

Chapter 5 - Industrial Wastewater Management (REDACTED)

5.1 Applicability

This instruction is applicable to all civil servants, contractor employees, and tenant personnel at Ames Research Center (Ames), Moffett Federal Airfield (MFA), and Crows Landing Flight Facility, who handle, generate, or otherwise manage industrial wastewater. This instruction does not apply to domestic wastewater discharges.

5.2 Purpose

This chapter prescribes the roles and responsibilities and establishes minimum requirements and limitations for all Ames and MFA personnel who discharge industrial wastewater to the sanitary sewer systems. It is to be used to assist Ames and MFA personnel to comply with Federal, state, and local sanitary sewer and wastewater pretreatment regulations and ordinances.

5.3 Policy

It is the policy of the Ames Research Center to:

1. Comply with all Federal, state, and local regulatory requirements related to the discharge of industrial wastewater to the sanitary sewer.
2. Promote employee awareness of water conservation methods.
3. Consult, as appropriate, with Federal, state, and local agencies, including:
 - U.S. Environmental Protection Agency (EPA)
 - San Francisco Bay Regional Water Quality Control Board
 - City of Sunnyvale Water Pollution Control Plant
 - City of Palo Alto Regional Water Quality Control Plant

5.4 Authority

All relevant Federal, state, and local laws and regulations pertaining to the management of industrial wastewater, including, but not limited to:

1. City of Sunnyvale Sewer Use Ordinance, Title 12
2. NASA-Ames Wastewater Discharge Requirements contained in Permit #1132 issued by the City of Sunnyvale Water Pollution Control Plant (WPCP)
3. City of Palo Alto Sewer Use Ordinance, Chapter 16.09
4. NASA-Ames Wastewater Discharge Requirements contained in Permit #96101 issued by the City of Palo Alto Regional Water Quality Control Plant (PARWQCP)
5. Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (33 U.S.C. 1251 et seq.)
6. 40 Code of Federal Regulations (CFR) Part 403 - General Pretreatment Regulations for Existing and New Sources of Pollution
7. California Regional Water Quality Control Board (RWQCB), San Francisco Bay Basin Plan

8. California Code of Regulations, Title 23, Waters

5.5 Responsibilities

5.5.1 Generators of Industrial Wastewater

1. Notify the Safety, Environmental Services Office, Code QE (Environmental Office) during the planning or design of new or modified equipment or processes that will discharge to the sanitary sewer. City approval of the design may be required. The city may require installation of specific sampling ports or flow meters.
2. Conduct operations in compliance with local, state, and Federal regulations applicable to the collection, treatment, and disposal of industrial wastewater to the sanitary sewer system.
3. Ensure that the following wastes do not enter the sanitary system:
 - a. Wastes that may, either directly or indirectly by interaction with other substances:
 - Cause a fire or explosion.
 - Damage the cities wastewater collection, treatment, or disposal facilities.
 - Obstruct flow in a sewer system or otherwise interfere with, inhibit, or disrupt the city's plant processes or operations.
 - Result in the plant's use of sludge in noncompliance with any applicable requirements.
 - Prevent city wastewater treatment plant's effluent from attaining water reclamation or discharge standards.
 - b. Sand, cement, cinders, ashes, metal, glass, or other heavy solids; straw, shavings, animal hair, feathers, or other fibrous matter; tar, asphalt, resins, plastics, or other viscous substances.
 - c. Wastewaters containing constituents at concentrations in excess of the established limits, or that do not meet the limitations shown in Appendix A of this chapter.
 - d. Radioactive wastes.
 - e. Hazardous wastes, including, but not limited to, organic solvents, pesticides and pesticide mixtures, oils and lubricating fluids, and corrosive materials.
 - f. Diluting waters (as defined in Section 5.6, Definitions).
4. Label all containerized industrial wastewater. Labels shall include:
 - a. Source of the wastewater.
 - b. Generator name, company (if contractor), code, and phone number.
 - c. Accumulation starts date.
 - d. Suspected constituents.
5. Contact the Environmental Office representative prior to the discharge of unknown or unauthorized incidental industrial wastewater into the sanitary sewer system.
6. Remove all sediments and sludge from industrial wastewaters prior to discharge, as outlined in Section 5.7, General Management Requirements.
7. Keep records of all industrial wastewater discharges and other applicable information, as outlined in Section 5.10, Monitoring.

