interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW, including oxygen demanding pollutants (BOD, etc.) released at a flow rate and pollutant concentration which a user knows or has reason to know will cause interference to the WWTP or cause a violation of the NPDES Permit.

A1.5. Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life, or are sufficient to prevent entry into the sewers for maintenance and repair.

A1.6. Any wastewater containing any radioactive wastes or isotopes, or other hazardous waste.

A1.7. Any liquid or vapor at temperatures higher than 150 degrees Fahrenheit, except where the volume of discharge represents an insignificant portion of the flow through a particular sewer, a lower limit may

be prescribed to prevent odor nuisance. Specifically, wastewater which will inhibit biological activity in the POTW resulting in interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 104 degrees Fahrenheit (40 degrees, Celsius).

A1.8. Storm water, ground water, roof runoff, artesian well water, subsurface drainage, or cooling waters.

A1.9. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

A1.10. Sludges, screenings, or other residues from the pretreatment of industrial wastes.

A1.11. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass through.

A1.12. None of the pollutants, substances, or wastewater prohibited within this section shall be processed or stored in such a manner that they could be discharged to the POTW or Moon Township Municipal Authority sewers.

Attachment 2

SPECIFIC DISCHARGE RESTRICTION FOR LISTED ACTIVITIES

The following is a list of non-domestic wastewater and appropriate restrictions and disposal methods:

A2.1. Washing Activities. Allow rinse water from the following activities to be discharged to the sanitary sewer system provided the rinse water does not contain solvents.

A2.1.1. Aircraft wash activities.

A2.1.2. Aircraft ground equipment washing activities.

A2.1.3. POL vehicles and equipment washing activities.

A2.2. Pest Management Shop. Pesticides and related pesticide wastes will be managed by subcontractor to the base operating service (BOS) contractor. No materials will be stored or disposed on base.

A2.3. Used Oils. Used oil generated shall be collected for recycle or fuel blending, if contaminated.

A2.4. Waste Ethylene Glycol. Waste ethylene glycol shall be collected by vehicle maintenance for recycle. Water separated from the glycol may be disposed of into the sanitary system. Waste sludge from the glycol recycling machine shall be containerized for proper disposal in accordance with the base's Hazardous Waste Management Plan.

A2.5. Battery Shops. Slurry from spent battery acid will not be discharged into sanitary sewers. All lead acid batteries will remain undrained and be recycled in accordance with the base's Hazardous Waste Management Plan. Base Vehicle Transportation (LGT) is the responsible agency for automotive lead acid battery recycling management.

A2.6. Storm Water and Groundwater. Rainwater or ground water including those contaminated with petroleum products cannot be discharged into sanitary sewers. Contaminated water will be properly containerized, labeled, and disposed of through the DRMO in accordance with the base's Hazardous Waste Management Plan.

A2.7. Photographic Wastes. Photographic wastes will be containerized for proper disposal or precious metal recovery through DRMO.

A2.8. Miscellaneous Wastes. Rinses and associated waste, which include methylene chloride, methyl ethyl ketone and paint waste, are to be containerized and treated as a hazardous waste.

A2.9. Oil/Water Separators. Oil/water separators are not to be used as a treatment device for spills or disposal of liquid hazardous materials and waste. Oil/water separators provide primary pretreatment of wastewater for industrial operations, such as maintenance shops and fuel management areas. Some chemicals that are discharged to the oil/water separators may not possess the same characteristics as, or be compatible with, oil. These chemicals can pass through the separator and discharge to an open waterway or POTW. Any pass through may be a violation. The best method of reducing the amount of sludge generated from oil/water separators is good housekeeping practices. Spill pans and absorbent materials should

be placed under equipment during maintenance work. This practice will prevent spills from traveling into floor drains and into the oil/water separators. In addition, frequent sweeping of the shop floors will prevent dirt and other debris from getting into the sewer. Attachment 3 is a Sanitary Schematic and shows the locations of all oil/water separators.

A2.10. Used Propylene Glycol. Used de-icing agent, propylene glycol, is collected from the base aircraft de-icing pad to an above ground storage tank. The used propylene glycol is managed for compliance with Air Force, State and Federal Environmental Regulations.

A2.11. Food Preparation Area. Areas which prepare food or are used for the washing of dishes used to serve food must have an operational and regularly maintained grease interceptor or grease trap system to separate, remove, collect and contain grease.