

Crossing the Border

Opportunities to Improve Tracking of
Transboundary Hazardous Waste
Shipments in North America

Working Draft Report

Commission for Environmental Cooperation

November 2003

This report was prepared for the Secretariat of the Commission for Environmental Cooperation (CEC). The views contained herein do not necessarily reflect the views of the CEC, or the governments of Canada, Mexico or the United States of America.

Reproduction of this document in whole or in part and in any form for educational or nonprofit purposes may be made without special permission from the CEC Secretariat, provided acknowledgement of the source is made. The CEC would appreciate receiving a copy of any publication or material that uses this document as a source.

For more information about this or other publications from the CEC, contact:

Commission for Environmental Cooperation
393, rue St-Jacques Ouest, Bureau 200
Montreal (Quebec) Canada H2Y 1N9
Tel: (514) 350-4300; Fax: (514) 350-4314
Web site: <http://www.cec.org>

Contents

Preface.....	vii
Current Tracking Processes for Transboundary Hazardous Waste Shipments	ix
Limitations of Current Tracking Processes.....	x
A Vision for Tracking Transboundary Hazardous Waste Shipments in North America.....	xi
Achieving the Vision	xii
Phased Implementation.....	xiii
Chapter 1 Introduction.....	1
Problem Definition.....	2
Study Objectives.....	2
Study Methodology	3
Organization of this Report	4
Chapter 2 NAFTA Country Requirements to Track the Transboundary Shipments of Hazardous Waste	5
International Agreements	5
NAFTA Country Domestic Laws, Regulations, and Data Management Systems	7
Canada.....	8
Mexico	10
United States	13
Summary.....	19
Laws and Regulations Related to Transboundary Hazardous Waste Shipments	19
Transboundary Hazardous Waste Data Management Systems	20
Chapter 3 Current Processes for Tracking the Transboundary Shipments of Hazardous Waste in North America	21
Overview	21
Between the United States and Mexico	21
Shipping Hazardous Waste from the United States to Mexico.....	22
Shipping Hazardous Waste from Mexico to the United States.....	28

Government to Government Reporting	34
Hazardous Waste Shipments Between Canada and the United States.....	36
Overview.....	36
Shipping Hazardous Waste from Canada into the United States.....	36
Shipping Hazardous Waste from the United States into Canada.....	43
Government to Government Reporting in North America	47
Hazardous Waste Shipments Between Mexico and Canada.....	49
Summary of Challenges.....	49
Inconsistent and Potentially Ineffective Border Controls.....	49
Administrative Burden.....	50
Chapter 4 Opportunities to Improve Procedures to Track Transboundary	
Shipments of Hazardous Waste in North America	52
The Challenge.....	52
A Vision for the Future—An Ideal Process for Tracking Hazardous Waste	
Shipments in North America	53
Achieving the Vision	55
Phased Implementation.....	56

Figures

Figure 3-1. Reporting Procedures to Ship Hazardous Waste from the United States to Mexico: Before Hazardous Waste Shipment Phase.....	23
Figure 3-2. Reporting Procedures to Ship Hazardous Waste from the United States to Mexico: During Shipment Phase	25
Figure 3-3. Reporting Procedures to Ship Hazardous Waste from the United States to Mexico: On Arrival and After Shipment Phase.....	27
Figure 3-4. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: Before Shipment Phase for Maquiladora Returns.....	29
Figure 3-5. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: Before-Shipment Phase for Non-maquiladoras.....	31
Figure 3-6. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: During Shipment Phase for all hazardous waste generators	33
Figure 3-7. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: On Arrival and After Shipment Phase for all Shipments	35

Figure 3-8. Reporting Procedures to Ship Hazardous Waste from Canada to the United States: Before Shipment Phase38

Figure 3-9. Reporting Procedures to Ship Hazardous Waste from Canada to the United States: During Shipment Phase.....40

Figure 3-10. Reporting Procedures to Ship Hazardous Waste from Canada to the United States: After Shipment Phase.....42

Figure 3-11. Reporting Procedures to Ship Hazardous Waste from the United States to Canada: Before Shipment Phase.....44

Figure 3-12 Reporting Procedures to Ship Hazardous Waste from the United States to Canada: During Shipment Phase46

Figure 3-13. Reporting Procedures to Ship Hazardous Waste from the United States to Canada: After Shipment Phase48

Figure 4-1. Draft Long-Term Concept for Electronic Data Sharing for Tracking the Transboundary hazardous waste Shipments in North America.....54

Preface

In 1994, with the signing of North American Free Trade Agreement (NAFTA), Canada, Mexico and the United States created the world's largest trading block. As a complement to NAFTA, the parties signed the North American Agreement on Environmental Cooperation (NAAEC), which established the Commission for Environmental Cooperation (CEC). The CEC is an international organization that addresses regional environmental concerns, helps prevent potential trade and environmental conflicts, and promotes effective enforcement of environmental law.

The CEC accomplishes its work through the combined efforts of the Council, Secretariat, and Joint Public Advisory Committee (JPAC). The Council, which is composed of the highest-level environmental authorities from each of the three countries, governs the CEC. The Secretariat implements the annual work program and provides administrative, technical, and operational support to the Council. The JPAC—composed of fifteen citizens, five from each of the three countries—advises the Council on any matter within the scope of the agreement.

The Secretariat undertook this report in response to a Council request to “proceed with a pilot project to track hazardous waste movement between Canada and the United States by means of an electronic notification system; and Conduct a feasibility study for a pilot project on electronic tracking of hazardous waste movements between Mexico and the United States, with particular attention to capacity building in Mexico and starting with a prioritized list of substances.”¹ The Secretariat incorporated the Council's request into its 2002 and 2003 work plans.²

In preparing this document, the Secretariat relied on the work of Emil J. Dzuray Jr. and Anna M. Wallace of the Logistics Management Institute (LMI), who developed this report with the input of government hazardous waste officials through the CEC's Hazardous Waste Task Force. This report is in draft form so that we can continue to receive comments from government, industry, nongovernmental organizations, and the public on how best to improve tracking of transboundary hazardous waste shipments in North America. If you have comments or questions, please contact me at (514) 350-4334 or <twhitehouse@cceintl.org>.

Tim Whitehouse
Head
Law and Policy Program
Commission for Environmental Cooperation

¹ Commission for Environmental Cooperation, “Final Communiqué; Ninth Regular Session of the CEC Council,” June 2002, p. 3.

² See <http://www.cec.org/files/pdf/LAWPOLICY/412-03-05_en.pdf>.



Chapter 1 Executive Summary

North American companies ship hundreds of thousands of tons of hazardous waste annually between Canada, Mexico, and the United States. Because improperly managed hazardous waste can pose a risk to human health and the environment, companies must follow reporting, shipping, and record-keeping procedures to minimize these risks. These procedures are dictated by the domestic laws within each country and by specific international agreements to which the NAFTA countries are parties. This draft report, *Crossing the Border*, details the current reporting procedures associated with transboundary hazardous waste shipments in North America, discusses the limitations of the current paper-based procedures, and presents opportunities to improve these reporting procedures, primarily through the use of electronic reporting.

Current Tracking Processes for Transboundary Hazardous Waste Shipments

In general, the Canadian, Mexican, and the US governments have similar requirements for regulating the transboundary shipments of hazardous waste. The procedures typically require importers or exporters to obtain approvals for certain shipments from designated government agencies and to track (by keeping a record of progress) the material's fate from its point of generation to its final destination (treatment, for example).

Although the specific requirements and reporting procedures for importing and exporting hazardous waste differ in the three countries, they all rest on the concept of prior informed consent (PIC). The PIC concept states that a hazardous waste listed in one country may only be exported to another country with the importing country's prior consent. However, the PIC concept does not apply to the hazardous waste generated by US companies operating in Mexico (known as *maquiladoras*) and shipped back into the United States for treatment. The United States, through the La Paz Agreement with Mexico, has agreed to accept hazardous waste from US *maquiladoras* without providing Mexico a PIC.

Both the PIC concept and each country's domestic hazardous waste management law rely on the effective sharing of information concerning each hazardous waste shipment. Government agencies use the information to decide whether to allow or disallow hazardous waste shipments, track trends, and identify possible compliance issues. Effective information exchange is critical to effective enforcement since the enforcement of transboundary hazardous waste shipments is the joint responsibility of each country's environmental and customs agencies. Each country has data management systems to support portions of its regulatory requirements to track transboundary hazardous waste shipments. However, the national environmental and customs agencies each have separate, standalone data management systems and rely on paper-based transactions. As a result, the agencies have difficulty accessing and sharing informa-

tion in a timely manner. In addition, no government has an integrated data management system that links the shipment approval process (which is the responsibility of the environmental agency in each country) with the border inspection process (which is the responsibility of the customs agency in each country), rendering the overall process ineffective as a compliance tool.

Limitations of Current Tracking Processes

The CEC hosted two workshops with government representatives from Canada, Mexico, and the United States to discuss the limitations of the current processes. The limitations discussed fall into the categories of border security, environmentally sound management, and administrative burdens. The following limitations are based on feedback from these workshops and build upon the CEC's 1999 report, *Tracking and Enforcement of Transborder Hazardous Waste Shipments in North America*:

- ◆ Border security is inconsistent and potentially ineffective.
 - Customs inspectors in each country inspect only a small percentage of hazardous waste shipments, and Environment Canada (EC) personnel report finding hazardous waste shipments without proper paperwork during border inspections.
 - Environmental and customs agencies do not typically communicate in real-time, making it hard to identify routinely noncompliant companies and enforce regulations at the border.
 - Currently, no NAFTA country has an integrated system that electronically shares data from the shipment approval process with the border inspection process. Consequently, customs border inspectors have no automatic means of identifying the appropriate hazardous waste documentation required for each shipment. In Canada, through a memorandum of understanding (MOU), EC has delegated authority to enforce the Export and Import of Hazardous Wastes Regulations (EIHWR) at the border to the Canada Customs and Revenue Agency (CCRA).
 - Customs and environmental agencies use different classification systems (harmonized tariff schedule code and waste identification number, respectively) to track hazardous waste shipments. This makes it difficult for government agencies to report consistent amounts and types of hazardous waste crossing borders.
- ◆ Limited data are available to support environmentally sound management of transboundary hazardous waste shipments.
 - Current government-to-government data sharing practices limit the ability of any one government agency to track transboundary hazardous waste from cradle to grave when the cradle is in one country and the grave is in another.

- Each government only requires a manifest for hazardous waste movements within its borders, and only Canada has a system to link manifest information with import and export notices.
- ◆ The government agencies responsible for regulating and enforcing transboundary shipments can experience unnecessary administrative burdens and costs.
 - Personnel must manually enter data and process paper-based forms provided by companies and other governments. Canada, Mexico, and the United States have a data entry backlog for their hazardous waste import and export tracking systems due to data entry burdens.
 - Personnel must follow different government-to-government reporting procedures for shipments between the United States and Canada and between Mexico and the United States. For example, US and Mexican agencies must use diplomatic channels to process government-to-government notices of hazardous waste shipments, resulting in delays.
 - The US federal and state governments maintain multiple, redundant data management systems to track the transboundary hazardous waste shipments.
- ◆ The regulated community can experience unnecessary administrative burdens and costs.
 - Each country requires different, yet similar, paper-based notice and manifest forms for one transboundary hazardous waste shipment, resulting in duplicative data entry and record keeping.
 - Shipping companies report delays while waiting for approval of forms.

These issues result from inefficient information exchange, processing backlogs, incompatibility of existing information systems, and limited integration among government environmental and customs agencies procedures.

A Vision for Tracking Transboundary Hazardous Waste Shipments in North America

An ideal process for tracking the transboundary shipments of hazardous waste must take into consideration the NAFTA goals of promoting free and secure trade among its members, each country's domestic environmental regulations (which require cradle-to-grave management of hazardous waste), and the North American customs agencies' goal of achieving a seamless, harmonized, and timely clearance of international commerce. Accordingly, a vision for the ideal process of tracking transboundary shipments of hazardous waste is as follows:

Tracking transboundary hazardous waste shipments within North America will be based on a timely electronic exchange of information, which will result in improved compliance, enhanced border security, and which will minimize the administrative burden and costs to government agencies and the private sector.

This report presents a *draft* concept of how the three governments can utilize electronic data exchange to help achieve this vision. The concept builds on each country's domestic initiatives and focuses on developing standard procedures for electronic reporting among the countries, not the creation of a single trilateral hazardous waste tracking system. The main tenet of this concept is the establishment by the three countries of standard procedures for the electronic exchange of notice and manifest data. This concept depends on the development of trilateral data crosswalks for each country's hazardous waste classifications, import and export notices-of-intent data elements, and hazardous waste manifest data elements.

Achieving the Vision

To assist the three governments in achieving this vision and overcoming the limitations of the current domestic tracking systems within the constraints of limited resources, the workshop participants identified the following opportunities for using electronic reporting to improve each country's ability to track transboundary hazardous waste shipments:

- ◆ To improve border security, the Canadian, Mexican, and US governments can work together to:
 - obtain comments from customs agencies on these draft CEC report recommendations,
 - designate specific hours of crossing for wastes with specific tariff codes (such as those for hazardous waste) and restrict them to specific ports of entry, and
 - identify best practices and standards (data format, exchange protocols, security protocols, etc.) for electronically sharing information between the national environmental and customs agencies.
- ◆ To improve the environmentally sound management of transboundary hazardous waste shipments, the Canadian, Mexican, and US governments can work together to:
 - institute the true origin-to-destination tracking of transboundary hazardous waste shipments by sharing select manifest data,

- establish common procedures for generators to provide a certificate of destruction or recycle even if hazardous waste is sent to a foreign facility,³
 - establish common procedures to track the transboundary shipments of exempt hazardous wastes if regulated as hazardous in one of the NAFTA countries,
 - identify specific capacity building needs for Mexican personnel with responsibilities for tracking transboundary hazardous waste shipments, and
 - consider development of a trinational declaration form for transboundary shipments of exempt wastes, which would also support the effort to track exempt wastes.
- ◆ To reduce the administrative burden on the government agencies responsible for regulating and enforcing transboundary shipments, the Canadian, Mexican, and US governments can work together to:
 - establish common procedures for government-to-government reporting of transboundary hazardous waste shipments (such as the environmental agencies in the United States and Mexico directly communicating instead of using diplomatic channels to share notices of import and export),
 - update the trinational data crosswalk of the hazardous waste codes used by each country and make this information available to the government agencies,
 - conduct a pilot project to electronically exchange government-to-government reporting for obtaining PIC, and
 - on the part of the United States, investigate the feasibility of streamlining its three federal data management systems into one comprehensive system for both import and export data management.
 - ◆ To reduce the administrative burden on the regulated community, the Canadian, Mexican, and US governments can work together to:
 - host a series of meetings to present the draft report and collect comments from industry and the public, and
 - create an updated trinational data crosswalk of the hazardous waste codes used by each country and make this information available to private companies.

Phased Implementation

We recommend a two-track, phased approach to achieving a harmonized data exchange process that automates (to the extent practical) the reporting process for track-

³ This procedure would supplement existing domestic requirements and facilitate the origin-to-destination tracking of hazardous waste shipments across North America.

ing transboundary hazardous waste shipments. This approach would be integrated into the ongoing modernization efforts in each of the country's environmental and customs agencies. Each phase builds upon the results of the previous one while allowing member countries time to coordinate these efforts with domestic system modernization efforts.

Track one would be to automate the country-to-country notice and approval process for transboundary hazardous waste shipments. It would consist of the following eight phases:

1. Obtain agreement on business practices to streamline, and, for each, analyze costs and opportunities to use electronic reporting.
2. Design, develop, and test data standards, application code, and security protocols for government-to-government notices.
3. Pilot test electronic reporting of government-to-government notices.
4. Expand the pilot test to allow industry to submit applications for hazardous waste import and exports (business-to-government notices).
5. Obtain agreement on streamlined business practices for electronic reporting between customs ports and environmental agencies.
6. Design, develop, and test data standards, application code, and security protocols for sharing notice and manifest data between customs and environmental agencies.
7. Pilot test electronic reporting of approval or objection notices between environmental and customs agencies.
8. Expand the pilot test to include all environmentally related data exchange requirements.

Track two would consist of examining the technologies and systems currently being considered for tracking hazardous waste and hazardous recyclable materials and wastes in North America, to identify obstacles to the interoperability of these systems, develop activities for the exchange of information, and implement automated systems for tracking transboundary movements in North America.

Chapter 1

Introduction

Annually, importers and exporters ship hundreds of thousands of tons of hazardous waste between Canada, Mexico and the United States. Because hazardous waste poses a risk to human health and the environment, the shipments of these substances are governed by laws and regulations, which are designed to address domestic issues, and international agreements, which require additional reporting procedures for transboundary shipments. In general, international shipments require importers or exporters to obtain approvals for certain shipments from designated government agencies and keep a record of the material's fate from cradle to grave. Although the requirements and reporting procedures are different in each NAFTA country, they are all based on the concept of prior informed consent (PIC).

The PIC concept states that a hazardous waste listed in one country may only be exported to another country with the importing country's prior consent. However, the PIC concept does not apply to the hazardous waste generated by US companies operating in Mexico (known as *maquiladoras*) and shipped back into the United States for treatment. The United States has agreed to accept hazardous waste from US *maquiladoras* without providing Mexico a prior informed consent.

The PIC concept as well as the NAFTA country's domestic laws relies on the sharing of information about hazardous waste shipments before the shipments occur. Canadian, Mexican, and US government agencies use the information to make decisions about whether to allow or disallow the import or export of a particular hazardous waste. They also use the information to track trends and identify enforcement needs. Enforcement of the import and export of hazardous waste is carried out jointly by each country's environmental agencies [e.g. Mexico's Secretariat for Environment and Natural Resources (Semarnat), Environment Canada (EC), and the US Environmental Protection Agency (US EPA)] and its customs agencies [e.g., Mexico's Customs Department, Canada Customs and Revenue Agency (CCRA), and the US Customs Service (USCS)].

