# National and Regional NPRI Offices

### Headquarters

National Pollutant Release Inventory
Environment Canada
9th Floor, Place Vincent Massey
351 St. Joseph Blvd.
Hull, Quebec
K1A 0H3

Tel: (819) 953-1656
Fax: (819) 994-3266
eMail: NPRI@ec.gc.ca

### Newfoundland and Labrador, Prince Edward Island, New Brunswick and Nova Scotia

National Pollutant Release Inventory
Environment Canada
5th Floor, Queen Square
45 Alderney Drive
Dartmouth, Nova Scotia
B2Y 2N6

Tel: (902) 426-4482
Fax: (902) 426-8373
eMail: npri_atl@ec.gc.ca

National Pollutant Release Inventory
Environment Canada
Northwest Atlantic Fisheries Centre
P.O. Box 5037
St John's, Newfoundland
A1C 5V3

Tel: (709) 772-4005
Fax: (709) 772-5097

### Quebec

National Pollutant Release Inventory
Environment Canada
105 McGill Street, 4th floor
Montreal, Quebec
H2Y 2E7

Tel: (514) 283-0193
Fax: (514) 496-6982
eMail: Anne-Marie.Carter@ec.gc.ca

### Ontario

National Pollutant Release Inventory
Environment Canada
2nd Floor
4905 Dufferin Street
Downsview, Ontario
M3H 5T4

Tel: (416) 739-5886 / 739-5891
Fax: (416) 739-4326
eMail: Suzanne.Spicer@ec.gc.ca,
Sandro.Leonardelli@ec.gc.ca

### Manitoba, Saskatchewan, Alberta and Northwest Territories

National Pollutant Release Inventory
Environment Canada
Twin Atria #2, Room 200
4999-98 Avenue
Edmonton, Alberta
T6B 2X3

Tel: (403) 951-8726 / 951-8730
Fax: (403) 495-2615
eMail: Art.Beckett@ec.gc.ca,
Nancy.Taschuk@ec.gc.ca

National Pollutant Release Inventory
Environment Canada
123 Main Street, Suite 150
Winnipeg, Manitoba
R3C 4W2

Tel: (204) 983-7788
Fax: (204) 983-0960

National Pollutant Release Inventory
Environment Canada
Room 300, Park Plaza
2365 Albert Street
Regina, Saskatchewan
S4P 4K1

Tel: (306) 780-6001
Fax: (306) 780-6466

National Pollutant Release Inventory
Environment Canada
3rd Floor, Diamond Plaza
5204 - 50th (Franklin) Avenue
Yellowknife, Northwest Territories
X1A 2R2

Tel: (867) 669-4727
Fax: (867) 873-8185

### British Columbia and Yukon

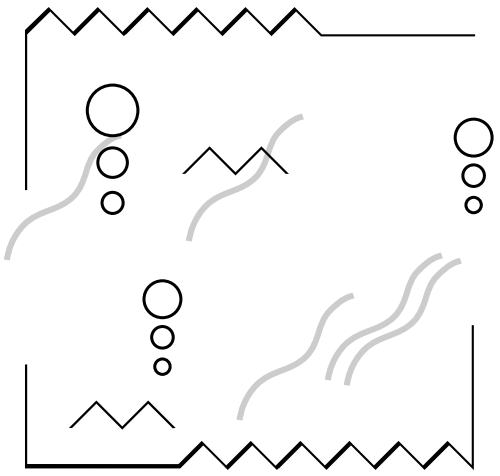
National Pollutant Release Inventory
Environment Canada
224 West Esplanade
North Vancouver, British Columbia
V7M 3H7

Tel: (604) 666-2588
Fax: (604) 666-6800
eMail: Michael.DeAbreu@ec.gc.ca

National Pollutant Release Inventory
Environment Canada
91782 Alaska Highway
Whitehorse, Yukon
Y1A 5B5

Tel: (403) 667-3402
Fax: (403) 667-7962
eMail: Benoit.Godin@ec.gc.ca

# Guide for Reporting to the National Pollutant Release Inventory



# 1997

*Canadian Environmental Protection Act*

## Acknowledgements:

Prepared by: Michael DeAbreu and Marielle Nobert
In collaboration with: Sandro Leonardelli

Catalogue # En40-495/1997E
ISBN 0-662-26612-9
ISSN 1204-5675

# Table of Contents

# Preface

The National Pollutant Release Inventory (NPRI) is a federal government initiative designed to collect and make available to the public, on a yearly basis, national data on releases to air, water and land and transfers in waste of specified substances. The inventory provides information from all Canadian sectors – industrial, government, commercial and others.

Under the authority of the *Canadian Environmental Protection Act*, owners or operators of facilities that manufacture, process or otherwise use one or more of the 176 specified substances under prescribed conditions are required to report to the NPRI.

This document enables facility owners or operators to review the NPRI reporting criteria and determine if they are required to report to the NPRI for the 1997 reporting year. It also provides guidance for completing the reporting form and filing a report with Environment Canada.

Cette publication est aussi disponible en français sous le titre de «Guide de déclaration à l'Inventaire national des rejets de polluants – 1997».

# Highlights and Important Changes for 1997

## Report Due Dates

Reporting deadlines for the NPRI are subject to change and should be verified each year.

| *Canada Gazette* Notice | Reporting Year | Due Date |
|---|---|---|
| **April 5, 1997** | **1997** | **June 1, 1998** |
| February 17, 1996 | 1996 | July 1, 1997 |
| February 18, 1995 | 1995 | July 1, 1996 |
| February 26, 1994 | 1994 | June 1, 1995<br>extended to July 17, 1995 |
| March 27, 1993 | 1993 | June 1, 1994 |

## Verification of Data

Facilities are responsible for the accuracy of data submitted to the NPRI. Facilities identified in the annual Summary Report are notified before its publication, so that they may prepare for any media or public inquiries. It is essential that the information in the pre-publication notice be verified and distributed to the responsible personnel in your company. Correspondence from the NPRI will be addressed to the company coordinator. If there is no coordinator, correspondence will be sent to the technical contact. See Section 2 - A4.0, A6.0 and A8.0.

## Reporting Sections

**As a result of public consultations in 1996, several new sections were added to the 1997 reporting form and some significant changes were made in other sections.**

The information required in your report has been re-grouped to simplify data input for reporters, harmonize the data collected with existing Canadian regulations and international standards and to provide Environment Canada flexibility in adding new reporting elements and data-entry fields in the software as changes are made in future years.

- Section A1 Facility Identification
- Section B1 Substance Information
- Section B10 On-site Releases to the Environment
- Section B20 Off-site Transfers for Disposal or Recycling
- Section B30 Pollution Prevention Activities
- Section B40 Production Ratio and Activity Index

**Please review the explanations provided for these sections before completing your 1997 NPRI report.**

## Reporting Off-site Transfers for Disposal and Recycling

As a result of public consultations in 1996, the NPRI changed the reporting of off-site transfers in waste for disposal and recycling. The new reporting requirements were harmonized with those of the Canadian *Export and Import of Hazardous Waste Regulation*. The data classifications will be familiar to those who use the International Waste Identification Codes (IWIC) developed by the Organization for Economic Cooperation and Development (OECD). Information must be provided on the reasons for the transfer, the disposal activities and, optionally, the recycling activities. The section on quantities transferred off site for recycling provides a preview of the reporting requirements which will become mandatory in 1998. While still optional this year, facilities are encouraged to complete this section and provide comments to the NPRI office. See Section 2 - B20.0 and B25.0.

## Reporting Pollution Prevention Activities

In response to public consultations in 1996, qualitative tracking of pollution prevention (P2) activities is a new feature of the 1997 NPRI report. Facilities which have taken measures to prevent the generation of pollutants or wastes are asked to indicate what P2 activities they have undertaken. See Section 2 - B30.0.

## Production Ratio and Activity Index

As our historical database grows, the NPRI is used more often to track trends in environmental releases and waste transfers. Since these trends may be the result of either improved (or worsened) environmental performance or changes in production levels or some other activity, NPRI reporters are asked to provide, on a voluntary basis, a production ratio or activity index to help explain these trends. See Section 2 - B40.0.

## Geographic Coordinates

Geographic coordinates for facilities are now determined by the NPRI office to ensure a reliable and consistent set of data for use with geographical information systems (GIS). **Facilities may be asked to provide information needed to determine the geographic coordinates of their facility.**

## Common Errors

- **Units are Metric Tonnes**
  The most serious error made is when a facility reports values in kilograms or pounds rather than in metric tonnes. This over-estimates their releases or transfers by a factor of 1000 or more, which has led to errors in the analysis and presentation of the NPRI data. **All values entered in the electronic reporting form are in metric tonnes (1000 kg).**

- **Statement of Certification**
  A number of facilities provided a Statement of Certification signed by a person other than the Executive Contact identified in field A16.1. Others neglected to provide a signed Statement of Certification. These circumstances render the report incomplete.

- **NPRI Identification Number**
  A number of facilities did not report the NPRI identification number that had been assigned to the facility in previous reporting years. Your assigned NPRI ID number is provided in your NPRI correspondence. NPRI ID numbers are between 1 and 9999. Contact your regional NPRI office if you cannot find your ID number.

- **Inconsistent SIC Codes**
  A number of facilities reported Standard Industrial Classification (SIC) codes that were inconsistent with their industrial activities. Facilities must verify that the SIC code they report best describes their activities.

  Another common error occurs with the U.S. SIC codes. Reporters select the first choice offered by the software although it may not correspond to the Canadian SIC code previously chosen. If you have any doubts about selecting SIC codes, please contact your regional NPRI office.

- **Polymers vs. Monomers**
  A number of facilities submitted reports for polymers such as polystyrene, polypropylene and polyvinyl chloride. Polymers are not on the list of substances. Only monomers (styrene, propylene, vinyl chloride) must be reported if the reporting criteria are met.

# Introduction

The NPRI is an annual inventory from all Canadian sectors of specified substances released on site to land, air and water, or transferred off site in waste. The NPRI data support a wide range of environmental initiatives, including pollution prevention and abatement.

The NPRI was developed through a consultative process. Environment Canada intends to continue consultations with industry, environmental groups and other federal and provincial governments with respect to changes to the program.

On April 5, 1997, a "Notice with Respect to Substances in the National Pollutant Release Inventory for 1997" (NPRI) was published, under the authority of subsection 16(1) of the *Canadian Environmental Protection Act (CEPA)*, in the *Canada Gazette*, Part I (*Canada Gazette*, 1997). An amendment to the Notice was published on February 14, 1998 (*Canada Gazette*, 1998). These notices specified that any person owning or operating a facility that manufactured, processed or otherwise used any of the specified substances, under the conditions prescribed in the notice, provide this information to the Minister of the Environment no later than June 1, 1998.

Notices will be published in the *Canada Gazette* for subsequent reporting years. Changes may be made to the notice from year to year. A summary document of the non-confidential data collected for the reporting year will be published and made available electronically via the Internet at:

***http://www.ec.gc.ca/pdb/npri***

This guide will assist facility owners or operators in determining whether they are required to report to the 1997 NPRI and in completing the electronic reporting form.

Reporting to the NPRI is a two-step process as illustrated in Figure 1. First, you must determine if you meet **all** of the reporting criteria. When calculating the 10-tonne reporting threshold, include only the quantity of the NPRI substance in concentrations of 1% or more that are manufactured, processed or otherwise used at the facility, **plus** the quantity of the same NPRI substance at any concentration that is considered a by-product and which is released to the environment or transferred off site in waste. The reporting criteria are explained in Section 1 of this guide.

In the second step you must provide information on all releases and transfers of NPRI substances **regardless of concentration or quantity**, including "zero" releases. Section 2 of this guide explains what information is required and how to complete the electronic reporting form.

***Figure 1***
***1997 NPRI Process***

**Step 1**

*see Section 1*

## Meeting the Reporting Criteria

*The threshold criteria are used only to determine if a facility is required to report to the NPRI.*

- ✔ Facility is not exempt
- ✔ Employees worked 20 000 hours or more
- ✔ Manufactures, processes or otherwise uses an NPRI substance
- ✔ Exceeds 10-tonne reporting threshold
  i.e., process streams (concentration >1%)
  PLUS by-products (any concentration)

**Step 2**

*see Section 2*

## Completing the NPRI Report

*All on-site releases to any media and all off-site transfers for disposal must be reported regardless of the concentration or quality.*

- ✔ **Facility Identification**
  - facility name and location
  - Standard Industrial Classification (SIC) code
  - public, technical and executive contacts
  - parent companies
  - company coordinator
- ✔ **Substance Information**
  - substance name
  - manufacture, process and other use activities
  - on-site releases
  - off-site transfers for disposal
  - off-site transfers for recycling (optional)
  - anticipated releases and transfers
  - pollution prevention activities
  - production ratio or activity index (optional)
- ✔ **Off-site Facilities**
  - receiving transfers for disposal
  - receiving transfers for recycling (optional)
- ✔ **Surface Water Bodies**
  - receiving discharges of NPRI substances

If you have any difficulties interpreting the requirements of the NPRI notice, please consult the Questions & Answers in Section 5 or contact your regional NPRI office listed inside the front cover of this guide.

# Section 1 – Criteria for Reporting to the National Pollutant Release Inventory

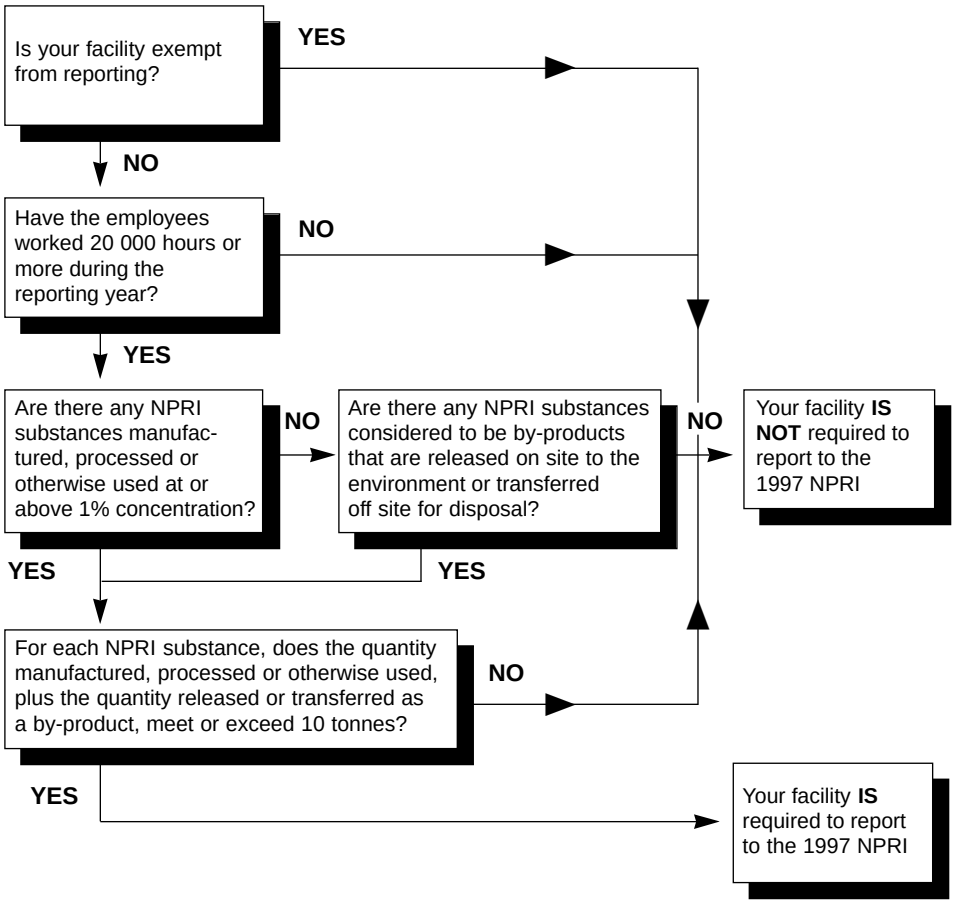
## General Reporting Criteria

In general, any person who owns or operates a facility must report **only** if the facility meets **all** three of the following criteria for **any one** of the 1997 NPRI substances (Appendix 1):

- employees worked a total of 20 000 hours or more during 1997, which is equivalent to 10 full-time employees, **and**
- the facility has manufactured, processed or otherwise used 10 tonnes (10 000 kg) or more of an NPRI substance in the 1997 calendar year, **and**
- the NPRI substance was manufactured, processed or otherwise used at a concentration greater than or equal to 1% by weight, with the exception of NPRI substances considered to be by-products. The total weight of by-products, regardless of their concentration, must be included in the calculation of the 10-tonne threshold for each NPRI substance.

The steps to be followed in determining whether a facility is required to report are shown in Figure 2. A facility must meet **all reporting criteria** before it is required to report on-site releases and transfers off site in waste of an NPRI substance.

***Figure 2***
***Criteria for Reporting to the 1997 NPRI***



The *Canada Gazette* notice of April 5, 1997, states that the information required by the NPRI need only be reported to the Minister of the Environment if the facility owner or operator possesses the information or may reasonably be expected to have access to the information. **Consequently, the NPRI does not require additional monitoring or measurement of the quantities or concentration of substances released to the environment, beyond those already required under the provision of other laws or regulations.** You are, however, required to show "due diligence" in obtaining the information required by the *Canada Gazette* notice.

A facility includes all buildings, equipment, structures or other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same company.

**Once your facility has determined that it is required to file a report for an NPRI substance, all on-site releases and transfers off site in waste for final disposal of that substance are reportable, whatever their concentration or quantity (including "zero" releases and transfers).**

## Exempt Facilities

Certain facilities are currently **exempt** from reporting to the NPRI. These are identified in the *Canada Gazette* notice as facilities used exclusively for:

- educating or training students, such as universities, colleges and schools
- research or testing
- the maintenance and repair of transportation vehicles, such as automobiles, trucks, locomotives, ships or aircraft
- the distribution, storage or retail sale of fuels
- the wholesale or retail sale of articles or products which contain NPRI substances, provided that the substances are not released to the environment during normal use at the facility
- the retail sale of NPRI substances
- growing, harvesting or managing renewable natural resources, such as fisheries, forestry or agriculture, **but not** those facilities that process or otherwise use their products
- mining, **but not** those facilities engaged in further processing of mined materials
- drilling or operating wells to obtain oil and gas products, **but not** those facilities engaged in further processing of these oil and gas products.

## Total Employee Hours Worked

If the total number of hours worked by all employees is less than 20 000 hours, then your facility does not have to report to the NPRI. The total number of hours worked includes paid vacation and sick leave. Owners, students, part-time and contract employees are included in this calculation. This criterion depends specifically on the number of hours worked by all employees at the facility during the calendar year and not on the number of persons working. When reporting to the NPRI, 10 "full-time employees" is equivalent to 20 000 hours worked.

*Some groups of substances and individual substances are qualified in terms of their specific physical or chemical form, state or particle size.*

## Identifying NPRI Substances at a Facility

The next step is to confirm that one or more of the 176 substances listed in the 1997 *Canada Gazette* notice are manufactured, processed or otherwise used at your facility. The NPRI substances for 1997 are listed in alphabetical order in Appendix 1. Most of the substances have Chemical Abstracts Service (CAS) registry numbers associated with them. The NPRI substances are listed by CAS numbers in Appendix 2. Substances that do not have a unique CAS number are noted with an asterisk (*).