5.5.2 Safety, Environmental Services Office, Code QE

1. Prepare and distribute environmental standards for industrial wastewater management at Moffett Field.

2. Prepare and renew discharge permits with the City of Palo Alto and the City of Sunnyvale, as outlined in Section 5.8.6, Discharge Permits. Authorize the discharge of incidental industrial wastewaters to the sanitary sewer system.
3. Monitor and report, as required under each sanitary sewer permit.
4. Serve as technical point of contact for regulatory agency inspections.

5.5.3 Plant Engineering Branch, Code JFP

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5.5.4 Thermo-Physics Facilities Branch, Code ASF

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5.5.5 Construction Manager

1. Manage job sites to avoid discharges of liquid and solid substances to the sanitary sewer and storm drain systems. Systematic inspections of the job site are required to ensure that construction, demolition, and excavation materials (liquid or solid) are not entering sanitary or storm drain systems.
2. Submit an incidental discharge request form (Form AEH 5B, Appendix B of this chapter) and receive authorization from the Environmental Office before discharging water generated from construction activities into the sanitary system. See Section 5.8.6 for permit application requirements.
3. Plug or block drains, especially along street gutters if necessary, when working with wet concrete or cutting waters. These substances are not permitted to enter storm or sanitary sewer drains.
4. Place residual concrete/asphalt cutting effluent that remains in equipment in the bermed area and allow to evaporate. The dry residue can then be removed and discarded as solid waste. Do not discharge these waters or residues to the sanitary or storm systems.
5. Tanks and containers
 - If large amounts of wastewater are to be generated, construction managers shall arrange to store the water in tanks to allow for sampling and analysis prior to discharge.
 - Containers and/or tanks of wastewater shall be labeled "wastewater pending analysis." Labels shall also include the following: contact name, phone number, description of water source, suspected contaminants, and date.
 - Soils, sediments, and other particulates that settle out of the water onto the tank bottom shall not be flushed to the sanitary sewer. Sediments shall be filtered or otherwise captured during discharge, as required in Section 5.7.
 - Tanks shall be rented by the contractor directly from the vendor. The Environmental Office can provide assistance in recommending vendors and ordering tanks, if necessary. The Environmental Office, as explained in Section 5.8.6, must authorize all discharges of industrial wastewater from tanks to the sanitary sewer system.
6. Use shovels and brooms instead of water for cleaning streets and construction site surfaces. Do not hose off sidewalks and streets such that soil, concrete, or other debris is flushed down storm or sanitary sewer drains.

5.6 Definitions

The following words and terms are defined as indicated for the purposes of this chapter.

5.6.1 Diluting Waters

Cooling water, potable water, domestic sewage, groundwater, surface drainage, or other waters not part of an industrial process for which pretreatment limitations apply, but which are combined with industrial process wastewater prior to a monitoring point.

5.6.2 Domestic Sewage (or Domestic Waste)

Liquid and waterborne wastes derived from ordinary living processes, free from industrial wastes and of such character as to permit disposal into the sanitary sewer system without treatment.

5.6.3 Groundwater

All water in or from the zone of saturation (i.e., the subsurface zone in which voids in soil or rock are filled with water), including water from aquifers and underground streams.

5.6.4 Industrial Wastewater

Waste and wastewater from any maintenance, production, manufacturing, fabrication, research, development, or processing activity, where water is used to remove waste derived from nondomestic sources from processes connected to or flowing otherwise to the sanitary sewer system.

5.6.5 Incidental Industrial Wastewater

Waste and wastewater generated from any nonroutine activity. Such wastewater sources include, but are not limited to, construction dewatering, utility vault pumping, groundwater excavation, rainwater in secondary containment, cooling tower maintenance wastestreams, and boiler blowdown.

