

US EPA ARCHIVE DOCUMENT

SECTION 3 CONTENTS

3.	Understanding the Process: Inputs, Outputs, and Applicable Federal Environmental Regulations	3-1
3.1	Introduction	3-1
3.2	Examining Process and Ancillary Operations	3-1
3.2.1	Inputs	3-2
3.2.2	Overview of Outputs and Applicable Statutes	3-5
3.3	Conducting a Waste Analysis	3-7
3.3.1	Example Waste Analysis For SIC 203 Facility	3-7
3.3.2	Completing a Waste Analysis For Your Facility	3-9
Table 3-1.	Types of SIC 203 Facilities	3-7
Table 3-2.	Waste Analysis for SIC Code 203 Facility	3-10
Table 3-3.	Waste Analysis Worksheet	3-12
Figure 3-1a.	Generic Process Map with Examples of Regulated Outputs	3-3
Figure 3-1b.	Selected Ancillary Operations with Examples of Regulated Outputs	3-4
Figure 3-2.	Process Waste Analysis for a SIC 203 Facility	3-8
Figure 3-3.	Process Waste Analysis Worksheet	3-11

3. UNDERSTANDING THE PROCESS: INPUTS, OUTPUTS, AND APPLICABLE FEDERAL ENVIRONMENTAL REGULATIONS

3.1 Introduction

The section provides you with an approach for analyzing your facility's operations to identify the wastes generated and how those wastes are regulated.

Remember that this guide discusses the most significant, but not all, of the federal environmental requirements that apply to your food processing facility. State and local requirements are not addressed.

First, this section leads you through an examination of the activities at a typical food processing facility, including process and ancillary operations. It will (1) describe the inputs and the waste outputs generated during process and ancillary operations, and (2) identify the federal environmental requirements associated with the waste outputs. To help you visualize the steps, this section includes figures (generic Figures 3-1a and 3-1b) that show typical process and ancillary operations for the food processing industry, and their inputs and regulated waste outputs.

After reviewing this generic model of a food processing operation, the next example will show you a process map (Figure 3-2) for a facility in Standard Industrial Classification (SIC) Code 203, including typical inputs, regulated outputs, and the applicable environmental statute.

The final part of this section provides you with an opportunity to examine your facility's process and ancillary operations, identify inputs and waste outputs, and determine how they are regulated. A blank waste analysis process map (Figure 3-3) and a blank waste analysis table (Table 3-3) are provided to help you in this activity.

3.2 Examining Process and Ancillary Operations

The process map of your food processing operation, as well as your ancillary operations, are most likely very similar to those shown in the following figures:

Figure 3-1a. Generic Process Map With Examples of Regulated Outputs

Figure 3-1b. Selected Ancillary Operations with Examples of Regulated Outputs.

As shown in these figures, you will find that your process and ancillary operations are comprised of various inputs and associated outputs of waste. Inputs, which can range from raw ingredients to hazardous materials (see Section 3.2.1), and waste outputs vary greatly depending on type(s) of food products being produced. The applicable environmental statute for each type of waste output is indicated in parentheses on generic Figures 3-1a and 3-1b. Sections 3.2.1 and 3.2.2, respectively, discuss inputs and outputs in greater detail.

3.2.1 Inputs

As shown in generic **Figures 3-1a and 3-1b**, inputs go into every step of the process and ancillary operations. Inputs can consist of a variety of materials, including raw products, chemicals, water, paper, ink, steam, etc. The inputs to each operation will vary depending on the type of facility and product(s) being produced.

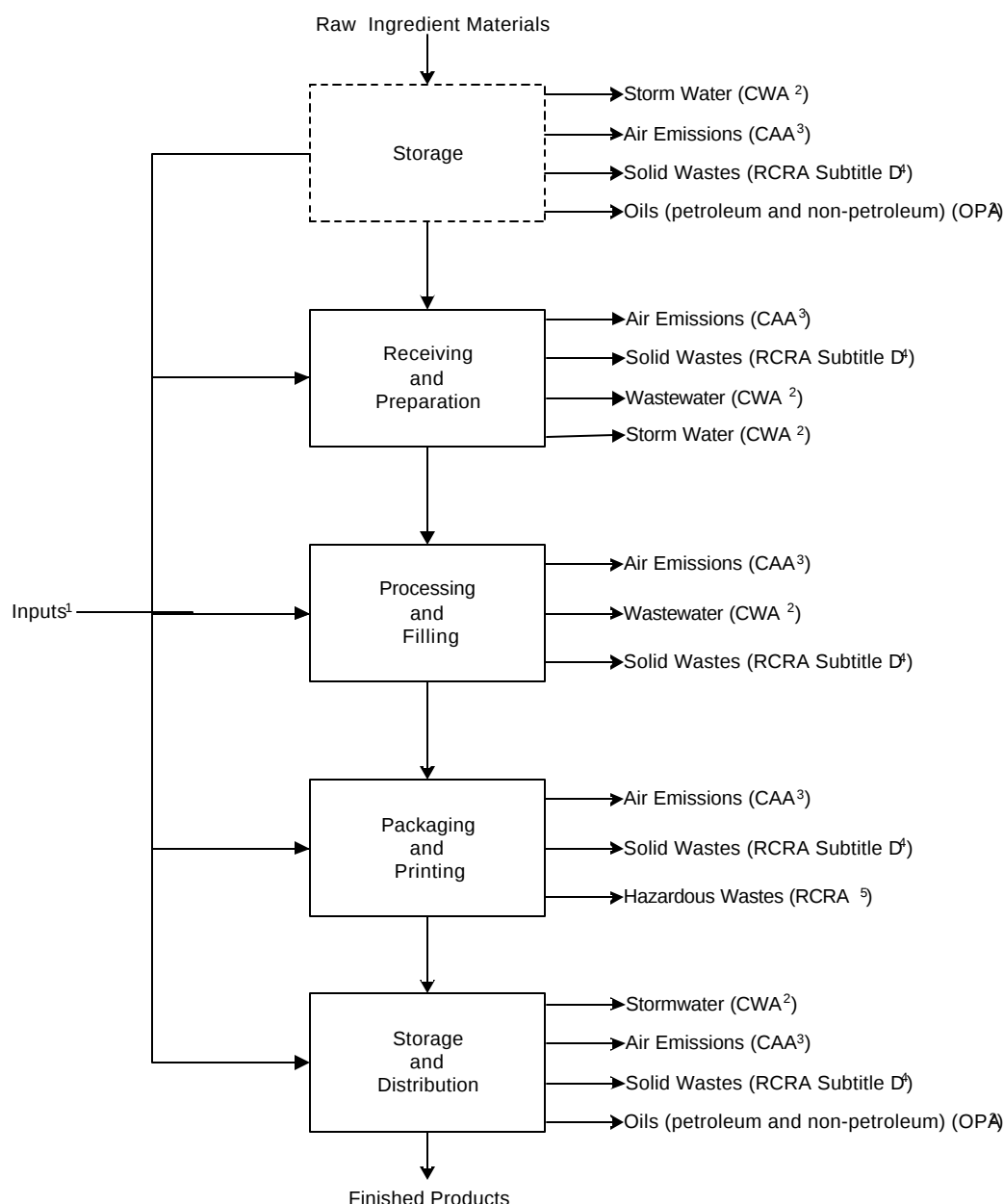
Hazardous Materials. To meet your input needs, your food processing facility may store and use many types of hazardous or toxic materials in your daily operations including, but not limited to, oils, chemicals, paints, pesticides, and fuels. Many of these materials may be regulated because of their hazardous or toxic nature. Please note that the term “materials” is not an EPA regulatory term, but a broad term selected for purposes of this discussion.

EPA and other federal regulations use various terms to denote hazardous or toxic materials. Examples of several terms used to denote these types of materials include the following:

- C EPA refers to regulated materials by terms such as “hazardous substances” and “extremely hazardous substances” under the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Lists of these substances can be found in the EPCRA/CERCLA regulations at 40 CFR 302, Table 302.4 and 355, respectively. Such regulated materials do not have to be waste outputs to be covered under these regulations. In fact, such materials may be inputs to your process or ancillary operations.
- C A “hazardous material” is defined by the U.S. Department of Transportation (DOT) as a substance or material...capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. For DOT, this term includes hazardous and extremely hazardous substances as defined in CERCLA/EPCRA, hazardous wastes as defined in Resource Conservation and Recovery Act (RCRA), marine pollutants, and elevated temperature materials.

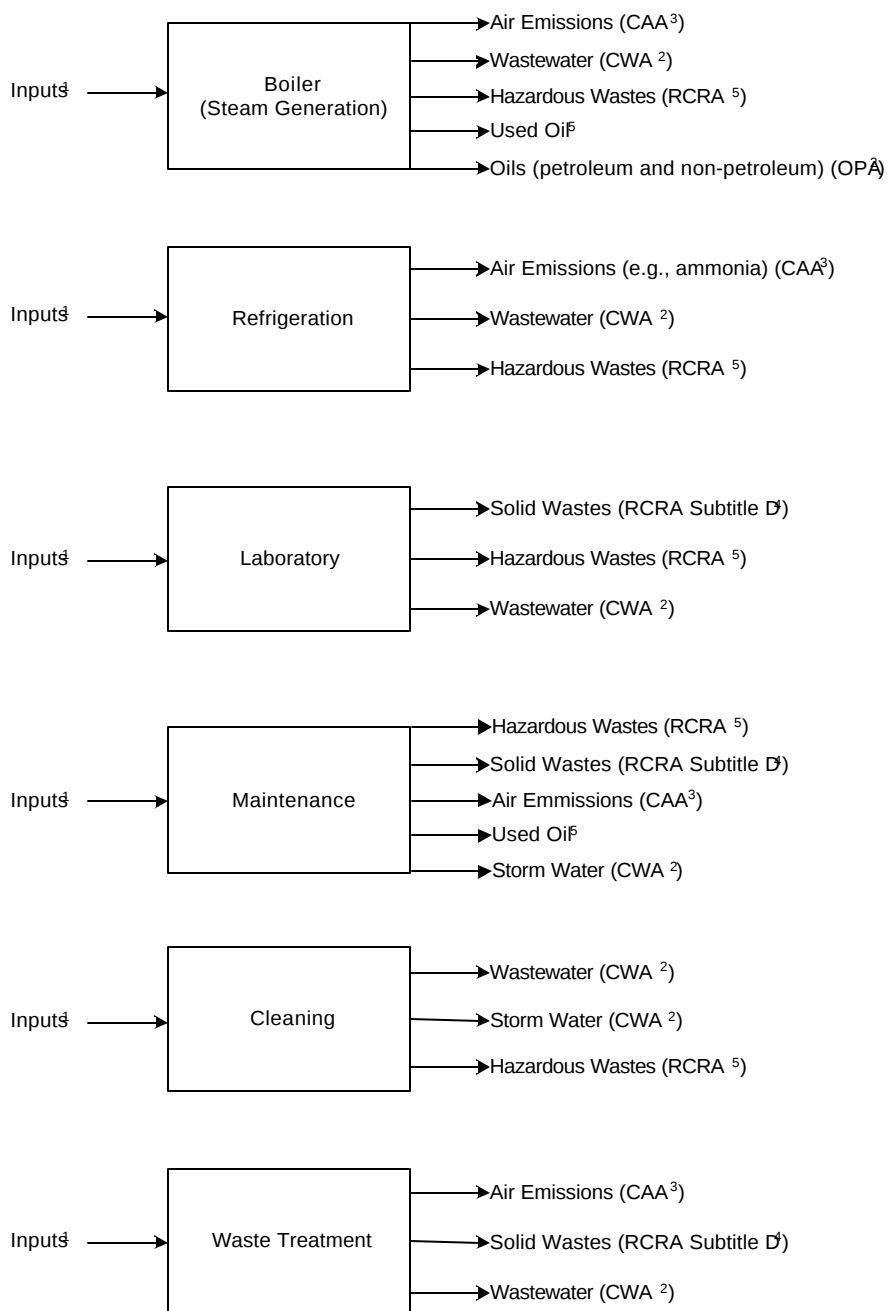
For some types of hazardous or toxic materials, EPA regulates storage and how you are to report your use of them. The typical practices for storage and handling of hazardous materials are designed to prevent the following: exposure to individuals, releases to the environment, and mixing (which could cause explosions, fire, or unwanted chemical reactions and releases). See Section 9.0 *How Do I Comply With Spill or Chemical Release Requirements?* for a multimedia overview of requirements, or, for more specific detail, see each statute-specific section (Sections 4.0 through 10.0).

Figure 3-1a. Generic Process Map with Examples of Regulated Outputs



- ¹ Some Inputs may be regulated under federal statutes (e.g., CERCLA, EPCRA). See Section 3.2 (following) and Section 7.0 How Do I Comply with the Emergency Planning and Community Right-to-Know Act Regulations?
- ² See Section 4.0 How Do I Comply with Wastewater Discharge and Related Regulations?
- ³ See Section 6.0 How Do I Comply with Air Regulations?
- ⁴ See Section 10.0 Other Major Environmental Statutes and Regulations: CERCLA, RCRA Subtitle D, FIFRA, and TSCA.
- ⁵ See Section 8.0 How Do I Comply with the Hazardous Waste Regulations?

Figure 3-1b. Selected Ancillary Operations with Examples of Regulated Outputs



¹ Some Inputs may be regulated under federal statutes (e.g., CERCLA, EPCRA). See Section 3.2 (following) and Section 7.0 How Do I Comply with the Emergency Planning and Community Right-to-Know Act Regulations?

² See Section 4.0 How Do I Comply with Wastewater Discharge and Related Regulations?

³ See Section 6.0 How Do I Comply with Air Regulations?

⁴ See Section 10.0 Other Major Environmental Statutes and Regulations: CERCLA, RCRA Subtitle D, FIFRA, and TSCA.

⁵ See Section 8.0 How Do I Comply with the Hazardous Waste Regulations?

Multimedia Environmental Compliance Guide for Food Processors

It is important to understand the difference between hazardous or toxic materials and hazardous wastes. For the purposes of this discussion, the term hazardous or toxic materials includes all materials that have **not been used, and therefore, are not wastes**. Thus, hazardous materials include those hazardous and extremely hazardous substances as defined in CERCLA/EPCRA, but not hazardous wastes as defined by RCRA.

Hazardous Wastes. Hazardous wastes are those materials which are no longer usable and are to be disposed of. Hazardous wastes must be managed according to the RCRA hazardous waste regulations. See Section 8.0 *How Do I Comply With the Hazardous Waste Regulations?* The RCRA regulations also address non-hazardous wastes (e.g., solid wastes). See Section 10.2 *Subtitle D of the Resource Conservation and Recovery Act* for more information.

Example of Hazardous Material Versus Hazardous Waste: Methyl Ethyl Ketone (MEK)

Hazardous Material	A drum of MEK being stored at a facility is a hazardous material under EPCRA regulations. It is not a classified as a hazardous waste under RCRA because <u>it is not a waste</u> .
Hazardous Waste	As a waste, MEK is a RCRA-listed hazardous waste . A drum of MEK that cannot be used (e.g., is contaminated during use, exceeds its shelf-life, or is off-spec), becomes a waste and must be disposed of as a hazardous waste. Additionally, MEK that is released in the event of a spill or accidental release, must be managed as a hazardous waste.