However, the processes currently in place to report and share information about hazardous waste shipments are primarily paper-based in each of the three countries. The CEC 1999 report, *Tracking and Enforcement of Transboundary Hazardous Waste Shipments in North America*, concluded that the hazardous waste tracking processes/systems in all three countries were deficient with respect to the quality, quantity and timing of information. The need to improve management practices regarding the tracking of transboundary shipments of dangerous substances, including hazardous wastes, has heightened in the aftermath of the terrorist attacks in the United States on 11 September 2001.

With this knowledge, the environmental and customs agencies in Canada, Mexico and the United States are striving to both improve the effectiveness of their border controls while reducing the administrative burden on the regulated communities. One aspect of this effort is the electronic exchange of information about trans-boundary hazardous waste shipments. In 2001, the CEC established a trilateral Hazardous Waste Task Force (HWTF) to work on the Environmentally Sound Management (ESM) and Tracking of Hazardous Waste to explore ways to better manage and track hazardous wastes in North America.

This report is part of the CEC's ongoing efforts to help facilitate cooperation among the NAFTA countries as they work to adopt electronic reporting, improve the effectiveness of border controls, while also trying to minimize the administrative burden on the regulated communities.

Problem Definition

A major limitation of the current paper-based reporting processes for hazardous waste import/exports is that it is not fully effective in enforcing import/export restrictions and monitoring compliance. In addition, there is a lack of control during the shipping process due to the inability to access real-time information on shipments during the shipping process. Other limitations of the current paper based process result from inefficient information exchange, processing backlogs, incompatibility of existing information systems, and limited integration among border agencies. Electronic exchange of information provides an opportunity for the NAFTA countries to share data in real time, so that enforcement and border personnel have the data they need to effectively exercise control of hazardous waste shipments during transit and at the border.

Study Objectives

This draft report contains the initial findings collected from the first of two CEC workshops and it presents the current procedures, information and systems used to track the transboundary shipments of hazardous waste between Canada, Mexico and the United States (referred to as the 'as-is' workflow model). It presents an analysis of this 'as-is' workflow and identifies process changes and opportunities for automation that can provide the following benefits:

- ◆ Ensure all transboundary hazardous waste shipments occur in a compliant and secure manner;
- ◆ Promote the environmentally sound management of transboundary hazardous waste shipments across the NAFTA countries;
- ◆ Reduce the costs and undue administrative burden on the regulated community; and
- ◆ Reduce the administrative burden on the government agencies responsible for regulating the transboundary hazardous waste shipments process.

Before finalizing this report, the CEC will subject it to a public comment period and present it at a series of public meetings. The final report will attempt to capture the concerns of all major stakeholders and to identify specific options for automating and improving transboundary processes. With the final report, CEC hopes to facilitate cooperation between the NAFTA countries in implementing electronic reporting opportunities to improve the effectiveness of border controls, to reduce the administrative burden on the regulated communities and regulating agencies, and to provide better information to the public.

Study Methodology

Using the broad framework of Business Process Re-engineering (BPR), this study was conducted in three phases. In the first phase, LMI reviewed previous studies, domestic regulations of Canada, Mexico and the United States, and key international agreements specified in NAFTA. The output of the first phase was a draft workflow model of the current import and export procedures for shipping hazardous waste among the NAFTA countries (referred to as the draft “as-is” workflow model).

In phase two, LMI facilitated the first of two collaborative workgroup meetings comprised of environmental and customs representatives of the NAFTA countries to confirm the as-is model. In phase three, CEC and LMI facilitated a second workgroup meeting to present the findings from the first report and use this as a baseline to collaboratively refine opportunities to improve the movements of hazardous waste. LMI then synthesized these opportunities into an ideal workflow process (referred to as the “to-be” workflow model) for tracking the transboundary shipments of hazardous waste among NAFTA countries. This *draft report* provides a comprehensive “as-is” workflow model for shipping hazardous waste between the NAFTA countries. It also contains the draft “to-be” workflow model and recommendations for facilitating implementation. Specifically, this report includes:

- ◆ The information-related business practices in use by Mexico, Canada, and the United States to include documentation and common control devices. (For example: notifications, consents, shipping documents/manifests, summary reports, etc.).
- ◆ An analysis of the relevant tracking mechanisms, their application, data/reports generated, and gaps/limitations.
- ◆ An evaluation of the current systems being used for transboundary hazardous waste tracking, their degree of integration, and gaps/limitations.
- ◆ An overview of current coordination efforts between border agencies and competent authorities and between national border agencies and national environmental agencies.
- ◆ Recommendations for improving, streamlining, and automating the processes/systems to better ensure compliance.

-
- ◆ “As-is” and “to-be” NAFTA hazardous waste workflow tracking models.

This working draft report will serve to collect additional comments from representatives from the customs agencies, private companies, and the public in each of the member countries. The final report will contain this feedback.

Organization of this Report

The remainder of this report is organized as follows:

- ◆ Chapter 2 provides a synopsis of relevant international laws and multilateral and bilateral agreements. A synopsis is also provided of domestic laws and policies in the United States, Mexico and Canada regulating the transboundary movement of hazardous waste.
- ◆ Chapter 3 presents a workflow model of the current practices for tracking the transboundary shipments of hazardous waste between the NAFTA countries. This information comes from a review of the relevant requirements, previous reports, and information provided from the CEC Hazardous Waste Task Force (comprising environmental, customs and other officials from the United States, Mexico, and Canada). It provides a description of the current hazardous waste information tracking systems used by each of the NAFTA countries. It then summarizes the limitations of the current practices (“as-is model”) and information systems in enabling each country to effectively control its borders while minimizing the administrative burden on the import and export community.
- ◆ Chapter 4 offers a “to-be” model of how the NAFTA countries can effectively control their borders while minimizing the administrative burden on the import and export community. This model and associated recommendations builds on those recommendations provided in previous reports by capturing the input from the CEC Hazardous Waste Task Force. The recommendations include direct proposals to each country as well as the steps that the CEC will undertake to facilitate cooperation among the stakeholders.

Chapter 2

NAFTA Country Requirements to Track the Transboundary Shipments of Hazardous Waste

This chapter provides a brief overview of the requirements that importers, exporters and domestic government agencies must meet to ship hazardous wastes among the three NAFTA countries. It describes the domestic regulations, international agreements and the current status of the information systems each country has in place. Material presented in this chapter has been abstracted from the draft CEC report, *Environmentally Sound Management of Hazardous Wastes and Recyclables in North America*, other previous CEC reports, the text of various laws and regulations, and the proceedings from the CEC Hazardous Waste Task Force meeting in Puerto Peñasco, Mexico.

International Agreements

Although the purpose of NAFTA was to establish a free trade area throughout North America, it also stressed the importance of maintaining appropriate environmental standards. Specifically, Article 104 of the NAFTA states that in the event of conflicts between provisions of NAFTA and specified environmental agreements, the environmental agreements govern. The specified environmental agreements that address tracking and control of transboundary movements of hazardous waste between the NAFTA countries include the:

- ◆ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 5 May 1992. (Canada and Mexico are among the 157 countries that have ratified it. The United States has not);
- ◆ The Organisation for Economic Co-operation and Development (OECD) Decision of Council on the Control of Transboundary Movement of Wastes Destined for Recovery Operations, June 2001;
- ◆ The Agreement between the Government of Canada and the Government of the United States of America Concerning the Transboundary Movement of Hazardous Waste (1986, amended in 1992); and the
- ◆ US and Mexico Agreement (La Paz Agreement) and the US and Mexico Border 2012 Program goals.

Movements between Mexico and Canada are subject to Basel Convention controls if they are for final disposal, because both are Basel Parties and do not have a separate bilateral agreement addressing any hazardous waste shipments. Signatories to the Basel Agreement may prohibit specific waste from entering their country regardless of how it is regulated in the generating country. Also, officials in an

exporting country have a duty to prohibit an export of a hazardous waste if there is reason to believe the importing country cannot dispose of the hazardous waste in an environmentally sound manner. Basel Parties may authorize the movement of hazardous waste when the exporting state lacks the necessary facilities, technological capacity, or suitable disposal sites to dispose of the waste in an environmentally sound and efficient manner, when the importing country requests the waste as a raw material for recycling, or other mutually agreeable conditions are met.

The Canada/US and US/Mexico bilateral agreements are similar, except that the Canada/US agreement provides for transboundary shipments for disposal. The requirements of each are reflected in the domestic statutes and regulations that implement transboundary hazardous waste shipment requirements. Also, each Agreement requires relevant information to be included in the tracking document, and each allows a country to block entry of “environmentally harmful” hazardous waste. The Canada/US Agreement allows the importing country 30 days to indicate consent or objection to the proposed waste shipment and the Agreement provides for tacit consent, whereas the La Paz Agreement allows the importing country 45 days, and there is no tacit consent. In addition to the 45-day window for consent or objection, the La Paz Agreement provides that the notification must include: identity of exporter, type and quantity of waste, the period of time over which the waste will be exported and the point of entry. Under the La Paz Agreement, if the designated authority orders the shipment expelled from the import country for any reason the export country must readmit the shipment.

To implement the La Paz Agreement, the US EPA and Mexico’s Semarnat in April 2003 joined 10 US-Mexico border states and US tribes in launching a 10-year program designed to protect public health and the environment along the 2,000-mile US-Mexico border. This program, known as Border 2012, will focus on decreasing pollution and lowering the risks of exposure to pesticides and other chemicals, and it aims to achieve the following goals in the border region by 2012.

- ◆ Goal 1. Reduce water contamination
- ◆ Goal 2. Reduce air pollution
- ◆ Goal 3. Reduce land contamination
- ◆ Goal 4. Improve environmental health
- ◆ Goal 5. Reduce exposure to chemicals as a result of accidental chemical releases and/or acts of terrorism
- ◆ Goal 6. Improve environmental performance through compliance, enforcement, pollution prevention, and promotion of environmental stewardship.

Particular to the issue of tracking transboundary shipments of hazardous waste is the objective listed under Goal 3 that states:

By 2004, evaluate the hazardous waste tracking systems in the United States and Mexico. During the year 2006, develop and consolidate the link between both tracking systems. Currently, both the United States and Mexico have their own, separate computer systems for tracking the movement of hazardous waste across the border. If these systems were linked it would lead to a better exchange of information, and to a more complete and effective tracking of the movement of hazardous wastes across the US-Mexico border.

The Border 2012 Agreement also focuses on the importance of quality environmental information by stating:

Collection, management and exchange of environmental data are essential to effective environmental management. Some examples include harmonizing bi-national environmental protocols or information management systems (e.g., hazardous waste tracking systems) and developing effective data collection and information exchange mechanisms between Border 2012 partners and border stakeholders.

These objectives set a clear direction and timeline for coordinating US and Mexican system development efforts for tracking transboundary hazardous waste shipments. The entire draft Border 2012 plan is available in English and Spanish on the US EPA and Semarnat web sites:

<http://www.epa.gov/usmexicoborder/index.htm>.

NAFTA Country Domestic Laws, Regulations, and Data Management Systems

Statutes and regulations of the three individual NAFTA countries establish the specific mechanisms for tracking and control of transboundary movements of hazardous waste. The laws typically require that domestic waste generators, transporters, and management facilities submit information to specific government agencies at three points during the international waste transport process. Prior to shipment, a notification of intent to export or import must be submitted to the government for approval. During shipment, a waste manifest must accompany the shipment and must be made available to government inspectors. After the shipment reaches its final destination, an annual report or facility management log is kept by the facility to document the receipt of the shipment.

However, under the La Paz Agreement, the United States has agreed to readmit hazardous waste generated in the processes of economic production, manufacturing, processing or repair, for which raw materials were utilized and temporarily admitted under Mexico's maquiladora program, where the country of origin for the raw materials was the United States.

The following sections provide a brief overview of the current domestic laws and regulations that govern the import and export of hazardous waste. In addition,

each of the NAFTA countries are engaged in efforts intended to harmonize regulations and to enhance the effectiveness of compliance efforts for hazardous waste and recyclables, both for domestic generation and treatment, and when subject to import or export.

Canada

Overview of Relevant Laws and Regulations

Canada's Export and Import of Hazardous Wastes Regulations (EIHWR) are the principal regulations for tracking transboundary movements of hazardous waste into, out of, and transit through Canada. These regulations work in concert with the Transportation of Dangerous Goods Act and regulations, which control the transportation of dangerous goods (including hazardous waste) within Canada. The movement of hazardous waste is subject to various regulations that are dependent on the amount, the method of disposal as well as the location of the final destination.

The keystone of the EIHWR is the prior informed consent (PIC) mechanism, which is also the essential component of the international agreements. The PIC provisions in the EIHWR require the Canadian importer or exporter to submit a notice for intended imports of hazardous waste destined for disposal or recycling/recovery operations before any movements take place. The notice allows Environment Canada to determine who the parties are in the transaction (generator/foreign exporter, carriers and importer/receiver), identify the hazardous waste(s), and ensure that the appropriate documentation is in place to cover the proposed shipments, such as contracts between the parties and evidence of sufficient insurance coverage in the event of an accident or a mishap. This also permits the provinces to review the information and to provide consent based on the strict controls that they have placed on the operational permits for the facility before the transportation of the wastes.

Parties initiating transboundary movements of hazardous waste must file a notice of intent to export, import, or transport hazardous waste with the Transboundary Movement Branch of Environment Canada. Each notice references a specific shipment of hazardous waste from a specific generator and specific importer, to allow the notice to be evaluated and the competent authorities to consent or object to the shipment. Each notice contains detailed information regarding the waste, the country of origin, destination, and transit (if any), parties involved in the shipment, operations to be used to manage the waste, and, in the case of exports from Canada, a claim of responsibility by a Canadian exporter to take back the waste if it cannot be managed as foreseen after export. Documentation of insurance and applicable contracts must accompany the notice.

The Transboundary Movement Branch reviews the information in this notice and a permit is issued allowing the export, import, or transit provided all regulatory conditions have been met. Consent for an export is subject to approval of the im-

porting country as well as Canadian authorities while consent for imports is subject to Canadian provincial confirmation and approval that the receiving facility can manage the waste. The import and export consents are valid for up to one year, and may be used to cover multiple shipments within that year.

In addition to the insurance and contractual information, a waste manifest, notice, and letter of consent all must accompany the hazardous waste shipment at all times when it is in transit. Manifests are required for solid wastes exceeding five kilograms; liquid wastes exceeding five liters, and wastes containing greater than 500 g of PCB in a mixture. Copies of manifests must be signed and provided to specific parties during transport, including the government agency, the transporter, Canada customs and the consignee. The consignor, carrier, and consignees must maintain copies of all documentation for two years. The government agency, the Transboundary Movement Branch, receives copies of the manifest at waste pickup, delivery, and border crossing, and the consignee must send a certification to Environment Canada stating that the recycling or disposal activities have occurred, within 30 days of completion of the activity. If scheduled recycling or final disposal activities cannot be undertaken or completed, the Canadian exporter must provide this information to the Transboundary Movement Branch and must arrange to have the waste recycled or disposed of via different means, following appropriate approval, or returned to the person who initiated the transboundary movement.

Although generally federal waste manifests are used throughout Canada for intra-provincial transport of hazardous waste, Canadian provinces have jurisdiction over intra-provincial movement of hazardous wastes. Each province may impose additional requirements on movements of hazardous wastes and address different wastes that are not covered under the federal regulations. For example, in Ontario, the General Waste Management Regulation controls the transport of waste within, out of, into, and through Ontario. Movements of hazardous and other wastes are tracked through a system of manifests.

Data Management Systems

Environment Canada uses the Canadian Notice and Manifest Tracking System (CNMETS) is Environment Canada's system to collect, store, and process hazardous waste information. A module within the CNMETS, the Manifest System for Exports and Imports of Hazardous Waste, provides detailed tracking of exports and imports of hazardous waste, from the time it leaves the gates of the shipper or generator to the time it arrives at its destination as specified on the advance notice and certificate of destruction or recycling. It is designed to ensure that such shipments do not go astray, either at borders or after they have crossed them, and that their entire cargoes arrive intact. It also helps to prevent "orphan" shipments: if a shipment is abandoned, or rejected at a plant gate, the manifest system will enable it to be traced back to its exporter/generator. In addition, detailed manifests enable fast and effective emergency response, should a mishap occur. Canadian regulations require the identification of the disposal or recycling

process that will be used for the hazardous waste in the notice. The regulations also require the Canadian exporter/generator and Canadian importer/receiver to provide a certificate of disposal or recycling (as the case may be) within 30 days of the process being completed. Although Canadian regulations regulate the export and import of hazardous wastes, it is the Canadian provinces that have jurisdiction over movements solely within their territory. The hazardous waste manifest required by federal regulations is also used to track inter-provincial and intra-provincial movements of hazardous wastes, although these shipments are regulated by the provincial authorities.

Exporters/generators and importers of hazardous wastes are responsible for ensuring that the various sections of the manifest are properly filled out, that copies are distributed to the appropriate authorities, and that they are kept on record for two years. The authorities, including Environment Canada, match the manifest copies received from exporters/generators and importers along with the information in the notice to ensure that shipments have arrived intact at their intended destinations.

