

Industrial Pretreatment Program

Pease Wastewater Treatment Facility



City of Portsmouth, Public Works



June 13, 2024



- City of Portsmouth Department of Public Works
 - William Bernan: Industrial Pretreatment Coordinator
 - Erich Fiedler: City Engineer

- Engineering Consultant; Hoyle, Tanner, & Associates Inc.
 - Heidi Marshall: Sr. Municipal Engineer
 - Paula Boyle: Sr. Environmental Engineer



- Introduction – Why Are We Here?
- History, Facility, Existing Permit Program
- New IPP Development Efforts
- Identifying Industrial Users
- Sampling – Headworks Loading
- MAHL / MAIL / Local Limits
- Sewer Use Ordinance
- Enforcement
- Timeline / What Can We Expect

Open Discussion / Questions at the end of presentation



PEASE WASTEWATER TREATMENT FACILITY

- Pease WWTF
 - Constructed 1952
 - Updated 1997, 2002, 2015, 2021
 - 1.2 MGD (Design)
 - 1.77 (Permitted)
 - Permit Status – Active 2023
 - NPDES NH0109000





HISTORY OF INDUSTRIAL USER PROGRAM

- Prior to 1990s – No Program
- 1990’s Developed Initial Program for Permit Issuance
 - Example and Encouragement from DES
 - Identification of All Properties With Discharge
 - Phone/In-Person Discussion of Specifics
 - Permit Application and Issuance
 - Incorporated 40 CFR Part 403 General Pretreatment Standards*



CITY OF PORTSMOUTH, NEW HAMPSHIRE
INDUSTRIAL WASTEWATER DISCHARGE PERMIT APPLICATION

All items must be completed for this application to be considered complete. If this application is for a proposed discharge, indicate whether discharge information is actual or estimated. Existing discharges must give actual information for all questions. If an item is not applicable, indicate "N/A". Please type all information. Attach additional pages where additional space is required.

Return Completed Application to: William Berman, Industrial Pretreatment Coordinator
 Department of Public Works
 680 Peaverly Hill Rd
 Portsmouth, NH 03801

If you need assistance or have any questions, please contact; wberman@cityofportsmouth.com or (603) 380-4597.

CERTIFICATION STATEMENT

"On behalf of the applicant (owner) named herein, I hereby apply for a permit to discharge non-domestic wastewater to the wastewater collection and treatment facilities owned by the City of Portsmouth, NH. I certify that I am familiar with Chapter 11, Article II, Section 11.201 – Section 11.216, and the information contained in this application. I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that if the actual wastewater discharged differs in any significant matter from the information contained herein, any permit issued based upon this application is void and such discharge shall be in violation of the City of Portsmouth Code."

Signature of Authorized Representative

Name: _____ Title: _____ Date: _____

Signature: _____

CONFIDENTIALITY: The information and data submitted as part of this application relating to wastewater characteristics is considered public information and shall be available to the public without restriction. Confidential and/or propriety information provided by the applicant in this permit application shall be stamped "Confidential" or "Proprietary Information" or a written request shall accompany this application requesting confidentiality of this information.



EXISTING INDUSTRIAL USER PROGRAM

- Permit Application & Permit Issuance
 - Inspection at Time of Permit Application
 - Permit Requirements Depends on IU Impact
- Sampling/Reporting
 - Schedule
 - Location(s)
 - Parameters
- Proper Operation and Maintenance
- Expiration/Reapplication
- Surcharge for Excessive Load
 - Fees Set by City Council
- Authority for Inspection and Sampling

STAFFING

- City Engineer
- Assistant City Engineer
- Wastewater Operations Manager
- Wastewater Treatment Staff
- Collections Staff



- **Augmented Legal Authority**
- **Fresh Local Limits**
- **Updated List of Industrial Users (IUs)**
- **Similar Permitting**
- **Similar on-site Monitoring**
- **Enhanced Enforcement**
- **Additional Sampling Inspection by City**
- **New Program Organization**