To help determine if NPRI substances are present at your facility, Appendix 3 divides the list of substances into several groups and describes some of their characteristics and the industrial activities generally associated with each group.

Some groups of substances and individual substances are qualified in terms of their specific physical or chemical form, state or particle size. Appendix 3 lists these substances, grouped by their qualifiers. These qualifiers will affect the decision about whether your facility will be required to report for a given substance.

- **fume or dust**
  This qualifier for aluminum and vanadium refers to solids with particle diameters of 0.001 to 1 microns for fumes and 1 to approximately 100 microns for dust particles.

- **fibrous forms**
  This qualifier, applied to aluminum oxide, excludes the more common granular, powdered or fumed forms of alumina.

- **salts**
  Weak acids and bases are listed with this qualifier. Although the CAS number that appears on the NPRI list is specific to the acid or base, all salts of these listed substances must be reported as an equivalent weight of the acid or base. Appendix 3 lists the common salts which must be reported to the NPRI.

- **compounds**
  Thirteen elements have this qualifier. The pure element and any substance, alloy or mixture must be reported as the equivalent weight of the element. No CAS number is provided for these substances.

- **friable form**
  Asbestos is the general name for several fibrous minerals and products. Only asbestos which is brittle and readily crumbled should be reported.

- **mixed isomers**
  This qualifier is used for mixtures of isomers which have the same chemical formula but different chemical structures. Appendix 3 lists the individual isomers which are on the NPRI list of substances. Substances with this qualifier are usually found as mixtures. The total quantity of all isomers must be used in calculating the 10-tonne threshold quantity. Do not apply the 10-tonne reporting threshold to each individual isomer, unless the pure isomer alone is manufactured, processed, otherwise used or is an NPRI by-product.

- **ionic**
  This qualifier, applied to cyanides, includes the salts of hydrogen cyanide but excludes organocyanides, nitriles and organometallic cyanide compounds such as ferrocyanide.

- **total**
  For aqueous solutions of ammonia, this means both $NH_3$ and $NH_4^+$ expressed as ammonia.

- **yellow or white**
  This qualifier is the general description for an allotrope of elemental phosphorous.

- **in solution at a pH of 6.0 or greater**
  This distinguishes nitrate ion in neutral or basic solution from nitric acid (pH less than 6.0). If nitric acid is neutralized to a pH of 6.0 or greater, you must file a report for both nitric acid and for nitrate ion in solution. Your release or transfer of nitric acid would be "zero" and your release or transfer of nitrate ion would reflect the quantity of neutralized nitric acid reported as nitrate ion in solution at a pH of 6.0 or greater.

In most cases, consider only the substances and the CAS numbers listed. For example, "styrene" is listed with its corresponding CAS number "100-42-5". The chemical description which corresponds to this CAS number does not include "polystyrene". There are no polymers on the NPRI list, only monomers.

Material Safety Data Sheets (MSDS) are an important source of information on the composition of purchased products. Suppliers of hazardous materials are required, as part of the Workplace Hazardous Material Information System (WHMIS), to supply MSDS on request.

## Activities

The terms "manufacture", "process" and "otherwise use" are defined in Schedule IV of the *Canada Gazette* notice. These activities are part of the reporting criteria. A facility must have manufactured, processed or otherwise used 10 tonnes of an NPRI substance.

### Manufacture

The term "manufacture" means to produce, prepare or compound an NPRI substance. It also includes the coincidental production as a *by-product* or *impurity* of an NPRI substance as a result of the manufacture, processing or use of other substances.

The production of chlorine dioxide by a chemical plant is an example of manufacturing. The production of hydrochloric acid during the manufacture of chlorofluorocarbons is an example of incidental production.

### Process

The term "process" means the preparation of an NPRI substance, after its manufacture, for distribution in commerce. Processing includes preparation of a substance with or without changes in physical state or chemical form. The term also applies to the processing of a mixture or formulation that contains an NPRI substance as one component, as well as the processing of "articles" (see "Other Definitions").

The use of chlorine (an NPRI substance) to manufacture hypochloric acid (not an NPRI substance) is an example of processing of chlorine. The use of toluene and xylenes to blend paint solvent mixtures is an example of processing without changes in chemical form.

*A "by-product" is an NPRI substance that is incidentally manufactured, processed or otherwise used at a facility and is released on site to the environment or transferred off site in waste.*

### Otherwise Use

The term "otherwise use" encompasses any use of an NPRI substance at a facility that does not fall under the definitions of "manufacture" or "process". This includes the use of the substance as a chemical processing aid, manufacturing aid or some other ancillary use. The use of trichloroethylene in the maintenance of equipment used for manufacturing and processing is considered "otherwise use". "Otherwise use" does not include routine janitorial or facility grounds maintenance.

## By-products

In 1995, the reporting criteria were changed to include by-products in the calculation of the 10-tonne reporting threshold. The reason for this change was to capture large-volume, low-concentration releases and transfers which normally would not trigger the reporting requirements of the NPRI. This change affects facilities that release or transfer in waste large quantities of NPRI substances, but at concentrations below 1%. Some examples of affected sectors include but are not limited to, power generation, aluminum smelting, and pulp and paper production.

Normally, only NPRI substances in concentrations equal to or greater than 1% are included in the threshold calculations. The 1% concentration limit is consistent with the reporting requirements under the Workplace Hazardous Materials Information System (WHMIS). Minor constituents (with some exceptions) are not included on Material Safety Data Sheets (MSDS). **However, the 1% concentration limit does not apply to by-products.**

The NPRI applies to any person who **possesses** or who may **reasonably be expected** to have access to the types of information requested. This reasonable expectation limits the reporting liability of facilities which can not easily determine minor amounts of NPRI substances in their feedstock or process.

A "by-product" is an NPRI substance that is **incidentally** manufactured, processed or otherwise used at a facility and is **released on site** to the environment or **transferred** off site in waste. **The total weight of by-product(s) must be used in the calculation of the 10-tonne reporting threshold regardless of the concentration.**

To determine if a substance is a by-product, you need to consider all of the elements of the by-product definition.

The NPRI substance is not relevant to the manufacture, process or other use of substances at the facility. It may be the product of an unwanted side-reaction or an impurity in feedstock material. If the NPRI by-product were absent, there would be no effect on the process. As with substances reportable to the NPRI, it must have been manufactured, processed or otherwise used at the facility.

Substances which meet the above criteria are only considered by-products if they are released to the environment or transferred off site in waste. Substances that are recycled are excluded from the by-products definition. Substances incidentally present in the final product are considered to be impurities and are not included in the threshold calculation.

*An "impurity" is an NPRI substance that is incidentally manufactured, processed or otherwise used at a facility and remains in the final product that is distributed in commerce.*

***Example 1***
Hydrogen fluoride is incidentally manufactured during aluminum smelting. For some large facilities, more than 10 tonnes may be released to the atmosphere at concentration below 1%. The weight of the hydrogen fluoride by-product must be used in the calculation of the 10-tonne reporting threshold, regardless of the concentration.

***Example 2***
Chromium, nickel and mercury are incidentally present in coal. During combustion a portion of these metals are concentrated in the ash which is transferred off site for disposal and a portion of the metals are released in stack emissions. The weight of the heavy metal by-products must be included in the calculation of the 10-tonne reporting threshold.

***Example 3***
An NPRI substance is present in trace amounts in a product that is repackaged for retail sale. The quantity of this substance released through spillage or through fugitive air emissions cannot be determined because the formulation of the product is proprietary and the substance concentration is not listed on the MSDS. Although this NPRI substance is considered a by-product, it is not included in the calculation of the 10-tonne reporting threshold because it is an unreasonable expectation that the facility could obtain information on the substance identity, concentration or quantity.

## Other Definitions

### Impurity

An "impurity" is an NPRI substance that is **incidentally** manufactured, processed or otherwise used at a facility and **remains in the final product** that is distributed in commerce. **Unlike by-products, the quantity of impurities in a mixture at a concentration of less than 1% is not used in the calculation of the 10-tonne reporting threshold.** For example, unreacted monomers that remain in the final product at concentrations below 1% are considered impurities and are not included in the threshold calculation. However, unreacted monomers are considered by-products if they are released to the environment or are transferred off site in waste.

### Article

An "article" is defined as a manufactured item that does not release an NPRI substance under the normal conditions of processing or use. When articles such as metal sheets and bars are processed (punched, cut or sheared) and there are no releases, or the releases such as metal shearings or pieces are recycled 100% or with due care, the NPRI substances in that article need not be included in the threshold calculation. Exercising "due care" in ensuring 100% recycling means that the facility generates less than 1 kg of the NPRI substance as waste. Materials that are welded lose their article status since there are releases from the article during welding.

## Calculating the Reporting Threshold

The 10-tonne reporting threshold is based on the quantity of an NPRI substance manufactured, processed or otherwise used at the facility at concentrations at or above 1% **plus** the quantity of the same NPRI substance, at any concentration, that is considered a by-product which is released on site to the environment or transferred off site in waste.

When calculating the 10-tonne reporting threshold, **include** the quantity of an NPRI substance that is:

- manufactured at a concentration equal to or greater than 1%
- processed at a concentration equal to or greater than 1%
- otherwise used at a concentration equal to or greater than 1%
- a by-product, at any concentration, released to the environment
- a by-product, at any concentration, transferred off site in waste

**do not include** the quantity of an NPRI substance that is:

- present as an impurity in a product destined to be distributed in commerce
- contained in materials used as structural components of the facility
- contained in materials used in routine janitorial or facility grounds maintenance
- contained in materials used for personal use by employees or other persons
- used for the purpose of maintaining motor vehicles operated by the facility
- present in intake water or intake air, such as in water used for process cooling or air used either as compressed air or for combustion.

Note that the maintenance of processing equipment is not considered “routine janitorial” or “facility grounds” maintenance. For example, if manufacturing or processing equipment is cleaned with a solvent, the amount of NPRI substance(s) contained in the solvent should be included in the threshold calculation.

Any NPRI substances that are recycled off site and returned to the facility should be treated as the equivalent of newly-purchased material for the purposes of NPRI threshold determinations. Although an NPRI substance may undergo many processes in a facility, care should be taken not to double-count process streams when calculating the reporting threshold.

### Example of Calculating the Reporting Threshold

| PROCESS STREAM CONTAINING SUBSTANCE "A" | TOTAL WEIGHT OF STREAM CONTAINING SUBSTANCE "A" | CONCENTRATION OF SUBSTANCE "A" IN PROCESS STREAM | NET WEIGHT OF SUBSTANCE "A" FOR THRESHOLD CALCULATION |
|---|---|---|---|
| Process stream 1 | 150 tonnes | 5.00% | 7.5 tonnes |
| Raw material in process 2 | 2 tonnes | 100.00% | 2.0 tonnes |
| Raw material in process 3 | 45 tonnes | 0.20% | n/a[1] |
| Impurity in product from process 4 | 80 tonnes | 0.05% | n/a[2] |
| By-product released from process 5 | 10 000 tonnes | 0.01% | 1.0 tonne[3] |
| | **Total weight of substance "A"** | | 10.5 tonnes |

1. The weight of substance "A" in the raw material used in process 3 is not included in the threshold calculation because the concentration is less than 1%. Note, however, that since the facility in this example must report because it meets the 10-tonne reporting threshold, it is required to take into account and report releases and transfers from all processes including those, such as process 3, which were not used in the threshold calculations.
2. The weight of substance "A" in the final product from process 4 is not used in the threshold calculation because it remains in the product at a concentration below 1% and is therefore considered an impurity.
3. The weight of substance "A" produced and released from process 5 is included in the calculation because it is a by-product. The concentration criterion does not apply to by-products.

In this example, the facility would be required to file a report to the NPRI (assuming it also meets the 10-employee threshold) because the total amount of substance "A" manufactured, processed or otherwise used at the facility exceeds 10 tonnes for a given calendar year.

**Note that the facility must file a report even if the on-site releases or off-site transfers in waste of substance "A" are zero.**

These threshold calculations are not to be reported to the NPRI. Their purpose is to determine the substance for which a facility is required to report on-site releases and transfers off site in waste. Keep this information in your files.

## NPRI Substances At or Above 1% Concentration

The total quantity of an NPRI substance manufactured, processed or otherwise used at concentrations greater than or equal to 1%, at any time or in any part of the facility **must** be used in the calculation of the 10-tonne reporting threshold.

The quantity of a substance received by a facility at 30% concentration and then diluted to below 1% for use, is included in the threshold calculation. The same would apply for a substance received at the facility below 1% and subsequently concentrated to 5%.

*The total quantity of a by-product released to the environment or transferred off site in waste must be used in the calculation of the 10-tonne reporting threshold.*

Facilities that blend or formulate NPRI substances such as solvents must include the total quantity of substances blended or mixed in the reporting threshold calculation since blending, mixing and formulating are considered processing which is a reportable activity.

Facilities that repackage or transfer NPRI substances between containers need only consider the total quantity of substance repackaged or transferred if there are releases during the transfer or repackaging process. **The exemption for wholesaling only applies if there are no releases or wastes produced during the operation.**

If only a range of concentrations is available for a substance present in a mixture, use the average of the range for threshold determinations.

## NPRI Substances Below 1% Concentration

The total quantity of a by-product released to the environment or transferred off site in waste **must** be used in the calculation of the 10-tonne reporting threshold. This is the only circumstance where the quantity of an NPRI substance at a concentration less than 1% is used in calculating the 10-tonne reporting threshold. **However, once the reporting criteria have been met, then all on-site releases and all off-site transfers in waste must be reported, regardless of the substance's concentration.** The following examples illustrate the application of the by-product definition.

***Example 1***
A facility uses a pre-polymer mixture which contains unreacted di-*n*-octyl phthalate monomer at a concentration below 1%. The monomer remains in the final product after the processing is completed. The polymer is used to make articles which are sold for distribution. The unreacted monomer is not released and remains in the product distributed in commerce. It is therefore an impurity and it is not included in calculating the 10-tonne threshold.

***Example 2***
Gases produced during coking of coal are recovered and used to supply heat and are therefore not considered by-products. The quantity produced at concentrations below 1% should not be used in the calculation of the reporting threshold.

***Example 3***
Many industrial processes involve separation but not all of these processes create by-products. Distillation of crude oil, for example, produces a number of secondary substances which are intended for distribution in commerce or further use. These are not by-products for the purpose of reporting to the NPRI.

***Example 4***
Metal cuttings, transferred off site in waste, contain alloyed chromium at a concentration less than 1%. The chromium is an essential component of the alloy, therefore it is not incidentally processed and is not considered to be a by-product. The chromium in the metal cuttings is not included in the calculation of the 10-tonne reporting threshold.

*If you have concluded that you are not required to report, advise your regional NPRI office listed on the inside front cover.*

## If You Are Not Required to Report

If you have concluded that you **are not required to report** for your facility, either because it is an exempt facility or it does not meet all the reporting criteria, advise your regional NPRI office listed on the inside front cover to update our records and mailing lists.

## If You Are Required to Report

If you have concluded that you **are required to report** for your facility, use the electronic reporting form provided to file your report. Mail your report on disk to your regional NPRI office, listed on the inside front cover. If you do not have access to a computer, a paper reporting form can be requested from your regional office. Extra copies of the reporting package can be ordered from your regional office. The reporting package includes these items:

- the NPRI electronic reporting form (3.5" or 5.25" IBM-compatible disk)
- this guidance document, "Guide for Reporting to the National Pollutant Release Inventory - 1997".

If there are any items missing from your package, call your NPRI regional office.

# Section 2 – Completing the Reporting Form

## Introduction

This section describes the information required and the procedures to follow to comply with the notice published in the *Canada Gazette*. An electronic reporting form was developed to facilitate data input for reporters, to provide on-line help to the person completing the report and to reduce errors in data transcription. For ease of reference, this section follows the same order, titles and numbering system as the electronic reporting form. Complete details on installing and using the electronic reporting form are given in Appendix 4 - "Software User's Guide."

A typical procedure, as shown in Figure 3, is to install the 1997 reporting software, re-index all database files and upload the data from your 1996 report if it is available. Next, update the information on reporting facilities, substances, off-site facilities and surface water bodies. Use the software's "error check" function to verify that the report is free of errors and create an NPRI report disk. Finally, submit the report disk with a Statement of Certification signed by the executive contact (identified in field A16.0) to Environment Canada.

**As a result of public consultations in 1996, several new sections were added to the 1997 reporting form and some significant changes were made in other sections.**

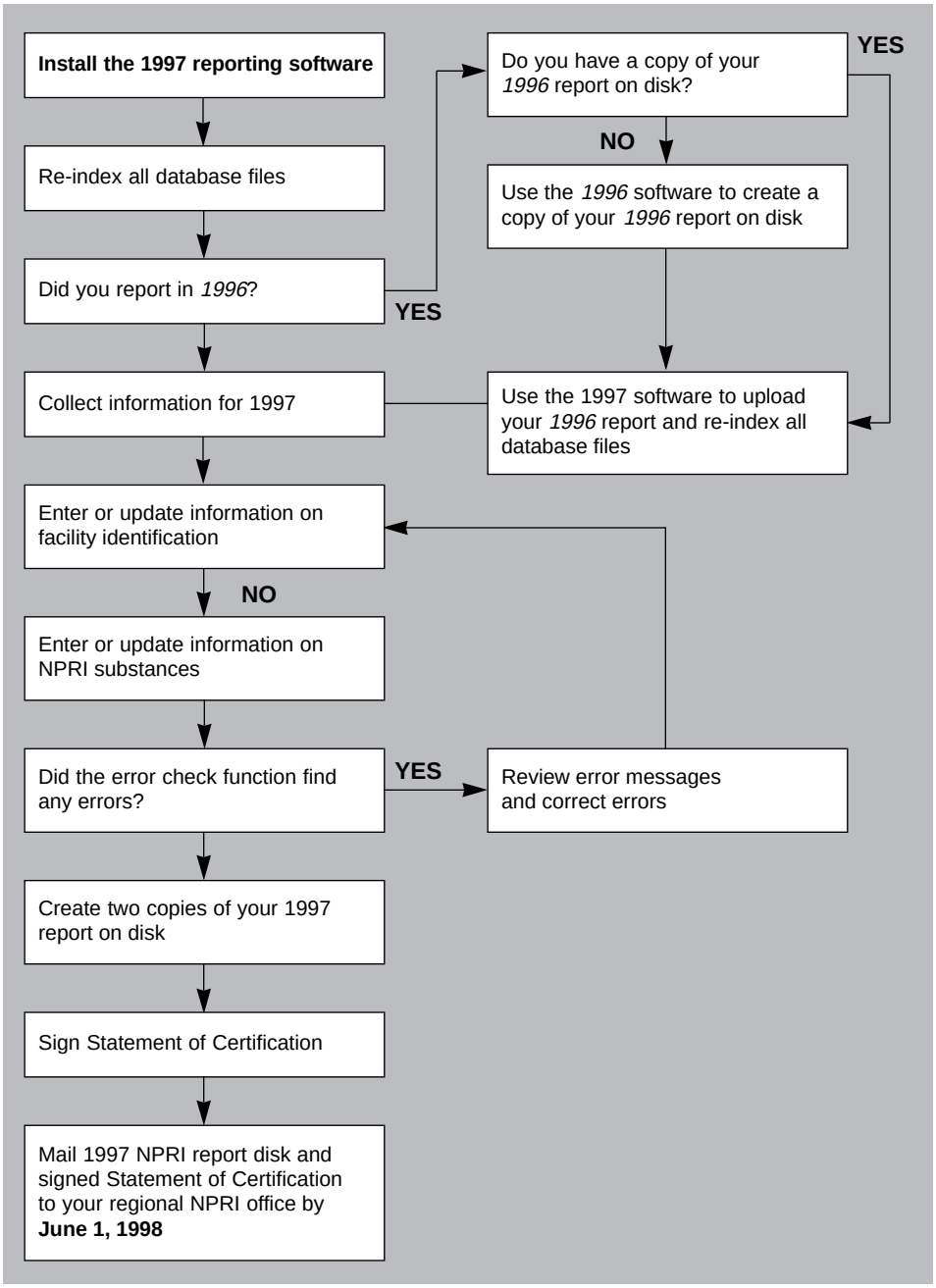
The information required in your report has been re-grouped to simplify data input for reporters, harmonize the data collected with existing Canadian regulations and international standards and to provide Environment Canada flexibility in adding new reporting elements and data-entry fields in the software as changes are made in future years.