Planned Initiatives

Canada recently completed extensive modifications to the regulations applicable to the transportation of dangerous goods within Canada. The new regulations became effective 15 August 2002. The new, “clear language” regulations are available on the Internet at <http://www.tc.gc.ca/tdg/clear/tofc.htm>. In addition to the new final regulations, efforts are underway to update the transport of dangerous goods regulations. Revisions to the Export and Import of Hazardous Wastes Regulations (EIHWR) were completed and came into force at the same time, August 2002, to ensure that no regulatory gaps were created with respect to the manifesting provisions.

On a parallel track, Environment Canada is developing a regulatory framework for the import and export of non-hazardous waste to meet its international obligations. The planned regulation will affect management of non-hazardous wastes both within Canada and when exported from Canada. Initial management options considered are available for review at <http://www.ec.gc.ca/CEPARegistry/participation/Report>.

Mexico

Overview of Relevant Laws and Regulations

Mexico’s General Law provides the framework for transboundary movements of hazardous waste. It states that imports can be accepted as long as handling and management complies with applicable laws and there is a certification by the competent authorities of the country of origin of the wastes indicating the degree of hazard. Exports may be undertaken if the importing country consents. Import of hazardous materials or wastes for final disposal or for simple deposit, storage

or confinement, or use in manufacture is not permitted. Hazardous wastes and materials generated in activities in which temporarily imported hazardous raw materials are used must be returned to the country of origin. Significantly, the Mexican environmental authority does not consider the “return” of these materials an export under its control framework (due principally to the fact that “returns” do not require the complex international authorization process required of an export), yet the United States regards them as imports, contributing to problems associated with tracking.

Mexican regulations provide more specificity than the General Law. Some, which implement UN Recommendations on hazardous waste transportation, address classification of the wastes, packaging, labeling, unit identification, transport equipment, inspections, and shipment requirements, as well as documentation for emergency response during transit of hazardous wastes, and obligations of the generator and recipient of the hazardous wastes.

Tracking of hazardous waste generation and management is exclusively a federal government responsibility. Semarnat is the responsible authority through the Undersecretariat of Management for Environmental Protection (*Subsecretaría de Gestión para la Protección Ambiental—SGPA*) and enforcement is carried out through Profepa. Profepa ensures compliance and will issue fees and penalties to those agencies that fail to comply with all federal regulations. Semarnat maintains the tracking of transboundary shipments of hazardous waste, and is responsible for authorizing imports and exports of such waste. The Secretariat of Communications and Transport (SCT) is the federal agency responsible for national and transboundary transport of hazardous waste, maintaining a register of companies authorized to transport hazardous waste.

Most of the hazardous waste transported out of Mexico comes from a category of companies called the maquiladora or maquilas. Maquilas are companies that have are given special tax and tariff rates to bring materials into Mexico and produce products for export. However, one condition is that they return to the country of origin all hazardous waste produced as part of the production process.

In Mexico, a transboundary movement of hazardous waste begins when the generator presents an import/export application to SGPA or to the Semarnat federal delegations. Authorization, granted as a permit to export or import, allows shipments to occur within 90 days. The permit is attached to the shipping manifest. The information required on the import/export permit applications includes: information regarding the applicant, the route to be used to move the waste, information about the transporter, technical specifications regarding the waste, flow diagrams of how the wastes would be used, information about the importer/exporter company, lists of the relevant recycling centers and center-specific information, emergency response measures for the shipment, notification that meets international requirements, a letter of acceptance from facilities in the country of final destination, and a bond placed with Semarnat to guarantee compliance with conditions of the authorization.

A manifest must accompany shipments of hazardous waste within Mexico. The manifest system is similar to that in the United States in that it is signed, retained, and passed along to all participants in the waste transport and management activities. Each shipment must be accompanied by a permit as evidence of the authorization to export in order for Mexican Customs to allow the shipment to proceed. After the shipment arrives at the destination facility and the manifest is returned to the generator, the generator must report the shipment to Semarnat within 15 days of completion. With this notification, the generator conveys information about the actual quantities shipped. The generator must keep all originals and copies of the manifest, to be available for inspection.

Data Management Systems

Starting in 1994, the *Instituto Nacional de Ecología* (INE) and US EPA Regions VI and IX jointly operated and periodically updated the Hazardous Waste Tracking System (Haztraks) system, through version 97.1b. They also developed the user manuals and training for Semarnat's federal delegations in the Border States. In 1997, the INE began development of a Hazardous Waste Tracking System (*Sistema de Rastreo de Residuos Peligrosos*—SIRREP), which includes the use of the Aviso (return notice) instead of the export authorizations for waste generated by the maquiladora industry. SIRREP replaced the Haztraks system in the respective Mexican agencies. Operation of SIRREP began in November 1998 in the Semarnat Federal Delegations in the northern border states, as well as at the INE. This enables Semarnat to track hazardous waste movements between the United States and Mexico, and to track hazardous waste movements within Mexico.

The SIRREP system is the main tool for recording and exchanging information, preparing reports, and searching records and statistics on the movement of temporarily imported hazardous waste through the tracking of Return Notices. The Return Notice is the form that Semarnat uses to track the return, to the country of origin, of the hazardous waste generated from raw materials used during the maquiladora production process, as well as to ensure that such transboundary movement follows safety measures that prevent alterations in the ecological balance of Mexican territory. In order to strengthen the operation of SIRREP in the Semarnat and the Profepa, the INE published Administrative Procedure for the Return of Hazardous Waste Generated by the Maquiladora Industry. This procedure is undertaken, by any entity or individual who is required to return hazardous waste to the country of origin (of the raw materials used in processing), in order to notify Semarnat of such movement.

Semarnat representatives have reported that the SIRREP system has shown operational problems over the last few years. In 2000 and 2001, server problems continued to affect SIRREP Revolución and during 2002, SIRREP ceased to operate at Revolución. As of December 2002, the information contained in SIRREP was not current and the Semarnat is planning a review of the completeness of information for years 2000 and 2001 and data entry for 2002.

The Mexican Customs officials share receiving notifications and manifest databases with Profepa to ensure that importers and exporters comply with Mexican environmental laws.

Planned Initiatives

Mexico has undertaken an ambitious program of regulatory revisions and development. Since 1993, when Mexico published its first regulation based on the Eighth Edition of the UN Recommendations on the Transport of Dangerous Goods, it has published and finalized 22 standards (*Normas Oficiales Mexicanas*—NOMs) covering all modes of transportation. At present, the relevant authorities are modifying NOM-002-SCT-2/1994 (list of most commonly transported dangerous goods), NOM-007-SCT2/1995 (marking and packaging for transport of hazardous substances and wastes), and NOM024-SCT/1995 (specifications for manufacture, and test methods used for performance oriented packaging).

In addition to the important transportation NOMs being revised, new NOMs are under consideration for provisions relating to compatibility and segregation of train cars carrying hazardous wastes and materials, inspection of railcar equipment used to carry hazardous wastes and materials, and cleaning and control of hazardous substances and waste residues in tanker cars carrying hazardous wastes.

Many new initiatives may also affect standards applicable to hazardous waste management, and thus indirectly affect potential transboundary movements. They include an unnamed standard that would establish specifications and handling requirements for generators and handlers of used oil. Used oil is not considered a hazardous waste in the United States, and could be currently exported to Mexico for recycling without notice or prior consent under the US regulations, though whether such movements are actually occurring is not clear. Emergency response requirements are also under development, as they relate to controlling and mitigating accidents involving hazardous wastes and materials. There are no comparable Mexican regulations addressing this issue.

United States

Overview of Relevant Laws and Regulations

US federal laws and associated regulations that are integral to the tracking and enforcement of transboundary hazardous waste transport include the Resource Conservation and Recovery Act (RCRA) (Title 40, Section 262, Subpart E of the Code of Federal Regulations (CFR) for export and Subpart F of 40 CFR 262.60 for import) and the Hazardous Materials Transportation Act (HMTA) (Title 49 CFR Sections 106 to 180). The following sections describe the export and import requirements as defined in RCRA.

Under RCRA, hazardous waste is regulated from the time it is generated until the time of its disposal. For the export and import of hazardous wastes from and into the United States, jurisdiction ends the moment the shipment leaves the country and starts when it enters the country. In many cases, states are authorized to administer certain portions of the RCRA program. Authorized states may develop and carry out their own hazardous waste programs, provided they are consistent with and equivalent to the federal program. The authorized state programs may be broader and more stringent than the federal program. However, there is no provision for authorization of state programs for implementing import and export notice and consent procedures, which is a role reserved for the federal government.

Export Requirements

RCRA establishes that exports of hazardous waste from the United States are prohibited unless:

- ◆ notification has been provided; a primary exporter of hazardous waste must notify US EPA of an intended export sixty days before the date scheduled for the initial shipment, describing the hazardous waste and the US EPA hazardous waste number, US DOT proper shipping name, hazard class and ID number for each hazardous waste;
- ◆ the receiving country has consented to accept the hazardous waste;
- ◆ a copy of the US EPA Acknowledgement of Consent to the shipment accompanies the hazardous waste shipment and, unless exported by rail, is attached to the manifest;
- ◆ the hazardous waste shipment conforms to the terms of the receiving country's written consent as reflected in the US EPA Acknowledgment of Consent; and
- ◆ a primary exporter complies with manifest and reporting requirements, including retaining a copy of each notification of intent to export for a period of at least three years from the date the hazardous waste was accepted by the initial transporter. Hazardous wastes that are not subject to a hazardous waste manifest are not regulated when exported, nor are secondary materials that are shipped under terms of an exclusion (e.g., characteristic by-products being shipped for reclamation are not subject to regulation in the United States, and are therefore not subject to the US notice and consent requirements).

US EPA directly notifies the competent authority in the intended country of import to obtain consent and serves as a communication link between that competent authority and the US entity proposing the export.

Thus, a notice of intent to export must be submitted to US EPA and must include information about the exporter, the hazardous waste to be exported, the estimated frequency of export of this waste and the time during which it is to be exported,

where it is headed, the means of transportation and management upon arrival, and the destination facility. US EPA reviews the notice of intent and requests the consent of the receiving country, which is necessary before the US government can consent to the export. Once consent is obtained from the competent authority in the receiving country, it is passed on to the exporter, who attaches a copy to the hazardous waste manifest initiated when the shipment actually begins. Exporters of waste must file an annual report summarizing the types, quantities, frequency, destination, and ultimate disposal of the waste exported over the course of the preceding year every 1 March. All records must be maintained for no less than three years.

Import Requirements

When importing hazardous waste to the United States, the US importer does not have to request prior consent from the US EPA. The foreign exporter will typically notify its appropriate government agency, which will then provide a notice to the US EPA. However, the US importer must meet all the manifest requirements including identification of the foreign generator. In such a case, documentation must accompany the waste from the point of entry into the United States to the final destination. A facility that intends to receive waste from a foreign source must notify the appropriate US EPA regional office at least 28 days before the first shipment is expected to arrive at the receiving facility, but is not required to re-notify for future shipments unless the source or character of the waste changes. US EPA lacks statutory authority to deny entry so long as the shipment conforms to US regulatory requirements.

The manifest names the generator, importer, and the facility that will manage the waste and provides details of the amount and type of waste. There is no requirement to submit a copy of the manifest to US Customs officials at present; however, such a requirement was recently proposed. US Customs officials have in the past informally copied manifests of imports and provided them to US EPA regional offices for hazardous waste coming into the United States from Mexico.

RCRA regulations require that the exporter must deliver a copy of all manifests to US Customs. The US Customs Service has authority to search suspect hazardous waste shipments and to seize and detain the waste when there is reasonable cause to believe a transporter is exporting illegally. The transport of waste exported to or imported from the United States must comply with the HMTA during its transport in the United States.

Data Management Systems

At the federal level, the United States operates three hazardous waste shipment data management systems. US EPA headquarters (HQ) Office of Enforcement and Compliance Assurance (OECA) uses two stand-alone data management systems to support the tracking of transboundary movements of hazardous waste:

-
- ◆ Waste International Tracking System (WITS) tracks Notices of Intent (NOIs) to import hazardous waste into the United States and the associated US response (e.g., consent or object).
 - ◆ Hazardous Waste Export System (HWES) tracks NOIs to export hazardous waste, associated responses (e.g., consent or object), hazardous waste manifests, and annual reports.

Also, US EPA Regions 6 and 9 use a different stand-alone system for hazardous waste shipments between the US and Mexico to include shipments from US maquiladoras. Haztraks tracks information from the import and export NOIs, the Mexican aviso, and the manifest.

The following sections describe these federal systems in greater detail. In addition, the states of Texas,⁴ California,⁵ New Jersey and Washington have active systems that track movements of hazardous waste in and out of the United States. Many other states collect and compile information about generators, transporters, and managers of hazardous waste but not in a systematic or computerized fashion.

Hazardous Waste Export System

Under RCRA, hazardous waste exporters must first notify US EPA of their intent to export. After a review for sufficiency, the US shares the notification of intent to export with the destination country (Mexico or Canada) and receives consent or objection of the proposed shipment. The US EPA stores this information in its HWES database. This database holds the following information for each potential export shipment:

- ◆ Name and address of the exporter;
- ◆ Types and estimated amounts of hazardous wastes to be exported;
- ◆ Estimate of the frequency or rate at which the waste is to be exported and the period of time over which it is to be exported;
- ◆ Ports of entry;
- ◆ Method of transportation to the receiving country and the treatment, storage, or disposal of the waste in that country; and
- ◆ Name and address of the ultimate treatment, storage, or disposal facility.

⁴ Texas Natural Resource Conservation Commission, Electronic Tracking of Hazardous Waste from Mexican Maquiladoras to the US, December 1998, Available from <<http://www.tnrcc.state.tx.us/admin/topdoc/sfr/064.pdf>>.

⁵ Ibid.

The database also holds information drawn from export manifests and from annual reports filed by exporters. A single annual report can provide information on multiple shipments and manifest numbers.

Periodically, the US EPA uses data in HWES to generate reports summarizing trends in exports of hazardous waste. These data also are used for enforcement purposes to identify non-filers, late filers, and mis-filers of required RCRA notices and reports. US EPA's OECA uses the information contained in HWES to compare with hard copies of hazardous waste manifests. HWES report printouts are compared against the sorted manifests as part of regular compliance monitoring to determine whether actual shipments exceeded the maximum consent limits for each notice that is entered into HWES. Apparent violations become the subject of memoranda of referral that request US EPA's Regional RCRA Enforcement Managers to take appropriate enforcement action against violators.

Waste International Tracking System

Under the US–Mexico and US–Canada bilateral agreements, Mexico and Canada must notify the United States of intent to ship hazardous waste to a US facility. The United States has the opportunity to consent or object to this notice before such waste can enter the country. Information received from Mexico and Canada in their export notification forms (in the case of Mexico, based on OECD forms) is managed by US EPA's OECA in Washington, DC, on the WITS database. The US accepts the form of notice used by each of its neighbors in the case of hazardous waste. Both include the following information:

- ◆ Name of foreign exporter
- ◆ Type and quantity of waste expected to be shipped
- ◆ Expected port of entry
- ◆ Expected US recipient
- ◆ Dates of expected shipments.

The WITS database is PC-based, LAN-served, and relational using Visual Basic. It will shortly be available in read-only access throughout US EPA headquarters and regional offices.

US–Mexico Hazardous Waste Tracking System

In October 1992, US EPA, in partnership with the Mexican Secretariat of Environment, Natural Resources, and Fisheries, developed Haztraks to facilitate the tracking of transboundary movements of hazardous wastes. Haztraks can retain the data related to the volumes and types of hazardous waste crossing the US–Mexico border and was intended to enable the US EPA and Semarnat to share and monitor data. The Haztraks database correlates data from US and Mexican waste manifests (and other sources) that would facilitate a common approach for track-

ing waste movement between the two countries. The Haztraks system was developed to manage information from the following sources:

- ◆ US Uniform Hazardous Waste Manifests required under RCRA;
- ◆ US treatment-storage-disposal facility notices to receive foreign-generated waste required under RCRA;
- ◆ Mexican permits to ship waste out of the country; and
- ◆ Data (principally identification) on US RCRA-permitted treatment, storage, and disposal (TSD) facilities.

As conceived, this information would enable both US and Mexican officials to both track origin to destination hazardous waste shipments between the two countries. At the time of this report, however, neither country was entering the data into Haztraks that would enable origin to destination tracking. The Mexican officials attending the CEC workshops reported that they were not entering any data into Haztraks. Also, regional US EPA staff attending the CEC workshops noted that entry of US data was backlogged due to funding constraints. The US EPA will not be funding Haztraks in the future but will be exploring alternative tracking mechanisms.

Planned Initiatives

The volume of hazardous wastes and recyclables exported for management outside the United States or imported from other countries is so small compared to the volume of hazardous waste generated and managed within US borders that resources allocated to changing hazardous waste imports and exports processes are not expected to increase. However, the United States is planning three major initiatives that will have a secondary impact on how hazardous waste transboundary shipments are managed: the US EPA is updating regulations for manifesting hazardous wastes, modernizing its electronic information systems and adopting electronic reporting for manifests; the US Customs Service is undertaking a major modernization effort to upgrade its electronic commodity tracking systems.

The single most important regulatory change anticipated in the United States with respect to its potential impact on transboundary waste movements is a revision to the uniform hazardous waste manifest. A proposed rule was issued on 22 May 2001. The most significant proposal in the rule making would require the importer to provide a copy of the import manifest the Bureau of Customs and Border Protection, Department of Homeland Security, which would forward the manifest to US EPA under an existing Memorandum of Understanding between the two agencies. If adopted this would provide US EPA, for the first time, with actual data on import shipments. The proposed revisions would also include a checkbox on the manifest form to identify hazardous waste imports and exports. This simple change could result in significantly improved tracking of transboundary movements of hazardous waste.