STAFFING

- Industrial Pretreatment Coordinator*
- City Engineer
- Assistant City Engineer
- Wastewater Treatment Staff
- Collections Staff



MAJOR EFFORTS IN DEVELOPING EPA IPP

- Develop Master List of IUs/SIUs
- Conduct Headworks Loading Analysis
- Develop Local Limits (MAHL/MAIL)
- Revision of Sewer Use Ordinance
- Develop Enforcement Response Plan



MASTER LIST

- Developed a Master List of all Industrial Users (IUs) (in the Pease WWTF service area)
 - Reviewed City documents and records
 - Drove the area to identify potential users
- Distributed Surveys requesting basic information
- Distributed more detailed Surveys to users where a better understanding of operations was necessary
- Visited specific facilities to best understand operations
- Sorted IUs into groups with similar oversight needs





CONDUCT HEADWORKS LOADING ANALYSIS

The goal of the headworks loading analysis is to identify how much of a pollutant load can be treated by the Wastewater Treatment Facility (WWTF)

- What is entering the WWTF?
- How much is treated/removed from the wastewater by the WWTF?
- What is leaving the WWTF?





CONDUCT HEADWORKS LOADING ANALYSIS

- Once we determined how much of each Pollutant of Concern (POC) is entering and exiting the WWTF, we calculated how well the WWTF is removing the POCs
- This allows us to determine how much capacity the WWTF has to provide allocations to industries based upon a series of safety and environmental criteria
- Completion of that analysis leads to development of local limits.





MAHL → MAIL → LOCAL LIMITS

EPA evaluates the need to develop rules for discharges based upon the loadings of the POCs entering the WWTF

- The proposed limits are based upon the WWTF’s ability to treat the wastewater
- The MAIL in the table is how much “leftover” capacity the WWTF has to divide up and allocate to industries
- Proposed allocation criteria are currently under review by EPA

Pease Maximum Allowable Industrial Loads (MAIL)					
POC	Proposed MAHL (lbs/day)	MAHL Less Safety Factor (10%)	Uncontrollable Loading (lbs/day)	Septage Loading (lbs/day)	Proposed MAIL (lbs/day)
Antimony	384.31	345.88	0.0013	0.0007	345.87
Arsenic	0.09	0.08	0.0034	0.0008	0.08
Total Organic Arsenic	-	-	0.0017	0.0000	-
Cadmium	7.06	6.36	0.0013	0.0009	6.36
Chromium	4.73	4.26	0.0069	0.0014	4.25
Copper	7.70	6.93	0.3888	0.0927	6.45
Cyanide (Total)	0.82	0.74	0.0733	0.0051	0.66
Lead	7.59	6.83	0.0013	0.0020	6.83
Mercury	0.17	0.15	0.0000	0.0000	0.15
Nickel	6.98	6.28	0.1789	0.0018	6.10
Selenium	85.27	76.74	0.0013	0.0001	76.74
Silver	4.56	4.11	0.0013	0.0002	4.11
Thallium	-	-	0.0013	0.0001	-
Zinc	2.47	2.22	0.3633	0.1409	1.72
Sulfide	28.59	25.73	0.20	0.2304	25.32
BOD ₅	4,460.00	4,014.00	195.8	21.13	3,797.08
TSS	2,907.00	2,616.30	296.2	69.81	2,250.29
TN	364.00	327.60	102.9	3.33	221.36
Chloroform	3,639.27	3,275.35	0.06	-	3,275.28
Phenol	326.35	293.71	0	0.003	293.71



SEWER USE ORDINANCE

Presently Chapter 11 Article II – Sewers

Adopted: 1972

12 pages

Limited program implementation provisions

Future Chapter 16 Article III – Sewer Use

65 Pages

More detailed control mechanisms and remedies

Strenuously adheres to EPA Model

IPP Chapter 2, Appendix 2A

To be presented before City Council for adoption following EPA review



40 CFR 403.8(f)(5) (i-iv) requires the City to develop and implement an Enforcement Response Plan (ERP) as part of their approved pretreatment program.

