



Industrial Waste Program  
**Wastewater Discharge  
Permit Application**

---

Instructions and Guidelines




**King County**

Department of Natural Resources and Parks

**Wastewater Treatment Division**

---



A King County Wastewater Discharge Permit allows your business to discharge industrial/commercial wastewater to King County's sewer system in accordance with RCW 90.48.165, RCW 35.58.180, RCW 35.58.200, RCW 35.50.360, and King County Code 28.84.060.

To obtain a permit, you must fully complete a Wastewater Discharge Permit Application. Your completed application fulfills the requirement for submittal of a Baseline Monitoring Report (BMR) for dischargers subject to federal categorical pretreatment standards.

The application asks for a great deal of information on your business and its wastewater generation and disposal activities. To guide you in completing the application, we have prepared this packet of instructions and examples. The packet is divided into two parts: Part 1, which focuses on the application, and Part 2, which focuses on the exhibits that accompany the application.

We have tried to make the application and instructions as clear and complete as possible, but they do not include many of the details of the local, state, and federal laws that dictate permit application requirements. If you need further information, contact:

King County Industrial Waste Program  
130 Nickerson Street, Suite 200  
Seattle, WA 98109-1658  
206-263-3000  
206-263-3001 FAX  
<http://dnr.metrokc.gov/wlr/indwaste/>

You may also wish to obtain copies of the dangerous waste regulations (Chapter 173-303 WAC) and the requirements for an engineering report (Chapter 173-240 WAC). To request copies, contact:

Washington State Department of Ecology  
Northwest Regional Office  
3190 160th Avenue SE  
Bellevue, WA 98008-5452  
425-649-7000  
<http://www.ecy.wa.gov>

This information is available in alternative formats for people with disabilities on request at 206-263-3000 (voice) or 711 (TTY).



## CONTENTS

<b>Part 1 – Wastewater Discharge Permit Application .....</b>	<b>1</b>
General Instructions .....	2
Section A – Business Names and Addresses .....	2
Section B – General Business Information .....	3
Section C – Product and Process Description .....	4
Section D – Water Balance .....	7
Section E – Supporting and Required Exhibits .....	10
Section F – Certification .....	10
<b>Part 2 – Exhibits for the Wastewater Discharge Permit Application .....</b>	<b>11</b>
General Instructions .....	12
Exhibit A – Schematic Flow Diagram .....	12
Exhibit B – Site Layout .....	12
Exhibit C – Planned Changes in Pretreatment or Waste Disposal Practices .....	15
Exhibit D – Analytical or Historical Data .....	15
Exhibit E – Spill Prevention and Containment Plan .....	15
Exhibit F – Tank Capacities and Concentrations .....	16
Exhibit G – Hydrogeologic Reports for Groundwater Remediation .....	16
Exhibit H – Engineering Report .....	16
Exhibit I – Documentation of Water Balance Calculations .....	18

## Part 1 - Wastewater Discharge Permit Application

This part of the packet gives detailed instructions for completing each section of King County's Wastewater Discharge Permit Application. Thoroughly review these instructions before attempting to complete the application.

The following general instructions are also included on the application:

- Submit **three** copies of this application for *each* facility. Please do not submit applications in three-ring binders.
- King County Industrial Waste (KCIW) does not require an application fee. Once KCIW determines that you require a permit, KCIW will bill you prior to issuing you a draft permit.
- Answer all questions and include the required exhibits. **Incomplete applications will be returned to you.**
- If you do not have an answer for the requested information, indicate so and explain why.
- Indicate "N/A" if a section does not apply to your operations.
- Use additional pages, if needed.
- Send **three** copies of the completed application and exhibits to:

King County Industrial Waste Program  
130 Nickerson Street, Suite 200  
Seattle, WA 98109-1658

Many of you are applying for a permit before you begin discharging. In this case, you will be estimating the quantities requested in the permit application. You can base these estimates on your design engineer's specifications and on performances of similar industries or services. You can also call King County Industrial Waste for help 206-263-3000. Remember that you are estimating for a 5-year period. If your estimate is too low, you may have to apply for another permit when your discharges increase to over 20 percent of your published amount.

For those already discharging, you can base most of your answers on the 1-year period prior to the application date and add any allowances for estimated growth over the next 5 years.