5.6.6 Point of Discharge

A point at which wastes enter the sanitary sewer, or the point at which waste leaves the process or wastewater-generating system or operation. A point of discharge can be specified in a permit and includes, but is not limited to, a manhole, floor drain, sump, etc.

5.6.7 Prohibited Discharge

Any discharge of waste to the sanitary sewer system that is not authorized in Ames or that is in violation of any applicable regulations.

5.6.8 Sanitary Sewer (or Sanitary Sewer System)

All sewers, treatment plants, and other facilities owned and operated by the City of Mountain View, the City of Palo Alto, the City of Sunnyvale, or NASA for carrying, collecting, treating, and disposing of sanitary sewage and industrial wastes.

5.6.9 Storm Drain (or Storm Drain System)

The system of pipes and channels primarily designed to convey storm water, surface water, street wash, drainage, or other storm run-off to the wetlands and other surface waters at the northern end of Moffett Field.

5.7 General Management Requirements

1. All industrial wastewater discharges require permission as per Section 5.8.
2. Industrial wastewaters generated from the following activities shall be filtered, allowed to separate by retention, or otherwise captured to remove sludge or suspended solids prior to discharge to the sanitary sewer:
 - Cleaning of cooling towers and boilers.

- Construction dewatering,
- Building and equipment washing.

5.8 Specific Management Requirements

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5.9 Internal Notifications

5.9.1 Prohibited Discharge Notification

The Environmental Office shall be notified **immediately** of prohibited discharges (as defined in Subsection 5.6.7). Persons knowledgeable of the prohibited discharge shall provide the Environmental Office with the information necessary to enable proper notification of the involved agency or agencies.

5.9.2 Responsibilities

Persons responsible for a prohibited discharge shall:

1. Report the discharge to the Environmental Office and provide, if known, information regarding the date, time, location, cause, nature, volume, and characteristics of the discharged material.
2. Provide the Environmental Office with a written statement detailing the incident. The statement shall:
 - Be submitted to the Environmental Office within two working days of the date of the discharge.
 - Detail the causes of the discharge, actions taken in immediate response to the discharge, and corrective measures taken or planned to prevent recurrence.
 - Be signed by a supervisor, manager, or appropriate representative of the responsible organization.
 - Serve as documentation for use by the Environmental Office to provide written notification to involved agencies, as required.

5.10 Monitoring

The Environmental Office will perform all required industrial wastewater monitoring for facility-wide industrial wastewater permits, incidental industrial wastewater discharges, and wastewaters treated onsite.

5.10.1 Sampling

The requester shall notify the Environmental Office, at least ten working days in advance of the planned discharge date, to sample the waste to be discharged. Unless otherwise arranged, the Environmental Office shall collect all required samples upon being notified by the requester. The requester shall provide all information necessary or otherwise assist the Environmental Office with collecting the sample or samples representing the waste to be discharged.

5.10.2 Recordkeeping

The requester shall record all discharge information, as required by the permit. For wastewaters that have been determined to be nonsewerable and treated onsite by the reverse osmosis treatment system, the Plant Engineering Branch is responsible for recording and submitting form AEH 5B-Request for Incidental Sewer Discharge. For wastewaters treated and discharged by the REDACTED Industrial Wastewater Pretreatment Facility, related information will be recorded in accordance with discharge monitoring requirements provided by the Environmental Office. The discharge record shall be maintained by the Plant Engineering

Branch and the Thermo-Physics Facilities Branch and made available to the Environmental Office upon request.

5.10.3 Reporting

Dischargers shall report the required discharge information to the Environmental Office. The Environmental Office shall report monitoring information to the City of Palo Alto or City of Sunnyvale based on the information reported by the discharger, in accordance with the conditions of the approved permit and all applicable regulations.