The use of electronic manifests is also under consideration, a possibility that could be combined with advances in technology since the last revisions to the hazardous waste manifest. Electronic manifests would allow for real-time monitoring of transboundary movements. However, the fate of the proposal to allow the use of electronic manifests is uncertain, given concerns that have been raised about the enforceability of electronic signatures. The public comment period on the regulatory proposal has closed, and US EPA is currently considering how to proceed. As of June 2002, no schedule has been set for publication of a final rule, nor have any public statements been made concerning the direction that rulemaking may take.

Another rulemaking in progress could provide an incentive to increase hazardous waste exports. The yet-to-be published proposal would reportedly impose emission standards on hazardous waste incinerators for dioxins and furans. Current standards do not address these emissions, and development of emission standards will almost inevitably increase the cost of incineration. In many cases, incineration is required to achieve the existing US pretreatment standards that must be met before final disposal is allowed. Thus, hazardous waste generators would be faced with a choice between increased costs for domestic management and exporting wastes to locations where pretreatment requirements and/or emission standards for incinerators do not address dioxins. This requirement could nullify the intended effect of Canada's emerging standards for pretreatment of hazardous waste prior to final disposal.

Summary

Laws and Regulations Related to Transboundary Hazardous Waste Shipments

In general, Canada, Mexico, and the United States have similar requirements for regulating the transboundary shipments of hazardous waste. The procedures typically require importers or exporters to obtain approvals for certain shipments from designated government agencies and to track (by keeping a record of progress) of the material's fate from its point of generation to its final destination (e.g. treatment). Although the specific requirements and reporting procedures to import and export hazardous waste are different in each of the three countries, they are all based on the concept of prior informed consent (PIC). The PIC concept states that a hazardous waste listed in one country may only be exported to another country only with the importing country's prior consent. However, the PIC concept does not apply to the hazardous waste generated by US companies operating in Mexico (known as *maquiladoras*) and shipped back into the United States for treatment. The US, through the La Paz Agreement, has agreed to accept hazardous waste from US *maquiladoras* without providing Mexico a prior informed consent.

Both the PIC concept and each country's domestic hazardous waste management law rely on the effective sharing of information about each hazardous waste shipment. Government agencies use the information to make decisions about whether to allow or disallow a particular hazardous waste shipment, to track trends, and to identify enforcement needs. Effective enforcement in particular requires effective information exchange since the enforcement of transboundary hazardous waste shipments is the joint responsibility of each of the country's environmental agencies and its customs agencies.

Transboundary Hazardous Waste Data Management Systems

At the time of this report, only Canada had an integrated transboundary hazardous waste data management system. Its CNMITS provides Environment Canada and the Provinces with the ability to track status of hazardous waste shipments from cradle to grave. In conjunction with upcoming amendments to the EIHWR, Environment Canada has been modifying CNMITS to integrate with an electronic data exchange (EDE) system which will enable electronic submission of notice and manifest data by companies, better tracking of shipments at the Canadian border, and real-time data to customs agents and enforcement personnel. In Mexico and the United States, environmental agencies and the customs agencies each have separate stand-alone systems and processes that primarily rely on the paper-based transactions. Consequently, achieving electronic connectivity even among current national environmental and customs systems would be extremely challenging, let alone trying to integrate existing systems across each of the countries. Further complicating the situation in the United States is the existence of multiple transboundary hazardous waste tracking systems (e.g., WITS, HWES, Haztraks, and Texas and California state tracking systems). However, as each country modernizes its hazardous waste import and export data management systems, there are opportunities now to coordinate future system upgrades that could achieve common standards, where appropriate, for data definitions and electronic exchange protocols.

Chapter 3

Current Processes for Tracking the Transboundary Shipments of Hazardous Waste in North America

Overview

Exporting and importing hazardous waste between Canada, Mexico, and the United States is a complex process that requires the sharing of information among the government agencies in each country, generating facility, receiving facility, carrier, and shipment brokers. In the following sections, we describe the current procedures and the information that is shared among these key players. For each case, we describe the procedures that occur in three separate phases:

- ◆ before the shipment leaves the generating facility,
- ◆ during shipment from the generating facility, across the border(s), to the receiving facility, and
- ◆ after shipment arrives at the receiving facility.

Presented first is a detailed description of the current import and export procedures for shipping hazardous waste between the United States and Mexico, Canada and the United States, and between Mexico and Canada.

Between the United States and Mexico

The following sections describe the procedures for shipping hazardous waste between the United States and Mexico and contain detailed process flow charts of the current procedures and associated reporting requirements. We present the import and export process flow charts in three separate sections: the before shipment, during shipment, and after shipment procedures for the following transboundary movements:

- ◆ Shipping hazardous waste from Mexico to the United States. This description includes both maquiladora and non-maquiladora shipments.
- ◆ Shipping hazardous waste from the United States to Mexico. As noted, hazardous waste can only be shipped to Mexico for recycling purposes.

Each phase is depicted in a separate flow chart to assist in documenting the current procedures and help in identifying opportunities to streamline and automate the reporting process.

Shipping Hazardous Waste from the United States to Mexico

Before Leaving Generating Facility

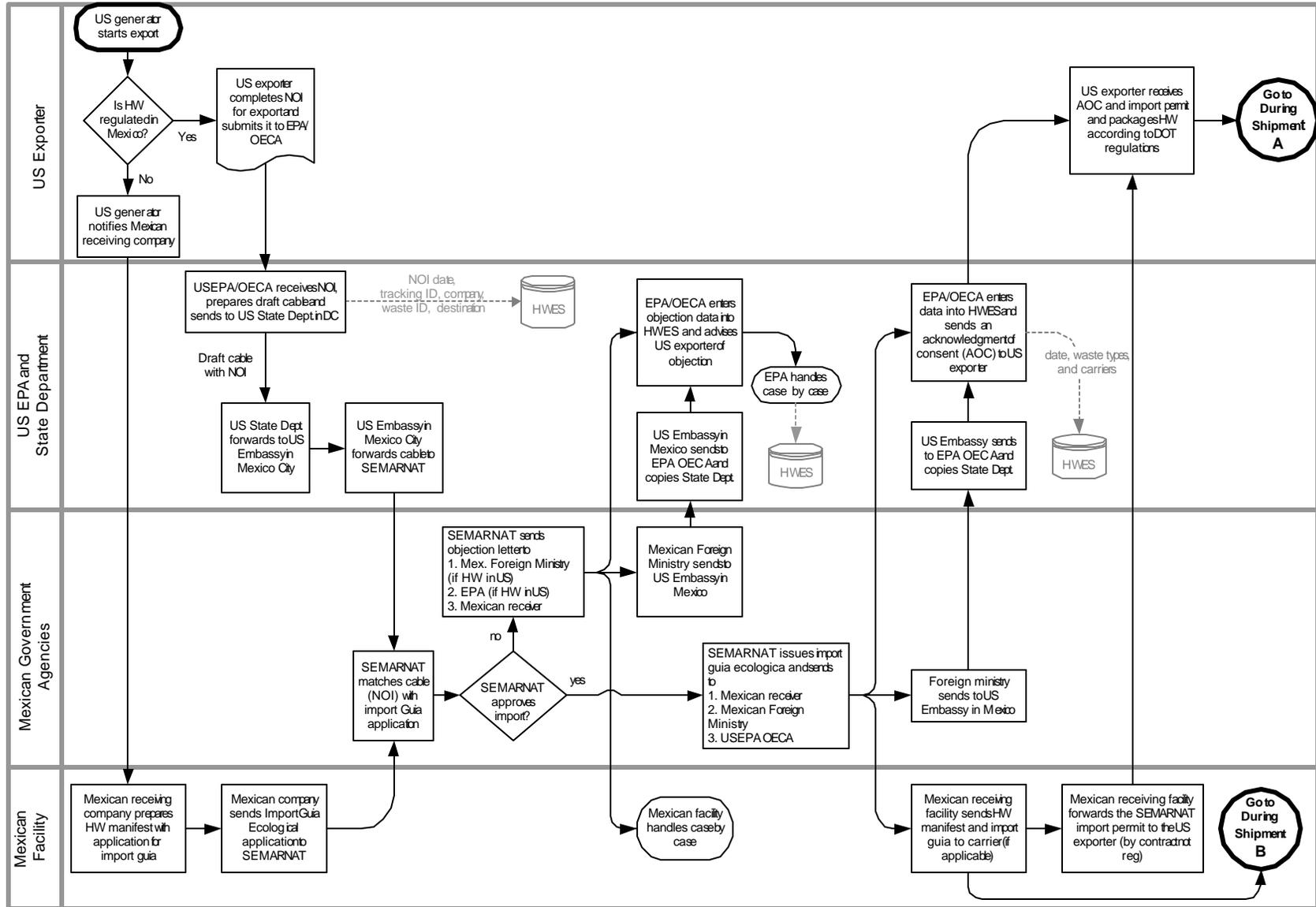
To start the process, the US primary exporter submits to the US EPA a notice of intent (NOI) to export hazardous waste to Mexico. The primary Mexican importer must notify Semarnat directly and names the source of the hazardous waste for recycling.

The US EPA's OECA adheres to the following steps for notifying the Mexican government.

- ◆ US EPA responds to NOI by preparing draft cable and provides it to the US State Department in Washington, DC. After any revisions have been made, it sends the cable to the US Embassy in Mexico. The US Embassy in Mexico forwards the cable to the Mexican Consul. The Mexican Consul forwards it to Semarnat.
- ◆ Semarnat consents or objects to the import (depending on recycling capabilities).
- ◆ Semarnat sends copy of consent or denial to the Mexican consul, and then to US Embassy in Mexico City, then directly to US EPA's OECA, may copy state dept.
- ◆ The US Embassy sends a copy of the cable to US EPA's OECA.
- ◆ US EPA's OECA sends acknowledgement of consent (AOC) to the US exporter.
- ◆ US EPA's OECA records NOIs and AOCs data in HWES, not by Haztraks or SIRREP.

Once notified by the US generator, the Mexican receiver notifies Semarnat of its intention to receive waste from the United States by submitting an application for import authorization containing data similar to the export notice. Semarnat issues an import authorization approving shipment that is good for one calendar year from January to December. Semarnat may grant an amendment due to a change in the recycling capacity of receiving facilities or volume increase by the US generator. Figure 3-1 presents the workflow processes that occur before a shipment leaves the generating facility in the United States.

Figure 3-1. Reporting Procedures to Ship Hazardous Waste from the United States to Mexico: Before Hazardous Waste Shipment Phase



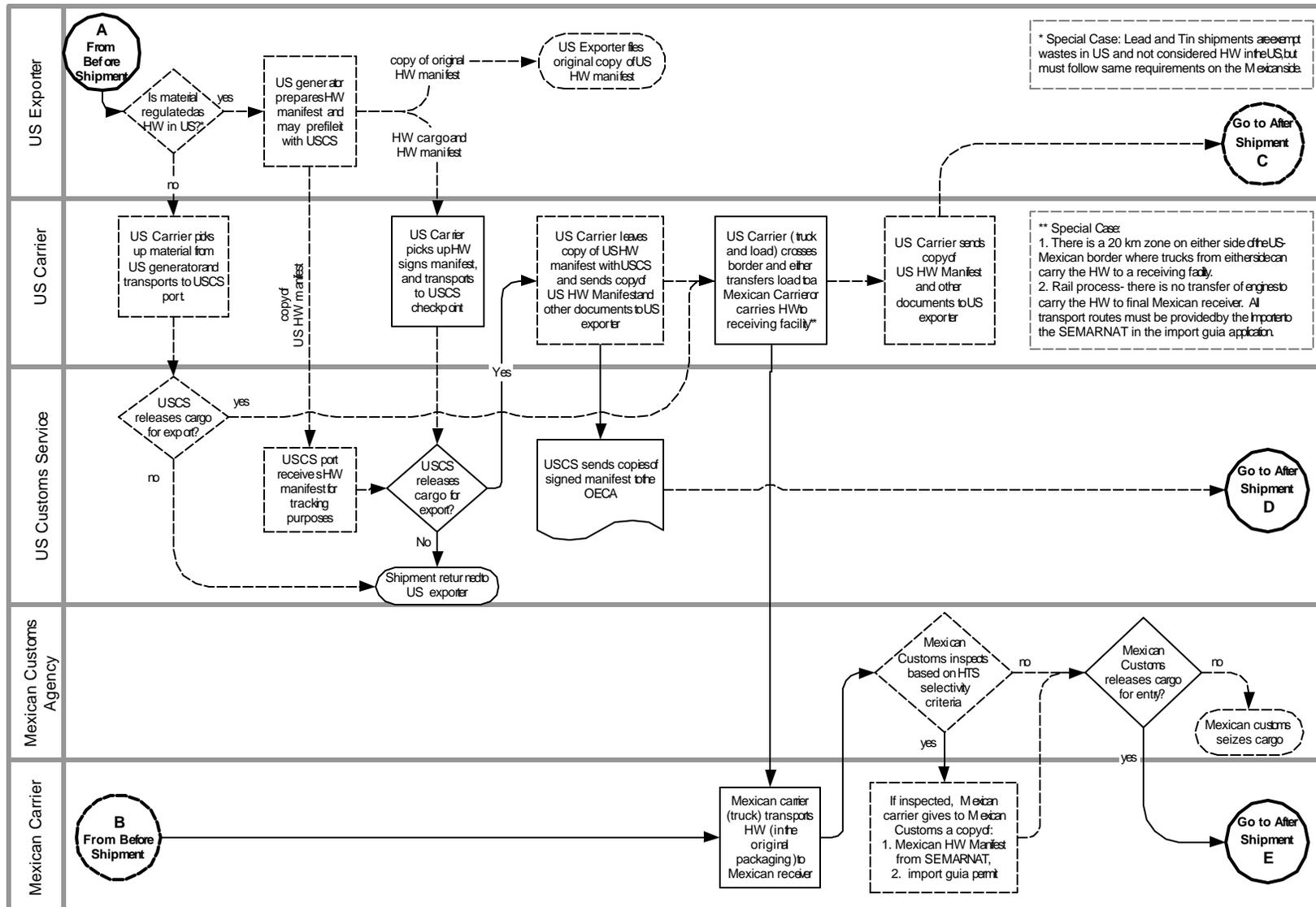
During Shipment Across Borders

The US carrier picks up the hazardous waste from the US facility, signs the US manifest and transports it to the US Customs border checkpoint. The carrier leaves a copy of the US hazardous waste manifest at the US Customs border checkpoint upon departure. If the material is also regulated as a hazardous waste in the United States, the US exporters pre-files a hazardous waste manifest with the US Customs border checkpoint. The US Customs port forwards the hazardous waste manifest to the US EPA's OECA. OECA files the manifests and compares data to NOIs. Although most US truck carriers travel directly to the Mexican receiving facility, some transfer the hazardous waste to a Mexican truck carrier. All rail shipments go directly to the Mexican receiving facility without changing carriers at the border.

At the Mexican border checkpoint, the carrier presents the appropriate Mexican shipping documents that identify the shipment's tariff code. According to tariff code, the Mexican Customs may inspect the shipment and review any required permits. Also, they require that shipments of commodities with a specific tariff codes traverse at a particular border crossing due to the onsite capabilities at each border checkpoint. Mexican Customs representatives attending the CEC workshops reported that, in general, they inspect about 10 percent of shipments traversing border crossings. A carrier is only required to present to the Mexican border inspectors a copy of the hazardous waste manifest and the import permit if they are stopped and inspected.

Figure 3-2 contains the detailed process from the time the hazardous waste leaves the generating facility to when it arrives at the receiving facility.