3.2.2 Overview of Outputs and Applicable Statutes

Outputs from food processing include the saleable products being produced and the wastes. This section will focus on the wastes and the environmental regulations that apply to their management and/or disposal. You must first identify all the wastes your facility generates.

Wastes are generated throughout your process (see generic Figure 3-1a), as well as from your ancillary operations (see generic Figure 3-1b). Many activities occur during each part of the process that generate wastes, including the following:

<u>Process Step</u>	<u>Activity Generating Waste</u>
Storage	Storage of raw materials, refrigeration, and onsite transport.
Receiving and Preparation	Loading, conveyor handling, cleaning, inspection, sorting, separating, washing, peeling, cutting, and pulverizing. Also includes water unloading and fluming.
Processing and Filling	Mixing, cooking, freezing, concentrating, freeze-drying, filling, cooling, preserving, and flavoring.

Multimedia Environmental Compliance Guide for Food Processors

<u>Process Step</u>	<u>Activity Generating Waste</u>
Packaging and Printing	Can-making, printing, packaging (e.g., plastic bag, paper, can, glass jars and bottles, cardboard, and pallet-packaging).
Storage and Distribution	Storage of prepared materials, refrigeration, and loading.

The wastes generated can take one of the four forms called *wastestreams*, including wastewaters, air emissions, hazardous wastes, and solid wastes. Each of these wastestreams is regulated by one or more environmental statutes as follows:

- *Wastewater* is regulated under the Clean Water Act (CWA). Additionally, some discharges of wastewater to underground injection wells are regulated under the Safe Drinking Water Act (SDWA).
- *Air emissions* are regulated under the Clean Air Act (CAA). Some air emissions, such as those from waste storage or the burning of hazardous waste, are regulated under RCRA.
- *Hazardous wastes* are regulated under RCRA.
- Solid wastes are regulated under RCRA Subtitle D.

In addition to the regulatory background information provided in Section 2.0 *Guide to EPA's Major Environmental Statutes*, the following sections, organized by statute (with the exception of Section 9.0), provide additional information on regulatory compliance requirements your facility must follow when managing these wastestreams:

- Section 4.0 How Do I Comply with Wastewater Discharge and Related Regulations?
- Section 5.0 How Do I Comply with Safe Drinking Water Regulations?
- Section 6.0 How Do I Comply with Air Regulations?
- Section 7.0 How Do I Comply with the Emergency Planning and Community Right-To-Know Act Regulations?
- Section 8.0 How Do I Comply with the Hazardous Waste Regulations?
- Section 9.0 How Do I Comply With Spill or Chemical Release Requirements? For purposes of comparison, this section pulls together and briefly summarizes your responsibilities for emergency planning and response requirements across several statutes [e.g., EPCRA, CERCLA, CWA, Oil Pollution Act (OPA), CAA, RCRA]. Always refer to the statute-specific section, the regulations, or program guidance for additional information.

- C Section 10.0 Other Major Environmental Statutes and Regulations: CERCLA, RCRA Subtitle D, FIFRA, and TSCA.

3.3 Conducting a Waste Analysis

3.3.1 Example Waste Analysis For SIC 203 Facility

The following discussion presents an example (in **Figure 3-2** and **Table 3-2**) of how to apply this method of examining process inputs and outputs (e.g., wastes) and identifying applicable environmental requirements for a facility in SIC Code 203, *Canned, Frozen and Preserved Fruits, Vegetables and Food Specialties*. The types of facilities included in SIC Code 203 are presented in **Table 3-1**.

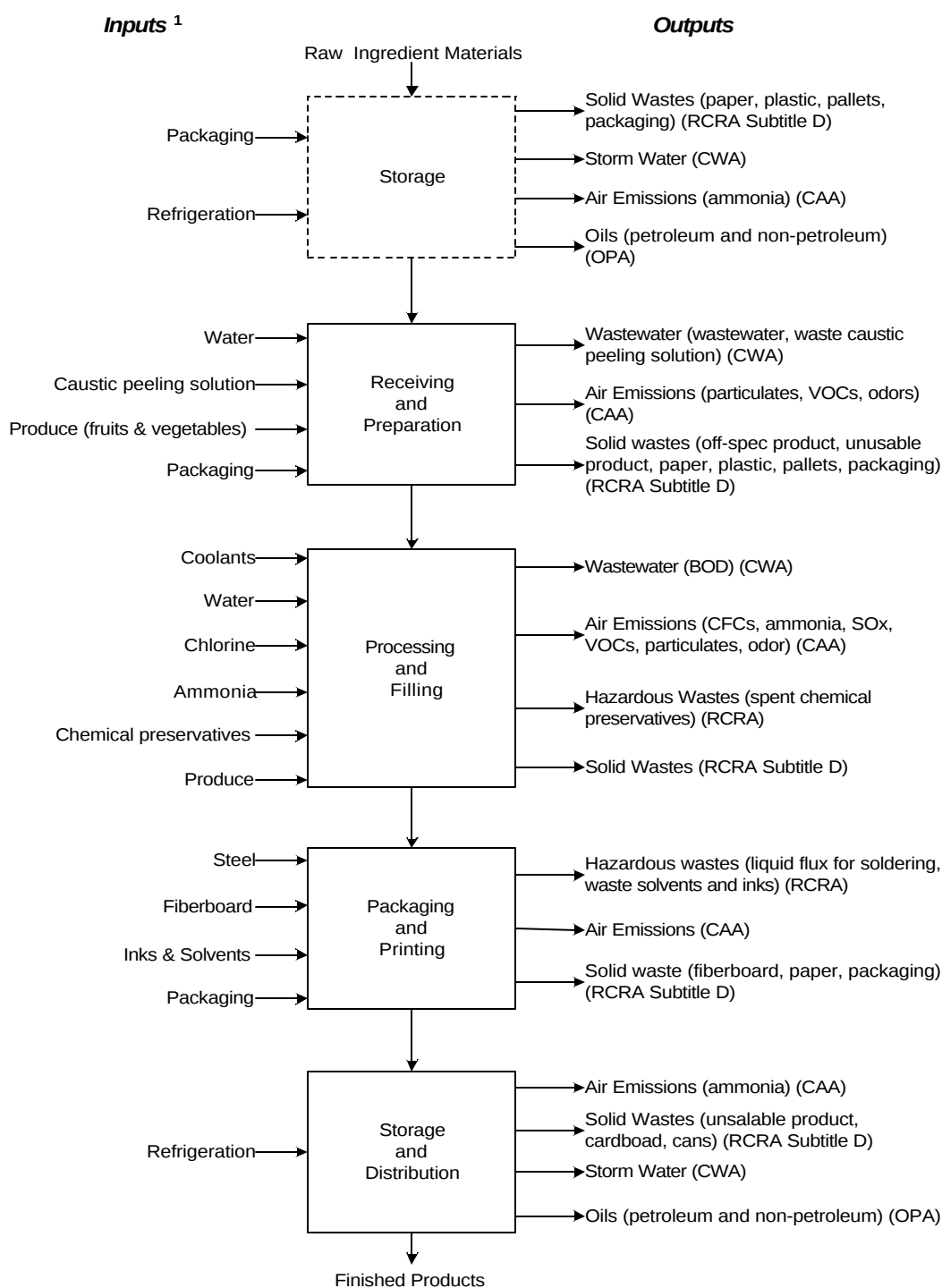
Table 3-1. Types of SIC 203 Facilities

SIC	NAICS *	Types of Facilities
2032	311422 and 311999	Canned Specialties
2033	311421	Canned Fruits, Vegetables, Preserves, Jams and Jellies
2034	311423 and 311211	Dried and Dehydrated Fruits, Vegetables, and Soup Mixes
2035	311421 and 311941	Pickled Fruits and Vegetables, Vegetable Sauces and Seasonings, and Salad Dressings
2037	311411	Frozen Fruits, Fruit Juices, and Vegetables
2038	311412	Frozen Specialties, Not Elsewhere Classified

* The 1997 North American Industrial Classification System (NAICS) codes for the food processing industry will replace the 1987 SIC codes in publications of the U.S. Statistical Agencies over several years (1998-2004), beginning with publications of the NAICS United States Manual. The NAICS Implementation Schedule for these agencies is available on the U.S. Census Bureau's Internet site at <http://www.census.gov/epcd/naics/timeschd.html>.

Figure 3-2 presents a waste analysis for a hypothetical SIC Code 203 facility. The common process activities include: (1) storage (e.g., storage of raw produce); (2) receiving and preparation (e.g., sorting fruits and vegetables to remove immature or substandard ones; cleaning and washing; peeling [sometimes using caustic solutions to remove peels]; and coring and pitting); (3) processing and filling; (4) packaging and printing; and (5) storage and distribution. Typical inputs and outputs are identified for each process activity.

Figure 3-2. Process Waste Analysis for a SIC 203 Facility



¹ Some, not all, of the inputs listed in this figure may be regulated under federal statutes (e.g., CERCLA, EPCRA). See Section 3.2 and Section 7.0 How Do I Comply With the Emergency Planning and Community Right-to-Know Act Regulations?

To further explore this facility's wastes, **Table 3-2** presents examples of typical wastes from each process activity. Each facility waste is placed in the table by category of "Wastestream" (Column 1) and "Process Steps" (Columns 2-5). Ancillary operations (Column 6) show examples of wastes from steam generation, cleaning, and maintenance.

3.3.2 Completing a Waste Analysis For Your Facility

This section provides a blank process waste analysis process worksheet (**Figure 3-3**) and a blank waste analysis table (**Table 3-3**) for you to complete for your facility. These tools can help you identify your facility's inputs and corresponding regulated outputs (e.g., wastes), as well as the environmental regulations that apply to these wastes. Please modify these tools as needed based on your facility's operations.

To complete your waste analysis, follow the steps below. Fill the information in **Figure 3-3** and **Table 3-3** as you go through each step:

(1) Identify Process Activities and Ancillary Operations. Identify all of your process activities and ancillary operations.

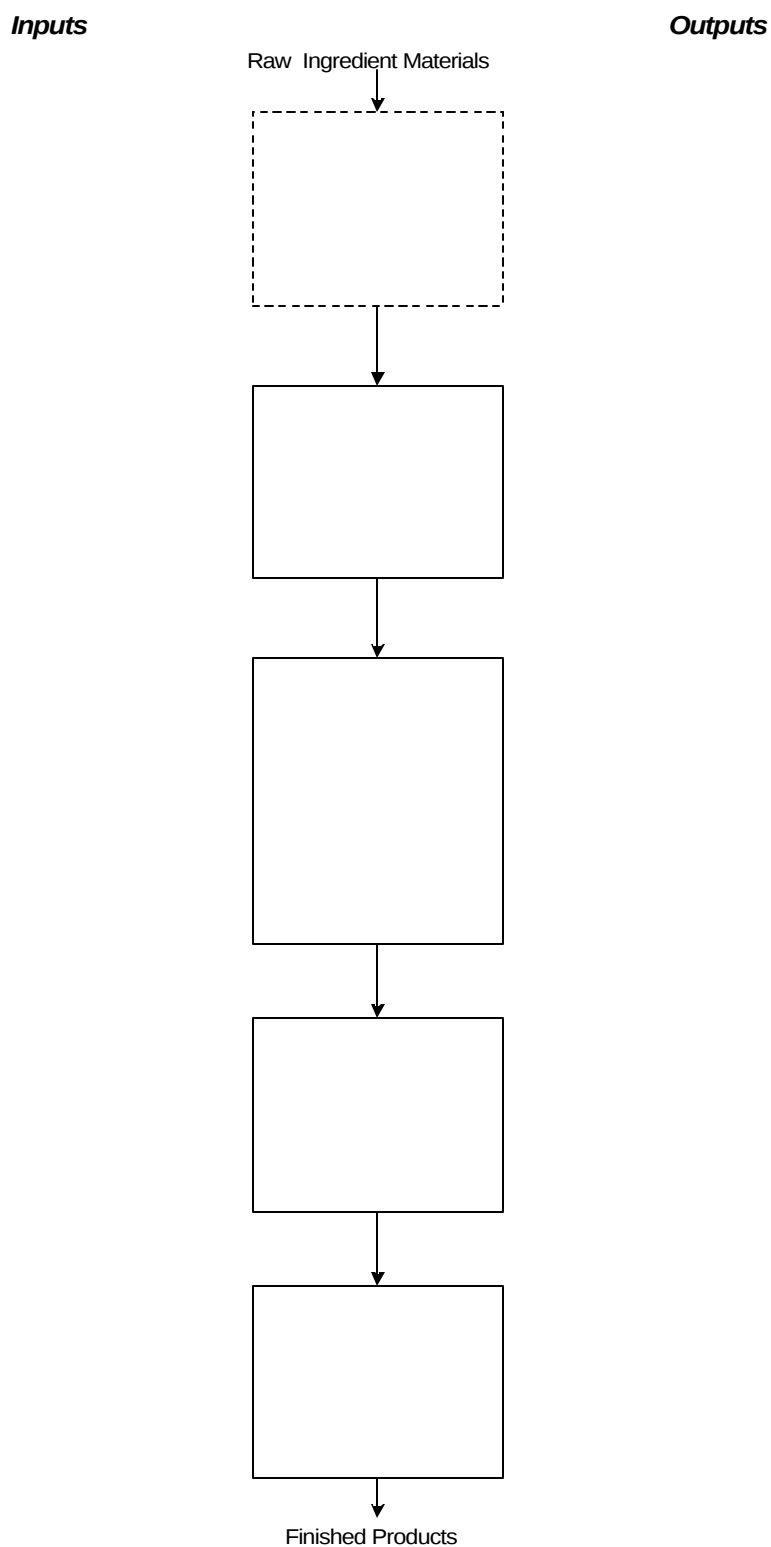
(2) Identify Inputs. Identify all of the inputs to these activities and operations. Remember that some of these inputs may be regulated under specific EPA statutes (e.g., EPCRA, CERCLA, OPA, CWA), as well as under the Occupational Safety and Health Administration (OSHA). Refer to the appropriate statute-specific section for more information. Also, for a very brief overview of spill or chemical release requirements across EPA statutes, please refer to Section 9.0. *How Do I Comply With Spill or Chemical Release Requirements?*

(3) Identify Outputs and Wastestreams. Identify your outputs and the wastestream to which each output belongs. While your facility has several types of outputs, this activity is focused on identifying those outputs which are regulated - primarily wastes. As discussed earlier, waste outputs are regulated differently depending on the wastestream (wastewater, hazardous wastes, air emissions or solid wastes) to which they belong. Once you identify the wastestream, you can refer to the appropriate EPA statute-specific section of this guide for more information on how to manage those wastes and comply with the regulations.

