

CROSSING THE BORDER
OPPORTUNITIES TO IMPROVE TRACKING
OF TRANSBOUNDARY HAZARDOUS WASTE
SHIPMENTS IN NORTH AMERICA

COMMISSION FOR ENVIRONMENTAL COOPERATION

OCTOBER 2005

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Crossing the Border: Opportunities to Improve Tracking of Transboundary Hazardous Waste Shipments in North America

OCTOBER 2005

Executive Summary

The objective of this report is to describe the current hazardous waste information tracking procedures and systems used by each of the North American Free Trade Agreement (NAFTA) countries for transboundary hazardous waste shipments and to recommend ways to improve cooperation within North America on the transboundary tracking of these wastes. 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. The domestic laws within each country and specific international agreements to which the NAFTA countries are parties dictate these procedures.

The three governments have similar requirements for regulating the transboundary shipments of hazardous waste. They typically require importers or exporters to obtain approvals for certain shipments from designated government agencies and to create a written record of the material's fate from its point of generation to its final destination. The countries employ the concept of prior informed consent (PIC), under which a material regulated as a hazardous waste in one country may only be exported to another with the importing country's prior consent.¹

The PIC concept and the domestic hazardous waste management laws rely on the sharing of information on hazardous waste shipments. Government agencies use this 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, which is the joint responsibility of each country's environmental and customs agencies.

¹ 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.

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 Commission for Environmental Cooperation (CEC) 1999 report, *Tracking and Enforcement of Transboundary Hazardous Waste Shipments in North America*, concluded that the hazardous waste tracking processes and 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 tracking² of transboundary shipments of dangerous substances, including hazardous wastes, has heightened in the aftermath of the terrorist attacks in the United States on September 11, 2001.

The environmental and customs agencies in Canada, Mexico, and the United States are striving to both improve the effectiveness of their border controls and reduce the administrative burden on the regulated communities. In 2001, as part of its ongoing effort to facilitate cooperation among the NAFTA countries as they work to adopt electronic reporting, the CEC established a trilateral Hazardous Waste Task Force (HWTF)—comprising environmental officials from Canada, Mexico, and the United States—to work on the environmentally sound management (ESM) and tracking of hazardous waste in North America. Subsequently, in 2002 and 2003, the HWTF received instruction from the CEC Council to proceed with a pilot project to track hazardous waste movement between Canada and the United States by means of an electronic notification system,³ to examine issues surrounding the interoperability tracking systems under consideration in the three Countries, and to identify capacity building needs in Mexico.

As a result of these instructions, the Secretariat held two workshops to develop a draft as-is workflow model of the current import and export procedures for shipping hazardous waste among the NAFTA countries. The workshops were also an opportunity for the participants to identify opportunities to improve the movements of hazardous waste and to come up with an ideal workflow process (referred to as the “to-be” workflow model) for tracking the transboundary shipments of hazardous waste among NAFTA countries.

These workshops resulted in a draft *Crossing the Border Report*. The Secretariat facilitated a public meeting on this draft report and provided for a public comment period and government review of the report.

² For the purpose of this report, the term tracking refers to the creation, storage, retrieval, and sharing of those records and does not refer to real time tracking of hazardous waste shipments.

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

As part of this final report, the Secretariat recommends that over the next three years the Parties continue to work collectively with representatives from the NAFTA environmental and customs agencies, private companies, and citizen groups to:

- ◆ Identify and promote practices that ensure the environmentally sound management of transboundary hazardous waste shipments using existing systems, technologies, procedures and programs.
- ◆ Coordinate on domestic decisions as information systems and procedures are updated so that in the future transboundary movement information can be readily exchanged among NAFTA countries.
- ◆ Where appropriate, work with the NAFTA environmental and customs agencies to coordinate the development of data standards with those data standards being developed by the United Nations Center for Trade Facilitation and Electronic Business (UN CEFAC).
- ◆ Identify and implement capacity building efforts with a particular emphasis on addressing the needs of Mexico
- ◆ Explore single-window reporting and processing opportunities for North American data harmonization and standardization consistent with the World Customs Organization and the US International Trade Data System (ITDS).

The Secretariat recommends that after completing this work, the Parties will be in a better position to determine the feasibility of longer term collaboration within North America to coordinate domestic environmental and customs system development efforts which would allow the electronic sharing of select manifest and notice data.

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Preface

In 1994, with the signing of the 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 prepared 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.⁴

The Secretariat incorporated the Council's request into its 2002 and 2003 work plans.⁵ Subsequent to the council request, council passed Council Resolution 03-08 which direct the Secretariat to work with the Parties to:

(3) Continue to examine 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;

⁴ Commission for Environmental Cooperation, "Final Communiqué; Ninth Regular Session of the CEC Council," June 2002, p. 3.

⁵ Commission for Environmental Cooperation, "Environmentally Sound Management and Tracking of Hazardous Waste," *Law and Policy*, December 2002. Available from http://www.cec.org/files/pdf/LAWPOLICY/412-03-05_en.pdf.

(4) Identify specific capacity building needs in Mexico for both ESM and tracking of hazardous wastes destined for final disposal and hazardous recyclable materials and wastes destined for recovery/recycling operations;

(5) Hold a public workshop with the CEC Joint Public Advisory Committee on the management and tracking of such hazardous wastes and hazardous recyclable materials and wastes in North America in order to provide an opportunity for participation by the regulated community of the three countries and input from other interested stakeholders; and

(6) Identify and evaluate additional collaborative opportunities to improve and enhance the ESM and tracking of transboundary movement of hazardous wastes destined for final disposal and hazardous recyclable materials and wastes destined for recovery/recycling operations in North America.

The goals of this council resolution are reflected in this report.

In preparing this document, the Secretariat relied on the work of Emil J. Dzuray Jr., Anna M. Wallace, and Emily Estes of LMI, who developed this report with the input of government hazardous waste officials, workshop participants and the Secretariat through the CEC's Hazardous Waste Task Force.

The material in this document is current as of November 2004. In addition, this document discusses US changes to the hazardous waste manifest regulations which occurred in January 2005. The Parties plan to update this document and begin using it as a reference guide in late 2005 or early 2006.

If you have comments or questions, please contact me at 514-350-4334 or twhitehouse@cec.org.

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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 shipment of these substances is governed by laws and regulations, designed to address domestic issues, and international agreements, which require additional reporting procedures for transboundary shipments. In general, domestic regulations and international agreements require importers or exporters to obtain approvals for certain shipments from designated government agencies. Although the requirements and reporting procedures differ in each NAFTA country, they are all based on the concept of prior informed consent (PIC).

Under the PIC concept, a material regulated as a hazardous waste 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*, or assembly plants) and shipped back into the United States for treatment. The United States has agreed to accept hazardous waste from US-owned *maquiladoras* without requiring Mexico to obtain prior informed consent.

The PIC concept and NAFTA countries' domestic laws rely on the sharing of information about hazardous waste shipments before they occur. Canadian, Mexican, and US government agencies use the information to decide whether to allow or disallow the import or export of a particular hazardous waste. They also use it to track trends and identify enforcement needs. The individual environmental agencies—Mexico's *Secretaría de Medio Ambiente y Recursos Naturales* (Semarnat),⁶ Environment Canada (EC), and the US Environmental Protection Agency (US EPA)—and customs agencies—Mexico's Customs Department, Canada Customs and Revenue Agency (CCRA), and Bureau of Customs and Border Protection (CBP) jointly enforce laws regulating the import and export of hazardous waste.⁷

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

⁶ Secretariat for Environment and Natural Resources.

⁷ CBP, within the Department of Homeland Security, assumed the responsibilities held by the US Customs Service in the Department of the Treasury.

tracking processes and 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 tracking⁸ of transboundary shipments of dangerous substances, including hazardous wastes, has heightened in the aftermath of the terrorist attacks in the United States on September 11, 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 and reduce the administrative burden on the regulated communities. One aspect of this effort is the electronic exchange of information about transboundary hazardous waste shipments. In 2001, as part of its ongoing effort to facilitate cooperation among the NAFTA countries as they work to adopt electronic reporting, the CEC established a trilateral Hazardous Waste Task Force (HWTF)—comprising environmental officials from Canada, Mexico, and the United States—to work on the environmentally sound management (ESM) and tracking of hazardous waste in North America.

PROBLEM DEFINITION

A major limitation of the current paper-based reporting process for hazardous waste import/export is that it does not provide effective support for enforcement or monitoring compliance. In addition, there is a lack of control during the shipping process due to the inability to share real-time information on shipments. Inefficient information exchange, processing backlogs, incompatibility of existing information systems, limited integration among border agencies, and limited public access to information also impair the process.

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 monitor hazardous waste shipments during transit and at the border.

REPORT OBJECTIVES

The objective of this report is to describe the current hazardous waste information tracking procedures and systems used by each of the NAFTA countries to identify process improvements. The CEC hopes it can serve to facilitate cooperation between the NAFTA countries in implementing electronic reporting to improve the effectiveness of border controls, reduce the administrative burden on the regulated communities and regulating agencies, and provide better information to the public.

⁸ For the purpose of this report, the term tracking refers to the creation, storage, retrieval, and sharing of those records and does not refer to real time tracking of hazardous waste shipments.

STUDY APPROACH

Using the broad framework of business process reengineering (BPR), the Secretariat engaged a consultant, LMI, to work with the CEC Hazardous Waste Task Force to conduct this study in three phases:

1. LMI reviewed previous studies; domestic regulations of Canada, Mexico, and the United States; and key international agreements specified in NAFTA and produced a draft as-is workflow model of the current import and export procedures for shipping hazardous waste among the NAFTA countries.
2. LMI facilitated the first of two collaborative workshop meetings, comprising environmental and customs representatives of the NAFTA countries, to confirm the as-is model and to provide a summary of challenges with the current practices.
3. CEC and LMI facilitated a second workshop meeting to present the findings of the first report and use them as a baseline to collaboratively refine opportunities to improve the movements of hazardous waste. (Appendix A contains a list of the meeting participants.) 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. Ideas were also collected on other ways to improve tracking and coordination in North America.

Once the as-is and to-be models were created, the CEC presented these models at a 4 November 2003 public meeting in Montreal and made the report available for public comment on its web site from December 2003 to April 2004.

The second round of government comments occurred between April 2004 and March 2005.

REPORT ORGANIZATION

The remainder of this report is organized as follows:

- ◆ Chapter 2 describes relevant international laws, multilateral and bilateral agreements, and domestic laws and policies of Canada, Mexico, and the United States regulating the transboundary movement of hazardous waste.
- ◆ Chapter 3 presents an as-is workflow model of current practices for tracking the transboundary shipments of hazardous waste between 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. The first section of this Chapter summarizes opportunities that workgroup participants identified to improve each country's ability to track transboundary hazardous waste shipments. The second section is an outline of a proposed long-term phased approach to achieving an electronic data exchange that automates (to the extent practical) the reporting process for tracking transboundary hazardous waste shipments.
- ◆ Chapter 5 presents the Secretariats recommended next steps over the next three years for the Parties to continue to improve the tracking of hazardous waste in North America.

Chapter 2

NAFTA Country Requirements

This chapter summarizes the requirements that importers, exporters, and domestic government agencies must meet regarding shipments of hazardous wastes among the three NAFTA countries⁹. It describes the domestic regulations, international agreements, and current status of the information systems each country has in place.

INTERNATIONAL AGREEMENTS

There are several international agreements that address the tracking and control of transboundary movements of hazardous waste between the Parties. These include the:

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

Movements for final disposal or recycling between Mexico and Canada are subject to Basel Convention controls because both are Basel Parties and do not have a separate bilateral agreement addressing any hazardous waste shipments. Parties to the Basel Convention 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

⁹ This chapter contains material summarized 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 of the HWTF workshop in Puerto Peñasco, Mexico.

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 when other mutually agreeable conditions are met.

The Canada/US and US/Mexico bilateral agreements are similar in many respects. Each agreement requires the inclusion of relevant information in the tracking document and allows a country to block entry of “environmentally harmful” hazardous waste provided that domestic statutory authority supports this. However, there are differences in the two agreements. The Canada/US Agreement allows the importing country 30 days to indicate consent or objection to the proposed waste shipment and provides for tacit consent, whereas the La Paz Agreement allows the importing country 45 days and contains no tacit consent provision. In addition to the 45-day window for consent or objection, the La Paz Agreement requires the notification to include the identity of exporter, type and quantity of waste, the period over which the waste will be exported, and the point of entry. It requires the export country to readmit the shipment if the designated authority orders the shipment expelled from the import country for any reason; however, the United States lacks the statutory authority to implement this provision.

To further implement the La Paz Agreement, US EPA and 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 (3,200-km) US-Mexico border. This program, known as Border 2012, will focus on decreasing pollution and lowering the risks of exposure to a variety of environmental hazards, and it aims to achieve the following goals in the border region by 2012:

1. Reduce water contamination.
2. Reduce air pollution.
3. Reduce land contamination.
4. Improve environmental health.
5. Reduce exposure to chemicals as a result of accidental chemical releases and/or acts of terrorism.
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 an objective under Goal 3:

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.

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

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

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, the facility keeps an annual report or facility management log to document the receipt of the shipment.

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. The NAFTA countries are also collectively trying 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 in 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, which depend on the amount, method of disposal, and location of the final destination.

