

Crossing the Border



Opportunities to Improve Sound Management of Transboundary
Hazardous Waste Shipments in North America



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Preface

In recent years, North American countries have made tremendous progress towards strengthening laws and regulations governing the management of hazardous waste and hazardous recyclable materials within their own boundaries and for the transboundary shipment of hazardous waste and hazardous recyclable material. However, the availability, usefulness and comparability of data related to hazardous waste generation and disposal remains a challenge. In addition, greater efforts must be directed towards the sound management and appropriate monitoring of these wastes and materials as they are transported across North American borders.

Crossing the Border addresses these issues. It provides an overview of the national and international regulatory frameworks governing the management of transboundary shipments of hazardous waste and hazardous recyclable materials. It also documents the policies and processes for authorizing such shipments and provides recommendations to further guarantee the sound management of toxic and hazardous waste and materials in transit.

The Secretariat of the Commission for Environmental Cooperation (CEC), through the North American Working Group on Enforcement and Compliance Cooperation (EWG) and the Hazardous Waste Task Force (HWTF), prepared *Crossing the Border* and wishes to acknowledge those people who have contributed to it. Special thanks are due to Robert Heiss, Rick Picardi, Janet Bearden, Deborah Kopsick, Eva Kreisler and William Noggle of the US EPA; Alfonso Flores, José María Lorenzo, Felipe López Olvera of Semarnat; and Yvan Chabot of Environment Canada for their efforts and time devoted to the EWG and HWTF.

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Executive Summary

Every year, North American companies import or export thousands of tons of hazardous wastes and hazardous recyclable materials as a result of production processes across North America. Due to the nature and characteristics of hazardous waste and hazardous recyclable materials, the mismanagement of these substances can pose a threat to human health or the environment. For this reason, Canada, Mexico and the United States share a commitment to guarantee the sound management of these substances for the benefit of the North American population and our shared environment.

The objective of this report is to describe the current procedures and systems used by each of the North American countries for the notification of export and the consent of import of transboundary shipments of hazardous waste and hazardous recyclable materials. The three governments have similar regulatory regimes; in the case of transboundary shipments of hazardous waste, importers or exporters are required to obtain approvals from designated government agencies and to create a written record of the waste's fate from its point of generation to its final destination. This document presents the current framework for these processes and addresses opportunities

for the North American governments to shift to the electronic exchange of information among themselves to make information sharing more accessible and expedient.

The countries employ the concept of prior informed consent (PIC), under which a material regulated as a hazardous waste or hazardous recyclable material in one country may only be exported to another with the importing country's PIC.¹ The PIC concept and the domestic hazardous waste management regimes rely on information-sharing with respect to hazardous waste and hazardous recyclable material shipments. Government agencies use this information to decide whether to allow or deny hazardous waste shipments and to monitor and ensure compliance.

In this regard, effective information exchange is critical to successful enforcement and monitoring, which is the joint responsibility of each country's environmental and customs agencies.

At present, all three countries use a primarily paper-based system to report and share information about hazardous waste and hazardous recyclable materials shipments. This document outlines different opportunities to enhance and facilitate the effective monitoring of shipments of hazardous waste and hazardous recyclable materials.

The Commission for Environmental Cooperation (CEC) 1999 report,² *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. More recently, post-11 September 2001, security concerns have heightened the need to improve management practices regarding the tracking of transboundary shipments of dangerous substances, including hazardous wastes.³

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 North American countries, the CEC established a

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.

2 <http://www.cec.org/files/PDF/ECONOMY/HazW-Ang.pdf>.

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



trilateral Hazardous Waste Task Force (HWTF). The HWTF is composed of senior environmental officials working to improve the environmentally sound management (ESM) and tracking of hazardous waste in North America. The HWTF received instruction from the CEC Council in 2002 and 2003 to proceed with a pilot project to track hazardous waste movement between Canada and the United States by means of an electronic notice system.⁴ The purpose of this activity was to examine issues surrounding the interoperability of tracking systems under consideration in all three countries, and to identify capacity building needs in Mexico.

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

As part of this work, the CEC Secretariat held two workshops to develop an "as-is" workflow model of the current import and export procedures for shipping hazardous waste among the North American countries. The workshops were also an opportunity for participants to identify methods 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.

These workshops resulted in a draft version of *Crossing the Border*. The Secretariat facilitated public and government reviews of the draft and the first version of *Crossing the Border* was completed in 2005. As part of that version, the Secretariat recom-

mended that the Parties (the three North American countries) continue to work with representatives from North American environmental and customs agencies, private companies, and citizen groups for the ensuing three years to:

- Coordinate on domestic decisions as information systems and procedures are updated so that in the future, transboundary movement information can be electronically exchanged among North American countries.
- Identify and promote practices that ensure the environmentally sound management of transboundary hazardous waste shipments using existing systems, technologies, procedures and programs.
- Identify and implement capacity building efforts with a particular emphasis on addressing the needs of Mexico.
- Coordinate the development of data standards on hazardous waste exports and imports with those being developed by the United Nations Center for Trade Facilitation and Electronic Business (UN-CEFACT).
- 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).

In addition, the draft was updated to include modifications made to North American environmental and hazardous waste reporting legislation through 2007. The CEC is aware that some changes in regulations, policies, or processes may have occurred since that time that are not reflected in this report.

Industrial production contributes goods, services and jobs, but it is also a major source of pollution and waste. This pollution and waste can be classified into six categories: toxic chemicals, criteria air contaminants, greenhouse gases, hazardous wastes,⁵ nonhazardous wastes and radioactive wastes.⁶

This document focuses on the movements of hazardous waste and, in the case of Canada and Mexico, hazardous recyclable materials within North America. Industrial pollution and waste are important in the North American context because pollutants travel through the air and water regardless of political boundaries and because waste is shipped across borders for recycling, treatment and disposal.

North America generates a significant amount of hazardous waste. In 2005, the United States generated nearly 34.8 million tons of hazardous waste compared to some 6 million tons in Canada and just over one million tons in Mexico.⁷

The regulatory requirements governing the management of hazardous wastes can influence the waste management decisions of industrial facilities. For example, some regulations may inhibit recycling by facilities because of concerns about higher compliance costs. Jurisdictional differences in regulatory requirements, in addition to differen-

tials in waste management pricing, can also influence decisions about where and how wastes are managed. North American companies ship hundreds of thousands of tons of hazardous wastes and hazardous recyclable materials each year among Canada, Mexico and the United States. The CEC's most recent *Taking Stock* report shows that in 2005, cross border transfers of pollutants (including hazardous waste and hazardous recyclable materials) accounted for 115 million kilograms of Canada's total off-site transfers, while Mexico transferred 43 million kilograms off-site and the US transferred 65 million kilograms across the borders; from these cross border transfers, transfers to Canada accounted 16 million kilograms while transfers to Mexico totaled 37.5 million kilograms.⁸

When wastes or hazardous recyclable materials are sent to other jurisdictions for recycling, treatment or disposal, shipments are frequently transported along roads and railways, often through populated areas, before reaching their destinations.

Apart from their potential effects on humans and the environment, these materials and waste represent inefficiency in industrial production. They impose costs on facilities that must pay for management, regulatory compliance and underutilized material inputs.

The production of waste imposes significant economic and social costs on modern industrial societies. Costs associated with the regulation of waste-generating industries, contaminated site remediation, and post-exposure medical treatment increase as a result of increased hazardous waste production and spillage. The nonmonetary costs include the depletion of nonrenewable resources, consumptive land-use practices and the degradation of ecosystems.

International agreements and national legislation and regulations govern the management and shipment of hazardous waste and recyclable

5 Hazardous wastes are industrial wastestreams that may contain more than a single chemical or substance. They are typically defined by characteristics such as ignitability, reactivity, corrosiveness and toxicity.

6 CEC 2008. *The North American Mosaic: An Overview of Key Environmental Issues*. Commission for Environmental Cooperation, p. 43; available at: http://www.cec.org/files/PDF/Mosaic-2008_en.pdf.

7 Following reforms to Mexican laws governing hazardous waste and environmental standards, such as NOM-052-Semarnat-2005, the production of hazardous waste in Mexico was calculated at 1,099,142.83 tonnes from 29,885 facilities. This may be an undervaluation because five states and 9, 270 facilities from a different category are not included in the figure. In addition, 360,000 tonnes of oil drilling cuttings and 5.7 million tonnes of mining waste are not taken into account.

8 *Taking Stock* reports on the releases and transfers of pollutants from industrial facilities in North America. *Taking Stock 2005* presents data from the three countries and for the second year presents publicly available data from Mexico's PRTR, the *Registro de Emisiones y Transferencia de Contaminantes* (RETC).



Laws regulating the import and export of hazardous waste in North America are jointly enforced by environmental and customs agencies from all three countries.

materials. These legal instruments are aimed at ensuring sound management and avoiding unnecessary risks in their management.

To safeguard against risks to human health or the environment, domestic regulations and international agreements generally require importers or exporters to obtain transport approval from designated government agencies. Although the requirements and reporting procedures differ in each North American country, they are all based on the concept of Prior Informed Consent (PIC).

The PIC concept requires that waste regulated as hazardous in one country may be exported to another country only with the importing country's prior knowledge and 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.

Laws regulating the import and export of hazardous waste in North America are jointly enforced by environmental and customs agencies from all three countries. In Mexico, the relevant enforcement bodies are the Secretariat for the Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*—Semarnat) and the General Customs Administration. US agencies include the US Environmental Protection Agency (EPA) and the US Customs and Border Protection (CBP). Environment Canada (EC) and the Canada Border Services Agency (CBSA) monitor the Canadian context.

Internationally, the Organization for Economic Cooperation and Development (OECD) recognizes that efforts are needed to ensure appropriate monitoring of waste flows and related management practices. Such efforts should extend to an analysis of how management practices have evolved over time, followed by initiatives to improve the completeness, international comparability and timely entry and accessibility of data. The *North American Mosaic*, published in 2008 by the CEC, notes that it is difficult to discern North American trends in hazardous waste generation and management owing to the lack of comparable data.⁹ Various CEC reports have documented the deficiencies in hazardous waste tracking processes and systems with respect to the quality, quantity, and timing of information. 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.

Crossing the Border presents the “playing field” for the transboundary shipments of hazardous waste and materials across North America. It documents the international agreements and national legislation and regulations that govern these activities and illustrates the procedures and schemas regulating the environmentally sound transportation of hazardous substances across North America. It should be noted that in the US this framework is only applicable for Hazardous Wastes, but in Canada and in Mexico, these procedures and schemes are also used in the transboundary movements of Hazardous Recyclable Materials.

⁹ CEC 2008. *The North American Mosaic: An Overview of Key Environmental Issues*, p. 44.

Current Situation of Transboundary Shipments of Hazardous Wastes

A major limitation of the current paper-based reporting process for hazardous waste import/export is that it does not provide optimal support for monitoring compliance or enforcement. 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. In addition, there is a lack of control during the shipping process due to the inability to share real time information on shipments.

Electronic exchange of information provides an opportunity for the North American countries to easily share data so that enforcement officers and customs and border personnel have the data they need to effectively monitor compliance in hazardous waste shipments, both during transit and at borders.

Report Objectives and Methodology

The objective of this report is to describe the current hazardous waste information tracking procedures and systems used by each of the NAFTA countries and to identify potential process improvements.

By producing this document, the CEC intends to support cooperation among the North American countries in implementing electronic reporting to improve the effectiveness of export and import monitoring, reduce the administrative burden on the regulated communities and regulating agencies, increase the efficiency of tracking, and provide better information to the North American public interested in these features.

The Secretariat conducted the present report with support from the LMI Research Institute and Guillermo Román Moguel. These people worked as consultants in conjunction with the CEC Hazardous Waste Task Force, conducting the project work in three phases:

1. The first phase consisted of a review of previous studies, domestic regulations of Canada, Mexico, and the United States and NAFTA and other international agreements. This phase resulted in a draft “as-is” workflow model of the current import and export procedures for shipping hazardous waste among the North American countries.
2. The second phase was conducted via workshops that brought together environmental and customs officials of the North American countries to confirm the “as-is” model and to provide a summary of challenges with the current practices.
3. The third phase was undertaken through a workshop 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.

These three phases have been followed by later phases to develop more detailed workflow models, agree on various common data standards for North America and perform other preparation needed to one day improve the effectiveness and efficiency of international data sharing.

The objective of this report is to describe the current hazardous waste information tracking procedures and systems used by each of the NAFTA countries and to identify potential process improvements.

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 North American Countries. It also summarizes the limitations of the current practices (as-is model) and information systems that assist each country in effectively controlling its hazardous waste exports and imports.



North American Countries' Requirements

This chapter summarizes the requirements that importers, exporters, and domestic government agencies must meet regarding shipments of hazardous wastes and hazardous recyclable material among the three North American countries.¹⁰ It describes the domestic regulations, international agreements, and current status of the information systems each country has in place.

International Agreements

Several international agreements are of relevance to the tracking and control of transboundary movements of hazardous waste and hazardous recyclable material in North America. These include the:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, May 1992 (Canada and Mexico are among the 169 countries that have ratified it, however, the United States has not);
- Decision of Council on the Control of Transboundary Movement of Wastes Destined for Recovery Operations of the Organization for Economic Co-operation and Development (OECD), 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 (known as the La Paz agreement) and the goals of the border coordination program between the United States and Mexico known as “*Border 2012*.”

Movements for final disposal or recycling between Mexico and Canada are subject to Basel Convention controls because both are Parties to that agreement and do not have a separate bilateral agreement addressing hazardous waste shipments; in the case of hazardous recyclable materials, these are subject to the OECD Council Decision Amber Mechanism.¹¹

Parties to the Basel Convention may prohibit specific waste from entering their country regardless of how it is regulated in the generating country. Also, under Basel, officials in an exporting country have a duty to prohibit an export of a hazardous waste or hazardous recyclable if there is reason to believe the importing country cannot dispose of the hazardous waste in an environmentally sound manner.

Basel Parties may authorize the movement of hazardous waste when the exporting country lacks the necessary facilities, technological capacity, or suitable disposal sites to dispose of the waste in an environmentally sound and efficient manner. Authorization may also be granted 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 refuse the entry of “environmentally harmful” hazardous waste, provided that domestic statutory authority supports this refusal. However, there are some differences in the two agreements.

¹⁰ This chapter contains material from the draft CEC report, *Environmentally Sound Management of Hazardous Wastes and Recyclables in North America from 2004*, other previous CEC documents and reports, the text of various laws and regulations, and the proceedings of the HWTF workshop held in Puerto Peñasco, Sonora, Mexico in 2002.

¹¹ Recyclable wastes contained in the amber list are subject to a control system established by a 1992 OECD decision that requires a written contract between the private parties involved which must include provisions for financial security and allocation of responsibility for the shipment; prior notification to and tacit consent of the competent authorities of the States concerned, which can be waived under certain circumstances, a movement document accompanying the shipment and the duty of the person responsible to arrange for the safe disposal or return of the shipment if this can not be carried out in accordance with the arrangements.



The Canada/US Agreement gives the importing country 30 days to verify consent—with or without conditions—to the proposed hazardous waste/recyclable material shipment or to object to the shipment altogether. When the importing country does not reply within 30 days, it is deemed to have given tacit consent.

In contrast, the La Paz agreement allows the importing country 45 days to consent or object but does not contain a tacit consent provision. In addition to the 45-day window for consent or objection, the La Paz agreement requires the notice to include

the identity of exporter, the type and quantity of waste, the period over which the waste will be exported, and the point of entry. It also requires the exporting country to readmit the shipment if the importing country orders the shipment expelled from the import country for any reason.

To further implement the La Paz agreement, US EPA and Semarnat joined forces with ten US-Mexico Border States and US tribes in April 2003 to launch 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*” focuses on decreasing pollution and lowering the risks of exposure to a variety of environmental hazards. 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 on land contamination:

By 2004, evaluate the hazardous waste tracking systems in the US and in Mexico. During the year 2006, develop and consolidate the link between both tracking systems.

Because of limited resources at the time and the time needed to develop a data exchange, the US and Mexico were not able to meet the ambitious 2006 timeframe. However, significant progress is being made through the CEC Hazardous Waste Task Force to electronically share hazardous waste export and import data in North America, which of course includes the US and Mexico.

The Border 2012 program 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 Border 2012 program is available in English and Spanish on the US EPA web site: <http://www.epa.gov/usmexico-border/index.html>.

Domestic Laws, Regulations and Data Management Systems

Statutes and regulations of the three individual North American countries establish the specific mechanisms for tracking and controlling transboundary movements of hazardous waste, and in the case of Canada and Mexico, hazardous recycla-

ble material. 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 notice of intent to export or import must be submitted to the government for approval.
- During shipment, a waste movement document (also known as 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.

In addition, all three countries require written confirmation of disposal or recycling to “close the loop” on any cross border transaction. 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 temporarily admitted and utilized under Mexico’s *maquiladora* program, where the country of origin for the raw materials is the United States.

The North American 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.

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



Canada

Overview of Relevant Laws and Regulations

Control of hazardous waste and hazardous recyclable material within Canada is a shared responsibility. The federal government regulates international and interprovincial/territorial movements, while provincial/territorial governments regulate intra-provincial movements of hazardous waste and hazardous recyclable material.

The provinces/territories are also responsible for establishing controls for licensing hazardous waste generators, transporters and treatment facilities within their jurisdiction.

The federal government controls the transboundary movement of hazardous waste under the guidelines of the following:

- The Canadian Environmental Protection Act, 1999 (CEPA 1999)
- *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (EIHWRMR 2005)

Canada’s *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (EIHWRMR), under CEPA 1999, revoked and replaced the former *Export and Import of Hazardous Waste Regulations* (EiHWR).