Table 3-2. Waste Analysis for SIC Code 203 Facility

Waste-streams	Process Activities					Ancillary Operations
	Storage	Receiving and Preparation	Processing and Filling	Packaging and Printing	Storage and Distribution	
Wastewater	- Hydraulic lift oil - Waste food residue - Outdoor maintenance spills - Vegetable oils and animal fats	- Pollutants (e.g., BOD, COD, and pH) - Caustic solution - Suspended solids - Waste product residue - Oil and grease - Spilled product	- pH - Cooking oils - Oil and grease - Cooling water (from container cooling)	- Ink and coating solvents (glycol ethers, MEK) - Metal pigment compounds - Rinse water - Used fixer - Water-based inks		- Cleaning wastewater - Pollutants (e.g., BOD, COD and TSS) - pH - Residual pesticides
Hazardous Wastes	Vehicle maintenance waste		Spent or unusable chemical preservative	- Solvents - Liquid flux for soldering - Waste ink - Solvent-laden rags - Used fountain solution	Vehicle maintenance waste	- Spent solvent-based cleaning materials - Spent lab chemicals - Used oil
Air Emissions	- VOCs from waste product - Odors	- VOCs - Particulates - Odors - Chlorinated organics	- CFC, ammonia emissions from coolants and cooling processes - SOx from preserving - VOCs, odors, particulate emissions	VOCs		- Vented lab chemicals - Fugitive emissions from cleaning materials - NOx, SO₂, and particulates

Figure 3-3. Process Waste Analysis Worksheet



Multimedia Environmental Compliance Guide for Food Processors

Table 3-3. Waste Analysis Worksheet

Wastestreams	Process Activities				Ancillary Operations
Wastewater					
Hazardous Wastes					
Air Emissions					
Solid Wastes					

SECTION 4 CONTENTS

4. How Do I Comply with Wastewater Discharge and Related Regulations?	4-1
4.1 Introduction	4-1
4.2 Wastewater Generated During Food Processing Operations	4-2
4.3 Am I a Direct Discharger?	4-2
4.3.1 Direct Dischargers to Surface Waters	4-3
4.3.2 Storm Water Dischargers	4-5
4.4 Am I an Indirect Discharger?	4-15
4.4.1 Pretreatment Requirements	4-16
4.4.2 Calculating Your Surcharge	4-20
4.5 How Do I Dispose of Industrial Sludge?	4-21
4.6 How Do I Comply With Oil Pollution Prevention Requirements?	4-22
4.6.1 Introduction and Background	4-22
4.6.2 SPCC Requirements	4-24
4.6.3 Facility Response Plans (FRPs)	4-28
4.6.4 Oil Spill Notification and Response	4-35
4.7 Compliance Issues For Selected Activities	4-38
4.7.1 Land Application of Wastewater	4-38
4.7.2 Construction or Plant Modification Activities	4-39
Table 4-1. Reporting Requirements for All NPDES Permit Holders	4-4
Table 4-2. Eligibility, Deadlines, and Expiration of General and Individual Permits for Food Processing Facilities	4-9
Table 4-3. SWPPP Requirements for General and Individual Permits for Food Processing Facilities	4-11
Table 4-4. General Storm Water BMPs Required for Permit Holders in SIC Code 20	4-13
Table 4-5. Monitoring Requirements for All Food Processors	4-14
Table 4-6. Additional Monitoring Requirements for Specific Food Processing Operations .	4-15
Table 4-7. Reporting Requirements for All Indirect Dischargers	4-19
Figure 4-1. Determination of Response Plan Applicability	4-29
Figure 4-2. Flowchart of Criteria for Substantial Harm	4-31

4. HOW DO I COMPLY WITH WASTEWATER DISCHARGE AND RELATED REGULATIONS?

4.1 Introduction

The discharge of wastewater from your food processing facility generally will be covered by either the federal Clean Water Act (CWA) or the Safe Drinking Water Act (SDWA) (see Section 5.5 *Underground Injection Control (UIC) Requirements*). In 1972, Congress passed the Federal Water Pollution Control Act (FWPCA), now known as the CWA, which established the basic framework for protecting the waters of the United States. The CWA and its regulations now focus on keeping conventional, nonconventional (including oil and grease), and toxic water pollutants out of our rivers, lakes, and oceans.

Generally, federal regulations target three types of industrial discharges. As a food processing facility, your industrial wastewater discharges probably fall into one of these categories:

- (1) **Direct discharges** which include any wastewater from an industrial facility (e.g., untreated, unpolluted wastewater or treated process wastewater) that is discharged straight to surface waters (e.g., ponds, lakes, oceans, streams, and wetlands). Storm water discharges also are considered a type of direct discharge. See Section 4.3 *Am I A Direct Discharger?*
- (2) **Indirect discharges** which include any wastewater from an industrial facility that is discharged to a publicly owned treatment works (POTW), which subsequently discharges to a surface water. See Section 4.4 *Am I An Indirect Discharger?*
- (3) **Land application** of industrial wastewater discharges. Land application discharges include any wastewater from an industrial facility that is discharged to land to either condition the soil or to fertilize crops or other vegetation grown in the soil. (See Section 4.7.1 *Land Application of Wastewater*.)

*If your food processing facility also operates an **Animal feeding operation (AFO)**, you may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit that includes the AFO if the AFO discharge goes directly to surface waters. Check with your permitting authority for more information.*

For more information, visit EPA's water programs homepage at <http://www.epa.gov/wow>.

4.2 Wastewater Generated During Food Processing Operations

Process Wastewater

Wastewater at food processing facilities commonly is generated during food preparation, processing, and cleaning operations. As presented in Table 3-2. *Waste Analysis for SIC Code 203 Facility*, there are many common wastes that typically are found in food processing wastewater. This wastewater can contain a variety of pollutants or characteristics, some of which are regulated by federal, state, or local requirements.

Regulated pollutants include:

- biochemical oxygen demand (BOD)
- chemical oxygen demand (COD)
- total suspended solids (TSS)
- oil and grease (O&G)
- total Kjeldahl nitrogen (TKN)
- high or low pH
- ammonia nitrogen
- phosphorus.

Note that these are *examples* of conventional pollutants likely to be regulated in your wastewater discharge permit. In addition, your permit may include discharges of toxics (e.g., ammonia) and nutrients (total nitrogen, total phosphorus). The amount of these pollutants that you are allowed to discharge in your wastewater will vary depending on where you discharge (e.g., direct, indirect, or other) and the applicable regulations.

Storm Water

Another potential source of wastewater at your food processing facility is storm water. Storm water discharges begin when rain comes in contact with potential pollutants, such as product spills, uncovered waste containers, or spilled liquids related to vehicle or mechanical parts maintenance. The pollutants found in storm water will be dependent on the type of material(s) the rain comes in contact with prior to discharge.

After you identify the wastewater (process and storm water) generated by your facility, you must determine how best to manage it. As discussed above, there are several methods that your food processing facility can use to dispose of your wastewater. Some of these methods require you to obtain a permit as well as conduct monitoring of pollutant levels in your wastewater. The following sections discuss the federal regulations that apply to your wastewater discharges and related activities and how you can comply with these regulatory requirements. See Section 4.3.2 *Storm Water Dischargers* for more information.

4.3 Am I a Direct Discharger?

If your food processing facility discharges process wastewater, cooling water (contact or non-contact) and/or storm water straight to surface waters (or through any conveyance system through which water flows and then discharges directly to surface waters, i.e., through a “point

source”), you are a direct discharger. See Appendix A.1 *Summary of Principal Regulations Under the Clean Water Act* for the complete definition of a point source. Specific requirements that apply to food processing wastewater discharges and cooling water are discussed in Section 4.3.1; storm water discharges are discussed in Section 4.3.2.

4.3.1 Direct Dischargers to Surface Waters

As a direct discharger, you must apply for and obtain a permit under EPA's National Pollutant Discharge Elimination System (NPDES) program. A NPDES permit sets limits, often referred to as **effluent limits**, on the amounts of pollutants that can be discharged to surface waters.

Permits must be obtained from EPA or the authorized state or territory. As of March 1998, EPA has authorized 42 states and one territory to administer the NPDES program. Where permit authority has not been delegated to the state or territory, you must apply for permits directly from EPA rather than the state authority. EPA has not delegated authority to the following states and territories: Alaska, Arizona, District of Columbia, Idaho, Maine, Massachusetts, New Hampshire, New Mexico, Pacific Territories, Puerto Rico, Texas, and the federal Tribal Lands.

A NPDES permit:

- Specifies the amount of pollutants (e.g., effluent limits) that can be discharged based on either available wastewater treatment technology or on the specific water quality standards of the surface water.
- Generally requires a facility to routinely conduct monitoring and submit reports (generally on an annual, quarterly, or monthly schedule). Such requirements are determined on a facility-specific basis; however, there are some reporting requirements that apply to all facilities. These requirements are presented in Table 4-1.
- Requires that all records related to monitoring be maintained by the facility for at least three years.
- May contain other site-specific requirements, such as (1) construction schedules, (2) best management practices (BMPs), (3) additional monitoring for non-regulated pollutants, and (4) spill prevention plans.

For facilities in coastal areas, states may include stricter permit limits in order to meet the requirements of the Coastal Zone Management Act (CZMA). See Section 4.7.2 Construction or Plant Modification Activities.

A NPDES permit application may be submitted as either a **general** permit or an **individual** permit, depending on EPA or state requirements. General permits, which usually are limited to storm water discharges (see Section 4.3.2 *Storm Water Dischargers*), typically are less complicated than individual permits and do not require as much information to apply for the permit. The application for a general permit is often referred to as a Notice of Intent (NOI).

How to Comply If You Are a Direct Discharger

- T** Contact your EPA or state regulatory agency to find out how to obtain a permit application. Apply for and obtain a NPDES permit.
- T** As part of the permit application, you will be required to analyze your industrial wastewater for BOD, COD, total organic carbon (TOC), TSS, ammonia (as N), temperature and pH.¹ In addition, your food processing facility will likely be required to analyze your industrial wastewater for oil and grease, and may be required to analyze for additional parameters (e.g., total phosphorus or total nitrogen) based on the water quality standards applicable to the receiving water, and any applicable state regulations. While the effluent limits and other requirements in your permit will be specific to your facility, all permits will require reporting, sample collection, and sample analysis (see 40 CFR 122.41, 136.1-136.4, and 136.3).
- T** Read all permits carefully and make checklists of requirements.
- T** Follow the monitoring and reporting activities specified in your permit. Compare the monitoring results to the effluent limits to verify that your facility meets the effluent limits in your NPDES permit. Conduct any additional required reporting and recordkeeping activities for your wastewater discharge.
- T** Notify the permitting authority as indicated in Table 4-1 *Reporting Requirements for All NPDES Permit Holders*.

Table 4-1. Reporting Requirements for All NPDES Permit Holders

Specific Requirement	
Notify the permitting authority of any noncompliance with your permit that may endanger health or the environment.	Within 24 hours of becoming aware of violation; written submission within 5
Notify the permitting authority of any planned physical alterations or additions to the facility.	As soon as possible.
Notify the permitting authority of any planned changes in your discharge that may result in noncompliance.	In advance of changes.
Notify the permitting authority of the transfer of the facility to a new owner.	As soon as possible in advance of the transfer.

¹ Some industrial sectors also are required to analyze for some or all of the 126 priority pollutants (40 CFR 423, Appendix A); however the federal NPDES regulations do not require food processors to analyze for these pollutants.

Surface waters in the United States are protected through state-established **water quality standards**. These standards were created for the purpose of establishing minimum water quality requirements for surface waters. Water quality standards contain two distinct elements: 1) use designations, and 2) specific water quality criteria to protect these designated uses. Each water body in the country is given one or more water use designations, such as aquatic life warmwater habitat, primary contact recreation, or public water supply. Based on these designations, parameter-specific criteria are applied to the point sources discharging into the specific water body.

Total Maximum Daily Loads (TMDLs) focus on restoring and protecting surface water. TMDLs impose water quality-based discharge limits from point sources based on a watershed approach. They are written, quantitative evaluations of water quality problems and contributing sources of pollution. A TMDL:

- C Identifies the amount a pollutant needs to be reduced to meet water quality standards
- C Allocates pollutant load reductions among pollutant sources in a watershed
- C Provides the basis for taking actions needed to restore/protect a waterbody.

Direct discharges of some pollutants from your facility (e.g., ammonia) may be affected by the development and implementation of TMDLs by the states. For more information on TMDLs, refer to *Final Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program* (July 28, 1998) on the EPA Homepage at <http://www.epa.gov/OWOW/tmdl/advisory.html>. For additional information on pollutants of concern, water quality standards, TMDLs, or your permit, contact your permitting authority.

4.3.2 Storm Water Dischargers

Introduction and Background

Under Phase I of the storm water program, which currently is being implemented, storm water discharges associated with industrial activity, such as food processing, must be covered by a NPDES storm water permit regardless of whether they discharge to a municipal separate storm sewer system or directly to waters of the United States. Municipal separate storm sewer systems are designed to convey storm water from impermeable areas to bodies of water. Waters of the United States are defined to include virtually any surface waters, whether navigable or not.

The term “storm water discharge associated with industrial activity” means a storm water discharge from one of 11 categories of industrial activity defined in 40 CFR 122.26. Six categories are defined by Standard Industrial Classification (SIC) codes and five are defined by regulated industry activity narrative descriptions. Food processing facilities

Exemption from Storm Water Permit: Food processors that have no exposure of materials and activities to storm water are exempt from these requirements. “No Exposure” means that there is **no possibility** of storm water, snow fall, snow melt, or storm water “run on” coming in contact with any process or storage related activity.

are listed in category xi. **This category includes facilities with storm water discharges from areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, byproducts, or industrial machinery are exposed to storm water.** These areas may include:

- Industrial plant yards
- Material handling sites
- Refuse sites
- Sites used for the application or disposal of process wastewater (as defined in 40 CFR 401)
- Sites used for the storage and maintenance of material handling equipment
- Sites used for residual treatment, storage, or disposal
- Shipping and receiving areas
- Manufacturing buildings
- Storage areas (including tank farms) for raw materials, and intermediate and finished products
- Areas where industrial activity has taken place in the past and significant materials remain.

Material handling activities at your facility include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on facility property separate from the facility's industrial activities, such as office buildings and accompanying parking lots, as long as the drainage from the excluded areas **is not mixed** with storm water drained from the above described areas. If storm water from your food processing facility is discharged to a municipal combined sewer system, the storm water discharges are subject to indirect discharger requirements (see Section 4.4).

Storm Water Permits

Food processing facilities with storm water discharges must be covered by a NPDES permit regardless of whether they discharge to a municipal separate storm sewer system or directly to waters of the United States. **Storm water permits are not required where runoff flows through a combined sewer to a POTW.** Storm water permits provide a mechanism for monitoring the discharge of pollutants from these sources to waters of the United States and for establishing appropriate controls.

Facilities can comply with NPDES permit requirements for storm water discharges by submitting (1) a **Notice of Intent (NOI)** to be covered under a **general** permit (Baseline or Multi-Sector); or (2) an application for an **individual** permit; and (3) complying with all of the conditions specified in the applicable permit. In the past, facilities could submit an application to be covered under a group permit, but this option and the original group permit have expired.