5.11 Metrics

1. Percent compliance with all POTW discharge limitations. Goal: 100%
2. Percent compliance with PRCC and Permit Applications time constraints. Goal: 100%
3. Percent **REDACTED** Operational readiness. Goal: 100%

5.12 Sources of Additional Information or Assistance

1. Building Emergency Action Plans (BEAPs)
2. Environmental Services Office Code QE , **REDACTED**
3. City of Palo Alto Sewer Use Ordinance, Chapter 16.09
4. City of Sunnyvale Sewer Use Ordinance, Chapter 12.04
5. NASA-Ames Industrial Wastewater Discharge Permit #96101 (City of Palo Alto)
6. NASA-Ames Industrial Wastewater Discharge Permit #1132 (City of Sunnyvale)
7. Environmental Office WWW home page at <http://dq.arc.nasa.gov>

5.13 Appendices

5.13.1 Appendix A: Sewer Discharge Limits for the Cities of Palo Alto and Sunnyvale

NO.	TOXICANT/POLLUTANT	PALO ALTO	SUNNYVALE
		Max. allowable concentration (mg/L) unless otherwise specified*	Max. allowable concentration (mg/L) unless otherwise specified
1	Antimony		1.0
2	Arsenic	0.1	0.3
3	Barium	5.0	1.0
4	Beryllium	0.75	0.5
5	Boron	1.0	
6	Cadmium	0.1	0.1
7	Chromium, hexavalent	1.0	
8	Chromium (total)	2.0	1.7
9	Cobalt	1.0	1.0
10	Copper	0.25	(24 hr. comp.) 0.5 (grab) 0.7
11	Cyanide(s)	1.0	0.5
12	Formaldehyde	5.0	
13	Lead	0.5	0.5
14	Manganese	1.0	
15	Mercury	0.05	0.01
16	Nickel	0.5	(24 hr. comp.) 0.25 (grab) 0.5
17	Phenols	1.0	1.0
18	Selenium	1.0	1.0
19	Silver	0.25	0.2
20	Zinc	2.0	1.48
21	pH	5.5-11.0**	6.0-10.5
22	Oil & Grease (total)	200	100
23	Single toxic organics	0.75	1.0
24	Total toxic organics	1.0	1.0
25	Chlorinated hydrocarbons (pesticides)		0.02
26	Cresols		2.0
27	Temperature	150°F***	140°F
28	Flash point (closed cup)	<140°F	<140°F
29	Mercaptans and dissolved sulfides	0.1	
30	Suspended solids (SS)	6000	
31	Total dissolved solids (TDS)	10,000	
32	Fluoride	65	

*These limits are for discharges less than 50,000 gallons. The limits for metals are halved for discharges greater than 50,000 gallons, except for silver and nickel.

**Where the pH is monitored continuously, no individual deviation from the stated range shall exceed 10 minutes in length for discharges less than 10,000 gallons per day nor 5 minutes in length for discharges greater than 10,000 gallons per day. The total time of deviations during any seven calendar day period shall not exceed a total of 30 minutes.

***<30 gpm and <30 minutes all other times.

5.13.2 Appendix B: Form AEH 5B - Request for Incidental Industrial Sewer Discharge

Project location: _____
 (please attach map with location indicated)

Expected start date: _____ Today's date: _____

Project duration: _____

Project description (include description of wastewater-generating source):

Check one:

Groundwater Surface water Construction Boiler

Cooling tower Excavation/remediation

Other _____

Discharge type (check one):

Batch (from tanks, containers, etc.) Continuous

If batch: Qty/batch _____ (gallons), Estimated no. of batches/week: _____

If continuous: _____ (estimated gallons/day), _____ (days/week)

Estimated total discharge qty. for project: _____

Requested discharge point(s): _____
 (i.e., sewer manhole number(s))

Requested discharge rate (gallons/minute): _____

Material to be discharged (if known product is to be added to water, please attach MSDS and/or analytical results): _____

Suspected constituents: _____

Discharger: _____ Phone: _____ MS: _____

SUBMIT COMPLETED REQUEST TO REDACTED

(Request to discharge permitted when Environmental Office returns completed portion below.)

Date request received from discharger: _____
QE contact: _____ Phone/Fax: _____ MS: _____
Date agency notified: _____ Date request submitted: _____ (if applicable) (if applicable)
Agency: _____ Agency contact/phone: _____
Projected discharge date/conditions: _____
Environmental Office discharge approval (signature and date): _____
Agency discharge approval (signature and date): _____
Requester notified (date): _____

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