Figure 3-2. Reporting Procedures to Ship Hazardous Waste from the United States to Mexico: During Shipment Phase



On Arrival and After Shipment

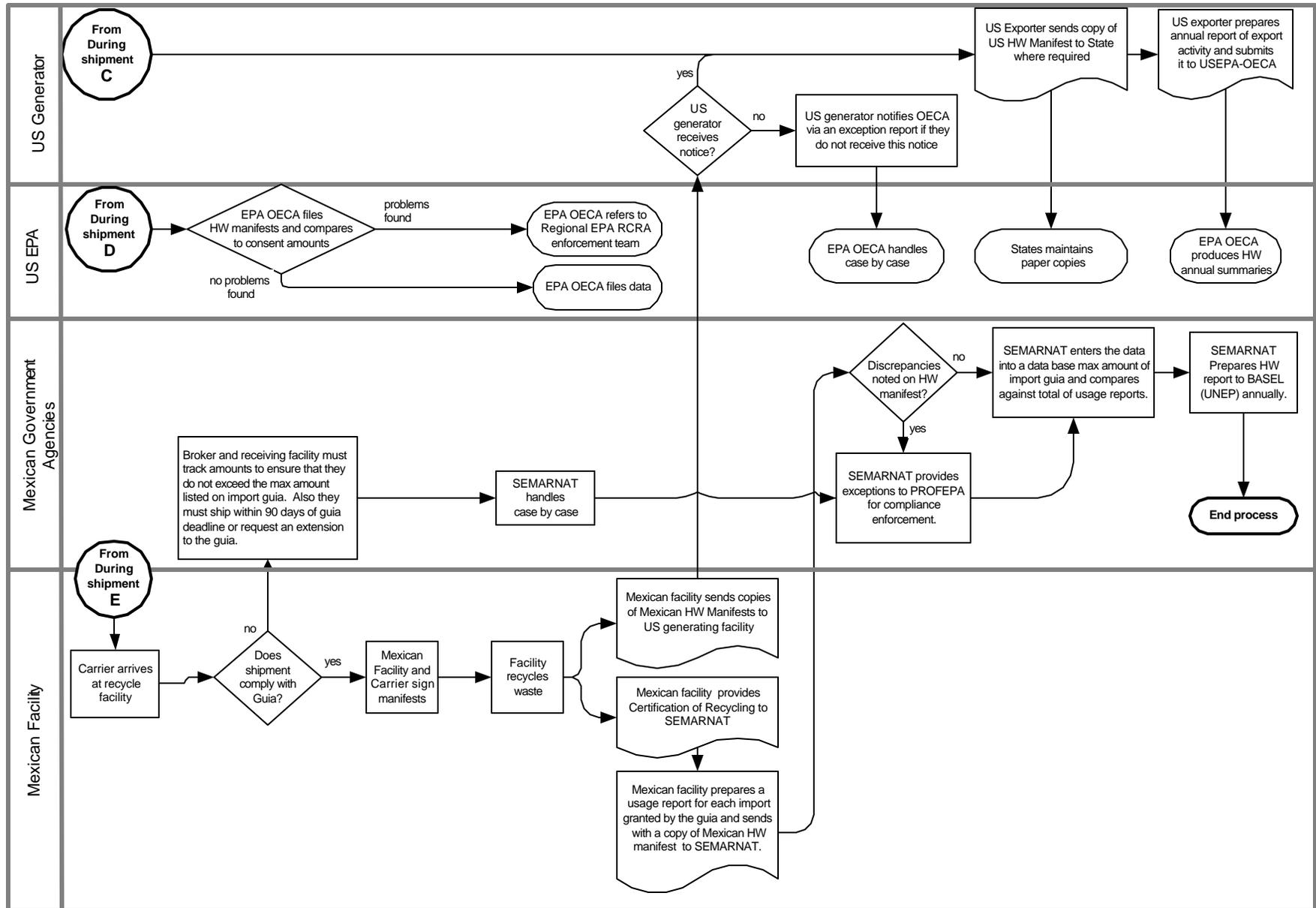
Typically, the carrier delivers the hazardous waste to the Mexican recycling facility. Once the hazardous waste arrives at its destination, the receiving facility reviews the hazardous waste manifest with the approval provided on the import *guia* (permit). If in order, the receiving facility signs the Mexican hazardous waste manifest. The receiving facility will then prepare a usage report that lists the hazardous waste amounts treated versus the hazardous waste amounts allowed on the original import *guia*. They will provide this report with a copy of the Mexican hazardous waste manifest to Semarnat for each import. Also, the Mexican facility provides a Certificate of Recycling to Semarnat once complete. Typically, the Mexican receiving facility will send a notice that it has accepted the hazardous waste shipment by sending a signed copy of the Mexican hazardous waste manifest to the US facility.

The US facility (exporter) is responsible for notifying the US EPA if it does not receive a notice from the Mexican facility. Some states will also require the US waste exporter to send a copy of the signed US hazardous waste manifest (generally true for 24 states with RCRA authority). US facilities are required to report the amount to US EPA on an annual basis.

Semarnat stores all paper notices. It only uses the SIRREP database for tracking the information contained in Return Notices for the Return of hazardous waste generated by the maquiladora industry. Semarnat reviews usage reports and import *guias* to identify discrepancies between the type and amount of hazardous waste approved for import and the type and amount actually imported. If discrepancies are identified, they notify Profepa.

US EPA-HQ receives manifests on an ongoing basis from US Customs but because of a lack of resources does not enter it in the HWES. Figure 3-3 describes the processes that occur when the hazardous waste arrives at the recycling facility and afterwards.

Figure 3-3. Reporting Procedures to Ship Hazardous Waste from the United States to Mexico: On Arrival and After Shipment Phase



Shipping Hazardous Waste from Mexico to the United States

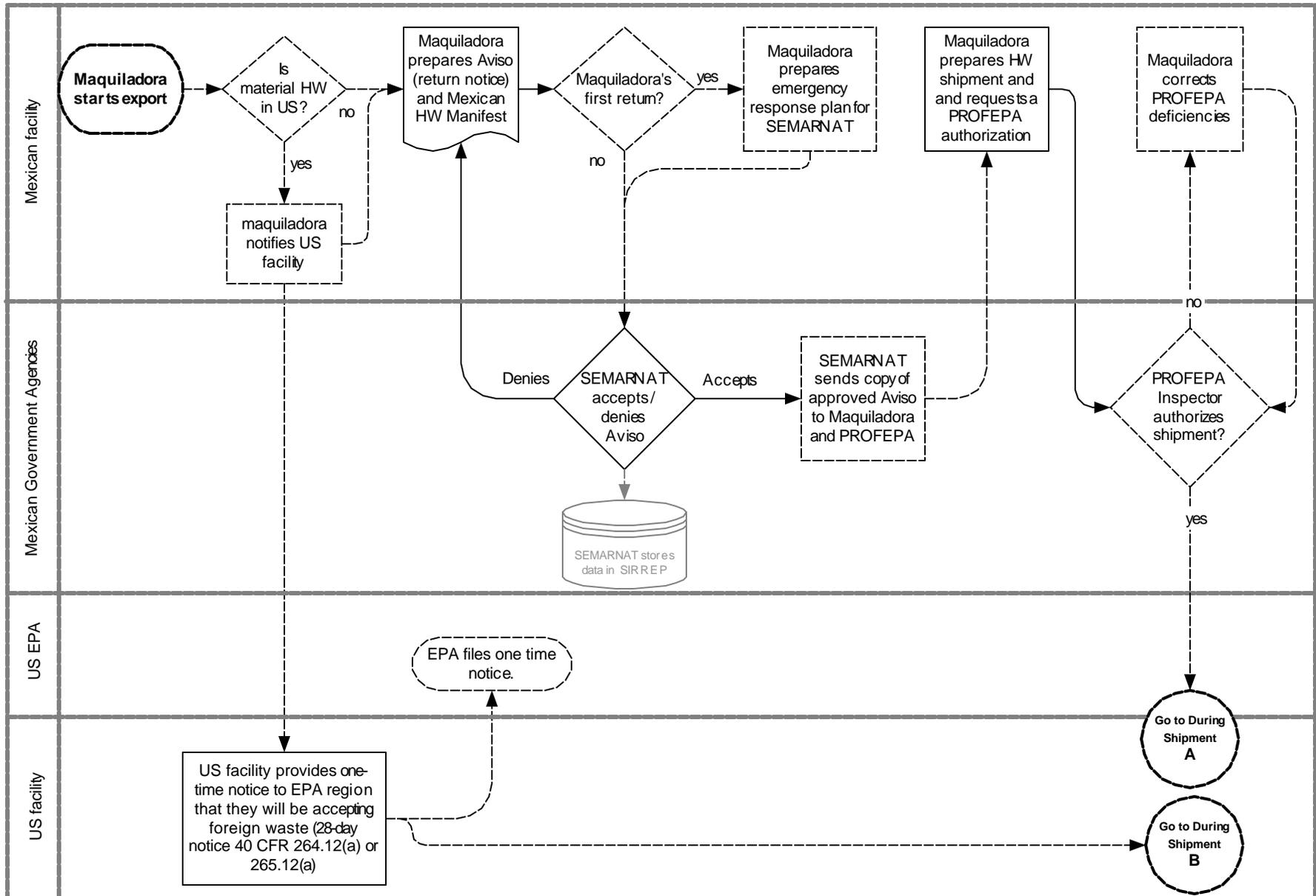
Shipping hazardous waste from Mexico to the United States is the same from the US perspective whether it is a 'return' from a maquiladora or from another Mexican generator. The Mexican government, as noted, does not consider 'returns' from maquiladoras as a hazardous waste export and tracks those shipments slightly differently.

Before Leaving a Maquiladora Generating Facility

To start the process, the Mexican generator (i.e., maquiladora or exporter) determines if waste is hazardous in Mexico and the United States. If the material is a hazardous waste in the United States, the maquiladora arranges with a US receiving facility to receive its hazardous waste before preparing an *aviso* (return notice). Semarnat will then accept or deny the *aviso*. For the first shipment, the maquiladora must submit a one-time requirement for emergency response plan. The maquiladora or export broker confirms that the Mexican carrier company is authorized and insured to ship hazardous waste. Semarnat reviews the *aviso* and approves or objects to it based on the information provided. Semarnat enters the data from the *aviso* into SIRREP.

The US receiving facility notifies US EPA and/or state agency of its intent to receive waste from a foreign source. This is a one-time notice. The US broker or US transporter (referred to on the US hazardous waste manifest as the US generator) pre-files a copy of the US hazardous waste manifest, which will identify the name and address of either the maquiladora or broker. The US importer of record may also be required to pre-file a US hazardous waste manifest and other documents with the USCS if the material is regulated as a hazardous waste in the United States.

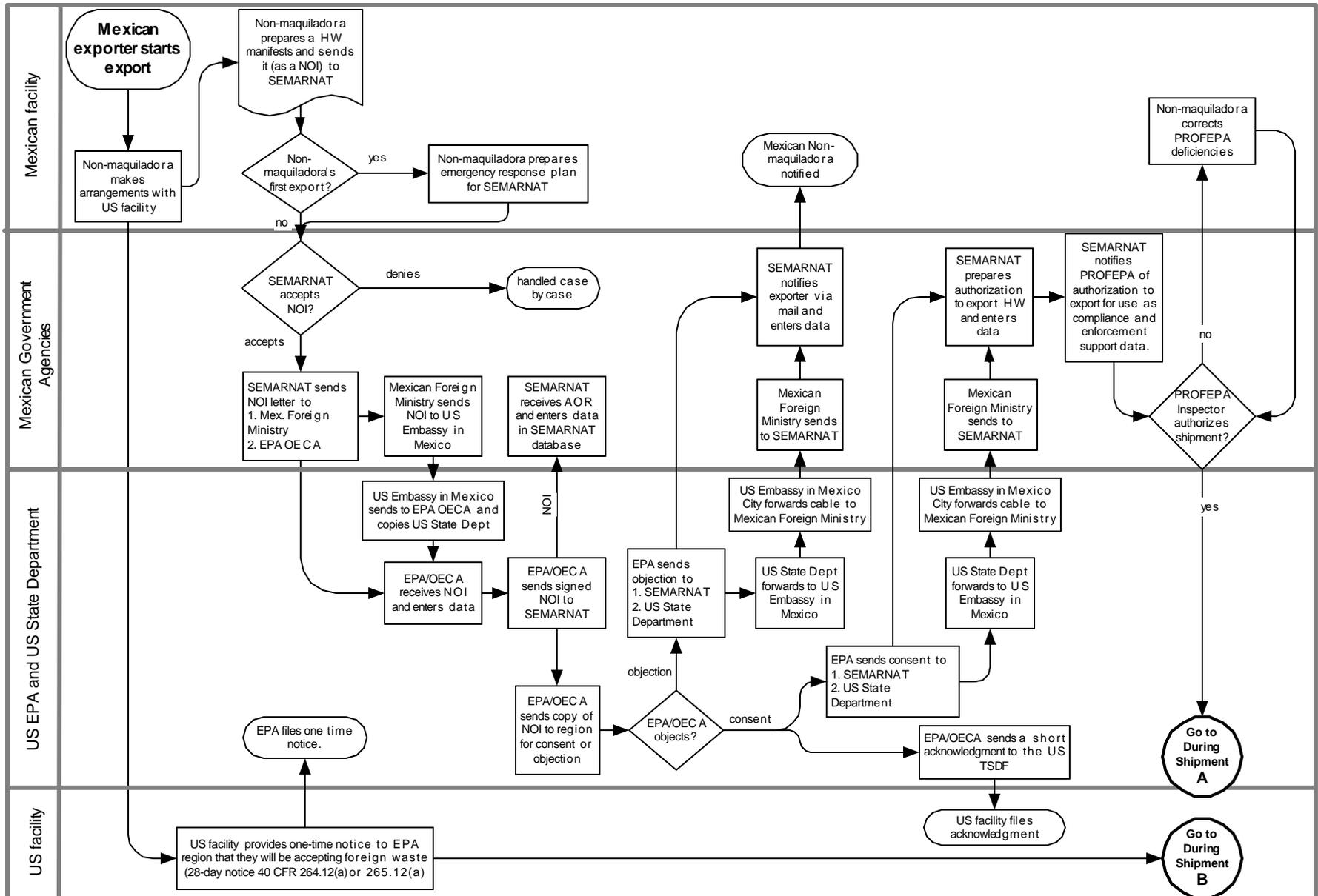
Figure 3-4. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: Before Shipment Phase for Maquiladora Returns



Non-maquiladora Requirements before Shipment

If the hazardous waste shipment comes from a non-maquiladora, the non-maquiladora generator notifies Semarnat of its intent to export hazardous waste to the United States as shown in Figure 3-5. Once this notification is received, Semarnat submits an NOI to US EPA. The US EPA then provides an acknowledgment of receipt (AOR) to Semarnat. The AOR takes the form of the signed notice returned to Semarnat, which the US EPA sends by either fax or mail. The annual volume is approximately 20–35 notices per year. The AOR starts the 45-day clock. The US EPA then reviews the NOI at its Headquarters and the Regional Offices and then consents or objects, unless it is non-hazardous in the United States, in which case US EPA informs Semarnat by letter of that fact, and neither consents nor objects because it is non-hazardous in the United States. Upon receipt of US EPA's consent or letter indicating it is non-hazardous in the United States, Semarnat will provide the non-maquiladora generator with an export authorization.

Figure 3-5. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: Before-Shipment Phase for Non-maquiladoras



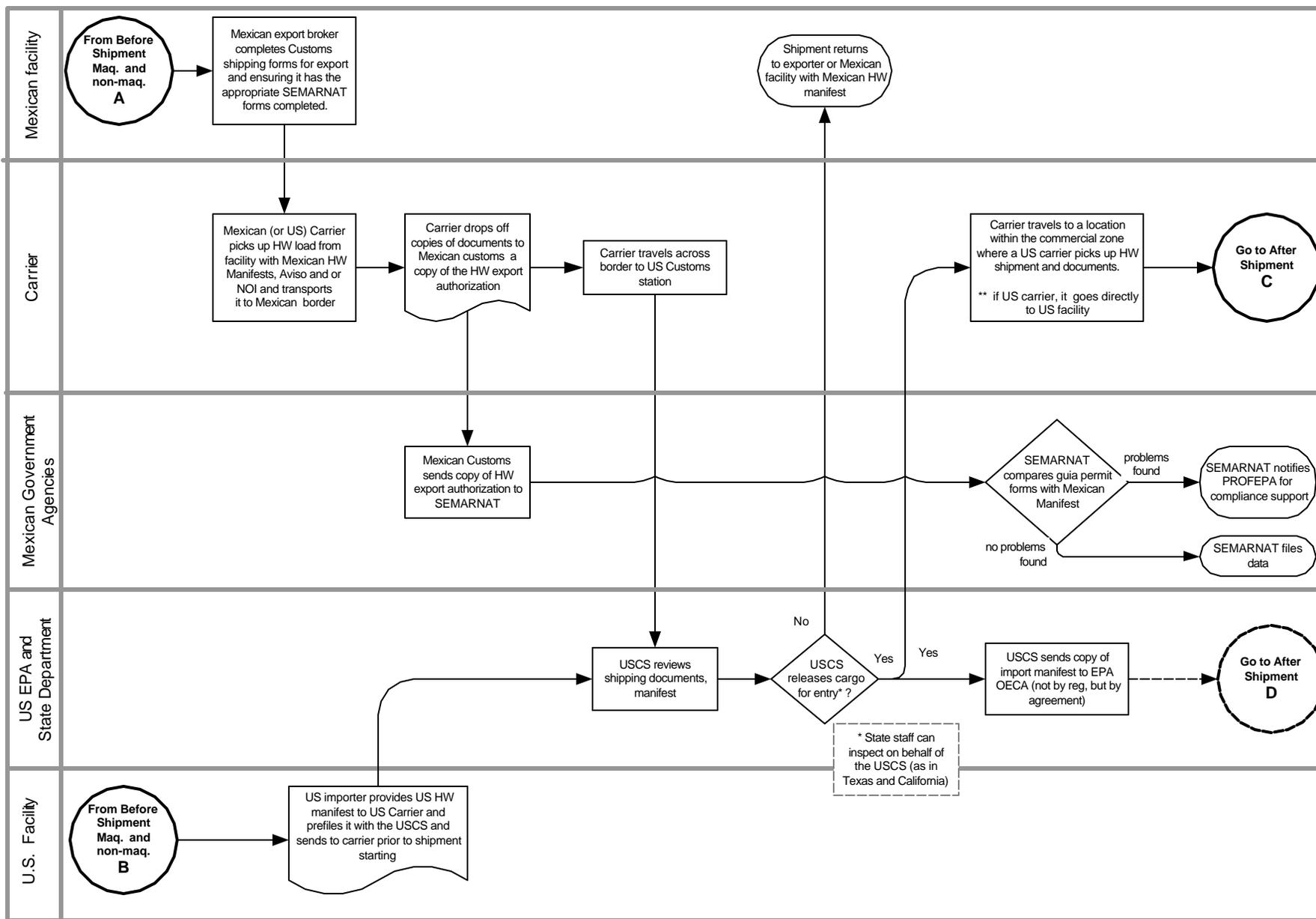
During Shipment Across Borders

The exporter receives an approval from Semarnat to export the hazardous waste. In the case of the maquiladora, it receives an approved aviso and must respond to Semarnat with a letter that lists the portion of the original amount of hazardous waste requested that was actually shipped and the actual date and quantity shipped. The maquiladora has five days to ship the hazardous waste or withdraw the aviso and then five days to report by letter to Semarnat the actual amount shipped. A non-maquiladora receives an approved export notice. In the case of a non-maquiladora, the Mexican generator or export broker prepares an export application for Mexican Customs and gives it to the carrier to present at border. Mexican Customs reviews an export application, assigns a tariff code, checks if the appropriate requirements have been met per tariff classification, and records the shipment information by tariff code. Mexican Customs can use selectivity criteria to review certain shipments. A Mexican carrier may transport the waste from the generator to the border.