The keystone of the EIHWR is the PIC mechanism, 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 and recovery operations before any movements take place. The notice allows Environment Canada to determine who the parties are in the transaction (generator or foreign exporter, carriers, and importer or receiver), identify the hazardous wastes, 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. It also permits the provinces to review the information and to consent on the basis of 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 issues a permit allowing the export, import, or transit provided all regulatory conditions have been met. Consent for an export is subject to approval of the importing 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 5 kilograms, liquid wastes exceeding 5 liters, and wastes containing greater than 500 grams of polychlorinated biphenyls (PCBs) 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 federal waste manifests are generally used throughout Canada for intra-provincial transport of hazardous waste, the provinces have jurisdiction over this movement. Each may impose additional requirements on movements of hazardous wastes and address different wastes not covered under the federal regulations. For example, in Ontario, the General Waste Management Regulation controls the transport of waste within, into, through, and out of Ontario. Movements of hazardous and other wastes are tracked through a system of manifests.

In August 2002, Canada extensively modified the regulations that apply to the transportation of dangerous goods within Canada. These new, “clear language” regulations are available at <http://www.tc.gc.ca/tdg/clear/tofc.htm>. At the same time, it revised the EIHWR to ensure that no regulatory gaps were created with respect to the manifesting provisions.

DATA MANAGEMENT SYSTEMS

Environment Canada uses the Canadian Notice and Manifest Tracking System (CNMETS) 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 or 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 or generator and Canadian importer or receiver to provide a certificate of disposal or recycling (as appropriate) within 30 days of the process being completed. Canadian regulations cover the export and import of hazardous wastes, but, as stated previously, the Canadian provinces have jurisdiction over movements solely within their territory. The hazardous waste manifest required by federal regulations is also used to track interprovincial and intraprovincial movements of hazardous wastes, although the provincial authorities regulate these shipments.

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

PLANNED INITIATIVES

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 within and when exported from Canada. Initial management options considered are available for review at <http://www.ec.gc.ca/RegistreLCPE/documents/part/RepFinDisp.cfm>.

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 the competent authorities of the country of origin of the wastes certify the degree of hazard. Exports may be undertaken if the importing country consents. Import of hazardous materials or wastes for final disposal; 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 *Subsecretaría de Gestión para la Protección Ambiental* (SGPA), and enforcement is carried out through the *Procuraduría Federal de Protección al Ambiente* (Profepa).¹⁰ Profepa ensures compliance, collecting fees from and issuing penalties to agencies that fail to comply with all federal regulations. Semarnat tracks transboundary shipments of hazardous waste and authorizes 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 maquiladoras. Maquiladoras 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. The ecological guide, 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 applicant data, the waste route, transporter data, waste technical specifications, flow diagrams of waste use, importer/exporter company data, lists of 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 ecological guide.

A manifest must accompany shipments of hazardous waste within Mexico. The manifest (similar to that in the United States) 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 genera-

¹⁰ Undersecretariat of Management for Environmental Protection and Environmental Protection Bureau.

tor, the generator must report the shipment to Semarnat within 15 days. With this notification, the generator conveys information about the actual quantities shipped. The generator must keep all originals and copies of the manifest available for inspection.

DATA MANAGEMENT SYSTEMS

Starting in 1994, the *Instituto Nacional de Ecología* (INE)¹¹ and US EPA Regions 6 and 9 jointly operated and periodically updated the Hazardous Waste Tracking System (HAZTRAKS) system, through version 97.1b.¹² They also developed the user manuals and training for Semarnat's federal delegations in the border states. In 1997, the INE began development of the *Sistema de Rastreo de Residuos Peligrosos* (Sirrep),¹³ which includes the use of the Aviso (return notice) instead of the export ecological guides for waste the maquiladora industry generates.¹⁴ 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 system enables Semarnat to track hazardous waste movements between the United States and Mexico and within Mexico.

Sirrep 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. To strengthen the operation of Sirrep in the Semarnat and Profepa, the INE published *Administrative Procedure for the Return of Hazardous Waste Generated by the Maquiladora Industry*. Any entity or individual that is required to return hazardous waste to the country of origin (of the raw materials used in processing) uses this procedure to notify Semarnat of such movement.

Semarnat representatives have reported operational problems with Sirrep over the last few years. In 2000 and 2001, server problems affected 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.

¹¹ The INE is Mexico's National Institute of Ecology.

¹² US EPA discontinued operating HAZTRAKS in 2003 and no longer considers it a viable system.

¹³ Sirrep is the Hazardous Waste Tracking System.

¹⁴ 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.

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),¹⁵ covering all modes of transportation. At present, the relevant authorities are modifying NOM-002-SCT-2/1994, *List of the 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 revising these important transportation NOMs, Mexico is considering new NOMs 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 (unless contaminated) 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. No comparable Mexican regulations currently address 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; Subpart F of 40 CFR 262 for import; and Subpart H for transboundary movements of hazardous recoverables with

¹⁵ Mexican Official Norms.

OECD countries and the Hazardous Materials Transportation Act (HMTA), Title 49 CFR Sections 106 to 180. Title 40, Section 263 also includes regulations for RCRA transporters. The following paragraphs describe the export and import requirements.

Under RCRA, hazardous waste is regulated from the time it is generated until the time of its disposal in the United States. 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, but no provision authorizes them to implement import and export notice and consent procedures, 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 and the US Department of Transportation proper shipping name, hazard class, and identification number for each hazardous waste;
- ◆ the receiving country has consented to accept the hazardous waste;
- ◆ a copy of the US EPA Acknowledgment 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.

US EPA directly notifies the competent authority in the intended country of import to obtain consent and serves as a liaison 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, 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, an Acknowledgment of Consent is passed on to the exporter, who attaches a copy to the hazardous waste manifest initiated when the shipment actually begins. Every March 1, exporters of waste must send an annual report to US EPA summarizing the types, quantities, frequency, destination, and ultimate disposal of the waste exported over the course of the preceding year. All records must be maintained for no less than three years.

RCRA regulations require that the transporter must deliver a copy of the manifest to CBP. 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 (for example, characteristic byproducts 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).

Import Requirements

When importing hazardous waste to the United States, the US importer does not have to request prior consent from US EPA. The Canadian or Mexican exporter will generally notify its appropriate government agency, which will then provide a notice to the US EPA for its consent or objection. 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 as 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. CBP 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.

CBP 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 and RCRA transportation regulations during its transport in the United States.

DATA MANAGEMENT SYSTEMS

At the federal level, US EPA headquarters (HQ) Office of Enforcement and Compliance Assurance (OECA) uses two standalone data management systems to support the tracking of transboundary movements of hazardous waste:

- ◆ The Waste International Tracking System (WITS) tracks notices of intent (NOIs) to import hazardous waste into the United States and the associated US response (that is, consent, objection, or neither consent nor objection if not regulated).
- ◆ The Hazardous Waste Export System (HWES) tracks NOIs to export hazardous waste, associated responses (that is, consent, objection, or neither consent nor objection if not regulated), hazardous waste manifests, and annual reports.

From 1992 to 2003, US EPA Regions 6 and 9 used a different stand-alone system for hazardous waste shipments between the US and Mexico to include shipments from US maquiladoras. HAZTRAKS tracked information from the import and export manifests, and the Mexican aviso. In 2003, HAZTRAKS was discontinued.

The following paragraphs describe these federal systems in greater detail. In addition, the states of Texas,¹⁶ California, 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 computerized fashion.

¹⁶ Texas Natural Resource Conservation Commission, *Electronic Tracking of Hazardous Waste from Mexican Maquiladoras to the US*, December 1998. Available from http://www.tceq.state.tx.us/assets/public/comm_exec/pubs/sfr/064.pdf.

Hazardous Waste Export System

Under RCRA, hazardous waste exporters must first notify US EPA of intent to export with the destination (Mexico or Canada) and receives consent or objection of shipments covering a twelve-month period. US EPA stores this information in its HWES database, which 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 over which it is to be exported
- ◆ Ports of exit
- ◆ Method of transportation to the receiving country and the treatment, storage, or disposal of the waste in that country
- ◆ Name and address of the ultimate treatment, storage, or disposal facility.

The database also holds information drawn from export manifests and annual reports filed by exporters. Because of limited resources, data from manifests have not been entered into HWES for recent years. An annual report provides a summary of all shipments for the year.

Periodically, 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 nonfilers, late filers, and misfilers 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 with the sorted manifests as part of regular compliance monitoring to determine whether actual shipments exceeded the maximum consent limits for each waste stream in each notice entered in HWES. Apparent violations become the subject of memorandums of referral that request US EPA's regional RCRA enforcement managers to take appropriate enforcement action against violators.

Waste International Tracking System

Under Mexican laws and regulations and Canadian laws and regulations respectively, 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. Because the United States does not require a notice for im-

ports, it accepts the form of notice used by each of its neighbors. 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 a PC-based Internet application for use in US EPA headquarters and in read-only access to 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. In 2003, as stated previously, US EPA ceased to operate HAZTRAKS.

HAZTRAKS was a database that enabled US or Mexican officials to store the data related to the volumes and types of hazardous waste crossing the US–Mexico border. The HAZTRAKS database correlated data from US and Mexican waste manifests (and other sources) that facilitated a common approach for tracking waste shipment data 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
- ◆ Data (principally identification) on US RCRA-permitted treatment, storage, and disposal facilities (TSDFs).

As conceived, HAZTRAKS provided one database of information that both US and Mexican officials could use to track related hazardous waste shipments between the two countries.

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 with

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 two major initiatives that will have a secondary impact on how hazardous waste transboundary shipments are managed: US EPA recently updated regulations for manifesting hazardous wastes, modernizing its electronic information systems, and proposing electronic reporting for manifests; the Bureau of Customs and Border Protection is undertaking a major modernization effort to upgrade its electronic commodity tracking systems.

A US regulatory change which affects transboundary waste movements is a revision to the former hazardous waste manifest. In March 2005, US EPA issued a final regulation that would ensure delivery of import manifests to the Agency. This rule would provide US EPA, for the first time, with actual data on import shipments.

The new regulation also includes 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. Specific lines are now provided for identifying the port of entry or departure and for signing and dating the manifest on the departure of a shipment from the United States.

US EPA is also considering electronic manifests, which would use recent advances in technology. Electronic manifests would allow for real-time monitoring of transboundary movements. However, timing of the establishment of an electronic manifest system is uncertain, given public comments submitted concerning the proposed rule. US EPA is currently considering how to proceed..

Another rule in progress might have the effect of increasing hazardous waste imports. The proposal under development would impose new emission standards on hazardous waste incinerators for dioxins and furans. These emissions are currently controlled permit by permit, rather than through a single national standard. The development of emission standards could increase the cost of incineration. In many cases, incineration is required to achieve the existing US pretreatment standards that must be met before final land disposal is allowed. This requirement could impact the intended effect of Canada's emerging standards for pretreatment of hazardous waste prior to final disposal.

SUMMARY

Laws and Regulations

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 (treatment, for example). Although the specific requirements and reporting procedures to import and export hazardous waste differ in the three countries, they are all based on the PIC concept, which states that a shipment of hazardous waste may only be exported to another country with the importing country's prior consent. Both the PIC concept and each country's domestic hazardous waste management laws rely on the effective sharing of information about each hazardous waste shipment. Government agencies use the information to decide whether to allow or disallow a particular hazardous waste shipment or set of shipments, track trends, and 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 country's environmental agencies and its customs agencies.

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 it 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.

At the time of this report, Mexico and the United States, environmental and customs agencies each had separate standalone systems and processes that primarily relied on paper-based transactions. However, the CBP was in the early stages significant efforts to upgrade its automated systems. 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 (such as WITS, HWES, and Texas and California State tracking systems). However, as each country modernizes its hazardous waste import and export data management systems, opportunities are emerging to coordinate future system upgrades that could achieve common standards, where appropriate, for data definitions and electronic exchange protocols.

Public Access to Information

At the time of this report, the public in each country had limited access to timely information regarding the transboundary shipments of hazardous waste. None of the three NAFTA countries domestic regulations require a public review period as part of the government's decision process for consenting or objecting to accepting these shipments. Also, each country publishes only limited public reports on the data related to the transboundary shipments of hazardous wastes. For example, only Canada, in 2003, provided a summary of amounts and types of transboundary hazardous waste shipments. The United States and Mexico include summary information regarding transboundary hazardous waste shipments as a section in other public environmental reports (for example, the US Toxics Release Inventory (TRI) report identifies the amounts of hazardous waste accepted from foreign sources), but do not publish specific annual reports.

The CEC has been coordinating with the NAFTA parties to assemble and provide a high-level summary of transboundary shipments of hazardous wastes through its North American Pollutant Release and Transfer Register (PRTR) project. It tracks and publishes information on the amounts, sources, and handling of toxic chemicals from industrial activities in North America, including analyses of trends in pollutant releases and transboundary shipments since the early days of NAFTA. The CEC publishes the *Taking Stock* report and web site, which provide a unique regional picture of pollutant data in North America, on the basis of available data from the national PRTR systems.



Chapter 3

Current Processes

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 shared. For each case, we describe the procedures for three separate phases:

- ◆ Before the shipment leaves the generating facility
- ◆ During shipment from the generating facility, across the borders, to the receiving facility
- ◆ After the shipment arrives at the receiving facility.

We first describe the current import and export procedures for shipping hazardous waste between the United States and Mexico, Canada and the United States, and Mexico and Canada.

