



MASSACHUSETTS WATER RESOURCES AUTHORITY
SEWER USE DISCHARGE PERMIT APPLICATION

INSTRUCTION SHEET

In accordance with Massachusetts Water Resources Authority (MWRA) Sewer Use Regulations, 360 C.M.R. §§ 10.007, 10.052, 10.072, and 10.092, users must complete and file a Sewer Use Discharge Permit Application. The Application must be filed with the MWRA and the Municipality in which the sewer user's discharge is located. Failure to submit a copy of the application to the Municipality is a violation of 360 C.M.R. 10.052 and may delay the processing of the permit. In addition, if your facility is either a treatment, storage, or disposal facility (TSDF) or Level III recycler under the Massachusetts hazardous waste regulations, a third copy must be sent to the Massachusetts Department of Environmental Protection. Please read the following instructions before completing the form. If you have any questions, please call the Toxic Reduction and Control at (617)305-5627 and ask to speak to the Industrial Coordinator for the city or town in which the facility to be permitted is located.

1. Answer all questions carefully.
2. The application is designed to apply to a wide range of users. It consists of a "standard application," sections A-J, which every user must complete, and three addenda. The tables which you must complete may not entirely reflect your operations. You may slightly alter the tables to better suit your needs so long as you do not significantly change the question by doing so. You must complete the first and second addenda if the facility to be permitted engages in one or more of the operations described in them (or answer N/A as appropriate). If you would like to be covered by the MWRA's General Permit for Low Flow and Low Pollutant Dischargers, you must complete the third addendum.
3. For the questions which do not apply, please write "N/A" or "not applicable" in the space provided. Please do not leave the question blank, because we may assume you missed the question and send the application back to you.
4. If more space is needed, please attach additional pages.
5. If you have previously submitted information required by this application and that information is unchanged, you must resubmit the information. If there are only minor changes, you may resubmit the information and on a separate sheet indicate the changes that have occurred with page references for each change.
6. If you have not already done so, submit to the Massachusetts Department of Environmental Protection (MADEP) a classification of your pretreatment system

by completing the attached pretreatment facility grading report form. Include a process flow diagram of the pretreatment system and send to:

Board of Certification
DEP Training Center
Route 20
Milbury, MA 01527

7. The form must be signed and dated by an authorized representative of the user to be valid. The MWRA has adopted the EPA's definition of an Authorized Representative, 40 CFR 403.12., as follows:

- (A) For a corporation, its (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- (B) For a partnership or sole proprietorship, a general partner or proprietor.

By a duly authorized representative of an individual designated in paragraph (A) or (B) if: (i) the authorization is made in writing by the individual described in paragraph (A) or (B); (ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the Industrial Discharge originates, such as the position of plant manager or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company; and (iii) the written authorization is submitted with this form.

8. Submit the completed application in the following manner, please keep a copy for your own records:

- Please submit two copies of the application, one hard copy and one electronic copy to the TRAC office. Please send an additional copy to the municipality that the facility resides in.

- The hard copy of the application should contain a “wet” signature and be mailed to the TRAC office address listed on the top page of page 1 of this application.
 - The electronic copy of the application should be a **single** pdf document that is a compilation of the permit application document and all supporting information. The electronic copy of the application should be emailed to TRACApplications@mwra.com
 - In the subject line of the email submittal, please identify the submittal as follows: PERMIT APPLICATION, permit number (if you have a previously issued permit), your company name.
 - Because of file size limitations with the MWRA email server, please scan the permit application and all supporting information at the lowest scan setting. Most scanners will default to a very high photo realistic DPI (dots per inch) setting. Please use the lowest DPI setting to obtain a readable document, yet compressed file size.
 - After scanning, if the pdf file is slightly larger than 5 MB, try compressing to a zip file. There may be enough compression with the zip file to get below the 5 MB server limitation. If the file is too large to email, please send an email to TRACApplications@mwra.com requesting a link to the MWRA Share File server.
9. You must submit a completed application no later than sixty (60) days before your current permit expires in order for your current permit to remain in effect pending a decision on your new application.