## SECTION A - BUSINESS NAMES AND ADDRESSES

APPLICANT BUSINESS AND/OR PROJECT NAME. Enter the name or title of your business or project.

ADDRESS OF SITE DISCHARGING WASTEWATER. Enter the full street address of the applicant building or site. If the site does not have an address, describe its location (add another sheet if necessary).

BUSINESS MAILING ADDRESS. Enter the full mailing address for the business and/or project.

PRIMARY AND SECONDARY PERSON TO BE CONTACTED ABOUT THIS APPLICATION. Enter the name, title, mailing address, telephone number, emergency 24-hour telephone number, FAX number, and e-mail address, of two people who are thoroughly familiar with the information reported in the application and who can be contacted by King County Industrial Waste staff.

## SECTION B - GENERAL BUSINESS INFORMATION

### 1. NATURE OF BUSINESS

Briefly describe your business and the main reason for applying for a wastewater discharge permit:

- State your main activities or processes at the applicant building or site that produce wastewater. Example activities include metal finishing, battery manufacturing, dry cleaning, groundwater remediation (pumping and treating contaminated groundwater), food processing, and construction dewatering. Applications for groundwater remediation should include a description of the activity that caused the contamination, such as leaking underground storage tanks. (Section C, Item 2 gives you the opportunity to list all the individual activities at your site and the products they produce.)
- Indicate the reason for the application. You could be applying because regulations require that this activity be permitted (categorical discharger), because the activity generates wastewater that contains regulated substances, and/or because you are proposing to substantially increase your discharges (by over 20 percent).

See *Discharging Industrial Wastewater in King County*, included in this application package, and Chapter 173-240 WAC for examples of regulated business practices and substances.

### 2. PERTINENT IDENTIFICATION NUMBERS AND PERMITS

**STANDARD INDUSTRIAL CLASSIFICATION (SIC).** This is the code number that appears on your business license and tax documents.

**EPA WAD NUMBER.** According to Chapter 173-303 WAC, your business must have a state/EPA waste identification number (WAD) if it routinely, or even occasionally, generates over 220 pounds of hazardous waste each month, or if it accumulates over 220 pounds at any one time. If you qualify, contact the Washington State Department of Ecology.

**WATER/SEWER AGENCY AND ACCOUNT NUMBER.** Enter the water/sewer agency name and account number that appears on your combined water and sewer bill.

**WATER METER NUMBER(S).** Enter water meter identification numbers at your site or facility.

**CURRENT KING COUNTY PERMIT NUMBER.** Enter your permit or discharge authorization number if you currently hold a King County wastewater discharge permit or authorization and are either renewing your permit or applying for a new permit because of substantial increases in discharges.

**ENVIRONMENTAL CONTROL PERMITS.** Enter the type of permit and the permit number of any environmental permits that have been issued for your applicant building or site. Examples include NPDES and PSAPCA permits.

## SECTION C - PRODUCT AND PROCESS DESCRIPTION

### 1. DAILY AND SEASONAL VARIATIONS

**NUMBER OF OPERATING DAYS PER YEAR.** Review your business records and enter the average and maximum number of days that your business operates each year. For example, if your plant has been operating for 3 years and the number of operating days for each year were 220, 250, and 300, then the average is 257 and the maximum is 300.

**NUMBER OF EMPLOYEES PER SHIFT.** Calculate the average and maximum number of employees on each shift. Base your answer on the yearly average and maximum, not on any one season.

NOTES ON SECTION C, ITEM 1:

- Remember to adjust your answers to account for any anticipated growth over the next five years.
- If you are just starting your business, estimate operating hours and indicate the basis for these estimates.
- If you are applying for a short-term project of operation, such as construction dewatering, then estimate the total number of project days and enter this total in the "Number of Operating Days/Year" column. Estimate for both the expected number ("average") and the maximum number of days the project will operate. Do the same for the number of employees per shift. Indicate that these are estimates for the length of a particular operation.

### 2. BUSINESS ACTIVITIES AND PRODUCTS

**BUSINESS ACTIVITY.** List all the business activities at your site. Activities include manufacturing, processing, commercial, construction, remediation activities, and treatment of any off-site wastes.