UNITED STATES AND MEXICO

This section contains 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—before shipment, during shipment, and after shipment—for the following transboundary movements:

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

We depict each phase 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 from United States to Mexico

BEFORE LEAVING GENERATING FACILITY

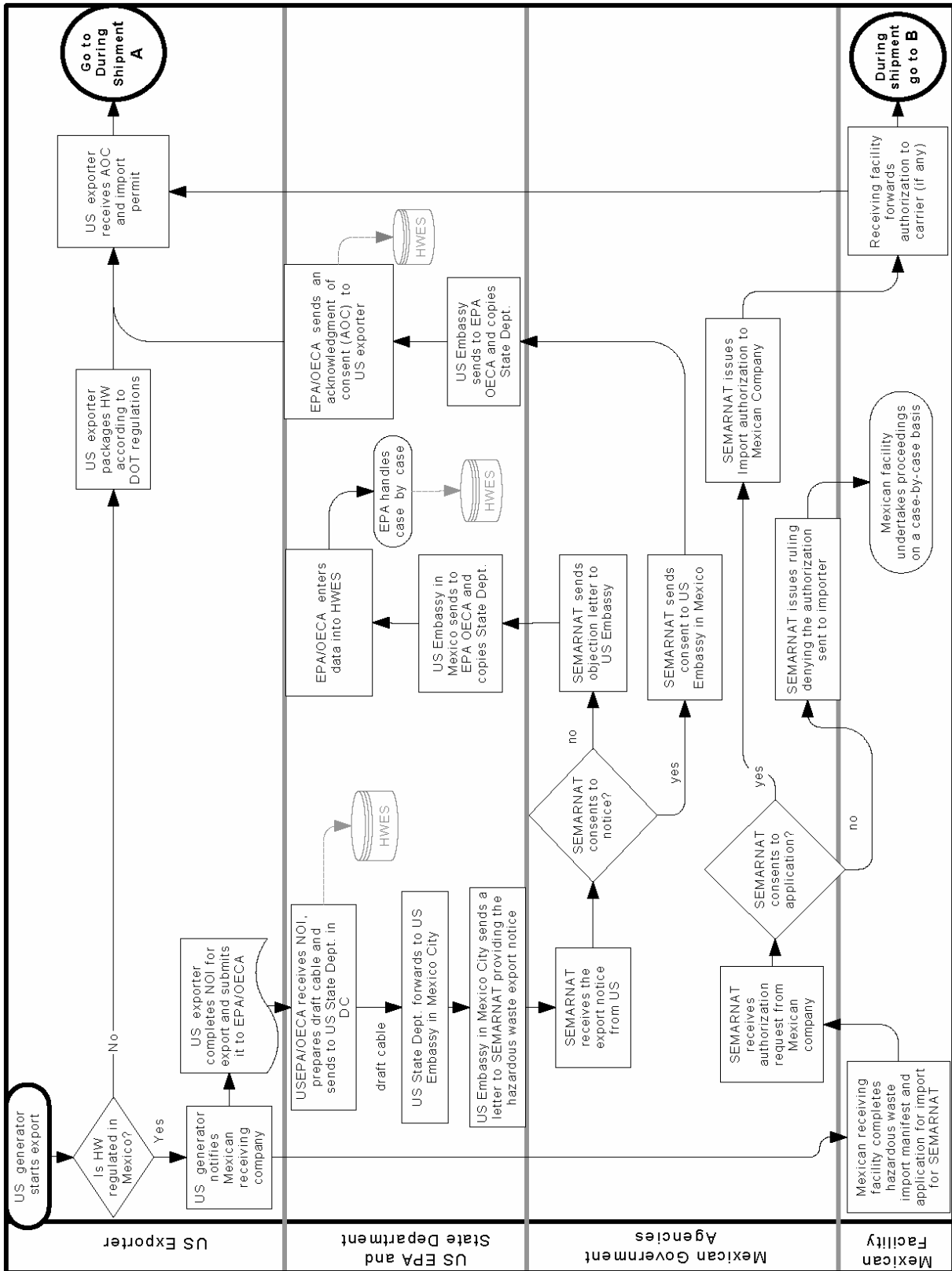
To start the process, the US primary exporter submits to US EPA a notice of intent (NOI) to export hazardous waste to Mexico. The primary Mexican importer must notify Semarnat directly and names the source of the hazardous waste for recycling.

US EPA's OECA takes the following steps to notify the Mexican government:

- ◆ US EPA responds to the NOI by preparing a draft cable and providing it to the US State Department in Washington, DC. After any revisions, the State Department sends the cable to the US Embassy in Mexico, which forwards it 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 objection to the Mexican Consul, then to the US Embassy, and then directly to OECA (and may copy the Department of State).
- ◆ OECA sends an acknowledgment of consent (AOC) or a notice of objection to the US exporter.
- ◆ OECA records notification information in HWES.

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 ecological guide containing data similar to the export notice. Semarnat issues an import ecological guide approving shipment, which is good for one calendar year from January to December. Semarnat may grant an amendment due to a change in the recycling capacity of the receiving facility or volume increase by the US generator. Figure 3-1 shows 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



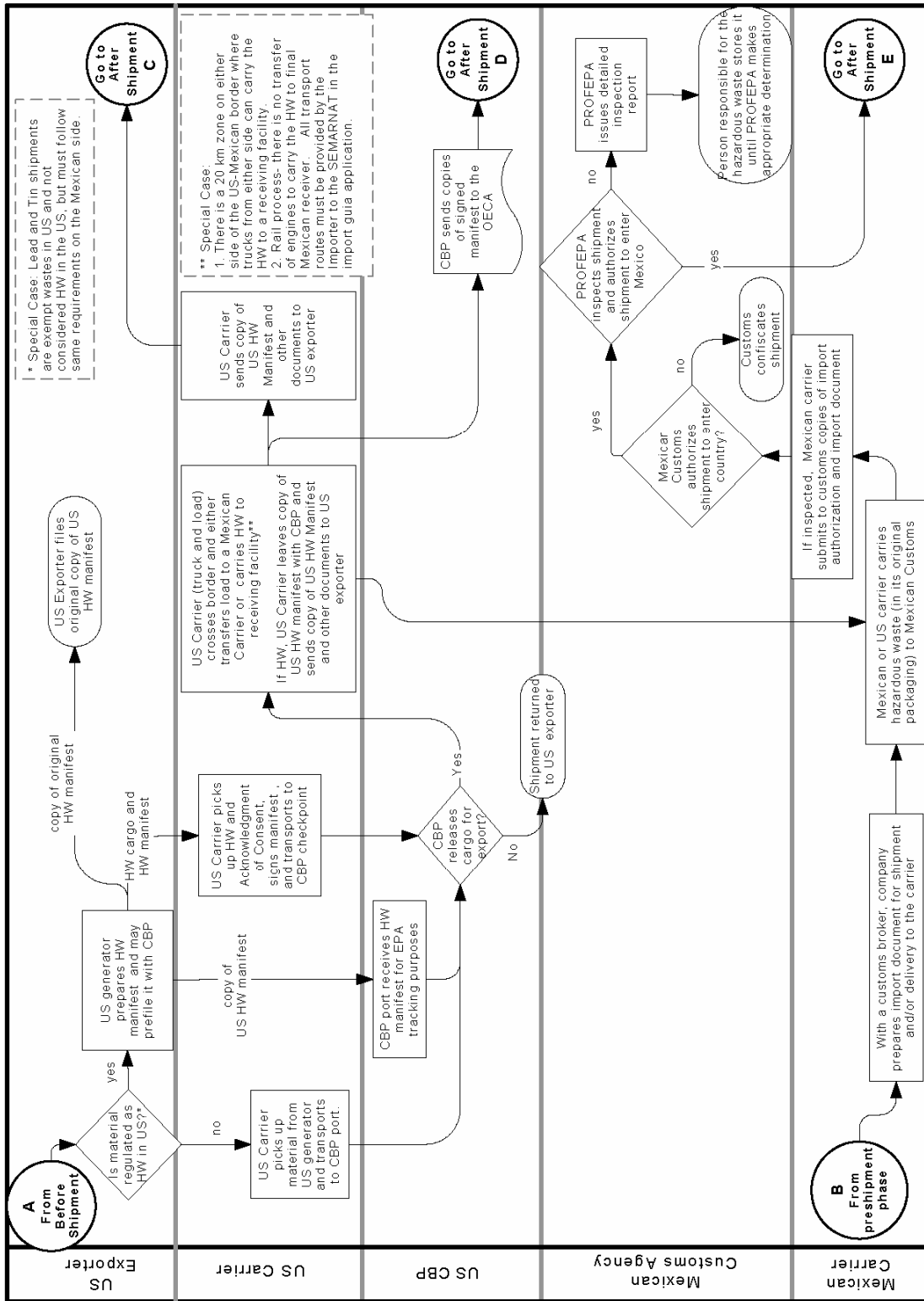
DURING SHIPMENT ACROSS BORDERS

The US carrier picks up the hazardous waste from the US facility, receives the US manifest and Acknowledgment of Consent, signs the US manifest, and transports it to the CBP border checkpoint. The carrier leaves a copy of the US hazardous waste manifest at the CBP border checkpoint upon departure. If the material is also regulated as a hazardous waste in the United States, some customs ports may require the US exporter to provide a copy of the a hazardous waste manifest to the CBP border checkpoint at least 24 hours before the shipment arrives.¹⁷ The customs port forwards the hazardous waste manifest to OECA. OECA files the manifest and compares the data to the NOI. 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, which identify the shipment's tariff code. According to tariff code, the Mexican Customs may inspect the shipment and review any required permits. Also, it requires that shipments of commodities with a specific tariff code traverse at a particular border crossing due to the on-site 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 it is 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.

¹⁷ For example, the CBP Office at International Bridge Intersection of Spur 239 and Qualia Drive, Del Rio, TX 78840, requires that US exporters provide paperwork at least 24 hours in advance of the hazardous waste shipment.

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



ON ARRIVAL AND AFTER SHIPMENT

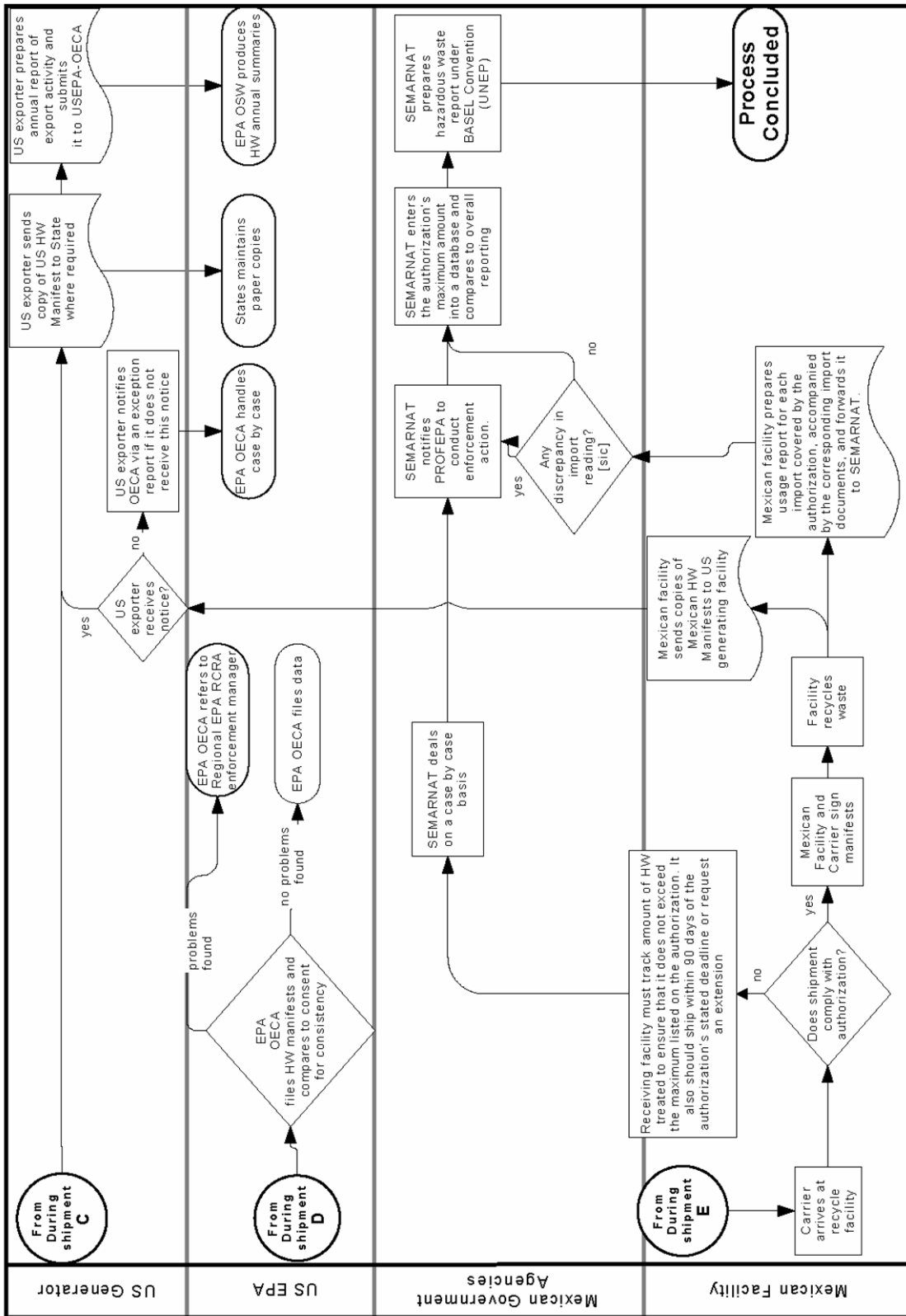
Typically, the carrier delivers the hazardous waste to the Mexican recycling facility. Once the hazardous waste arrives at its destination, the receiving facility reviews the hazardous waste manifest with the approval provided on the import guia (permit). If it is in order, the receiving facility signs the Mexican hazardous waste manifest. It then prepares a usage report that lists the hazardous waste amounts treated versus the hazardous waste amounts allowed on the original import guia. It provides this report with a copy of the Mexican hazardous waste manifest to Semarnat for each import. It also provides a certificate of recycling to Semarnat once the recycling is completed. Typically, the Mexican receiving facility sends 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 US EPA if it does not receive a written confirmation of delivery from the Mexican facility. Some states also require the US waste exporter to send them a copy of the signed US hazardous waste manifest. US facilities are required to report the amount to US EPA annually.