MWRA ADDRESS:
2 Griffin Way
Chelsea, MA 02150-3334
Attention: TRAC

MUNICIPAL ADDRESS:
Refer to: <https://www.mwra.com/03sewer/html/tracpermits.htm>

Note: The MWRA has special applications for certain facility types. If your facility engages solely in a) photo processing and/or printing operations or b) food processing operations, you should call MWRA as directed on Page 1 of these instructions and request the Notice of Intent to Discharge for your type of discharge. Special applications are also required for Colleges and Universities, Landfills, Publicly Owned Drinking Water Treatment Plants, Septage Haulers, and Municipalities. In addition, a separate addendum is required for applicants seeking to discharge from construction site dewatering activities. If you believe you need one of these, please call as directed on Page 1 of these instructions and speak with your Industrial Coordinator.

MASSACHUSETTS WATER RESOURCES AUTHORITY
SEWER USE DISCHARGE PERMIT APPLICATION
COLLEGES AND UNIVERSITIES

SECTION A - GENERAL INFORMATION

1. Name of Applicant: _____

2. Mailing Address: _____

3. Facility Address: _____

4. Facility Representative to Contact Concerning Information Provided Herein.

Name: _____ Title: _____
Telephone: _____

5. Name and Title of Authorized Representative:

Name: _____ Title: _____
Telephone: _____

6. Name of Person to Receive Permit (If Different from Above).

Name: _____ Title: _____
Telephone: _____

7. Check One: Existing Discharge _____ Proposed Discharge _____

If proposed discharge, anticipated date of initial discharge: _____

The MWRA has adopted the EPA's definition of an Authorized Representative. 40 CFR 403.12 (l):

Authorized Representative

Authorized representatives include those persons with the following responsibilities:

a) Responsible corporate officer, if the industrial user submitting the reports is a corporation. For the purpose of this requirement, a responsible corporate officer means a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b) General partner or proprietor if the industrial user submitting the reports is a partnership or sole proprietorship respectively.

c) Duly authorized representative of the individual designated in (a) or (b) of this section if:

- i) the authorization is made in writing by the individual described in (a) or (b);**
- ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the industrial discharge originates, such as the position of plant manager, operator of a well, or well field superintendent, or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company;**
- iii) the written authorization is submitted to the MWRA**

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of this section must be submitted to the MWRA prior to or together with any reports to be signed by an authorized representative.

Date

Signature of Authorized Representative

SECTION B - PRODUCT OR SERVICE INFORMATION

2. Check all operations/processes that are present at the facility:
For Each operation/process that is present, please complete the insert that corresponds to the operation/process

- Commercial Photography (SIC # 7335)
- Photofinishing Laboratories (SIC # 7384)
- Doctors of Medicine; Offices, Clinics (includes Radiologists (SIC # 8011))
- Dentists; Offices and Clinics (SIC # 8021)
- Health Practitioners, General Offices (SIC # 8049)
- Veterinary Services for Livestock (SIC # 0741)
- Veterinary Services for Animal Specialties (SIC # 0742)
- Commercial Art and Graphic Design (SIC # 7336)
- Testing Laboratories (X-ray inspection services, industrial) (SIC # 8734)
- Laundry

Educational Facility (check all below that are included in the facility):

- Photography Lab
- Health Center
- Graphic Design and Commercial Art Labs
- Labs (chemistry, biology, research, etc.)
- Dentist/Doctor Office
- Maintenance Shop (Automotive/Equipment)
- Other(s), please specify below:
- Infirmary

SECTION C - OVERALL OPERATIONAL CHARACTERISTICS page 4

1. Operating Information: If usage is variable, please comment:
(for example, main operation is between September and May or open 24 hours)
 - a. Total operating hours per work day _____
 - b. Operating shift schedule:

first shift	start_____stop_____
second shift	start_____stop_____
third shift	start_____stop_____
 - c. Operating days per week _____
 - d. Average annual work days per year _____
 - e. Number of employees _____

SECTION D - WATER USAGE

1. Water Sources:

Name the water sources for your facility. Include the amount contributed from each source in 100 cubic feet (ft³) from the beginning of July to the end of June. Indicate the year. (100 ft³ = 748 gallons)

Source	Name	Annual Water Use 7/1/____-6/30/____
Municipal (Town or City)		100 ft ³
Private Water Company		100 ft ³
Surface Water (Lake or Pond)		gallons
On Site Well		gallons
Other Source		gallons
TOTAL:		

2. Has incoming water been analyzed within the past year? This information can be helpful in determining sources of pollutants in the discharge that can not be accounted for in the raw materials. yes _____ no _____

If yes, attach a copy of the results.

