



BASEL CONVENTION



MID-TERM PROGRESS REPORT

MERCURY STORAGE AND DISPOSAL PROJECT IN THE CARIBBEAN: JAMAICA, SURINAME AND TRINIDAD AND TOBAGO

UNEP GLOBAL MERCURY
PARTNERSHIP

BASEL CONVENTION REGIONAL
CENTRE- CARIBBEAN

AUGUST 2016

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region (BCRC-Caribbean) in collaboration with the UNEP “Chemicals and Waste Branch” of the United Nations Environment Programme’s Division of Technology, Industry and Economics (UNEP/DTIE) received funding from the Norway Official Development Assistance (ODA) for the project “Mercury Storage and Disposal Project in the Caribbean: Jamaica, Trinidad and Tobago and Suriname”. The project seeks to identify environmentally sound storage and disposal solutions for mercury, recognized by the international community as a priority

This project is a follow-up to the 2009 Norway funded project “Reducing Mercury Supply and Investigating Safe Long Term Storage Solutions”, also known as “UNEP Mercury Storage Project”. The project serves as a catalyst in the action towards ratification of the Minamata Convention and it is part of the continuing work to provide technical assistance to countries in search for environmentally sound storage and disposal for mercury, identified as a priority of governments. The project builds on GC 25/5 III decision that requested “UNEP Executive Director working through the Global Mercury Partnership and concurrently with the work of the Intergovernmental Negotiating Committee to develop a legally binding instrument on mercury, to continue and enhance as part of international action on mercury the existing work, including enhancing capacity for mercury storage”. The project is under the umbrella of the UNEP Global Mercury Partnership, mandated to take immediate action to reduce mercury pollution.

PROGRESS REPORT

This report details the progress made since the hosting of the Project Inception Workshop in Trinidad and Tobago in September of 2015.

INCEPTION WORKSHOP

To initiate the project, the BCRC-Caribbean and UNEP/DTIE hosted a two-day inception workshop which was held at the Trinidad Hilton and Conference Centre, Port-of-Spain, Trinidad and Tobago from 12th to 13th August 2015. This workshop was attended by representatives of the relevant government agencies of the three (3) countries, the CARICOM Secretariat, the BCRC-Caribbean and the UNEP “Waste and Chemicals Branch” as well as an international consultant, Mr Stephen Hoffman.

The workshop created the platform to allocate roles and responsibilities and established a detailed timeline for the implementation of the various project activities. Each country selected a representative for the overall coordination of the project and mechanisms of communication were put into place. The meeting also served as an opportunity for the

UNEP Waste and Chemicals Branch to present and explain the toolkit for the identification and quantification of mercury releases.

NATIONAL WORKSHOPS

The finalized project documentation and Small Scale Funding Agreement (SSFA) between the United Nations Environment Programme through its Division of Technology, Industry and Economics (UNEP/DTIE) and the Basel Convention Regional Centre for the Caribbean (BCRC-Caribbean) came into effect in February, 2016. The first activities after the signing of the SSFA and the mobilisation of funding were the planning and execution of three national workshops in each country. These workshops were held after consultation and establishment of the national steering committees and national working groups in each of the three countries.

The workshop dates were:

1. Trinidad and Tobago – May 18th 2016
2. Jamaica – June 14th 2016
3. Suriname – June 20th 2016

The objectives of these workshops were:

- 1) To bring together the key stakeholders in each country and to introduce them to the project,
- 2) Establish a working group of key stakeholders in each country through which data and resources could be made available,
- 3) To begin the process of evaluating the nature and content of data that existed in each country on mercury use, storage facilities and methods and disposal options currently practiced and
- 4) To begin the process of conducting an inventory of mercury uses, storage and disposal in each country using the first tier (Level I) of the Mercury Inventory Toolkit.

The particulars of participation and discussions at these workshops are detailed in each of the national country reports which are attached as Appendices 1, 2 and 3 at the end of this report. The PowerPoint presentations on the project made at these meetings were generic in nature and are included in Appendix 4.

In order to facilitate the data gathering it was envisaged that the development of individual questionnaires would expedite the data collection process. As such the BCRC Caribbean consulted with Mr Stephen Hoffman (who has been recruited by the BCRC - Caribbean) to provide senior level technical advice and oversight for the project. The questionnaires that were developed are attached at Appendix 5.