Semarnat stores all paper notices. It only uses the Sirrep database for tracking the information contained in 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, it notifies Profepa.

US EPA HQ receives manifests on an ongoing basis from CBP, but because of a lack of resources does not enter them 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 from Mexico to United States

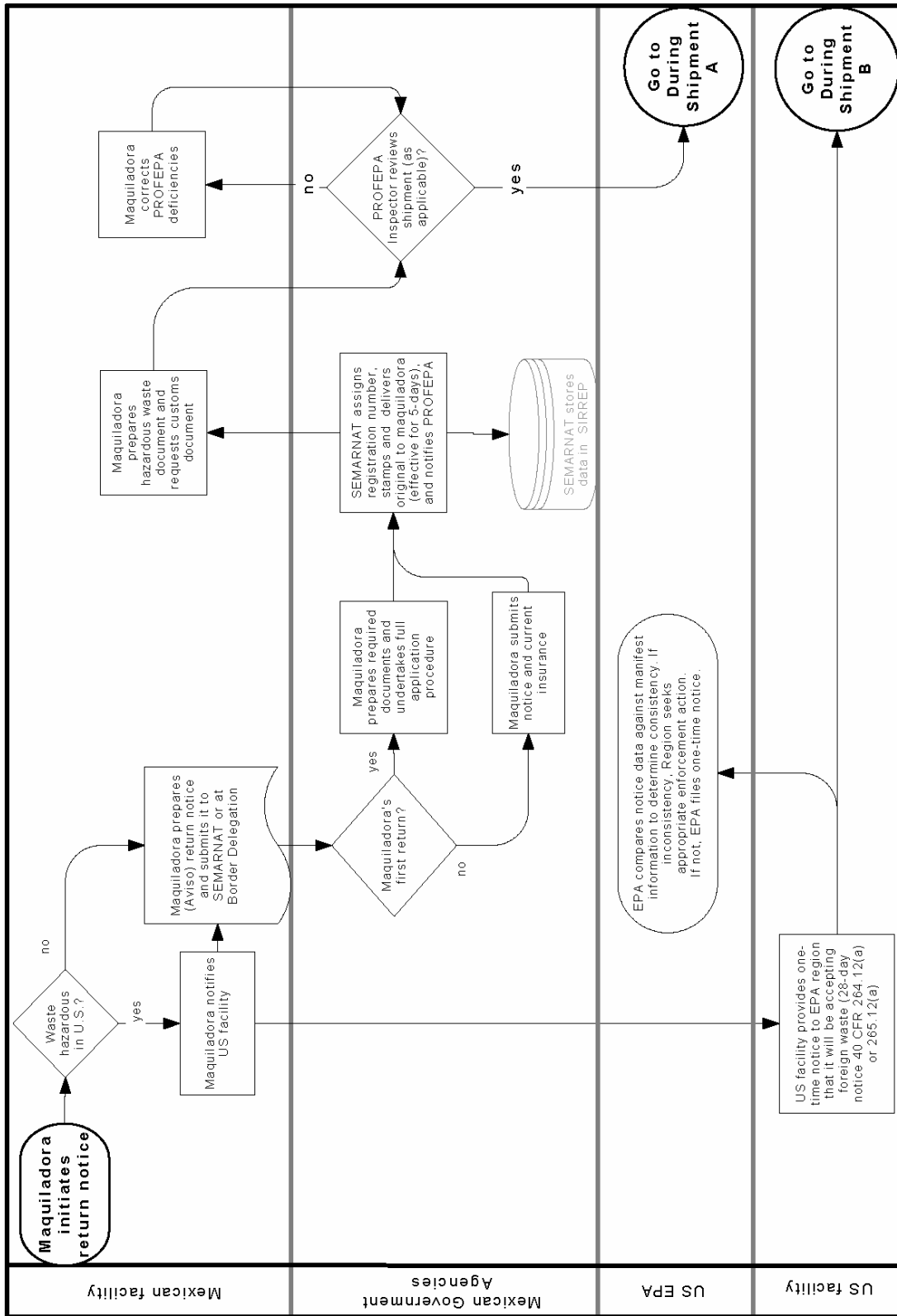
Shipping hazardous waste from Mexico to the United States is the same from the US perspective whether it is a “return” from a maquiladora or from another Mexican generator. The Mexican government, as noted, does not consider returns from maquiladoras as hazardous waste exports and tracks those shipments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

BEFORE LEAVING US MAQUILADORA FACILITY

To start the process, the Mexican maquiladora determines whether the 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 facility to receive its hazardous waste before preparing an aviso de retorno (return notice application). The first time a maquiladora applies for an aviso de retorno, it must submit (as a one-time requirement) an emergency response plan, a proof of domicile of the company, and a proof of maquiladora authorization. For all aviso de retornos, the maquiladora must include a map of the shipment route, proof that the Mexican carrier company is authorized and insured to ship hazardous waste, and a copy of the customs documents (pedimentos). Semarnat reviews the aviso and approves or objects to it on the basis of the information provided. Semarnat enters the data from the aviso de retorno into Sirrep.

The first time a US receiving facility intends to receive waste from a foreign source (a one-time requirement), it must notify the applicable US EPA regional office. The US importer identifies itself and signs in place of the generator on the US hazardous waste manifest and identifies the name and address of the maquiladora or broker (see Figure 3-4).

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



ON-MAQUILADORA REQUIREMENTS BEFORE SHIPMENT

If the hazardous waste shipment comes from a non-maquiladora company, Mexico treats the shipment as an export of a hazardous waste. If the material is a hazardous waste in the United States, the company arranges with a US facility to receive its hazardous waste before preparing an application to export. The non-maquiladora generator notifies Semarnat of its intent to export by submitting an application for export, which includes the following information:

- ◆ Hazardous wastes or materials import or export manifest
- ◆ Proof of domicile of the exporting company
- ◆ Locator diagram of the company where waste is stored, indicating streets, lot boundaries, and location on premises
- ◆ Diagram of the route to be followed from loading point to customs exit point (land or maritime), indicating the principal localities through which the shipment will pass
- ◆ Copy of the carrier civil liability policy for damages to third parties and the environment during shipping (where the company has a similar policy, it may be taken as valid by the Semarnat for the purposes of this obligation)
- ◆ Emergency preparedness plan for spills during loading, transit, unloading, and incident of any type
- ◆ OECD export notification form or Basel Convention form provided by Semarnat
- ◆ Letter of acceptance of waste by US importing company
- ◆ Bond to guarantee compliance with the authorization
- ◆ Payment of fees for filing, review of application, and, as applicable, authorization of hazardous waste exporting.

For subsequent applications, the Mexican exporter is required to submit the following materials if the data concerning the exports is unchanged:

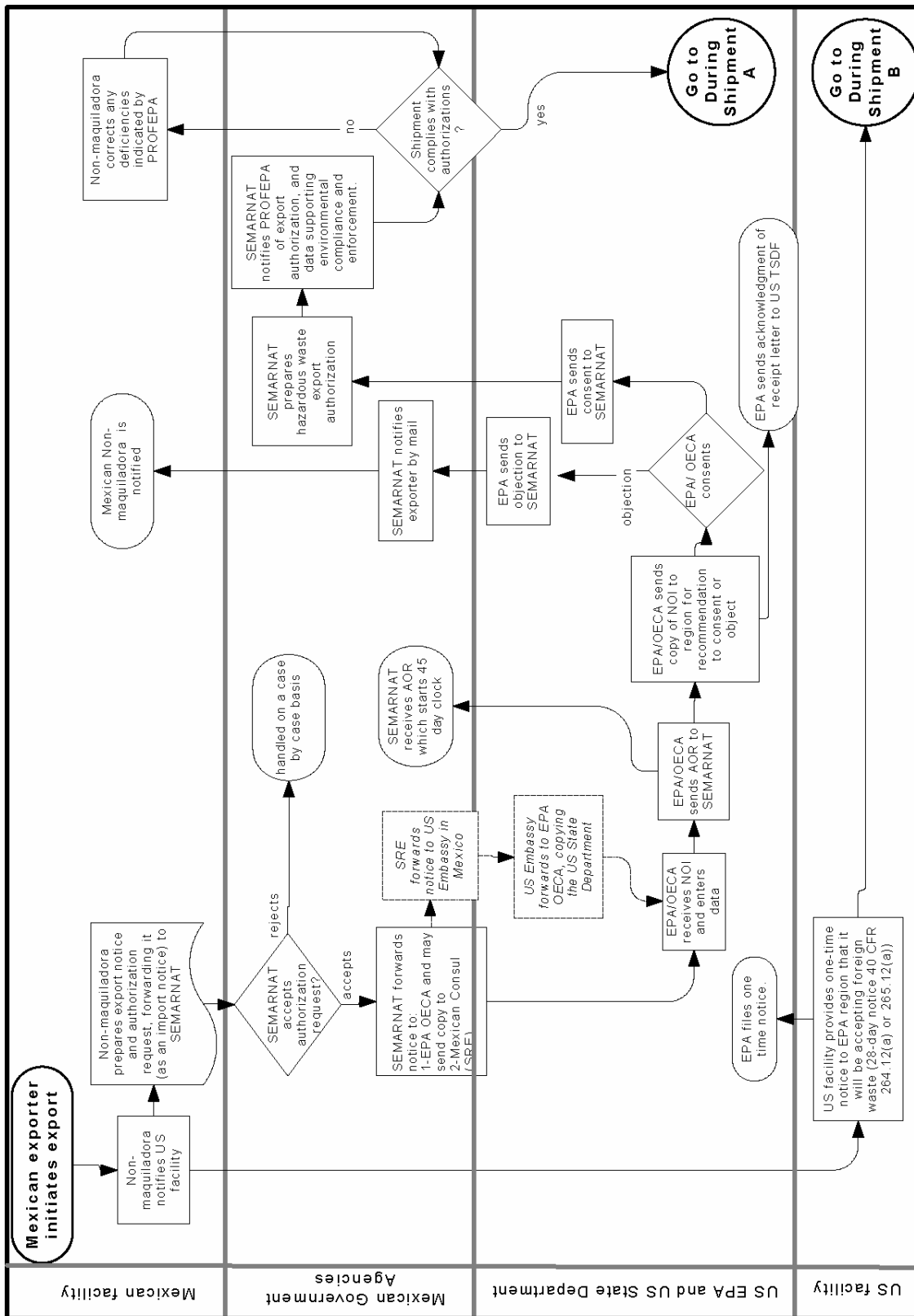
- ◆ Hazardous wastes or materials import or export manifest
- ◆ Copy of valid bond
- ◆ Payment of fees for filing, review of application, and, as applicable, authorization of hazardous waste exporting.

Semarnat reviews the information with the application to export hazardous waste and approves or objects to it on the basis of the information provided. Semarnat enters the data from the aviso de retorno into Sirrep.

Once Semarnat receives and approves of this export application, it submits an NOI to US EPA. US EPA then provides an AOR, which takes the form of signing the acknowledgement block in the notification, by fax or mail to Semarnat. The annual volume is approximately 20–35 notices per year.

The receipt of the AOR starts the 45-day clock. The US EPA then reviews the NOI at its Headquarters and 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. Upon receipt of US EPA's consent or letter indicating it is non-hazardous in the United States, Semarnat provides the non-maquiladora generator with an export ecological guide. See Figure 3-5 for a schematic representation of this process.