SECTION E - CHEMICAL USAGE

1. Submit copies of any reports that indicate chemical usage of chemicals covered under the Superfund Amendment and Reauthorization Act (SARA) Title III including the quantities used per year.

Examples of reports that should be submitted, if they exist for your facility, include:

- Biannual DEP Report
- Inventories with Local Fire Departments
- SARA Title III Report
- Other Reports/Inventories which would illustrate chemical usage on premises

Please list the reports that you have submitted:

SECTION F - SANITARY SEWER CONNECTION(S)

1. Attach a map of the campus or facility showing all buildings and include a key which describes the operations conducted in each building. In the buildings where process (as opposed to sanitary) wastewater discharges, label alphabetically, the connections to which the processes discharge. Also label the nearest downstream manhole with the same letter. If there are more than 26 connections, begin the series with AA, BB, etc. Indicate if both process and sanitary wastewater discharge through a common connection. Name all surrounding streets and buildings, and any other pertinent physical structures that may facilitate field orientation.

SECTION G - NON-DISCHARGED WASTE

1. Are any waste liquids or sludges removed from the facility site? yes _____ no _____

If yes, attach a copy of the Biennial Report for Hazardous Waste required by DEP.

2. How is liquid, sludge and clean-up hazardous and non-hazardous waste removed from facility?

3. Does the facility implement any of the following management plans?

_____ Chemical Hygiene Plan (OSHA)

_____ Other Waste Management Policies

Please attach a table of contents for each waste management policy checked. You are required to keep copies of each plan on site so that they may be reviewed by the MWRA on request.

4. State the name and address of any waste hauler(s) contracted by your facility.

_____	_____
_____	_____
_____	_____
_____	_____

5. Are any sludges, liquids or spill clean up materials placed with the trash for disposal?
yes _____ no _____

Describe discarded waste:

State name and address of hauler for this waste:

6. Does your facility employ the service of a commercial laundry? yes _____ no _____

State the name and address of the company:

7. Does your facility have it's own laundry on the premises? yes _____ no _____

INSERT 1

PHOTODEVELOPING

Column 4 - Building

Write the name of the building that the operation is located in, as you named the building in Section F.

Column 5 - Connection

Identify the connections by the letters you used to mark the connections on the map in Section F.

Column 6 - Flow

Use the following ranges to identify the daily flow rate:

< 10 gallons per day (gpd)	501-1000 gpd
10-50 gpd	1001-5000 gpd
51-100 gpd	If > 5000 gpd, specify how much
101-500 gpd	

Column 7 - PT

Enter the codes provided below to identify all types of pretreatment used for each process:

- SR** Silver Recovery Cartridges
- ESR** Electrolytic Silver Recovery
- IE** Ion Exchange (Conventional Regeneration)
- E/D** Evaporation/Distillation
- CP** Chemical Precipitation
- pHC** Chemical Addition pH Neutralization
- pHL** Limestone Chip pH Neutralization
- NT** No Pretreatment
- O** Other - Describe Here:

2. For each process, indicate the characteristic of the wastewater that is discharged. (for example: rinsewater, fixer, developer)

3. How was each flow determined in the above table (column 6)?

4. Attach Maintenance Schedules for each pretreatment system identified in column 7.

5. Are there any process changes planned for the next five years which would effect wastewater volume or characteristics yes _____no _____

If yes, please describe:

6. Attach Material Safety Data Sheets (MSDS) for chemicals used in all processes identified in column 1.

7. Attach analytical results for pH and silver for wastewater samples collected of each process discharge to the sewer **after** pretreatment.