The EIHWRMR are the principal regulations for tracking transboundary movements of hazardous waste and hazardous recyclable material into, out of, and in transit through Canada. The new regulations came into force on 1 November 2005 and work in concert with the *Transportation of Dangerous Goods Act* and regulations, which control the transportation of dangerous goods (including hazardous waste/recyclables) within Canada. The new regulations provide for the distinction between hazardous waste and hazardous recycling material and are intended in part to encourage recycling. The regulations introduce exemptions for certain specified low risk recyclable materials when shipped within the OECD area only. Both the US and Mexico are included in the OECD.

One of the key aspects of the EIHWRMR is the prior informed consent (PIC) mechanism, which is also an essential component of the international agreements. The PIC provisions in the EIHWRMR require the Canadian importer or exporter to submit a notice for intended imports of hazardous waste destined for disposal or recycling and recovery operations and receive a permit before any movements can take place.

The notice is used by Environment Canada to determine the parties in the proposed transaction (generator or foreign exporter, transporters, and importer or receiver), identify the hazardous wastes/hazardous recyclable materials, 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. In the case of imports, it helps 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. For exports, it allows US-EPA or Mexico's foreign competent authority (FCA) to review and provide consent.

Canadian exporters and importers proposing to make transboundary movements of hazardous waste/recyclable material must file a notice with the Waste Reduction and Management Division of Environment Canada. Each notice is unique and applies to specific shipments of hazardous waste/recyclable materials from a specific generator and site to a specific importer and authorized receiving facility.

The completed notice is sent to the appropriate import authorities for their review, assessment and consent, with or without conditions, or objection to the shipment. Each notice contains detailed

Control of hazardous waste and hazardous recyclable material within Canada is a shared responsibility.

information regarding the description of the hazardous waste/recyclable material, the country of origin, destination, and shipment route (if any). It also details the parties involved in the shipment (including all transporters), the operations to be used to dispose of or recycle the waste or recyclable material 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 Waste Reduction and Management Division reviews the information in the notice. Once consent has been received in writing, the Division issues a permit allowing the export, import, or transit, provided all regulatory conditions have been met. Consent for exportation is subject to the approval of the importing country, while consent for importation is subject to Canadian provincial confirmation and attestation that the receiving facility is authorized and can manage the hazardous waste/recyclable material. The import and export permits are valid for up to one year and may be used to cover multiple shipments of the same hazardous waste or hazardous recyclable material as set out in the permit.

A movement document and permit must accompany the hazardous waste/recyclable material shipment at all times when it is being transported. Copies

of the movement document must be signed and provided to specific parties during transport, including the federal and/or provincial governments, the transporters, Canada customs, and the receiver. The consignor, transporter, and receivers must retain copies of all documentation for three years.

The Waste Reduction and Management Division of Environment Canada receives copies of the movement document at three key points during the movement: pickup at the shipping site, delivery at the receiving authorized facility, and at the border crossing. In addition, the receiving facility must send a certificate to Environment Canada within 30 days of completion of the activity stating that the recycling or disposal activities have occurred. The Regulations also require the final disposal or recycling operation to take place within 365 days and, in the case of interim operations, that the hazardous waste or hazardous recyclable material be shipped off-site within 180 days, destined for a final operation. If scheduled recycling or final disposal activities cannot be undertaken or completed, the Canadian exporter or importer must provide this information to the Waste Reduction and Management Division and must arrange to have the hazardous waste recycled or disposed of via different means at an authorized facility, following appropriate approval, or returned to the site where the transboundary movement originated.

The movement document is generally used throughout Canada for the intraprovincial transport of hazardous waste and hazardous recyclable material, as the provinces have jurisdiction over this type of movement. Each province may impose additional requirements on movements of hazardous waste/recyclables and may address different wastes or recyclables 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 movement documents, also known as “manifests”.

In August 2002, Canada extensively modified the *Transportation of Dangerous Goods Regulations* (TDGR), which control the movement of dangerous goods within Canada.

These new, “clear language” regulations set out the tests and criteria used to determine whether substances are dangerous. Consignors determine the danger level of their shipments by referencing the TDGR’s three schedules, which identify and classify hazardous waste and hazardous recyclable materials. Several shipments which are subject to the EIHWRMR are also subject to the TDGR; in this case, compliance with both is necessary. A copy of the TDGR is available at <http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm>.

To improve the management of hazardous wastes and hazardous recyclable material, the federal government has put in place an effective system to control the export, import and transit of such wastes and recyclable material at border points. The net effect of CEPA’s *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* is threefold:

- They improve the overall management of hazardous wastes and hazardous recyclable material within Canada;
- They enable Canada to implement international obligations under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; the Organisation for Economic Co-operation and Development (OECD) Decision concerning the control of transboundary movement of wastes destined for recovery/recycling operations; and the Canada-US Agreement on the Transboundary Movement of Hazardous Waste 1986 (as amended in 1992);
- They incorporate and implement CEPA 1999 hazardous waste and hazardous recyclable material authorities.

In sum, the new *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* include updated obligations from the former *Export and Import of Hazardous Waste Regulations* (EIHWR) and introduce new elements.

These regulations include:

- Definitions for “hazardous waste” and “hazardous recyclable material” that will enable:
 - progress toward a federal-provincial-territorial harmonized approach to the management of hazardous waste and hazardous recyclable material;
 - Canada to prohibit the export of wastes or recyclable materials when informed by a Basel Party in accordance with the Basel Convention, or by the United States, that although the waste or recyclable material is not included on the Basel lists, it is considered hazardous under the

legislation of that country and the country has prohibited its import or transit;

- Specific time periods for completing the disposal or recycling operations once the hazardous wastes or hazardous recyclable materials are accepted at the authorized facilities;
- Criteria that the Minister will take into account, prior to refusing to issue an export, import and transit permit, to form an opinion as to whether the hazardous waste or hazardous recyclable material will be managed in a manner that will protect the environment and human health;
- Elements to be contained in the plans to reduce or phase out exports of hazardous wastes destined for disposal;
- Facilitation of recycling by excluding from the definition of hazardous recyclable material certain low-risk recyclable materials and by extending the \$1 million liability insurance requirement for Canadian importers and Canadian exporters to movements of hazardous recyclable materials;¹² and
- A movement document harmonized with that used by the provinces that will meet international movements as well as provincial requirements.

The Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations maintain:

- The prior informed consent mechanism where the receiving country agrees in advance to any shipments;

¹² Under the former Regulations, the requirements were \$1 million for movement of hazardous recyclable materials within the Organisation for Economic Co-operation and Development (OECD), and \$5 million for movements of hazardous recyclable materials to non-OECD countries, in contrast with the \$5 million required for movements of hazardous wastes.

- The tracking of all transboundary movements of hazardous wastes and hazardous recyclable materials from the facility from which it is shipped to final destinations, and the written confirmation of disposal or recycling when completed;
- Prohibitions on exports of hazardous wastes and hazardous recyclable materials to Antarctica or countries that prohibit their imports;
- Conditions governing who is permitted to import or export;
- The recycling of hazardous material and disposal of hazardous waste at authorized facilities only;
- The requirements for contracts between importers and foreign exporters, and between exporters and foreign receivers;
- The requirements for liability insurance and what insurance coverage is required;
- The obligations to make alternative arrangements or arrange for returns when shipments are not accepted at the intended authorized facility in the country of import. The exporter may dispose of the hazardous waste or recycle the hazardous material at an authorized facility other than the one named

in the permit in the country of import or arrange for the return of the waste or the recyclable material to the facility in Canada from which it was shipped; and

- The requirement that imports, exports and transits are only allowed with countries that are parties to one of the three agreements.

The Compliance and Enforcement Policy under CEPA 1999 applies to these regulations. The text of the *Export and Import of Hazardous Wastes and Hazardous Recyclable Material Regulations* can be found at: <http://laws-lois.justice.gc.ca/PDF/SOR-2005-149.pdf>.

Also, Environment Canada issues the *Resilog* on a regular basis. This is a newsletter of the Waste Reduction and Management Division of Environment Canada that includes information on submissions for notice of import, export and transit of hazardous recyclable materials and wastes. The requirement for publication of notice information is found under Part 7, Division 8, Section 187 of the *Canadian Environmental Protection Act, 1999*. The *Resilog* presents this information on the notices received and also shows their status:

Notified Quantities, 1 July–31 December 2007 ¹³ (Third and Fourth Quarters, 2007)			
	Exports	Imports	Transits
Number of duly completed notices received	781	1,286	40
Number of waste streams requested	1,637	7,883	257
Total quantity requested (tonnes)	1,778,958	11,473,553	70,518
Quantity consented (tonnes)	1,657,471	9,765,251	70,518
Quantity objected (tonnes)	47,020	0	0
Quantity pending (tonnes)	74,467	1,708,301	0

Data Management Systems

Environment Canada uses the Canadian Notice and Manifest Tracking System (CNMTS) to collect, store, and process hazardous waste/recyclable material information. A module within the CNMTS contains the movement document system for exports, imports and transits of hazardous waste/recyclable material. It provides detailed tracking of individual transboundary movements, from the time the shipment leaves the gates of the shipping or generator site to the time it arrives at the authorized facility destination as specified in the permit and certificate of destruction or recycling.

Tracking by means of the movement document system makes use of three key points of control in an international movement. Copies of the document must be submitted at three specified points in the transaction: the departure point, the border crossing and upon arrival at the final destination. All copies are sent to the Canadian exporter or importer. From there, they must be submitted to Environment Canada within three working days of the transaction.

The movement document tracking system is designed to ensure that such shipments do not go astray, either at borders or after they have crossed them, and that their entire cargo arrives intact. It also helps to prevent “orphan” shipments: if a shipment is abandoned, the movement document system will enable it to be traced back to its exporter or generator. In addition, detailed movement documents enable fast and effective emergency response, should a mishap occur.

¹³ http://dsp-psd.tpsgc.gc.ca/collection_2009/ec/En40-57-22-2F.pdf. Note that in the case of export and import notices, the quantity notified is not the same as the quantity shipped. Exporters and importers routinely overestimate waste quantities on their notices, given that they must project the physical and chemical nature of hazardous wastes that will be shipped over a period of one year. Actual movements are tracked through a manifest database.

Canadian regulations require the identification of the disposal or recycling process that will be used for the hazardous waste/recyclable material 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/recyclable materials, but, as stated previously, the Canadian provinces have jurisdiction over movements solely within their territory. Within Canada the movement document referenced by federal regulations is also used to track interprovincial movements between provinces and territories, as well as intraprovincial movements of hazardous wastes/recyclable materials for those provinces where the provincial



authorities have made the movement document a regulatory requirement.

Exporters and importers of hazardous wastes/recyclable materials are responsible for ensuring that the various sections of the movement document are properly filled out, that copies are distributed to the appropriate authorities, and that copies are kept on file for three years. The authorities, including Environment Canada, compare the movement document copies received from exporters or generators and importers or receivers with the information in the notice to ensure that shipments have arrived intact at their intended destinations.

Planned Initiatives

Canada has a well-established program in the notification and tracking of transboundary movements of hazardous waste and hazardous recyclable material. Continuous review of this program identifies new initiatives and opportunities to strengthen the management of these shipments. Areas that have been identified for future action include:

- upgrading the CNMTS for enhanced electronic interactivity;
- implementing administrative adjustments to current provision in the EIHWRMR to improve clarity, accuracy and efficiency;
- aligning PCB Waste Export Regulations with existing provisions for the export and import of hazardous waste;
- developing new provisions regulating the export and import of non-hazardous waste for final disposal; and
- developing new provisions regulating the export and import of electrical and electronic equipment (EEE) destined for final disposal, recycling or reuse.



Mexico

Overview of Relevant Laws and Regulations

Late 2003/early 2004 saw the beginning of a series of changes in Mexican legislation to bring it up to date in different waste management areas, particularly in relation to hazardous wastes. Early in 2004, the General Act on Waste Prevention and Comprehensive Waste Management (*Ley General Para la Prevención y Gestión Integral de los Residuos—LGPGIR*) came into force.¹⁴

LGPGIR regulations were published in November 2006. They govern hazardous waste importation and exportation, including the return of wastes to the United States by *maquiladoras* and specifics on the import/export authorization paper work. These regulations also stipulate the conditions pertaining to the management of hazardous wastes, including specific provisions for their collection and transportation within the country, up to the border; waste classification, packaging and labeling; transportation equipment; and inspection and shipping requirements. Such regulations also

¹⁴ Published on 8 October 2003, *Diario Oficial de la Federación*.

address the need to report temporarily imported materials that may generate hazardous wastes.

The LGPGIR established the foundations for prevention of waste generation, recycling and comprehensive waste management. Furthermore, hazardous wastes imports and exports (including those in transit) came under the scope of the LGPGIR along with the Foreign Trade Act (*Ley de Comercio Exterior*), the General Economic Competition Act (*Ley General de Competencia Económica*) and the international treaties to which Mexico is a party.

The LGPGIR stipulates the following conditions regarding the transboundary management of hazardous wastes, some of which, while not as explicitly defined, were already mandatory:

- The importing of hazardous wastes shall only be authorized if such substances are reused or recycled (such imports may be restricted should they act as a disincentive or obstacle to the management of Mexican wastes).
- The importing of persistent organic compounds is prohibited.
- The prior consent of the importing country is required when authorizing the export of hazardous wastes as is, where applicable, that of transit countries.
- Under the provisions of the Act, Semarnat shall implement a hazardous waste tracking system, i.e., the existing Hazardous Wastes Tracking System (*Sistema de Rastreo de Residuos Peligrosos—Sirrep*), which will establish records of the authorizations granted for waste imports and exports. This information will be integrated into the National Environmental and Natural Resources Information System (*Sistema Nacional de Información Ambiental y de Recursos Naturales*).

- The acquisition of an insurance policy or a bond shall be mandatory for cross-border shipments.
- Industries that import products, equipment, machinery, or any other type of input under the temporary import regime for manufacturing, recycling or reprocessing known as the *maquiladora* and PITEX¹⁵ systems (presently in transition towards the IMMEX¹⁶ system), must inform Semarnat of the materials imported, and indicate their volume and hazardous characteristics, as well as the volumes and characteristics of the hazardous wastes they generate.
- It remains a mandatory requirement that the hazardous wastes generated from the materials imported under temporary import regime for manufacturing, recycling and reprocessing be returned to the country of origin.
- The wastes described in the preceding point may be recycled in generating facilities or in other Semarnat-authorized facilities in Mexico, in which case they need not return to the country of origin and their management will be subject to the applicable Mexican laws and regulations.

The LGPGIR therefore includes exceptions to the requirement to return generated wastes when they can be recycled in the generating facility or in another facility that provides such services.

It also includes the processing of the Notice of Return according to the following procedures:

- Notice of imported materials under the temporary import regime
- Notice of return of hazardous wastes
- Subsequent notices
- Notice of recycling of non-returned hazardous wastes



Enabling regulations for Mexico's pollutant release and transfer registry (the *Registro de Emisiones y Transferencia de Contaminantes—RETC*) require summary information regarding transboundary hazardous waste shipments to be submitted, identifying the amounts of hazardous waste sent or accepted to/from foreign sources.

A revision of the Mexican Official Standard NOM-052 was issued in September 2006. This standard compiles hazardous wastes and their characteristics into accessible lists and sets out procedures for their identification and classification.

The Secretariat for Communications and Transports (*Secretaría de Comunicaciones y Transportes—SCT*) issued a ruling in November 2006 to amend the Regulation on the Ground Transport of Hazardous Materials and Wastes (*Reglamento para el Transporte Terrestre de Materiales y Residuos Peligrosos*). These regulations give the Secretariat and the Federal Police

¹⁵ Industry registered under the Temporary Import Program for Producing Export Goods (*Programa de Importación Temporal para Producir Artículos de Exportación*).

¹⁶ *Industria Manufacturera, Maquiladora y de Servicios de Exportación.*

the authority to impose penalties and sanctions on federal and private ground transportation units that fail to comply with the provisions on the transport of hazardous waste and recyclable materials.

Finally, in a reform enacted in December 2006, the Foreign Trade Act defined the requirements applicable to the export of any type of merchandise including hazardous wastes.

Semarnat is the agency responsible for authorizing and monitoring the movement of hazardous waste and hazardous recyclable materials within Mexico. The Undersecretariat for Environmental Protection Management (*Subsecretaría de Gestión para la Protección Ambiental—SGPA*) and the General Directorate for the Comprehensive Management of Hazardous Materials and Risk Activities (*Dirección General de Gestión Integral de Materiales y Actividades Riesgosas—DGGIMAR*) are the specific Semarnat administrative bodies that oversee these processes.

The Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente—Profepa*) monitors compliance and enforces laws and regulations in the environmental administrative sphere.

The SCT is the federal agency responsible for regulating the domestic and transboundary transportation of hazardous materials and wastes. The SCT authorizes transportation companies that engage in this activity and maintains a registry of these companies. Vehicles used to transport hazardous materials also require Semarnat authorization prior to transportation.

A large proportion of the hazardous waste transported beyond Mexico's borders include the return of waste by industries involved in the *maquiladora* and PITEX temporary import regimes that benefit from special tax and tariff rates.

In 2006, these businesses accounted for 54 percent of employment in the manufacturing industry and 65 percent of Mexico's total exports. Based on Semarnat records, between 2004 and 2008, hazardous waste imports averaged between 200,000 and 300,000 tons per year. The highest yearly total was 500,000 tons in 2005. In the same period, the average number of authorizations per year was about 100. The principal imported waste was electric furnace dust and spent lead acid batteries.

Exports over the same period were subject to greater fluctuations; the yearly average varied between 60,000 and 300,000 tons. The main exports were oil-based drill cuttings from petroleum and gas extraction. Waste returned from *maquiladoras* amounted to 80,000–100,000 tons and accounted for 30,000 to 40,000 of all return notices per year. The returned hazardous wastes consisted principally of used solvents; dust, textiles and other materials contaminated by oil and other hydrocarbons;

are reported under different names. Sometimes the same waste product is returned to the United States by *maquiladoras* and appears several times under different names. This situation hampers classification and reporting efforts and complicates compliance monitoring.