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



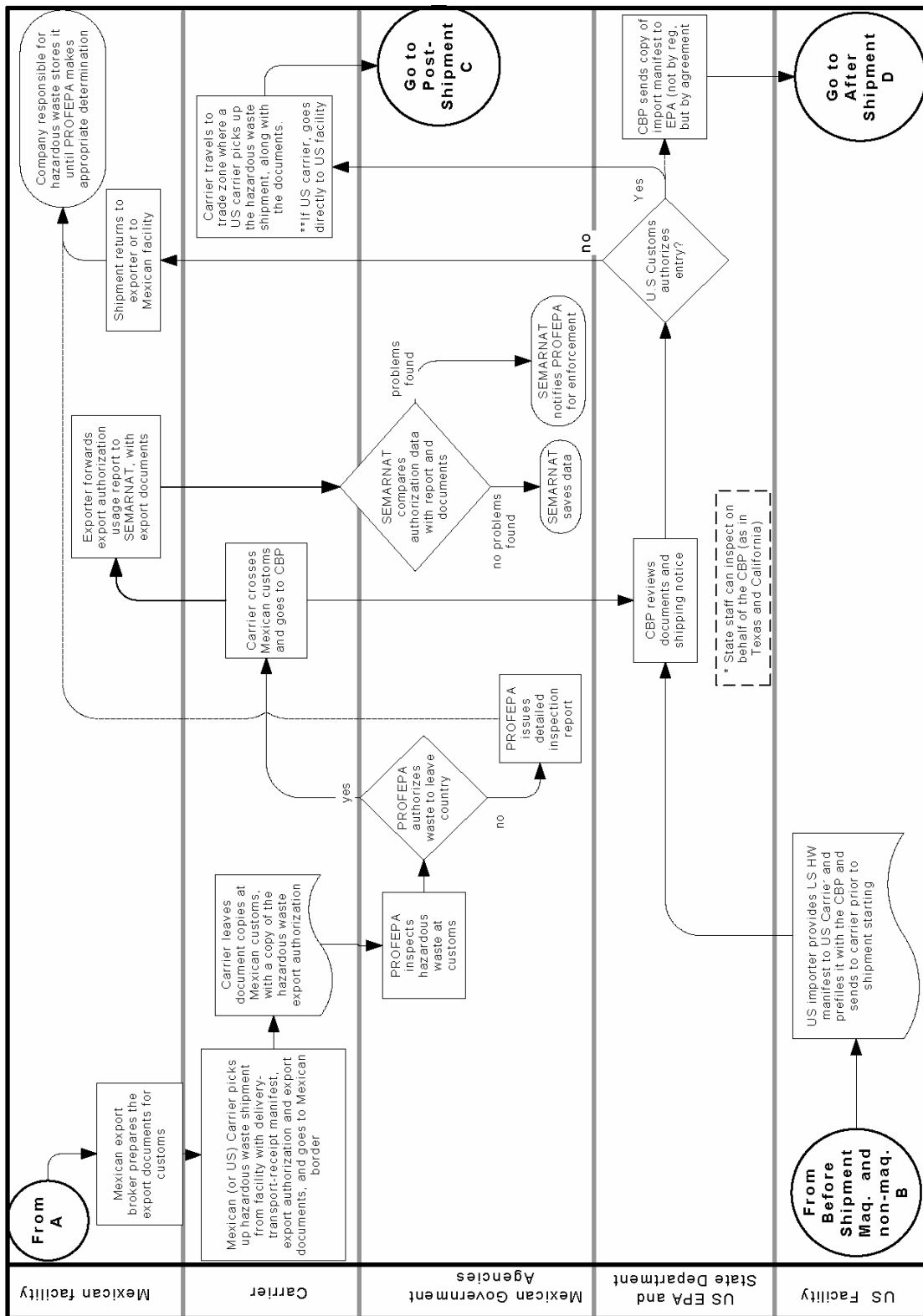
DURING SHIPMENT ACROSS BORDERS

Once Semarnat provides a non-maquiladora with a hazardous waste export authorization, the generator or export broker prepares an export application for Mexican customs and gives it to the carrier to present at the border. Mexican customs reviews the application, verifies the tariff section, checks whether 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.

Customs port authorities may require US importers to provide a copy of the US hazardous waste manifest at least 24 hours before the hazardous waste shipment arrives at the border. US port authorities that request pre-filed paperwork from the US importer review the signed shipping documents and tariff code and clear it through the border. US port authorities have different procedures for inspecting hazardous waste shipments. In addition, some states provide border control support to the CBP checkpoint staff. Such is the case in Texas and California, which provide environmental staff to the border ports for review of hazardous waste shipments. Arizona has an arrangement to provide environmental inspections on request by CBP.

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 the border zone for the US carrier. All shipping manifests are signed and transferred. A 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 ships the waste to an intermediary collection facility for a subsequent transporter. In the latter case, the second transporter also signs the manifest and takes the waste to the receiving facility. See Figure 3-6.

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 receiving facility reports, to the entity listed as the “generator” on the US manifest, which may be an import broker or the maquiladora, that it has received the hazardous waste. The maquiladora has 30 days to notify Semarnat if no report is received. However, when a US maquiladora returns a hazardous waste to the United States under terms of Annex III of the La Paz Agreement, a critical reporting aspect is the return of the manifest to the US importer. Public comments on this report note that some US maquiladora generators are not aware of the requirement to receive a copy of the manifest after their waste has arrived at the US TSDF, or they are uncertain that the signature on the manifest, which goes to the importer, is from the TSDF.¹⁸ Electronic tracking could clarify this uncertainty.

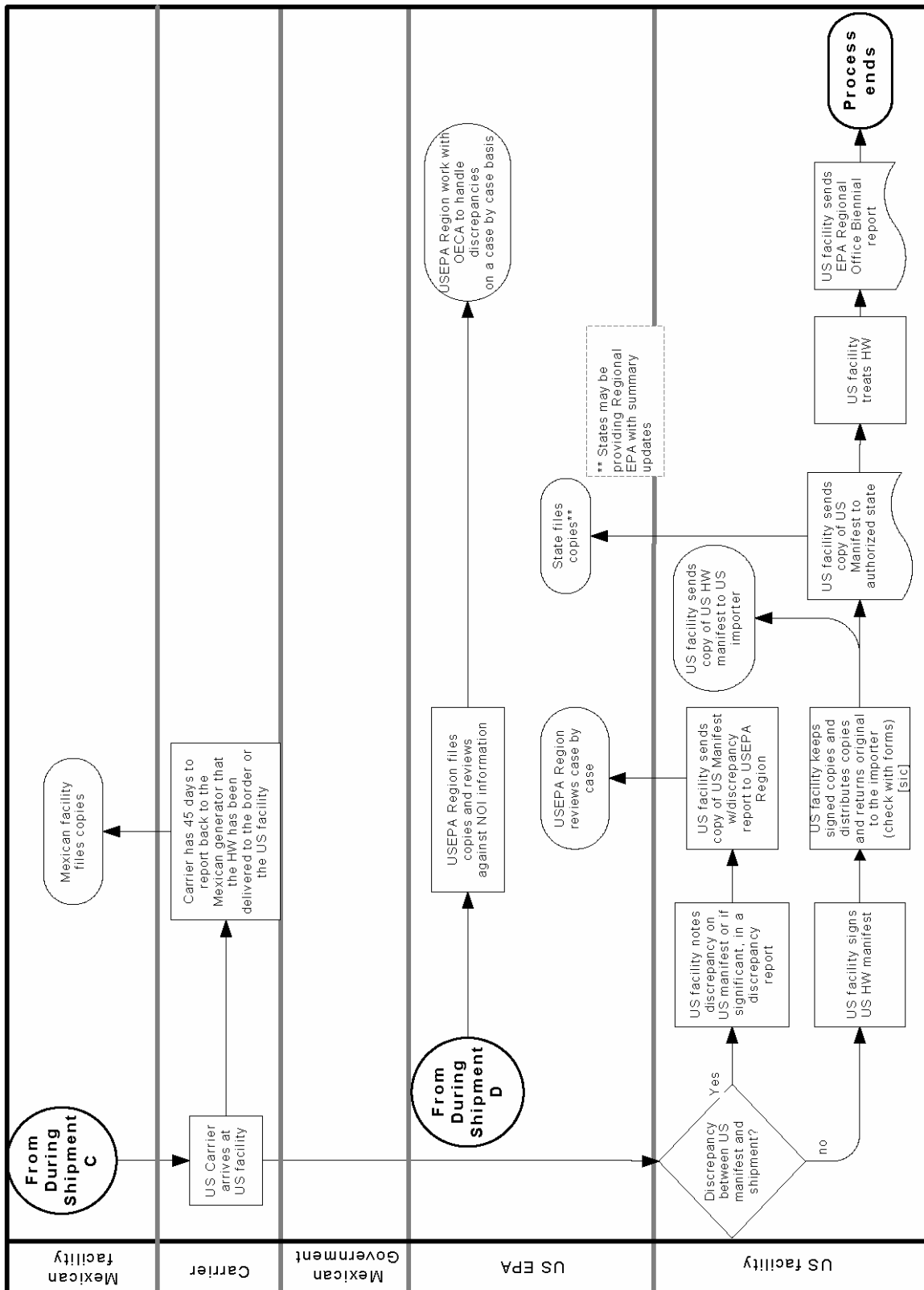
Some customs ports regularly send copies of the pre-filed manifests to OECA. US EPA requires the US receiving facilities to biennially report hazardous waste quantities treated, recycled, or disposed, specifying the amount from foreign countries. See Figure 3-7.

Government-to-Government Reporting

Currently, the US and Mexican governments share data only on an ad hoc basis. However, the draft Border 2012 document has a goal of linking Mexican and US transboundary data tracking systems. Also, workshop participants expressed an interest in sharing data about the transboundary shipments of lead-acid batteries. Lead-acid batteries are not currently tracked as a hazardous waste in the United States, but are hazardous materials and are often shipped to Mexico for recycling

¹⁸ Stephen M. Niemeyer Acosta, P.E., Policy Analyst, Border Affairs, Texas Natural Resource Conservation Commission, letter to the CEC, April 5, 2004.

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



CANADA AND UNITED STATES

This section contains import and export process flow-charts in three sections: before shipment, during shipment, and after shipment. Each section details the typical organizations involved in the process and the types of reports required.

Shipping from Canada to United States

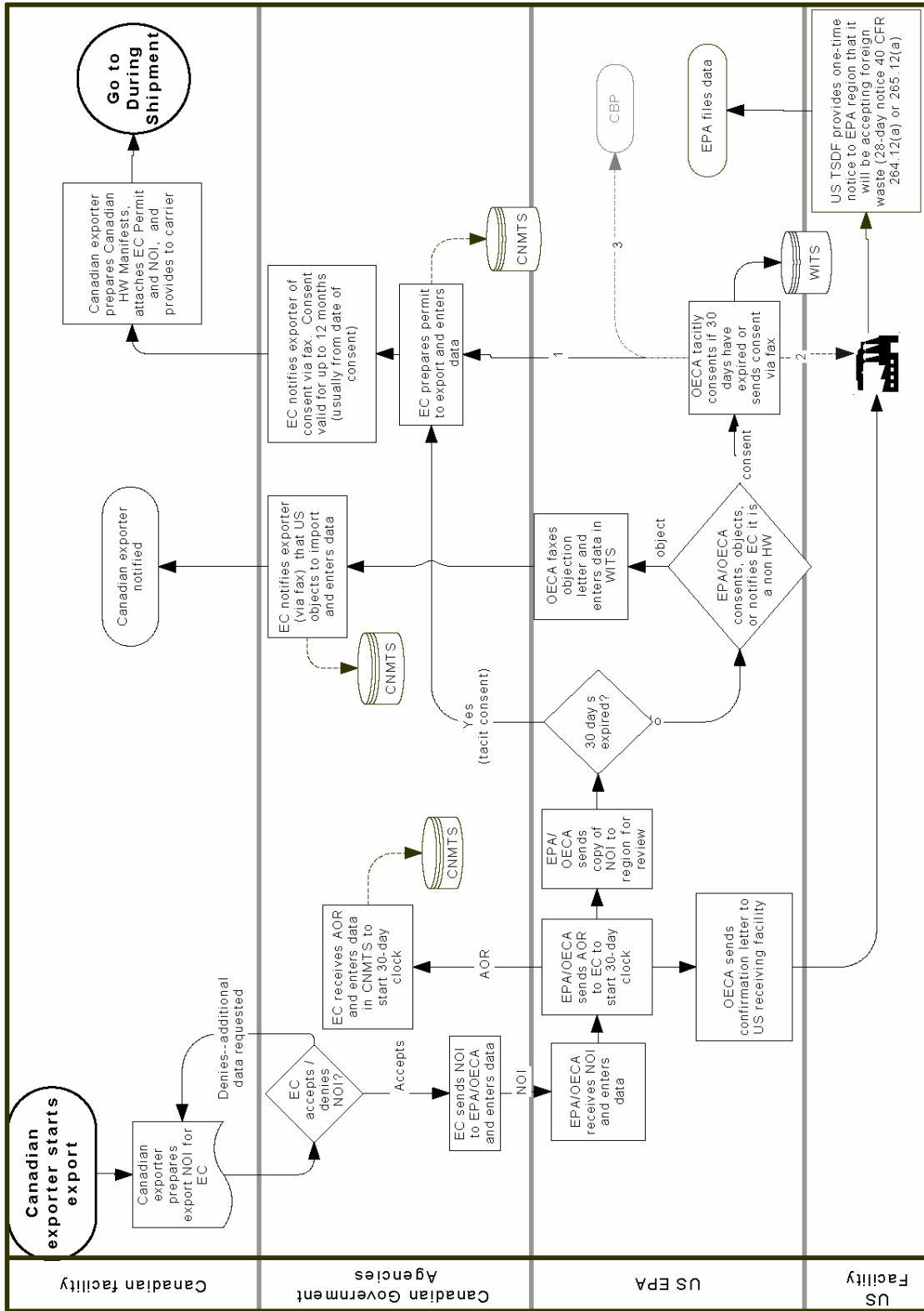
BEFORE LEAVING GENERATING FACILITY

Exporting hazardous waste to the United States from Canada begins when the Canadian exporter prepares the Notice of Intent (NOI) to export and forwards it to Environment Canada (EC). (Figure 3-8 presents the current practices before shipping the hazardous waste.) EC determines whether more information is necessary to complete the request. If EC accepts the NOI to export, it enters the data from the NOI into the Canadian Notification and Manifest Tracking System (CNMTS) and sends a copy of the NOI to export hazardous waste to US EPA's OECA.