**TYPE OF PRODUCT OR BRAND NAME.** For each activity indicate the types of products or services resulting from the activity, giving the common or brand name and the proper scientific name of each product. (Some activities may share the same product, or may not have any product associated with them.)

**DAILY QUANTITIES.** Enter the average and maximum quantities produced or handled each day. If you are estimating quantities, indicate the basis for your estimates.

THE FOLLOWING IS AN EXAMPLE FOR SECTION C, ITEM 2:

Business Activity	Type of Product or Brand Name	Daily Quantities	
		Average	Maximum
Circuit board manufacturing	Printed circuit boards	3,000 ft <sup>2</sup> /day	4,000 ft <sup>2</sup> /day
Electronics assembly	Personal computers	75 units	125 units

### 3. RAW MATERIALS AND CHEMICALS USED IN THE PROCESS

BRAND, CHEMICAL, AND ACTUAL NAME. Identify the materials and chemicals that you use in your business. When completing this item, make sure that you also include the following:

- All chemicals used to condition raw water.
- All chemicals and compounds known to have contaminated the site (for site remediation projects).

PURPOSE. Indicate the purpose for each material or chemical.

DAILY QUANTITIES USED. Enter the average and maximum quantities used each day. If you are estimating quantities, indicate the basis for your estimates.

TANK VOLUME. Indicate maximum capacity of all process tanks.

WORKING CONCENTRATION. Indicate the manufacturers recommended concentration for normal operation.

THE FOLLOWING IS AN EXAMPLE FOR SECTION C, ITEM 3:

Brand Name	Chemical or Actual Name	Purpose	Daily Quantities Used		Tank Volume	Working Concentration
			Average	Maximum		
A Chemical Co.	Sodium hydroxide	Stripping	1 gallon	3 gallons	1000 gallons	20 oz./gal
B Chemical Co.	Methylene chloride	Screen wash	1 pint	2 pints	2000 gallons	65% by weight
C Chemical Co.	Sulfuric acid, Cu	Copper plating	1 oz	4 oz	5000 gallons	30 oz./gal

### 4. INDUSTRIAL WASTEWATERS DISCHARGED TO KING COUNTY SEWERS

PROCESS THAT GENERATES WASTEWATER AND PROCESS NUMBER. Name each process that generates wastewater that you are discharging or are planning to discharge to the King County sewer system. Also, identify each process with a number that corresponds to numbered processes on your schematic flow diagram (Exhibit A) and your site layout (Exhibit B).

SUBSTANCES DISCHARGED TO THE SEWER. List all substances contained in these wastewaters. On a separate sheet, identify specific chemical and physical hazards associated with each process wastestream. You may find part of this information in Material Safety Data Sheets or by contacting your chemical supplier.

TYPE OF PRETREATMENT. Identify the type of pretreatment, if any, for each wastestream (e.g., chemical precipitation, settling, pH neutralization, DAF).

FREQUENCY OF DISCHARGE. Indicate the frequency of discharge. Enter "continuous" if you discharge wastewaters continuously to the sewer as the wastewaters are generated, or "batch" if you store wastewater and discharge it to the sewer in batches. (Batch discharges are intentional, controlled discharges that occur as the result of non-continuous operations.) For metal finishers, frequency of discharge of drag-out or dead rinses must be indicated.



**DAILY QUANTITY DISCHARGED IN GALLONS.** Note the average and maximum daily discharge quantities in gallons. For example, if your plant usually discharges one 10,000-gallon batch of wastewater each week and you operate 5 days, then the average quantity will be 2,000 gallons per day, plus an allowance for growth. The maximum daily quantity will be the largest batch based on your plant history or on your estimated operating patterns. If you are estimating quantities, indicate the basis for your estimates.