TRINIDAD AND TOBAGO

Since the workshop, the following data requests/questionnaires have been sent to the following sectors:

1. Oil and Gas Industry
2. Methanol and Ammonia Plants
3. Dental Association and Individual Dentists
4. Companies involved in environmental remediation
5. Power Generation
6. Funeral Homes and Crematoria
7. Companies that sell Mercury Containing Devices
8. Companies that sell Dental Amalgam

In order to facilitate the data collection, the BCRC – Caribbean has recruited interns for each of the three (3) countries, for a period of two (2) months. The Terms of Reference for these interns is attached at Appendix 6.

For Trinidad and Tobago, Mr Kishan Patloo has been recruited for the period July 26th 2016 to September 26th 2016 (See Resume at Appendix 7). He will be supervised by Dr Ahmad Khan, Director and Ms Jewel Batchasingh, Research Analyst of the BCRC – Caribbean. He and the other interns have been tasked with the following duties:

- ❖ *Disseminating questionnaires and collecting data from stakeholders;*
- ❖ *Continuous follow up with stakeholders to gather data;*
- ❖ *Data analysis;*
- ❖ *Assistance with collection of information related to the legislative and regulatory framework;*
- ❖ *Research, collect, analyse documents related to mercury sources, storage and disposal;*
- ❖ *Perform other duties as required.*

JAMAICA

Since the workshop, the following data sets were received based on the stakeholder participation:

1. Bauxite Production data
2. Mercury Emissions to the environment from the regulatory agency National Environmental Protection Agency

Ms April Johnson has been recruited for the period July 25th to September 23rd 2016 (See Resume at Appendix 7). She will now disseminate the questionnaires to the relevant sectors and begin the data collection process to the various sectors that have not yet responded. Ms Johnson will be supervised by Dr. Roy Porter, Head of Chemistry Department, University of the West Indies, Mona and Ms Andrea Jones- Bennett, Director Projects and Enforcement, Ministry of Economic Growth and Job Creation.

SURINAME

Since the workshop on June 20th, 2016 the only data set that was received was the Geological Maps of Suriname.

Ms Tiffany van Ravenswaay has been recruited for the period July 18th, 2016 to September 16th, 2016 (See Resume at Appendix 7). Ms Ravenswaay will be supervised by Dr. Christiaan Max Huisden, Vice Chair, Environmental Sciences Department - University of Suriname and Marci Gompers, Office of the Cabinet of the President.

She will disseminate the questionnaires to the relevant sectors and begin the data collection process to the sectors that have not yet responded.

It must be noted that in Suriname stakeholders wanted formal correspondence from the Office of the Cabinet of the President in order to release the data. Now that Ms van Ravenswaay is on board, it is anticipated that this process will be expedited.

BUDGET EXPENDITURE

As of July 31st 2016, 42.2% of the budget was spent and committed. The breakdown of said expenditure is provided in Table 1 below. It is evident that the balance of funds will not be spent according to the expenditure schedule, primarily because the BCRC-Caribbean and the respective Steering Committees in each country have determined that the “best value for money” can be realised if as many key stakeholders as possible participate in the actual data gathering exercises and the results workshops at the end of the project. The intention to sub-contract out-sourced services for the activities listed at 3, 4, 6 and 7 no longer exists and the BCRC-Caribbean through the interns hired in each country and the National Working Committees will now undertake these activities under the guidance of a senior expert, Stephen Hofmann.

The balance of funds are proposed to be used to pay for Mr Hofmann’s services, to fund follow up in-country meetings by BCRC-Caribbean staff, to pay for the services of the Interns and to host three Results Workshops, one in each country, in December 2016.

Table 1: Breakdown of Budgeted and Actual/Committed Expenditure for the Project to End July 2016.

