



PROJECT FOR STORAGE AND DISPOSAL OF MERCURY IN PANAMA



Final Report



UNEP-YMCA Panama Agreement

Elaborated by Augusto Mendoza

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Executive Summary

A. Regulatory Framework

Results of the analysis of the regulatory framework determined that there are no specific legal rules in the Republic of Panama with environmental standards that establish maximum permissible mercury emissions to protect the environmental quality of the factors water, air, soil and biota as well as human health protection. Similarly, there are no specific rules for the temporary storage location of elemental mercury waste, mercury contaminated waste and PRTR. However, there are some legal rules that may apply to the registration of sources of emissions and other specific rules that may apply to regulate the import and export of elemental mercury and mercury-containing products.

For some very specific activities there are regulations applicable to control mercury releases.

In the Republic of Panama there is a fairly recent rule regulating the authorization procedure for activities related to hazardous waste management, which includes specifically elemental mercury, its products, and waste, within the framework of hazardous waste. Likewise, there are clear regulations that establish procedures and rules for the inspection of facilities handling mercury waste, but not for this substance in its pure state or its products. On the other hand, the process of Environmental Impact Assessment and Risk related to mercury, its products and waste is clearly stated in the regulation of the General Environmental Law.

It should be noted that there is a National Policy on Integrated Hazardous and Non-hazardous Waste Management, including elemental mercury waste and waste contaminated with mercury. Import of hazardous waste is prohibited, including elemental mercury waste and mercury-contaminated waste.

It is necessary to develop a rule establishing or directing an institutional coordination to address the issue of mercury waste, and it is essential to create a legal provision that criminalizes or defines a list of hazardous substances and waste including among them mercury waste, and likewise there should a legal provision requiring the creation and monitoring of a Pollutant Release and Transfer Register (PRTR).

B. Inventory Update

The results of the inventory update indicate increased mercury releases caused by some products; this is due to sustained economic growth experienced by the Republic of Panama in recent years. The three largest sources of mercury release will be described. For more information on the other sources of release please refer to Annex 5 on page 40.

The highest mercury releases to factors air, water and waste are identified by the Subcategory 5.5.4 *Batteries with mercury*, with a value of 18278.71 kg Hg/year.

In second place, the document describes the mercury releases to factors air, water and land, from by-products classified in the Subcategory 5.9.4 *Informal dumping of general waste*, with mercury releases valued at 2232.66 kg Hg/year.

In third place, the release of mercury to factors air, impurities in products and waste products caused by products classified in the Subcategories 5.3.1 *Cement production*, have a value of 1532.62 kg of Hg per year.

C. Potential sites for temporary storage of elemental mercury waste and mercury-contaminated waste

During the project, several potential sites for temporary storage of elemental mercury waste and mercury-contaminated waste were identified after evaluating the characteristics of location and other criteria such as:

- a. Proximity to the largest generation of waste;
- b. Availability of space;
- c. Compliance with environmental rules;
- d. Proximity to nearest populated place (near, far);
- e. Adequate security to prevent access to outsiders;
- f. Accessibility (highways, roads);
- g. Zoning (urban, semi-urban, rural);
- h. Land use (commercial, industrial, agricultural);
- i. Location in a seismic zone;
- j. Location in geological faults;
- k. Flood area;
- l. Nearby water sources;
- m. Local aquifer;
- n. Nearby vulnerabilities (cultural heritage, schools, hospitals);
- o. Waste handling in the area;
- p. Mercury waste handling in the area.

The following chart describes the identified potential sites for temporary storage of elemental mercury waste and mercury-contaminated waste, and the corresponding responsible entity:

Possible sites of interest	Responsible Entity
Bunkers	Ministry of Security
Cerro Patacon Landfill	Authority of Urban and Household Sanitation (private concession management)
EMAS controlled dump	Municipality of La Chorrera (private concession management)
Lands of the Tocumen extension of the Technological University of Panama.	Technological University of Panama
Ecologic S,A	Private company

1. Background

This document includes the results obtained within the framework of the agreement between UNEP and YMCA-Panama, to develop a Project for Storage and Disposal of Mercury in Panama - Phase 1. In particular, the contents of this report include an introduction to the legal framework (summary of deliverable 2), an analysis of the current waste management in Panama, particularly hazardous waste and mercury, including the list of treatment facilities (deliverable 1). It also provides information on updating the national emissions inventory (summary of deliverable 3), in order to contribute to a greater context to the document. This paper also contains a section corresponding to the identification of stakeholders (deliverable 4), including the description of actors, their roles, and the progress in the establishment of a working group. Finally it provides a preliminary assessment of management options (deliverable 5).

It should be noted that in February 2009 the UNEP Governing Council adopted Decision 25/5 on the development of a legally binding global instrument on mercury. On Saturday January 19, 2013, in the early morning, the governments agreed to the wording of a global legally binding instrument on mercury which gave birth to the "Minamata Convention on Mercury." The next Plenipotentiary Conference held in Minamata will celebrate the acceptance of the Convention in question.

International action is indirectly addressing the concerns in the area of healthcare through the reduction of emissions and releases to the environment. These include point sources reduction and control of products containing mercury, reducing the use of procedures that use mercury, solid waste management and structural approach to reduce the use of mercury in artisanal gold mining.

These measures will reduce mercury levels in fish and they should also lower levels in the environment as well. In some fish species, this reduction can be seen fairly quickly, while in other species, the levels will decrease more slowly. However, much of the mercury emitted in the past will impact the environment in the coming years. So it is necessary to take action starting now to lessen the impact of exposure to mercury.

2. Regulatory Framework

2.1 Summary of the review of the regulatory framework in the field of hazardous waste including the national policy on the management of hazardous and solid waste.

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