THE FOLLOWING IS AN EXAMPLE FOR SECTION C, ITEM 4:

Process Number	Process That Generates Wastewater	Substances Discharged to the Sewer	Type of Pretreatment	Frequency of Discharge (continuous or batch)	Daily Quantity Discharged in Gallons	
					Average	Maximum
4	Rinsewater from electroplating bath	Cu, Ni, Pb	Chemical precipitation	Continuous	10,000 gal	18,000 gal
2	Rinsewater from photoresist stripping	Photoresist cleaners	None	Continuous	2,000 gal	3,500 gal
4	Drag-out from copper plating bath	Cu, Acid	Chemical precipitation	Batch	100 gal	700 gal

#### 5. LIQUID WASTES AND SLUDGES REMOVED BY MEANS OTHER THAN KING COUNTY SEWERS

**TYPE OF WASTE SUBSTANCE.** Enter the type of waste or other spent materials removed from the site by means other than King County sewers. Examples include alkaline cleaners, organic solvents, treatment sludges, caustics, distillation residues, reactive materials, pesticides, plating solutions, and heavy metals hauled offsite for disposal or reclamation.

**MEANS OF REMOVAL.** Enter the type of firm or facility that removes or accepts these materials from your site.

**FREQUENCY.** Enter how often each substance is removed.

**VOLUME.** Enter the volume of substances removed, showing the volume for each removal or for a specific time period (tons/each removal; gallons/day).

THE FOLLOWING IS AN EXAMPLE FOR SECTION C, ITEM 5:

Type of Waste/Substance	Means of Removal	Frequency	Volume
Treatment sludges	Treatment, storage, and disposal facility	Monthly	500 lb/month
Waste solvents	Treatment, storage, and disposal facility	Monthly	4 gal/month
Wipe rags	Industrial laundry service	Weekly	200 lb/week

#### 6. PROPOSED DURATION OF WASTEWATER DISCHARGE

Indicate the duration of discharge and include the anticipated date that discharge would commence.

## SECTION D - WATER BALANCE

### 1. WATER BALANCE TABLE

The purpose of the water balance is to demonstrate a direct relation between the amount of water coming into your site each day and the amount that is discharged. All water sources must be balanced with water uses and allocated to specific discharge points. Calculate all quantities for the past year, adjust them for future growth, and enter them in gallons per operating day. If there is a significant discrepancy between water received and water discharged, state the reason for the difference. You can include this statement and the basis for any estimates in Exhibit I.

Remember that the water balance covers the entire site, both the inside and outside of buildings.

#### Water In

**WATER SOURCE.** Enter the appropriate letter in the "Water Source" column for the type of water source for each water use, and determine the daily amount of water that enters your site from each source:

- *City Water (a).* Review meter readings and past water bills. Call your water utility if you need help. Submit copies of the two most recent water bills and water or sewer meter number.
- *Private Well Water (b).*
- *Reclaimed Water (c).* This is treated wastewater that is "reused" for site irrigation or plant processes.
- *Raw Materials (d).* Raw materials that you use in your process may contain water that accounts for some of the wastewater discharged from your site.
- *Industrial Storm Water (e).* This is the daily amount of rainfall at your site. The fate of this rainfall depends on your site. It could be captured and used for various purposes on the site. It could infiltrate into the groundwater. It could run off impermeable surfaces (paved surfaces, roofs) and enter the nearest surface water body. It could enter the storm sewer via drain pipes on the site. It could discharge to the sanitary or combined sewer and be the subject of this permit application. Or, it could meet any combination of these fates.
- *Groundwater (f).* This is groundwater pumped for site remediation or construction dewatering.

**WATER USE.** Each water use may have more than one source. Allocate the amount of each water source to each water use (average and maximum daily quantities).

- Start with water usage for processes that can be measured from meters and exempt meters, product labels, or other accurate means. Use the Uniform Plumbing Code estimates on the next page for determining sanitary uses and discharges.

- Then calculate other water uses that are less precisely known. You can do this by measuring instantaneous flows and estimating process operation.
- Estimate the remaining uses by subtracting the measured and calculated amounts from the total amount for each source.

**SANITARY WATER/WASTEWATER.** This refers to the volume of water supplied for and the volume of wastewater discharged from restrooms, showers, and meal preparation facilities. You may use the following Uniform Plumbing Code volumes for both the "Water Use" and "Water Discharge" columns:

- Field service employees - 5 gallons per employee per day
- Office employees - 20 gallons per employee per day
- Production employees - 25 gallons per employee per day
- Production employees with showers - 35 gallons per employee per day

**COOLING WATER.** Do not include volumes that are re-circulated within the plant or within a closed-loop system.

**INDUSTRIAL STORM WATER.** Calculate the volume of contaminated industrial stormwater discharged to the sanitary or combined sewer. Base this estimate upon five years worth of precipitation data and the amount of process waste discharged in the outdoor area that drains to the sanitary sewer, or your discharge records if you have a meter to measure the volume discharged from this area. If your business is located in a separated sewer area and you are discharging to the sanitary sewer, your company must also complete the supplemental application for discharge of contaminated stormwater. Please call 206-263-3000 to obtain a copy of the supplemental application.