- A1.0 Facility Identification
- B1.0 Substance Information
- B10.0 On-site Releases to the Environment
- B20.0 Off-site Transfers for Disposal or Recycling
- B30.0 Pollution Prevention Activities
- B40.0 Production Ratio and Activity Index

**Please review the explanations provided for these sections before completing your 1997 NPRI report.**

The reporting software has many error-checking routines to help ensure that the information provided is complete. **All warnings in the reporting form can be overridden by pressing "C" to continue. However, the NPRI report must be error-free before the software will allow a disk to be copied for submission to Environment Canada. (See Section 3 - "Returning Information to Environment Canada".)**

***Figure 3***
***Completing the 1997 NPRI Report***



# Facility Identification

From the “Main Menu” of the NPRI software, press **[F2]** to enter the “View/Enter/Edit Data” menu and press **[F2]** again to access the “Reporting Facilities” section. The electronic reporting form allows NPRI reports for more than one facility to be entered. This is useful for company coordinators who are filing NPRI reports for several facilities. Facilities can be added, edited or deleted using the **[F3]**, **[F7]** and **[F5]** function keys, respectively. To edit information on an existing facility, highlight your choice and press **[Enter]**.

**At any time while completing the report, you can save the information you have entered or abandon the changes you have made by pressing the [Esc] key.** This opens a pop-up screen with the options to “Save”, “Cancel” or “Resume”.

## A1.0 Reporting Year, NPRI ID and Language

The “Reporting Year” field cannot be changed. This is the calendar year for which you are required to report to the NPRI and for which you will be providing information.

### A1.1 “NPRI ID”

If an NPRI report was previously filed for your facility, it was assigned a **permanent** NPRI identification number. The NPRI ID is specific to the facility and does not change even if the ownership of the facility has changed. You will find this number on the mailing label of the 1997 NPRI package or on the correspondence sent to your company/facility. If you cannot find your NPRI ID number, call your regional NPRI office (listed inside the front cover).

**If this is your first year of reporting, place the cursor in the NPRI ID field marked “NEW REPORT” and press [F4]** to generate a temporary identification number. A permanent NPRI ID for your facility will be assigned by Environment Canada at a later date.

### A1.2 “Language”

Correspondence from Environment Canada will be in the language identified, i.e., English or French. The language code is also a control character which determines the language used by the software when printing reports.

## A2.0 Facility Identification and Site Address

Our database fully supports uppercase/lowercase text entry which improves legibility. DATA ENTRY IN ALL UPPERCASE CHARACTERS IS DISCOURAGED. Please take the time to correctly enter your facility identification as you wish it to appear in the publicly accessible database. These data will be used to identify your facility in Environment Canada reports and databases, and should therefore be entered carefully to ensure that your facility is correctly identified.

**Geographic coordinates for facilities are now determined by Environment Canada to ensure a reliable and consistent set of data for integration with geographical information systems (GIS). Facilities reporting for the first time must contact their regional NPRI office of Environment Canada to provide the information needed to determine the geographic coordinates of the facility.**

*The "Address" is the site address for the facility. Do not use a post office box or mailing address as the street address.*

### A2.1 "Company Name"

Enter your company name. **This field is mandatory.** If your company owns more than one reporting facility, please ensure that the same company name is used consistently.

### A2.2 "Facility Name"

Enter the name of the facility or any other information which, in addition to the "Company Name", completely identifies the facility. You may omit the "Facility Name" if the "Company Name" alone completely identifies the facility.

| COMPANY NAME | FACILITY NAME |
|---|---|
| Specialty Pharmaceuticals | Liquids Plant |
| Trans Canada Airlines | Calgary |
| Canadian Refineries | Alberta Processing Plant |
| International Manufacturing | ABC Manufacturing Division |

### A2.3 and A2.4 "Address"

The "Address" is the site address for the facility. **Do not use a post office box or mailing address as the street address.** A mailing address can be given when identifying a public contact, technical contact or company coordinator. Enter the street name and number and other identifiers such as suite number or building designation. For rural addresses, where a street address is not available, enter the lot and concession numbers, and the township or its equivalent.

### A2.5 "City/District"

Enter the name of the city, town, village, district or township where your facility operates.

### A2.6 "Province or Territory Code"

Enter the two-character code for the province or territory in which your facility operates. These codes can be found in the pick-list available by pressing **[F6]** while the cursor is in the "Province" field. The province, territory and U.S. state codes are listed in Appendix 5.

### A2.7 "Postal Code"

Enter the postal code. It will automatically be formatted, e.g., V7M-3H7

## A3.0 Full-time Employees

Enter the number of full-time (or equivalent) employees at your facility. One "full-time employee" (or equivalent) is defined as 2000 worker-hours per year (including paid vacation and sick leave). The definition depends on the number of hours worked by all employees at the facility during the calendar year and not on the number of persons working.

To determine the number of full-time employees (or equivalent) working for your facility during the calendar year, total the hours worked by all employees, including the time worked by students, part-time and contract employees and sales and support staff at the facility, and divide the total by 2000 hours. If the owner works at the facility, his/her time must also be included in the full-time employee calculation. Working hours spent by sales people must be included in the calculation if they have an office on site, even though they may spend part of their time away from the facility. Time spent by contract workers at the facility must also be included in the calculation.

*If a facility's public contact is not identified in A4.0, the technical contact will be listed as the public contact in the NPRI database.*

## A4.0 Facility Public Contact

Enter the name, position, telephone, extension and facsimile numbers of the facility's public contact. The public contact does not have to be the same person who prepares the report or signs the Statement of Certification and does not necessarily need to be someone at the reporting facility. But, this person should be able to answer questions from the public about the report. A position title alone, such as "Environmental Coordinator", can be used to identify the public contact. The facility public contact will be identified in the NPRI database available to the public. **If these fields are left blank, the technical contact (in field A6.0) will be listed as the public contact in the NPRI database.**

## A5.0 Facility Public Contact Address

Complete this field if the mailing address for the public contact is different from the facility's site address (A2.0). The province, territory or U.S. state codes can be found in pick-lists by pressing **[F6]** while the cursor is in these fields. A list of the two-character province, territory and U.S. state codes is provided in Appendix 5. The "Country" field (A5.9) must be completed only if the address is outside Canada or the United States. Field A5.10 "Zip Code or Other" is provided for addresses in the U.S. or in other countries.

## A6.0 Facility Technical Contact

Enter the name, position, telephone, extension and facsimile numbers of a technical representative who can be contacted by Environment Canada for clarification of the report. This person should be familiar with the details of the report and be able to answer questions about the information provided. **The technical contact will be listed as the public contact in the NPRI database if a public contact is not named in A4.0.** Unless a company coordinator is identified in A8.0, the technical contact will receive all information, mailings and inquiries from the NPRI. **A consultant can be the technical contact as long as a company coordinator is identified in field A8.0.**

## A7.0 Facility Technical Contact Address

If the mailing address for the technical contact is different from the facility's site address (A2.0), complete this field as described in A5.0.

## A8.0 Company Coordinator

In addition to a facility technical contact, some companies may coordinate reports for several facilities through a central contact. If you answer "Yes" to the question "Would you like to have information sent to a central contact?", provide the name, position, telephone, extension and facsimile numbers for the company coordinator (fields A8.1 to A8.7). **Correspondence from the NPRI will be addressed to the company coordinator. If there is no coordinator, correspondence will be sent to the technical contact.**

*A parent company is defined as the highest level company or group of companies that directly control your facility.*

## A9.0 Company Coordinator Address

If the mailing address for the company coordinator is different from the facility's site address (A2.0), complete this field as described in A5.0.

## A10.0 Standard Industrial Classification (SIC) Code

Standard Industrial Classification (SIC) codes are numerical identifiers for different types of businesses and industries (Statistics Canada, 1989). SIC codes are used for reporting aggregated information, and for compiling and analyzing statistics. American codes have been included to enable sectoral comparisons between the United States and Canada.

The first two digits of a four-digit SIC code define a major business sector, while the last two denote a facility's specialty within the major sector. For example, the first two digits (37) of the Canadian SIC code 3751 represent the chemical industry in general, and the last two digits (51) represent the paints and varnishes industry. Code 3741 represents the same major sector but denotes the pharmaceutical industry. Two-digit Canadian and American SIC codes are listed in Appendices 6 and 7, respectively. The electronic reporting form provides a pick-list of two-digit Canadian SIC codes. The software also provides concordance tables of four-digit Canadian SIC codes and their corresponding American SIC codes. If you are unsure about the correct SIC code for your facility, please contact your regional NPRI office.

### A10.1 "Two-digit Canadian SIC Code"

Enter the **two-digit** Canadian SIC code that best represents your facility as found in Appendix 6 or press **[F6]** to access the pick-list and choose the appropriate number. Your facility may cover multiple SIC codes. If so, use the SIC code that describes the highest value of activities at your facility.

### A10.2 "Canadian SIC Code"

Based on the two-digit code entered in field A10.1, the software will provide a pick-list (press **[F6]**) of four-digit codes associated with your industrial sector. Select the most appropriate Canadian SIC code for your facility according to the description provided.

### A10.3 "U.S. SIC Code"

Based on the Canadian SIC Code entered in field A10.2, the software will provide a pick-list (press **[F6]**) of corresponding four-digit U.S. codes. As some Canadian classifications are broader than the U.S. codes, there may be more than one U.S. code for each Canadian code. **A common error is to select the first choice offered by the software.** Be certain to select the appropriate U.S. SIC code for your facility.

## A11.0 Identification of Parent Companies

For the purposes of the NPRI, a parent company is defined as the highest level company or group of companies that directly control your facility. To identify one or more parent companies, answer "Y" for "Yes" to the question A11.1, "Is the facility controlled by another company or companies?" This opens a screen to input the names, addresses and percent ownership of controlling parent companies. Pressing **[F3]** will allow you to add parent company names, starting with the one having the highest percentage of control. If your company is not owned or controlled by another parent company, place an "N" for "No" in field A11.1.

*"Waste" is defined as any material that is sent for final disposal or treatment prior to final disposal.*

## A12.0 Other Environmental Regulations or Permits (optional)

This optional field identifies other governmental organizations, agencies or programs to which you report environmental data. These identifiers may be municipal, provincial, territorial or regional operating permit numbers, certificates of approval or numbers used to identify your facility for a survey on releases or transfers to the environment.

If you wish to provide the environmental identification numbers that exist for your facility, place a "Y" for "Yes" in the response box to question A12.1, "Do you report under other environmental regulations or permits?" The electronic form will present a pop-up screen after responding "Yes" to this question. Enter the identification number or permit number in the column entitled "ID Number" and the government and program requesting the data in the column entitled "Government Department, Agency or Program Name."

If you do not report under any other environmental regulations, enter "N" for "No". If you choose not to complete this field, enter an asterisk (*) in field A12.1.

***Example 1***
In **Ontario** include the "Ontario Hazardous Waste Generator Registration Number" (OHWGRN). The OHWGRN is a nine-digit alphanumeric number (e.g., ON1234500) assigned to each facility under Ontario Regulation 347 *(Environmental Protection Act of Ontario)*.

***Example 2***
Facilities located in **Alberta** handling hazardous waste have to register for, and may have more than one, provincial ID numbers, assigned by Alberta Environmental Protection. Facilities receiving, consigning or transporting hazardous wastes are assigned provincial ID numbers. The ID number is an eight-digit alphanumeric number (e.g., ABR09999).

## A13.0 Identification of Off-site Facilities and MSTPs

The NPRI identifies three different types of off-site facilities:

- facilities to which **waste** containing the reported substance is sent for disposal or treatment prior to final disposal
- municipal sewage treatment plants (MSTPs) to which your facility discharges an **effluent** containing a reported substance, and
- optionally, facilities to which **materials** containing the reported substance are sent for **recycling**.

**"Waste" is defined as any material that is sent for final disposal or treatment prior to final disposal.**

**Discharges to sanitary sewers are to be reported as a transfer of waste to an MSTP, regardless of the type or level of treatment offered at the MSTP.**

*Should you choose to report one total discharge to all environmental media, if your releases are less than one tonne, DO NOT identify any surface water bodies.*

If you send waste containing an NPRI substance to an off-site facility or MSTP, type "Y" for "Yes" to open the "Identification of Off-site Facilities and MSTPs" table where you can enter the name and address of the site(s). The program will assign a numerical code (e.g., 01, 02, 03, ...) to each off-site facility. This code will be used in field B22.0 to identify each site without having to re-enter the full name and location of the facility.

Reporting the quantity of NPRI substances sent for recycling, and the names of the facilities to which these substances are sent, is optional for 1997 but will become mandatory in 1998. If you intend to provide this information, type "Y" for "Yes" to open the "Identification of Off-site Facilities and MSTPs" table. The information will be used in field B25.0 to identify each site.

**Do not identify an off-site facility unless it will be associated with at least one substance transfer, otherwise the software will generate an "orphan facility" error.** There are three ways to edit the "Identification of Off-site Facilities and MSTPs" table:

- by pressing **[F4]** - "Off-site Facilities" in the "View/Enter/Edit Data" menu
- by answering "Y" to question A13.0, or
- by entering "Y" in the "Locations" column in field B22.1, then pressing **[F3]** to add an off-site facility to the pick-list.

## A14.0 Identification of Surface Waters

If you release NPRI substances for which you are reporting to surface waters (streams, rivers, lakes, etc.), answer "Y" for "Yes" to the question "Do you release any NPRI substances, for which you are reporting, to surface waters?" This opens the "Identification of Surface Waters" table. A surface water body name may have up to 50 characters. The program will assign a letter code (e.g., A, B, C, ...) to each one. This code will be used in field B12.3 "Releases to Surface Waters" instead of the full description of the water body.

If your total discharge to all media is less than one tonne, you are not required to report your releases by environmental media and may report only a total discharge. Should you choose this option for all of your releases, do not enter any information on water bodies in this field. Do not include water bodies that receive the general plant waste stream if this waste stream does not contain an NPRI substance or if reportable acids in the waste stream have been neutralized to a pH of 6.0 or greater prior to release.

**Do not identify a surface water body unless it will be associated with at least one discharge to surface waters identified in field B12.3, otherwise the software will generate an "orphan water body" error.** There are three ways to edit the "Identification of Surface Waters" table:

- by pressing **[F5]** - "Discharges to Surface Waters" in the "View/Enter/Edit Data" menu
- by answering "Y" to question A14.0 "Do you release any NPRI substances, for which you are reporting, to surface waters?", or
- by answering "Y" in the "Water Codes" column in field B12.3, then pressing **[F3]** to add a surface water body to the pick-list.

## A15.0 Comments (Facility)

This field allows you to enter comments regarding the facility information provided or any other issue pertaining to this section. Because of the new, mandatory requirement for reporting pollution prevention activities to the 1997 NPRI (see field B30.0), facilities are encouraged to provide additional information describing the initiatives that they have implemented and the results they have achieved, e.g., environmental results, economic benefits, etc. Information on general P2 activities such as water and energy conservation initiatives should be entered in the facility comment field.

Type "Y" for "Yes" to access the comments field; otherwise type "N." The program allows 10 lines of 75 characters each to enter comments.

## A16.0 Executive Contact Certifying this Submission

A "Statement of Certification" can be printed through the "Reports Menu." **If you are unable to print a Statement of Certification, contact your regional NPRI office immediately.** A brief summary of the NPRI report is printed as part of the Statement of Certification. It lists the reporting facilities, their substances and the total quantities of substances released on site and/or transferred off site for final disposal or recycling.

**A Statement of Certification signed by the executive contact identified in field A16.0, must accompany the NPRI report submitted to Environment Canada.** This person must have delegated powers to accept legal responsibility for the information provided. Some facilities may choose a CEO, the environmental coordinator or the plant manager. The person who signs this statement acknowledges that:

- he/she has reviewed the documents
- he/she has exercised due diligence to ensure that the information is true and complete, and
- the amounts and values are accurate, based on reasonable estimates using available data.

**The name of the Executive Contact will not appear in the public database.**

## A17.0 Mailing Address of Executive Contact

If the mailing address for the executive contact is different from the facility's site address (A2.0), complete this field as described in A5.0.

---

This is the end of the first section of the reporting form. After the last data entry field, you will be given the option of saving the facility information, canceling the changes or returning to the facility report.

- To continue editing the facility information press **[Enter]** to return the cursor to field A1.1 "NPRI ID."
- To save your data, press **[Esc]**, highlight the **[Save]** option on the "Save/Cancel/Resume" pop-up screen and press **[Enter].** This will return you to the "Reporting Facilities" screen where you can add (**[F3]**) another facility to your report, edit (**[F7]**) the information for another facility or delete (**[F5]**) a facility from the report.
- To cancel any changes to the report, press **[Esc]**, highlight the **[Cancel]** option of the "Save/Cancel/Resume" pop-up screen and press **[Enter]**. After confirming that you want to discard all changes to the report, you return to the "Reporting Facilities" screen.

From the "Reporting Facilities" screen, press **[Esc]** to return to the "View/Enter/Edit Data" menu. From this menu, press **[F3]** to report on NPRI substances.

---

# Substance Information

You must report on each NPRI substance that exceeds the 10-tonne reporting threshold, regardless of its concentration. Section 1 of this document contains instructions on how to determine which substances must be reported.

**There are significant new reporting requirements resulting from public consultations in 1996.** You should review these sections of the guidance document before completing the report.

- B1.0 Substance Information
- B10.0 On-site Releases to the Environment
- B20.0 Off-site Transfers for Disposal and Recycling
- B30.0 Pollution Prevention Activities
- B40.0 Production Ratio and Activity Index

## B1.0 Substance Identity

Enter the name of the NPRI substance and its Chemical Abstracts Service (CAS) registry number. Appendix 1 lists the NPRI substances alphabetically and Appendix 2 lists the NPRI substances by CAS registry number. The reporting software also provides pick-lists (**[F6]**) of the NPRI substances. **Enter only NPRI substances.** For example, if you use silver nitrate, do not report silver nitrate with its corresponding CAS number because the NPRI does not list silver nitrate as an individual compound. Report this substance as "silver (and its compounds)" which has no specific CAS number. The reporting software will only accept the name and the CAS number of substances on the NPRI list.