OECA enters the data from the NOI to export into its Waste International Tracking System (WITS) and sends EC an acknowledgment of receipt (AOR) to confirm that the NOI was received. EC inputs the data from the AOR into CMNTS and records the date, initiating the 30-day response. The AOR identifies the beginning date of the 30-day response. During the 30 days, OECA sends 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 United States. OECA also forwards a copy of the NOI to the US EPA regional office (region) with jurisdiction over the receiving facility and requests its recommendation as to objection or consent to the Canadian export. The region also has read-only access to the NOI information through WITSNET. State data and/or participation assist the region in reaching its determination to recommend consent or objection to the import.

Once the region has responded, OECA makes a final determination and either faxes an objection to EC, sends a consent letter to EC if consent is before the end of the thirty-day period, or advises EC by letter that the waste is not considered hazardous in the United States. Otherwise, after thirty days, consent is tacit. OECA enters the determination and related information into WITS. EC notifies the Canadian exporter via fax of an objection. For consent, EC enters the information in CNMTS, and the system generates the permit necessary for export.

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

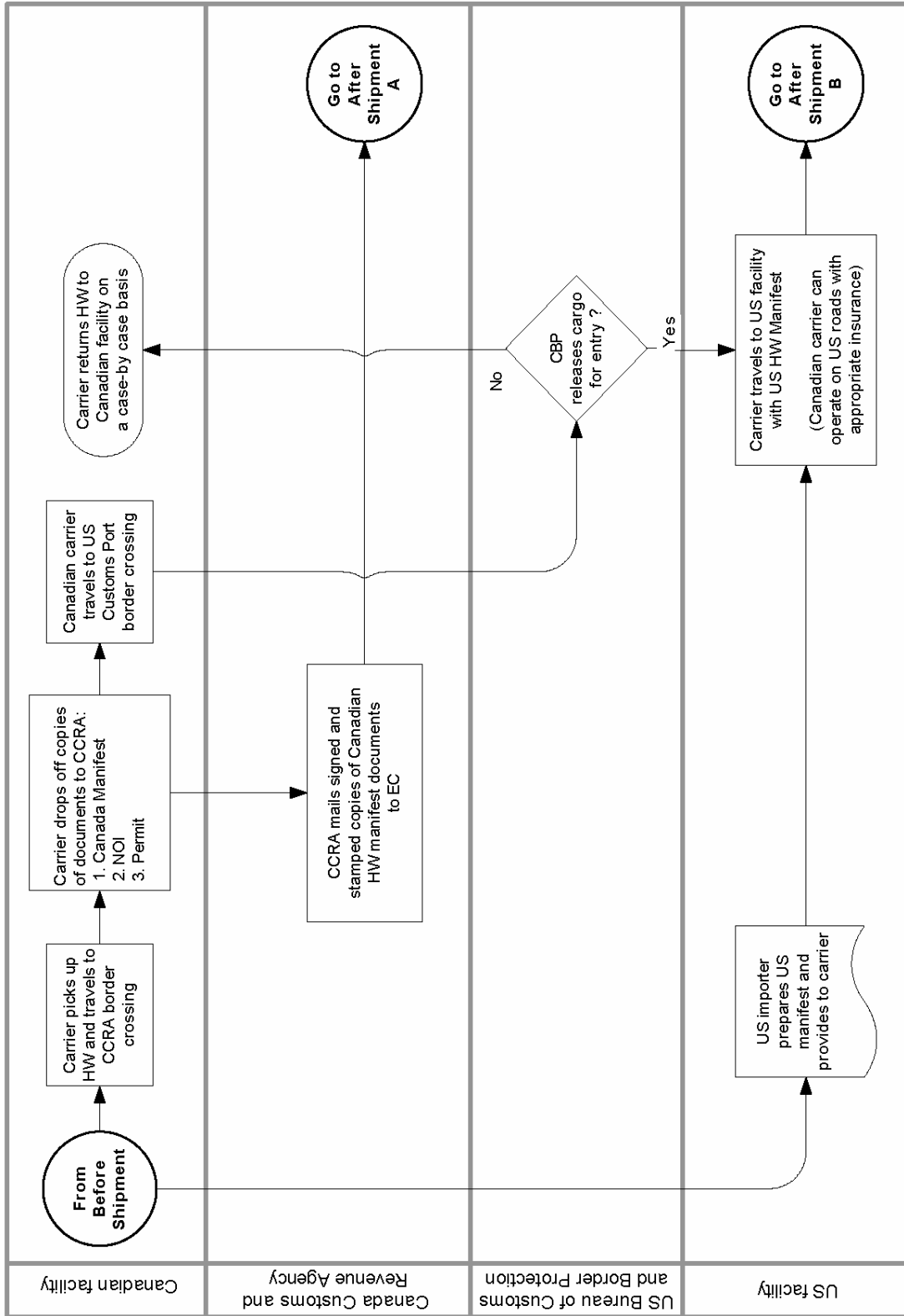


DURING SHIPMENT ACROSS BORDERS

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, which is given to the carrier either before or during entry into the United States. However, before the carrier enters the United States, it gives 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 mails the documents to EC for entering into CNMETS.

The carrier arrives at the Bureau of Customs and Border Protection, which denies or allows entry of the shipment. If denied, the carrier returns the shipment to the Canadian exporter; if allowed, the carrier delivers 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 phase (see Figure 3-10) begins when the carrier arrives at the receiving facility. The receiving facility either accepts or declines the shipment. If the shipment is accepted, it undergoes verification to determine whether the type and weight of hazardous waste corresponds to that documented on the manifest.

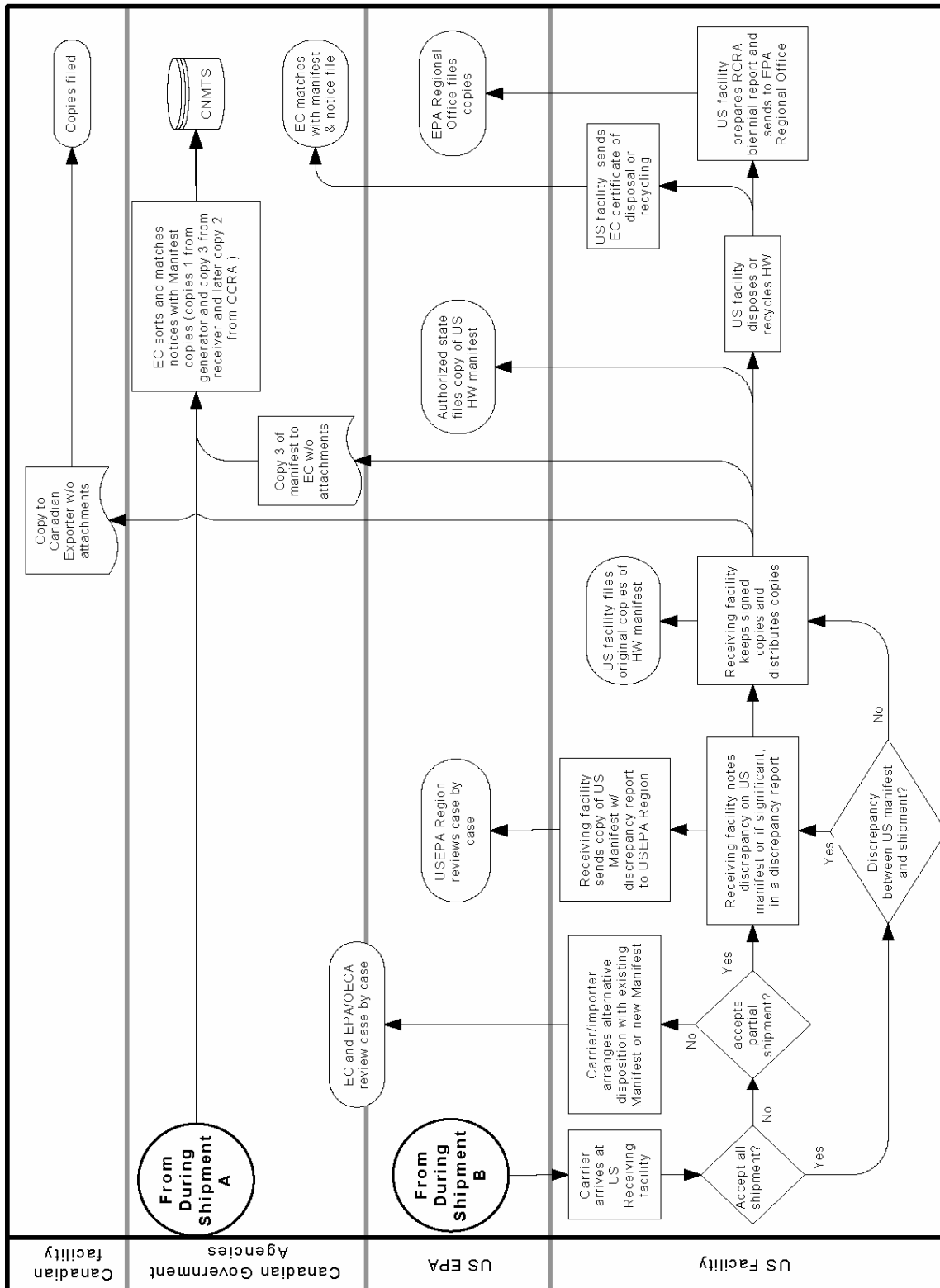
If the receiving facility identifies a discrepancy of, for example, greater than 10 percent between the US manifest and the total quantity of bulk hazardous waste being delivered, the receiving facility must submit a “significant discrepancy” report. Under this scenario, the receiving facility will send a copy of the manifest with a discrepancy report to the EPA region. The region often handles this scenario case by case. If there is no discrepancy, the carrier leaves the shipment at the receiving facility. The receiving facility signs and distributes copies of the US and Canadian manifests as follows:

- ◆ It retains one copy of both manifests.
- ◆ The carrier receives one copy of both manifests.
- ◆ The Canadian exporter receives a copy of the Canadian manifest.
- ◆ In some cases, the state receives a copy of the US manifest if it regulates the hazardous waste that was shipped.

The receiving facility treats the waste and sends a report on its recycling or disposal to the US EPA Office of Solid Waste as part of its RCRA biennial reporting, if the waste is hazardous. The receiving facility sends a certificate of recycling or disposal to the Canadian exporter no more than 30 days after the hazardous waste is treated, and the exporter reports to EC to close out the report in CNMETS.

If the receiving facility declines the hazardous waste shipment and an alternate disposal site is found, the exporter notifies EC, and the carrier uses the existing manifest or a new manifest to transport the waste to the alternate site. EC and OECA handle these situations case by case.