US Customs reviews pre-filed paperwork from the US importer (or carrier), reviews the signed shipping documents and tariff code, and clears it through the border. Border ports have different criteria for inspecting hazardous waste shipments. Some states provide border control support to US Customs checkpoint staff. Texas and California provide environmental staff to the border ports for review of hazardous waste shipments. Arizona has an arrangement to provide environmental inspections on request by US Customs.

An authorized Mexican carrier may transfer the shipment to an authorized US carrier. A US carrier can go into Mexico to pick up the shipment or the Mexican carrier can drop off in border zone for US carrier. All shipping manifests are signed and transferred. An US EPA/DOT authorized transporter signs the manifest, takes responsibility for the waste at the border, and either ships directly to the receiving facility or holds the waste temporarily for a subsequent transporter. In the latter case, the second transporter also signs the manifest and takes the waste to the receiving facility.

Figure 3-6. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: During Shipment Phase for all hazardous waste generators



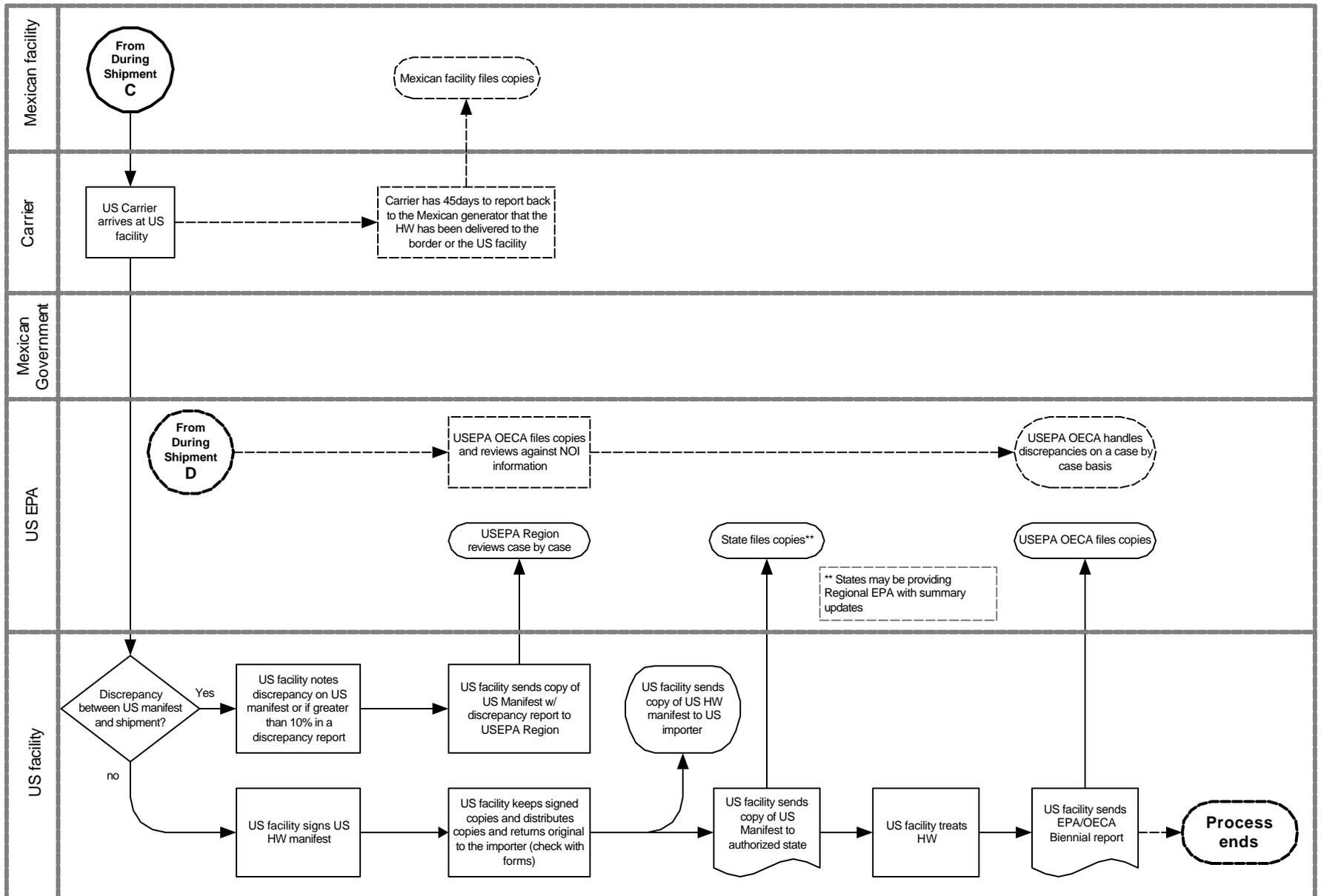
Upon Arrival and After Shipment

The US receiving facility receives the hazardous waste, signs the manifest, and returns the original copy to the US importer. Many state agencies require the US importer and receiving facility to submit copies of completed manifests. After delivery, the carrier must report, via a signed manifest to the maquiladora, that it has delivered the hazardous waste to the final destination. The maquiladora has 30 days to notify Semarnat if no report is received. Authorized State agencies submit completed hazardous waste manifests and receiving facility notifications to US EPA's OECA monthly. Some US Custom ports send copies of the pre-filed manifests to US EPA's OECA on a regular basis. The US EPA requires the US receiving facilities to biennially or annually report quantities treated to include the amount from foreign sources included in the total.

Government to Government Reporting

Currently, the US and Mexican governments share data only on an ad hoc basis. However, there is a goal in draft Border 2012 document to link Mexican and US Transboundary data tracking systems by a future date to be determined. Also, workshop participants noted an opportunity to better share data about the transboundary shipments of lead acid batteries. Lead acid batteries are not currently regulated or tracked as a hazardous waste in the United States, but are hazardous materials and are often shipped to Mexico for recycling.

Figure 3-7. Reporting Procedures to Ship Hazardous Waste from Mexico to the United States: On Arrival and After Shipment Phase for all Shipments



Hazardous Waste Shipments Between Canada and the United States

Overview

The documentation involved when shipping hazardous waste between the United States and Canada is a complex process that requires several key players. In the following sections, we present the import and export process flow charts in three separate sections: the before shipment, during shipment, and after shipment phases. Each section details the typical organizations involved in the process and the types of reports required.

Shipping Hazardous Waste from Canada into the United States

The first process we present is for importing hazardous waste into the United States from Canada.

Before Leaving Generating Facility

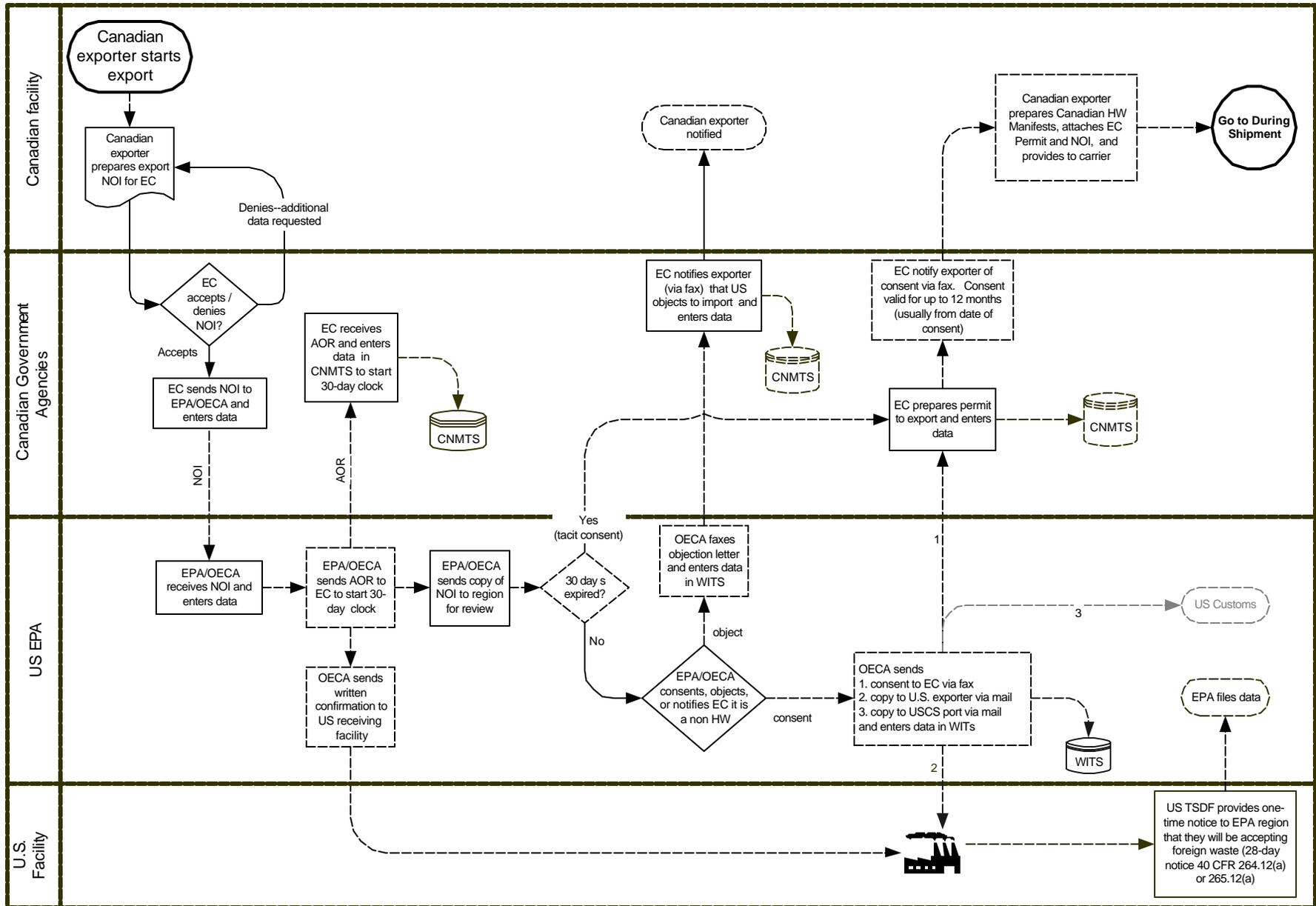
Exporting hazardous waste to the United States from Canada begins with the Canadian exporter preparing the Notice of Intent (NOI) to export and forwarding the request to Environment Canada (EC). Figure 3-8 presents the current practices before the shipping the hazardous waste. EC determines if more information is necessary to complete the request. If EC accepts the NOI to export, they will enter the data from the NOI into the Canadian Notification and Manifest Tracking System (CNMTS) and send a copy of the NOI to export hazardous waste to the US EPA's OECA.

US EPA's OECA will enter the data from the NOI to export into its Waste International Tracking System (WITS), and send EC an acknowledgement of receipt (AOR) to confirm that the NOI was received. EC will input the data from the AOR into CMNTS and keep record of the date initiating the 30-day response. The AOR will identify the beginning date of the 30-day response. During the 30 days, US EPA's OECA will send a different type of AOR to the receiving facility to alert it that US EPA has been contacted and is reviewing a request from EC to export hazardous waste into the US. US EPA's OECA will also forward a copy of the NOI to the US EPA regional office (Region) in which the receiving facility is located and request its recommendation as to objection or consent to the Canadian export. The region works with the State to determine if the receiving facility is in compliance to assist in the Region's recommendation to allow the import.

Once the US EPA Region has responded, US EPA's OECA will fax an objection to EC, or a consent letter to EC if consent is before the end of the thirty-day period, or advise EC by letter that the waste is not considered hazardous in the

United States. Otherwise, after thirty days, consent will be tacit. US EPA's OECA enter the information into WITS. EC will notify the Canadian exporter via fax of an objection. For consent, EC will enter the information in CNMTS and the system will generate the permit necessary for export.

Figure 3-8. Reporting Procedures to Ship Hazardous Waste from Canada to the United States: Before Shipment Phase

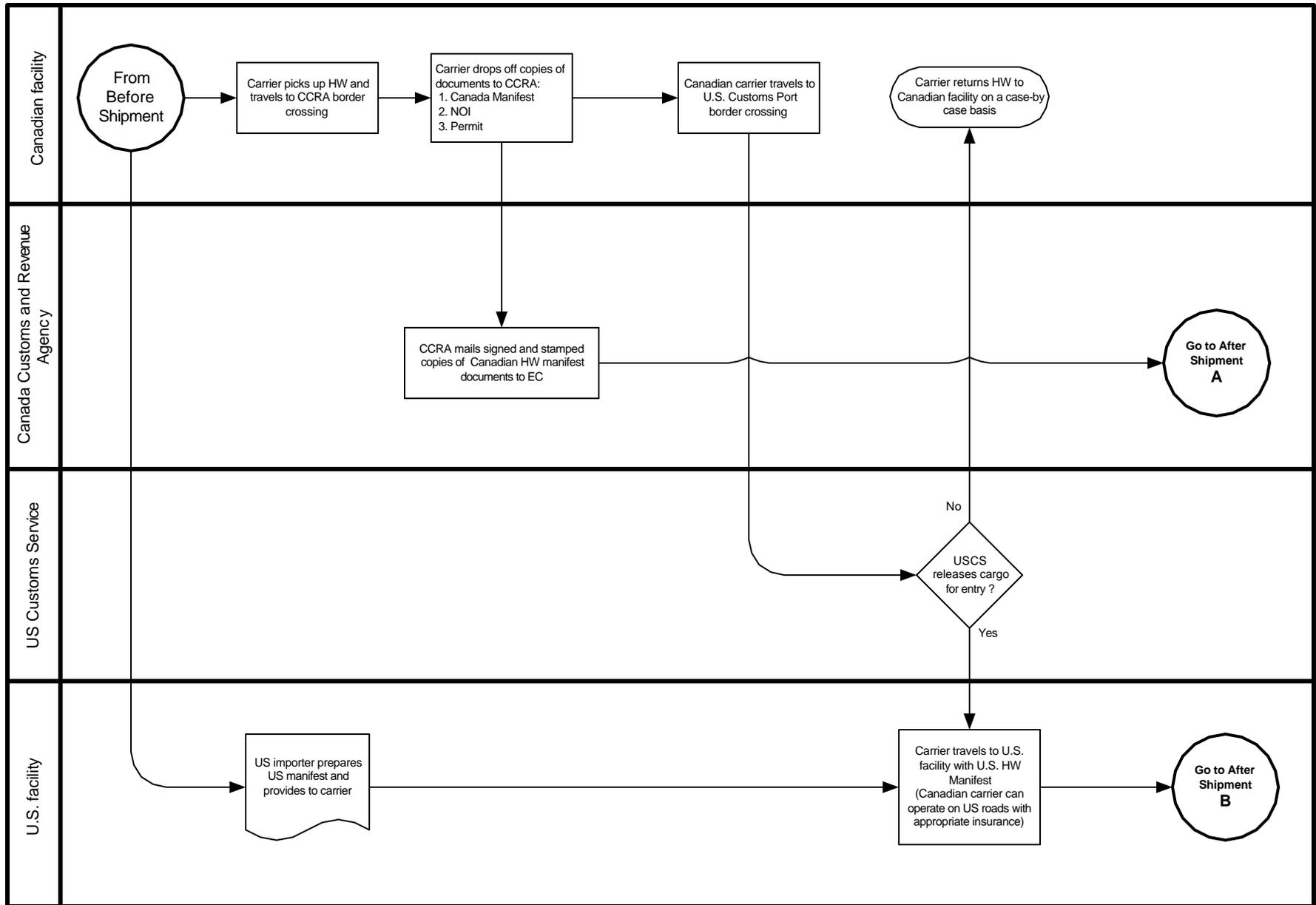


During Shipment Across Borders

After the approval of the NOI, the export process moves to the second phase. Figure 3-9 presents the current process that occurs during shipment. The Canadian exporter receives the permit to export from EC and prepares the Canadian hazardous waste manifest. Concurrently, the US importer prepares the US hazardous waste manifest. The US manifest will be given to the carrier either before or during entry into the United States. However, before the carrier enters the United States, it will give a signed copy of the Canadian manifest, NOI, and permit to the Canada Customs Revenue Agency (CCRA). The CCRA has a drop-off box for the carrier to deposit these copies. CCRA will mail the documents to EC for entering into CNMTS.

The carrier will arrive at the US Customs Service (USCS). The USCS will deny or allow entry of the shipment. If denied, the carrier returns the shipment to the Canadian exporter; if the shipment is allowed entry, the carrier will deliver the shipment to the US importer or receiving facility.

Figure 3-9. Reporting Procedures to Ship Hazardous Waste from Canada to the United States: During Shipment Phase



On Arrival and After Shipment

The after shipment (see Figure 3-10) phase begins with the carrier arriving at the receiving facility. The receiving facility will either accept or decline the shipment. If the shipment is accepted, it will undergo verification to determine that the shipment's type and weight of hazardous materials corresponds to that documented on the manifest.