The reporting of hazardous waste exports poses a challenge as data may not be available and must be refined to enhance compliance monitoring and law enforcement.

Export Requirements

The process of exporting hazardous wastes begins when the waste generator or its agent applies for an export authorization at the DGGIMAR or the Semarnat office of a particular State.

Authorization, given in the form of an export permit, has the same force of law as the written consent granted by the recipient country.

The following information is required to obtain export authorization:

Semarnat authorized the following amounts in 2007 (amounts expressed in tonnes):

Imports (2007)			
	From the US	From Canada	Total
Quantity Authorized	654,464	N/A	659,470
Exports (2007)			
	To the US	To Canada	Total
Quantity Authorized	141,609	60	151,365

acidic wastewaters containing metals; water treatment sludge; used hazardous wastes containers; slag and other metal contaminated wastes.

It is important to mention that the harmonization of hazardous waste terminology remains a work in progress within Mexico and throughout North America as some substances and materials

- The applicant/exporter's general data;
- Information relating to the waste generator;
- Name and address of importer and the waste receiving facility;
- The transporter's name and permit number;
- The type of container in which the waste will be transported or managed;



- The name of the waste product and its physical and chemical characteristics;
- The classification of the degree of hazard that it poses;
- The process it will undergo;
- Information pertaining to the port of entry;
- The customs code classification in the harmonized system (*fracción arancelaria*);
- Bond or insurance data;
- Authorization for recycling issued by Semarnat;
- The domicile of the exporter;
- Export notification and the corresponding OECD or Basel Convention movement tracking form;

- A letter of consent from the final destination country; and
- An export guarantee or bond deposit with Semarnat as a guarantee of compliance with the conditions of authorization.

For first-time exports, the issuing time is 20 working days. For subsequent exports, it is 10 working days following receipt of consent from the destination country.

The transport of hazardous wastes within Mexico's borders requires a Consignment, Transport and Receipt Manifest (*Manifiesto de Entrega, Transporte y Recepción*). The procedure for transporting

hazardous wastes using this manifest (also referred to as the movement document) is as follows:

1. For each waste shipment, at the time the waste is turned over, the waste generator provides the transporter (also known as a carrier) with the original copy of the movement document, duly signed, plus two copies.
2. The transporter signs the original copy of the movement document and submits it, along with one other copy, upon delivery of the hazardous waste for recycling, treatment or final disposal. The remaining copy is retained by the transporter as a record.
3. Upon receipt of the hazardous waste, the recipient signs the original copy of the movement document, immediately returns it to the waste generator and keeps one copy as a record.
4. If at the end of sixty calendar days, starting from the date that the transporter received the hazardous wastes for transportation, the original copy of the movement document, duly signed by the recipient, has not been returned to the waste generator, the generator shall advise Semarnat of this fact to ensure that appropriate measures may be taken.

The waste generator must retain the original movement document so that it will be available for inspection by Profepa.

In the case of exports, the waste generator must retain this movement document, report the use to which its authorization is granted, and provide single copies of the export permit requests and of the OECD or Basel Convention movement tracking form. The latter, to be signed by the recipient facility, shall indicate that the waste management operations were executed in the destination

country, except where the wastes in question are not considered hazardous in that country.

Waste return constitutes a special case of hazardous wastes exports. Such exports to the United States began in 1999 due to the use of inputs from that country in *maquiladoras* and the PITEX industry. This export procedure is covered in the LGPGIR and a specific chapter of its Regulations.

In this context, the return of hazardous wastes is not considered an export activity, and its return is processed by Semarnat via the “Notice of Return of Hazardous Wastes” (*Aviso de retorno de residuos peligrosos*) and “Subsequent Notices” (*Avisos subsecuentes*) procedures, stipulated by LGPGIR regulations. The former applies the first time the hazardous wastes are returned. A copy of the temporary import authorization, granted by the Ministry of Finance (*Secretaría de Economía—SE*), shall be appended along with the *maquiladora* or PITEX firm’s proof of residence.

The following information is required in the Notice of Return of Hazardous Wastes:

- The waste generator’s particulars;
- The waste recipient’s particulars and, where applicable, the particulars of the company effecting the waste repatriation;
- The quantity of waste and its hazardous characteristics; and
- Handling precautions and shipping information.

The waste return operation must be completed within 10 working days of the submission of this notice to Semarnat, as well as by the deadline established by the temporary import authorization. Where no such date has been set, the return operation must be completed no later than 180 calendar

days following the generation of the hazardous waste. Upon the operation’s completion, Semarnat must be notified via appropriate form within 15 calendar days, and a single copy of the relevant export request should be appended to the form.

Import Requirements

The process of importing hazardous waste begins with receipt of the export notification from the exporting country—i.e., an OECD or Basel Convention movement tracking form. Semarnat then verifies whether the company contracted to recycle the waste is capable of carrying out this function. In the affirmative, the receiving facility issues its written consent. For its part, the importer applies for an import authorization at the DGGIMAR or at the Semarnat office in the relevant state.

The information required to obtain import authorization includes:

- The applicant/importer’s particulars and those of the waste generator;
- The transporter’s name and permit number;
- The waste product’s name and its physical and chemical characteristics;
- Classification of the degree of risk it poses and the process that it will undergo;
- Customs duties;
- Shipping and handling precautions;
- A copy of the recycling or reuse authorization in the name of the importing company; and
- A bond deposited with Semarnat as a guarantee of compliance with the conditions of authorization.

Authorization is granted in the form of an import permit and is valid for one year. The import authorization request must be received within 20 work-

ing days for a first request and within 10 working days for subsequent imports.

In 2002–2003, import and export procedures were ISO 9001-certified. ISO certification has been maintained ever since as part of the certification of all the Environmental Management Undersecretary at procedures at Semarnat. This has systematized the issuance of authorizations and contributed to shortened resolution times. Consequently, records of all authorizations (and volumes) granted since 2000 now exist. Records of the exact number of movements, however, are still lacking.

In 2003, workshops commenced to advise companies on the proper filing of import and export requests. The content of these workshops, which are still offered, is published on the DGGIMAR website. The hazardous wastes import procedure is subject to the Charter of Commitments to Citizens (*Carta Compromiso al Ciudadano*) and as such, the competent government agencies are obliged to ensure its constant improvement.

Data Management Systems

The LGPGIR mandated the creation of an information system on the comprehensive management of wastes, including hazardous wastes, integrated into Semarnat’s environmental information system, which, in turn, forms part of the government’s Information System. Data management functions are administered by the General Directorate for Information Technologies and Telecommunications (*Dirección General de Informática y Telecomunicaciones*), an agency of the Semarnat General Secretariat.

From 1994 to 1998, the hazardous waste tracking system linking the Mexican and US authorities (i.e., EPA Regions 6 and 9) was HazTraks. This system,

which was updated several times, focused in particular on the wastes generated by *maquiladoras*.

In late 1997, with the objective of ensuring adequate monitoring and greater control over transboundary movements of hazardous wastes, the Secretariat of the Environment, Natural Resources and Fisheries (*Secretaría de Medio Ambiente Recursos Naturales y Pesca*—

hazardous wastes notice of return forms. Such information is entered into a local database on the computer of the generating facility where the application is installed.

Sirrep also permits the transfer of said information to Semarnat's "Institutional" database, which is used for mass information storage and the generation of statistical reports on the return

Sirrep. These activities were concluded by the end of 2003. The operation of the system's applications did not prove optimal due to issues related to its structure and execution, which permitted the continual generation of errors at the time of data entry. This problem delayed information recording and rendered the data entry process unreliable and inefficient with respect to the generation of statistics and

The new Sirrep...enables information exchange and online consultation of the information systems used by the administrative agencies involved in tracking hazardous wastes between Mexico and the other NAFTA countries.

Semarnap), renamed Semarnat in December 2000, designed the Hazardous Wastes Tracking System (*Sistema de Rastreo de Residuos Peligrosos*—Sirrep). As it records information, this automated system enables the generation of a Return of Hazardous Wastes Notice for storage electronically as well in printed form for presentation at the service window of Semarnat's *Centro Integral de Servicios* (CIS).

From late 1998 to the present date, Sirrep has been used in Mexico for information recording and exchange, reporting purposes, retrieval of registration information and for statistics on the movement of temporarily imported hazardous wastes. All of this was based on the Return Notice procedure that had replaced the ecological export guide. From its inauguration to the present day, the system has been limited to records of the information contained in the

of hazardous via transboundary movements, particularly with respect to the United States. The system has two distinct applications:

1. One is deployed by hazardous wastes generating facilities (*maquiladoras* and the PITEX industry) for the generation of return notices in electronic and paper versions.
2. The other is deployed by the Semarnat headquarters and its federal delegations located on Mexico's northern border for document registration, validation and report generation.

In late 2002, following constant problems with the central server, a workplan was established that resulted in the recompiling of information generated since the year 2000, the writing of a user's manual, and training the personnel in the Semarnat federal delegations on the country's northern border to use

providing timely information for decision making.

As a consequence, Semarnat has developed a new version of Sirrep that includes the hazardous wastes import and export procedures. This new version is presently being implemented.

In addition, Mexico's customs authorities exchange information with Profepa on notifications and shipping movement documents in order to guarantee that importers and exporters comply with environmental legislation and customary regulations.

Modifications to Sirrep

The processes and logistics pertaining to transboundary movements were now updated pursuant to the LGPGIR and its regulations as well as those affecting the NOM 052, the Transportation Regulations, and the *Foreign Trade Act*. The following procedures were modified:

- *Import/Export of Hazardous Wastes:*
 - (a) first time imports; (b) subsequent imports;
 - (c) non-hazardous wastes imports;
 - (d) first time exports; (e) subsequent exports;
 - (f) exporting of persistent organic compounds;
 - and (g) importing and exporting of samples.
- *Transit of Hazardous Wastes:*
 - (a) by sea; or (b) by land.
- *Return of Hazardous Wastes Notices:* (a) notice of imported materials under the temporary imports regime; (b) notice of first-time return of hazardous wastes; (c) notice of subsequent returns; and (d) notice of recycling of non-returned hazardous wastes.
- *Use of authorizations and return reporting:*
 - (a) use of transit consent report; (b) notice of return report; (c) use of import authorization report; (d) use of export authorization report; and (e) report on use of authorization to export persistent organic compounds and organohalogenes.

The new version of Sirrep was implemented as a pilot project prior to its full implementation in Semarnat's six delegations along the US border. This implementation required training programs for Sirrep officers in each delegation as well as the publication of a user's manual and the development of new forms.

The new Sirrep has incorporated the Hazardous Wastes lists in the new NOM 052 standard as well as the modifications stipulated by the LGPGIR and its regulations. It includes an application for *maquiladoras* and PITEX companies that generate notices of return in electronic and paper formats. In compliance with Mexican legislation, it also contains the use of authorizations reports (and similar reports) in relation to imported materials

and the recycling of hazardous wastes. Furthermore, the new Sirrep includes an application to be used by the Semarnat headquarters and its delegations located on Mexico's northern border. This application enables information recording, validation and statistical retrieval to generate statistical reports of value in decision-making.

The principal impact of the new Sirrep is that it enables information exchange and online consultation of the information systems used by the administrative agencies involved in tracking hazardous wastes between Mexico and the other NAFTA countries. Moreover, it is possible that such consultation may eventually be available to the general public.

Planned Initiatives

Electronic waste is another sector subject to management, which is a reflection of growing transboundary exchanges in this sector. Semarnat, through the National Institute of Ecology (*Instituto Nacional de Ecología*—INE), conducted a study in 2007 that will facilitate drafting an electronic waste management policy, which will necessarily include the management of transboundary flows. This study is available at http://www.ine.gob.mx/descargas/sqre/res_electronicos_borrador_final.pdf.

The LGPGIR and its regulations will have a growing impact on hazardous waste management. Such impact will certainly give rise to new initiatives and areas of cooperation. Management plans are mandatory for certain hazardous wastes as well as for others deemed to be areas of "special management," such as used engine oils and electronic waste. Depending on the type of wastes, management plans could also be applicable to *maquiladoras* and the PITEX industry.



United States

Overview of Relevant Laws and Regulations

US federal laws and associated regulations integral to the tracking and enforcement of transboundary hazardous waste shipments include the Resource Conservation and Recovery Act (RCRA); Title 40, Part 262, Subpart E of the *Code of Federal Regulations* (CFR) for export; Subpart F of 40 CFR 262 for import; Subpart H of 40 CFR 262 for transboundary movements of hazardous recoverables with OECD countries; Title 40, Part 273, sections 273.20, 273.40, 274.56; and the Hazardous Materials Transportation Act (HMTA), Title 49 CFR Sections 106 to 180. Title 40, Section 263 of the CFR 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

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.

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 implement at a minimum the federal requirements. The authorized state programs may be more stringent than the federal program, but no provision authorizes them to implement import and export notice and consent procedures, which is a role reserved for the federal government.

Export Requirements

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

- Notice has been provided: an exporter (called the “primary exporter” in the RCRA regulations) 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 providing the US EPA hazardous waste code, the US Department of Transportation (DOT) proper shipping name, hazard class, and identification number for each hazardous waste;
- The receiving country has consented to accept the hazardous waste: after which a copy of the US EPA Acknowledgment of Consent to

the shipment must accompany the hazardous waste shipment and (unless exported by rail) is attached to the movement document (known as the US hazardous waste 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
- An exporter complies with the movement document and reporting requirements, including retaining a copy of each notice of intent to export and movement document for a period of at least three years from the date the hazardous waste was accepted by the initial transporter.

US EPA serves as a liaison between the US entity proposing the export and the competent authority of the importing country, submitting the notification of intent to import directly to the competent authority in order to obtain its consent.

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 receiving facility among other information. 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 movement document initiated when the shipment actually begins. By March 1st of each year, exporters of hazardous waste must file an annual report with 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 deliver a copy of the US hazardous waste movement document to the US Customs and Border

Protection (CBP) for exported shipments of hazardous waste. However, shipments of waste that are not considered hazardous under RCRA are not required to contain an accompanying US hazardous waste movement document and are not regulated when exported. Additionally, secondary (recyclable) materials that are shipped under terms of a regulatory exclusion, such as “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. However, if the foreign country defines the shipment as hazardous waste or hazardous recyclables under their regulations, then prior informed consent through the notice and consent process may be required. In that case, the US exporter must submit its notice of intent to export hazardous waste directly to the competent authority in the country of import.

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 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 US movement document 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. Once in the US, the hazardous waste must comply with all RCRA requirements. A facility that intends to receive waste from a foreign source must notify the appropriate US EPA regional office at least four weeks before the first shipment is expected to arrive

at the receiving hazardous waste management 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 US movement document names the generator, importer, and the facility that will manage the waste and provides details of the amount and type of waste. Receiving facilities are required to send the import movement document to EPA headquarters within 30 days of receipt of the hazardous waste.

CBP has authority to search suspect hazardous waste shipments and to seize and detain the hazardous waste when there is reasonable cause to believe a transporter is exporting illegally. The transport of hazardous waste exported to or imported from the United States must comply with the US Department of Transportation Hazardous Materials Transportation Act (HMTA) and EPA RCRA transportation regulations during its transport in the United States.

The new regulation also includes a checkbox on the revised movement document form to identify hazardous waste imports and exports. This simple change results 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 movement document on the departure of a shipment from the United States.

Data Management Systems

Several data management systems have been utilized by the US EPA headquarters, US EPA regional offices, and US state environmental agencies to track various aspects of transboundary shipments and the entities involved in those shipments.

From 1992 to 2003, US EPA Regions 6 (Dallas) and 9 (San Francisco) used a standalone system for hazardous waste shipments between the US and Mexico to include shipments from US maquiladoras. HazTraks tracked information from the import and export movement documents, and the Mexican aviso. In 2003, HazTraks was discontinued.

US EPA hopes to create a more comprehensive national “electronic manifest system.” While about 20 US states do collect movement documents (manifests) and track data from movement documents involving generators, transporters, and receiving facilities of hazardous waste in their states, the US EPA does not have a complete set of such data available in all states. EPA believes that a national electronic system would improve oversight of hazardous waste shipments as it would improve on the current situation under which all shipments are tracked with a movement document.

Many states do have active systems that track movements of hazardous waste in and out of their states, including a number of US border states such as California and Texas.¹⁷

As required by the RCRA regulations described in the above sections, EPA maintains a database of information on hazardous waste generators, transporters and hazardous waste management facilities called RCRAInfo.

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

¹⁷ 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.

The Waste Import and Export Tracking System (WIETS) tracks notices of intent (NOIs) to import hazardous waste into the United States and the associated US response (that is, consent, object, or neither consent nor object if not regulated).

The WIETS also tracks the US notice to export hazardous waste, associated responses from the proposed importing country (that is, consent, object, or neither consent nor object if not regulated), hazardous waste movement documents, and annual reports.

The WIETS is described in more detail in the following sections.

Waste Import and Export Tracking System: Exports Under RCRA, hazardous waste exporters must first notify US EPA of their intent to export to a specified destination country (for example, a receiving facility in Mexico or Canada) and must wait to receive an acknowledgment of consent or notice of objection from EPA reflecting the destination country's decision regarding shipments covering a twelve-month period. US EPA stores this information in its WIETS database, which holds all the required information from each notice to export. The required information for the notice will depend on the regulations for a particular notice, but each notice typically requires the following:

- 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
- The period over which the waste is to be exported
- Ports of exit from the US and ports of entry to the importing country (“ports” refers to both land-based and water-based points of exit)

- Name and address of the transporters
- Method of transportation to the receiving country and the method of treatment, storage, or disposal of the waste in that country
- Name and address of the hazardous waste management facility
- Packaging type for the waste
- If applicable, names of transit countries, length of stay, and nature of handling while in the transit country

The database also holds information drawn from export movement documents and the annual reports filed by exporters. A movement document contains information about a single transboundary shipment of one or more hazardous waste, and an annual report provides a summary of all shipments for the year. Due to limited resources, data from movement documents have not been entered into WIETS in recent years.

