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GRC Environmental Programs Manual—Chapter 3

Water Pollution Control

Approved by Energy and Environmental Management Office Chief

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**NASA - Glenn Research Center
Cleveland, OH 44135**

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Change Record

Revision	Effective Date	Expiration Date	C-25, Change Request #	Description
A	4/2015	4/2020	14-002	Changed approval office name. Added PBS emergency number. Chapter updated to reflect new NPDES permit numbers and EPM Chapter 24. Updated all hyperlinks. Updated form names and relink to new form website

***Include all information for each revision. Do not remove old revision data. Add new rows to table when space runs out by pressing the tab key in the last row, far right column.*

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Chapter 3.—Water Pollution Control

NOTE: This chapter is maintained and approved by the Energy and Environmental Management Office (EEMO). The last revision date of this chapter was March 2015. The current version is maintained on the Glenn Research Center internet at <http://www.grc.nasa.gov/WWW/FTD/EEMO/index.html>. Approved by: Chief of Energy and Environmental Management Office.

1.0 PURPOSE

This chapter provides the policies and requirements for design, construction, modification, and operation of Glenn Research Center (GRC) facilities contributing waterborne wastes to the sanitary, storm, and industrial waste systems. The provisions herein are in accordance with the national efforts to improve water quality through prevention, control, and abatement of water pollution from Federal activities in the United States.

2.0 APPLICABILITY

This chapter is applicable to all personnel at Lewis Field and Plum Brook Station including, but not limited to, civil servants, contractor personnel, and students.

3.0 BACKGROUND

Section 402 of the Clean Water Act (CWA) established an effluent permit system known as the National Pollutant Discharge Elimination System (NPDES). The NPDES constitutes the Nation's central mechanism for controlling pollution of waterways and lakes. Under the CWA, it is illegal for any person, including Federal agencies, to discharge pollutants from a point source without a permit.

4.0 POLICY

It is Glenn policy that the design, maintenance, operation, and changes to the Lewis Field and Plum Brook sewer systems be planned, controlled, and monitored in a manner that assures that environmental pollution regulations will not be violated.

4.1 National Pollution Discharge Elimination System

Lewis Field and Plum Brook Station operate under separate NPDES water discharge permits issued by the Ohio Environmental Protection Agency (EPA). The permits specify the discharges that are allowed, pollutant limitations, and the monitoring and reporting requirements. The EEMO performs reporting and monitoring. Any discharge not allowed under these permits is a violation of the CWA.

4.2 Storm Water Permit/Storm Water Pollution Prevention Program

The Lewis Field facility has received a permit to discharge storm water runoff. Please reference the Environmental Programs Manual, Chapter 24, Storm Water Pollution Prevention, for further information at Lewis Field and Plum Brook Station; storm water construction permits are required for any construction project that disturbs over 1 acre of land.

Because it is located outside the boundaries of the Sandusky, Ohio, urbanized area, Plum Brook Station is not subject to NPDES requirements for Municipal Separate Storm Sewer System (MS4). In addition, as a research facility, Plum Brook Station is not required to obtain NPDES coverage under 40 Code of Federal Regulations (CFR) 112.26 for storm water discharges associated with industrial activities.

5.0 RESPONSIBILITIES

5.1 All Employees

Each employee is responsible for assuring no release of toxic or hazardous materials or reportable quantities of other materials to the sanitary, storm, and industrial waste sewer systems.

Any person who becomes aware of any spill, or the inadvertent or unauthorized release of toxic or hazardous materials to any GRC sewer system, shall report the incident by dialing 911 from a Center telephone or 216-433-8888 from a cell phone at Lewis Field and 419-621-3222 at Plum Brook Station.

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All facilities shall comply with the local, state, and Federal regulations and codes applicable to the collection, transmission, and disposal of waterborne wastes to sanitary, storm, and industrial waste sewer systems.

5.2 Energy and Environmental Management Office

EEMO sets Glenn environmental pollution standards based on the requirements of local, state, and Federal regulations and permits. EEMO updates these standards as required by changes in such regulations and permits. Questions concerning application of standards should be directed to EEMO.

EEMO defines a sampling and testing program to monitor wastes in the sewer systems, the purpose of which is to detect, control, and eliminate pollution.

EEMO is the focal point for the submission for applications of all water permits. EEMO maintains the Lewis Field and Plum Brook Station NPDES permits and monitors according to the specifications included in the permits.

EEMO coordinates with outside agencies as appropriate.

EEMO provides requesters with waste disposal technology information, analytical chemistry, and monitoring metrology for handling and disposing of wastewater.

5.3 Facilities Division

Facility Division (FD) is responsible for the physical operation and maintenance of the process water systems and the industrial waste system.