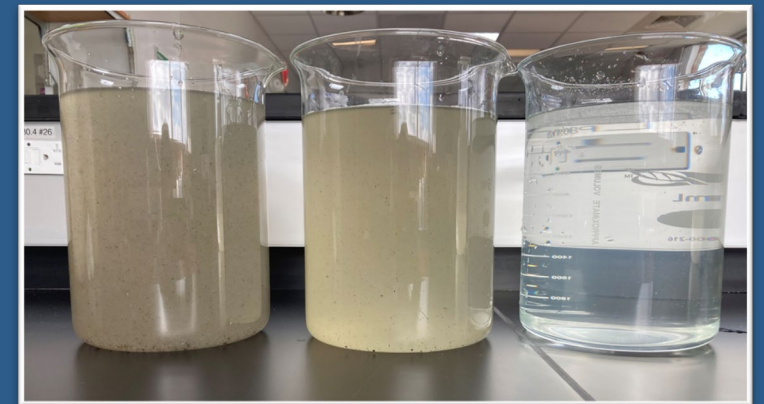
- ERP will serve as a guidance for the enforcement of Federal regulations, New Hampshire IPP regulations, and the City's SUO.
- Contains detailed procedures indicating how the City will investigate and respond to instances of IU noncompliance.
- Standardizes responses



TIMELINE / WHAT CAN WE EXPECT

- EPA Review anticipated to last nine months or more
- EPA to have a public comment period near the end of their review
- City achieves approval
- SUO adoption can take one to three months after EPA approval
- Program Implementation
- Meet with IUs and present updated IUP applications
- New/Revised IUP issuance
- Annual Sampling & Inspection

Pease WWTF





Open Discussion/Questions



Contact: William Bernan, Industrial Pretreatment Coordinator
wcbernan@cityofportsmouth.com
603-380-4597
<http://cityofportsmouth.com/publicworks/wastewater>



■ Identify Potential IUs:

- Various City and regulatory sources
- Pease Development Authority (PDA) tenant List
- Water Use records
- Chamber of Commerce Listings
- Liquor License database
- Non-Residential Flex Accounts
- Plumbing Permit List
- Health inspector reports
- EPA Echo database
- NHDES One stop database
- The City's GIS for business locations and connection to the sanitary sewer
- Internet searches for various business identification
- Windshield Survey

■ Identified IU's issued a 2-Phase Industrial Waste Survey (IWS)



- Screening for Pollutants of Concern (POCs)
 - One-day - conducted on July 12, 2023
 - Locations: Influent, Effluent, Septage, Sludge
- Sampling Plan
 - Five day – conducted October 23 - October 29, 2023
 - Locations: Influent, Effluent, Septage, Sludge
 - Uncontrollable Sources sampling - conducted February 6-9, 2024
 - SMHs 2797, 2453, 2052
 - Lonza and Cisco/Wicked Weed Splits
- Math (lots of math)





MAHL → MAIL → LOCAL LIMITS

Maximum Allowable Headworks Loading: pollutant load that can be received at WWTF's headworks that should not cause a POTW to violate a particular treatment plant limit or environmental criteria.

- The factors that serve as the basis for the MAHL calculation and developing local limits include:
 - Design Studies/Capacity/Engineering Reports (Existing Conditions)
 - Removal Efficiency
 - NPDES discharge limits;
 - Water quality of the receiving stream;
 - Protection of the WWTF;
 - Prevention of inhibition;
 - Prevention of pass through or interference;
 - Prevention of sludge contamination;
 - Protection of the collection system; and
 - Worker health and safety.

- MAHL less 10% Safety Factor, Uncontrollable Loading, and Septage Loading = MAIL