US EPA uses data in WIETS to generate reports summarizing trends in exports of hazardous waste. These data also are used for enforcement purposes to identify non-filers, late filers, and mis-filers of required RCRA notices and reports. US EPA's OECA compares the information contained in WIETS with hard copies of hazardous waste movement documents. WIETS report printouts are compared with the sorted movement documents as part of regular compliance monitoring to determine whether shipments occurred without a valid consent or whether actual shipments exceeded the maximum consent limits for each waste stream in each notice entered in WIETS. Apparent violations become the subject of memoranda of referral that request US EPA's regional RCRA enforcement managers to take appropriate enforcement action against violators.

Waste Import and Export Tracking System: Imports 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 notice forms (in the case of Mexico, based on OECD forms) is managed by US EPA's OECA in Washington, DC, on the WIETS database. Because the United States does not have a prescribed notice for imports, it accepts the form of notice used by each of its neighbors. Both include the following information:

- Name and address of the foreign exporter
- Name and address of importer
- Types and estimated amounts of hazardous wastes to be exported
- Estimate of the frequency or rate at which the waste is to be exported
- The period over which the waste is to be exported
- Ports of exit from the exporting country and ports of entry to the US (“ports” refers to both land-based and water-based points of exit)
- Name and address of the transporters
- Method of transportation and the method of treatment, storage, or disposal of the waste
- Name and address of the hazardous waste management facility
- Packaging type for the waste

The WIETS database is a PC-based Internet application for use by US EPA Notice Officers and US EPA Regional Coordinators.

US–Mexico Hazardous Waste Tracking System

In October 1992, US EPA and 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 movement documents (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 hazardous waste management 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 hazardous waste management facilities (also known in the US as 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 hazardous waste imports and exports processes are not expected to increase, assuming that applicable arrangements do not change materially. 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 waste and is proposing an electronic movement document (manifest) system to replace the current paper-based process. In addition, CBP is undertaking a major modernization effort to upgrade its electronic commodity tracking systems.

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 consent 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 consent or object to a particular hazardous waste shipment or set of shipments, track trends, and identify enforcement needs. 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

As of 2003, only Canada had an integrated transboundary hazardous waste data management system. Its CNMITS provides Environment Canada and the provinces with the ability to track the status of hazardous waste shipments from cradle to grave. As a result of the amend-

ments 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 movement document by companies, better tracking of shipments at the Canadian border, and real-time data to customs agents and enforcement personnel. Mexico is in the process of implementing the electronic submission of notice data by companies.

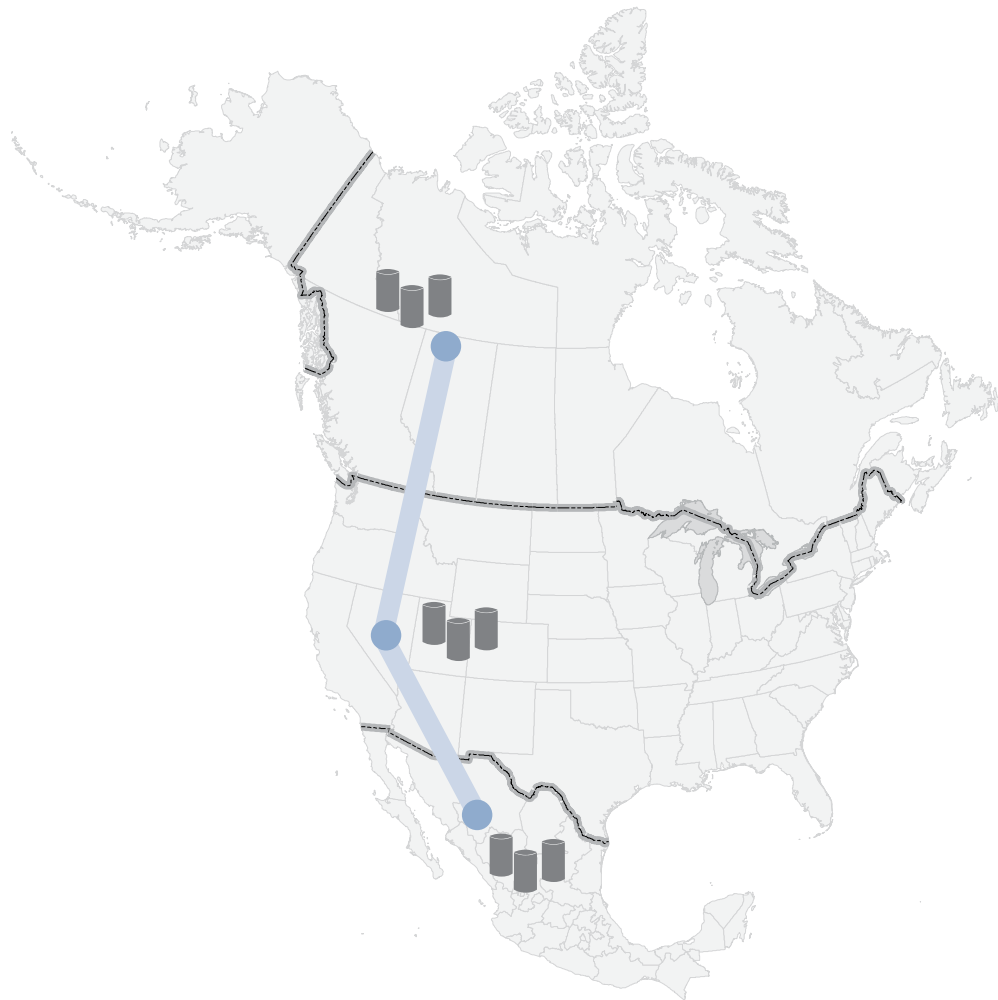
At the time of this report, environmental and customs agencies in Mexico and the United States each had separate standalone systems and processes that primarily relied on paper-based transactions. As each country modernizes its hazardous waste import and export data management systems, opportunities are emerging to coordinate future system upgrades which could accept common North American 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. Also, each country publishes only limited public reports on the data related to the transboundary shipments of hazardous wastes. Only Canada, since 2001, provides an ongoing annual report on the export and import of hazardous waste and hazardous recyclable materials. In addition, under CEPA 1999, Environment Canada provides semi-annual reports on specified notice information.

As required under the Basel Convention, Canada as a Party has submitted the annual Article 13 and 16 reports to the Basel Secretariat on the exports and imports of hazardous waste and hazardous recyclable materials which are published and made public. These reports are available on the Internet at: <http://www.basel.int/natreporting/index.html>.

Current Processes



Overview

Exporting and importing hazardous waste among Canada, Mexico, and the United States is a complex process that requires the sharing of information among the government agencies in each country, hazardous waste generating facility, the receiving hazardous waste management facility, the transporter, and shipment brokers. All three government agencies are cooperating to develop international electronic information-sharing mechanisms. This should speed the notice and consent process and improve compliance-related matters and reduce the administrative burden on governments. 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 begin by describing 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 respectively.

United States to Mexico

This section contains detailed process flow charts of the current procedures and associated reporting requirements between the United States and Mexico. 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 the US Generating Facility

To start the process, the US 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.

The prior informed consent process can be described by the following steps:

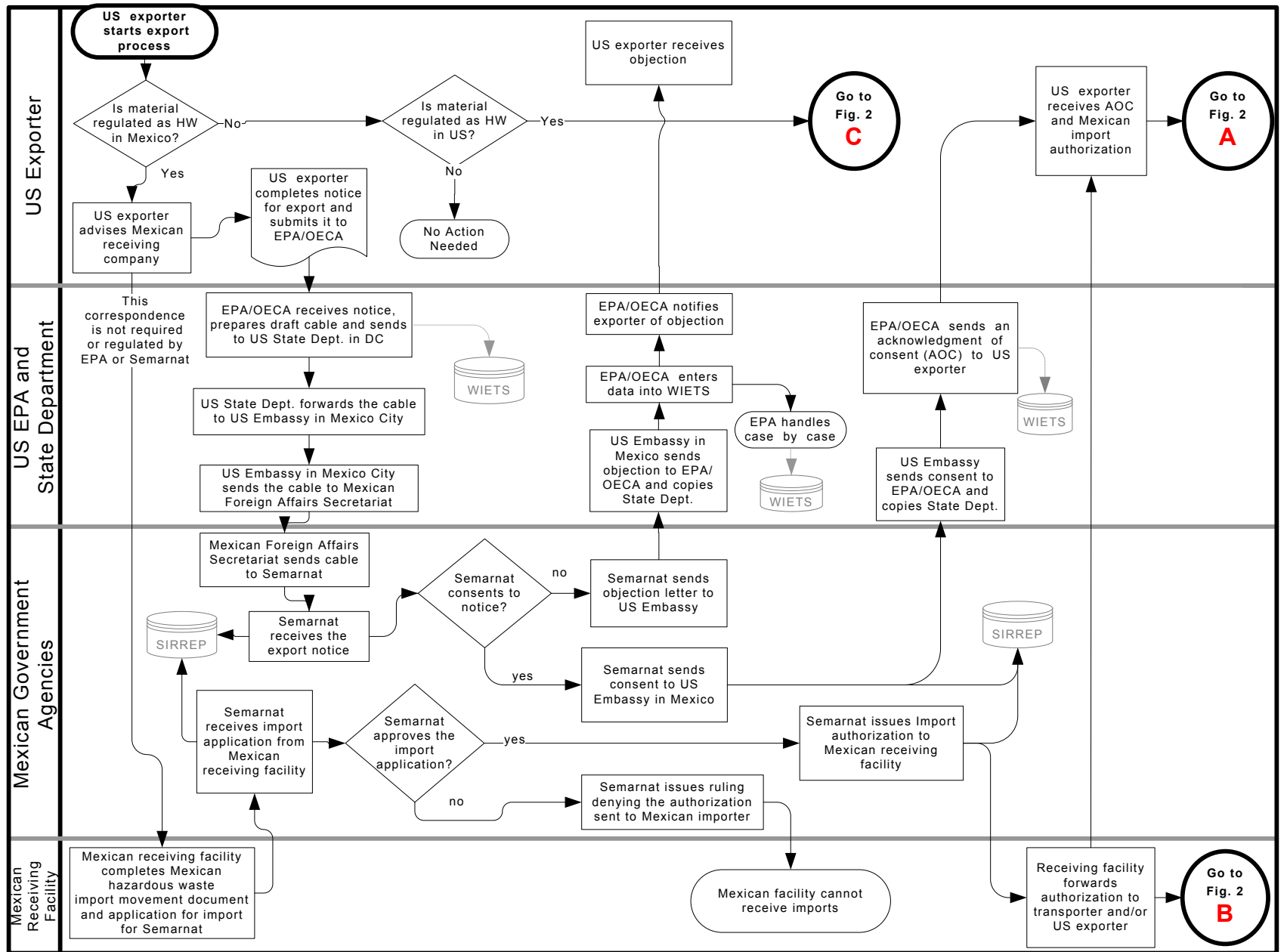
- US EPA Office of Enforcement and Compliance Assurance (OECA) forwards the notice of intent via draft cable to the US State Department in Washington, DC. After any revisions, the State Department sends the cable to the US Embassy in Mexico. The Embassy forwards it to the Mexican Secretariat of Foreign Affairs, which sends it to Semarnat.
- Semarnat consents or objects to the import (depending on recycling capabilities) and sends this response to Foreign Affairs, which sends it to the US Embassy. From there it goes directly to US EPA OECA and may be copied to the US Department of State.
- US EPA OECA sends an acknowledgment of consent (AOC) or a notice of objection to the US exporter.
- Both Semarnat and US EPA OECA record notice information in country-specific import/export databases, Sirrep and WIETS, respectively.

The US generator contacts the Mexican receiving facility or primary Mexican importer to make arrangements for the export of hazardous waste to Mexico. This business-to-business communication is not regulated or required by either the US or Mexican governments. However, either the Mexican receiving facility or importer needs the import/export information from the US generator in order to complete the notice process with Semarnat. The Mexican receiving facility 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 notice submitted by the US generator to the US EPA. Semarnat issues an authorization approving shipment, which is good for a maximum of 12 months and limited to the consent or notification of content and to the corresponding insurance or other financial guarantee for the liability in case of accident. The import authorization is sent to the Mexican receiving facility and the Mexican receiving facility subsequently sends a copy of the import authorization to the US exporter.

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 1 shows the workflow processes that occur before a shipment leaves the generating facility in the United States.

Figure 1. Reporting procedures to ship hazardous waste from the United States to Mexico, prior to shipment phase



United States to Mexico

During Shipment across Borders

The US transporter picks up the hazardous waste from the US generator, receives the US hazardous waste movement document (US hazardous waste manifest) and acknowledgment of consent, signs the US hazardous waste movement document, and transports the waste to the CBP checkpoint. The transporter leaves a copy of the US hazardous waste movement document at the CBP border checkpoint upon departure. The US hazardous waste movement document is only required if the material is also regulated as a hazardous waste in the United States. If the material is regulated as a hazardous waste in the US, some CBP ports may require the US exporter to provide a copy of the US hazardous waste movement document to the CBP border checkpoint at least 24 hours before the shipment arrives.¹⁸ When agreed to, the CBP port forwards the hazardous waste movement document to US EPA OECA, which files the movement document and compares the data to the notice.

At the Mexican border checkpoint, the transporter presents the appropriate Mexican shipping documents. Those are 1) the import authorization issued by Semarnat; 2) the pedimento aduanal (import permit), and 3) the Mexican hazardous waste movement document for the shipping and delivery, (also known as the manifest), which identifies the shipment's tariff code.

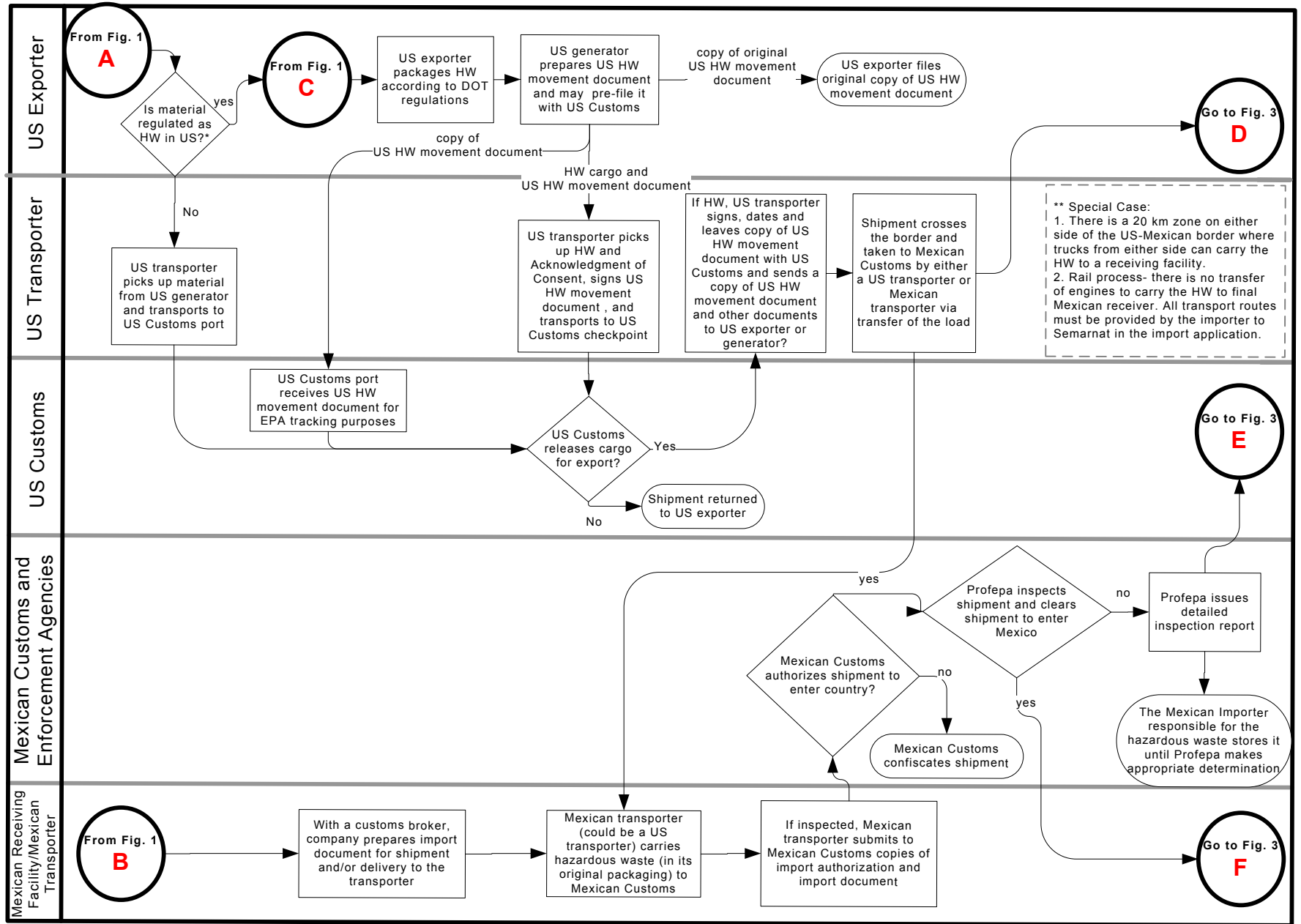
According to the tariff code, the Mexican Customs may inspect the shipment and review any required permits. Also, it requires that shipments of materials with a specific tariff code traverse at a particular border crossing due to the on-site capabilities at each border checkpoint.

A transporter is only required to present to the Mexican border inspectors a copy of the three mentioned documents if stopped and inspected.