**COMBINED SEWER AREAS.** The only combined sewer areas in the King County sewer area are located within areas in the City of Seattle. If your facility is in Seattle, you may call 206-684-5279 to find out if you are in a combined sewer area.

## Water Out

DISCHARGE POINTS. Where does the water go once you have used it? Are you connected to a combined sewer system, or do you have separate storm and sewer drains? How much of your storm water and wastewater leaves the site through these drains? How much is lost to evaporation during site irrigation and cooling processes?

Determine the discharge points and enter the appropriate letters in the "Discharge Point" column:

- *Sewer (a)*
- *Storm Drain (b)*
- *Receiving Water (c)*
- *Waste Hauler (d)*
- *Evaporation (e)*
- *Product (f)*

WATER DISCHARGE OR LOSS. To calculate discharges and losses, follow the same basic steps you used to calculate water uses: (1) Determine measurable amounts from sewer meters and other sources, (2) calculate other amounts from water flow measurements, and (3) estimate the remainder.

INDUSTRIAL WASTEWATER. Include contaminated groundwater and construction dewatering groundwater in the quantities for industrial wastewater. Also include pretreatment wastewater here.

COOLING WATER. Do not include volumes that are re-circulated within the plant or within a closed-loop system.

WATER INCORPORATED INTO PRODUCT. This refers to water leaving the plant as part of the finished product. This consumed water may be in a liquid form or in an unidentifiable mixture with other materials. If you have an exempt meter or a separate sewer meter, indicate this on your application.

SANITARY WASTEWATER. Use the Uniform Plumbing Code figure given earlier.

EVAPORATION. Evaporation refers to both natural and heated process water loss to the atmosphere, including boiler and cooling water losses indicated by (and equal to) make-up water volumes.

THE FOLLOWING IS AN EXAMPLE FOR SECTION D, ITEM 1, Water Balance Table:

Type of Consumption/Discharge	Water In:			Water Out:		
	Water Use			Water Discharge or Loss		
	Water Source (1)	Average (gals/day)	Maximum (gals/day)	Discharge Point (2)	Average (gals/day)	Maximum (gals/day)
Industrial processing water/wastewater	a	12,000	21,500	a	12,000	21,500
Contact cooling water	N/A	0	0	N/A	0	0
Non-contact cooling water	c	0	0	N/A	0	0
Boiler and cooling tower feed/blowdown	a	15	150	a	10	100
Water incorporated into product	N/A	0	0	N/A	0	0
Sanitary water/wastewater	a	1,250	1,875	a	1,250	1,875
Industrial storm water	e	614	24,900	b	614	24,900
Plant washing water/wastewater	a	100	300	a	100	300
Construction dewatering	N/A	0	0	N/A	0	0
Groundwater remediation	N/A	0	0	N/A	0	0
Site irrigation	a	100	1,246	c	100	1,246
Evaporation	—	—	—	N/A	5	50
Other: (please indicate)	N/A	0	0	N/A	0	0
<b>TOTALS:</b>	—	14,079	49,971	—	14,079	49,971

## SECTION E - SUPPORTING EXHIBITS

Part 2 of this packet contains instructions for completing the required and optional exhibits.

## SECTION F - CERTIFICATION

Your application must be signed by an authorized representative. See King County Code 28.82 for the definition of an authorized representative.

## Part 2 - Exhibits for the Wastewater Discharge Permit Application

## GENERAL INSTRUCTIONS

Exhibits A, B, C, D, E, F, and I are required. Exhibit G is optional. Exhibit H is required if you are planning to install a new pretreatment system or you are planning to make significant changes to an existing pretreatment system. Your application will be returned if the required exhibits are not included. Submit each exhibit on 8½ x 11 inch paper, if possible.