The NPRI reporting form can be used to complete reports for the National Emissions Reduction Masterplan (NERM) of the Canadian Chemical Producers' Association and for the Accelerated Reduction/Elimination of Toxics (ARET) program of Environment Canada. From the "Main Menu", press **[F6]** to enable reporting of substances on the NERM and ARET substances list. The pick lists in field B1.0 will include the NERM and ARET substances in addition to the NPRI substances. Indicators next to the CAS number will show if the substance is a NERM or ARET substance.

### B1.1 "CAS Registry Number"

Enter the CAS registry number of the NPRI substance you are reporting. Press the **[F6]** function key to open the pick-list of NPRI substances, listed numerically by CAS registry number. Once the CAS number is identified and highlighted in the pick-list, press **[Enter]** and the program will automatically place the CAS number in field B1.1 and the substance name in B1.2.

### B1.2 "Substance Name"

Enter the substance name by putting the cursor in the field and pressing **[F6]** to bring up the pick-list of NPRI substances. Highlight your choice and press **[Enter]**. The CAS number will automatically be inserted into field B1.1. The program will enter "NA" in the CAS number field for groups of NPRI substances which do not have a unique CAS registry number, such as "Zinc (and its compounds)."

# B2.0 Nature of Activities

Indicate whether the NPRI substance is manufactured, processed or otherwise used, and the nature of such activities and uses at the facility during the calendar year. For each substance you may identify more than one activity and type of activity.

## B2.1 "Manufacture the Substance"

The term "manufacture" means to produce, prepare or compound an NPRI substance. This also includes the incidental production of an NPRI substance as a by-product or an impurity as a result of the manufacture, processing, otherwise use or treatment of other substances, products or materials. For example, certain NPRI substances may be manufactured as a result of wastewater treatment or other treatment processes.

***Example of Manufacturing Activity***

Your facility purchases chlorine and reacts it with sodium chlorite to form chlorine dioxide. Therefore, your company *processes* chlorine and *manufactures* chlorine dioxide. Both are listed NPRI substances. You are required to report both substances if you meet the reporting criteria. Refer to "Calculating the Reporting Thresholds" in Section 1.

***Example of Incidental Manufacturing of By-products***

Your facility manufactures aluminum. During the smelting process, hydrogen fluoride (HF) is released. The concentration of HF is 2 ppm but the quantity exceeds 10 tonnes per year. You are required to report your releases of HF because it is *produced as a by-product* and not subject to the 1% concentration criterion. You are not required to report solid aluminum because it is not an NPRI substance. You may have to report aluminum "fume or dust", as well as other NPRI substances, if all other reporting criteria are met. Refer to "Calculating the Reporting Threshold" in Section 1.

If you manufacture the substance being reported, enter a "Y" for at least one of the categories that follow:

**B2.1.a** **"For on-site use/processing"** - The substance is manufactured and then further processed or used at the same facility.

**B2.1.b** **"For sale/distribution"** - The substance is manufactured specifically for sale or distribution outside the facility. For example, a mine mill processes metal ore on site to manufacture ore concentrates, and then sells the metal concentrate(s) outside the facility.

**B2.1.c** **"As a by-product"** - The substance is produced incidentally and is released to the environment or transferred off site in waste. See Section 1 for a complete discussion of NPRI by-products.

**B2.1.d** **"As an impurity"** - The substance is produced incidentally and remains in the product destined to be distributed in commerce.

## B2.2 "Process the Substance"

The term "process" means the *preparation* of a listed substance, after its manufacture, for distribution in commerce, or the use of a listed substance as part of a chemical or physical process. Processing includes the preparation of a substance ***with or without change*** in physical or chemical form. The term also applies to the processing of materials, mixtures or formulations that contain a listed substance as one component. During processing, the substance is generally not separated from the product. If your facility processes the substance, enter a "Y" for at least one of the following:

**B2.2.a** **"As a reactant"** - An NPRI substance used in chemical reactions for the manufacture or processing of another substance or product. This includes, but is not limited to, feedstock, raw materials, intermediates and catalysts.

**B2.2.b** **"As a formulation component"** - A substance that is added to a product (or product mixture) before further distribution of the product. Examples of substances used in this capacity include, but are not limited to, additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants and rheological modifiers.

**B2.2.c** **"As an article component"** - A substance that becomes an integral component of an article distributed for industrial, trade or consumer use. An example is ethylene glycol added to vehicle radiators during assembly.

**B2.2.d** **"Repackaging only"** - Processing or preparation of a substance (or product mixture) for distribution in commerce. This also includes transferring NPRI substances from bulk containers to other reservoirs where there are releases during the transfer operations.

**B2.2.e** **"As a by-product"** - The NPRI substance is incidentally processed and is released into the environment or is transferred off site in waste. See Section 1 for a complete discussion of NPRI by-products.

### B2.3 "Otherwise Use the Substance"

"Otherwise use" encompasses any use of an NPRI substance at a facility that does not fall under the definitions of "manufacture" or "process." As an example, your facility cleans equipment with a listed solvent; it *otherwise uses* the substance (ancillary or other use). Note that such an activity is not considered "routine janitorial" or "facility grounds maintenance."

If your facility otherwise uses the substance, enter a "Y" for at least one of the following:

**B2.3.a** **"As a physical or chemical processing aid"** - A substance that is added to a reaction mixture to aid in the manufacture or synthesis of another substance but is not intended to remain in or become part of the product or product mixture. Examples of such substances include, but are not limited to, process solvents, catalysts, inhibitors, initiators, reaction terminators and buffers.

**B2.3.b** **"As a manufacturing aid"** - A substance that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another substance. Examples include process lubricants, metalworking fluids, coolants, refrigerants and hydraulic fluids.

**B2.3.c** **"Ancillary or other use"** - A substance in this category that is used at a facility for purposes other than as a chemical processing aid or manufacturing aid. This includes, but is not limited to, equipment cleaners, degreasers, fuels, flocculants and substances used for treating wastes.

**B2.2.d** **"As a by-product"** - The NPRI substance is incidentally present in a material which is otherwise used at the facility and is released into the environment or is transferred off site in waste. See Section 1 for a complete discussion of NPRI by-products.

*All values entered in the electronic reporting form are in metric tonnes (1000 kg).*

# On-site Releases to the Environment

If the reporting criteria are met for a listed substance, then **all** releases of that substance must be reported **regardless of the concentration or amount**.

## B10.1 Do You Release This Substance On Site?

If your facility releases on site, an NPRI substance for which you are reporting, enter "Y" for "Yes" in field B10.1. If you enter "N" for "No", the program brings you automatically to field B14.0 - "Reasons for Changes in Quantities Released from Previous Year".

## B11.1 Releases of Less Than One Tonne

If the total of all your releases for a substance to all media is less than one tonne, you have the option of reporting releases by environmental medium (B12.1 to B12.4 for releases to air, water, land and underground injection) or reporting only the total release to all media (B12.5). To report total releases to all media of less than 1 tonne of a substance, enter "Y" for "Yes" in B11.1. The program will proceed directly to field B12.5 "Total Releases." Otherwise, enter "N" for "No" in the response box and enter specific releases to each environmental medium.

**If you identified surface water bodies (through field A14.1 or from the "View/Enter/Edit Data" menu), you should enter "N" and proceed to identify the specific releases to each water body. Ensure that each water body previously identified is associated with a discharge reported in field B12.3, otherwise the software will register an error. Return to the list of surface water bodies and delete those not referenced in field B12.3**

## B12.0 On-site Releases of the Substance to the Environment

If your releases are greater than one tonne, you must account for total releases of the substance from your facility to each environmental medium (air, water, land and underground injection). **Report the "net" release of the substance, not the total release of a mixture containing the substance.** Some NPRI substances are listed as "(element) and its compounds." For these substances, only report the total amount of the element in the compounds released rather than the total amount of the compounds that contain the element. Total releases (B12.5) from your facility do not include transfers of the substance in waste to off-site locations for disposal or treatment prior to disposal, nor the amount of the substance transferred for recycling.

**All values entered in the electronic reporting form are in metric tonnes (1000 kg).**

## "Basis of Estimate" Codes

For each release by medium, enter a "Basis of Estimate" code. There are four methods for estimating releases. Reference documents that may assist you with your estimates are listed in the Bibliography and examples of each estimation method are given in Appendix 8. The following are the "Basis of Estimate" codes listed in declining order of expected accuracy:

- monitoring or direct measurement (Code M)
- mass balance (Code C)
- emission factors (Code E), and
- engineering estimates (Code O).

Selecting "NA" (not applicable) for the "Basis of Estimate" field indicates that there are no releases from your facility to this medium. Enter the letter code identifying the method that applies to the largest portion of the estimated releases. Press **[F6]** for a pick-list of the "Basis of Estimate" codes.

## Quantity Codes

There are two options for reporting on-site releases of less than one tonne – a quantity code, or a measured or calculated number. For releases greater than one tonne, quantity codes are not available. **The "Quantity Codes" (A, B, C, D, E) represent a range of values used for reporting releases of less than one tonne (see below).** When the code is entered, the electronic form will automatically insert the midpoint of the range. For all other cases, the "Quantity Code" should be "NA". "NA" (not applicable) is inserted automatically in the electronic reporting form when scrolling past this field.

| CODE | RANGE | MIDPOINT |
|---|---|---|
| **A** | > 0 to < 0.2 tonnes | 0.1 tonnes |
| **B** | 0.2 to < 0.4 tonnes | 0.3 tonnes |
| **C** | 0.4 to < 0.6 tonnes | 0.5 tonnes |
| **D** | 0.6 to < 0.8 tonnes | 0.7 tonnes |
| **E** | 0.8 to < 1.0 tonnes | 0.9 tonnes |
| **NA** | Not applicable | — |

Using the pick-list (**[F6]**), you can select one of the codes and press **[Enter]** to automatically enter this code in the "Quantity Code" column. This will also enter the midpoint of the chosen range into the "Releases" column. For example, entering code "B" in the "Quantity Code" column will place the quantity "0.3 tonnes" in the "Releases" column. If quantity codes are used, it is possible that total releases by medium could total more than one tonne. This is acceptable and should not be corrected to total one tonne.

### B12.1 "Air Releases"

Report all air emissions of the NPRI substance and the basis of the estimate. Quantity codes may be used to estimate releases under 1 tonne. "Basis of Estimate" and "Quantity Codes" are described above in B12.0. Both routine releases, such as fugitive releases to air, and accidental or non-routine releases, such as a relief valve opening due to process upset, should be included in your estimate of the quantity released.

*Discharges to an MSTP are considered off-site transfers and not direct discharges to surface waters.*

**B12.1.a "Stack or point releases"** - Total releases from stack or point sources including stacks, vents, ducts, pipes or other confined process streams. Releases to air from pollution-control equipment generally fall into this category.

**B12.1.b "Storage or handling releases"** - The quantity of releases to air from storage or handling of a listed substance should be entered in this field.

**B12.1.c "Fugitive releases"** - Fugitive releases are the total of all releases to air that are **not released through confined process streams**. These releases include:

- fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.
- evaporative losses from surface impoundments and spills
- releases from building ventilation systems, and
- any other fugitive or non-point air emissions from land treatment, mine tailings, storage piles, etc.

**B12.1.d "Spills"** - Any accidental releases to air that do not qualify as point or non-point air releases should be entered in this field.

**B12.1e "Other non-point releases"** - Any other non-point air releases, not estimated in one of the above air-related release types, should be entered in this field.

### B12.2 "Underground Injection"

Report the quantity of the NPRI substance injected **on site** and the basis of the estimate. Quantity codes may be used to estimate releases under 1 tonne. "Basis of Estimate" and "Quantity Codes" are described above in B12.0.

### B12.3 "Releases to Surface Waters"

Report all releases of the NPRI substance to surface waters and the basis of the estimate. Quantity codes may be used to estimate releases under 1 tonne. "Basis of Estimate" and "Quantity Codes" are described above in B12.0.

**B12.3.a "Direct discharges"** - Direct discharges **do not include discharges to a municipal sewage treatment plant (MSTP) or other off-site wastewater treatment facilities**. These discharges are considered off-site transfers in waste for final disposal which are reported in field B22.1.f.

B**12.3.b "Spills"** - Spills into surface waters include any accidental releases which may have occurred at your facility.

**B12.3.c "Leaks"** - A leak to surface waters differs from a spill in terms of the time required for an event. Spills normally occur over a period of hours to days, whereas a leak is a chronic event which occurs over periods of days to months.

For each surface water discharge you must identify the receiving water bodies. Enter "Y" for "Yes" in the "Water Codes" column. This opens the "Surface Water Body Entry Codes" table where you list the water bodies that receive the discharge as well as the quantity discharged to each surface water body. Press **[F6]** to add a water body to the table from a pick-list of previously-entered water body names. To delete a water body from the table press **[F5]**. To edit an entry, press **[F7]**.

If the pick-list of surface water bodies is incomplete or inaccurate, you can add or edit a surface water body name by pressing **[F3]. Ensure that each water body in the pick-list is associated with a discharge reported in field B12.3 in at least one of the substance reports. If the software reports an error for "orphan" water bodies, return to the table "Identification of Surface Waters" and delete those not associated with any discharges.**

There are three ways to add or edit surface water body names in the table, "Identification of Surface Waters":

- by pressing **[F5]** - "Discharges to Surface Waters" in the "View/Enter/Edit Data" menu
- by answering "Y" to question A14.0 "Do you release any NPRI substances, for which you are reporting, to surface waters?", or
- by answering "Y" in the "Water Codes" column in field B12.3, then pressing **[F3]** to add a surface water body to the pick-list.

### B12.4 "Releases to Land"

Report all releases of the NPRI substance to land **within** the boundaries of your facility and the basis of the estimate. Quantity codes may be used to estimate releases under 1 tonne. "Basis of Estimate" and "Quantity Codes" are described above in field B12.0. Do not report land disposal at an off-site location in this field. Transfers of the substance in waste for disposal are reported in B20.0.

**B12.4a "Landfill"** - For the purposes of the NPRI, **on-site** landfilling is classified as a release. If the substance is transferred off site in waste for final disposal, enter the quantity in field B22.1.e "Containment - Landfill."

**B12.4b "Land treatment/application farming"** - Land treatment is a disposal method in which a waste containing a listed substance is applied onto or incorporated into soil. If the substance is transferred off site in waste for final disposal, enter the quantity in field B22.1.h "Land Treatment."

**B12.4c "Spills"** - Releases classified as spills include any accidental release of a listed substance to land at your facility.

**B12.4d "Leaks"** - Leaks differ from spills in that they are chronic events that occur over a comparatively long time. This includes leaking underground storage tanks.

**B12.4e "Other"** - Releases to land could occur in forms other than those already specified above, for example, encapsulation prior to on-site landfill.

### B12.5 "Total Quantity Released (tonnes)"

The electronic form will calculate the sum of the on-site releases reported in fields B12.1 through B12.4 and place this total into field B12.5. If you chose to report only a total release under 1 tonne to all media (B11.1), enter the quantity and the basis of the estimate. Quantity codes may be used to estimate releases under 1 tonne. "Basis of Estimate" and "Quantity Codes" are described in B12.0.

## B13.0 Yearly Breakdown of Releases by Percentage in Each Quarter

This field is intended for facilities that have seasonal fluctuations in their releases. Releases for the four quarters must total 100%.

## B14.0 Reasons for Changes in Quantities Released from Previous Year

Enter "Y" to select one or more reasons why the on-site releases of the NPRI substance changed since 1996. You may use the comments field to elaborate on your reasons. If this is your first reporting year, select B14.1.i for "Not applicable." Some of the reasons for change may also be considered as pollution prevention activities. If you have selected B14.1.c "Pollution prevention activities", you must also complete section B30.0 - Pollution Prevention Activities.

**B14.1.a "Changes in production levels"** - A change in on-site releases may be the result of either improved (or worsened) environmental practices or changes in production levels or some other activity at the facility. Changes in production levels can be caused by increased sales, a change in the economy affecting the facility, a strike or other plant closure, expansion or conversion of the facility, etc. Other examples are given in section B40.0 "Production Ratio and Activity Index," where you have the opportunity to provide a quantitative measure of the year-to-year fluctuations in production levels and on-site releases.

**B14.1.b "Changes in estimation methods"** - Choose this item if the "basis of estimate" (described in B12.0) for the reported substance has changed, e.g., if engineering estimates (Code O) have been replaced by direct monitoring (Code M). If the method of calculation was updated or corrected, provide details in field B14.2 - Comments. Appendix 8 provides examples of estimating releases and the Bibliography lists reference documents for estimation methods.

**B14.1.c "Pollution prevention activities"** - If chosen, you must describe the pollution prevention activities in section B30.0. Refer to that section for examples of pollution prevention activities. **Pollution prevention does not include on-site treatment (pollution control) or off-site recycling or disposal.**

**B14.1.d "Changes in on-site treatment"** - Examples include modification of or addition of new pollution control devices, redirection or elimination of waste streams, expanded on-site recycling and other changes in on-site waste treatment.

**B14.1.e "Changes in off-site transfers for recycling"** - If chosen, complete field B25.0 (optional) on recycling operations and report the quantity of the NPRI substance recycled.

**B14.1.f "Changes in off-site transfers for final disposal"** - Off-site transfers of waste are reported in fields B20.0 to B24.0.

**B14.1.g "Other"** - Some examples include accidents, spills or breakdowns. Provide details in the comments field.

**B14.1.h "No significant change"** - Choose this item if there has been no change or if the change was less than 10% from the previous year.

**B14.1.i "Not applicable"** - Choose this item if this is the first year you are reporting this substance.

### B14.2 "Comments (Releases)"

This field is for comments on your releases. Enter a "Y" in the box for "Comments" to open a memo screen where you can enter 10 lines of text, each 75 characters long.

## B15.0 Anticipated Releases

Enter your estimates of total releases to all environmental media, in tonnes, for the years 1998, 1999 and 2000. Estimates for the years 2001 and 2002 are optional (Press **[F4]** to enter "Not Applicable"). Factors that should be considered when making these estimates include future production levels, product or process changes, pollution prevention measures, addition of pollution-control equipment, etc.

# Off-site Transfers for Disposal or Recycling

To simplify reporting to the NPRI, off-site transfers for disposal, recycling or energy recovery are considered together here. People who report under the *Export and Import of Hazardous Wastes Regulations (EIHWR) (Canada Gazette*, 1992) will immediately recognize the new format. Even if you do not handle hazardous wastes, the new reporting format will enable you to describe your transfers more accurately. The reporting categories are based upon the International Waste Identification Code (IWIC) (Environment Canada, 1993) developed by the Organization for Economic Cooperation and Development (OECD). Reporting is limited to those categories which are most applicable to NPRI reporters. By harmonizing the NPRI with existing Canadian regulations and international standards, the value of the data collected will be enhanced.

"**Waste**" is defined as any material that is sent for final disposal or treatment prior to final disposal. "**Disposal**" is final disposal of the material (e.g., landfill) or storage and treatment (e.g. stabilization) prior to final disposal. "**Recycling**" refers to activities that keep a material or a component of the material from becoming a waste destined for final disposal. Recyclable materials may be reprocessed to their original specifications and re-used for their original purpose or used for an entirely different purpose. Components may be recovered from the recyclable material or the material may be used as a fuel for energy recovery. The recyclable material may be used in the manufacture of another product. For the purposes of the NPRI, recycling also includes substances sent back to the manufacturer or supplier for reprocessing, repackaging, resale or for credit or payment.