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

¹⁸ 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 2. Reporting procedures to ship hazardous waste from the United States to Mexico, during shipment phase



United States to Mexico

Upon Arrival and After Shipment

Typically, the transporter (also known as a 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 movement document with the import authorization issued by Semarnat. If the shipment and corresponding paperwork are in order, the receiving facility signs the Mexican hazardous waste movement document and then prepares a usage report that lists the hazardous waste amounts received versus the hazardous waste amounts allowed on the original import guide. The receiving facility provides this report to the US exporter with a copy of the import permit (*pedimento*) for each shipment and a copy of the authorization issued by Semarnat. 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 movement document to the US generator.

The US exporter is responsible for notifying US EPA if it does not receive a written confirmation of delivery from the Mexican facility. Some states' environmental agencies also require the US waste exporter to send them a copy of the signed US hazardous waste movement document. US facilities are required to report the amount of exported waste to US EPA annually.

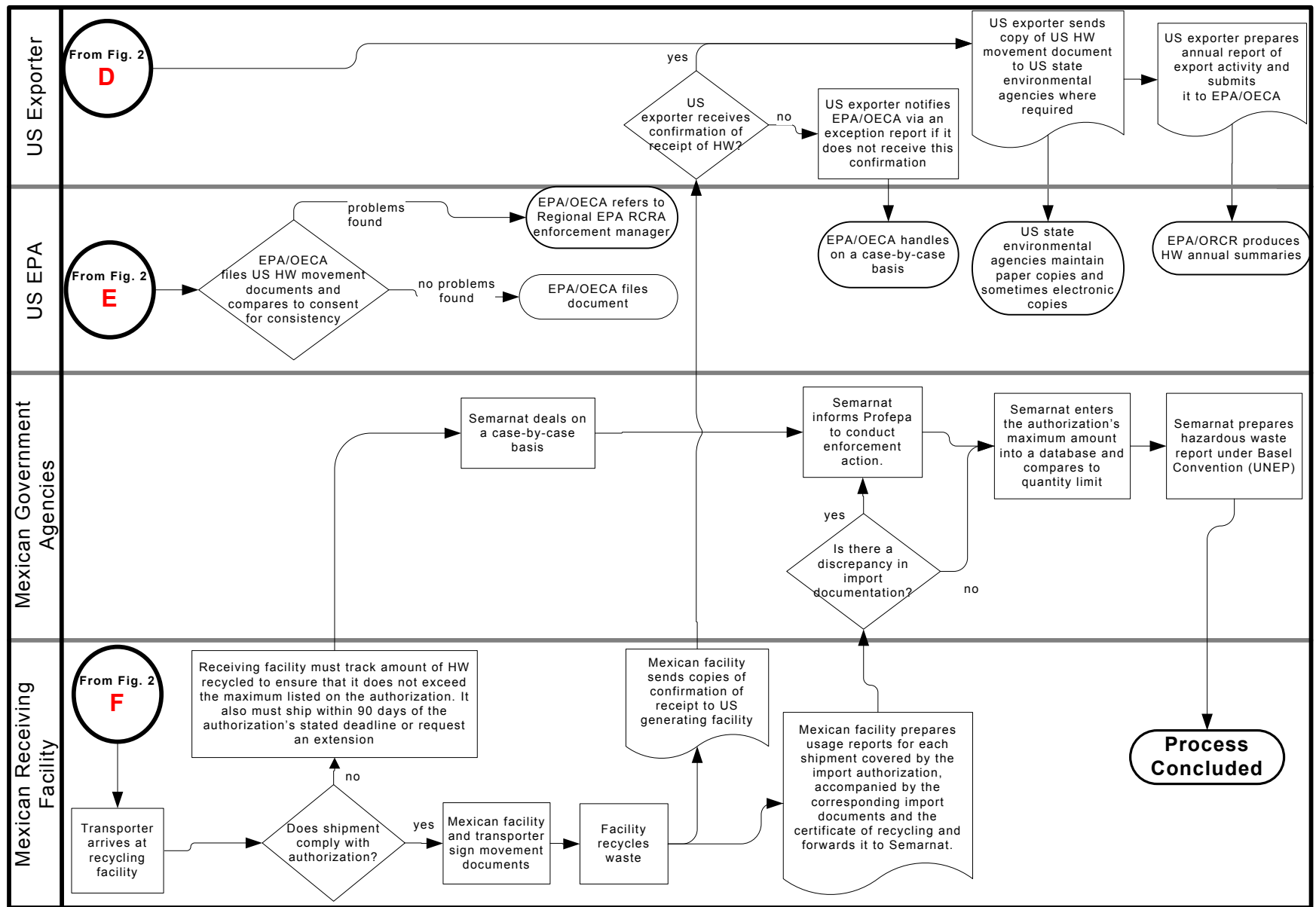
Semarnat stores all paper notices. It only uses the Sirrep database for tracking the information contained in notices for the return of hazardous waste generated by the *maquiladora* industry. Semarnat reviews usage reports and import authorization to identify discrepancies between the type and amount of hazardous waste approved for import and the type and amount actually imported. If discrepancies are identified, it notifies Profepa.

Semarnat prepares a periodic hazardous waste export/import report and submits it to the Basel Secretariat (office) of the United Nations Environment Program (UNEP).

US EPA headquarters receives movement documents on an ongoing basis from CBP but does not enter them in WIETS because of a lack of resources.

Figure 3 describes the processes that occur when the hazardous waste arrives at the recycling facility and afterwards.

Figure 3. Reporting procedures to ship hazardous waste from the United States to Mexico, upon arrival and after shipment phase



Mexico to United States

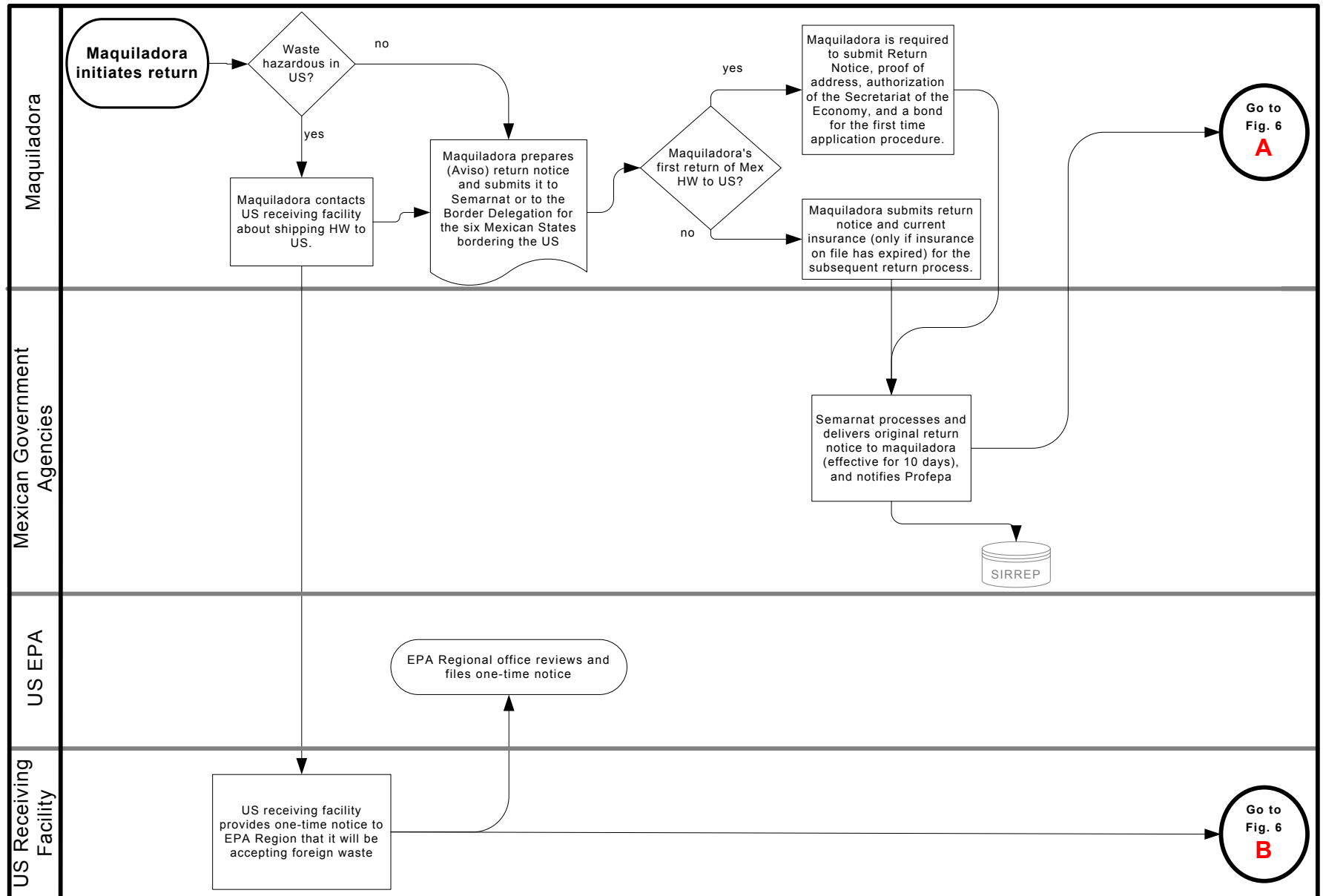
From the US perspective, shipping hazardous waste from Mexico to the United States is the same whether it is a “return” from a *maquiladora* (Figure 4) or an export from another Mexican generator (Figure 5). The Mexican government, as noted earlier, does not consider returns from *maquiladoras* as exports and tracks those shipments differently.

US Maquiladora Facility Requirements Before Shipment

To start the process, the US-owned *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 the *maquiladora* hazardous waste before the *maquiladora* prepares 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 from the Secretariat of the Economy and a bond. For subsequent return shipments of hazardous waste, the *maquiladora* must furnish information on the transporter company authorized by the SCT and deliver to Semarnat information relative to the consignee or receiver of the hazardous waste, noting the name of the waste or wastes, as well as its degree of danger and volume.

The first time a US receiving facility intends to receive waste from a foreign source (a one-time requirement), the receiving facility must notify the applicable US EPA regional office at least 4 weeks in advance. The US importer, which may be a receiving facility or a broker, fills out and signs the US hazardous waste movement document as the generator and identifies the name and address of the *maquiladora* or importer (see Figure 4).

Figure 4. Reporting procedures to ship hazardous waste from Mexico to the United States, prior to shipment phase for *maquiladora* returns



Mexico to United States

Non-*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 non-*maquiladora* company ensures that the US facility is able to receive the 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 movement document (manifest)
- Proof of domicile of the exporting company
- A document that includes details of actions, measures, equipment, instruments materials and other activities on hand to control environmental contingencies due to non-controlled emissions, leaks, spills, explosions or fire in those facilities or transportation vehicles in the load, transit, delivery, unloading and in case of any other contingency.
- OECD export notification 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 keep up to date the relevant data and information to comply with these requirements and submit the following materials if the data concerning the exports is unchanged:

- Hazardous wastes or materials import or export movement document
- 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 rejects it on the basis of the information provided. Once Semarnat receives and approves the export application, Semarnat submits an export notice to US EPA.

The request is sent by Semarnat to the Mexican Foreign Affairs Secretariat (SRE). SRE forwards the request to the US Embassy in Mexico. Finally, the US Embassy forwards the request to US EPA and copies the US State Department.

The request to import to the United States is submitted on the Mexican version of the OECD form for notification of transboundary shipments of hazardous waste. US EPA then provides an acknowledgment of receipt (AOR) of the notice by signing the acknowledgment block in the notice and sending it back to Semarnat by fax or mail. The annual volume is approximately 20–35 notices per year.

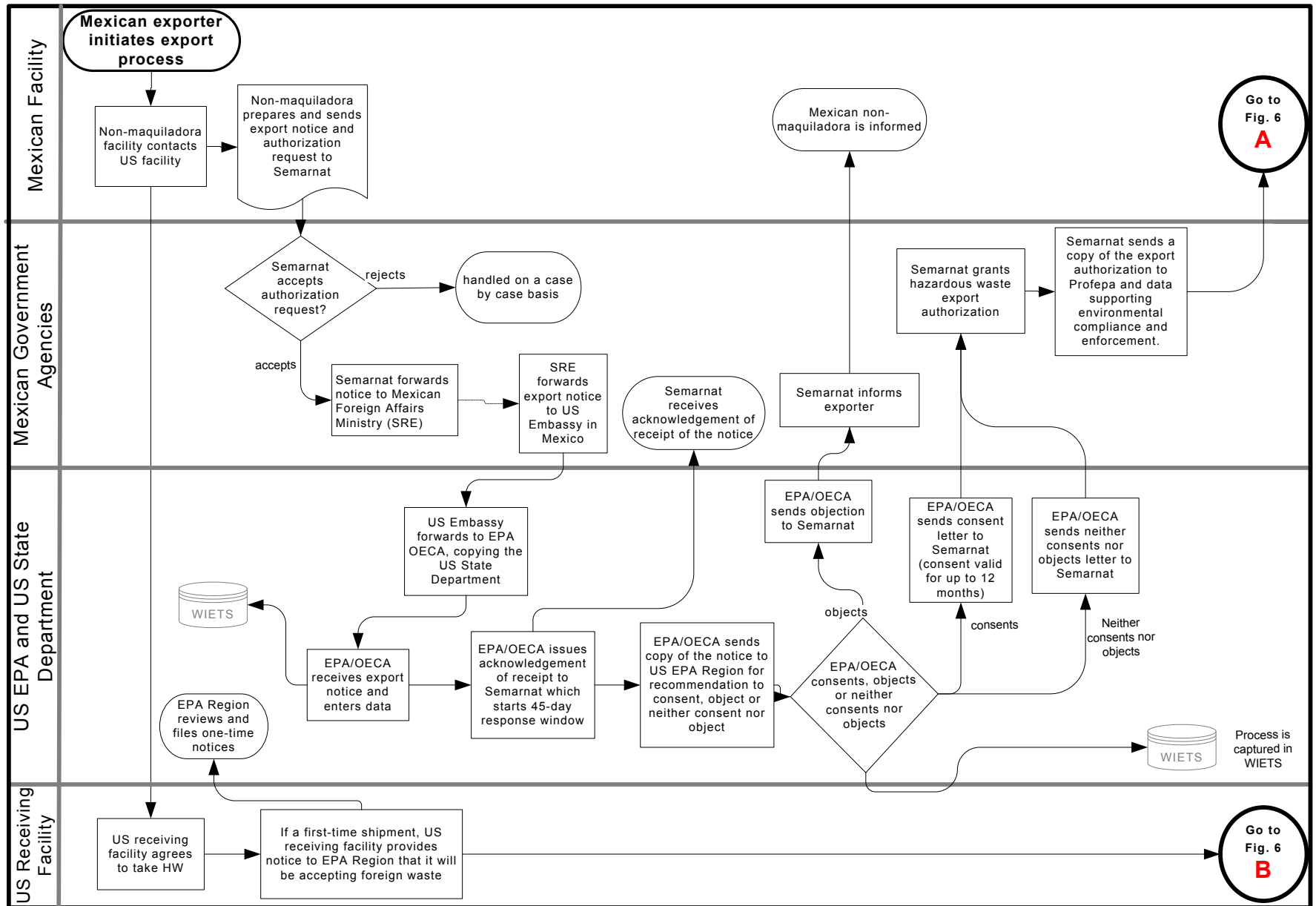
The receipt of the AOR starts the 45-day response clock. The US EPA then reviews the NOI at its headquarters in the Office of Enforcement and Compliance Assurance and forwards it to the corresponding regional office for a recommendation. OECA then consents or objects unless it is non-hazardous in the United States, in which case US EPA informs Semarnat by letter of that fact and neither consents nor objects because it is non-hazardous. There is no tacit consent with imports of hazardous waste from Mexico to the United States.

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 authorization to export hazardous waste.

In the event that the US EPA objects to authorizing the import of hazardous waste, Semarnat will deny the request of authorization and will notify the non-*maquiladora* exporter.

See **Figure 5** for a schematic representation of this process.

Figure 5. Reporting procedures to ship hazardous waste from Mexico to the United States, prior to shipment phase for non-maquiladora facilities



Mexico to United States

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 transporter 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. Profepa may verify the export authorization and the export document (*pedimento aduanal*) at the border crossing point.