- C **General Storm Water Permit Applications - Baseline or Multi-Sector.** Your food processing facility may be permitted under a general permit, **whether EPA or the State is the permitting authority.** General permits require development of a storm water pollution prevention plan (SWPPP) and periodic discharge monitoring. In those states and territories without NPDES authorization (i.e., EPA is the permitting

authority, see below), EPA has developed and finalized general permits that cover 29 industry categories including food processors.

EPA has developed two different general permits under which food processors can discharge their storm water: the **Baseline** general permit, and the **Multi-Sector** general permit. The Baseline general permit was originally issued in 1992 and covered storm water discharges from many different facilities, both industrial and municipal, under the same requirements. The Multi-Sector permit was issued in 1995, and like the Baseline permit, covered many different industrial facilities. The main difference between the two permits is that the Multi-Sector permit established different requirements for different industries, while the Baseline established one set of requirements for all industries. As of September 1998, most food processing facilities were covered under the Multi-Sector permit. More detail on the eligibility, deadlines, expiration dates, and permit requirements of each of these facilities is provided below.

- C **Individual Storm Water Permit Applications.** If a facility has storm water discharges and did not participate in a group application, or did not obtain coverage under a general permit by March 1996, it may be required to obtain and submit an individual permit application consisting of Form 1 (General Information) and Form 2F (Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity). These forms can be obtained from and submitted to the permitting authority. Form 2F requires the facility to submit a site drainage map, a narrative description of the site identifying potential pollutant sources, and quantitative testing data of pollutant sources. A facility is required to submit an individual permit application 180 days before starting a new discharge.

Where do I get a storm water permit? General permits, NOIs, individual permit applications, and individual permits can be obtained from your NPDES permitting authority. Copies of general permits and NOIs can be downloaded from the Internet. Information on downloading NOI's and general permits can be found at <http://www.epa.gov/earth1r6/6en/w/sw/home.html>.

As of March 1998, 42 states and one territory have been delegated authority by EPA to administer the NPDES program. EPA has not delegated NPDES authority to the following states and territories: Alaska, Arizona, District of Columbia, Idaho, Maine, Massachusetts, New Hampshire, New Mexico, Pacific Territories, Puerto Rico, Texas, and the federal Tribal Lands. Of the delegated NPDES states and territories, only the Virgin Islands has not been delegated authority for the storm water general permits program as well. Where permit authority has not been delegated to the state or territory, food processing facilities must obtain NOIs, general permits, or individual permit applications directly from EPA rather than from the state authority. Contact your permitting authority, either EPA or your state, to find out how to obtain the appropriate documents and to determine whether the individual or general permit is required.

Note: If your storm water discharges are currently covered by a general permit (Baseline or Multi-Sector), you are not required to submit an individual permit application (provided that neither EPA nor the implementing agency required an individual permit application on a case-by-case basis). NOI requirements for general permits usually address only general information and typically do not require sample

Storm Water Permits - Conditions and Requirements

Your food processing facility will be subject to different requirements depending on whether you are covered under a Baseline general storm water permit, a Multi-Sector general storm water permit, or an individual storm water permit. Conditions and requirements for each of these permits are described below.

Eligibility, Application Deadlines, and Expiration Dates

Each of the permits available to food processing facilities has different eligibility requirements, application deadlines, and expiration dates. These requirements and deadlines are summarized in Table 4-2. *Eligibility, Deadlines, and Expiration of General and Individual Permits for Food Processing Facilities.*

Baseline General Permit: In order to be covered under a storm water **Baseline general permit** on September 30, 1998, your food processing facility was required to do the following: 1) submit a NOI to EPA or the permitting authority **prior to October 1, 1992**, and 2) submit a second NOI **prior to September 9, 1997**, in order to be covered under the **administratively-extended** Baseline general permit. If you were eligible and met these deadlines, then your facility is still covered under the administratively-extended Baseline general permit.

- C Eligibility: Your facility was eligible to submit these NOIs if it did **not have an adverse impact on endangered species**, and your storm water discharges were not subject to EPA's *Storm Water Effluent Limitation Guidelines*.
- C Expiration: Your Baseline general permit **expired in 1997**, unless you met the deadline for submitting the second NOI to obtain coverage under the administratively-extended Baseline permit. The administratively-extended permit **will expire 90 days** after the modified Multi-Sector General permit becomes final (late 1998 or early 1999).
- C Future Requirement for Permit Coverage: The **administratively-extended Baseline general permit** expires **90 days after EPA issues modified Multi-Sector permit becomes final** (late 1998 or early 1999). When the administratively-extended Baseline expires, food processing facilities that are covered under the administratively-extended Baseline permit will have 90 days to submit a NOI to be covered under the modified Multi-Sector permit and to **meet all of the conditions** of the Multi-Sector permit (including implementing new components of the SWPPP).

EPA's recommendation to food processing facilities: Because the modified Multi-Sector permit is more complex than the Baseline permit, and because of the short time period available to implement the Multi-Sector requirements (see below), **EPA strongly recommends that food processing facilities that are covered under the Baseline permit begin to implement the requirements of the modified Multi-Sector permit (which, for food processing facilities, will have the same requirements as the currently available Multi-Sector permit) as soon as possible, rather than waiting for the Baseline permit to expire.** (See following subsection for explanation and requirements pertaining to eligibility and applications deadlines under the **Multi-Sector** and the **modified Multi-Sector general permit**.)

Table 4-2. Eligibility, Deadlines, and Expiration of General and Individual Permits for Food Processing Facilities

	Baseline General Permit	Multi-Sector General Permit	Individual Permit
Eligibility	Food processing facilities which do not have an adverse impact on endangered species, and do not include additional non-food processing activities (e.g., can making) that are subject to effluent guidelines.	Food processing facilities which do not have an adverse impact on endangered species and certify there will not be an impact.	All facilities are eligible for individual permits at the discretion of the permitting authority.
Application Deadline	Existing dischargers must have submitted a NOI by 10/1/92 and a second NOI for the administratively-extended Baseline permit prior to 9/9/1997. New dischargers must submit NOI two days prior to commencing industrial activity.	Existing permit holders and group applicants must have submitted a NOI by 12/28/96 or within 90 days of finalization of modified Multi-Sector permit. New dischargers must submit NOI two days prior to commencing industrial activity.	Existing permit holders must submit applications at least 180 days prior to the expiration of existing permit. New discharges must apply for and receive permit prior to commencement of industrial activity.
Expiration	Baseline permit expired in 1997 except for those facilities that submitted NOIs prior to 9/9/97 to continue coverage (until 90 days after the modified Multi-Sector permit is issued) under the administratively-extended Baseline permit.	Multi-sector permit expires in 2000 (even for those facilities that waited to file a NOI until modifications in the Multi-Sector permit were complete). EPA will issue new Multi-Sector permits or extend existing permit when existing permit expires.	Permits are valid for dates specified on the individual permit.

Multi-Sector General Permit: In order to be covered under a storm water **Multi-Sector general permit** on September 30, 1998, your food processing facility was required to submit a NOI to EPA and to meet certain eligibility criteria. Deadlines for submitting a NOI differed for facilities in operation prior to September 29, 1995, and those commenced operation after September 29, 1995.

Facilities in the first category (i.e., those facilities **in operation prior to September 29, 1995**) had **two** periods for submitting a NOI depending on the status of your permit coverage at the time.

Period 1: The NOI submission period was between **September 29, 1995 to December 28, 1995**, if your facility was **not** covered under the **Baseline general permit**, and met the eligibility criterion below.

Period 2: This NOI submission period was between **June 11, 1997 and September 9, 1997**, if your facility was covered under **the Baseline general permit**, and you wanted to obtain coverage under the Multi-Sector General permit **before the expiration** of the **Baseline general permit** in 1997.

Facilities in the second category (i.e., those facilities that **commenced operation after September 29, 1995**) are required to submit a NOI **at least 2 days prior** to commencing operations.

- C Eligibility: In any of these situations, your facility was required to meet the applicable deadline and meet both of the following condition: 1) to have no adverse impact on endangered species; **and** 2) to certify that there will be no adverse impact.
- C Expiration: The Multi-Sector permit expires on September 29, 2000.
- C Future Requirement for Permit Coverage: If your facility is currently, or soon will be covered under the Multi-Sector permit, you must contact your permitting authority at least 90 days prior to September 29, 2000 in order to determine if you will be required to submit a NOI to be covered under a new Multi-Sector permit, or to be covered under an extension of your current Multi-Sector permit.

Individual Storm Water Permit: In order to be covered under an **Individual storm water permit**, your facility is required submit a permit application to the EPA or state permitting authority, receive a permit, and meet the conditions of the permit prior to commencing operations.

- C Eligibility: Facilities are eligible for individual storm water permits if they choose to apply for individual permits, or if required to do so by the permitting authority. To be eligible, facilities that commenced operations prior to October 1992 were required to submit a storm water permit application prior to October 1992. Facilities that commenced operations after October 1992 are required to submit a permit application and receive a permit prior to commencing operations.
- C Expiration: Individual storm water permits expire on the date indicated on the permit. Individual permits are usually valid for five years.
- C Future Requirement for Permit Coverage: If your facility is currently covered under an Individual storm water permit, you are required to submit an application to renew your permit at least 180 days prior to the expiration of your current permit.

What do I do if my food processing facility missed the previous deadlines for submitting NOIs? If your facility did not submit NOIs prior to the applicable deadlines, you must contact your State or EPA Regional permitting authority to determine if you are eligible for a Multi-Sector or individual storm water permit.

What do I do if my food processing facility was previously covered under a Group permit? If your food processing facility was previously covered under a group permit, you were required to submit a NOI for the Multi-Sector permit prior to March 29, 1996 and meet the storm

water pollution prevention plan conditions (see Table 4-3. *SWPPP Requirements for General and Individual Permits for Food Processing Facilities* and accompanying text below) of the Multi-Sector permit by September 25, 1996.

Table 4-3. SWPPP Requirements for General and Individual Permits for Food Processing Facilities

Baseline General Permit	Multi-Sector General Permit	Individual Permit
Requires consideration of <i>generic</i> pollution prevention measures and BMPs. Facilities subject to EPCRA Section 313 reporting requirements are required to incorporate additional measures into SWPPP, and have the plan certified by a <i>Professional Engineer</i> every three years. Does not provide guidance on specific Food Processing industry BMPs.	Requires consideration of <i>generic</i> BMPs <u>and</u> practices <i>specific</i> to the Food Processing Industry. Facilities subject to EPCRA Section 313 reporting requirements are required to incorporate additional measures into SWPPP, however, the plan only needs to be certified by the <i>facility operator</i>. Fact sheet describes applicable BMPs for the Food Processing industry.	SWPPP requirements are included at the discretion of the permitting authority.

Storm Water Pollution Prevention Plan (SWPPP). If your food processing facility is required to obtain a storm water permit, you will likely be required to prepare and implement a storm water pollution prevention plan. Facilities are required to develop SWPPPs to prevent storm water from coming in contact with potential contaminants. Each plan is facility-specific because every facility is unique in its source, type and volume of contaminated storm water discharges. Regardless of the variations, all plans must include several common elements, such as a map and site specific considerations. The elements include:

- Facility size and location
- A description of the volume of storm water and pollutants that could potentially be discharged.
- Hydrogeology
- The environmental setting of each facility
- The predicted flow of storm water discharges.
- Climate.

Multimedia Environmental Compliance Guide for Food Processors

Storm water pollution prevention (P2) plans also must address how your facility will complete the following activities:

- Develop general and specific measures and controls to prevent or minimize pollution of storm water (articulated as BMPs in your plan)
- Develop a P2 Team
- Train employees
- Conduct inspections and evaluations
- Test outfalls
- Conduct recordkeeping.

Some SWPPP elements may be specific to the type of permit at your facility. Table 4-3 compares SWPPPs of Baseline general, Multi-Sector general, and Individual storm water permits.

Best Management Practices. BMPs are measures and controls used to prevent or minimize pollution. The most effective BMPs for reducing pollutants in the storm water discharges from your food processing facility are exposure minimization (preventing/minimizing storm water contact with potential contaminants) and good housekeeping. Exposure minimization practices reduce the potential for storm water to come in contact with pollutants. Good housekeeping practices ensure that the facility is responsive to routine and non-routine activities that may decrease exposure of storm water to pollutants. One simple practice is to move product storage, loading, or waste areas to existing enclosed structures.

While exposure minimization usually can be accomplished by good housekeeping and covering or bringing potential pollutants inside a facility, some food processing facilities may be required to develop additional structural controls to prevent contaminants from reaching storm sewers. Such controls may include cement pads, berms/dikes, screens, or separators. In a few instances, more intensive BMPs (e.g., detention ponds, filtering devices) may be necessary at your facility depending on the type of discharge, types and concentrations of contaminants, and volume of flow. Many food processing facilities already have some of these controls in place as part of spill control plans required under the Oil Pollution Act (see Section 4.6 *How Do I Comply With Oil Pollution Prevention Regulations?*), and can use these existing controls to help them meet the BMP requirements of their SWPPPs.

As part of the Multi-Sector general storm water permit, EPA has identified BMPs specific to the food processing sector. General storm water BMPs practices specific to food processors are shown in Table 4-4. *General Storm Water BMPs Required for Permit Holders in SIC Code 20.* Some or all of these BMPs may be required by your permit for your food processing facility. Even if not required, implementing these BMPs at your facility can be a low cost way to reduce contaminants in your storm water discharges.

Table 4-4. General Storm Water BMPs Required for Permit Holders in SIC Code 20

Activity	Management Practice
Raw material unloading/product loading	• Reduce or repair defective containers (bags, drums, bottles, crates). • Prevent spills and leaks (tanks and rail cars) from reaching storm drains. • Ensure connections (hose and coupling) are secure and not leaking prior to loading or unloading. • Reduce washwater usage and cover storm drains during wash down of loading/unloading area.
Tank storage of liquids	• Conduct preventive maintenance and inspections of tanks and piping to avoid external corrosion and structural failure. • Train operators and monitor loading/unloading to prevent spills and overflows due to operator failure. • Whenever possible, provide secondary containment tanks and storage areas.
Drum and container storage of liquids	• Keep containers closed except when loading or unloading. • Keep containers covered to avoid exposure to storm water. • Regularly inspect containers for signs of corrosion, spills, or leaks. • Train operators on proper handling and transporting techniques. • Immediately clean any known spills or leaks.
Solids storage in silos, holding bins, fiber drums, etc.	• Inspect and maintain good housekeeping practices to avoid storm water contamination from spilled product, dust, or particulates.
Air emissions	• Inspect emissions from ovens or other vents that may emit solids. • Regularly clean any roof top solids, or oils and greases from air emissions. • Practice proper handling techniques to avoid dust or fine solids emissions.
Solid wastes	• Regularly inspect dumpsters and trash cans, spent equipment, scraps, etc. • Keep all wastes covered from storm water.
Wastewater	• Monitor treatment processes to prevent hydraulic overflow. • Inspect and conduct preventative maintenance on outside piping and connections.
Pest control	• Follow proper application techniques in outside areas.
Improper connections to the storm sewer	• Conduct a comprehensive site inspection to ensure that no process wastewater, process floor drains, sanitary sewers, or UST overflows are connected to storm drains.
General storm water management	• Implementation of traditional storm water management measures (oil/water separators, vegetative swales, and detention ponds).
Erosion prevention	• Identification of areas with high potential for erosion and stabilization measures or structural controls used to limit erosion.