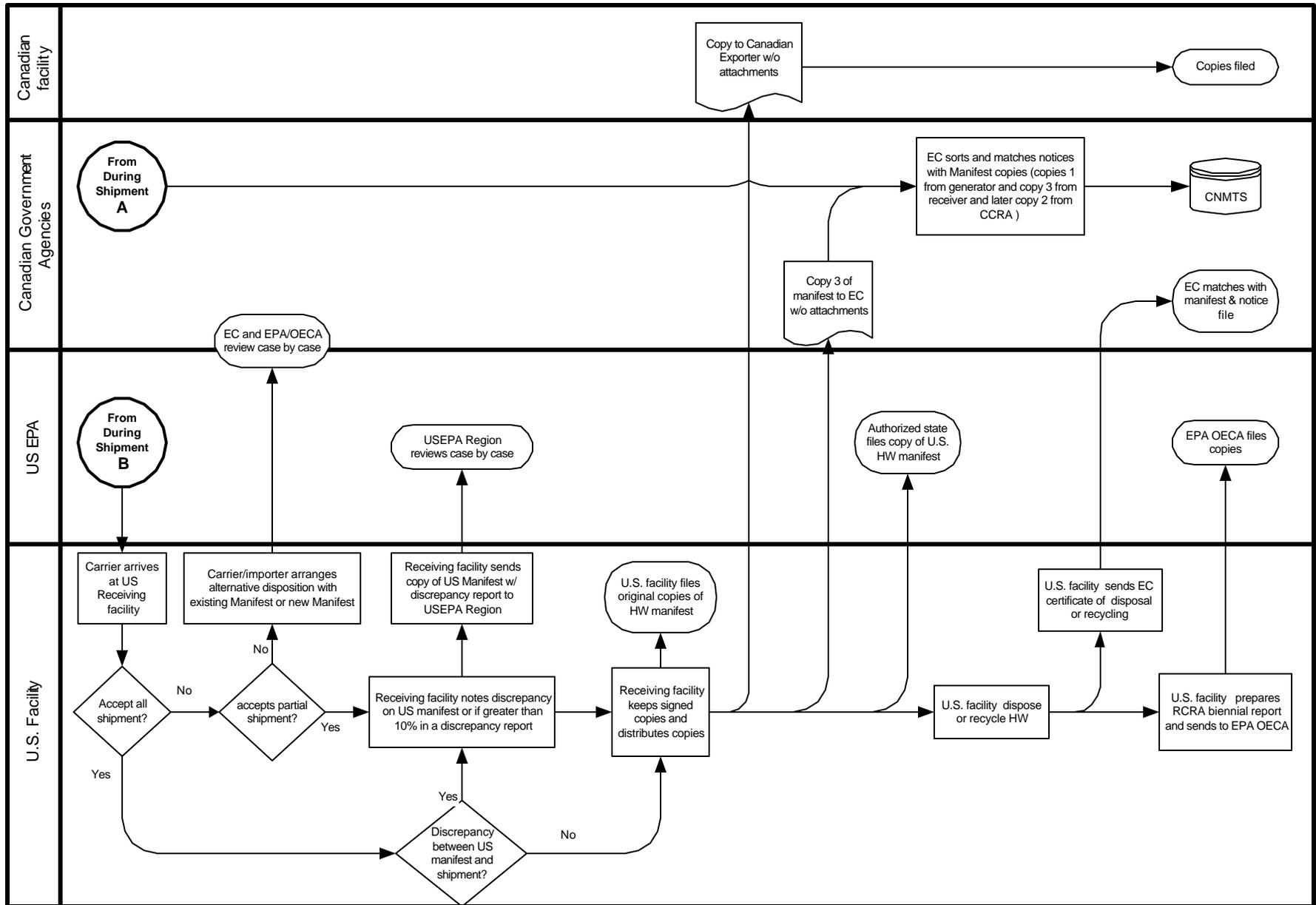
If the receiving facility identifies a discrepancy between the US manifest and the total quantity of hazardous waste being delivered, of greater than 10 percent, the receiving facility may decline the shipment. During this scenario, the receiving facility will send a copy of the manifest with a discrepancy report to the region. The region often handles this scenario on a case-by-case review. If there is no discrepancy, the carrier will leave the shipment to the receiving facility. The receiving facility will sign and distribute copies of the US and Canadian manifests as follows:

- ◆ Receiving facility retains one copy of both manifests.
- ◆ The carrier receives one copy of both manifests.
- ◆ The Canadian exporter receives a copy of the Canadian manifest.
- ◆ US EPA's OECA will receive a copy of both manifests.
- ◆ The state receives a copy of the US manifest if it regulates the hazardous waste that was shipped.

The receiving facility will treat the waste and send a report detailing its recycling or disposal to US EPA's OECA as part of its RCRA biennial reporting, if the waste is hazardous. The receiving facility will send a certificate of recycling or disposal to the Canadian exporter no more than 30 days after the hazardous waste is treated, and the exporter will report to EC to close out the report in CNMTS.

If the receiving facility declines the hazardous waste shipment and an alternate disposal site is found, the exporter will notify EC and the carrier will use the existing manifest or a new manifest to transport the waste to the alternate site. EC and US EPA's OECA handle these situations on a case-by-case basis.

Figure 3-10. Reporting Procedures to Ship Hazardous Waste from Canada to the United States: After Shipment Phase



Shipping Hazardous Waste from the United States into Canada

The second process we present is exporting hazardous waste into Canada from the United States.

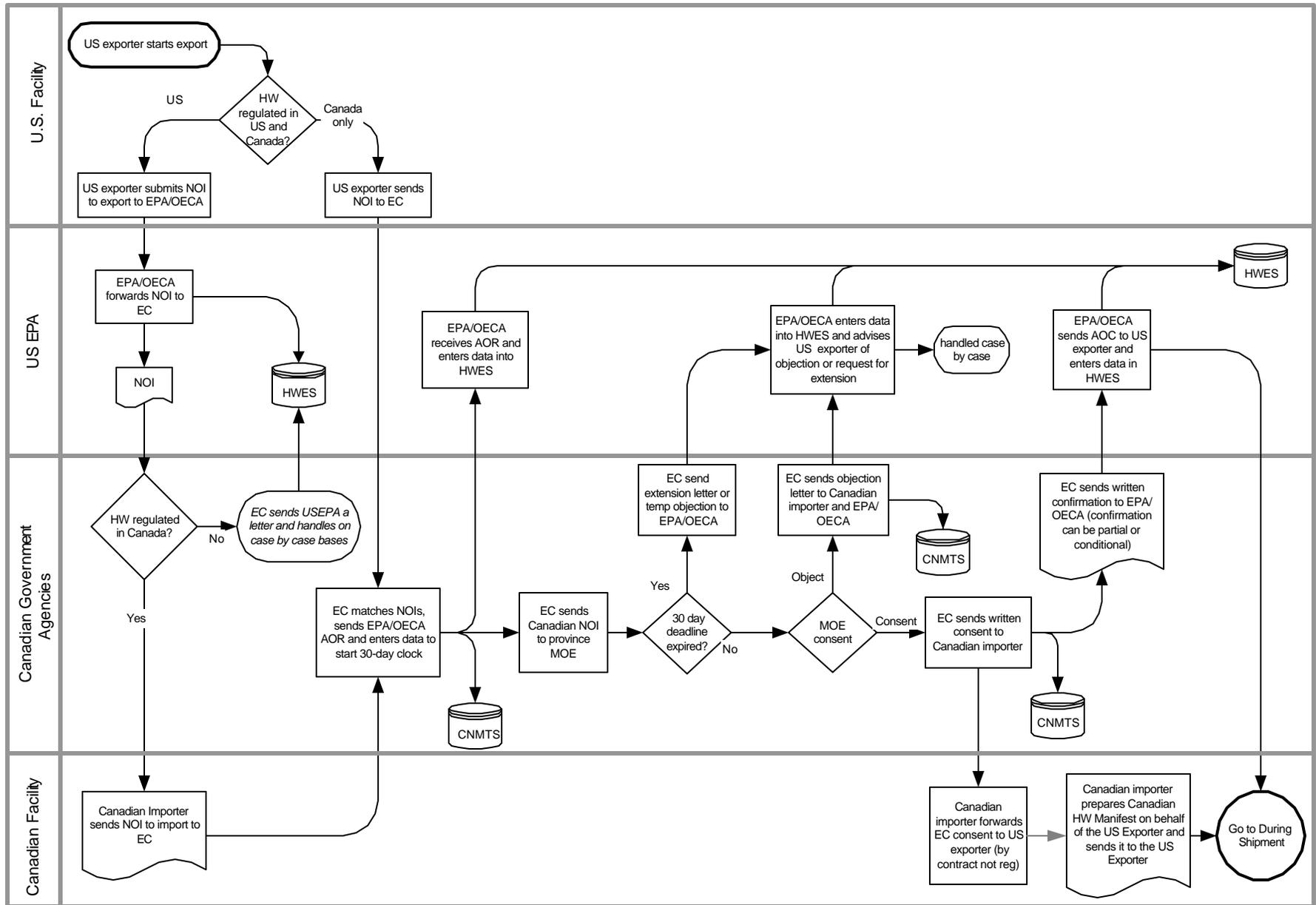
Before Leaving Generating Facility

Exporting hazardous waste from the United States to Canada begins with the US exporter determining which countries regulate the hazardous waste and notifying the Canadian importer of its intent to export wastes. Figure 3-11 presents the current practice before the shipping of hazardous waste.

If the hazardous waste is regulated in the United States, the US exporter sends a NOI to export hazardous waste to US EPA's OECA. US EPA's OECA will enter the data from the NOI into its Hazardous Waste Export System (HWES) and forward the NOI to export to EC. EC then determines if the hazardous waste is regulated in Canada. If so, the Canadian importer will send the NOI to import to EC and match it with the US NOI to export. EC will send an AOR that the NOI was received from US EPA's OECA. This AOR will identify the beginning date of the 30-day response. During the 30 days, EC will forward the NOI to the provincial Ministry of the Environment for consent or objection within the 30-day time limit. The provincial Ministry of the Environment determines if the importing facility is licensed and sends its determination to EC. EC has no authority to object to the decision made by provincial Ministry of the Environment.

If the provincial Ministry of the Environment objects, EC will send an objection letter to US EPA's OECA. If the provincial Ministry of the Environment consents, EC will send a consent letter to US EPA's OECA, which can be partial or conditional. EC may decide to send a temporary objection letter to US EPA's OECA while it is awaiting receipt of the Canadian importer's NOI to import. Regardless, EC enters the data into CNMETS. US EPA's OECA will enter the notice data into HWES and provide the US exporter of with an acknowledgement of consent (AOC) or an objection letter.

Figure 3-11. Reporting Procedures to Ship Hazardous Waste from the United States to Canada: Before Shipment Phase

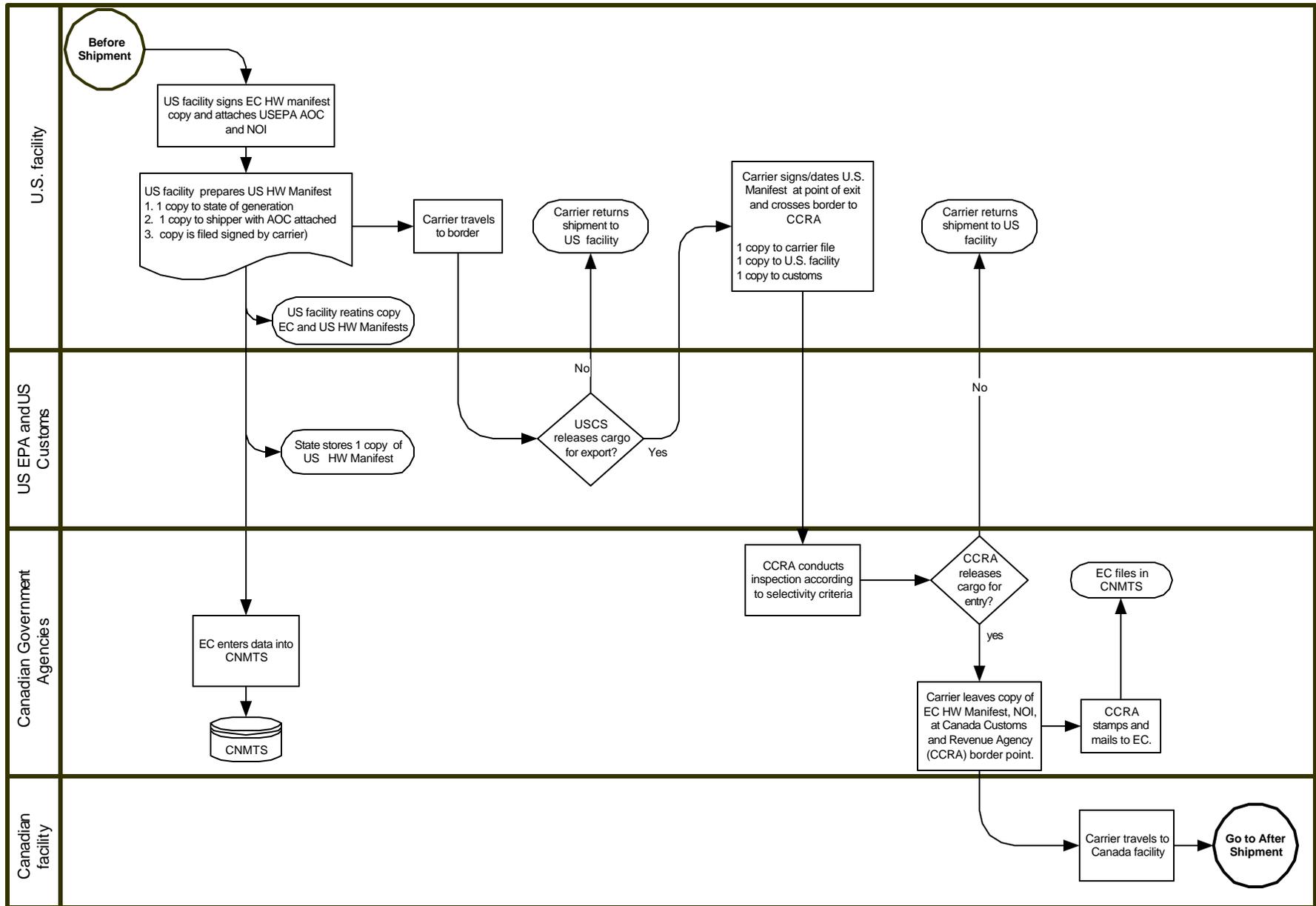


During Shipment Across Borders

The second phase of exporting hazardous waste from the United States is shown in Figure 3-12. The figure captures the current practices that occur during the shipment process. Prior to shipment, the US exporter receives the AOC from US EPA's OECA and prepares the US hazardous waste manifest. The Canadian importer will prepare the EC hazardous waste manifest. The carrier arrives at the USCS border checkpoint and leaves a copy of the US hazardous waste manifest in a departure drop box. The USCS will forward a copy of this manifest to US EPA's OECA with appropriate signatures.

The carrier crosses the border and arrives at the CCRA. The carrier will give the CCRA a copy of the Canadian hazardous waste manifest, the consent permit, and the NOI. CCRA will perform an inspection and will either accept or deny the import. CCRA has the authority to send the shipment back or to hold it and wait for further approval from EC. If the CCRA accepts the shipment, the carrier transports the hazardous waste shipment to the Canadian receiving facility.

Figure 3-12. Reporting Procedures to Ship Hazardous Waste from the United States to Canada: During Shipment Phase



Upon Arrival and After Shipment

The US carrier arrives at the Canadian receiving facility, which is the equivalent to the US receiving facility. The facility will either accept or decline the shipment. Figure 3-13 presents the final phase of the process to export wastes from the United States to Canada.

After accepting the shipment, the Canadian facility will sign the Canadian manifest, give a copy to the carrier, and send the appropriate copy to EC. The disposal facility will also send a confirmation of receipt to the US exporter, which includes that information in its annual export summary report for US EPA's OECA.

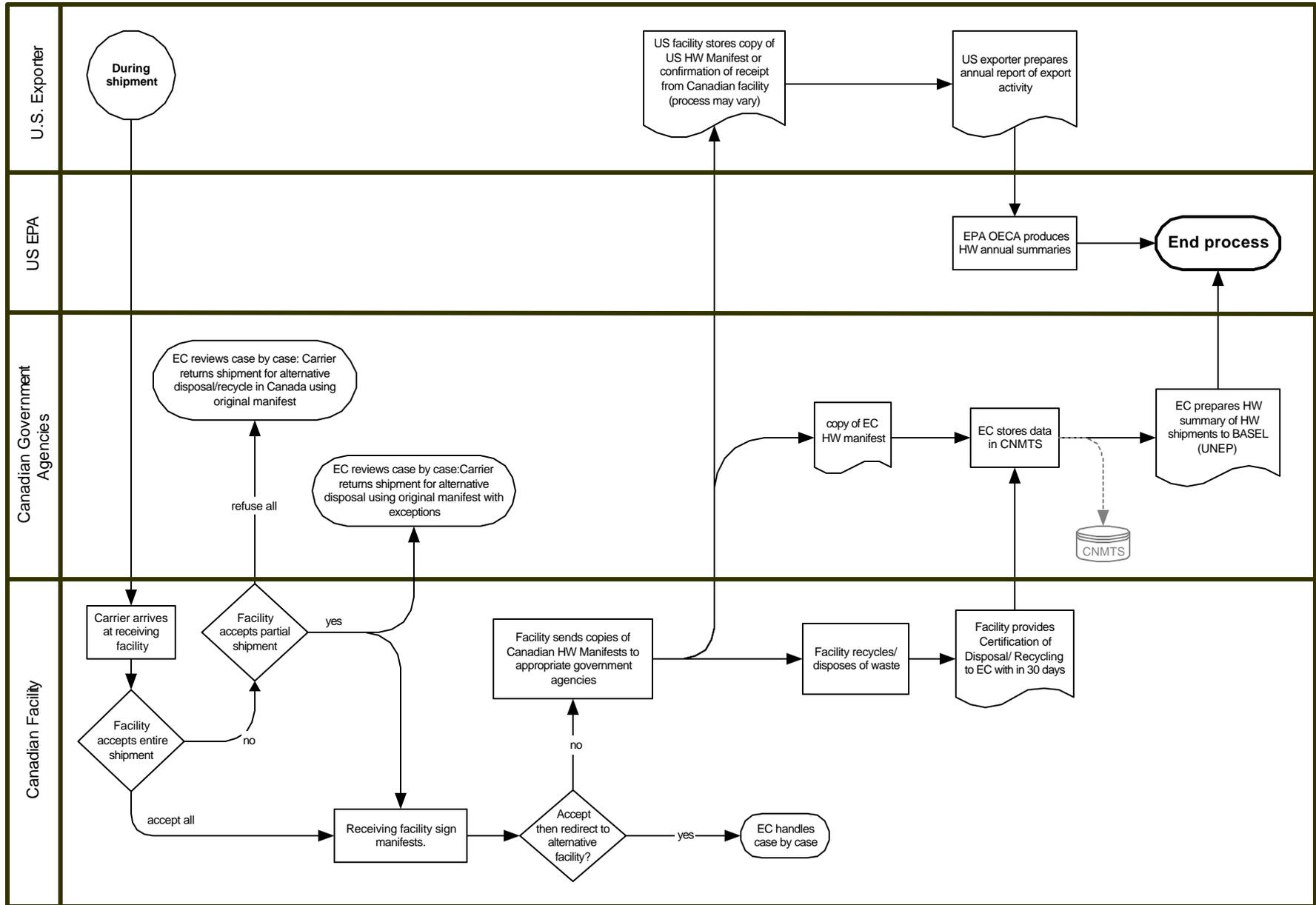
The Canadian receiving facility will then treat the hazardous waste and sends a certificate of disposal to EC. EC enters the data into CNMETS and prepares a summary of hazardous waste shipments to the United Nations Environmental Program under the Basel Convention.