## EXHIBIT A - SCHEMATIC FLOW DIAGRAM

The schematic flow diagram is a simple line drawing that illustrates the nature and flow of your plant's processes, placing particular emphasis on the processes that generate wastewater and their associated pretreatment systems. For sites already in operation, your diagram should also show any proposed changes in your processes. Describe these proposed changes in Exhibit C. Your diagram should be no larger than 11 x 17 inches. At a minimum, your schematic flow diagram should include the following:

- Each business activity, as listed in Section C, Item 2, of your application.
- Each plant process that generates wastewater and the average and maximum daily quantities generated, as listed in Section C, Item 4. Number each wastewater-generating process using the same numbers from Section C, Item 4, in the site layout (Exhibit B) and in the tank inventory (Exhibit F).
- A sub-schematic of each wastewater pretreatment process, illustrating treatment tanks, piping, and control features.
- Discharge points for each wastestream (side sewers, storm drains).
- Final sampling location.

Figure 1, on Page 13, illustrates a schematic flow diagram for a printed circuit board manufacturing plant.

## EXHIBIT B - SITE LAYOUT

The site layout enhances the schematic flow diagram (Exhibit A) by locating each activity and process in a geographical setting. Remember to include proposed changes, as you did in the schematic flow diagram. Your layout should be no larger than 11 x 17 inches. At a minimum, your site layout should indicate the following:

- |   |  |
|---|--|
| • Building outlines                         | • Storm drains   |
| • Property lines                            | • Sampling locations   |
| • North arrow                               | • Side sewers  |
| • Wastewater routing                        | • Water lines and meters   |
| • Wastewater drainage plumbing and manholes | • Wastewater-generating processes (numbered with same numbers used in Exhibit A) |

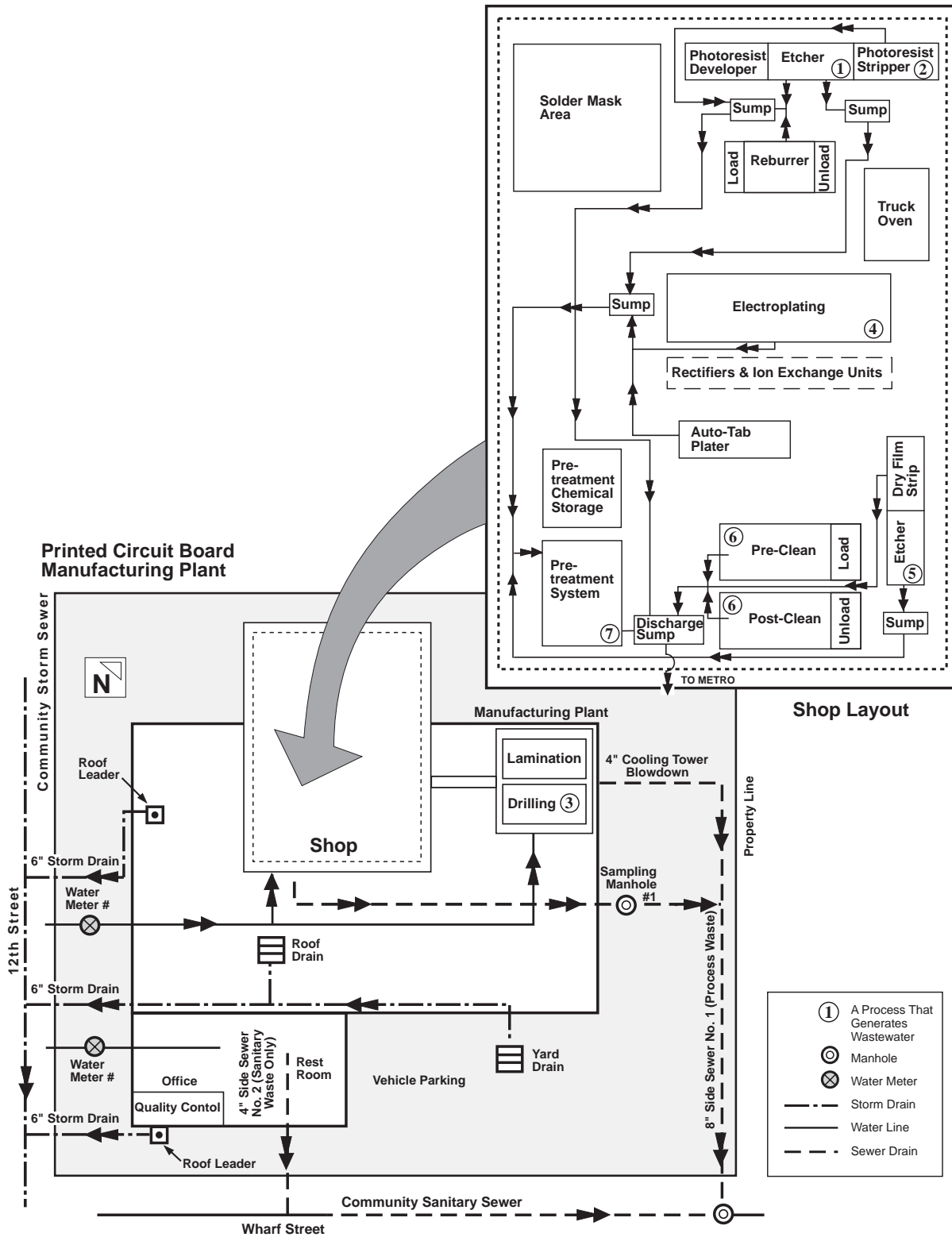
Describe the sampling locations in detail and how to gain access to them.