Multimedia Environmental Compliance Guide for Food Processors

Monitoring. Under your general or individual storm water permit, your facility will be required to conduct monitoring, which may include visual examination of storm water discharges and/or analytical monitoring. Monitoring is required primarily to provide your facility with a means for assessing your storm water contamination and evaluating the performance of your SWPPP. As indicated in Table 4-5. *Monitoring Requirements for All Food Processors* and Table 4-6 *Additional Monitoring Requirements for Specific Food Processing Operations*, most food processing facilities are required to conduct only visual monitoring if covered under the Multi-Sector general permit, and no monitoring if covered under the Baseline general permit. **Note** that some states may require food processing facilities to monitor additional parameters.

Table 4-5. Monitoring Requirements for All Food Processors

Category of Food Processor	Baseline Permit (one time monitoring for discharge characterization)	Multi-Sector Permit (ongoing monitoring)			Individual Permit
		Parameter	Monitoring Frequency	Years monitoring required	
All food processors	none* (except for animal handling/meat packing as noted below) NOTE THAT ONGOING MONITORING MAY BE REQUIRED ON A CASE BY CASE BASIS.	Visual examination	Quarterly	All	Monitoring Requirements established by the individual permitting authorities.
Facilities subject to EPCRA Section 313 reporting requirements for water priority chemicals.	O&G, BOD, COD, TSS, TKN, TP, pH, acute whole effluent toxicity, and any Section 313 water priority chemical for which the facility reports.	No additional monitoring based on EPCRA reporting status.			All individual permit requirements are specific to the facility and established by the permitting authority.
Facilities that can certify there are no significant materials or industrial activities exposed to storm water.	Exempt from all monitoring.	No provisions for these facilities in Multi-Sector permit.			
Facilities that can certify that there are no sources of a pollutant present.	No provisions for these facilities in Baseline permit.	Facilities may be exempt from monitoring certain pollutants on a <u>pollutant by pollutant basis</u> .			

Table 4-6 Additional Monitoring Requirements for Specific Food Processing Operations

Category of Food Processor	Baseline Permit (one time monitoring for discharge characterization)	Multi-Sector Permit (ongoing monitoring)			Individual Permit
		Parameter	Monitoring Frequency	Years monitoring required	
Grain mill products	None	TSS	Quarterly	Year 2 and 4 of permit coverage	All monitoring required under individual permit is facility specific and determined by the permitting authority.
Fats and oils	None	TSS, BOD, COD, and nitrate + nitrite nitrogen	Quarterly	Year 2 and 4 of permit coverage*	
Animal handling/meat packing	grab and composite (where appropriate) for BOD, oil and grease, COD, TSS, TKN, Total Phosphorus, pH, and fecal coliform.	No specific requirements under Multi-Sector permit.			

* Facilities with pollutant concentrations lower than benchmarks in the second year are exempt from monitoring in the fourth year.

4.4 Am I an Indirect Discharger?

If you are an indirect discharger, your food processing facility discharges wastewater into a sewer system that leads to a municipal treatment plant, also known as a POTW. The POTW typically is owned by the local municipality or a regional board or sewer authority.

Usually, POTWs treat domestic household wastes using biological treatment processes. Most POTWs cannot handle large quantities of industrial wastewater, because certain pollutants present in industrial discharges can adversely affect the POTW's treatment processes or pass through the plant directly to surface water without receiving adequate treatment. However, some POTWs are designed to accept large industrial waste loadings, often with prearranged industrial financial assurances.

In response to the potential problems caused by industrial wastewater, federal pretreatment regulations were developed to prevent the discharge of pollutants to the POTW that will:

- Interfere with the operation of the POTW
- Pass through the POTW untreated
- Create problems with disposal of sludge from the POTW
- Cause problems to treatment plant workers from exposure to chemicals.

These regulations, referred to as the **pretreatment regulations**, apply to all industrial facilities, including food processing facilities, that discharge industrial wastewater to POTWs. Local POTWs with approved pretreatment programs have responsibility for enforcing pretreatment requirements. Because the primary enforcement authority for pretreatment regulations is often the local POTW, **to assure compliance you must contact your local POTW**, even if you have already contacted the State or EPA region.

4.4.1 Pretreatment Requirements

There are three types of pretreatment requirements: requirements for general industry (*general pretreatment standards*), requirements for specific industries (*categorical pretreatment standards*), and locally established requirements for specific facilities (*local limits*). At a minimum, the federal *general pretreatment standards* apply to your food processing facility's discharge to a POTW, while *local limits* may also apply to your facility.

- (1) **General pretreatment standards** establish minimum discharge requirements for all industrial discharges, including those from food processing facilities. These standards protect POTWs by prohibiting specific wastestreams from being discharged by industrial users. The general types of pollutants prohibited under the general pretreatment standards include:
 - C Pollutants that cause pass through or interference at the POTW (including vegetable oils and animal fats).
 - C Pollutants creating a fire or explosion hazard in the POTW.
 - C Pollutants that will cause corrosive structural damage (i.e., any wastewater with a pH less than 5).
 - C Pollutants that are solid or viscous that can obstruct the wastewater flow.
 - C Any pollutant released in a discharge at a flow rate or concentration that will cause interference at the POTW.
 - C Heat in amounts that will inhibit biological activity at the POTW, but in no case, discharges that will cause the POTW influent to exceed 104 degrees Fahrenheit.
 - C Petroleum oil, non-biodegradable cutting oil, or products of mineral oil in amounts that will cause interference or pass through.
 - C Pollutants that result in the presence of toxic gases, vapors, or fumes in the POTW that may cause acute worker health and safety problems.
 - C Any trucked or hauled pollutants, except at discharge points designated by the POTW.

Some examples of typical pollutants specific to SIC Code 20 that are prohibited under the general pretreatment standards include pollutants discharged at a flow rate or concentration that will cause interference at the POTW (i.e., high BOD and COD loads). In cases where

there are high BOD or COD loads in the wastewater, the POTW may choose to include these discharges in their surcharge program (see Section 4.4.2).

- (2) **Categorical pretreatment standards** are standards established for specific types or categories of industrial facilities or processes. These facilities are known as categorical industrial users. EPA does not consider food processing facilities to be categorical industrial users. EPA has not established specific numerical limits for indirect discharges from food processors. Hence, **categorical pretreatment standards** that apply to food processing operations require compliance with 40 CFR 403 (the general pretreatment standards).²

- (3) **Local Limits or Requirements** are standards established by the POTW for any or all of the industrial facilities from which it receives wastewater. These limits are designed to protect the POTW and its workers, and to meet the POTW's own direct discharge permit limits. POTWs often require food processing facilities to clean and maintain grease and grit traps on a specified schedule.

Can making operations. If your food processing facility also includes can making (not simply packaging materials in cans), your facility will be subject to additional categorical pretreatment standards. These standards can be found in 40 CFR 465.40 through 465.46. In addition, your facility will be considered a Significant Industrial User (SIU) and be subject to the permit criteria discussed below.

Where the POTW local limits are **more** stringent than federal requirements, they will **replace** the federal requirements. As a food processing facility, your POTW may or may not have local limits. For specific POTW limits that apply to your facility, you must contact your local POTW. **Even if your facility is not subject to local limits, the general pretreatment standards do apply.**

² EPA does not consider food processors involved in dairy products processing, grain mills, canned and preserved fruits and vegetables, canned and preserved seafood, sugar processing, and meat products point source categories (see 40 CFR 405-409 and 432) to be categorical industrial users. EPA has not established specific numerical limits for indirect discharges, known as categorical pretreatment standards, for these facilities. (Memo from Director Office of Water Enforcement and Permits to Regional Water Management Divisions Directors and Regional Water Compliance Branch Chiefs, 2/16/89)

40 CFR 403 provides **General Pretreatment Standards** for various types of food processing facilities. In 40 CFR 405-409 and 432, EPA provides several tables of effluent limits for various types of discharges (e.g., direct and indirect discharges from new and existing facilities) from various types of food processing facilities. There is a different table for each type of food processing facility, and each type of discharge from that type of facility; the tables simply refer to the **General Pretreatment Regulations**, or indicate that the industrial users (food processors) **must comply with 40 CFR 403 (the general pretreatment standards)**. If EPA considered food processing facilities to be categorical industrial users, then EPA would have established specific numerical limits for indirect discharges from food processors. Thus, the tables simply provide a reminder that food processors must comply with General Pretreatment Standards, rather than impose additional categorical pretreatment requirements.

Permit Criteria

In addition to the local limits, your POTW may require you to have a wastewater discharge permit that requires you to monitor, submit reports, and keep records of your industrial wastewater discharges. POTWs are required by federal law to permit significant industrial users (SIUs), and may permit any or **all** of their industrial dischargers, not just significant industrial users as defined below. Your food processing facility is considered a SIU if it meets any of the following criteria:

- Is subject to categorical pretreatment standards (not applicable to SIC 20);
- Discharges an average of 25,000 gallons or more per day of process wastewater (excluding sanitary, noncontact cooling, and boiler blowdown wastewater) (may apply to a food processing facility);
- Contributes a process wastestream which makes up five percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant (may apply to a food processing facility); or
- Is designated on the basis that the industrial discharger has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (may apply to a food processing facility).

If your food processing facility meets any of the above criteria, you must contact the POTW and receive a permit prior to discharging wastewater. However, even if a permit is not required, you will need to get **approval** from the POTW for your industrial wastewater discharge to the POTW.

Additional Requirements

Usually, the monitoring, reporting, and recordkeeping requirements, as well as the wastewater discharge limits, are specified in facility-specific permits. Also, as shown in Table 4-7 *Reporting Requirements for All Indirect Dischargers*, there are some reporting requirements, that apply to **all** indirect dischargers (even if they do not have a permit).

Table 4-7. Reporting Requirements for All Indirect Dischargers³

Requirement	Time Frame
Notify the POTW or State of a discharge of wastewater that could cause problems to the POTW, including slug loading. A slug loading is defined as any relatively large release of a pollutant that might not ordinarily cause a problem when released in small quantities.	Immediately (40 CFR 403.12(f)).
Notify the POTW or state of substantial change in wastewater discharge.	Prior to the change.
Notify the POTW, state hazardous waste authorities and EPA Regional Waste Management Division Director of a discharge of hazardous waste. This is a one-time notification required of those who discharge more than 15 kg of a hazardous substance in a month; or if the substance is acutely hazardous and any amount is discharged. Note: A list of acutely hazardous wastes can be found in 40 CFR 261.30(d) and 261.33(e). The written notification must include (1) the name of the listed hazardous waste (as listed in 40 CFR 261); (2) the EPA hazardous waste number; (3) the type of discharge; and (4) a certification that a program is in place to reduce the amount and toxicity of the hazardous waste that is generated, to the degree that is economically feasible. If discharging more than 100 kg of hazardous waste in one month, the notification also must include (1) identification of the hazardous waste constituents that are contained in the waste; (2) an estimate of the mass and concentration of the constituents in the waste stream discharged during the month; and (3) an estimate of how much will be discharged in the next 12 months. <i>If any new substance is listed under RCRA and a facility discharges the substance, the facility must notify the authorities cited above within 90 days of the new listing.</i>	One-time notification for each hazardous waste discharge [40 CFR 403.12(p)].
Additional Requirements	As specified by POTW

Private Wastewater Treatment

Sometimes, a food processing facility may discharge to a sewer that is owned and/or operated by a private industrial treatment plant. The private plant is not considered a POTW and is not required to implement a pretreatment program for indirect dischargers as described above. However, the plant may have requirements of its own that apply to the discharge of wastes.

³ In addition to the requirements listed for all industrial dischargers in Table 4-7, all SIUs (and most food processors will be SIUs as a result of their high strength waste stream) are required to submit once every six months a description of the nature, concentration and flow of the pollutants required to be reported by the control authority (either the POTW or the State/EPA).

How to Comply If You Are an Indirect Discharger

- T** Obtain a copy of the state and/or local sewer use regulations or ordinance by contacting your state and/or local POTW to determine what requirements apply to your facility.
- T** Contact the POTW or state to determine whether your facility must obtain a permit. Even if you are not required to obtain a permit, you may be required to obtain **approval** for your wastewater discharge.
- T** Meet, at a minimum, the federal **general pretreatment standards** if you are an indirect discharger (even if your POTW does not require a permit).
- T** Verify whether your wastewater discharge is meeting the effluent limits in your permit (if you have one) and that your facility is not discharging any prohibited pollutants (see Section 4.4.1 *Pretreatment Requirements*) to the POTW.
- T** Conduct monitoring, reporting, and recordkeeping activities for your industrial wastewater discharge. Maintain records for all samples collected for monitoring activities for at least three years. These records, which should be available for review at any time, must include:
 - Date, place, method, and time of sampling and the names of the person(s) taking the samples
 - Date(s) the laboratory performed the analyses and the analytical methods used
 - Laboratory that performed the analyses
 - Results of the analyses.
- T** Notify the state or POTW (see Table 4-7):
 - Immediately of a discharge of wastewater from your facility that could cause problems to the POTW, including slug loading
 - Promptly prior to any substantial change in your wastewater discharge
 - Of a hazardous waste discharge from your facility. You also are required to notify state hazardous waste authorities and the EPA Regional Waste Management Division Director.

4.4.2 Calculating Your Surcharge

Even if permits are not required, wastewater treatment by POTWs costs money, and most treatment works charge according to the volume of sewage treated. Many POTWs charge flat rates per unit flow and pollutants, regardless of concentration. Other POTWs may charge extra

if the waste load exceeds certain specified levels. This extra charge is called a surcharge. Surcharges are used for pollutants that typically can be treated at the wastewater treatment plant such as BOD and TSS (two pollutants commonly found in high concentrations at food processing facilities).

By definition, a surcharge is a charge that is based on the pounds of waste material in industrial wastewater **in excess** of normal levels. The surcharge is levied in addition to the normal sewer service charge which is the regular charge for treating normal strength wastes and is generally based on volume alone. Because a surcharge typically is based on the pounds of waste above "normal," there is an economic incentive for facilities to reduce the strength of these wastes. An example of how to calculate a surcharge is provided below. Note, even if a POTW uses a surcharge system, they will also impose a limit, above which you cannot discharge.