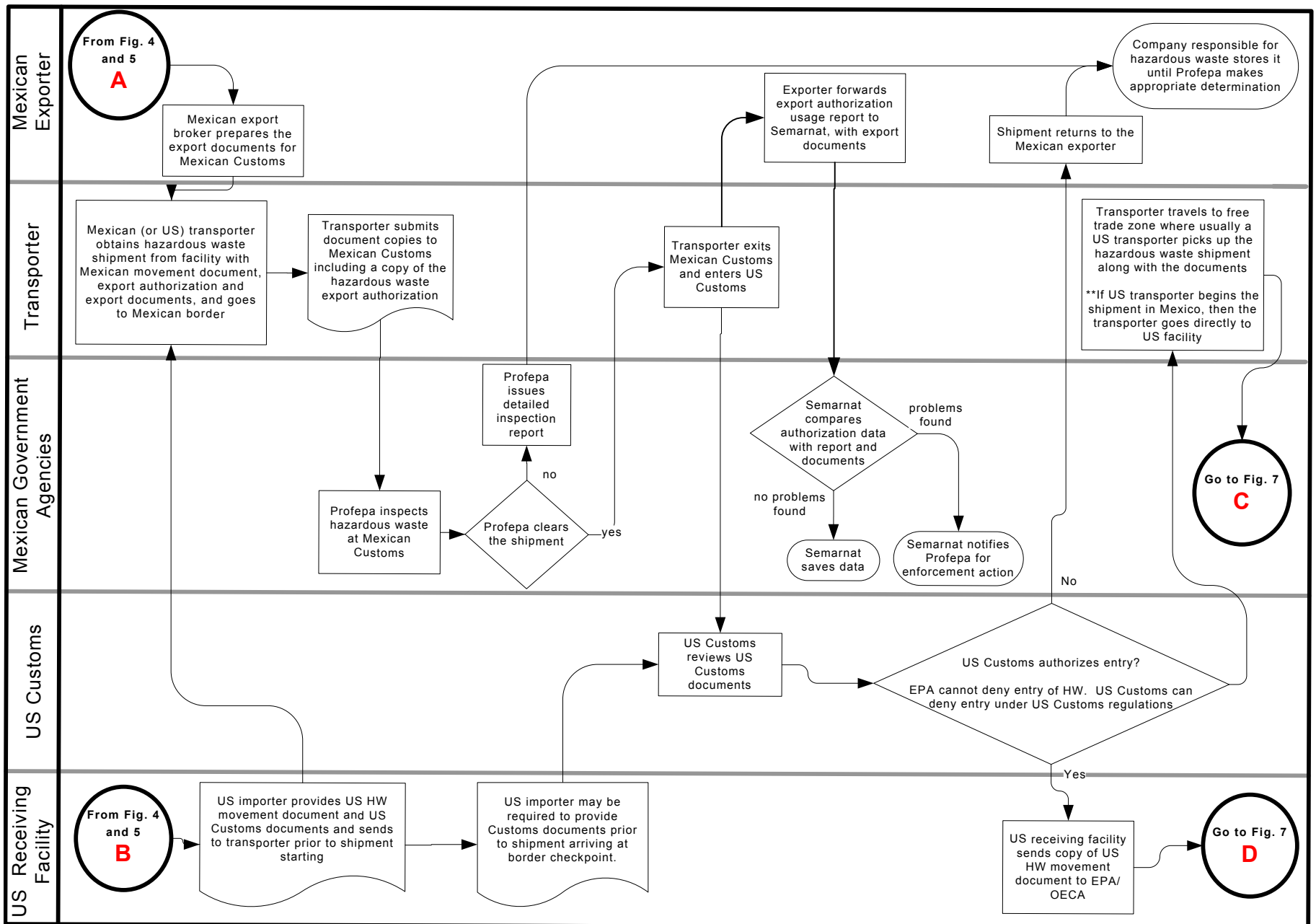
Customs port authorities may require US importers to provide a copy of the US hazardous waste movement document (manifest) at least 24 hours before the hazardous waste shipment arrives at the border. US port authorities that request pre-filed paperwork from the US importer review the signed shipping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

An authorized Mexican transporter (also known as a carrier) may transfer the shipment to an authorized US transporter at the border. A US transporter can go into Mexico to pick up the shipment or the Mexican transporter can drop off in the border zone for the US transporter. All documents related to the shipment are signed and transferred. A US EPA/DOT-authorized transporter signs the movement document, 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 movement document and takes the waste to the US receiving facility.

The Mexican exporter forwards the export authorization usage report to Semarnat with the export documents.

See **Figure 6**.

Figure 6. Reporting procedures to ship hazardous waste from Mexico to the United States, during shipment phase for all shipments



Mexico to United States

Upon Arrival and After Shipment

The US receiving facility receives the hazardous waste, signs the movement documents, and returns the original copy to the US importer. Many US state environmental agencies require the US importer and receiving facility to submit copies of completed movement documents. Within 30 days of delivery, the receiving facility is required to submit the US hazardous waste movement document to the US EPA/OECA. After delivery, the receiving facility reports that it has received the hazardous waste to the entity listed as the “generator” on the US hazardous waste movement document. The entity listed as the “generator” may be an import broker or the *maquiladora*.

The *maquiladora* has 30 days to notify Semarnat if no manifest 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 US hazardous waste movement document to the US importer. Public comments on this report note that some *maquiladoras* are not aware that the US receiving facility must send a copy of the US hazardous waste movement document to the US importer or to the *maquiladora* after their waste has arrived at the US receiving facility.¹⁹

When the transporter arrives at the US receiving facility, the receiving facility checks the shipment against the US hazardous waste movement document for discrepancies. If discrepancies under the EPA-regulated significant level of 10 percent are found, then the US receiving facility notes the discrepancies on the US hazardous waste movement document. If discrepancies over 10 percent are found, then the US receiving facility will complete a discrepancy report and file it with the US EPA regional office and, if needed, the US state environmental agency. The US EPA will review discrepancy reports on a case-by-case basis. There is a 45-day period for the transporter to report to the generator that the waste was delivered to the border or US receiving facility.

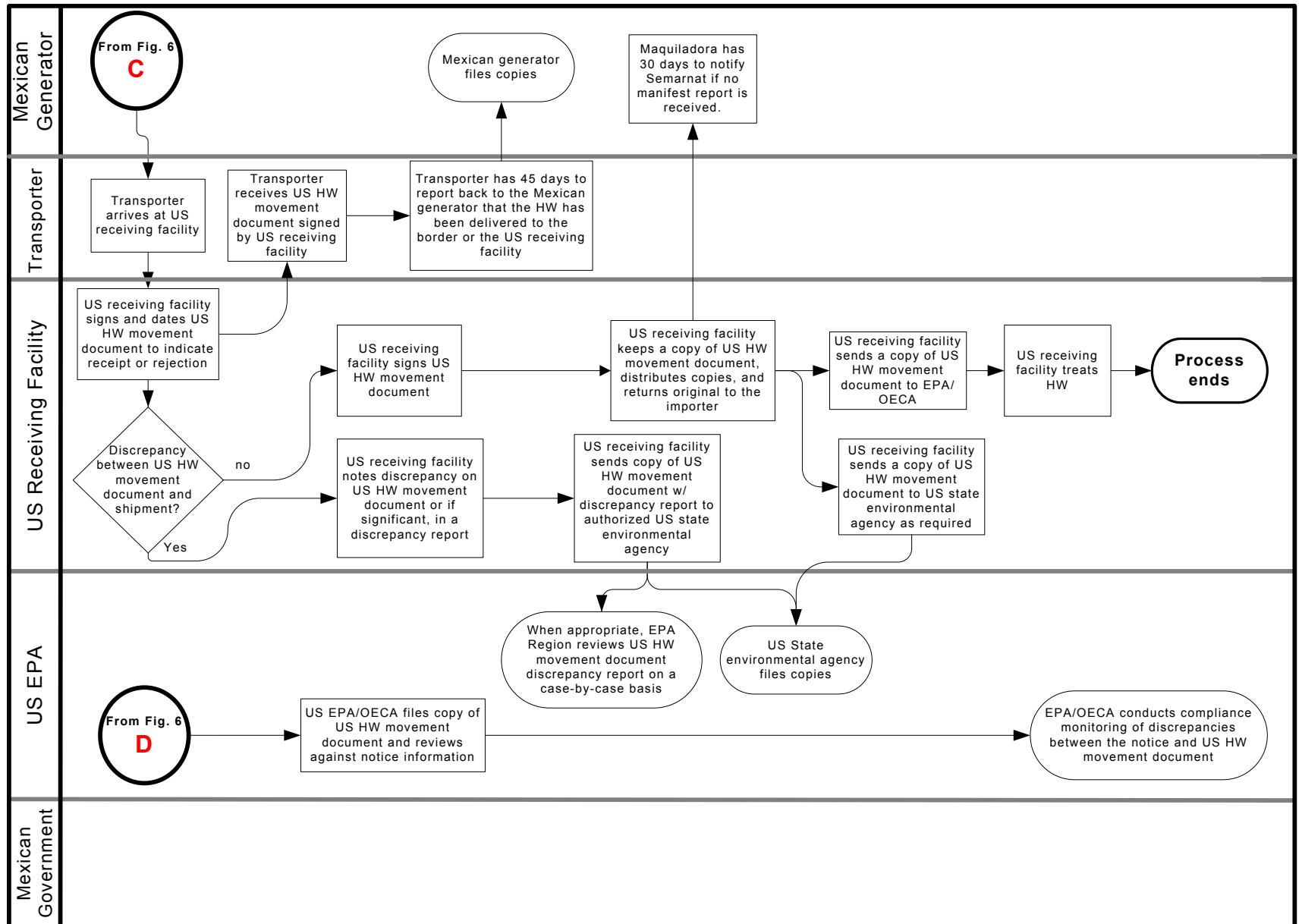
Also on a case-by-case basis, US EPA/OECA will conduct compliance monitoring by comparing data from the notice to import with US hazardous waste movement document data. Some customs ports regularly send copies of the pre-filed movement documents to OECA.

For hazardous waste imports to the US, 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 7**.

¹⁹ Stephen M. Niemeyer Acosta, P.E., Director, Border Affairs, Texas Natural Resource Conservation Commission, in a letter to the CEC.

Figure 7. Reporting procedures to ship hazardous waste from Mexico to the United States, upon arrival and after shipment phase for all shipments



Canada and Mexico

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 notices and reports required.

Shipping from Canada to United States

Before Leaving Generating Facility

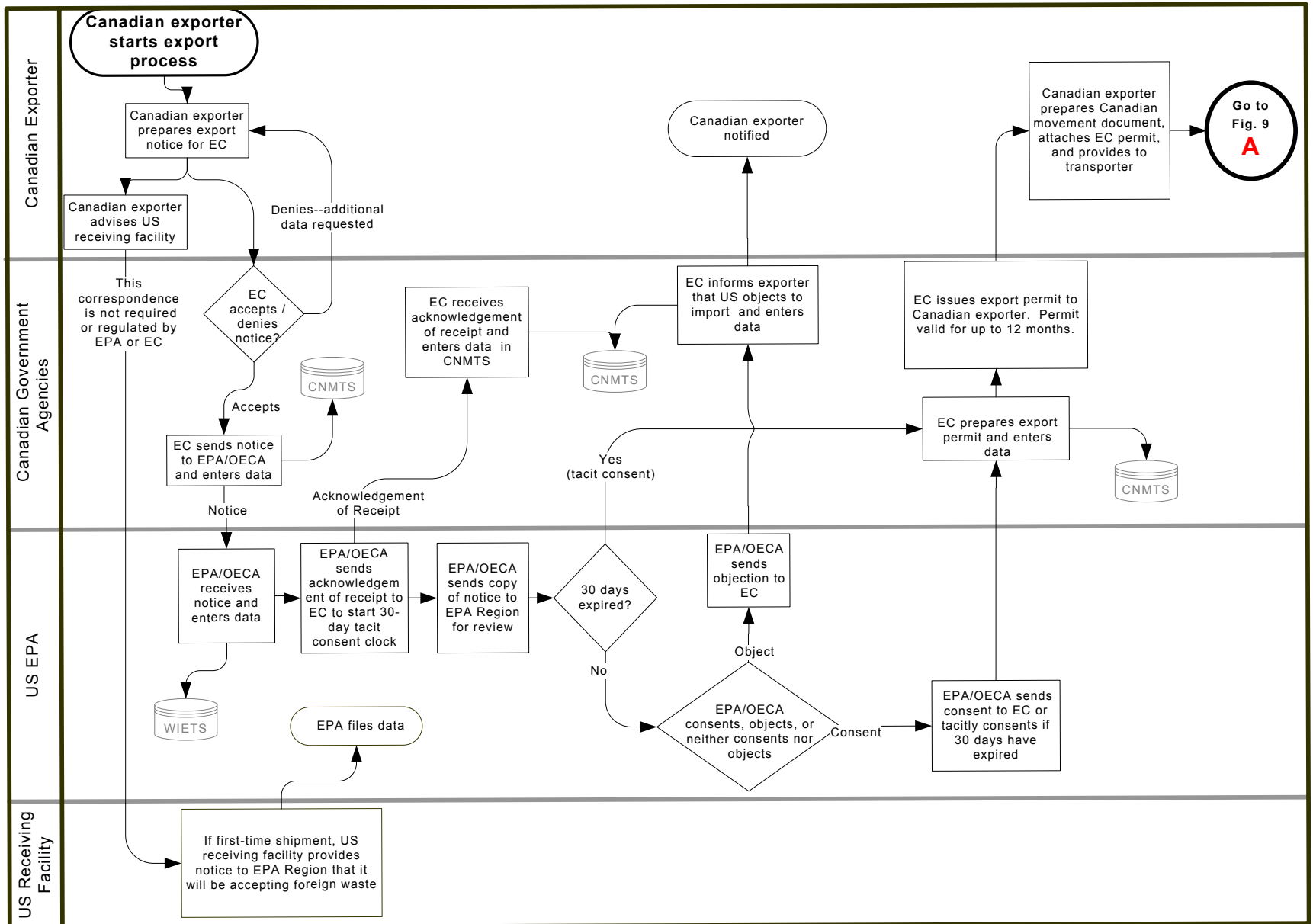
Exporting hazardous waste to the United States from Canada begins when the Canadian exporter prepares the notice to export and forwards it to Environment Canada (EC) (**Figure 8** presents the current practices before shipping the hazardous waste). The notice serves as an application for an export permit. EC determines whether more information is necessary to complete the notification requirements. If EC accepts the notice to export, it enters the data from the notice into the Canadian Notification and Manifest Tracking System (CNMETS) and sends a copy of the notice to export hazardous waste or hazardous recyclable material to US EPA's OECA.

OECA enters the data from the notice to export into its Waste Import and Export Tracking System (WIETS) and sends EC an acknowledgment of receipt (AOR) to confirm that the notice was received. EC inputs the data from the AOR into CNMETS and records the date, initiating the 30-day tacit consent clock. During the 30 days, OECA forwards a copy of the export notice to the US EPA regional office with jurisdiction over the

receiving facility and requests its recommendation as to object or consent to the Canadian export. The US EPA regional offices also have read-only access to the export notice information through WIETS. US state data and/or participation assist the US EPA regional office in reaching its recommendation to consent or object to the import.

Once the regional office has responded, OECA makes a final determination and faxes either an objection to EC, a consent letter to EC (if consent is before the end of the thirty-day period), or a letter advising EC that the waste is not considered hazardous in the United States and that it neither consents nor objects to the shipment. OECA may request an extension of the 30-day tacit consent period by issuing a temporary objection. Otherwise, if the EPA has not responded after thirty days, consent is tacit. OECA enters the determination and related information into WIETS. In the case of an objection, temporary or otherwise, EC notifies the Canadian exporter in writing via fax. For consent, EC enters the information in CNMETS, and the system generates the permit necessary for export.

Figure 8. Reporting procedures to ship hazardous waste from Canada to the United States, prior to shipment phase



Canada to United States

During Shipment across Borders

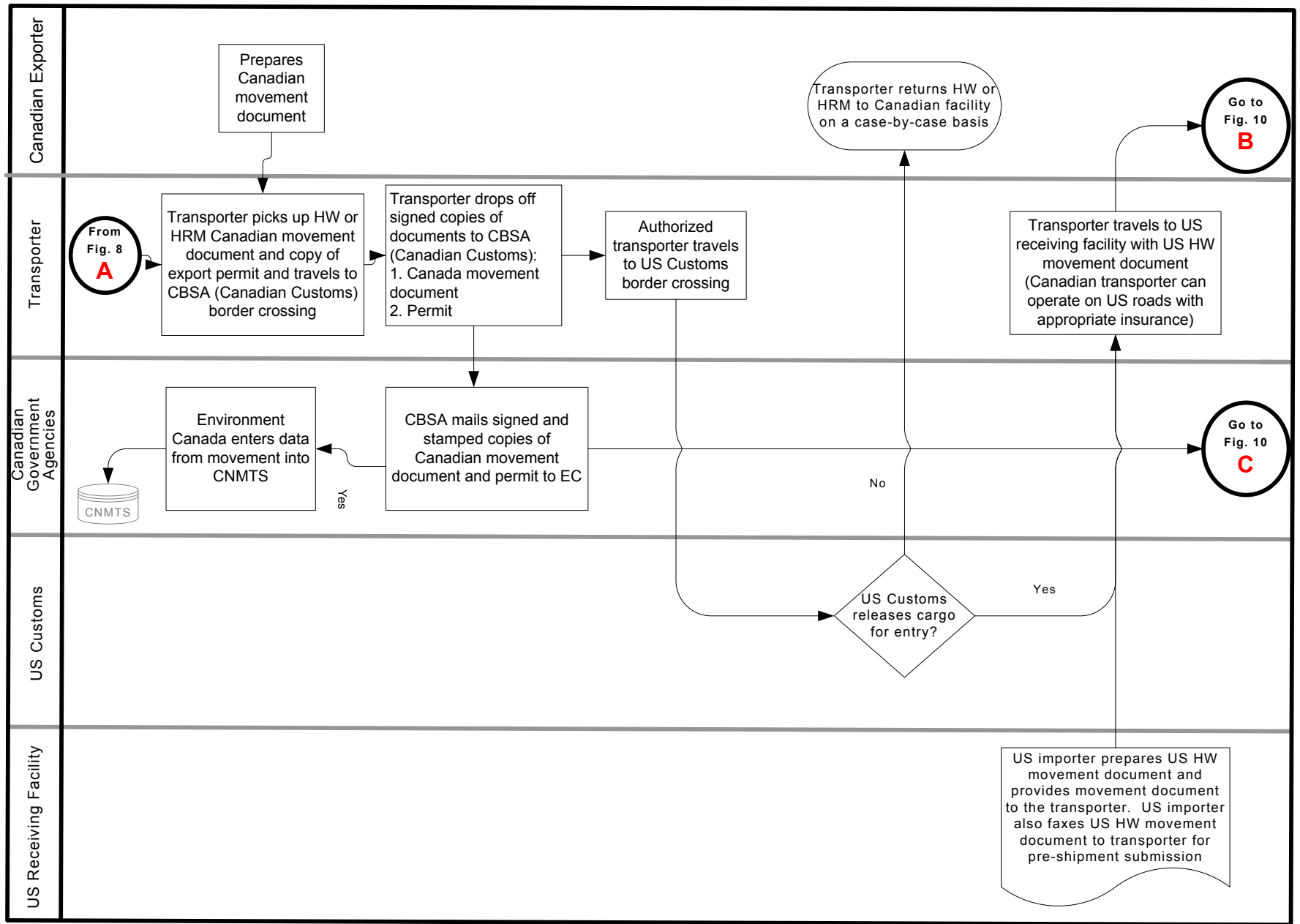
After the US EPA consents to the export notice and an export permit has been issued by EC, the export process moves to the second phase. (**Figure 9** represents the current process that occurs during shipment.)