## B20.0 Transfers of the Substance to Off-site Locations

Indicate if you transfer the NPRI substance to off-site locations for disposal or recycling by entering either "Yes" or "No" in fields B20.1 and B20.2, respectively. Depending on your reply, the software will automatically bypass certain sections of the report. However, even if you do not transfer NPRI substances off site, you must still provide reasons for changes in quantities disposed/recycled and anticipated transfers for disposal/recycling (B23.0, B24.0, B26.0 and B27.0). You will also be able to provide comments on your transfers in waste and your recycling activities in fields B23.2 and B26.2.

You can enter an asterisk (*) in field B20.2 to indicate that you choose not to provide any information on recycling. The software will bypass those sections of the report.

## B21.0 Reasons Why Substances Were Transferred Off Site for Disposal or Recycling

In this field, indicate why the NPRI substance or why a material containing the NPRI substance was transferred off site for disposal or recycling. **This category does not include on-site disposal or recycling.** For convenience, the equivalent IWIC codes are listed in brackets after each item. Choose one or more of the following reasons.

*Do not report off-site transfers of mineral acids if the acid has been neutralized to a pH of 6 or greater before its transfer off site for final disposal.*

**B21.1.a "Production residues"** - These are, for example, residues of industrial processes such as slags and still bottoms, residues from raw material processing such as mining residues and oil field slop. [Corresponds to codes Q1, Q8 and Q11 in the IWIC]

**B21.1.b "Off-specification products"** - These are products that are not suitable for commercial distribution or that cannot be used by the facility and are destined for final disposal or re-use or recycling by another facility. [Corresponds to code Q2 in the IWIC]

**B21.1.c "Expiration date passed"** - Products for which the date for appropriate use has expired and that are transferred off site for final disposal or re-use or recycling by another facility. [Corresponds to code Q3 in the IWIC]

**B21.1.d "Contaminated materials"** - For example, materials spilled or having undergone other mishap, including any materials contaminated as a result of the mishap; materials contaminated or soiled as a result of planned actions such as residues from cleaning operations, packing materials, containers, etc.; contaminated substances that no longer perform satisfactorily, such as contaminated acids, solvents, exhausted tempering salts, etc.; adulterated materials. [Corresponds to codes Q4, Q5, Q7 and Q12 in the IWIC]

**B21.1.e "Unusable parts or discards"** - Describes items such as reject batteries, exhausted catalysts, etc. [Corresponds to code Q6 in the IWIC]

**B21.1.f "Pollution abatement residues"** - Materials, such as scrubber sludges, baghouse dusts, spent filters, etc., generated by pollution controls and on-site waste treatment. [Corresponds to code Q9 in the IWIC]

B2**1.1.g "Machining or finishing residues"** - This includes lathe turnings, grinding dusts, sheet metal cuttings, mill scales, etc. [Corresponds to code Q10 in the IWIC]

**B21.1.h "Site remediation residues"** - Materials, substances or products resulting from remedial actions with respect to contaminated land. [Corresponds to code Q15 in the IWIC]

**B21.1.i "Other"** - Any materials, substances or products that are not described above.

## B22.0 Off-site Transfers in Waste for Final Disposal

In this field, report the quantity of the NPRI substance transferred in waste to off-site locations for final disposal or storage and treatment prior to final disposal. If the reporting criteria are met for a listed substance, then **all** off-site transfers of that substance in waste must be reported **regardless of the concentration or amount**. Report the weight, **in metric tonnes**, of the NPRI substance that is sent to an off-site treatment facility and not the total weight of the mixture containing that substance. Report transfers to the first off-site location only. You are not required to report any subsequent transfers by the waste disposal company, however, you must report the disposal method used. Disposal includes storage and treatment (e.g., stabilization) prior to final disposal. Do not report materials containing the NPRI substance which are recycled off site; they may be reported in field B25.0.

**Do not report off-site transfers of mineral acids if the acid has been neutralized to a pH of 6 or greater *before* its transfer off site for final disposal.** In the case of nitric acid, the quantity of neutralized nitric acid would be reported as "nitrate ion in solution at a pH of 6.0 or greater".

### B22.1 "Disposal Method"

Eight major off-site disposal methods are identified. Unlike previous NPRI reports, you enter the exact amounts of the NPRI substance transferred for that disposal method. The minimum reportable amount is 0.001 tonnes. Facilities can obtain information about the ultimate treatment/disposal of their transfers by looking at their invoices, waybills, waste manifests or by contacting the transfer facility.

**B22.1.a "Physical treatment"** - e.g., drying, evaporation, encapsulation or vitrification.

**B22.1.b "Chemical treatment"** - e.g., precipitation, stabilization or neutralization.

**B22.1.c "Biological treatment"** - An example is bio-oxidation.

**B22.1.d "Incineration/thermal"** - This differs from energy recovery. Incineration occurs when the substance or the material containing the substance does not have sufficient fuel value to contribute towards energy recovery.

**B22.1.e "Containment"** - Two forms of containment are identified: landfill and other storage.

**B22.1f "Municipal Sewage Treatment Plant (MSTP)"** - Report discharges of the NPRI substance to a municipal sewer system, regardless of the level of treatment provided by the MSTP.

**B22.1.g "Underground injection"** - Report quantity injected underground at an off-site location.

**B22.1.h "Land treatment"** - Report the quantity transferred off site for the purpose of land application or land farming.

You must identify the off-site facilities which receive the NPRI substance. Enter "Y" for "Yes" in the "Locations" column to open the "Off-site Facilities and MSTP Entry Codes" table. If you transfer waste to more than one facility, you must list each one and specify the quantity of the NPRI substance sent to each facility. Enter an off-site facility code (e.g., 01, 02, 03, …) and the quantity of the NPRI material sent to that off-site facility. Press **[F6]** for a pick-list of off-site facility names. To delete a facility code, press **[F5]**. To edit an entry, press **[F7]**. If the pick-list of off-site facilities and MSTPs is incomplete or inaccurate, you can add or edit a facility by pressing **[F3]**.

The pick-list of off-site facilities and MSTPs is based on the information provided in the table "Identification of Off-site Facilities and MSTPs". Do not identify an off-site facility unless it is associated with at least one substance transfer, otherwise the software will generate an "orphan facility" error. There are three ways to add or edit off-site facilities and MSTPs:

- by pressing **[F4]** - "Off-site Facilities" in the "View/Enter/Edit Data" menu
- by answering "Y" to question A13.0, or
- by entering "Y" in the "Locations" column in field B22.1, then pressing **[F3]** to add an off-site facility to the pick-list.

### B22.2 "Total Quantity Disposed (tonnes)"

The reporting software calculates the sum of the entries made in fields B22.1 and places the result into this field.

## B23.0 Reasons for Changes in Quantities Disposed from Previous Year

Enter "Y" to select one or more reasons why off-site transfers for disposal of the NPRI substance has changed since 1996. You may use the comments field to elaborate on your reasons. If this is your first reporting year, select B23.1.i for "Not applicable." Some of the reasons for change may also be considered as pollution prevention activities. If you have selected B23.2.c "Pollution prevention activities", you must also complete section B30.0 - Pollution Prevention Activities. The reasons for changes include:

**B23.1.a "Changes in production levels"** - A change in off-site transfers of waste for final disposal may be the result of changes in production levels or some other activity at the facility. Changes in production levels can be caused by increased sales, a change in the economy effecting the facility, a strike or other plant closure, expansion or conversion of the facility. Other examples are given in section B40.0 "Production Ratio and Activity Index," where you have the opportunity to provide a quantitative measure of the year-to-year fluctuations in production levels and on-site releases.

**B23.1.b "Changes in estimation methods"** - Choose this item if there was a change in the method of estimating the quantity of the NPRI substance in wastes transferred off site. For example, engineering estimates may have been replaced by direct measurement. Provide details in field B23.2 - Comments.

**B23.1.c "Pollution prevention activities"** - If chosen, you must describe the pollution prevention activities in section B30.0. Refer to that section for examples of pollution prevention activities. Pollution prevention does not include on-site treatment (pollution control) or off-site recycling or disposal.

**B23.1.d "Changes in on-site treatment"** - Examples include modification of or addition of new pollution control devices, redirection or elimination of waste streams, expanded on-site recycling and other changes in on-site waste treatment.

**B23.1.e "Changes in off-site transfers for recycling"** - If chosen, please complete field B25.0 (optional) on recycling operations and the quantity of the NPRI substance recycled.

**B23.1.f "Other"** - Some examples include site remediation, accidents, spills or breakdowns which affect the quantity of the NPRI substance transferred off site in waste for final disposal. Provide details in field B23.2 - Comments.

**B23.1.i "No significant change"** - Choose this item if there has been no change or if the change was less than 10% from the previous year.

B**23.1.j "Not applicable"** - Choose this item if this is the first year reporting this substance.

### B23.2 "Comments (Disposal)"

Enter "Y" to open the comments screen. Ten lines of 75 characters each are available for comments on off-site transfers in waste for final disposal.

*Report only the net weight of the NPRI substance transferred off site for recycling, and not the total amount of the mixture containing the substance.*

## B24.0 Anticipated Disposals

Enter your estimate of total transfers of the listed substance in waste to off-site facilities, in tonnes, for the years 1998, 1999 and 2000. Years 2001 and 2002 are optional fields (press **[F4]** to enter "Not applicable").

## B25.0 Off-site Transfers for Recycling (optional)

This field was added to offer facilities the opportunity of identifying their efforts toward recovery, re-use and recycling. While optional this year, reporters are encouraged to complete this field in preparation for the 1998 reporting year when recycling activities become a mandatory part of the NPRI report. Please notify your regional NPRI office of any difficulties in completing this field so that the NPRI reporting software and this guidance document can be improved for the 1998 reporting year.

"**Recycling**" refers to activities that keep a material or a component of the material from becoming a waste destined for disposal. Recyclable materials may be cleaned, regenerated or reprocessed to their original specifications and re-used for their original purpose. They may also be used for an entirely different purpose without any pre-treatment or modification. Components may be recovered or reclaimed from the recyclable material or the material may be used as a fuel for energy recovery. The recyclable material may be used in the manufacture of another product. For the purposes of the NPRI, recycling also includes substances sent back to the manufacturer or supplier for reprocessing, repackaging, resale or for credit or payment. Report only the net weight of the NPRI substance transferred off site for recycling, and **not the total amount of the mixture containing the substance**. For example, your facility submits an NPRI report for zinc. It sends zinc-coated steel for recycling to an off-site recycler. In this case, you must report the net weight of the zinc and not the total weight of the zinc-coated steel.

Ten types of recycling operations are listed, based on those set out in Part II of Schedule III of the *Export and Import of Hazardous Wastes Regulations* and are used as part of the IWIC code to classify hazardous recyclables. Choose the recycling operation which best describes how the NPRI substance or how the material containing the NPRI substance was recycled. The NPRI substance is considered to be recycled even when only a portion of the material in which it is contained is recycled. This recognizes the fact that recycling may only recover certain valuable components. For example, only the valuable metals may be recovered from a wastewater treatment sludge from an electroplating operation.

**B25.1.a "Energy recovery"** - The NPRI substance or the material containing it has a sufficiently high enough BTU value that would permit its use as a fuel for energy recovery. If there has been no attempt at recovering energy from the material, report it as an off-site transfer in waste for incineration. [Corresponds to code R1 in the IWIC]

**B25.1.b "Recovery of solvents"** - The recovery or regeneration of NPRI substances or materials containing NPRI substances that have been used as solvents. For example, distillation of methanol after solvent extraction to recover pure solvent methanol. [Corresponds to code R2 in the IWIC]

**B25.1.c "Recovery of organic substances (not solvents)"** - Recovery of other organic substances that are not used as solvents. [Corresponds to code R3 in the IWIC]

**B25.1.d "Recovery of metals and metal compounds"** - Choose this recycling activity when a pure metal or a metal compound is being recovered. The NPRI list of substances includes 17 metals: aluminum, antimony, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, thorium, titanium, vanadium and zinc. Some are listed as elements and their compounds while others are listed as specific inorganic or qualified inorganic compounds. Refer to Appendix 3. [Corresponds to code R4 in the IWIC]

**B25.1.e "Recovery of inorganic materials (not metals) "** - The NPRI list of substances contains the inorganic substances: ammonia, arsenic, asbestos, calcium cyanamide, carbon disulphide, chlorine, chlorine dioxide, ionic cyanides, hydrazine, nitrate ion, and phosphorus. Refer to Appendix 3. [Corresponds to code R5 in the IWIC]

**B25.1.f "Recovery of acids or bases"** - The following mineral acids are on the NPRI list: hydrochloric acid, nitric acid, phosphoric acid and sulphuric acid. This recycling activity also applies to the recovery of acids or bases that contain other NPRI substances as contaminants. [Corresponds to code R6 in the IWIC]

**B25.1.g "Recovery of catalysts"** - Choose this item if a catalyst containing an NPRI substance is transferred off site to be recovered, reactivated, regenerated or otherwise refurbished for re-use as a catalyst. Recovery of catalysts does not include the destruction of the catalyst to recover separate components. Choose B25.1.d if the catalyst is transferred off site for recovery of the metals in the catalyst. [Corresponds to code R8 in the IWIC]

**B25.1.h "Recovery of pollution abatement residues"** - This includes the recycling of residues from pollution controls or site remediation activities. [Corresponds to code R7 in the IWIC]

**B25.1.i "Refining or re-use of used oil"** - Lubricating oils are not on the NPRI list of substances. However, used oils are sometimes contaminated with NPRI substances, such as zinc additives. Choose this recycling activity if used oils containing NPRI substances are transferred off site for refining or re-use. If the used oil is used as a fuel, choose B25.1.a. [Corresponds to code R9 in the IWIC]

**B25.1.j "Other"** - Other recovery, re-use and recycling activities not described above.

Please identify the off-site facilities which receive the NPRI substance for recovery, re-use or recycling. Specify the quantity of the NPRI substance that is transferred to each facility. Enter "Y" for "Yes" in the "Locations" column to open the "Off-site Facilities and MSTP Entry Codes" table. Enter an off-site facilities code (e.g., 01, 02, 03, …), then enter the quantity of the NPRI substance sent to that off-site facility. Press **[F6]** for a pick-list of off-site facilities. To delete an off-site facility code, press **[F5]**. To edit an entry, press **[F7]**. If the pick-list of off-site facilities is incomplete or inaccurate, you can add or edit a facility by pressing **[F3]**.

The pick-list of off-site facilities and MSTPs is based on the information provided in the table "Identification of Off-site Facilities and MSTPs". There are three ways to add or edit off-site facilities and MSTPs:

- by pressing **[F4]** - "Off-site Facilities" in the "View/Enter/Edit Data" menu
- by answering "Y" to question A13.0, or
- by answering "Y" in the "Off-site Locations" column in field B25.1, then pressing **[F3]** to add an off-site facility to the pick-list.

### B25.2 "Total Quantity Recycled (Tonnes)"

The reporting software calculates the sum of the entries made in field B25.1 and places the result into this field.

## B26.0 Reasons for Changes in Quantities Recycled from Previous Year (optional)

Indicate the changes, since 1996, in off-site transfers for recycling. If this is your first reporting year, select B26.1.j - "Not Applicable". Otherwise, enter "Y" for at least one of the following reasons for changes in quantities transferred. If you have selected B26.1.c - "Pollution prevention activities", you must complete section B30.0 - Pollution Prevention Activities. The reasons for changes include:

**B26.1.a "Changes in production levels"** - See field B23.1.a.

**B26.1.b "Changes in estimation methods"** - See field B23.1.b.

**B26.1.c "Pollution prevention activities"** - See field B23.1.c.

**B26.1.d "Changes in on-site treatment"** - See field B23.1.d.

**B26.1.e "Changes in off-site transfers in waste for final disposal"** - Choose this item if transfers in waste (reported in 1996) were redirected towards recycling activities (in 1997) or vice-versa.

**B26.1.f "Other"** - See field B23.1.f.

**B26.1.i "No significant change"** - No change or a change of less than 10% from the previous year.

**B26.1.j "Not applicable"** - First year reporting this substance.

### B26.2 "Comments (Recycling)"

Enter "Y" to open the comments screen. Ten lines of 75 characters each are available for comments on off-site transfers for recycling.

## B27.0 Anticipated Recycling

Enter the anticipated total amounts of the listed substance that will be recovered, re-used or recycled in years 1998 to 2002. Press **[F4]** to enter "Not applicable".

*Pollution prevention does not include on-site treatment (pollution control) activities or off-site recycling and disposal activities.*

## Pollution Prevention Activities

In this section, facilities that have taken measures to prevent the generation of NPRI pollutants and wastes are asked to indicate what pollution prevention activities they have implemented.

Pollution prevention is defined as "the use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste, and reduce the overall risk to human health or the environment" (Environment Canada, 1995). Pollution prevention seeks to eliminate the causes of pollution rather than managing it after it has been created. It encourages the kinds of changes that are likely to lead to lower production costs, increased efficiencies and more effective protection of the environment. **Pollution prevention does not include on-site treatment (pollution control) activities or off-site recycling and disposal activities**.

## B30.0 Pollution Prevention (P2) Activities

Qualitative reporting of pollution prevention activities is a new, mandatory reporting requirement for the 1997 NPRI. If you have not implemented a pollution prevention program at your facility, choose item B30.1.i. Otherwise, identify one or more of the pollution prevention activities you have undertaken during the reporting year. If you selected "Pollution Prevention Activities" in fields B14.1c, B23.1c or B26.1c as a reason for changes in quantities released or transferred off site for final disposal or recycling, you **must** identify the activity.

**B30.1.a "materials or feedstock substitution"** - e.g., using aqueous-based cleaners rather than solvent-based cleaners; using a non-toxic detergent to clean glassware rather than using chromic acid.

**B30.1.b "product design or reformulation"** - e.g., reduce or eliminate the use of toxic substances by changing product specifications; modifying design or composition of products.

**B30.1.c "equipment or process modifications"** - e.g., changing to mechanical stripping/cleaning devices from solvents; using more efficient spray paint systems; instituting recirculation within a process.

**B30.1.d "spill and leak prevention"** - e.g., measures to prevent releases such as installing splash guards and drip trays around equipment, such as solvent sinks, hot tanks and jet spray washers, to collect and return drainage and contain leaks and spills.

**B30.1.e "on-site re-use, recycling or recovery"** - e.g., using a small distillation unit to reclaim solvents; recovering metals by ion exchange, reverse osmosis.

**B30.1.f "improved inventory management or purchasing techniques"** - e.g., avoiding the unnecessary generation of waste by ensuring that materials do not stay in inventory beyond shelf life; instituting a clearinghouse to exchange materials that would otherwise be discarded.

**B30.1.g "good operating practices or training"** - e.g., changing production schedules to minimize equipment and feedstock changeovers; improved maintenance scheduling; training staff to recognize pollution prevention opportunities.

**B30.1.h "other"** - Specify the pollution prevention activities in field B30.2 - Comments.

**B30.1.i "no pollution prevention activities"**

### B30.2 "Comments (Pollution Prevention)"

Enter a "Y" in the box for "Comments" to open a memo screen where you can enter 10 lines of text, each 75 characters long. Facilities are encouraged to provide additional information describing the pollution prevention initiatives they have implemented over the year, including results achieved (e.g., environmental results, economic benefits, etc.). Information on general P2 activities, such as water and energy conservation initiatives, should be entered in the facility comment field (A15.0).