FD must ensure that contractors plan and implement Best Management Practice (BMP) at construction sites. Refer to EPM Chapter 24, Storm Water Pollution Prevention for BMP.

FD provides engineering systems management.

5.4 Emergency Dispatch

Emergency Dispatch is the focal point of communications in initiating the emergency spill containment and cleanup plans.

6.0 REQUIREMENTS

6.1 Design and Construction

All facilities shall be designed and constructed in accordance with the criteria and standards set forth in the authorities cited above. All facilities shall comply with local, state, and Federal regulations and codes applicable to the collection, transmission, and disposal of waterborne wastes contributing to the sanitary, storm, and industrial waste systems. When the possibility of an accidental release of contaminated waste exists, adequate safeguards shall be included in such designs. Due consideration shall be given to effluent limits established for release to adjacent creeks or rivers and to regional sewage systems. Control or treatment facilities may be required in order to prevent such accidental or normal releases.

The environmental impact and assessment of design, construction, and modification activities shall be evaluated in the initial planning stages. Requirements governing the preparation and review of assessments of the environmental impact of GRC activities are contained in Chapter 2, National Environmental Policy Act, of this manual.

Violations of requirements in this document design should be reported to the Chief of FD for evaluation and corrective action.

BMP must be planned and implemented at construction sites to eliminate sediment discharge to storm sewers.

Accumulation of rainwater in the excavation site should be avoided. In the event rainwater is accumulated in the excavation site, the proper dewatering is needed.

For excavation site where the soil is clean, accumulated rainwater with sediment control shall be discharged to the storm sewer. At excavation sites where the soil is designed as a solid or hazardous waste, accumulated rainwater shall be contained and tested based on the contaminants of soil. The rainwater will be handled accordingly upon analytical results as recommended by EEMO.

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6.2 Operation and Maintenance

FD will operate and maintain sewer system to achieve compliance with the standards described in Section 6.1.

The Lewis Field and Plum Brook Station sewer systems will be operated and maintained to satisfy the following intended purposes:

Storm sewer system.—Surface and subsurface rainwater runoff (e.g., from roadways, parking lots, roof drains, and yard basins). For more detail information, review Chapter 24, Storm Water Pollution Prevention.

Industrial waste sewer (IWS) system (Lewis Field only).—Wastewaters containing oil and grease. Lewis Field attempts to minimize the discharge of pollutants at each entrance to the IWS. Many of the buildings that generate wastewater containing petroleum products have oil separators that remove floating and settleable materials before entering the IWS system. Contamination of this system with solvents and other chemicals violates the proper and intended use of the IWS. IWS wastewater discharges to a sanitary sewer system.

Sanitary sewer systems.—Domestic-type sewage and gray water originating at standard plumbing fixtures and laboratory sinks.

Radioactive wastes.—All contaminated wastewater that contain radioactive materials shall be disposed of in accordance with applicable Ohio EPA and U.S. Nuclear Regulatory Commission (NRC) regulations and licenses and requirements of the Midwest low-level Radioactive Waste Disposal Compact. In Cleveland, the Health Physics Team will control the disposal of radioactive wastes. At Plum Brook, radioactive waste disposal will be controlled in accordance with established Plum Brook Reactor storage license requirements and procedures approved by the GRC Radiation Safety Officer.

Utility manhole.—Rainwater and/or groundwater accumulated in a utility manhole that is free from oil sheen, odor, color, debris, and sediment can be discharged to a storm sewer. An evaluation of water shall be made prior to discharge. A competent person who is responsible for the project should do an evaluation. Contact EEMO if assistance is needed on the evaluation and/or oil sheen, odor, color, debris, and sediment are detected in the water.

During the discharge if any oil sheen, odor, color, debris, and sediment are detected, cease the discharge and contact EEMO immediately.

Cooling tower.—It is the policy of EEMO that cooling tower maintenance shall be performed in a manner that complies with all relevant laws and regulations. In order to implement this policy, EEMO recommends that prior to cooling tower maintenance activities, EEMO be notified in advance to establish proper procedures.

7.0 RECORDS

NPDES permit.—Maintained by EEMO.

NPDES permit monthly reports.—Maintained by EEMO.