The Canadian exporter receives the permit to export from EC and prepares the Canadian movement document. Concurrently, the US importer prepares the US hazardous waste movement document that is given to the transporter either before or during entry into the United States. However, before the transporter enters the United States, it gives a signed copy of the Canadian movement

document and permit to the Canadian Border Services Agency (CBSA). The CBSA has a drop-off box for the transporter to deposit these copies. CBSA mails the documents to EC, which matches the shipment information to the permit and enters the movement document information into CNMTS.

The transporter arrives at the US Bureau of Customs and Border Protection (CBP) checkpoint, which denies or allows entry of the shipment. If denied, the transporter returns the shipment to the Canadian exporter; if allowed, the transporter delivers the shipment to the US receiving facility.

Figure 9. Reporting procedures to ship hazardous waste from Canada to the United States, during shipment phase



Canada to United States

Upon Arrival and after Shipment

The “after shipment” phase (see **Figure 10**) begins when the transporter arrives at the authorized US receiving facility. The receiving facility either accepts or rejects the shipment in whole or in part. If the shipment is accepted, it undergoes verification to determine whether the type and weight of hazardous waste or hazardous recyclable material correspond to that documented on the US hazardous waste movement document.

If the authorized receiving facility identifies a discrepancy of greater than 10 percent between the US movement document 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 movement document with a discrepancy report to the US state environmental agency with jurisdiction. If there is no discrepancy, the transporter leaves the shipment at the receiving facility. The receiving facility signs and distributes copies of the US movement document and Canadian movement document as follows:

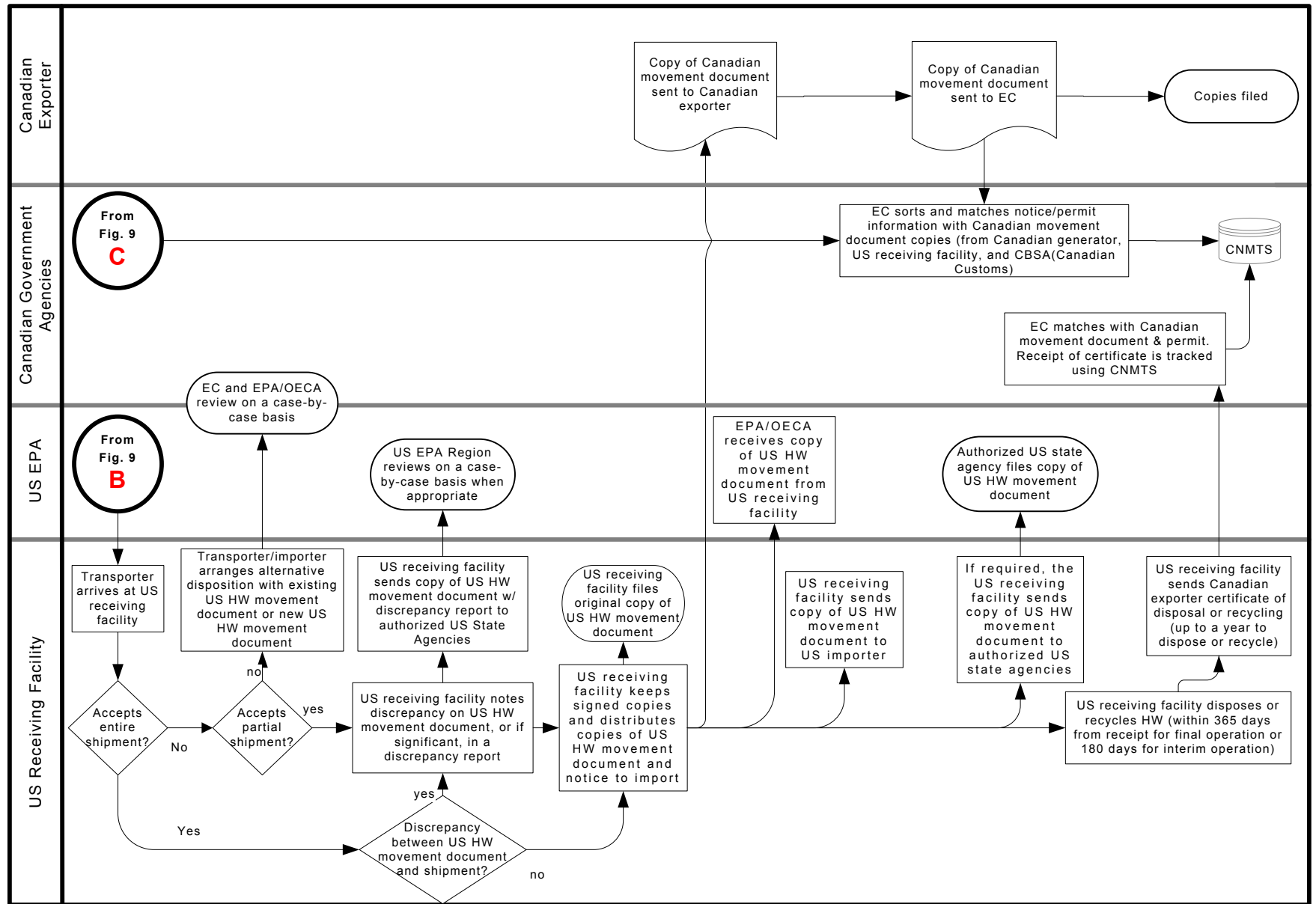
- The receiving facility retains one copy of the US movement document and Canadian movement document.
- The transporter receives one copy the US movement document and Canadian movement document.
- The Canadian exporter receives a copy of the Canadian movement document.
- The US receiving facility sends a copy of the US movement document to EPA headquarters.
- If required by state regulation, the US state environmental agency receives a copy of the US movement document.

The US receiving facility treats the waste and sends a report on its recycling or disposal to the US EPA Office of Resource Conservation and Recovery as part of its RCRA biennial reporting if the waste is hazardous. Within 30 days of receipt of the hazardous waste, the receiving facility sends a copy of the US movement document to US EPA/OECA. It also sends a certificate of recycling or

disposal to the Canadian exporter no more than 30 days after the hazardous waste is disposed or the hazardous recyclable material has been recycled, and the exporter reports to EC to close out the report in CNMTS. Under the Canadian *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*, the final disposal or recycling operation must be completed within 365 days after receipt of the shipment. In the case of interim disposal or recycling operations, which most commonly take place at waste treatment or storage facilities, the hazardous waste or hazardous recyclable material must be shipped to the final authorized facility within 180 days of receipt of the shipment.

If the receiving facility declines the hazardous waste shipment and an alternate disposal facility is found, the exporter notifies EC, and the transporter uses the existing movement document or a new movement document to transport the waste to the alternate facility. EC and OECA handle these situations on a case-by-case basis.

Figure 10. Reporting procedures to ship hazardous waste and hazardous recyclable material from Canada to the United States, after shipment phase



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. The exporter notifies the US EPA of its intent to export wastes unless the US does not regulate such wastes, in which case the exporter notifies EC directly. **Figure 11** represents the current practice before the shipping of hazardous waste.

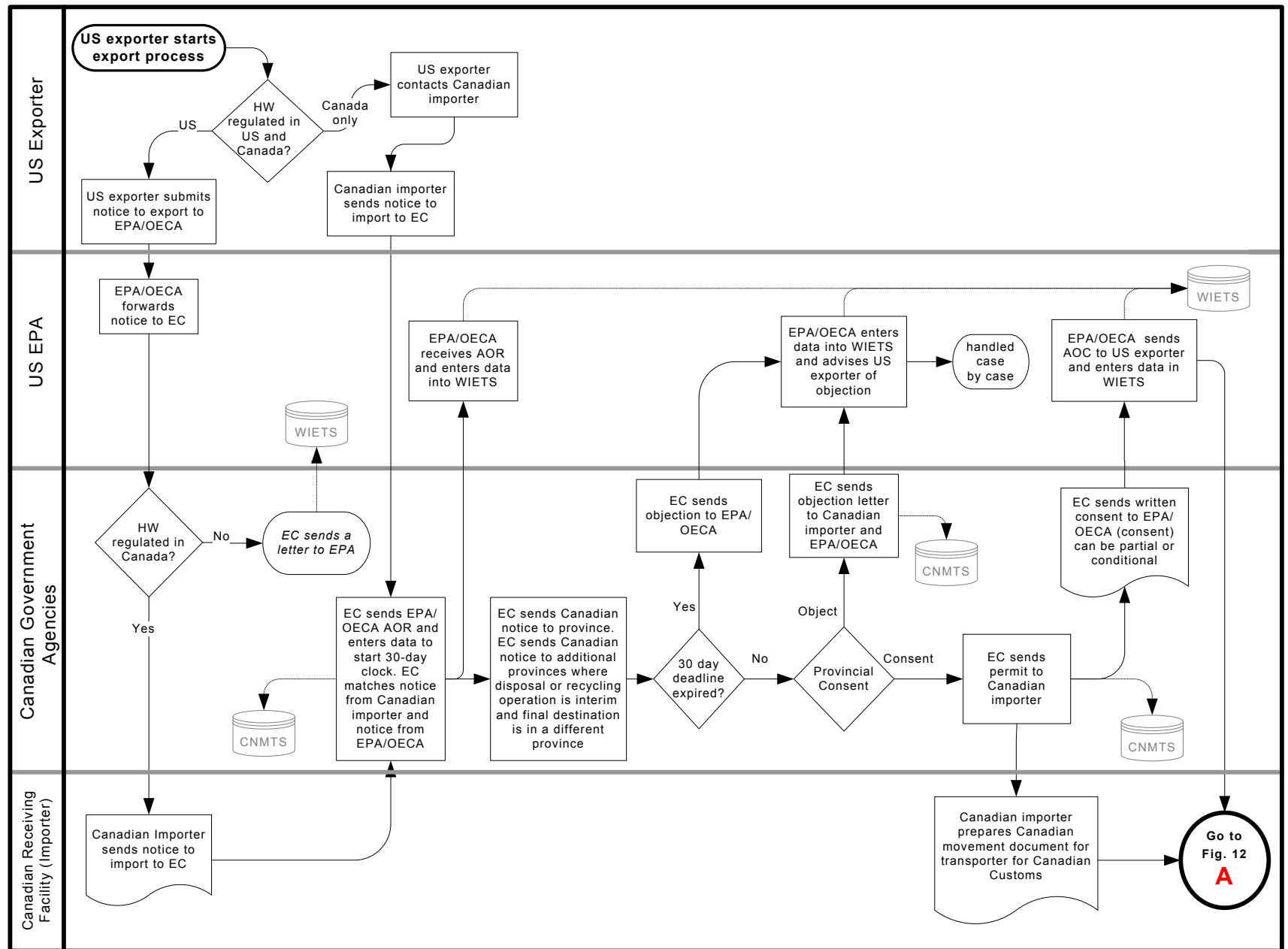
If the hazardous waste is regulated in the United States, the US exporter sends a notice to export hazardous waste to EPA/OECA sixty days prior to export. The notice must be in writing and signed by the exporter and must include information such as a description of the waste, estimates of the quantity and frequency of waste being shipped, and name of the foreign destination facility (40 CFR 262.53). OECA reviews the export notice for completeness. If it is complete, OECA enters the data from the export notice into WIETS and forwards the notice to export to EC. EC then determines whether the hazardous waste is regulated in Canada. If so, the Canadian importer is required to send a notice to import to EC which is matched with the US notice to export.

Irrespective of whether the Canadian import notice is received or not at the time of receipt of export notice from the US EPA, EC sends an AOR that the notice was received from OECA. This AOR identifies the start date of the 30-day consent clock. During the 30 days, EC forwards the Canadian import notice to the provincial Ministry of the Environment for its consent or objection. The provincial Ministry of the Environment determines whether the importing facility is licensed or approved for the disposal or recycling of the hazardous waste or hazardous recyclable material and sends its determination to EC.

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 object to the decision made by the provincial Ministry of the Environment and refuse to issue a permit when the federal Minister of the Environment is of the opinion that the waste or material will not be managed in a manner that protects the environment and human health.

If the waste is not hazardous in Canada, EC sends a letter to OECA indicating that it neither consents nor objects to the shipment. EC may decide to send an objection letter to OECA stating that EC is waiting on notification of the Canadian importer's notice to import. Regardless, EC enters the data into CNMETS. OECA enters the response data into WIETS and provides the US exporter with an acknowledgment of consent (AOC) or an objection letter.

Figure 11. Reporting procedures to ship hazardous waste and hazardous recyclable material from the United States to Canada, prior to shipment phase



United States to Canada

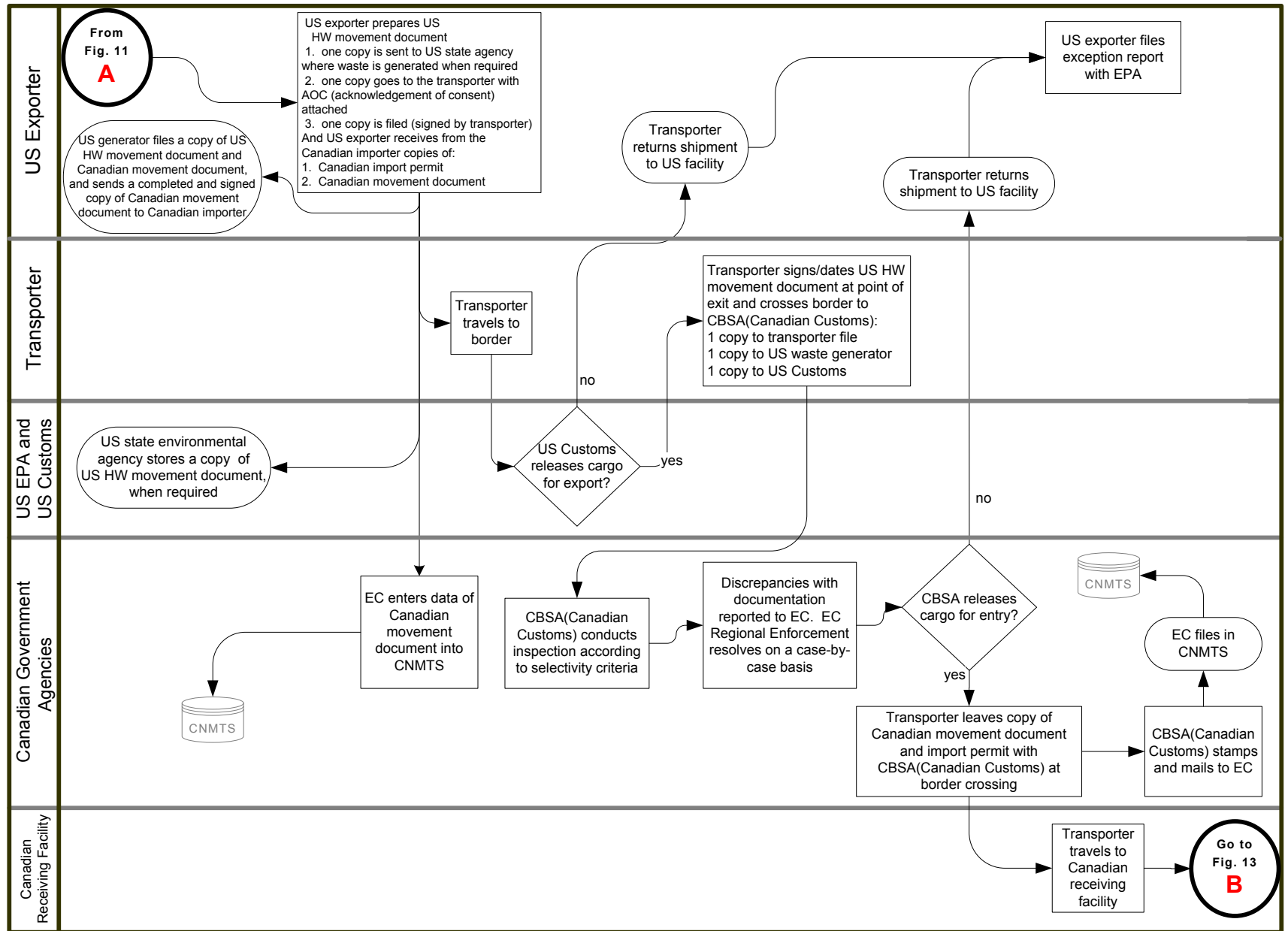
During Shipment across Borders

Figure 12 shows the second phase of exporting hazardous waste, including hazardous recyclable material 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 movement document. The exporter must attach a copy of the AOC to the movement document 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 movement document. An additional copy of the movement document must be given to the transporter, who signs, dates and delivers it to the US CBP official at the point where the waste exits the United States. In addition, the exporter requires the receiving facility to confirm receipt of the waste in writing.

The Canadian importer prepares the EC movement document. The transporter arrives at the CBP border checkpoint and leaves a copy of the US hazardous waste movement document in a CBP departure drop box. When agreed to, CBP forwards a copy of this movement document to OECA.

The transporter crosses the border and arrives at the Canada Border Services Agency (CBSA). The transporter gives the CBSA Border Services Officers (BSO) a photocopy of the Canadian movement document, and import permit. The BSO reviews the documentation and either accepts or denies the import. In the event that there are discrepancies detected in the documentation, CBSA has the authority to send the shipment back or to hold it and contact regional EC enforcement officials for resolution. If the CBSA accepts and clears the shipment for entry into Canada, the transporter transports it to the authorized Canadian receiving facility.