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



Shipping from United States to Canada

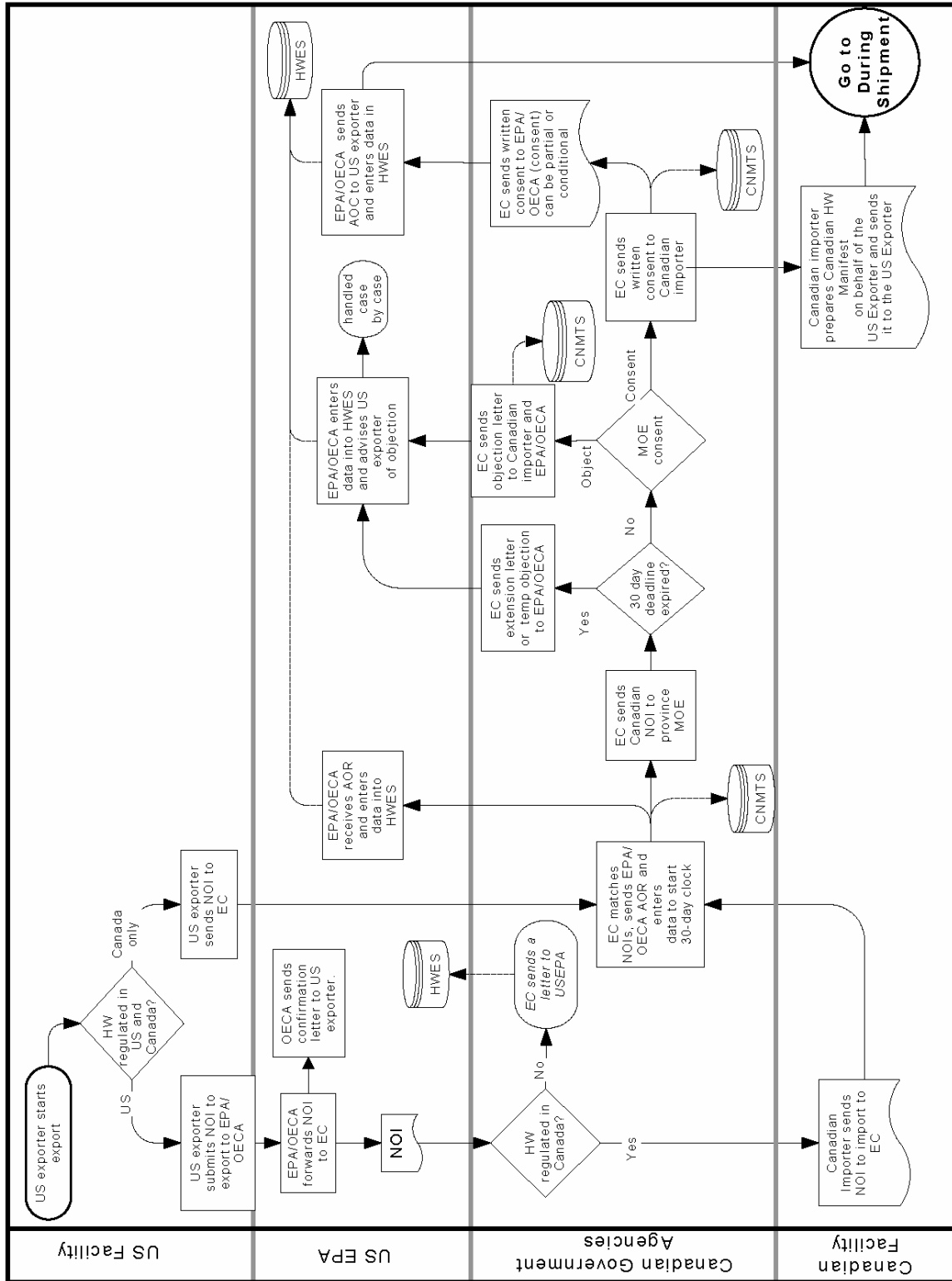
BEFORE LEAVING GENERATING FACILITY

Exporting waste from the United States to Canada begins when the US exporter determines whether either of the countries regulates the waste as hazardous. It notifies the competent authority in the federal government of the exporting country of its intent to export wastes, unless the US does not regulate such wastes, in which case the exporter notifies EC directly. 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 an NOI to export hazardous waste to OECA sixty days prior to export. The notification must be in writing and signed by the primary exporter, and must include information such as a description of the waste, estimates of the quantity and frequency of waste being shipped, and name of the foreign destination facility (40 CFR 262.53). OECA enters the data from the NOI into its Hazardous Waste Export System (HWES) and forwards the NOI to export to EC. EC then determines whether the hazardous waste is regulated in Canada. If so, the Canadian importer sends the NOI to import to EC and EC matches it with the US NOI to export. EC sends an AOR that the NOI was received from OECA. This AOR identifies the beginning date of the 30-day response. During the 30 days, EC forwards the NOI to the provincial Ministry of the Environment for consent or objection. The provincial Ministry of the Environment determines whether the importing facility is licensed and sends its determination to EC. EC has no authority to object to the decision made by the provincial Ministry of the Environment.

If the provincial Ministry of the Environment objects, EC sends an objection letter to OECA. If the provincial Ministry of the Environment consents, EC sends a consent letter to OECA, which can be partial or conditional. EC may decide to send a temporary objection letter to OECA while it awaits receipt of the Canadian importer's NOI to import. Regardless, EC enters the data into CNMTS. OECA enters the response data into HWES and provides the US exporter with an acknowledgment 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



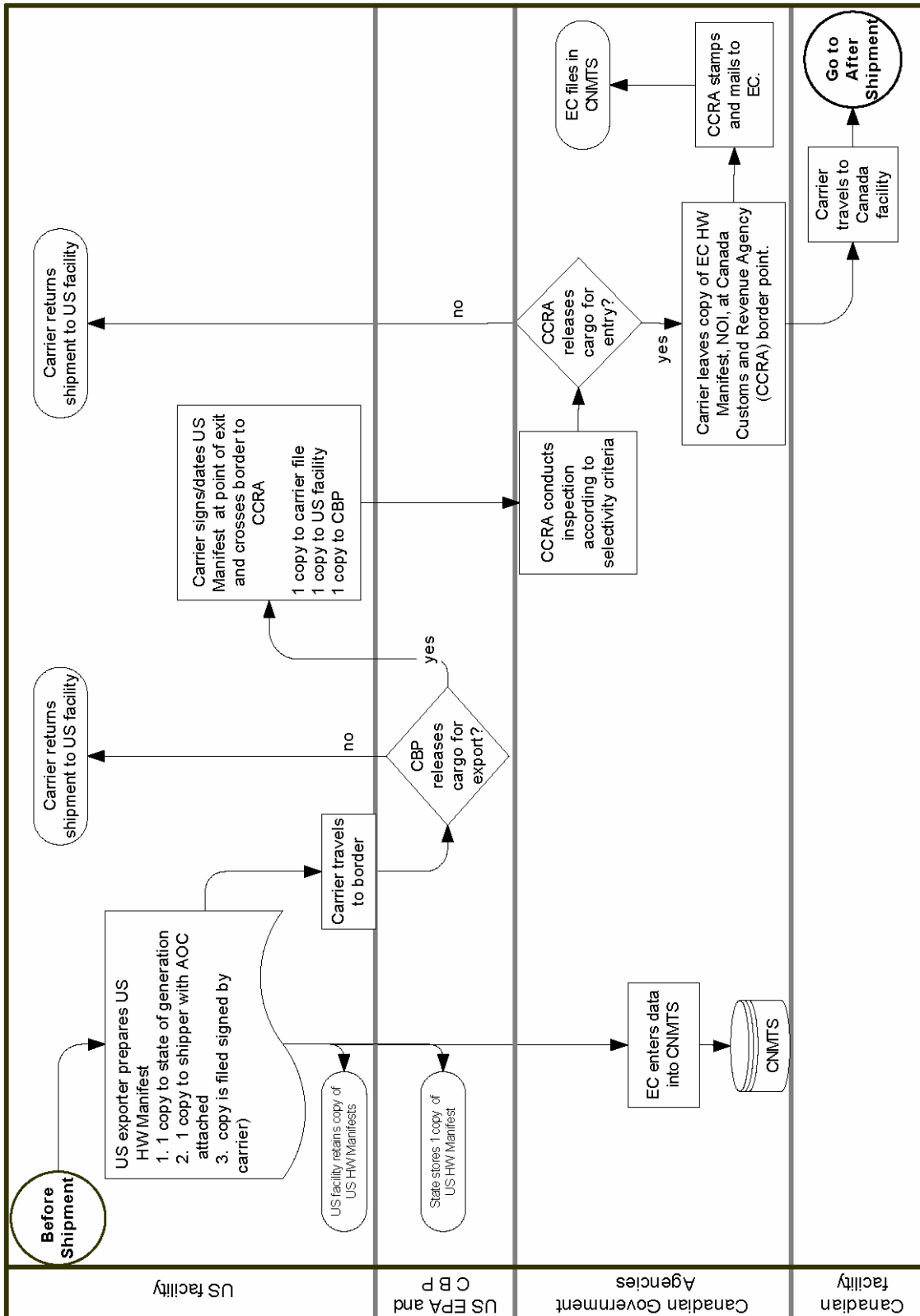
DURING SHIPMENT ACROSS BORDERS

Figure 3-12 shows the second phase of exporting hazardous waste from the United States. It captures the current practices that occur during the shipment process. Prior to shipment, the US exporter receives the AOC from OECA and prepares the US hazardous waste manifest. When exporting hazardous waste, the primary exporter must comply with special manifesting requirements found in 40 CFR 262.54. It must attach a copy of the AOC to the manifest when initiating the shipment of waste, except when the waste is shipped by rail. When shipping waste by rail, the US exporter may attach the AOC to the shipping paper rather than the manifest. An additional copy of the manifest must be given to the transporter, who delivers it to the US CBP official at the point where the waste exits the United States. In addition, the primary exporter must require the consignee to confirm in writing the delivery of the waste to the foreign destination facility.

The Canadian importer prepares the EC hazardous waste manifest. The carrier arrives at the CBP border checkpoint and leaves a copy of the US hazardous waste manifest in a CBP departure drop box. CBP forwards a copy of this manifest to OECA with appropriate signatures.

The carrier crosses the border and arrives at the CCRA. The carrier gives the CCRA a copy of the Canadian hazardous waste manifest, the consent permit, and the NOI. CCRA inspects and either accepts or denies 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 it 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

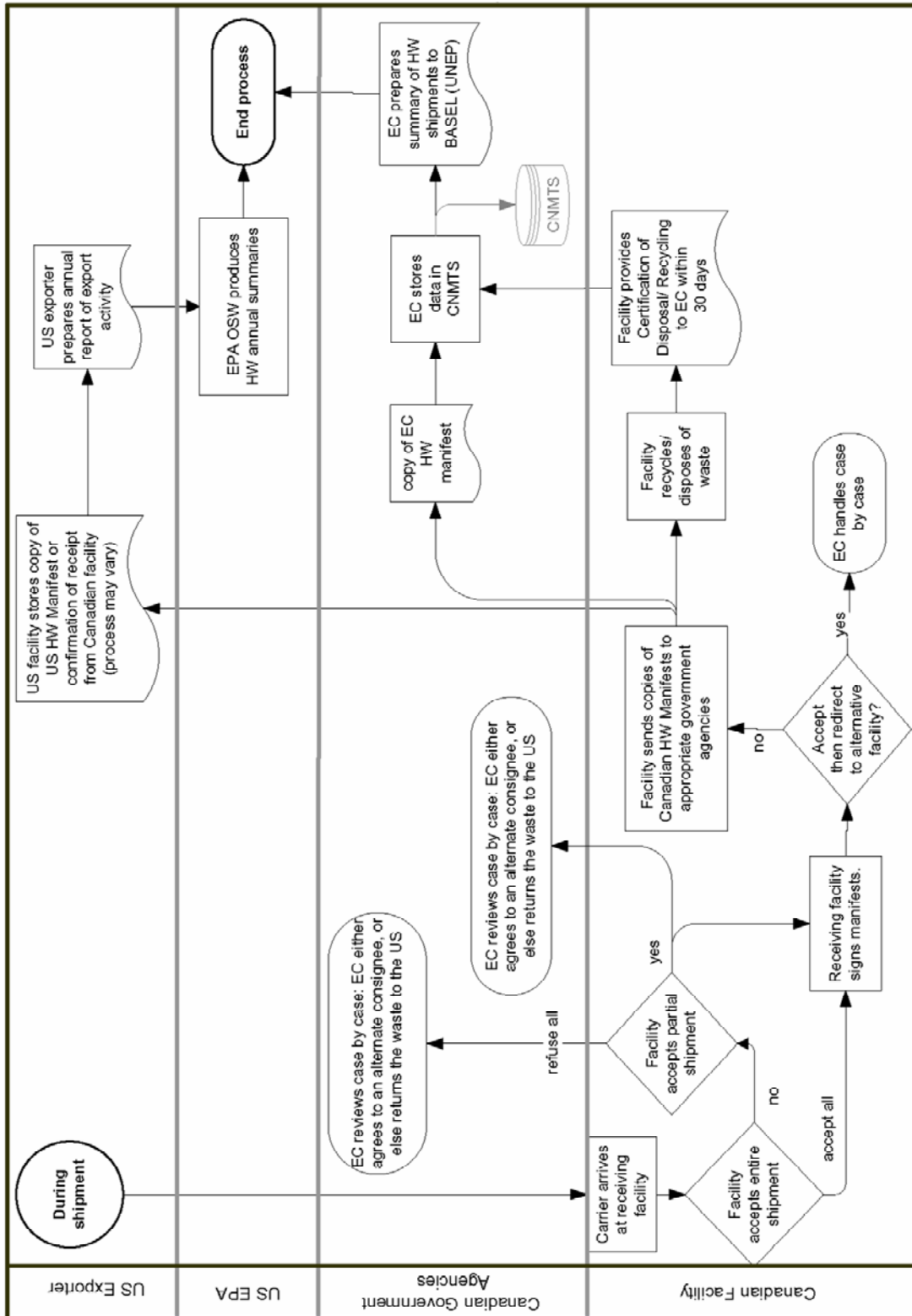
The US carrier arrives at the Canadian receiving facility. The facility either accepts or declines the shipment. Figure 3-13 presents the final phase of the process to export wastes from the United States to Canada. After accepting the shipment, the Canadian facility signs the Canadian manifest, gives a copy to the carrier, and sends the appropriate copy to EC. The waste management facility also sends a confirmation of receipt to the US exporter. The Canadian receiving facility then treats the hazardous waste and sends a certificate of disposal to EC. EC enters the data into CNMTS 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 notifies the US exporter, which looks for alternative Canadian sites. If no alternative site can be found, the carrier returns 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 sends an exception report to OECA. The US exporters must file an exception report if either of the following occurs:

- ◆ The PE does not receive a copy of the manifest signed and dated by the transporter at the point of departure from the United States within 45 days of the initial acceptance of the shipment by the transporter.
- ◆ The PE does not receive written confirmation of the receipt of the shipment by the consignee within 90 days of the initial acceptance of the shipment by the transporter.

After the shipment reaches its final destination, the primary US exporter may be subject to various reporting requirements, depending on its yearly export activities. These reports include exception reports (40 CFR 262.55), annual reports (40 CFR 262.56). By March 1 of each year, the primary US exporter has to file an annual report with US EPA summarizing the types, quantities, frequency, and ultimate destination of all wastes exported during the previous year. US EPA has not developed a standard reporting form for the annual report. Importers that are also TSDFs (as defined under RCRA) are required to fill out the biennial report. US EPA regulations require that importers that meet the biennial report applicability criteria (that is, are TSDFs) include import information on their report. However, US EPA changed the requirement for reporting export data on the biennial report because the information, unlike the import data, is contained on the exporter's annual report. Primary US exporters must keep copies of each notification of intent to export, AOC, confirmation of delivery from the consignee, annual reports, and biennial reports for at least three years as defined in 40 CFR 262.57.

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



Government-to-Government Reporting

The US and Canadian government agencies currently share little information, mostly on an *ad hoc* basis. However, 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 on the transboundary shipments of exempt hazardous materials.