# Production Ratio and Activity Index

This section allows facilities, on a voluntary basis, to show the relationship between year-to-year fluctuations of their production levels and the relative decrease or increase in the sum of their on-site releases plus off-site transfers of the reported substance.

A production ratio is the ratio of "reporting-year production" to "prior-year production" that will permit year-to-year comparisons of changes in the sum of on-site releases plus off-site transfers. An activity index is based on a variable, other than production, that is the primary influence on the sum of on-site releases plus off-site transfers, and that will permit comparison of changes from year to year. While the use of a production ratio or activity index is not practical for some facilities, it does provide a means for facilities to report useful information to better understand trends in on-site releases and off-site transfers in a simple numerical format. Because changes in total on-site releases and off-site transfers may be the result of changes in production levels, a production ratio or activity index would help indicate, relatively speaking, whether a facility has, in fact, improved (or worsened) its environmental performance.

## B40.0 Production Ratio and Activity Index (optional)

In this section, you are encouraged to provide a "ratio" of reporting-year production to prior-year production, or an "activity index" based on a variable other than production that was the primary influence on the total quantity of the reported substance released on-site and transferred off site for final disposal or recycling. The ratio or index should be reported to two decimal places (i.e., two digits to the right of the decimal point). If the manufacture, processing or otherwise use of the reported substance began during the current reporting year, enter not applicable, "NA", as the production ratio or activity index.

It is important to realize that if your facility reports more than one substance, the production ratio or activity index may vary for different chemicals. For facilities that manufacture the reported substance, the quantities produced in the current and previous year provide a good basis for the ratio because that is the primary business activity associated with the substance. However, in most cases, the production rate or activity index must be based on some variable of production or activity rather than on the amount of substance manufactured, processed or otherwise used.

Select, among the following examples, the production ratio or activity index that is the most appropriate method of adjusting the sum of on-site releases plus off-site transfers of the reported substance. If your facility reports on more than one NPRI substance, the production ratio or activity index may vary from substance to substance. However, for a given substance, the same method of calculating a production ratio or activity index must be used from year to year to allow comparison. If the substance is used in more than one production process, you must use a production ratio that is based on a weighted average of the individual production ratios. If this is the first year reporting a substance, enter not applicable, "NA", in field B40.1 because you have no basis of comparison to the previous year for the purposes of developing a production ratio or an activity index.

## Determining a Production Ratio

The production ratio must be based on the variable that most directly affects the quantities of the substance released on site or transferred off site for final disposal or recycling. Examples of methods available include:

- amount of the substance manufactured divided by the amount of the substance manufactured in the preceding year, or
- amount of product produced divided by the amount of product produced in the preceding year.

***Example 1***

Your facility manufactures the reported NPRI substance and you have instituted a pollution prevention program to reduce the fugitive emissions of the substance during manufacture, storage, packaging and shipping. An appropriate production ratio is the amount of the substance manufactured during the reporting year divided by the amount manufactured in the previous year.

***Example 2***

Your facility's only use of toluene is as a paint carrier for a painting operation. You painted 12 000 refrigerators in the current reporting year and 10 000 refrigerators during the preceding year. In this case, the production ratio for toluene is 1.2 (12 000 ÷ 10 000) because the number of refrigerators produced is the primary factor determining the quantity of toluene to be reported.

***Example 3***

A facility manufactures inorganic pigments, including titanium dioxide. Hydrochloric acid is produced as a waste during the production process. An appropriate production ratio for hydrochloric acid is the annual titanium dioxide production, not the amount of hydrochloric acid generated. During the reporting year, 20 tonnes of titanium dioxide was manufactured. If the facility produced 26 tonnes in the preceding year, the production ratio would be 0.77 (20 ÷ 26).

## Determining an Activity Index

In some situations, an activity other than production is the primary influence on the total quantity of the reported substance released on site and transferred off site for final disposal or recycling.

***Example 1***

Your facility manufactures organic dyes in a batch process. Different colours of dyes are manufactured and, between colour changes, all equipment must be thoroughly cleaned with solvent containing glycol ethers to reduce colour carryover. During the preceding year, the facility manufactured four different colours in separate batches, totaling 15 tonnes. During the reporting year, the facility manufactured two colours, in separate batches, totaling 20 tonnes. Since the main activity affecting usage of the glycol ether is the cleaning associated with colour changeovers, the activity index would be 0.5 (2 colour changeovers in reporting year ÷ 4 colour changeovers in previous year). The total quantity of dye manufactured has no bearing on the usage of the glycol ethers and, therefore, is inappropriate for normalizing your facility's annual changes in releases and transfers.

***Example 2***

A facility that manufactures thermoplastic composite parts for aircraft uses toluene as a wipe solvent to clean moulds. The moulds are cleaned on an as-needed basis that is not necessarily a function of the parts production rate. Operators cleaned 5200 moulds during the reporting year, but only cleaned 2000 moulds in the previous year. An activity index of 2.6 (5200 ÷ 2000) represents the activities involving toluene usage in the facility. If the moulds were cleaned regularly after every 1000 parts were manufactured, the production ratio would be equal to the activity index and either could be used.

***Example 3***

A facility manufactures surgical instruments and cleans the metal parts with 1,1,1-trichloroethane in a vapour degreaser. The degreasing unit is operated in a batch mode and the metal parts are cleaned according to an irregular schedule. The activity index can be based upon the total time the metal parts are in the degreasing operation. If the degreasing unit operated 3900 hours during the reporting year and 3000 hours the previous year, the activity index is 1.3 (3900 ÷ 3000).

## Determining a Production Ratio Based on a Weighted Average

At many facilities, an NPRI substance is used in more than one production process. In these cases, a production ratio or activity index can be estimated by weighting the production ratio for each process based on the respective contribution of each process to the quantity of the substance released and transferred off site for final disposal or recycling.

***Example***

Your facility paints bicycles with paint containing toluene. Sixteen thousand (16 000) bicycles were produced in the reporting year and 14 500 were produced in the previous year. There were no significant design modifications that changed the total surface area to be painted for each bike. The bicycle production ratio is 1.1 (16 000 ÷ 14 500). You estimate that 12.5 tonnes of toluene was released on site or transferred off site for final disposal or recycling as a result of bicycle production. Your facility also uses toluene as a solvent in a glue that is used to make components and add-on equipment for the bicycles. Thirteen thousand (13 000) components were manufactured in the reporting year, compared to 15 000 during the previous year. The production ratio for the components using toluene is 0.87 (13 000 ÷ 15 000). You estimate that 1.0 tonne of toluene was released on site or transferred off site for final disposal or recycling as a result of components production. A production ratio can be calculated by weighting each of the production ratios based on the relative contribution each has on the quantities of toluene (13.5 tonnes during the reporting year) released on site or transferred off site for final disposal or recycling. The production ratio is calculated as follows:

$$\text{Production ratio} = \left(\frac{12.5}{13.5} \times 1.1\right) + \left(\frac{1.0}{13.5} \times 0.87\right) = 1.08$$

*When all information concerning all your facilities and all your substances has been entered, use the [F2] - "Check for Reporting Errors" function in the "Check Errors / Create Report" menu.*

You have now completed the 1997 reporting form for this substance. After the last data entry field, you will be given the option of saving the substance information, canceling the changes or returning to the substance report.

- To continue editing the substance information, press **[Enter]**. This will bring the cursor back to field A1.0 - Substance Identity.
- To save your data, press **[Esc]**, highlight the **[Save]** option on the "Save/Cancel/Resume" pop-up screen and press **[Enter]**. This will return you to the "Substance Identity" screen where you can add (**[F3]**) another substance to your report, edit (**[F7]**) the information for another substance or delete (**[F5]**) a substance from the report.
- To cancel any changes to the report, press **[Esc]**, highlight the **[Cancel]** option of the "Save/Cancel/Resume" pop-up screen and press **[Enter]**. After confirming that you want to discard all changes to the report, you return to the "Substance Identity" screen where you can add (**[F3]**) another substance to your report, edit (**[F7]**) the information for another substance or delete (**[F5]**) a substance from the report.

From the "Substance Identity" screen, press **[Esc]** to return to the "View/Enter/Edit Data" menu. From this menu, you can enter other substances for this facility or enter other facilities and other substances.

When all information concerning all your facilities and all your substances has been entered, **use the [F2] - "Check for Reporting Errors" function** in the "Check Errors / Create Report" menu. Otherwise, the program will not allow copying of your NPRI report to a disk for submission to Environment Canada. (See Section 3, "Returning Information to Environment Canada".)

# Section 3 – Returning Information to Environment Canada

## Steps for Copying an NPRI Report to Disk

1. From the "Main Menu", press **[F5]** - "Check Errors/Create Report." See Appendix 4 - "Software Users Guide" for details.

2. Press **[F2]** - "Check for Reporting Errors." This function will verify that you have correctly completed all sections of the NPRI report. **This is an essential step. The reporting software will not copy an NPRI report to a disk until this function reports that no errors were detected**. The reporting software provides warnings if the reported releases and transfers are unusually large or if there was a significant year-over-year change in the quantities reported. Warnings, unlike errors, will not prevent the NPRI report from being copied to a disk.

   If errors are found, you will be prompted to view the error and warning messages. To do so, enter "Y" for "Yes", or press **[Enter]**. Otherwise enter "N" for "No". Correct the errors reported by the error-check function, and run the **[F2]** - "Check for Reporting Errors" function again. This will clear the error codes and allow you to copy your NPRI report to a disk.

   The most common problem encountered when creating a disk for Environment Canada is that the "Check for Reporting Errors" program was not run and the remaining errors prevent the report from being copied to disk.

3. Select **[F5]** - "Copy NPRI Report to Disk." To prevent the program from crashing, ensure that a blank, formatted disk has been inserted into disk drive "A" or "B". Before copying the NPRI report to disk, you will be presented with a summary screen that lists each facility and its associated substances. Review the information for accuracy.

   You must use the "copy" function within the program, otherwise the data on the disk cannot be accepted by Environment Canada. It is recommended that you keep the NPRI program disk for future reference. You should also create a copy of your report on disk for your files. Essential information from this report can be imported into next year's reporting software. **Do not use other database programs to alter the data after export.** This will result in your disk being rejected and will require a re-submission of your report.

   Although rare, computer viruses have been detected on report disks submitted to the NPRI. If your disk is infected, you will be required to re-submit your report.

4. After making a copy on disk, "write protect" your disk by sliding the tab and opening the window on the lower left corner of your 3.5" disk.

5. Indicate on your disk the name of your facility(ies), NPRI ID number(s) if previously assigned (provided with the reporting package) and the date of submission.

*Company coordinators are only required to send one report to the NPRI office in their region.*

6. Your disk must be accompanied by a signed "Statement of Certification". The statement should be signed by the same person identified as the "Executive Contact" for the facility in field A16.0.

   The reporting software should be used to print the Statement of Certification. If you are unable to print from the software, please contact your regional NPRI office to obtain a Statement of Certification. See Appendix 4 for details on printing reports.

7. Send the disk and the signed Statement of Certification to your regional NPRI office before June 1, 1998. It is not necessary to provide a printed copy of the report along with your disk.

   Where disks contain reports for facilities in different regions of Canada, company coordinators are only required to send one report to the NPRI office in their region. For example, a company coordinator in Montreal, reporting for facilities in Edmonton, Vancouver and Toronto, is asked to send the reports to the NPRI regional office in Montreal.

**If you need assistance, contact your regional NPRI office listed on the inside front cover.**

# Section 4 – Confidential Business Information

## Request for Confidentiality

Pursuant to subsection 19(1) of the *Canadian Environmental Protection Act (CEPA)*, any person who provides information to the NPRI may submit a written request that it be treated as confidential. For each facility and each substance reported, the request for confidentiality must clearly identify each field for which a request is being made. **The written request must accompany the report.**

It is recommended that you include with your request for confidential treatment, documentation that would be required to justify that the information submitted should be confidential as per the criteria outlined in subsection 20(1) of the *Access to Information Act (ATIA)* (see below). If substantiation is not provided, Environment Canada will advise the person requesting confidentiality that it intends to disclose the information as permitted under subsection 20(3) of the *CEPA*. The procedures for using this power are described in sections 27 and 28 of the *ATIA*.

To be treated as confidential, the company must demonstrate that it treats the information as confidential and wishes to continue to do so. It must also demonstrate that this information is not available to the general public through legal means, such as obtaining a public copy of a provincial waste permit.

Necessary precautions should be taken when submitting an NPRI report for which a request for confidentiality is being made. This includes, but is not limited to, the following:

- confidential materials are to be sent in double envelopes, excluding the courier outer envelope
- the outside envelope should be unmarked except for mailing and return addresses, and postage, and
- the inside envelope should be stamped on both sides with wording such as "Contains Confidential Information."

**A request for confidentiality is not determinative.** A determination of whether the information is confidential will be based on an objective analysis of the facts. The final decision as to what information is eligible for confidential treatment rests with the *ATIA* Information Commissioner.

**A request for confidentiality will be denied if the data are already in the public domain.**

Should you have any questions concerning confidentiality requests, please call your regional NPRI office listed on the inside front cover.

## Access to Information Act

The following excerpt from the Act provides guidance on the type of third-party information which would be considered confidential business information.

**20(1)** Subject to this section, the head of a government institution shall refuse to disclose any record requested under this Act that contains:

- **(a)** trade secrets of a third party;
- **(b)** financial, commercial, scientific or technical information supplied to a government institution by a third party and is treated consistently in a confidential manner by a third party;
- **(c)** information the disclosure of which could reasonably be expected to result in material financial loss or gain to, or could reasonably be expected to prejudice the competitive position of, a third party;
- **(d)** information the disclosure of which could reasonably be expected to interfere with contractual or other negotiations of a third party.

# Section 5 – Questions & Answers

## Index

## Questions & Answers

**1. Is a facility meeting the criteria described in the *Canada Gazette* Notice required to report if there were no releases of NPRI substances during the calendar year?**

Yes. The requirements for reporting under subsection 16(1) of the *Canadian Environmental Protection Act* are based only on quantity processed, manufactured or otherwise used, number of employees and concentration of NPRI substances. The amount of substances released does not affect the requirement to report.

**2. Our facility closed in May 1997. Are we required to submit an NPRI report?**

Yes. If your facility met the reporting criteria and was in operation during any portion of the calendar year, you are required to report.

**3. In British Columbia, several fish processors have factories on ships. They use ammonia and chlorine in their fish processing operations. Is each ship considered a "facility" under the Section 16 Notice or is the whole group of ships (assume one company) a facility?**

A facility is defined as all buildings, equipment, structures, and other stationary items which are located at a single site or adjacent or contiguous sites owned or operated by the same person. A ship is not a facility as defined under the Notice. It is not stationary and it is not located on a single site. Therefore, ships are not required to report.

**4. A barge-repair facility cleans barges by vacuuming out residual products containing listed substances and selling the recovered product to a chemical-recovery company. Must the facility report? Is it a processor? What if the recovered product is not sold?**

The facility is processing the chemicals. If the reclaimed substances exceed 10 tonnes per year and the concentration meets or exceeds 1%, before, during or after recovery, the facility must file a report. The quantity of substances sold would not be reported as a release or a transfer in waste, but could be reported as material sent for recovery/re-use/recycling. Releases during vacuuming (air particulates) should be reported as well as releases from related activities such as spills and equipment cleaning.

**5. A recently constructed manufacturing facility, which has not begun production, has used several NPRI substances in preparing a reactor bed and distillation columns for manufacturing. Is the facility required to report if they meet the reporting requirements?**

No. During the establishment or construction of the facility, any NPRI substances used to prepare production equipment for manufacturing activities, such as a reactor bed, that become part of the structure or building are not to be included in the threshold determinations for that calendar year.

**6. Does the determination of a full-time employee "equivalent" include the hours worked by sales staff whose offices are located in the same building as the production staff?**

Yes. All employees at a facility, regardless of function or location in a building, count toward the employee threshold determination.

**7. Would a facility with nine full-time employees and four part-time employees be required to report to the NPRI?**

The total hours worked by all employees should be reviewed. A "full-time employee" (or equivalent) is defined as 2000 worker-hours per year (including paid vacation and sick leave). If the total hours worked by all employees at a facility, including contractors, is 20 000 hours or more per year, the criterion for the number of full-time employees has been met.

**8. A manufacturing company that normally employs only four employees hires a construction company to modify its facility. The construction workers are employees of the construction company and worked on-site for only a few months. The contract specified delivery of a final product within a certain time frame for a certain amount of money. Do the hours worked by the construction workers count toward the "10 or more full-time employees" threshold (20 000 hours of work)?**

The contract was for a final product. The owner or operator does not have any way of knowing the number of hours worked and so they do not count towards the employee threshold. However, in cases where the contract specifies hourly wages, work based on hours or on standard work days, then these hours must be accounted for in the threshold determination.

**9. When calculating the total number of hours worked by all employees during the calendar year, should vacation and sick leave used be included toward the 20 000-hour threshold?**

Yes. When making the full-time employee determination, the facility should consider all paid vacation and sick leave used as hours worked by each employee who claims such vacation or sick leave. If the facility meets or exceeds the 20 000-hour threshold (including paid vacation and sick leave), the facility is considered to have 10 or more full-time employees.

**10. When should an individual's time spent working at a facility be counted for purposes of determining whether or not a facility meets or exceeds the 20 000-hour threshold?**

If an individual is employed by the facility or by the facility's parent company to work at the facility, then all of the hours worked by the individual should be counted toward the 20 000-hour threshold. If the individual is hired by the facility (or by the facility's parent company) as a contractor to work at the facility, then all hours worked by the contractor should be counted. If the individual is not an owner, contractor or an employee of the facility, then the individual's time spent working at the facility should not be counted toward the 20 000-hour threshold. For example, the time spent by individuals working at a facility who are performing intermittent service functions, such as collecting trash or repairing power lines for the electric utility company, should not be counted.

**11. If an individual both owns and works at a facility, how should the owner's time be accounted for when determining whether or not the facility meets or exceeds the 20 000-hour threshold?**

The owner must be counted as an employee of the facility and his/her hours must be applied toward the 20 000-hour threshold.

**12. A manufacturing facility employs eight people. The total number of hours worked in the calendar year, including overtime, by each employee is 2500. Consequently, the total number of hours worked by all employees at this facility is 20 000 hours. Does the facility meet the reporting requirement even if it doesn't have 10 employees?**

Yes. The 10-employee (or equivalent) threshold is defined as 20 000 hours of work during the calendar year. Even though only eight people work at this facility, the total number of hours worked is equivalent to approximately 10 full-time employees and therefore this facility has met the 10-employee criterion.

**13. Who is obligated to report the releases for a given reporting year if the facility has changed ownership during the year? Would both owners be obligated to file separate reports for that year?**

The owner or operator of the facility, on the reporting date (June 1 of the following year), is primarily responsible for reporting the data for the previous year's operations at that facility. The report submitted should cover the full year.

**14. Is the owner or the operator responsible for reporting?**

The notice requires a person who owns or operates a facility to report information to which he/she has access or can reasonably be expected to have access. This is usually the operator. However, either the owner or the operator is subject to the Section 16 Notice. If no report is received from a facility that meets the reporting requirements, both persons may be held liable.