Example Surcharge Calculation⁴. The total amount of BOD in your food processing facility's wastewater (BOD loading) can be calculated by multiplying the BOD concentration by the amount of effluent as follows:

$$\text{Amount of BOD} = \text{effluent (million gallons)} \times \text{BOD concentration} \times 8.34 \text{ (conversion factor)}$$

The monthly surcharge is based on the amount that the BOD concentration exceeds a specified level. Assume your food processing plant discharges 4.0 million gallons of wastewater per month with a BOD concentration of 2,500 mg/l and is subject to a surcharge on BOD in excess of 250 mg/l. To find the monthly surcharge cost, multiply the **excess** amount of BOD by the surcharge rate.

$$\text{Amount of BOD subject to surcharge} = (2,500 \text{ mg/l} - 250 \text{ mg/l}) \times 4.0 \text{ Mgal/month} \times 8.34 = 75,060 \text{ lbs/month}$$

If the surcharge rate is 10¢ per lb of excess BOD, the monthly cost is:

$$\text{Surcharge cost} = 75,060 \text{ lbs} \times 10¢/\text{lb} = \$7,506.00.$$

In addition to the charge for excess BOD and TSS, surcharges also may be used for excessively high levels of COD and TKN.

4.5 How Do I Dispose of Industrial Sludge?

Industrial sludge is defined as sludge generated at an industrial facility during the treatment of industrial wastewater with or without combined domestic sewage. The way you choose to dispose of your industrial sludge determines how it is regulated:

- C The application of industrial sludge to land is regulated under 40 CFR 257.

⁴ North Carolina Agricultural Cooperative Extension Service. "Bank or Drain: Cut Waste to Reduce Surcharges for Your Dairy Plant," North Carolina Pollution Prevention Pays Program. CD-26. March 1996. (JWM.) <http://www.bae.ncsu.edu/baepprograms/extension/publicat/wqwm/cd26.html/>.

- C The disposal of industrial sludge in a municipal solid waste landfill is regulated under 40 CFR 258. Although pollutant limits are not imposed under this regulation, sludge to be disposed of must be nonhazardous, as demonstrated by using the Toxicity Characteristic Leaching Procedure (TCLP) and passing a paint filter test. Contact your municipal solid waste landfill for more information on industrial sludge disposal requirements.

Note: Industrial sludge produced by wastewater treatment processes at your food processing facility is **not regulated** under EPA's biosolids rule (40 CFR 503) which allows beneficial uses of sludge generated from treatment of **domestic** wastewater and sludge generated from **municipal** wastewater treatment plants.

4.6 How Do I Comply With Oil Pollution Prevention Requirements?

4.6.1 Introduction and Background

Food processors today use oils for many purposes, including cooking oil for frying, food grade hydraulic oil for moving product, and/or diesel fuel for vehicles and as backup for boilers. Also several segments of the industry refine and/or process animal and vegetable oils for food and/or non-food uses such as soaps, inks, paint or varnish, resins and plastics, lubricants, fatty acid and other products. Non-food uses of vegetable oils are increasing with a corresponding increase in the amounts of these oils being produced and/or stored at refineries and bulk transportation facilities. Facilities that store petroleum and nonpetroleum oils (e.g., vegetable oils and animal fats) must follow Oil Pollution Prevention Regulations, also known as the Spill Prevention, Control and Countermeasures (SPCC) Regulation.

Oil discharges can have a variety of impacts on terrestrial and aquatic ecosystems, and on human drinking water resources and water treatment plants. Petroleum oil spills can also create the potential for explosion and fires, that, in turn, may lead to more equipment failures, more spills, and may endanger people as well as wildlife. Like petroleum oils, vegetable oils and animal fats and their constituents can severely harm aquatic and terrestrial organisms and their habitats, foul shorelines, clog drinking water treatment plants, upset or disable a wastewater treatment plants, and catch fire when ignition sources are present.

EPA issued the SPCC regulation in 1973 (40 CFR 112) to address the oil spill prevention provisions contained in the Clean Water Act (CWA) of 1972.⁵ The main objective of the SPCC program is to prevent oil spills from regulated aboveground and underground storage tanks from reaching navigable waters of the U.S. or adjoining shorelines (see Section 4.3 *Am I A Direct Discharger?* for a definition of navigable waters). In 1990, Congress passed the Oil Pollution Act (OPA) that amended Section 311 of the CWA to require "substantial harm" facilities to develop and implement facility response plans (FRPs) (see Section 4.6.3 *Facility Response*

⁵ EPA's Oil Program Center, Office of Emergency and Remedial Response (OERR), is revising the SPCC regulation and expects to finalize it in mid-1999. Some SPCC criteria and other provisions may change as a result. This regulatory revision pulls together changes that EPA has proposed to the SPCC regulation in three separate Federal Register notices -- one each in 1991, 1993 and 1997.

Plans). FRPs help facility owners/operators develop a response organization and identify the resources needed to respond to an oil spill adequately and in a timely manner. A unique aspect of these regulations is that unlike many other EPA programs, EPA may not delegate implementation of the SPCC regulation and the FRP regulation to state or tribal governments. States, however, may have their own requirements; therefore be sure to contact your state agency to find out about applicable requirements.

What is an Oil?

Oils are defined under several statutes including the CWA and its amendments under the Oil Pollution Act (OPA) of 1990. As a result, overlapping regulatory interpretations exist. For this reason, the EPA and the U.S. Coast Guard (USCG) are currently developing a nationally consistent program policy and methodology for facilities to determine whether a given substance is considered an oil under the existing CWA.

Under the CWA, the definition of oil includes oil of any kind and any form, such as petroleum and nonpetroleum oils. Generally, oils fall into the following categories: crude oil and refined petroleum products, edible animal and vegetable oil, other oils of animal or vegetable origin, and other nonpetroleum oils.

Many substances are easily recognizable as oils (e.g., gasoline, diesel, jet fuel, kerosene, and crude oil). Under the CWA definition, many other substances are considered oils which may not be easily recognizable by the industry, including mineral oil, the oils of vegetable and animal origin and other nonpetroleum oils. Therefore, your facility should work closely with the EPA and USCG (if applicable) to make determinations for the substances you store, transfer, or refine.

EPA's regulation requires facilities to prepare a plan and implement measures to prevent and control spills, regardless of the cause (e.g., human operational error, equipment failure or natural causes, such as lightning striking a tank). Facilities that fully comply with the requirements reduce the number and severity of discharges, thereby reducing the high costs of environmental cleanup or the additional permitting requirements that could be imposed in the event of a discharge. Facilities that are not in compliance are at greater risk to experience an oil spill that may result in a discharge into a navigable waterway or adjoining shoreline. The cost of cleanup would not only include repairing the damage to the facility (e.g., soil removal or equipment repair), but could extend beyond the facility's boundaries to affected offsite areas. Regulatory agencies may require modifications to operations or revisions to plans.

Use of Terms: *The following terms are used throughout this section: "spill," "discharge," and "release." They are used either as they appear in the regulations or as seems most appropriate for the discussion. Please refer to the regulations for specific definitions.*

4.6.2 SPCC Requirements

Nontransportation-Related Facilities

The SPCC requirements (40 CFR 112.3 through 112.7) of the Oil Pollution Prevention regulation apply to **nontransportation-related facilities** that meet these criteria:

- C Could reasonably be expected to discharge oil in harmful quantities into navigable waters of the United States or upon the adjoining shorelines, AND
- C Have (1) an aboveground oil storage capacity of more than 660 gallons in a single container; or (2) a total aboveground oil storage capacity of more than 1,320 gallons; or (3) a total underground storage capacity of more than 42,000 gallons.

Storage Capacity: Remember, the requirements apply specifically to your storage capacity, regardless of whether the tanks are completely filled.

Many facilities have aboveground storage tanks (ASTs) with storage capacities that meet the above criteria and therefore, must comply with the SPCC requirements. In addition to these federal requirements, there are often state and local requirements for ASTs. These requirements typically incorporate standards established by organizations such as the National Fire Protection Association and the American Petroleum Institute. Construction, design, and operation requirements for ASTs are typically governed by state and local fire marshals or an environmental officer. In addition to consulting with your fire marshal, you should also check with your state regulatory agency for information on additional AST requirements.

According to the SPCC proposed rule (October 21, 1991; 56 FR 54612), an AST is a tank or combination of tanks (including the connecting pipes) used to contain regulated substances that breaks the natural grade of the land.

Your AST system(s) may not be subject to EPA's SPCC regulations (40 CFR 112) if it meets the following conditions:

- Your onshore or offshore facility which, due to its location, could **not** be reasonable expected to discharge oil into or upon navigable water of the U.S. or adjoining shorelines.
- Equipment or operations of vessels or transportation-related facilities (both onshore or offshore) are subject to the authority of the Department of Transportation, with certain exceptions.⁶

⁶ The exceptions are that certain offshore facilities along the Great Lakes, rivers, coastal wetlands, and the Gulf Coast barrier islands are subject to EPA's Oil Pollution Prevention regulations, as a result of the Department of Interior's (DOI's) redelegation of authority for these facilities to EPA in a *Memorandum of Understanding* among EPA, DOI and DOT, effective February 3, 1994.

If your facility is subject to the SPCC requirements based on the above description, EPA requires you to prepare an SPCC plan (see below) and conduct an initial screening to determine whether you are required to develop an FRP. Those facilities that could cause “substantial harm” to the environment must prepare and submit an FRP to EPA for review (see Section 4.6.3 *Facility Response Plans*).

SPCC-regulated facilities must also comply with other federal, state, or local laws, some of which may be more stringent.

The SPCC Plan

The SPCC Plan is a written site-specific description detailing how a facility's operation complies with 40 CFR 112. In order to comply with 40 CFR 112, the SPCC Plan must be a carefully thought out plan, prepared in accordance with good engineering practices and which has the approval at a level with the authority to commit the necessary resources.

Regulated facilities in existence at the time the regulation went into effect, on January 10, 1974, were required to have a Plan prepared within 6 months of the effective date of the regulation and to have fully implemented the Plan within one year of the effective date of the regulation.

Newly constructed facilities must prepare an SPCC Plan within 6 months of the date they commence operations and to fully implement the Plan within one (1) year of starting operations. If you, as facility owner or operator, are unable to implement an SPCC Plan within this time frame due to circumstances beyond your control, you may request an extension, in writing, from the EPA Regional Administrator by following the procedures explained in 40 CFR 112.3(f).

While each SPCC Plan is unique, certain elements must be included in order for the SPCC Plan to comply with the provisions of 40 CFR 112. If a section does not apply to your facility, your Plan must state this. These elements include, but are not limited to, the following:

- C **Professional Engineer (PE) certification:** The SPCC Plan must be reviewed and certified by a registered PE who is familiar with the facility and with 40 CFR 112. The engineer's name, registration number and state of registration must be included as part of the SPCC Plan. The engineer's seal should be affixed to the Plan as part of the certification. By certifying the Plan, the engineer is attesting that he/she has examined the facility and is familiar with the facility, its SPCC Plan and the SPCC requirements, and that the Plan has been prepared in accordance with good engineering practices. In order to satisfy the requirements of 40 CFR 112.5, all subsequent amendments must also be certified by a PE, as described above.
- C **SPCC Plan Kept Onsite:** If your facility is manned at least 8 hours a day, you are required to maintain a complete copy of the SPCC Plan onsite. If the facility is manned less than 8 hours a day, the Plan must be kept at the nearest field office that is manned. The Plan must be made available for review by the EPA Regional Administrator or his/her representative during normal business hours.
- C **Management Approval:** The SPCC Plan have the full approval of management at a level with the authority to commit the resources necessary to implement the Plan. The appropriate manager's signature should be included in the SPCC plan.

- C **Plan Sequence Follows 40 CFR 112:** The SPCC Plan must include a complete discussion of your facility's conformance with all applicable SPCC requirements and shall follow the sequence of 40 CFR 112.7. To help facilities in preparing and reviewing SPCC Plans, the EPA Oil Program developed a sample Plan that you may obtain from your EPA Regional Office.

All spill prevention practices used at your facility must be addressed with a complete and accurate description included in the Plan. It is possible that some items in 40 CFR 112 are not applicable to your facility. Every item must be addressed in the Plan, even if your facility does not have every item. For example, under facility transfer operations, the first item requires that buried piping be protectively wrapped or cathodically protected. Some facilities may not have any buried piping. For these cases, the SPCC Plan should indicate that there is no buried piping at the facility.

- C **Spill History:** If your facility has experienced one or more spill events within 12 months prior to January 10, 1974, you should include a written description of each spill, corrective actions taken, and plans for preventing recurrence in the SPCC Plan.

- C **Spill Prediction:** Where industry experience indicates a reasonable potential for equipment failure, the SPCC Plan should include a prediction of direction, rate of flow, and total quantity of oil that could be discharged from your facility as a result of each major type of failure. Such failures include, but are not limited to, tank failure due to overflow, rupture or leakage; pipeline failure due to rupture or corrosion; leaking flanges, gaskets, expansion joints, valves, or catch pans; spills from bulk oil loading or unloading operations; and leaks due to other causes, such as failure of wastewater or storm water treatment or disposal systems.

Topographic maps are often useful for predicting and illustrating the direction of flow and bodies of water which might be affected by a spill.

- C **Plan review:** The SPCC Plan must be amended whenever there is a change in facility design, construction, operation or maintenance which materially affects the facility's potential to discharge oil into or upon navigable waters or adjoining shorelines.

In addition, the owner or operator of a regulated facility, is required to review and evaluate the SPCC Plan at least once every three (3) years from the time the facility becomes subject to the SPCC requirements. Within six (6) months after this review and evaluation, you must amend the SPCC Plan to include more effective prevention and control technology:

- if such technology will significantly reduce the likelihood of a spill event from the facility, **and**
- if the technology has been field-proven at the time of the review.

In order to satisfy the requirements of 40 CFR 112.5, all such amendments must be certified by a PE, as described earlier in this section.

- C **Amendment by EPA Regional Administrator (RA):** After review of the SPCC Plan and any other information submitted, the RA may require you to amend the SPCC Plan if (1) it does not meet the SPCC requirements or (2) such amendment is necessary to prevent or contain future discharges from the facility. The RA will

consider any recommendations made by the state agency in charge of water pollution control during the review process. If the RA proposes that the SPCC Plan be amended, the RA shall provide written notification to you specifying the terms of the proposed amendment. Upon receipt of this notification, you will then have 30 days in which to respond, in writing, to the proposal, and offer any additional information, arguments or counterproposals.

The RA will then review all available information and either notify you of any amendment required or rescind the original notice. Usually, if an amendment is required, it must be made part of the SPCC Plan within 30 days after the final EPA notice and implemented as soon as possible, but not later than six (6) months after you amend the Plan (unless the RA specifies another date). You may appeal an RA's decision regarding any amendment, in writing, to EPA's Administrator within 30 days of receipt of the RA's final notice. You must also send a copy of the appeal to the RA.

- C **Secondary Containment or Contingency Plans:** You are required to install appropriate containment and diversionary structures or equipment, such as dikes, berms, and retaining walls, as described in 40 CFR 112.7, to prevent discharged oil from reaching navigable water, unless it can be clearly demonstrated that installation of such structures or equipment is not practical or practicable. Impracticability pertains primarily to those cases where severe space limitations or other physical constraints may preclude installation of structures or equipment to prevent oil from reaching navigable water. Demonstrating impracticability on the basis of economic considerations is not acceptable.

In the event that such impracticability can be demonstrated, you must provide the following plan and resources in place of containment structures or equipment:

- A strong oil spill contingency plan following the provisions of 40 CFR 109, and
- A written commitment of manpower, equipment and materials required to expeditiously control and remove any harmful quantities of oil discharged.