1. Indicate the types and quantities of labs that are present in the facility. Include only laboratories that discharge or have the potential to discharge process wastewater to the sanitary sewer.

- _____ Research
- _____ Chemistry
- _____ Biology
- _____ Biochemistry (include both General and Advanced)
- _____ Medical/Chemical
- _____ Engineering (plastics, chemical, mechanical, etc.)
- _____ Other, please explain

2. Indicate below types and numbers of laboratories that are present in each building. Along with the type of pretreatment.

TYPE OF LAB	BUILDING NUMBER/NAME	# OF LABS	ROOM NUMBER	PRETREATMEN

List of various forms pretreatment

- 1. Neutralization/pH adjustment
- 2. Chemical precipitation
- 3. Ion exchange
- 4. Silver Recovery
- 5. Filtration
- 6. Sedimentation
- 7. Other, please explain:

3. Are limestone chip tanks (LCT) installed at the lab sinks. (This question can be answered in a variety of ways. For example, certain buildings may have LCT at each sink, while other buildings may have selectively chosen sinks that have LCT).

1. Are any cooling systems/towers present in the facility?

_____ yes

_____no

If yes, please list each cooling system/tower and the building in which it is located. Also answer the following questions as it pertains to each cooling system/tower.

- volume of water used (capacity of system/tower)
- tonnage of equipment
- location of equipment
- Bleed volumes and frequencies
- Discharge points
- chemicals used (include MSDS)

1. Are there any boilers present in the facility? (NOTE: The MWRA is interested in boilers other than what would be found in a household).

_____ yes _____no

If yes, how many? _____

List all the buildings in which boilers are present.

2. What are the use(s) of the boilers present in the facility?

_____ Hot water
_____ Steam
_____ Other, please explain _____

3. What type(s) of boilers are present in the facility?

_____ Low pressure
_____ High pressure
_____ Firetube boiler
_____ Watertube boiler
_____ Other, please explain _____

4. Is there any treatment of boiler feed water?

_____ Softening
If yes, what method?

_____ Demineralization
If yes, what method?

5. Is the boiler feed water (make-up) metered?

What is the daily average used? _____

Is condensate returned to the system? At what percent? _____

5. (continued) Is there any regeneration of the water softening system in-house? _____

What is frequency of regeneration? _____

What is the volume of brine discharged to sewer?

Where is the discharge plant located?

5. Is there any regeneration of the demineralization system in-house? Is it on service?

6. Is there any pretreatment of the boiler blowdown prior to discharge to the sewer? If yes, please describe below:

1. What are the hours of operation of the laundry facility? _____

2. In what building is the laundry located? _____

3. Please list the chemicals used in the laundering operation. (Please include MSDS for each chemical/detergent used)

_____	_____
_____	_____
_____	_____

4. Is there any form of pretreatment, prior to discharge to sewer? (pH adjustment, lint screen, others?)

pH Adjustment _____

lint screen _____

Other (explain) _____

Please provide a brief description of the pretreatment process below:

5. What is average daily flow of wastewater discharged? _____gpd

6. How was the wastewater flow determined? Estimated _____ or Measured _____

By what method was the water measured? _____

7. What is average temperature of wastewater? _____

**INSERT 6
(Automotive, Equipment)**

**MAINTENANCE SHOP/MACHINE SHOP
page 1**

1. Does the facility have a maintenance repair shop for automobiles and/or equipment?

_____yes _____no

If yes, how many? _____

2. Check all operations/processes that are conducted in the repair shops:

- _____ Machine Shop
- _____ General Automobile Maintenance/Repair
- _____ Engine/Transmission Repair
- _____ Radiator Repair
- _____ Steam Cleaning/High Pressure-High Temperature Washing
- _____ Car/Truck Washing
- _____ Paint/Body Shop
- _____ Other

3. In what buildings are the repair shops located?

4. Check the chemicals used in the repair shops and its discharge location.

<u>CHEMICALS</u>	<u>Discharge</u>		
	Sewer	Storm drain	Hauled as Hazardous Waste
_____ Hydraulic fluids	_____	_____	_____
_____ Lubricating oils	_____	_____	_____
_____ Quenching oils	_____	_____	_____
_____ Cutting oils	_____	_____	_____
_____ Coolants	_____	_____	_____
_____ Solvents	_____	_____	_____
_____ Other	_____	_____	_____

5. Are there any vapor degreasers, rectifiers, compressors or similar equipment in use?

_____yes _____no

If yes, do any of them require cooling water? _____yes _____no

Is any noncontact cooling water discharged to the sewer? _____yes _____no

If yes, what is the volume discharged per day? _____

If water is not used for cooling equipment, describe the cooling practices.