Figure 2, on Page 14, illustrates a site layout for the same printed circuit board manufacturing plant shown in Figure 1.





FIGURE 2: EXAMPLE SITE LAYOUT FOR EXHIBIT B



**EXHIBIT C - PLANNED CHANGES IN PRETREATMENT OR WASTE DISPOSAL PRACTICES**

Briefly describe any planned new installations or changes to existing processes, including pretreatment systems and waste disposal methods. (Make sure these changes are shown in Exhibits A and B.) Include proposed construction and startup dates. You may be required to prepare an engineering report for proposed installation or modification of pretreatment systems. (See Exhibit H.)

**EXHIBIT D - ANALYTICAL OR HISTORICAL DATA**

*This exhibit is not required by existing dischargers applying for a permit renewal unless you are adding a new process.* The purpose of this exhibit is to determine if your wastestreams require pretreatment or if your pretreatment systems (proposed or existing) are adequate. Submit laboratory analytical data from two samples that represent the characteristics of the wastewaters that you are currently discharging or are proposing to discharge. Refer to *Discharging Industrial Wastewater in King County* (included in this application packet) for an explanation of the substances King County regulates and their discharge limits. Analytical data should be submitted for all substances that are reasonably expected to be in the discharge. If you do not have access to such data, you may submit historical data from another business with a similar process or other evidence documenting the potential waste concentrations, as long as the information is sufficient to determine the need for pretreatment. Any data submitted must be analyzed by a Washington State accredited laboratory following approved test methods.

**EXHIBIT E - SPILL PREVENTION AND CONTAINMENT PLAN**

Your spill prevention and containment plan should detail the following:

- Who to contact if a spill or other similar emergency occurs (give names and telephone numbers).
- What quantities of chemicals and hazardous materials are used, handled, generated, and discharged at your site (listed in Section C, Items 3, 4, and 5, of your application).
- How and where these materials are stored, handled, and disposed (include a map of these locations, also showing floor drains).
- Where your containment areas are located and the containment volume provided by these areas.
- What employee training programs are in effect and the frequency of these programs.
- What precautions have been taken to prevent releases and spills.
- What procedures are in effect and what equipment is in place to reduce the impact of a release or spill and to recover from such an event.

For more specific guidelines on preparing spill prevention and containment plans, refer to the United States Environmental Protection Agency - Region 10's *Guidance Manual for the Development of an Accidental Spill Prevention Program* (February 1986).

## EXHIBIT F - TANK CAPACITIES AND CONCENTRATIONS

The tank capacities and concentrations exhibit augments the schematic flow diagram (Exhibit A) by detailing the locations, volumes, and working concentrations of tanks used in your plant's processes.