*Note: FRPs developed by **substantial harm** facilities may meet the above requirements for an oil spill contingency plan (see Section 4.6.3 Facility Response Plans).*

- C **Spill Reporting:** First, you must report oil releases to the **National Response Center at 1-800-424-8802 or 703-412-9810 (Washington, D.C. area)** (see Section 4.6.4 *Oil Spill Notification, Response, and Recovery*).

In addition, the owner or operator of a regulated facility must submit, in writing, certain information including the SPCC Plan to the EPA RA within 60 days, if the release meets either of the following conditions:

- **Either** a single discharge of more than 1,000 gallons of oil;
- **Or**, two reportable spills/discharges of oil in harmful quantities, during any 12-month period, into or upon navigable waterways, shorelines, etc.

The required information includes:

- Name of the facility;
- Name(s) of the owner or operator of the facility;
- Location of the facility;
- Date and year of initial facility operation;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Description of the facility, including maps, flow diagrams and topographical maps;
- The cause(s) of such spill(s), including a failure analysis of the system or subsystem in which the failure occurred;
- Corrective actions and/or countermeasures taken, including a complete description of equipment repairs or replacements; and
- A copy of the SPCC Plan and any other information pertinent to the Plan or the spill(s).

A complete copy of all information sent to the RA must also be sent to the state agency in charge of water pollution control activities.

- C **Performance-Based SPCC Requirements:** In addition to general requirements, the SPCC rule also has performance-based requirements in 40 CFR 112.7 for drainage control; bulk storage tanks; tank car and truck loading and unloading racks; various onshore and offshore production facility operations; onshore and offshore oil drilling, production, and workover facilities; security; and training. These specific requirements are not discussed further in this guidance. Please refer to 40 CFR 112.7 for more information.

4.6.3 Facility Response Plans (FRPs)

In 1990, Congress passed the Oil Pollution Act (OPA) which amended Section 311 of the Clean Water Act to require “substantial harm” facilities to develop and implement FRPs. EPA’s FRP requirements, which were published as a final rule in the Federal Register on July 1, 1994, are codified at

40 CFR 112.20 and 112.21 and include Appendices A through F. Under the FRP requirements, owners and operators of facilities that could cause “substantial harm” to the environment by discharging oil into navigable water bodies or adjoining shorelines must prepare plans for responding, to the maximum extent practicable, to the worst case discharge and to a substantial threat of such a discharge of oil.

For more information on FRPs, access EPA’s Oil Program webpage at <http://www.epa.gov/oilspill/>.

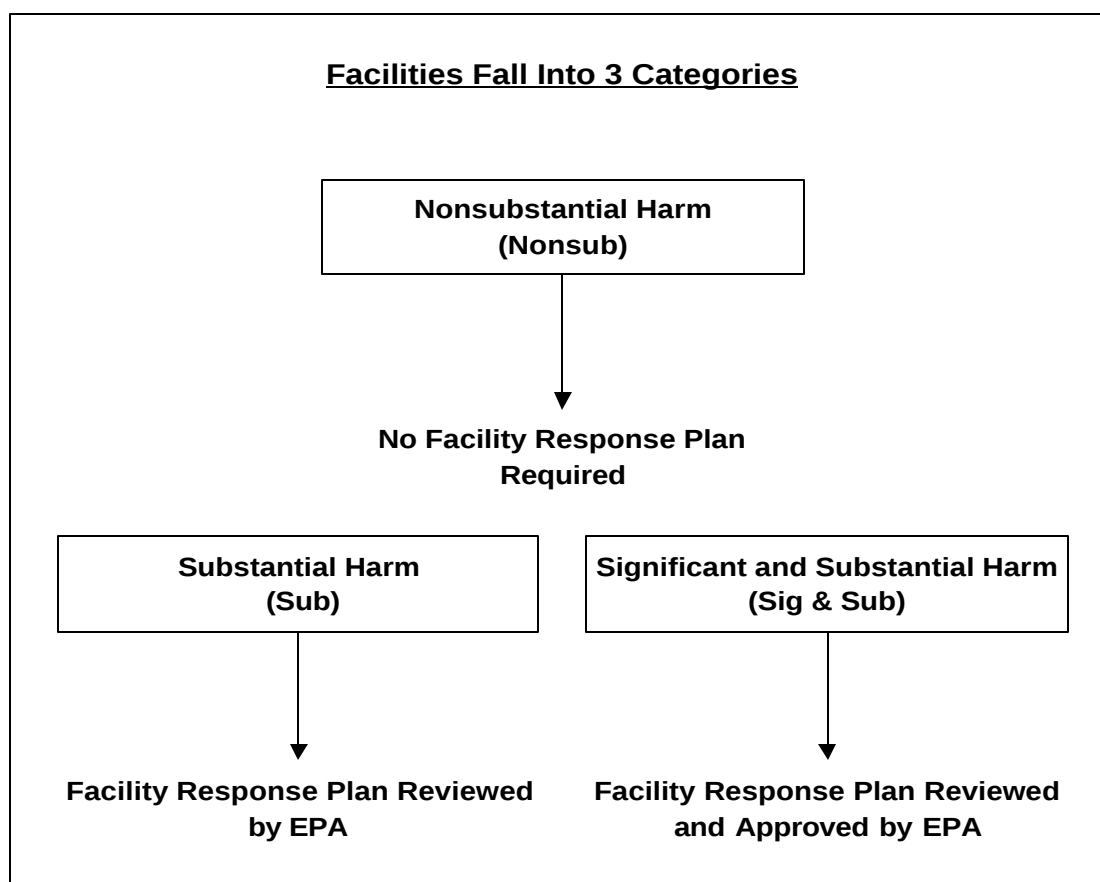
Determination of Response Plan Applicability

Owners or operators of all facilities subject to the Oil Pollution Prevention Regulation must familiarize themselves with the rule to determine whether their facility meets the “substantial harm” criteria. Facilities subject to the FRP requirements under 40 CFR 112.20 are referred to either as **substantial harm** facilities or **significant and substantial**

Although you don’t have to submit it to EPA, your facility should maintain the Certification of the Applicability of the Substantial Harm Criteria with your SPCC plan.

harm facilities. EPA has different roles when handling the FRPs for these 2 categories of facilities. FRPs from substantial harm facilities **are reviewed** by EPA while FRPs from significant and substantial harm facilities are **reviewed and must be approved** by EPA (see Figure 4-1 *Determination of Response Plan Applicability*). Facilities that do not fall into these two categories do not have to submit FRPs. Under 40 CFR 112.20 (e), facilities that **do not** meet the “substantial harm” criteria must document this determination by completing the “Certification of the Applicability of the Substantial Harm Criteria Checklist,” provided as 40 CFR 112, Appendix C, Attachment C-II. This certification should be maintained with the facility’s SPCC plan.

Figure 4-1. Determination of Response Plan Applicability



Substantial Harm Facilities

Facilities that are considered to pose a threat of substantial harm are required to prepare and submit FRPs. EPA recognizes two ways in which a facility may be identified as posing a risk of substantial harm:

- **Either** through a self-determination process (EPA has established criteria located in 40 CFR 112.20 to assist facilities in making the determination - see below),

- Or by a determination of the EPA Regional Administrator (RA).

As outlined in 40 CFR 112.20 (f)(1), your facility has the potential to cause substantial harm if:

- C **Either** the facility transfers oil over water to or from vessels **and** has a total oil storage capacity, including both aboveground storage tanks (ASTs) and underground storage tanks (USTs), greater than or equal to 42,000 gallons;
- C **Or** the facility's total oil storage capacity, including both ASTs and USTs, is greater than or equal to one million gallons **and one of the following is true:**
 - The facility does not have secondary containment for each aboveground storage area sufficient to contain the capacity of the largest AST within each storage area plus freeboard to allow for precipitation;
 - The facility is located at a distance such that a discharge could cause injury to fish and wildlife and sensitive environments;
 - The facility is located at a distance such that a discharge would shut down a public drinking water intake; or
 - The facility has had a reportable spill greater than or equal to 10,000 gallons within the last five years.

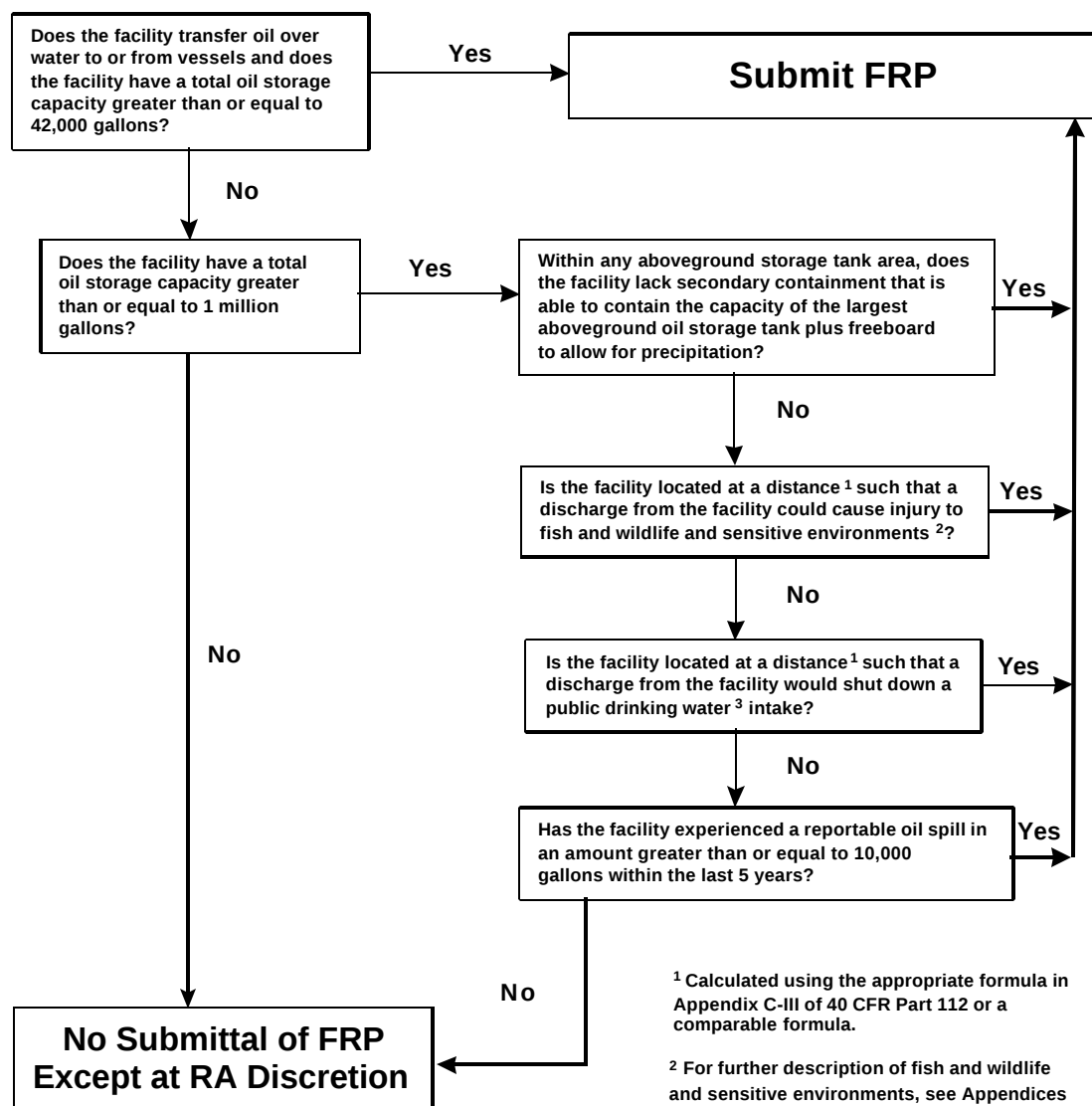
EPA's RA may determine whether a particular facility may cause "substantial harm." EPA's RA may consider factors similar to the self-selection criteria, as well as other factors, including the type of transfer operations at a facility, the facility's oil storage capacity, lack of secondary containment, proximity to environmentally sensitive areas or drinking water intakes, and/or the facility's spill history. These factors and how they are applied are shown in Figure 4-2 *Flowchart of Criteria for Substantial Harm* shown on the next page and also in 40 CFR 112, Appendix C. The EPA RA will notify your facility if EPA has determined that your facility poses a threat of "substantial harm."

Significant and Substantial Harm Facilities

EPA is also required to identify a **subset** of substantial harm facilities that could cause **significant and substantial harm** to the environment upon a release of oil. EPA bases its determination on factors similar to the criteria used to determine substantial harm, as well as the age of tanks, proximity to navigable water, and spill frequency. Facilities are notified by EPA in writing of their status as posing significant and substantial harm. If your facility is notified by EPA, you must submit your FRP to EPA for review and approval. The RA will review your FRP and inspect your facility for viability and compliance with the regulations before EPA approves the plan.

Remember: FRPs from substantial harm facilities are reviewed by EPA while FRPs from significant and substantial harm facilities are reviewed and must be approved by EPA.

Figure 4-2. Flowchart of Criteria for Substantial Harm



¹ Calculated using the appropriate formula in Appendix C-III of 40 CFR Part 112 or a comparable formula.

² For further description of fish and wildlife and sensitive environments, see Appendices I, II and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments: (59 FR 14713, March 29, 1994) and the applicable Area Contingency Plan.

³ Public drinking water intakes are analogous to public water system as described at 40 CFR 143.2(c)

FRP Development

If it has been determined, either through the self-selection process or by notification from the EPA RA, that your facility poses a threat of “substantial harm” to the environment, you must prepare and submit a FRP to the appropriate EPA Regional Office.

To assist you in preparing a FRP, EPA has prepared and included a “model facility response plan” in 40 CFR 112.2, Appendix F. EPA recognizes that many facilities may have existing *response* plans prepared to meet other requirements. Under OPA, you do not need to prepare a separate FRP provided that your original response plan:

EPA also recognizes that many facilities have established SPCC plans. Although response plans and prevention plans are different, and should be maintained separately, some sections of the plans may be the same. Under OPA regulations, you are allowed to reproduce or use those sections of the SPCC plan in the FRP.

- (1) satisfies the appropriate requirements and is equally as stringent;
- (2) includes all elements described in the model plan;
- (3) is cross-referenced appropriately; and
- (4) contains an action plan for use during a discharge.

FRPs must:

- C Be consistent with the National Contingency Plan (NCP) and the Area Contingency Plans.

The NCP, also called the National Oil and Hazardous Substances Pollution Contingency Plan, is the federal plan for responding to both oil spills and hazardous substance releases. See <http://www.epa.gov/oilspill/ncp> for more information.

- C Identify a qualified individual having full authority to implement removal actions, and require immediate communication between that person and the appropriate federal authorities and responders.
- C Identify and ensure availability of resources to remove, to the maximum extent practicable, a worst-case discharge.
- C Describe training, testing, unannounced drills, and response actions of persons at the facility.
- C Be updated periodically.
- C Be submitted for approval with each significant change.