5. Is there any pretreatment of wastewater? _____yes _____no

Check the various types of pretreatment that are used:

- | | |
|---------------------------------------|------------------------------|
| 1. _____ Neutralization/pH adjustment | 6. _____ Silver Recovery |
| 2. _____ Chemical precipitation | 7. _____ Screen/Grit Removal |
| 3. _____ Sedimentation | 8. _____ Grease Trap |
| 4. _____ Filtration | 9. _____ Gas/Oil Separator |
| 5. _____ Ion Exchange | 10. _____ Other _____ |

6. Is there a routine washdown of the work area? _____yes _____no

If yes, what is the frequency? _____

What is the volume discharged? _____

Is there any pretreatment? _____ (explain) _____

7. Are any degreasing operations performed? _____yes _____no

If yes, please check the type of degreasing performed:

- | | |
|--------------------------|------------------------|
| _____ Caustic soak | _____ Vapor degreasing |
| _____ Safety Kleen | _____ Bake-off oven |
| _____ Jet Spray | _____ Steam cleaner |
| _____ Solvent degreasing | |
| _____ Other _____ | |

8. Are there any floor drains in the shop? _____yes _____no

Where do they discharge? _____

9. If any chemicals are stored in the shop, please list describe the spill containment measures that are followed.

1. Are there any incoming water treatment systems in the facility? _____yes _____no

If yes, what type? _____Reverse Osmsosis
 _____De-ionized
 _____Other

2. Please list the location and type of incoming water treatment systems that are present in the facility.

<u>Location/Building</u>	<u>Type of Water Treatment System</u>	<u>Is there a discharge?</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Are there any discharges to the sewer from the maintenance of the incoming water treatment systems? _____yes _____no

Identify the type of streams that are discharged:

_____ incoming reject water
_____ d/i regeneration water
_____ filter backwash
_____ Other

4. For each stream listed in question #2 that is discharged to the sewer, please provide the following information: (a separate page may be attached, if necessary)

- frequency of discharge
- duration of discharge
- total volume of discharge
- location of each discharge

5. Is water kept in a holding tank and drawn-off as needed? _____yes _____no

6. Is the water produced on an as-needed basis? _____yes _____no

7. Is the treated water metered? _____yes _____no

8. If there are no reject streams from the incoming water treatment systems, explain the maintenance practices of the water treatment systems.

INSERT 8

PRINTING page 1

1. Are any printing operations performed in the facility? _____yes _____no

If yes, what type? _____off-set
 _____letterpress
 _____other, please explain _____

2. Are there any auxiliary operations associated with the printing operations? _____yes _____no

If yes, what type? _____film processing
 _____plate developing
 _____silkscreening
 _____other

3. Please list the buildings in which printing operations occur:

4. If there are photodeveloping operations, please complete INSERT 1.

5. If there are silkscreening operations, please complete INSERT 9.

6. If plate developing is done, what type of plates are used?

7. Please list the chemicals used in the printing operations. Please also attach the MSDS for each.

8. Is developer washed off and discharged to the sewer? _____yes _____no

If yes, what is the volume and frequency of the discharge?

If no, how is developer removed from the plates?

9. If rags are used to clean the plates, how are the rags disposed of?

_____Hauled as hazardous waste
_____Rubbish disposal
_____Laundered
_____Other

If the rags are laundered, list the name & address of the company:

1. Are any graphic art/silkscreening operations performed in the facility? _____yes _____no

2. Please list the buildings in which graphic art/silkscreening operations occur:

3. Please attach MSDS for all chemicals used in the graphic art/silkscreening operations.

4. What type of photo sensitive coating is used for silkscreening?

_____Paper

_____Liquid

If liquid, what volume? _____

Is the liquid discharged to the sewer? _____yes _____no

At what frequency and volume is the liquid discharged?