If the Canadian facility denies the shipment completely or partially, the carrier will notify the US exporter who will look for alternative Canadian sites. If no alternative site can be found, the carrier will return shipment to the US exporter or a facility it designates, using the original US manifest, modified by the carrier according to the exporter's instructions, and the Canadian manifest. In either case, the US exporter will send an exception report to the US EPA's OECA.

Government to Government Reporting in North America

There is currently little data shared between the US and Canadian governments, mostly on an *ad hoc* basis. However, the US EPA and EC have started an effort to electronically share NOI data. This linkage should reduce the administrative burden on both governments and speed the process. Also, workshop participants noted an opportunity to better share data about the transboundary shipments of exempt hazardous materials.

Figure 3-13. Reporting Procedures to Ship Hazardous Waste from the United States to Canada: After Shipment Phase



Hazardous Waste Shipments Between Mexico and Canada

Currently, there are no regular shipments of hazardous waste between Mexico and Canada. Canada and Mexico as signatories of the Basel Convention, ship hazardous waste in accordance with agreed Basel procedures and provide to all Basel signatories, detailed data on the transboundary shipments of hazardous waste.

Summary of Challenges

Canadian, Mexican, and US governments' paper-based practices for regulating the transboundary shipments of hazardous waste have resulted in ineffective border controls and undue administrative burden and costs on both the regulated community and the regulating agencies. Other problems arise from the differences in regulatory regimes in the three countries. As a result, the accuracy of reporting changes greatly from country to country due to different regulated and non-regulated shipments. Standardized practices for tracking the transboundary shipments of hazardous waste are not only an important component of achieving the NAFTA environmental objectives; they are a critical component of each country's domestic environmental goals and border security challenges. The following sections provide a summary of the challenges with the current practices described in this chapter.

Inconsistent and Potentially Ineffective Border Controls

Current information management practices vary among the three countries with Mexico and the United States still primarily relying on paper-based transactions to collect required information from the regulated community and share information between environmental and custom agencies. Environment Canada's CNMITS is the most advanced data management system, but is still in the early stages of electronically exchanging information with the regulated companies and Canada Customs agencies. Regardless of the status of domestic hazardous wastes data management systems, all three countries still use paper-based practices to exchange notices of transboundary hazardous waste shipments with each other. These paper-based practices have resulted in the following challenges and have raised concerns about the ability of customs officials to stop illegal hazardous waste shipments from crossing the borders.

- ◆ *Enforcement data not effectively shared among environmental and customs agencies.* When the receiving country has refused particular shipments, shipments may still cross the borders unless the refusal notice is shared between the country's environmental agencies and border check points.

-
- ◆ *Potential for illegal hazardous waste shipments and port shopping.* Because customs officials do not stop every hazardous waste shipment, carriers can in theory cross border checkpoints without the necessary pre-approval of the receiving country. Along with this concern is the concern that carriers will undertake port shopping. This situation occurs when trucks simply avoid the usual or declared port of entry during a period of increased customs inspections.
 - ◆ *Governments are unable to quickly and accurately report the amounts and types of hazardous waste crossing borders.* There is a high administrative burden to enter the data from paper-based forms, resulting in Mexican and US agencies often having incomplete data regarding the amounts and types of hazardous waste crossing the borders. Canada's CNMTS has enabled it to maintain accurate accounts of all hazardous waste imports and exports as well as transits in one integrated data management system. It still may experience data backlogs of up to one month due to the time required to receive paper forms from the regulated community and other authorities involved in the reporting process. Using this system, EC is able to provide industry, the public, and its employees with access to information on the amounts and types of hazardous wastes crossing its borders. Examples of data sharing mechanisms include:
 - Enforcement personnel have web-based access to CNMTS data.
 - EC's Transboundary Movement Branch publishes its *Resilog Newsletter* semi-annually on its web site and annual public reports summarizing hazardous waste import and export data.
 - As a member of the Basel Convention, Canada provides complete annual reports on exports and imports of hazardous wastes; and
 - EC's Transboundary Movement Branch provides Environment Canada's regional staff with hard coded reports summarizing data on hazardous waste notices and manifests.

Improved data management procedures and automation can provide improved border controls and regulatory effectiveness.

Administrative Burden

The following sections describe the types of administrative burdens experienced by the regulated and regulating communities.

Regulated Community

One of the goals of NAFTA was to reduce trade barriers among the Parties. However, companies that ship hazardous waste across the NAFTA borders face a myriad of complex procedures, redundant data entry, and conflicting requirements. These burdens and costs are primarily due to the differences in each country's:

- ◆ Definition of hazardous waste and exempt materials (Canada and Mexico are both a Party to the Basel Convention and thus employ the same lists for the definitions of hazardous wastes.);
- ◆ Import and export notice procedures and associated forms; and
- ◆ Requirement to complete different forms (e.g., manifests, notices to import, notices to export) with similar information.

As a result, companies can experience unnecessary delays due to this administrative burden and to inadequate data sharing among government agencies.

Government Agencies

The government agencies responsible for regulating transboundary shipments of hazardous waste experience administrative burdens similar to the regulating community. The primary cause of this burden stems from the requirement to manually enter data and review paper-based forms. Even after government agencies enter the information into existing information systems, there are currently no mechanisms in place to electronically share information with other systems in use by government agencies. As a result, the government agencies still have to mail or fax the paper-based forms to other agencies or to the regulated community.

Also, there seems to be the lack of standard procedures for inter-government reporting as well as government to government reporting. For example, the process that the United States uses to notify the Canadian government of a hazardous waste export is different than the one used to notify the Mexican government.

[CS1]

Chapter 4

Opportunities to Improve Procedures to Track Transboundary Shipments of Hazardous Waste in North America

The Challenge

Each government's national environmental agency has limited resources to improve border controls, limit the administrative burden on the regulated community and the regulating government agencies. Currently, no government-wide integrated system exists in any of the NAFTA countries to manage the tracking of transborder hazardous waste shipments.⁶ Instead, the environmental agencies and the customs agencies each have separate stand-alone systems and processes that primarily rely on the paper-based transactions. Consequently, achieving electronic connectivity even among current national environmental and customs systems would be extremely challenging, let alone trying to integrate existing systems across each of the countries. However, each country is in the process of undertaking major information system upgrades within its environmental agencies and customs agencies. Environment Canada is currently investigating creating closer ties with the CCRA in order to work better together.

As a result, an opportunity exists now to better coordinate national modernization efforts to achieve electronic connectivity for tracking transboundary hazardous waste shipments. As each country implements its systems modernization plans, it can coordinate development efforts around an agreed set of standard business practices and information requirements for the transboundary hazardous waste shipments.

⁶ Texas Natural Resource Conservation Commission, Electronic Tracking of Hazardous Waste from Mexican Maquiladoras to the United States, December 1998, Available from <<http://www.tnrcc.state.tx.us/admin/topdoc/sfr/064.pdf>>.

A Vision for the Future—An Ideal Process for Tracking Hazardous Waste Shipments in North America

An overall North American vision for tracking the transboundary shipments of hazardous waste must take into account each country's domestic environmental regulations requirement for the cradle to grave management of hazardous waste and the North American Customs agencies' goal to achieve a seamless, harmonized, and timely clearance of international commerce between and through trading countries resulting in safe and legal commercial operations.⁷ Accordingly, the draft CEC vision statement for the ideal process of tracking transboundary shipments of hazardous waste is as follows:

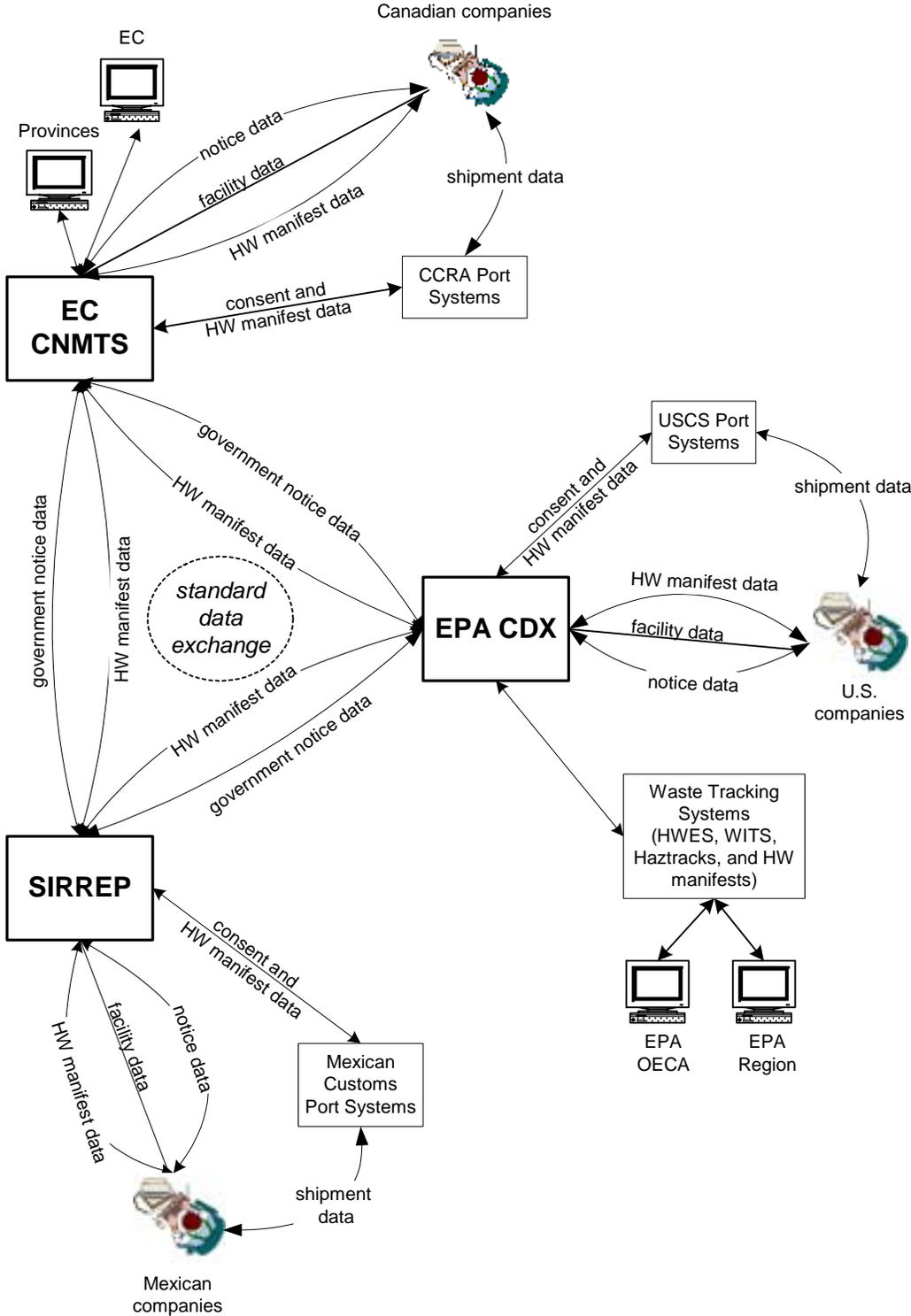
Tracking transboundary hazardous waste shipments within North America will be based on a timely electronic exchange of information, which will result in improved compliance, enhanced border security, and which will minimize the administrative burden and costs to both government agencies and the private sector.

Figure 4-1 contains a high level schematic of the draft long-term concept for the electronic sharing of data related to the tracking of transboundary hazardous waste shipments in North America. This concept builds upon each of the countries domestic initiatives and focuses on developing standard procedures for electronic reporting among the countries as opposed to the creation of a single trilateral hazardous waste tracking system. The main tenant of this concept is that the three countries would establish standard procedures for the electronic exchange of notice and manifest data. This concept depends on the development of trilateral data cross walks for each country's hazardous waste classifications, import and export notices of intent data elements, and hazardous waste manifest data elements.

⁷ US Federal Highway Administration, International Border Clearance (IBC) Program Vision, April 2001, Available at <http://www.itsdocs.fhwa.dot.gov/jpodocs/repts_te/8v601!.pdf>.

Figure 4-1. Draft Long-Term Concept for Electronic Data Sharing for Tracking the Transboundary hazardous waste Shipments in North America

[Note: CDX = Central Data Exchange]



Achieving the Vision

To assist the three governments in achieving this vision and overcoming the limitations of the current domestic tracking systems within the constraints of limited resources, the workshop participants identified the following opportunities to utilize electronic reporting to improve each country's ability to track transboundary hazardous waste shipments.

- ◆ To improve border security, the Canadian, Mexican, and the US governments can work together to:
 - obtain comments from customs agencies on these draft CEC report recommendations,
 - designate specific hours of operation for specific tariff codes (such as those for hazardous waste) and restrict them to specific ports of entry, and
 - identify best practices and standards (data format, exchange protocols, security protocols, etc.) for electronically sharing information between the national environmental and customs agencies.
- ◆ To improve the environmentally sound management of transboundary hazardous waste shipments, the Canadian, Mexican, and US governments can work together to:
 - institute the true origin-to-destination tracking of transboundary hazardous waste shipments by sharing select manifest data,
 - establish common procedures for generators to provide a certificate of destruction or recycle even if hazardous waste is sent to a foreign facility,⁸
 - establish common procedures to track the transboundary shipments of exempt hazardous wastes if regulated as hazardous in one of the NAFTA countries,
 - identify specific capacity building needs for Mexican personnel with responsibilities for tracking transboundary hazardous waste shipments, and
 - consider development a trinational declaration form for transboundary shipments of exempt wastes, which would also support the effort to track exempt wastes.

⁸ This procedure would supplement existing domestic requirements and facilitate the origin-to-destination tracking of hazardous waste shipments across North America.

-
- ◆ To reduce the administrative burden on the government agencies responsible for regulating and enforcing transboundary shipments, the Canadian, Mexican, and US governments can work together to:
 - establish common procedures for government-to-government reporting of transboundary hazardous waste shipments (such as the environmental agencies in the United States and Mexico directly communicating instead of using diplomatic channels to share notices of import and export),
 - update the trilateral data crosswalk of the hazardous waste codes used by each country and make this information available to the government agencies,
 - conduct a pilot project to electronically exchange government-to-government reporting for obtaining PIC, and
 - on the part of the United States, investigate the feasibility of streamlining its three federal data management systems into one comprehensive system for both import and export data management.
 - ◆ To reduce the administrative burden on the regulated community, the Canadian, Mexican, and US governments can work together to:
 - host a series of meetings to present the draft report and collect comments from industry and the public, and
 - create an updated trilateral data cross walk of the hazardous waste codes used by each country and make this information available to private companies.

Phased Implementation

We recommend a two-track, phased approach to achieving a harmonized data exchange process that automates (to the extent practical) the reporting process for tracking transboundary hazardous waste shipments. This approach could be integrated into the ongoing modernization efforts in each of the country's environmental and customs agencies. Each phase builds upon the results of the previous one while allowing member countries time to coordinate these efforts with domestic system modernization efforts.

Track one would be to automate the country-to-country notice and approval process for transboundary hazardous waste shipments. It would consist of the following eight phases:

1. Obtain agreement on selected business practices to streamline and analyze costs and opportunities to use electronic reporting.
2. Design, develop, and test data standards, application code, and security protocols for government-to-government notices.

3. Pilot test electronic reporting of government-to-government notices.
4. Expand the pilot test to allow industry to submit applications for hazardous waste import and exports (business to government notices).
5. Obtain agreement on streamlined business practices for electronic reporting between customs ports and environmental agencies.
6. Design, develop, and test data standards, application code, and security protocols for sharing notice and manifest data between customs and environmental agencies.
7. Pilot test electronic reporting of approval or objection notices between environmental and customs agencies.
8. Expand the pilot test to include all environmentally related data exchange requirements.

Track 2 would consist of examining the technologies and systems currently being considered for hazardous waste and hazardous recyclable materials and wastes tracking in North America, with a view toward identifying obstacles to the interoperability of these systems, developing activities for the exchange of information, and implementing automated systems for tracking transboundary movements in North America.