**15. A company purchased a facility in September through bankruptcy proceedings. The previous owner of the facility had filed a report for the preceding calendar year. The new owner of the facility has no plans to continue any manufacturing activities at the site. All listed NPRI substances at the facility were removed or sold by the previous owner as terms of the bankruptcy proceedings prior to final sale to the new owner. Who must submit a report for the months during the calendar year that the facility was in operation?**

The owner or operator for the facility on the reporting date is primarily responsible for reporting the data for the previous year's operations at the facility. Any other owner or operator of the facility during the calendar year may also be held liable. The report would be required if the facility has met all reporting requirements during the months in operation. The purchase of a facility through bankruptcy proceedings does not negate the liability for reporting activities occurring at the facility prior to new ownership/operatorship. The new owner/operator must make every reasonable effort to acquire the information required to determine if a report should be submitted.

**16. Who is the parent company for a 50/50 joint venture?**

The reporting form allows a number of parent companies to be entered with the percentage of ownership for each.

**17. A facility had been operating its manufacturing processes in a leased warehouse. In July, they bought their own warehouse and moved the manufacturing operations. These two locations are neither adjacent nor contiguous. The company did not shut down or close during this time. How should the facility make threshold determinations and report to the NPRI?**

The company should consider the locations as two separate facilities because the operations were carried out at two distinctly separate physical sites. Threshold determinations must be made for the period of time during which each facility operated.

**18. Mom and Pop Plastics is a wholly owned subsidiary of a major chemical company which is a wholly owned subsidiary of Big Oil Corp. Which is the parent company?**

Big Oil Corporation is the parent company because it is the highest level company that directly controls Mom and Pop Plastics.

**19. What is the definition of a primary Standard Industrial Classification (SIC) code?**

A Standard Industrial Classification (SIC) code is a numerical identifier for different types of businesses and industries. The reporting form provides space for the one SIC code which best describes the largest portion of income-generating activity at the facility.

**20. Two manufacturing facilities, owned by the same corporation, are divided by a public railroad. Is this considered adjacent facilities or two separate facilities?**

Two facilities owned or operated by the same corporation separated by a railroad would be considered adjacent sites since they are physically adjacent to one another except for a public right-of-way. Therefore, reporting thresholds would be determined by the combined quantities of substances processed, manufactured or otherwise used at both facilities. The 20 000-hour threshold would be determined by the sum of hours worked at both facilities.

**21. A Vancouver-based company has a plant in Alberta which processes 12 tonnes of methanol, a plant in Ontario which processes 8 tonnes of methanol and a plant in Quebec which processes 11 tonnes of methanol. Do the three plants have to report as a company or can they report as separate facilities?**

A report is required for each facility that meets the reporting criteria; their activities cannot be combined. In this case, the plant in Ontario is not required to report but the other two are if they meet the other reporting criteria. The parent company may choose to report for all the facilities meeting the reporting criteria on one disk or to have each facility report separately.

**22. The owner/operator of a facility is preparing a report for 1997. The facility and its parent company both changed names in January 1998. What names should be reported by the owner/operator (for both the facility and the parent company) on the report for 1997?**

Reports submitted on June 1, 1998, should reflect the name of the company and facility during the calendar year 1997. When the owner/operator submits his/her report for 1998, the report will reflect the new names used by the facility and parent company during that calendar year. Note that the NPRI identification number for the site will remain the same.

**23. When contractors working at a facility supply their own materials and supplies such as solvents containing NPRI substances, should these substances be included in the threshold determination and reported by the facility?**

Yes. NPRI substances used on-site by contractors are to be included in determining the reporting thresholds and any releases or transfers in waste must be reported to the extent that they are known. This also applies to NPRI substances used to install new equipment that do not become an integral part of the structure of building (i.e., solvents for cleaning). Solvents used for cleaning up after new installations are not considered part of "routine maintenance".

**24. NPRI substances used to fill heat-transfer equipment have to be accounted for in determining the reporting threshold. Does the same approach apply when emptying or decommissioning such equipment?**

Yes. NPRI substances removed from heat-transfer equipment for final disposal or recycling have to be accounted for in determining the 10-tonne "otherwise use" threshold if the concentration meets or exceeds 1% by weight. Releases during this process, or transfers off site, would be reported as such.

**25. Our company disposes of some of its waste in a landfill site which belongs to the company but is in a different location (not adjacent). Are transfers of NPRI substances contained in the waste classified as off-site transfers?**

Yes. A facility is defined as being on a single site, or adjacent sites owned and/or operated by the same person. Since the transfer of the waste is to a landfill site not adjacent to the facility, it is considered an off-site transfer.

**26. Our company sorts scrap metal and compresses it into bales to be sold to secondary metal producers. Most of the metal we recover contains some NPRI substances (Zn, Cr) in excess of 1% concentration. The process does not release any NPRI substances; it only compresses the pieces into bales. Are we required to file a report?**

In this case, the items being handled would retain their status as articles as long as there are no releases to the environment or transfers in waste.

**27. At what point in the processing of ore must mining companies report?**

The exemption for mining is for activities related to the actual removal of ore, rock or overburden, up to and including primary crushing. Any NPRI substances used in the further processing of the rock or ore, such as milling, concentrating, smelting and refining would be reportable if the thresholds are met. This would include, but not be limited to, NPRI substances found in the processed ore, solvents, acids, flotation agents, flocculation agents and fuels used in power generation. Listed substances in waste rock from the milling process are not reported unless they leave the tailings pond or other forms of containment.

**28. If a substance is spilled one year, and will result in air emissions over time in the following year, would this be double reporting?**

No. The spill need only be reported once. The spill should be reported as a release to the environmental medium where it occurred (air, land or water). In the event that the spill occurred on land and then traveled to the nearest water course, an estimation of quantities to each medium should be provided if possible. Further migration between media does not need to be reported.

**29. Is there a mechanism for adding and deleting substances on the NPRI list?**

The NPRI program was established through a consultative process. Consultations will continue for subsequent changes. The form of consultations will depend on the extent of the proposed changes and operational constraints. Individuals and organizations who wish to propose changes should contact the NPRI headquarters.

**30. Some provincial regulations allow facilities to claim off-site transfers to recycling facilities as 'products' instead of wastes. Under the NPRI, how do facilities treat the off-site transfer of such materials?**

The NPRI requires the reporting of releases to the environment and off-site transfers of wastes. Since the material is sent for recycling, it is not considered a waste because it is not being sent off site for final disposal or for treatment prior to final disposal. Refer to field B25.0 to report material sent off site for recovery, re-use, recycling or energy recovery. Completing this field is optional.

**31. Our process creates ashes that contain NPRI substances. These ashes are sold to a company that recycles the substance. Since the ashes are sold, are they reportable as a transfer in waste?**

No. In this case, the product generated is not considered a waste since it is not sent for final disposal or treatment prior to final disposal; it is sent off site for recycling. Materials recycled may be reported in field B25.0.

**32. Can a facility use its own software to report electronically to the NPRI?**

Environment Canada will accept reports produced by other software. However, if the report cannot be read by Environment Canada's own reporting software, the report will be considered incomplete and be returned for correction. Environment Canada reserves the right to change its software and file structure at any time. It is strongly recommended that the completed report be read into Environment Canada's software and verified before it is sent in. There have been changes in file format for 1997. A policy on using third-party software is available. Contact your regional NPRI office for further information on file structure.

**33. We use a 50% methanol solution in one part of the plant. The annual consumption of methanol exceeds 10 tonnes. In another part of the plant, a completely separate process produces a few tonnes of methanol which are released through a stack. Do we have to estimate methanol releases from the stack even if they are from a different process?**

Yes. Because your facility uses more than 10 tonnes of methanol, it is required to report all its releases of methanol, regardless of the process stream.

**34. We have a provincial waste permit to discharge sulphuric acid at a pH between 5.8 and 6.6. How do we report our releases of sulphuric acid if we meet all the reporting requirements?**

Releases of mineral acids at a pH of 6.0 or greater are considered neutralized and are to be reported as 0. The portion of acid discharged at a pH less than 6.0 will constitute a reportable release and must be calculated and reported.

**35. We send our metal turnings and small scrap pieces of metals to an outside company for recovery. The recovered metals are then sent back to us for re-processing. Do these compacted bales of metal turnings count towards the threshold calculation?**

Yes. Because the plant processes the bales of metal into other new products, the quantity of NPRI substances contained in the baled turnings would have to be added to the threshold calculation if their concentration in the turnings meets or exceeds 1% by weight.

**36. Our company makes rubber that contains a metal oxide. Defective unvulcanized parts are sent off site for either recycling or disposal. Should this be reported as a transfer?**

Yes. The quantity of metal (only the metal portion of the oxide) that is present in unvulcanized rubber which is scrapped and sent off site for disposal should be reported under ‘transfers in waste’ (field B20.0). The quantity of metal present in unvulcanized rubber which is sent for recycling can be reported under ‘3 R’s’ (field B25.0).

**37. A company engaged in electroplating is using equipment and lead anodes purchased and installed before the current reporting year. Fifteen tonnes of lead anodes were originally installed in the plating tanks. The lead anodes dissolve over time and the lead ends up in the sludge and the wastewater. During the calendar year, the company replaced 7 tonnes of lead anodes. Does the company have to report its releases of lead?**

No, because it only processed 7 tonnes of lead and therefore does not meet the 10-tonne criterion. If the company had used 10 tonnes of lead, it would have been required to report. The lead anodes lose their article status because they release NPRI substances during their normal use. Should the installation of the original 15 tonnes have occurred in 1997, then the company would have been required to report to the 1997 NPRI.

**38. When do metal parts, sheets or wire containing NPRI substances lose their status as articles?**

Metal parts, sheets or wire can be put through any mechanical process without losing their article status as long as there are no releases to the environment or transfers in waste. This means that all materials removed during processing, such as turnings or blanks, must be completely recycled or due care must be exercised to ensure that the materials are 100% recycled. Due care is considered to have been exercised if no more than 1 kg (0.001 tonne) of an NPRI substance is released in a given year as a result of the processing or otherwise use of an article.

**39. Our company purchases metal parts and then welds them together using welding rods. We then paint them and glue other parts to them. What would be reportable in this case?**

The original parts would lose their status as articles during welding because the welding process releases emissions to the air. The quantity of NPRI substances contained in the parts would be used to calculate the reporting threshold. The quantity of NPRI substances in the welding rods would also be included in the calculation of the reporting threshold.

When painting or gluing, there are no emissions from the metal parts, only from the paints or glues, therefore, the metal parts would retain their status as articles and remain exempt. The NPRI substances contained in the paints and glues would be reportable if the threshold criteria were met.

**40. Our company buys brass lamp bases which are crimped onto bulbs during the assembly. The crimping process unintentionally releases flecks of brass. Since there are no functional changes to the brass base, do they retain their status as articles?**

Articles such as lamp bases would lose their status as articles if there are any releases of NPRI substances, whether they be intentional or otherwise. In the situation described above, the brass base would lose its status as an article unless the releases are 100% recycled or due care is exercised to ensure that the releases are 100% recycled (refer to question 38 for an explanation of what is considered to be “due care”).

**41. We buy pre-fabricated metal parts made of different alloys. Most of the alloys contain NPRI substances above 1% concentration. The parts are then machined for an exact fitting during assembly. Is machining of metal parts considered a reportable activity?**

Articles retain their status as long as there are no releases of NPRI substances during normal use. When metal parts are machined, NPRI substances are released as turnings and filings. Unless the releases are 100% recycled or due care is exercised to ensure that the releases are 100% recycled (refer to question 38 for an explanation of what is considered to be “due care”), the machining of metal parts must be reported as releases of NPRI substances if all reporting criteria are met.

**42. We clean copper wire in a sulphuric acid solution. The process etches some of the copper off the wire. The resulting waste acid bath is sent off site for treatment and disposal. Are we required to report the copper in the waste solution as a waste transfer?**

Yes. In situations such as this one, the copper is cleaned by a chemical reaction. Copper is released into the acid bath and is not recycled. Transfers of copper in the waste must be reported if all reporting criteria are met.

**43. Is the use of diesel fuel exempt from reporting?**

No. The use of diesel fuel is not implicitly exempt from reporting. Use of diesel fuel in vehicles is not reportable. Use of diesel fuel for power generation in a facility would be reportable under "otherwise use" if NPRI substances are produced as by-products and released or transferred off site for disposal in excess of 10 tonnes annually.

**44. Our thermal generator uses coal as fuel. The resulting ash contains nickel and mercury below 1% concentration. The ash is either sent off site for disposal or sent to a recycler. Some of it escapes to the air through the stack. Considering the total quantity of ash generated each year, we expect to produce more than 10 tonnes of nickel but only 5 tonnes of mercury. Is this reportable?**

Yes. The 1% concentration criterion no longer applies to by-products. In this case your process (coal burning) produces by-products (nickel and mercury). Only the metals that are released or transferred off site for disposal are to be used in the 10-tonne threshold calculation. The portion sent to a recycler is not reportable. Each NPRI substance that is produced as a by-product at your facility and is released or transferred off site for disposal is reportable if it exceeds 10 tonnes per year. Mercury is not reportable because it does not equal or exceed 10 tonnes.

**45. Chemicals, such as chromated copper arsenate (CCA), used in the wood treatment industry are registered pesticides and are controlled under the *Pest Control Products Act*. Are they exempt from reporting to the NPRI?**

No. The NPRI substances in a pest control formulation, in this case chromium, copper and arsenic, must be reported if they meet the reporting criteria.

A typical bulk solution of CCA (50% concentrate) contains 12.3% Cr, 7.39% Cu, and 11.09% As, by weight. A company would have to use 81.3 tonnes of 50% concentrate of CCA to render chromium reportable. In this situation, As and Cu would not be reportable since they do not exceed the 10-tonne threshold.

**46. Our municipal water treatment plant uses 250 tonnes of compressed chlorine each year. Are we required to report to the NPRI?**

Yes, if you meet the employee threshold, you are required to report your releases of gaseous chlorine. The addition of chlorine to a water treatment system is not considered a release of chlorine to the environment because the chlorine in water leaving the plant is not a reportable form of chlorine.

**47. Should fugitive dust from tailings dams and tailings ponds be reported to the NPRI as releases?**

Yes. NPRI substances that leave the property as fugitive emissions (dust) must be reported. The deposit of NPRI substances contained in the mineral portion of the ore or rock to a tailings pond is not reportable, but emissions from the pond or dam are.

**48. Our site operates a wastewater treatment system for a tailings pond effluent. The treatment process generates a metal hydroxide sludge containing two NPRI substances. The sludge is pumped back into the tailings pond. Are the NPRI substances in the sludge reportable?**

Substances originally part of the rock that are pumped back into a tailings pond are not to be reported. Only the substances leaving the treated water would be reported as a release.

**49. Should hydraulic backfill pumped underground and used for filling open stopes for ground control be reported?**

No. Stope filling for ground control is part of the extraction process and is therefore exempt under the mining exemption.

**50. We use zinc in our primary crusher as backing for concaves and shells. Is it reportable?**

No. The mining exemption is for extraction up to and including primary crushing.

**51. Do NPRI substances contained in a refractory brick furnace have to be reported?**

Refractory bricks would retain their status as articles as long as they do not release any NPRI substances during normal use. Therefore, while they are in the furnace, the NPRI substances contained in the bricks would not be reportable. Should the bricks be removed for disposal, they lose their article status.

**52. Are HF and HCl gas considered NPRI substances?**

Yes. HF (hydrogen fluoride) is listed with its CAS number 7664-39-3 and is an NPRI substance either in gaseous form or in solution (as the acid). The same reasoning applies for HCl (hydrogen chloride). It appears on the NPRI list as hydrochloric acid (its most common form) and has the same CAS number: 7647-01-0.

**53. Our ore-processing facility uses greases and fuels to operate the many machines used in the beneficiation of the ore. Are NPRI substances in these greases and fuels reportable?**

Yes. The use of greases and fuels in this situation would be considered as “otherwise used” according to the NPRI definition. You would have to report only the releases of NPRI substances contained in the fuels and greases if you use 10 tonnes or more of a particular substance, present at a concentration of 1% or greater in the fuel or grease you use. Information on NPRI substances in these products may be available from your suppliers. You are not required to do any analysis to determine their presence or concentrations. Keep in mind that NPRI substances used in the maintenance of vehicles are exempt from reporting. Mobile sources are not considered part of the facility.

**54. We use more than 10 tonnes of sodium cyanide in our flotation beds. The substance is entirely consumed and transformed to non-ionic cyanides in the process. We meet all other reporting criteria. Are we required to report?**

Yes. Reporting to the NPRI is based on use, not releases. In this case, you use more than 10 tonnes and therefore must file a report. Since all the cyanide is converted to a non-ionic form, you would report a release of zero for this process. Any releases of ionic cyanides from any other reportable processes would now have to be reported since sodium cyanide has exceeded the threshold.

**55. We use copper sulfate as a reagent. During the process, it attaches itself to other compounds and remains with the concentrate. There are no releases. Is it reportable?**

Yes, if you meet all reporting requirements. You would file a report for "Copper (and its compounds)" and report a release of zero for this process. All other releases of copper from your facility would also have to be reported.

**56. We use zinc sulfate, zinc oxide and zinc stearate. How do we handle reporting of all these different metal compounds?**

Report only the zinc portion of the compounds under the substance name "Zinc (and its compounds)".

**57. Is fuel used for fire training purposes exempt from reporting to the NPRI?**

No. The exemption for fuels is limited to distribution, storage and retail sale. Any NPRI substances would be reportable if the reporting criteria are met during the calendar year (see question 43).

**58. We store products in our warehouse that don't belong to us. We do not use these products in the operation of our warehouse. Some of these products contain NPRI substances. Are we required to report?**

No. A warehouse is not required to report because it does not manufacture, process or otherwise use NPRI substances.

**59. We buy bulk NPRI substances in tanks and drums. Some of these substances are simply repackaged in smaller containers, e.g., tanks to drums, drums to 4-litre plastic bottles. However, some of the substances are mixed together and then repackaged. Are we required to report?**

The portion of substances that is simply repackaged is not reportable as long as there are no releases to the environment and no transfers in waste. If the repackaging process releases substances, then all substances being repackaged that are present at a concentration of 1% or greater must be accounted for in the threshold calculation. The substances that are mixed together prior to packaging are considered to be processed and are to be included in the threshold calculation.

**60. A facility ships woodwaste off site for treatment. It takes back the leachate for treatment in its own wastewater treatment system. How should this be reported for any NPRI substances?**

Only NPRI substances are reportable. The NPRI substances that come back will be processed in the wastewater treatment system and therefore should be accounted for in the 10-tonne threshold calculation if they are present in the leachate at concentrations of 1% or greater by weight.

**61. We use an NPRI substance in our process that meets all the reporting criteria. Unfortunately, we have no data on possible releases and we cannot find any estimation factors. Is a release of zero acceptable in this case?**

Yes. In this case, as indicated in the *Canada Gazette*, you are required to report the information that you possess. You must report your facility information and identify the substances for which a report is required. A release of zero will be accepted, but the comment section should include a statement that releases and transfers could not be estimated.

**62. We purchased 12 tonnes of an NPRI substance to prepare a solution for our new metal-cleaning baths. The baths will be used this year. How do we calculate the "otherwise use" threshold for that year and the following years?**

The threshold determination applies to the total amount used in that year. The total amount would be accounted for in the first year since that is when it was used. For the following years, only the amounts of substances added to the baths would count towards the threshold determination.