Figure 12. Reporting procedures to ship hazardous waste and hazardous recyclable material from the United States to Canada, during shipment phase



United States to Canada

Upon Arrival and after Shipment

The transporter arrives at the authorized Canadian receiving facility. **Figure 13** represents 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 movement document, gives a copy to the transporter, and sends the appropriate copy to EC. The authorized receiving facility also sends a confirmation of receipt to the US exporter. The authorized Canadian receiving facility sends a certificate of disposal or recycling to EC within 30 days of the completion of the disposal or recycling operation. EC enters the data into CNMITS and prepares an annual summary of hazardous waste and hazardous recyclable material shipments for the Basel Convention Secretariat.

If the Canadian facility cannot dispose of or recycle the hazardous waste or hazardous recyclable material as intended and approved in the import permit, the federal Minister of the Environment must be contacted. Alternative Canadian authorized facilities may be identified that can dispose of or recycle the waste or material in an environmentally sound manner. This re-routing to alternative authorized facilities must be approved by EC before any shipment can take place. If no alternative site can be found in Canada, the hazardous waste or hazardous recyclable material must be returned to the original exporting site in the US. In the case

of a return of rejected hazardous waste or hazardous recyclable material to the US, the Canadian importer must submit to EC a new notice for the purpose of a return. An export permit for the purpose of the return must be obtained by the Canadian importer before any shipment can take place. A new movement document must also be completed and submitted for return shipments.

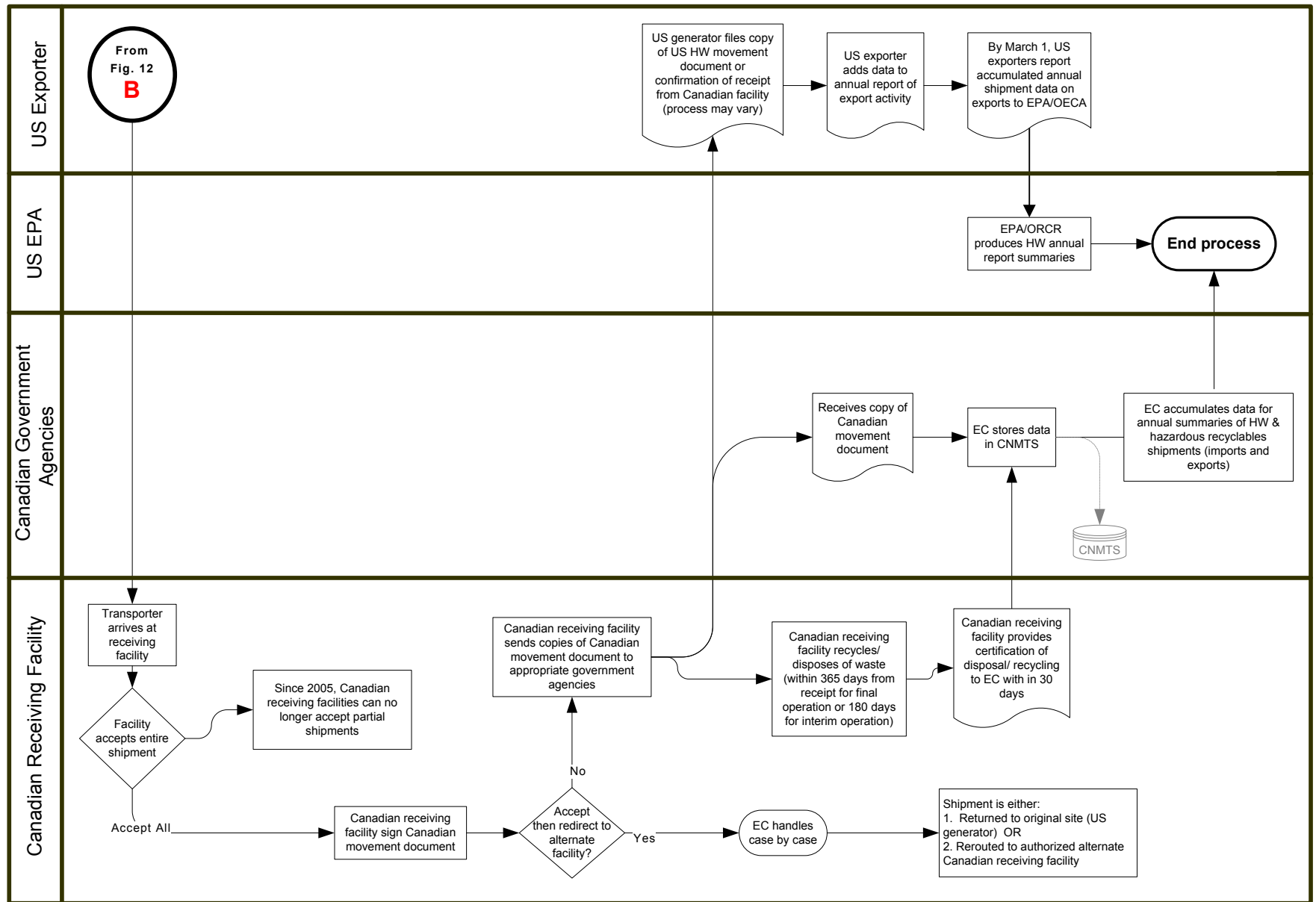
EC reports all return shipments to OECA and provides information on the re-routed, off-specification shipments that were sent to other authorized facilities within Canada. As part of the Basel Convention Article 13 report, Canada has reported the returned shipments to the US for 2005 as disposals which did not proceed as intended.

In either case, the US exporter sends an exception report to OECA. The US exporter must file an exception report if either of the following occurs:

- The exporter does not receive a copy of the US movement document signed and dated by the transporter at the point of departure from the United States within 45 days after the initial acceptance of the shipment by the transporter.
- The exporter does not receive written confirmation of the receipt of the shipment by the receiving facility within 90 days of the initial acceptance of the shipment by the transporter.

After the shipment reaches its final destination, the US exporter may be subject to various reporting requirements, depending on its yearly export activities. These reports include exception reports (US regulation 40 CFR 262.55) and an annual report (40 CFR 262.56). By March 1 of each year, the US exporter has to file an annual report with US EPA summarizing the types, quantities, frequency, and ultimate destinations of all hazardous wastes exported during the previous year. US EPA has not developed a standard reporting form for the annual report. Importers that are also authorized hazardous waste management facilities (TSDFs as defined under RCRA) are required to fill out the biennial report. US EPA regulations require that importers who meet the biennial report applicability criteria (that is, are authorized hazardous waste management facilities) 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. US exporters must keep copies of each notice of intent to export, AOC, confirmation of delivery from the receiving facility and annual export reports for at least three years as defined in US regulation 40 CFR 262.57.

Figure 13. Reporting procedures to ship hazardous waste and hazardous recyclable material from the United States to Canada, after shipment phase



Mexico and Canada

Currently, there are some shipments of hazardous waste or hazardous recyclable material between Mexico and Canada. Canada and Mexico have ratified and are Parties to the Basel Convention. They are also members of the OECD (as is the US). Shipments of hazardous waste destined for disposal operations are dealt with in accordance with agreed-upon Basel procedures and provide detailed data of transboundary shipments of hazardous waste. In the case of transboundary movements of hazardous recyclable materials, the amber mechanism of the OECD Council Decision C (2001) 107/Final, the OECD multilateral agreement on the transboundary movements of hazardous recyclables, can apply.

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

Summary of Challenges



The paper-based practices of the US, Mexican, and Canadian governments for regulating the trans-boundary shipments of hazardous waste create limits on promptly accessible export and import data, lengthy border processes, administrative burdens and costs on both the regulated community and the regulating agencies. 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 the United States and Mexico still relying primarily on paper-based transactions to collect required information from the regulated community and share information between environmental and customs agencies. Environment Canada's CNMITS is the most advanced data management system, but this system is still in the early stages of electronically exchanging information with the regulated companies and the Canada Border Services Agency. Canada to some degree does use other electronic means to communicate with companies under its jurisdic-

tion. 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 challenges listed below and have raised concerns about the ability of customs officials to stop illegal hazardous waste shipments from crossing the borders.

- Enforcement data is not effectively shared among environmental and customs agencies. For example, when the receiving country has denied entry for a shipment, that shipment may still cross the border, since the environmental agencies do not provide a notice of denied shipments to the customs agencies. Also, border agencies typically inspect only a small percentage of shipments to ensure that they have all the appropriate documentation.
- Potential exists for illegal hazardous waste/hazardous recyclable material shipments and port shopping. Because it is not feasible for customs officials to stop every hazardous waste/hazardous recyclable material shipment, transporters can in theory cross border checkpoints without the necessary preapproval of the receiving country. Along with this concern is the concern that transporters will undertake what is called “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 their borders. Manually entering data from paper-based forms creates a considerable administrative

burden. This burden results in Mexican and US agencies often having incomplete data regarding the amounts and types of hazardous waste crossing the borders. Canada’s CNMETS has enabled it to maintain accurate accounts of all hazardous waste and hazardous recyclable material imports and exports as well as transits through other countries in one integrated data management system. However, CNMETS 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 and hazardous recyclable materials crossing its borders and the nature of the disposal and recycling operations involved.

Examples of Canadian data-sharing mechanisms include the following:

- Enforcement personnel have web-based access to CNMETS data or preformatted reports;
- EC’s Waste Reduction and Management Division publishes its *Resilog* Newsletter semi-annually on its web site and annual public reports summarizing hazardous waste import and export data;
- As a Party to the Basel Convention, Canada provides complete annual reports on exports and imports of hazardous wastes and hazardous recyclable material, as well as on the shipments returned to the country of origin where the disposal could not be carried out as intended; and

- EC’s Waste Reduction and Management Division provides Environment Canada’s regional staff with a web-based tool and pre-formatted reports that are completed to summarize data on the notices, permits and movement documents.

Improved data gathering and management procedures and data sharing can provide improved border controls and regulatory effectiveness. For example, improvements may make it possible for exporters to electronically transmit the export notice data to the government. In addition, governments would benefit from the future electronic exchanging of movement document data.

Limited Availability of Information to the Public

The North American public has raised concerns about the lack of accessible information on transboundary shipments of hazardous wastes, which is 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 (point of waste generation) is in one country and the grave (final destination) is in another.
- Each government requires a movement document for hazardous waste movements within its borders, and only Canada has a system to link movement document information with import and export notices.
- Opportunities to learn about the amounts and types of transboundary shipments of hazardous wastes or hazardous recyclable materials are limited.



Only Canada provides an annual summary of amounts and types of transboundary hazardous waste and hazardous recyclable material shipments: the *Resilog* newsletter published semi-annually and an annual report to the Basel Convention Secretariat.

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. They do not publish specific annual reports of import and export activities.

Administrative Burden to the Regulated Community

One of the goals of NAFTA is to reduce trade barriers among the Parties (the three North American countries). However, companies that ship hazardous waste across the North American borders face complex procedures, redundant data entry, and conflicting requirements. These burdens and costs are primarily due to the lack of electronically sharing export and import data among the three countries. Examples include:

- Definition of hazardous waste and exempt materials;
- Import and export notice procedures and associated forms; and
- Requirement to complete different forms (e.g., movement documents, notices to import, notices to export) with similar information.

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

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. Canada does e-mail a certain amount of documentation to other agencies and the regulated community, but the US and Mexico still lag in this respect.

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.



Other Harmonization and Standardization Approaches

Canada

The Government of Canada is developing the Single Window Initiative (SWI) to implement a streamlined approach for the electronic collection, use, and dissemination of commercial trade data required to support the mandates of participating partners. The Other Government Department (OGD) SWI will deliver a more efficient, effective and integrated approach to collecting and consolidating advance commercial information. The OGD SWI will identify and develop electronic solutions and interface options to enhance and increase the exchange of commercial trade data between the Canada Border Services Agency (CBSA) and trade-chain partners.

The CBSA is working with the World Customs Organization (WCO) and bilaterally with the U.S. Customs and Border Protection to further develop harmonized reporting standards. Quality information, collected electronically and received prior to arrival or departure, will augment the ability of all government regulatory programs to identify high-risk goods, while expediting the flow of legitimate, low-risk goods. Looking to the future, the Canadian government hopes to integrate the program into an internationally recognized data set in so that communication between international traders and governments will increase while border security is strengthened.

Mexico

The Mexican government is exploring an initiative geared towards implementing a streamlined approach for the electronic collection, use, and dissemination of data in the case of imports and exports, and the eventual implementation of a single window for imports and exports. This initiative will include collection of data on hazardous waste and hazardous recyclable materials for import or export. The initiative is being led by the Mexican Revenue System (*Servicio de Administración Tributaria*). Other stakeholders of this initiative are Mexican Customs (Aduana Mexico), the Secretariat of Economy, Semarnat and other secretariats of the Federal government.

The United States

The US government is developing the International Trade Data System (ITDS). The ITDS program supports those US federal agencies working with the US Customs and Border Protection (CBP) to develop the Automated Commercial Environment (ACE), a new CBP trade processing system. ACE is being designed to enhance national border security and expedite lawful trade by allowing for unprecedented integration of information and communication between CBP, other participating government agencies (PGAs), and the trade community. The ITDS program assists the PGAs in identifying, documenting, and executing their plan to leverage ACE to improve their business operations and further their agency missions.²⁰

ITDS is an example of single-window processing, which helps to manage gaps between government agencies, simplify procedures, improve efficiency, and integrate applications.

US EPA is a participating government agency in the ITDS program; US EPA plans to share data with US CBP on shipments of hazardous waste. US EPA integration with the ACE will enhance the targeting of high-risk cargo including hazardous wastes. It will also simplify dealings between CBP 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 and at a lower cost.

International

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) have all 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; emphasizing the need for electronic transmission of data and establishing cooperative relationships among WCO members, other government agencies, relevant international bodies, and the private sector.

²⁰ http://www.itds.gov/linkhandler/itds/toolbox/background/itds_faqs.ctt/itds_faqs.pdf

Conclusions and Recommendations

The exports and imports of hazardous waste will continue for a variety of reasons. One reason is that most hazardous waste recycling, treatment and disposal facilities are very expensive so there are a limited number of viable facilities in the world to handle certain types of hazardous waste. Thus, in some cases, these hazardous wastes should be shipped to another country to ensure the environmentally sound management of the waste. Another reason is to promote the recycling of hazardous wastes. There are cases in which a hazardous waste would be disposed of if handled domestically but can be easily and safely recycled if exported.

Given that exports will continue, the oversight of hazardous waste exports and imports in North America is important, especially because the shipments cross different jurisdictions. While in recent years each of the Parties have made improvements to their procedures for transboundary movements of hazardous waste and/or the data gathered on those movements, additional measures are needed to achieve more a robust and efficient trilateral process.

The current paper-based approaches to monitoring of exports and imports have a number of limitations. These include: data entry backlogs because such entry is labor-intensive, limited ability to quickly access a broad set of information on hazardous waste exports and imports, data quality concerns resulting from duplicate data entry and the time-consuming process of comparing paper hazardous waste export and import permits with paper movement documents on actual transboundary shipments.

The CEC recommends that the Parties collaborate closely to establish streamlined electronic sharing of hazardous waste export and import data among themselves and receive data electronically from the regulated community to address the limitations described above. This collaboration includes making it possible for exporters and importers to electronically submit their transboundary movement data to the governments avoiding the vast majority of data entry backlogs and the various problems associated with such backlogs. Some countries are already making progress in the area of electronic submissions from exporters. The CEC also recommends that each Party take the necessary domestic actions to make possible the international exchange of electronic data on the exports and imports of hazardous waste in North America.

In summary, the public has expressed their desire for further strengthening of export and import oversight and for the sake of border security there is a growing demand for more timely information on transboundary movements. The Parties and the Secretariat have shown the capacity for collaboration on steps to replace paper-based approaches with electronic data exchange but further collaboration is needed to provide more complete and quickly accessible information on hazardous waste exports and imports.

AOC	Acknowledgment of consent (to export or import)
AOR	Acknowledgment of receipt (of export notice)
CBP	US Customs and Border Protection
CBSA	Canadian Border Services Agency
CEC	Commission for Environmental Cooperation
CEPA	Canadian Environmental Protection Act
CNMTS	Canadian Notice and Manifest Tracking System
DOT	US Department of Transportation
EC	Environment Canada
EIHWHRMR	Canada's Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations
EPA	US Environmental Protection Agency
HRM	Hazardous recyclable material (Canadian statutory term)
HW	Hazardous waste
ITDS	International Trade Data System
LGPGIR	Ley General Para la Prevención y Gestión Integral de los Residuos (Mexican waste legislation)
NOI	Notice of intent (to export or import)
OECA	EPA Office of Enforcement and Compliance Assurance
OECD	Organisation for Economic Cooperation and Development
ORCR	EPA Office of Resource Conservation and Recovery (formerly Office of Solid Waste)
Profepa	<i>Procuraduría Federal de Protección al Ambiente</i> (Mexican Office of the Federal Attorney General for Environmental Protection)
RCRA	Resource Conservation and Recovery Act (US waste management legislation)
SCT	<i>Secretaría de Comunicaciones y Transportes</i> (Secretariat for Communications and Transport)
Semarnat	<i>Secretaría de Medio Ambiente y Recursos Naturales</i> (Mexican Ministry of Environment and Natural Resources)
Sirrep	<i>Sistema de Rastreo de Residuos Peligrosos</i> (Hazardous Waste Tracking System)
SRE	<i>Secretaría de Relaciones Exteriores</i> (Mexican Ministry of Foreign Affairs).
TSD	Treatment, Storage and Disposal (US RCRA regulatory term)
TSDF	Treatment, Storage and Disposal Facility (US RCRA regulatory term; same as TSD)
WIETS	EPA Waste Import/Export Tracking System
WCO	World Customs Organisation





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