At a minimum your exhibit should include the following:

- For each business activity listed in Section C, Item 2, indicate the volume and operating concentrations of materials in tanks associated with these activities.
- For each process shown in the schematic flow diagram and listed in Section C, Item 4, show a sub-schematic diagram indicating all tanks used in the process and the direction of workflow through the tanks.
- Indicate the location of each process line on the site layout (Exhibit B) and indicate its position in relation to any floor drains. List the amount of secondary containment available for each tank. Show the direction of drainage and where each tank's contents would accumulate if the tank failed.

## EXHIBIT G - HYDROGEOLOGIC REPORTS FOR GROUNDWATER REMEDIATION

If you are applying for a permit for discharges resulting from a long-term groundwater remediation project, submittal of a hydrogeologic report for the site may help King County in its application approval process.

## EXHIBIT H - ENGINEERING REPORT

### General Requirements

Submittal of an engineering report and approval by King County are required prior to the installation of all new pretreatment systems (Chapter 173-240 WAC). It is also required for significant changes to existing pretreatment systems, including the following:

- A change in pretreatment process influent parameters (flow rate, concentration, chemical composition) that could adversely affect the effluent quality.
- A change in the pretreatment system (equipment or chemical processes).

Check with King County's Industrial Waste Program to make sure that your proposed change requires an engineering report.

*Submit two copies of your engineering report.* Your report may require a Washington State licensed professional engineer's stamp. Exceptions to this requirement include the following:

- Reports prepared for single sources discharging to single oil-water separators, unless the plans appear inadequate or the discharge warrants special attention.

- Reports prepared for standard air strippers used for remediating groundwater contamination from leaking underground storage tanks (fuel leaks).

For other exceptions, check with King County's Industrial Waste Program.

You will also be required to submit plans and specifications and an operation and maintenance (O&M) manual for your proposed new or modified pretreatment system. In general, the plans and specifications should be complete enough so that a supplier could use them to install the pretreatment system (or modifications) as intended by the engineer. You may submit them along with your engineering report or after the report is approved. The O&M manual must be completed before the pretreatment system is started up. The King County Industrial Waste Investigator assigned to your site will let you know when you should submit the manual for King County approval. Contact King County's Industrial Waste Program for specific guidelines on the preparation of these documents.

### **Report Contents**

An engineering report must meet the requirements set forth by Chapter 173-240 WAC. The purpose of an engineering report is to document the work done to develop or redesign the pretreatment system. The report should be detailed enough to allow a judgment on the appropriateness and effectiveness of the proposed system. It should contain, at minimum, the following components:

- Type of industry or business.
- Kind and quantity of finished product.
- Wastewater sources, quantity, and chemical characteristics to be treated by the pretreatment system.
- A site map showing the location of your pretreatment system.
- A layout diagram of your pretreatment system to include the location of wastewater sources at the site, the routing of wastewater, and the King County discharge point.
- Description of the physical provisions for oil and hazardous material spill control and/or accidental discharge prevention.
- Sound engineering justification through the use of pilot plant data, results from other similar installations, and/or scientific evidence from the literature that indicates that the effluent from the proposed facility will meet applicable permit effluent limitations and/or pretreatment standards.
- Basic design data and sizing calculations of the pretreatment system components (for example pumps, tanks, mixers).
- Description of your treatment process including the amount and kind of chemicals used in the treatment process.

- The general operations and the set points of all control features.
- A flow diagram of the treatment process, illustrating the system piping, tanks, and control features.
- A discussion of the method of final sludge disposal selected.
- A statement regarding compliance with SEPA, if applicable.
- A schedule for final design and construction.

### **EXHIBIT I - DOCUMENTATION OF WATER BALANCE CALCULATIONS**

Submit a thorough documentation of the information, methods, and assumptions used to calculate your site's water balance. This documentation should include the following:

- Assumptions used in the process.
- A breakdown of each meter, its type, purpose, location, identification number, and its discharge point.
- Meter readings.
- Square footage of permeable and impermeable site surfaces and the calculations for industrial storm water entering and leaving the site (only for industrial storm water that you currently discharge or that you are proposing to discharge to the sanitary or combined sewer).
- Basis for determining the amount of water in raw materials and in products leaving the site.
- Evaporation calculations.
- Copies of your two most recent water bills.