5. What type of developer is used? _____

If the developer is discharged to the sewer, what is the volume and frequency of the discharge?

6. How is the screen cleaned after printing? If a solvent is used, please explain the solvent's destination (hauled, sewerred, etc.)

7. Are the screens reused or thrown away? If they are thrown away, please describe the disposal practices.

8. Please list any equipment that discharges noncontact cooling water to the sewer, the volume discharged and the frequency of the discharge:

Equipment

Volume, gpd

Frequency

9. What types of paints and/or inks are used?

- oil-based
- water-based
- other

10. Is there any discharge to the sewer via routine area washdown, spills, etc.? yes no

If yes, please describe the discharge, its volume, and frequency of the discharge:

<u>Type of Discharge</u>	<u>Volume, gpd</u>	<u>Frequency</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. Please explain the procedures followed to ensure that dumping and/or spilling of chemicals to the sewer does not occur.

1. Are any pottery, ceramics and/or jewelry making operations performed in the facility?

If yes, please indicate which operations are performed:

- Pottery
- Ceramics
- Jewelry Making

2. Please attach MSDS for all chemicals used in the pottery, ceramics and jewelry making operations.

3. Please list the buildings in which pottery, ceramics and/or jewelry making operations occur:

<u>Building</u>	<u>Operation</u>	<u>Does the Operation Discharge to Sewer?</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. In reference to Question #3, please explain what is discharged to the sewer, the volume of the discharge and its frequency of discharge.

5. Is any hazardous waste generated from these operations? yes no

If yes, please describe the type of wastes and collection procedures followed.

6. Are any electroplating or metal finishing operations performed? yes no

If yes, please complete INSERT 11.

7. Please explain the procedures followed to ensure that dumping and/or spilling of chemicals to the sewer does not occur.

**INSERT 11
OPERATIONS**

ELECTROPLATING/METAL FINISHING
page 1

1. Are electroplating or metalfinishing operations performed in the facility? _____yes _____no
2. Please list the buildings in which electroplating and/or metal finishing operations take place.
3. Please attach MSDS for chemicals used in the electroplating/metalfinishing operations.
4. What was or will be the date of commencement of the electroplating/finishing processes at your facility? _____
5. List the base materials that are finished:

6. List finishes:

7. Indicate the metal finishing operations conducted:

<input type="checkbox"/> Electroplating	<input type="checkbox"/> Electroless Plating
<input type="checkbox"/> Anodizing	<input type="checkbox"/> Coating (chromating, phosphating & coloring)
<input type="checkbox"/> Chemical etching milling	<input type="checkbox"/> Printed Circuit Board Manufacturing

8. Indicate the auxiliary processes associated with the finishing operations:

<input type="checkbox"/> cleaning	<input type="checkbox"/> solvent degreasing	<input type="checkbox"/> welding
<input type="checkbox"/> soldering	<input type="checkbox"/> polishing	<input type="checkbox"/> polishing
<input type="checkbox"/> tumbling	<input type="checkbox"/> painting	<input type="checkbox"/> machining
<input type="checkbox"/> grinding	<input type="checkbox"/> hot dip coating	<input type="checkbox"/> other

Please explain other:

9. Is there a wastewater discharge from these processes? _____yes _____no

If no, please explain what happens to the spent baths, rinses, etc.

10. Is the wastewater treated? _____yes _____no

11. Indicate the types of treatment included in the pretreatment system:

_____chromium reduction	_____precipitation
_____flocculation	_____filtration
_____electrolytic recovery	_____ion exchange
_____neutralization/pH adjustment	_____cyanide treatment
_____other _____	

12. What is the average daily flow from the pretreatment system? _____gpd

13. Is a flow measuring device installed at the end of the treatment system? _____yes _____no

If yes, what type of measuring device is installed?

_____weir	_____parshall flume
_____magmeter	_____venturi meter
_____other, _____	