MEXICO AND CANADA

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

However, Canadian maquiladoras operating in Mexico must return the hazardous wastes generated to Canada. Although Mexico considers these shipments as returns and not as exports of hazardous wastes, it is covered under the Basel Convention since both Canada and Mexico are signatories.

SUMMARY OF CHALLENGES

The 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 comparability of reporting varies 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 checkpoints since the environmental agencies do not provide a notice of denied shipments to the customs agencies. Also, the Customs Agencies typically inspect a small percentage of shipments to ensure that they have all the appropriate documentation.
- ◆ *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 data sharing can provide improved border controls and regulatory effectiveness.

Public Concerns about the Environmentally Sound Management of Transboundary Hazardous Waste Shipments

During the public review process for this report, reviewers have raised concerns about the lack of environmentally sound management of transboundary shipments of hazardous wastes due to the following limitations:

- ◆ Current government-to-government data sharing practices limit the ability of any one government agency to track and report to the public the 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 public in each country has limited access to public reports about the amounts and types of transboundary shipments of hazardous wastes.
- ◆ At the time of this report, none of the three NAFTA countries' domestic regulations require a public review period as part of the government's decision process for consenting or objecting to accept transboundary hazardous waste shipments.

Also, each country provided only limited public reports of the data related to the transboundary shipments of hazardous wastes. For example, only Canada, as of 2003, was providing an annual summary of amounts and types of transboundary hazardous waste shipments. The US and Mexico do provide public reports containing summary information regarding transboundary hazardous waste shipments, but only as a section in other public environmental reports and do not publish specific annual reports of import and export activities.

Administrative Burden to the 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 Parties 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.

ADMINISTRATIVE BURDEN TO GOVERNMENT AGENCIES

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

In addition, standard procedures for intergovernmental and government-to-government reporting are lacking. For example, the process that the United States uses to notify the Canadian government of a hazardous waste export differs from the one used to notify the Mexican government.

Chapter 4

Opportunities for Improving Tracking and Coordination Efforts

During the CEC workshop meetings participants identified ideas for improving tracking of transboundary hazardous waste shipments. The following sections provide a summary of the information generated at these workgroup meetings. This information reflects the individual views of the workshop members who discussed and developed these ideas. The first section of this Chapter summarizes recommended opportunities to utilize electronic reporting to improve each country's ability to track transboundary hazardous waste shipments. The second section is an outline of a recommended long-term phased approach to achieving a harmonized data exchange process that automates (to the extent practical) the reporting process for tracking transboundary hazardous waste shipments.

WORKSHOP IDEAS

The workshop participants identified the following opportunities to utilize electronic reporting to improve each country's ability to track transboundary hazardous waste shipments either electronically or through the use of improved practices and better coordination between governmental agencies and countries.

- ◆ To improve border security, the Canadian, Mexican, and the US governments can work together to
 - designate specific hours of operation and ports of entry for hazardous waste shipments,
 - identify specific capacity building (e.g., training) needs for Mexican personnel with responsibilities for tracking transboundary hazardous waste shipments, and
 - develop 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 voluntary procedures for TSDFs to provide a certificate of destruction or recycle to the generator, even if hazardous waste is sent to a foreign facility,¹⁹
- establish common procedures to track the transboundary shipments of exempt hazardous wastes if regulated as hazardous in one of the NAFTA countries, and
- publish an annual public report summarizing the amounts and types of transboundary hazardous waste movements.
- ◆ To reduce the administrative burden on the regulated community and the government agencies responsible for regulating and enforcing transboundary shipments, the Canadian, Mexican, and US governments can do the following:
 - Establish common procedures for government-to-government reporting of transboundary hazardous waste shipments.
 - Develop an Extensible Markup Language (XML) format for the data required on all three countries' HW manifests and government-to-government notices. An electronic format for a North American transboundary waste manifest and notice form would ease the burden of creating separate manifests to accompany waste shipments while it is traveling in each country's territory.
 - Conduct a pilot project to electronically exchange government-to-government reporting for obtaining PIC.

ELECTRONIC EXCHANGE OF INFORMATION

Through the workgroup sessions, participants articulated a vision that, at some point in the future, transboundary shipments of hazardous waste within North America could be based on a timely electronic exchange of information. Figure 4-1 shows a high-level schematic of the long-term concept for electronic data sharing for tracking of transboundary shipments of hazardous waste in North America. This vision, although long-term, provides a framework around which the NAFTA parties can coordinate procedures and data exchange standards. It builds upon each of the countries' domestic initiatives and focuses on developing standard procedures for information exchange among the countries, as opposed to the creating a single tri-national hazardous waste tracking system.

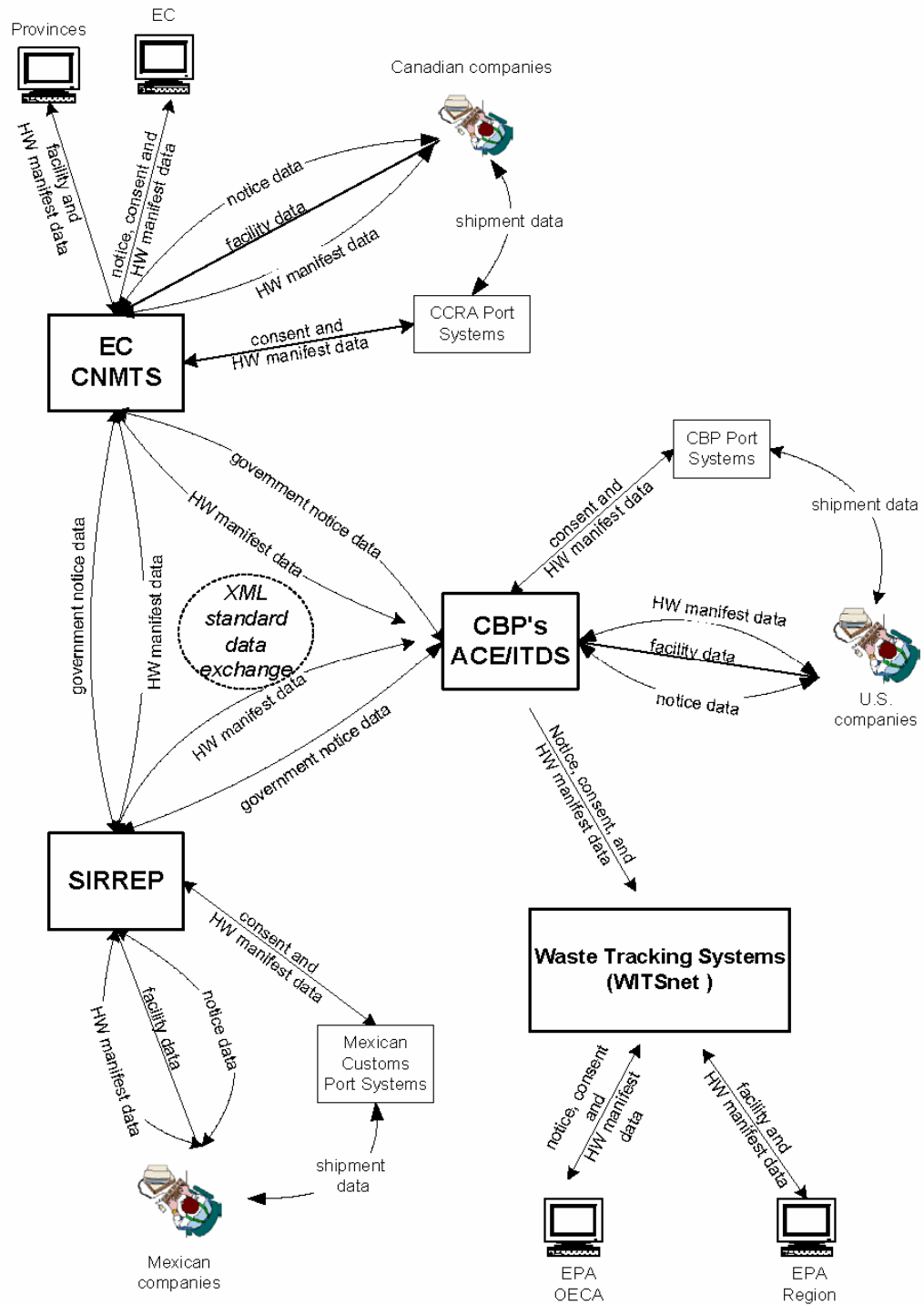
To achieve this vision of electronic exchange of information, the participants proposed a phased approach where each phase builds upon the results of the previous one, while allowing member countries time to coordinate their efforts to create a

¹⁹ This procedure could supplement existing domestic requirements and facilitate the origin-to-destination tracking of hazardous waste shipments across North America.

common NAFTA data exchange standard with their domestic system modernization efforts. It consists of the following eight phases:

1. Work with representatives from the NAFTA environmental agencies, customs agencies, private industry, and the public to develop a sound business case by obtaining agreement on selected business practices to streamline and analyze costs and opportunities to use electronic reporting.
2. Work with NAFTA environmental, customs agencies, and private industry to develop an Extensible Markup Language (XML) format for the data required on all three countries' HW manifests and government-to-government notices. Coordinate these data standards with the international data exchange standards being developed by the United Nations Center for Trade Facilitation and Electronic Business (UN CEFAC).
3. Pilot test electronic reporting of government-to-government notices.
4. Expand the pilot test to allow industry to submit applications for hazardous waste imports and exports (business to government notices).
5. Obtain agreement on streamlined business practices for electronic reporting between customs ports and environmental agencies.
6. Develop an Extensible Markup Language (XML) format for the data required on to share 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.

Figure 4-1 - Long-Term Concept for Electronic Data Sharing for Tracking the Transboundary Hazardous Waste Shipments in North America



OTHER DATA HARMONIZATION AND STANDARDIZATION APPROACHES

As briefly described at the public workshop in November 2003, the US Government is developing the International Trade Data System (ITDS), designed to implement a secure, integrated, government-wide system for the electronic collection, use, and dissemination of the international trade and transportation data that US agencies need to perform their missions. This is an example of single window processing, which can manage gaps between government agencies, simplify procedures, improve efficiency, and integrate applications.

International organizations such as the World Customs Organization (WCO), UN/ECE (Economic Commission for Europe), UN/CEFACT (Center for Trade Facilitation and Electronic Business), CEFACT-ITPWG (International Trade Procedures Working Group), ISO (International Standards Organization), and Simplified Trade Procedures (SITPRO) all have recognized the value of sharing data among parties for data reconciliation and processing. The WCO has been a leader in endorsing and creating standardized data elements to identify high-risk goods; the need for advance electronic transmission of data; and establishing cooperative relationships among WCO Members, other government agencies, relevant international bodies, and the private sector.

ITDS relies on the infrastructure and architecture provided by CBP's Automated Commercial Environment (ACE), which will also permit targeting of high-risk cargo, including hazardous wastes, and enhance border security. It will simplify dealings between Customs and the trade community by automating the time-consuming and labor-intensive processes that will help move goods through the ports and on to markets faster, at lower cost.

It is important for the three Parties to explore single-window reporting and processing opportunities for North American data harmonization and standardization consistent with the World Customs Organization and the US ITDS.

Chapter 5

Recommended Next Steps

As next steps to improving the tracking of hazardous waste in North America, the Secretariat recommends that over the next three years the Parties continue to implement Council Resolution 03-08 before determining whether to proceed with a pilot project to track hazardous waste between Canada and the United States as envisioned in the CEC's 2002 Communiqué.

The tracking portions of Council Resolution 03-08 direct the Secretariat to work with the Parties to:

- (3) Continue to examine 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;
- (4) Identify specific capacity building needs in Mexico for both ESM and tracking of hazardous wastes destined for final disposal and hazardous recyclable materials and wastes destined for recovery/recycling operations;
- (5) Hold a public workshop with the CEC Joint Public Advisory Committee on the management and tracking of such hazardous wastes and hazardous recyclable materials and wastes in North America in order to provide an opportunity for participation by the regulated community of the three countries and input from other interested stakeholders; and
- (6) Identify and evaluate additional collaborative opportunities to improve and enhance the ESM and tracking of transboundary movement of hazardous wastes destined for final disposal and hazardous recyclable materials and wastes destined for recovery/recycling operations in North America.

The Secretariat recommends that the Parties working collectively with representatives from the NAFTA environmental and customs agencies, private companies, and citizen groups to

- ◆ identify and promote practices that ensure the environmentally sound management of transboundary hazardous waste shipments using existing systems, technologies, procedures and programs,

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- ◆ coordinate on domestic decisions as information systems and procedures are updated so that in the future transboundary movement information can be readily exchanged among NAFTA countries,
 - ◆ where appropriate, work with the NAFTA environmental and customs agencies to coordinate the development of data standards with those data standards being developed by the United Nations Center for Trade Facilitation and Electronic Business (UN CEFAC), and
 - ◆ identify and implement capacity building efforts with a particular emphasis on addressing the needs of Mexico.
 - ◆ explore single-window reporting and processing opportunities for North American data harmonization and standardization consistent with the World Customs Organization and the US International Trade Data Systems (ITDS).

The Secretariat recommends that after completing this work, the Parties will be in a better position to determine the feasibility of implementing the 2002 Council Communiqué²⁰ to proceed with a pilot project for an electronic notification system and of developing a plan for longer term collaboration within North America to coordinate domestic environmental and customs system development efforts which would allow the electronic sharing of select manifest and notice data.

²⁰ Commission for Environmental Cooperation, “Final Communiqué; Ninth Regular Session of the CEC Council,” June 2002, p. 3.