8.0 REFERENCES

Document Number	Document Name
2IO00002*KD	NASA Plum Brook Station NPDES Permit
3IO00001*ID	NASA GRC Lewis Field NPDES Permit
40 CFR Part 110–122	Clean Water Act
40 CFR Part 112	Oil Pollution Prevention (Spill Prevention Control and Countermeasure Plan)
40 CFR Part 122	The National Pollution Discharge Elimination System
40 CFR Part 122.26	The Storm Water Rule
40 CFR Part 400–500	Effluent Guidelines and Standards
Title I	Code of Regulations/Sewer Use Code

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APPENDIX A.—DEFINITIONS AND ACRONYMS

Clean Water Act (CWA)

Code of Federal Regulations (CFR)

Energy and Environmental Management Office (EEMO)

Environmental Protection Agency (EPA)

Erie County Environmental Services (ECES)

Facilities Division (FD)

Glenn Research Center (GRC)

Industrial waste sewer (IWS)

Municipal Separate Storm Sewer System (MS4)

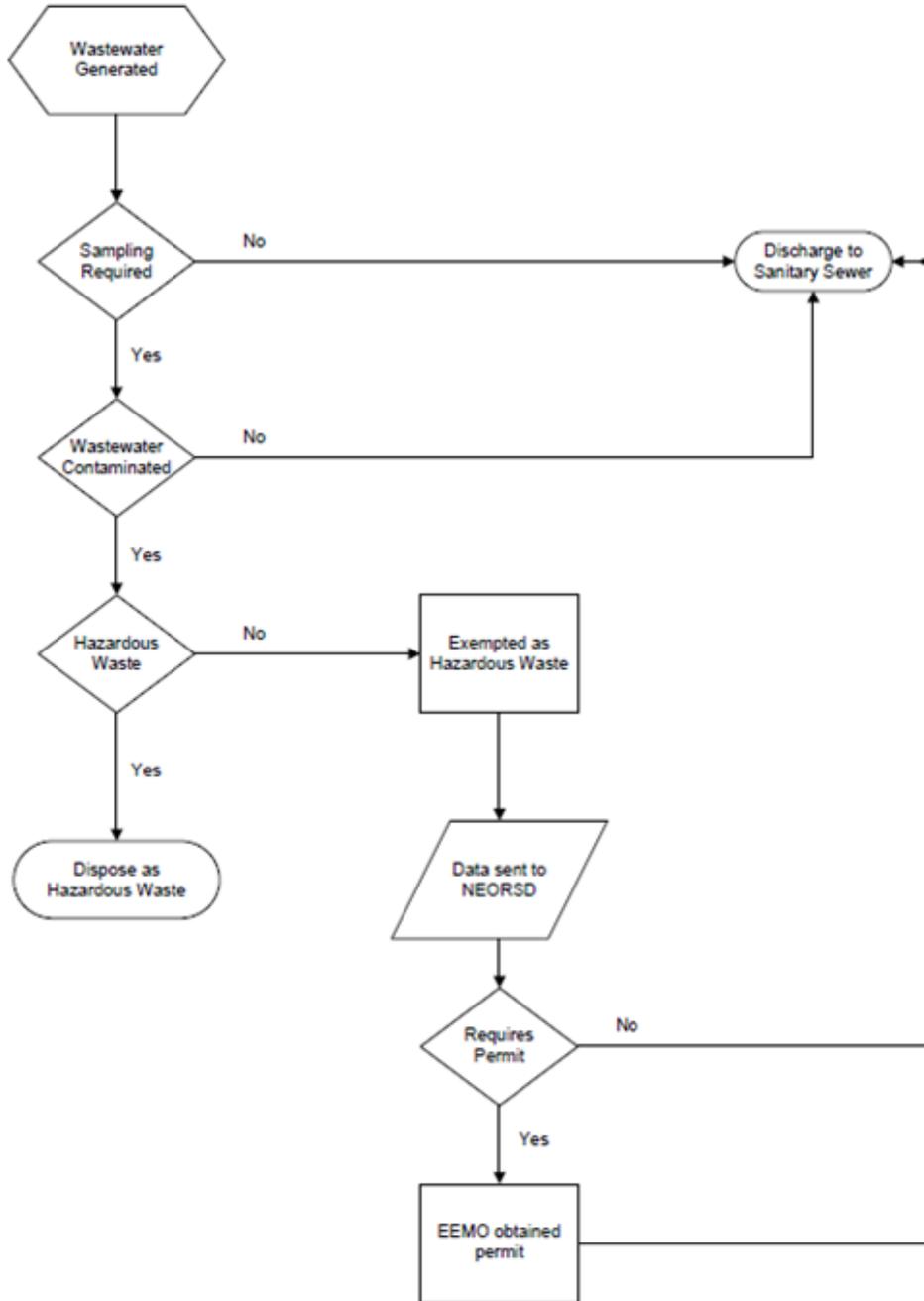
National Pollutant Discharge Elimination System (NPDES)

Northeast Ohio Regional Sewer District (NEORS)

Nuclear Regulatory Commission (NRC)

APPENDIX B.—WASTEWATER DISPOSAL FLOW CHARTS

*Disposal of Wastewater
GRC – Lewis Field*



Disposal of Wastewater GRC - Plum Brook Station