**63. Is vinyl chloride and polyvinyl chloride (PVC) the same compound?**

No. Polyvinyl chloride is a polymer made from vinyl chloride. It is not a synonym and is not listed on the NPRI, therefore it is not reportable. Only free vinyl chloride monomer is reportable. Some formulations of pre-polymers may contain a percentage of free monomer. If you purchase pre-polymers which contain free vinyl chloride monomer, you would have to report if you also meet the reporting threshold.

**64. Asbestos is listed with the CAS number 1332-21-4. We use asbestos with the following names and CAS numbers: Azbolen (17068-78-9), Actinolite (77536-66-4), Amosite (12172-73-5), Anthropylite (77536-67-5), Tremolite (77536-68-6) and Serpentine. Are we required to report?**

The CAS number 1332-21-4 is defined as: "Asbestos, a greyish, non-combustible fibrous material. It consists primarily of impure magnesium silicate". Asbestos with the CAS number 1332-21-4 is the general CAS number for a number of specific types of asbestos including those mentioned. Those types of asbestos would be reportable as long as they are in friable form.

**65. Cyanides are listed on the NPRI as ionic cyanides. Are other non-dissociable cyanides such as ferrocyanates also reportable?**

No. Non-dissociable cyanides such as ferrocyanates ($Fe(CN)_6$) are not ionic cyanides and are not subject to reporting. Most of the cyanides that dissociate are cyanide salts such as potassium cyanide (KCN), sodium cyanide(NaCN) and calcium cyanide ($Ca(CN)_2$).

**66. A facility coats materials using a vacuum deposition process. When it uses aluminum for coating, is it required to report for aluminum fumes?**

No. In vacuum deposition, the metal is converted to a vapour state under low pressure. The vapour condenses on the material to be coated. Vapours are not fumes. A metal fume consists of finely divided particulate matter dispersed in a gas (like smoke). Because vapors and fumes are different, this process would not be considered a reportable activity unless the condensation creates fumes or dust.

**67. Do NPRI substances produced coincidentally to manufacturing, processing or otherwise using have to be reported?**

Yes. Coincidental production is not exempt. Impurities, by-products and other coincidental products of reactions for example, would have to be accounted for in the threshold calculation.

**68. How is "routine maintenance" defined? Is equipment maintenance exempt?**

"Routine maintenance" is intended to cover janitorial or other custodial or plant grounds maintenance activities that may use NPRI substances which would be contained in cleaners, fertilizers or pesticides. Equipment maintenance using grease, oils or lubricants is not considered routine maintenance. However, painting of equipment would be considered routine maintenance.

**69. Our process uses metal grinding wheels which suffer regular abrasion. Would NPRI substances in these wheels be reportable?**

Yes. Items such as grinding wheels are, by their nature and use, intended to wear down and release substances. They are designed to be replaced and are subject to reporting.

**70. Are degreasers used in a plant's maintenance shop reportable?**

Yes. Degreasing of equipment for maintenance is not considered routine maintenance and is not exempt. It would be reported as "otherwise used".

**71. Is our quality control laboratory exempt from reporting under the laboratory exemption?**

Yes, assuming that the laboratory does not perform pilot-plant scale studies or specialty chemical production.

**72. Are photo development laboratories exempt?**

No. The laboratory exemption includes research facilities which perform auxiliary functions to the manufacturing or processing activities of a facility. Photo development laboratories do not perform auxiliary functions but perform activities which are essential to the development of their products (photographs, films, etc.).

**73. We buy more than 10 tonnes of chlorine gas and use it in a reaction vessel to produce chlorine dioxide. We then dilute the chlorine dioxide to less than 1% concentration. What do we have to report?**

Because you use chlorine gas, you are required to report your releases of chlorine gas. Because you manufacture chlorine dioxide at a concentration greater than 1%, you are required to report your releases of chlorine dioxide.

**74. How do we handle NPRI substances contained in industrial and commercial batteries?**

Items such as batteries, which contain NPRI substances that are not released during normal use, are considered articles and are not subject to reporting. However, if you refill lead-acid batteries for example with new sulphuric acid, then the amount of sulphuric acid added would count towards the threshold determination. Also, if you recycle lead-acid batteries by crushing and removing the lead, then the batteries cease to be articles and the NPRI substances they contain become reportable.

**75. How do we treat a solvent sent off site for distillation and then shipped back to us?**

A solvent received from a recycling operation located off site counts as new material and must be included in the threshold calculation. The quantity sent off site for distillation can be reported as material sent for recovery, re-use or recycling.

**76. We use a paint thinner that contains toluene. We also use toluene in another part of our plant. In total, more than 10 tonnes of toluene are used annually. The waste thinner is sent to an off-site facility for blending in fuels. How do we report this activity?**

NPRI substances sent off site for fuel blending or that add energy to a heat-recovery activity can be reported under energy recovery.

**77. Are NPRI substances used in maintenance activities such as paint booth cleaning, reportable?**

Paint booth cleaning is not considered a routine janitorial activity and would be reportable under the classification “otherwise use”.

**78. Trimming scraps from galvanized sheets are sent to a recycling facility where the steel is recycled but the zinc is volatilized in the process. Do the sheets retain their article status? Is the zinc considered recycled or transferred as waste?**

Because the trimmings are sent to a recycler, the galvanized sheets retain their status as articles. Zinc would be reported as recycled.

**79. Do we report benzene emissions from gasoline, even if gasoline has its own CAS number?**

Retail sale and fuel distribution are exempt. Refueling of motor vehicles is also covered by this exemption even if the vehicle is refueled from a tank on company property. Mobile sources of benzene such as vehicles and earth-moving equipment are not stationary items considered part of a facility. They are not to be included in the calculation of the reporting threshold. However, emissions of benzene from the use of gasoline in a stationary system would have to be reported if the reporting thresholds are met, regardless of the fact that gasoline has its own CAS number.

**80. How does the definition of a "facility" apply to a multi-site facility?**

"Facility" is defined in the *Canada Gazette* Notice. It includes all buildings or structures located on a single site or on adjacent sites owned and/or operated by the same person. Adjacent sites also include sites separated by a road or other right-of-way. If a threshold determination is done for a site that has four large structures, the single report for this site would include all four structures under one facility name, one geographical position, one SIC code, etc.

The notice also requires persons to report information to which they have access or can reasonably be expected to have access. Some sites have facilities that are linked but are operated independently by different companies. The companies have a choice of reporting separately or of filing one report for the facility as a whole. If separate reports are submitted, separate threshold calculations must be performed for each part of the facility.

On multi-plant sites, plants must report separately if they manufacture or process unrelated products and if they do not share common manufacturing or processing operations. For example, a battery plant and a vehicle-assembly plant, located side-by-side, are two distinct manufacturing operations that have different SIC codes. In the case of the battery plant, it also ships products to other installations that are not adjacent. Other examples are smelters and fertilizer plants, a refinery and a chemical plant.

A third way to decide whether the plants report separately would be to compare reporting and management structures of plants that are side-by-side with other plants that are further away. For example, a company has three plants. Two are located on adjacent sites and one is located elsewhere. All plant managers are of equal status and report to the same person. All three should report separately. If the two plants on adjacent sites are integrated and if one manager oversees both plants, they would report as a single facility. A separate report would be filed for the third facility if it also meets the reporting thresholds.

**81. Is reporting to the NPRI mandatory under the *Canadian Environmental Protection Act (CEPA)*? If so, how will it be enforced?**

It is the responsibility of each person who owns or operates a facility to determine whether he or she is required to report after examining the Section 16 Notice and the *CEPA*. There is an enforcement and compliance policy under the *CEPA* which dictates how regulations and notices are enforced.

# References & Bibliography

## References

*Canada Gazette* (1998) "Notice with Respect to Substances in the National Pollutant Release Inventory for 1997, Amendment", Department of the Environment, Extract *Canada Gazette*, Part I (February 14, 1998).

*Canada Gazette* (1997) "Notice with Respect to Substances in the National Pollutant Release Inventory for 1997", Department of the Environment, Extract *Canada Gazette*, Part I (April 5, 1997).

C*anada Gazette* (1992) "Export and Import of Hazardous Wastes Regulations", Department of the Environment, Extract *Canada Gazette*, Part II (December 2, 1992).

*Canada Gazette* (1991) "Domestic Substances List", Department of the Environment, Extract, Supplement *Canada Gazette*, Part I (January 26, 1991).

Environment Canada (1995) "Pollution Prevention - A Federal Strategy for Action".

Environment Canada (1993) "User's Guide to Hazardous Waste Classification".

Statistics Canada (1989) "Standard Industrial Classification – 1980", Standards Division, Catalogue 12-501E, Ottawa, ON.

## Publications of the U.S. Environmental Protection Agency

The United States Environmental Protection Agency (U.S. EPA) has developed short guidance manuals on how to estimate releases for different industries reporting to the Toxic Release Inventory (TRI). These manuals could also be used to estimate emissions for reporting to the NPRI.

1. "Estimating Chemical Releases from Textile Dyeing", EPA 560/4-88-004h (February, 1988).
2. "Estimating Chemical Releases from Presswood and Laminated Wood Products Manufacturing", EPA 560/4-88-004i (March, 1988).
3. "Estimating Chemical Releases from Wood Preserving Operations", EPA 560/4-88-004p (February, 1988).
4. "Estimating Chemical Releases from Paper and Paperboard Production", EPA 560/4-88-004k (February, 1988).
5. "Estimating Chemical Releases from Printing Operations", EPA 560/4-88-004b (January, 1988).
6. "Estimating Chemical Releases from Monofilament Fiber Manufacturing", EPA 560/4-88-004a (January, 1988).
7. "Estimating Chemical Releases from Rubber Production and Compounding Operations", EPA 560/4-88-004q (March, 1988).
8. "Estimating Chemical Releases from Leather Tanning and Finishing", EPA 560/4-88-0041 (February, 1988).

9. "Estimating Chemical Releases from Electroplating Operations", EPA 560/4-88-004g (January, 1988).
10. "Estimating Chemical Releases from Electrodeposition of Organic Coatings", EPA 560/4-88-004c (January, 1988).
11. "Estimating Chemical Releases from Spray Application of Organic Coatings", EPA 560/4-88-004d (January, 1988).
12. "Estimating Chemical Releases from Roller, Knife, and Gravure Coating Operations", EPA 560/4-88-004j (February, 1988).
13. "Estimating Chemical Releases from Semi-Conductor Manufacturing", EPA 560/4-88-004e (January, 1988).
14. "Estimating Chemical Releases from Formulation of Aqueous Solutions", EPA 560/4-88-004f (March, 1988).
15. "List of Toxic Chemicals Within The Water Dissociable Nitrate Compounds Category and Guidance for Reporting", EPA-745-R-95-002 (February,1995).
16. "Issue Paper – Clarification and Guidance for the Metal Fabrication Industry", (January, 1990).
17. "Guidance for Food Processors", EPA 560/4-90-014 (June, 1990).
18. "Guidance for Reporting Aqueous Ammonia", EPA 745-R-95-003 (July, 1995).
19. "Guidance for Metal Mining Facilities", October, 1997.
20. "Guidance for Coal Mining Facilities", September, 1997.
21. "Guidance for Chemical Distribution Facilities", October, 1997.
22. "Guidance for Electric Generating Facilities", September, 1997.
23. "Guidance for RCRA Subtitle C TSD Facilities and Solvent Recovery Facilities", October, 1997.
24. "Guidance for Reporting Sulfuric Acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)", EPA 745-R-97-007 (November 1997).

To assist groups interested in preparing inventories of air emissions of various potentially toxic substances, the U.S. EPA has prepared a series of documents that compiles available information on sources and emissions of these substances.

25. "Locating and Estimating Air Emissions from Sources of Acrylonitrile", EPA 450/4-84-007a (1984).
26. "Locating and Estimating Air Emissions from Sources of Carbon Tetrachloride", EPA 450/4-84-007b (1984).
27. "Locating and Estimating Air Emissions from Sources of Chloroform", EPA 450/4-84-007c (1984).
28. "Locating and Estimating Air Emissions from Sources of Ethylene Dichloride", EPA 450/4-84-007d (1984).
29. "Locating and Estimating Air Emissions from Sources of Formaldehyde" EPA 450/4-84-007e (1984).
30. "Locating and Estimating Air Emissions from Sources of Formaldehyde (revised)", EPA 450/4-91-012 (1991).
31. "Locating and Estimating Air Emissions from Sources of Nickel", EPA 450/4-84-007f (1984).
32. "Locating and Estimating Air Emissions from Sources of Chromium", EPA 450/4-84-007g (1985).

33. "Locating and Estimating Air Emissions from Sources of Chromium (supplement)", EPA 450/2-89-002 (1989).
34. "Locating and Estimating Air Emissions from Sources of Manganese", EPA 450/4-84-007h (1986).
35. "Locating and Estimating Air Emissions from Sources of Phosgene", EPA 450/4-84-007i (1986).
36. "Locating and Estimating Air Emissions from Sources of Epichlorohydrin", EPA 450/4-84-007j (1986).
37. "Locating and Estimating Air Emissions from Sources of Vinylidene Chloride", EPA 450/4-84-007k (1986).
38. "Locating and Estimating Air Emissions from Sources of Ethylene Oxide", EPA 450/4-84-0071 (1987).
39. "Locating and Estimating Air Emissions from Sources of Benzene", EPA-450/4-84-007q (1988).
40. "Estimating Air Toxics Emissions from Organic Liquid Storage Tanks", EPA 450/4-88-004 (1988).
41. "Estimating Air Toxics Emissions from Coal and Oil Combustion Sources", EPA 450/2-89-001 (1989).
42. "Estimating Air Toxics Emissions from Municipal Waste Combustors", EPA 450/2-89-006 (1989).
43. "Locating and Estimating Air Emissions from Sources of Perchloroethylene and Trichloroethylene", EPA 450/2-89-013 (1989).
44. "Locating and Estimating Air Emissions from Sources of 1,3-Butadiene", EPA 450/2-89-021 (1989).
45. "Estimating Air Toxics Emissions from Sewage Sludge Incinerators", EPA 450/2-90-009 (1990).
46. "Locating and Estimating Air Emissions from Sources of Mercury and Mercury Compounds", EPA-453/R-93-023 (1993).
47. "Locating and Estimating Air Emissions from Sources of Methylene Chloride", EPA-454/R-93-006 (1993).
48. "Locating and Estimating Air Emissions from Sources of Styrene", EPA-454/R-93-011 (1993).
49. "Locating and Estimating Air Emissions from Sources of Cadmium and Cadmium Compounds", EPA-454/R-93-040 (1993).
50. "Locating and Estimating Air Emissions from Sources of Cyanide Compounds", EPA-454/R-93-041 (1993).
51. "Locating and Estimating Air Emissions from Sources of Chlorobenzenes (revised)", EPA-454/R-93-044 (1993).
52. "Locating and Estimating Air Emissions from Sources of Methyl Ethyl Ketone", EPA-454/R-93-046 (1993).
53. "Locating and Estimating Air Emissions from Sources of Toluene", EPA-454/R-93-047 (1993).
54. "Locating and Estimating Air Emissions from Sources of Xylenes", EPA-454/R-93-048 (1993).
55. "Estimating Air Toxics Emissions from Medical Waste Incinerators", EPA-454/R-93-053 (1993).
56. "Locating and Estimating Air Emissions From Sources of 1,3-Butadiene (update)", EPA-454/R-96-008 (1996).

Other documents from the U.S. EPA are:

57. "Compilation of Air Pollutant Emission Factors, Vol. 1: Stationary Point and Area Sources", U.S. EPA, AP-42, 5th Edition (1996).
58. "Toxic Air Pollutant Emission Factors – A Compilation for Selected Air Toxic Compounds and Sources, Second Edition", U.S. EPA, EPA-450/2-90-011 (1990).
59. "Protocols for Generating Unit-specific Emission Estimates for Equipment Leaks of VOC and VHAP", U.S. EPA, EPA 450/3-88-010 (1988).
60. "Protocols for Equipment Leak Emission Estimates", U.S. EPA, EPA 453/R-93-026 (1993).

**Copies of these documents are available from:**

**U.S. Environmental Protection Agency**
**National Center For Environmental Publications and Information (NCEPI)**
**P.O. Box 42419**
**Cincinnati, OH 45242**
**U.S.A.**

**Tel: (513) 489-8190**
**Fax: (513) 489-8695**
**Internet: http://www.epa.gov/ncepihom/**

**The documents can be downloaded from:**

**U.S. Environmental Protection Agency**
**Office of Air Quality Planning and Standards**
**Technology Transfer Network Bulletin Board System (TTN BBS)**

**TTN BBS 14.4 Kb modem: (919) 541-5742**
**TTN BBS via Telnet: ttnbbs.rtpnc.epa.gov (134.67.104.11)**
**TTN*Web*: http://www.epa.gov/ttn/**

**Or, they can be ordered from:**

**National Technical Information Service**
**5285 Port Royal Road**
**Springfield, VA 22161**
**U.S.A.**

**Tel: (703) 487-4650**
**Fax: (703) 321-8547**
**eMail: orders@ntis.fedworld.gov**
**Internet: http://www.ntis.gov/**

## Documents Produced by Industry Associations

61. "Improving Air Quality: Guidance for Estimating Fugitive Emissions from Equipment", U.S. Chemical Manufacturing Association, CMA Order # 018026 (1988).

62. "Improving Air Quality: A Guide to Estimate Secondary Emissions", U.S. Chemical Manufacturing Association, CMA Order # 018014 (1989).

**Copies of the above reports can be purchased from:**

**Chemical Manufacturers Association**
**Publication Department**
**2501 M Street**
**Washington, DC 20037**
**U.S.A.**

63. "Evaporation Loss from External Floating Roof Tanks", American Petroleum Institute, Technical Bulletin 2517 (1989).

64. "Evaporation Loss from Fixed Roof Tanks", American Petroleum Institute, Technical Bulletin 2518 (1991).

65. "Evaporation Loss from Internal Floating Roof Tanks", American Petroleum Institute, Technical Bulletin 2519 (1990).

66. "Review of Air Toxic Emission Calculations from Storage Tanks, Air Toxic Emissions Calculation Validation Program: Analysis of Crude Oil and Refined Product Samples and Comparison of Vapor Composition to Model Predictions", American Petroleum Institute (1992).

**Copies of the above reports can be ordered from:**

**American Petroleum Institute**
**Publications and Distribution Section**
**1200 L Street Northwest**
**Washington, DC 20005**
**U.S.A**.

67. "NCASI Handbook of Chemical Specific Information for SARA Section 313 Form R Reporting", National Council of The Paper Industry for Air and Stream Improvement Inc. (1991).

**This publication is available from:**

**NCASI**
**Southern Regional Centre**
**P.O. Box 14483**
**Gainesville, FL 32604**
**U.S.A.**

**Attn: 313 Handbook Distribution Record**

## General Information

68. Howard, P. H. and M. Neal, *Dictionary of Chemical Names and Synonyms*, Lewis Publishers, Chelsea, MI (1992).

69. Lide, David R. *CRC Handbook of Chemistry and Physics, 75th Edition*, CRC Press, Inc., Boca Raton, FL (1995) pp 15-38, "*Characteristics of Particles and Particle Dispersoids*".