Deadlines for Preparing and Submitting FRPs⁷

The time that you have to prepare and submit a FRP will vary depending on several factors, including the following:

- **Notification from EPA Regional Administrator:** If EPA notifies your facility that you are required to submit a facility response plan, you must prepare and submit a plan within **six (6) months**.
- **Newly Constructed Facilities:** If your facility is newly constructed, you are required to submit the FRP **prior to the start of operations**. After sixty (60) days, you must make adjustments to the FRP to reflect changes that occur during the startup phase and resubmit the FRP.
- **Planned Facility Changes:** If your facility undergoes a planned change in design, construction, operation, or maintenance that places it in the designation of a **substantial harm facility**, then you must submit a FRP **prior to the start of operations** of the portion of your facility undergoing the changes.
- **Unplanned Facility Changes:** If your facility falls under the substantial harm facility designation because of an unplanned event or change in characteristics, then you must submit your FRP **within six (6) months of the unplanned event**.

Response Plan Maintenance

Under 40 CFR 112.20(g), facilities must periodically review their response plans to ensure consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Area Contingency Plans (ACPs). Consequently, a facility that is required to prepare a response plan must review relevant portions of the NCP and the applicable ACPs annually and update its FRP as appropriate. You must submit revised portions of your response plan within 60 days of each facility change, that may materially affect (1) the response to a worst case discharge or (2) the implementation of the response plan.

Area Contingency Plans (ACPs) include detailed information about resources (e.g., equipment and trained response personnel) available from the government agencies in the area. They also describe the roles and responsibilities of each responding agency during a spill incident. You can order copies of ACPs from the National Technical Information Service (NTIS) by calling 1-800-553-6847. To obtain the NTIS ordering number for your area's ACP, first call the RCRA/UST, Superfund and EPCRA Hotline at 1-800-424-9346 or 703-412-9810.

⁷ The initial statutory deadline for "substantial harm facilities" **either** to submit FRPS **or** to stop handling, storing or transporting oil was February 18, 1993. EPA's regulatory deadline for "substantial harm facilities" and "significant and substantial harm facilities" to submit FRPs or stop handling, storing or transporting oil was August 30, 1994, the effective date of the FRP rule.

Recordkeeping

FRP Requirements Not Applicable: If you determine that the response planning requirements at 40 CFR 112.20 do not apply to your facility, then you must certify and maintain a record of this determination using 40 CFR 112, Appendix C, Attachment C-II.

FRP Requirements Applicable: If your facility is subject to the response planning requirements at 40 CFR 112.20, you are required to maintain the response plan at the facility. You are also required to maintain updates to the plan to reflect material changes to the facility and to log activities such as discharge prevention meetings, response training drills, and exercises. You must keep the records of these activities for a period of five years.

Training and Response Drills

All facilities (i.e., “substantial harm” and “significant and substantial harm” facilities) subject to facility response planning requirements must address training and response drills. Oil spill response training is an important element in EPA’s oil spill prevention and preparedness efforts. Because operator error is often the cause of an oil spill, training and briefings are critical for prevention of a spill as well as response to a spill. Training encourages up-to-date planning for the control of, and response to, an oil spill and also helps to sharpen operating and response skills, introduces the latest ideas and techniques, and promotes interaction with the emergency response organization and familiarity with the facility’s SPCC and FRP plans.

Under 40 CFR 112.20(h)(8), FRPs must include:

- C Information about self-inspection drills, exercises, and response training, including descriptions and logs of training and drill or exercise program; and
- C Documentation of tank inspections, equipment inspections, response training meetings, response training sessions, and drills and exercises.

Consequently, FRPs may be revised based on evaluations of the drills and exercises.

Facility Response Training Programs.

Under 40 CFR 112.21 of the Oil Pollution Prevention regulation, facilities are required to develop and implement facility response training programs. It is recommended that the training program be based on the **USCG Training Elements for Oil Spill Response**, as applicable to facility operations. An alternative program can also be acceptable if approved by the Regional Administrator.

Facility Response Drills/Exercises. Under 40 CFR 112.21, your facility is also required to develop and implement a program of response drills and exercises, including evaluation

The PREP guidelines (USCG-X0191) and the Training Reference for Oil Spill Response (USCG-X0188) are available by mail or fax:

*TASC Department Warehouse
3341Q 75th Avenue
Landover, MD 20785
FAX: (301) 386-5395*

When requesting copies, please indicate the document name and publication number.

procedures to test the effectiveness of your response plan. A program that follows the National Preparedness for Response Exercise Program (PREP) will meet EPA's exercise requirements. An alternative program can also be acceptable if approved by the EPA RA.

4.6.4 Oil Spill Notification and Response

Notification - The "One" Immediate Phone Call to the NRC

NATIONAL RESPONSE CENTER

1-800-424-8802

In the Washington, D.C. area:

703-412-9810

**For more information on the NRC, access
<http://www.epa.gov/oilspill/NRC>**

- Ø Immediately notify the National Response Center (NRC) of discharges/releases of oils and hazardous substances by calling the NRC number.
- Ù If notifying the NRC is not practicable, then immediately notify the pre-designated On-Scene Coordinator of EPA or the USCG. (This means that you must know who your designated On-Scene Coordinator is before the release or discharge occurs.)
- Ú As required by the relevant Area Contingency Plan, report spills to the state, the tribal government, the territory or commonwealth where the spill occurred.

When an oil spill enters into or threatens any navigable water in the United States, coordinated teams of local, state, and national personnel are called upon to help contain the spill, clean it up, and assure that damage to human health and the environment is minimized. EPA has established requirements for reporting spills into navigable waters or adjoining shorelines. Specifically, facilities are required to report discharges of oil in quantities that may be harmful to public health or welfare or the environment.

EPA has determined that discharges of oil in quantities that may be harmful include those that:

- C Violate applicable water quality standards;
- C Cause a film or "sheen" upon or discoloration of the surface of the water or adjoining shorelines.

- C Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Also see related notification and reporting requirements for the discharge/release/spill of hazardous substances under EPCRA and CERCLA summarized in this guide in Section 7.3 *Emergency Release Notification*. For a quick, multimedia reference guide to the notification requirements under CWA, OPA, RCRA, EPCRA, CERCLA, CAA and OSHA, see Section 9.3 *Notification and Response Requirements*

Any person in charge of a vessel or onshore or offshore facility should notify the **National Response Center (NRC)** at **1-800-424-8802** or **703-412-9810 (Washington, D.C. area)** as soon as he/she had knowledge of a discharge from a vessel or facility. Spills or releases of oil which reach navigable waters or adjoining shoreline (including storm drains) or land areas which may threaten waterways must always be reported to the NRC.

You should also be aware of state, tribal, and local requirements for spill reporting. For example, there may be a requirement to report all spills meeting certain quantity thresholds even if the spill does not leave the contained area.

Reporting to the National Response Center

When you contact the National Response Center, the staff person will ask you for the following information:



- ? Your name, location, organization, and telephone number.
- ? Name and address of the party responsible for the incident.
- ? Date and time of the incident.
- ? Location of the incident.
- ? Source and cause of the release or spill.
- ? Types of material(s) released or spilled.
- ? Quantity of materials released or spilled.
- ? Danger or threat posed by the release or spill.
- ? Number and types of injuries.
- ? Weather conditions at the incident location.
- ? Any other information that may help emergency personnel respond to the incident.

The NRC records and maintains all spill reports in a computer database called the Emergency Response Notification System (ERNS), which is available to the public. The NRC relays the spill information to the EPA and U.S. Coast Guard (USCG), depending on the location of the incident.

Specifically, the NRC notifies representatives of EPA or the USCG, known as On-Scene Coordinators (OSCs) are notified. The OSC is the federal official charged with directing a spill

response through the Unified Command/Integrated Command System adopted by EPA and USCG. This intergovernmental coordinating system encourages, wherever possible, shared decision making by the federal lead response agency (EPA or USCG), the state(s) and the party responsible for the discharge/release.

Spill Response

The first and most immediate response is that of your facility. For this reason, the quantity, operation, and location of your facility's response equipment and supplies are all critical to effective oil recovery.

- C **SPCC/FRP Regulated Facilities (or Substantial Harm Facilities):** Within the SPCC-regulated community, facilities that may cause substantial harm to the environment or exclusive economic zone based on the quantity and location of their oil storage are required to prepare FRPs to ensure that these facilities have the capability to response to worst case scenario discharges. FRPs greatly assist the facility and response agencies to expedite and coordinate cleanup efforts.
- C **Other SPCC Regulated Facilities:** It is recommended that all other facilities in the SPCC-regulated community be prepared to respond to a spill by identifying control and response measures in their SPCC Plans. Every facility should have appropriate spill response equipment available and easily accessible. Absorbent pads and booms, disposal containers or bags, shovels, an emergency response guidebook, and a fire extinguisher are essential components of a spill kit. Portable pumps may also be a good investment. It is also recommended that facilities coordinate with local responders, other nearby facilities, and contractors before a spill occurs so that response is accomplished most efficiently. Facility personnel, including seasonal employees, must be educated and trained in spill response, notification, and oil recovery. By being prepared to respond, the impact of a discharge on human health or the environment may be minimized and cleanup costs and fines resulting from improper notification or response reduced.
- C **First Response:** In the event of an oil spill, the facility response plan is immediately activated. Depending on the nature of the spill, local, area, regional, or national plans may also be activated. The OSC will activate these plans if the facility is not equipped or capable of handling the response.
- C **On-Scene Coordinators:** The designated OSC from EPA or USCG is responsible for determining how to respond to the spill, i.e., determining the resources, both personnel and equipment needed. The OSC does this based on his/her assessment of several factors, including the following: the magnitude and complexity of the spill; the availability of appropriate response equipment and trained personnel; and the ability of the responsible party, or local and/or state responders to respond to the spill.

Although the OSC is responsible for coordinating federal efforts with local, state and regional response efforts, in practice the role of the OSC varies. Depending on the OSC's assessment, he/she may do the following: direct the response; direct the response in cooperation with other parties; oversee that the responses is conducted by other parties; provide limited or periodic oversight; or determine that a federal response is not needed.

For example, small spills may be cleaned up by the facility (or responsible party) or by local response agencies, while larger spills may require regional response efforts. In either cases, the OSC is required to oversee and monitor the spill response to make sure that all appropriate actions to prevent threats to human health or the environment are taken. If, however, a facility is handling a smaller spill adequately, the OSC may not go to the site.

- C **Oil Recovery:** The OSC, response teams, and a network of experienced agencies will decide on the most effective method of cleanup. These agencies must coordinate cleanup efforts carefully and efficiently to protect response personnel, recreational areas, drinking water reservoirs, and wildlife from the potentially catastrophic effects of an oil spill.

Selecting the best method, or combination of methods, for recovering oil after a spill is based on several factors. The type and amount of oil spilled and the water body are the most important considerations. The mechanisms most frequently employed to control oil spills and minimize their impact on human health and the environment fall into four broad categories: (1) mechanical containment or recovery includes booms, barriers, skimmers, and sorbent materials; (2) chemical and biological methods include dispersants, gelling agents, and biological agents; (3) physical methods include wiping, pressure washing, raking, and bulldozing, also scare tactics, such as floating dummies, to keep birds away from a spill area; and (4) natural processes, which include evaporation, oxidation, and biodegradation.

For more information, visit EPA's Oil Program at <http://www.epa.gov/oilspill/>.

4.7 Compliance Issues For Selected Activities

4.7.1 Land Application of Wastewater

Land application. Land application is the process of discharging wastewater from an industrial facility, such as a food processing facility, to land or agricultural crops. This process can be beneficial to the crops which utilize the water and the carbohydrates and nutrients in the wastewater. Land application generally is regulated by the state and may require a permit. The permit is designed to regulate contaminants in the wastewater, and ensure that the wastewater does not run off into nearby waterways.

Some typical requirements that may be included in a permit for the land application of wastewater include:

- A "no discharge" requirement prohibiting runoff to waterways
- Prohibitions of land application (including spraying) during wet weather or when the ground is frozen
- Monitoring of pollutant levels in the wastewater or sludge
- Limits on the amount of pollutants and the amount of wastewater applied.

- Installation of monitoring wells and monitoring of groundwater
- Installation of a pretreatment system to pretreat the wastewater before land application.

Check with your state regulatory agency for more information on the requirements for land application of industrial wastewater.

Overland flow treatment system. Some facilities may use an overland flow treatment system for treating their wastewater. This type of system, which results in discharges to a receiving water, requires a NPDES permit. Check with EPA or your state regulatory agency for more information.

4.7.2 Construction or Plant Modification Activities

There are other federal regulations that potentially apply to construction or plant modification activities at your facility, including regulations addressing wetlands and endangered species. These are discussed below.

Wetlands. Activities, such as construction or plant modification, at your facility that impact wetlands may require a permit. Wetlands, which commonly are called swamps, marshes, fens, bogs, vernal pools, playas, and prairie potholes, are a subset of “waters of the United States” as defined in Section 404 of the CWA. The placement of dredge and fill material into wetlands and other water bodies (i.e., waters of the United States) is regulated by the U.S. Army Corps of Engineers (Corps) under 33 CFR 328. The Corps regulates wetlands by administering the CWA Section 404 permit program for activities that impact wetlands. EPA’s authority under Section 404 includes veto power of Corps permits, authority to interpret statutory exemptions and jurisdiction, enforcement actions, and delegating the Section 404 program to the states.

Because wetlands and the regulations protecting them are dynamic, it is important to check with the Corps district office even if you think a permit may not be required for your activity. If your project area includes wetlands, the Corps district office also may suggest that your facility retain a consultant to delineate wetland boundaries. In addition to conducting the wetland delineation, some wetland consultants also can help with the permit application process.

In addition to federal regulations, some state and local governments have laws protecting wetlands. Laws may include those that require permits for construction in wetlands. To find out if your proposed activities require a state permit, contact the appropriate department (e.g., state department of water resources, natural resources, or the environment) in the state where the activities will take place.

Some states or local governments may have stricter wetland regulations than CWA Section 404, so if your activity does not require a Section 404 permit (and involves a wetland) you still should consult with the appropriate state agency.

Endangered or Threatened Species. The federal Endangered Species Act (ESA), administered by the U.S. Department of Interior’s (DOI) Fish and Wildlife Service (USFWS) and the Department of Commerce’s National Marine Fisheries Service (NMFS), establishes a program for the conservation of endangered and threatened species and the habitats in which they are found. State laws or regulations may be more, but not less restrictive, than the federal ESA or its regulations.

If you are engaged in, or planning to engage in, activities such as construction or plant modification, you must be aware if any endangered or threatened species exist on the property involved, or if the property is considered part of a listed species' critical habitat. If neither is the case, the ESA does not apply. However, if the action will "take" a species or degrade critical habitat, some form of mitigating action must be taken to prevent harming the species. Contact your local USFWS endangered species coordinator or talk with a qualified consultant to clear up any specific questions relating to your facility's activities.

The term "take" includes harassing, harming, hunting, killing, capturing, and collecting.