Activity	Item	Cost (per country)	Budgeted Expenditure		Actual/Committed Expenditure	
			UNEP Fund Allocation	BCRC Fund Allocation	UNEP Fund Allocation	BCRC Fund Allocation
1. Inception workshop - participation of UNEP staff, consultant and 3 participants per country	Travel/DSA	n.a.	10,000	2,500	12,740.85	12,484.84
2. National interagency meetings and workshops:	In-kind	-	-	-	-	-
3. Detailed inventories of mercury waste streams	Subcontracts	10,000	20,000	10,000	19,774.44	-
4. Survey and analysis of temporary storage locations	Subcontracts	5,000	10,000	5,000	4,500	-
5. Review of regulatory frameworks	In-kind	-	-	-	-	-
6. Assessment of basic management options	Subcontracts	3,500	7,000	3,500	-	-
7. Development of national storage and waste management action plans	Subcontracts	1,500	3,000	1,500	-	-
8. Results workshop participation of UNEP staff, consultant and 3 participants per country	Travel/DSA	n.a.	10,000	2,500	-	-
9. Project coordination	Staff time	n.a.	-	5,000	-	-
Totals			60,000	30,000	37,015.29	14,984.84
Balance left in UNEP in-cash Contribution			22,984.71			
Balance left in BCRC in-cash Contribution				15,015.16		

LEGISLATIVE REVIEW

For each of the three (3) participating countries the legislative review was assigned to the respective organisation as follows:

- ❖ Trinidad and Tobago – Legal Department, Ministry of Planning and Development
- ❖ Jamaica – Ministry of Economic Growth and Job Creation
- ❖ Suriname – National Institute for Environment and Development (NIMOS)

In each of the three (3) participating countries, there was a draft document that would have to be amended accordingly for the purposes of this project.

NEXT STEPS

The key next step is the data collection and subsequent development of the inventory and the report. It is anticipated that in keeping with the original project schedule that the draft report will be developed on or before October 31, 2016 with countries being given a month to review before the final workshop in December 2016.

APPENDIX 1
REPORT ON KEY STAKEHOLDER INCEPTION MEETING –
TRINIDAD AND TOBAGO

MERCURY STORAGE AND DISPOSAL PROJECT

National Workshop Report
Trinidad and Tobago
May 2016

Basel
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Centre-
Caribbean



BASEL CONVENTION



**MINAMATA
CONVENTION
ON MERCURY**

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MERCURY STORAGE AND DISPOSAL PROJECT

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region (BCRC-Caribbean) in collaboration with the UNEP “Chemicals and Waste Branch” of the United Nations Environment Programme’s Division of Technology, Industry and Economics (UNEP/DTIE) has received funding from the Norway Official Development Assistance Agency (ODA) for the project “Mercury Storage and Disposal Project in the Caribbean: Jamaica, Trinidad and Tobago and Suriname”.

The specific objectives of this project are:

1. Establish effective decision-making processes as they relate to mercury use, storage and disposal at the national level;
2. Gain an understanding of mercury waste streams, management options and the regulatory framework relevant for the environmentally sound management of mercury
3. Enhance countries’ understanding of the mercury waste and commodity issues as these relate to surplus mercury at country level;
4. Assist government to understand the key elements of a framework enabling the environmentally sound management of mercury waste, including through the development of national storage and waste management action plans;
5. Support the three (3) countries efforts towards the accession, ratification and early implementation of the Minamata Convention on Mercury;
6. Create awareness on the hazards and risks posed by mercury and mercury waste.

PROJECT ACTIVITIES

In order to meet the above mentioned objectives, the following activities will be conducted:

ACTIVITIES

- Inception workshop;
- Establishing decision-making processes;
- National interagency meetings and workshops;
- Detailed inventories of mercury waste streams;
- Survey and analysis of possible temporary storage locations;
- Review of regulatory framework;
- Assessing basic management options;
- Developing national storage and waste management action plans;
- Results workshop.

The following are the outputs that are expected:

OUTPUTS

- Inception workshop; (COMPLETED August 2015)
- Report of the inception workshop;
- Establishment of an inter-agency/inter-ministerial committee in each country;
- Establishment of a national working group in each country;
- National interagency meetings and workshops in each country;
- List of generators of mercury wastes for each country;
- Inventories of mercury waste streams in each country;
- Preliminary list of potential temporary storage locations in each country;
- List of companies authorized for the treatment, storage or disposal of hazardous waste in each country;
- Assessment of the domestic management infrastructure in each country;
- Summary report on the regulatory framework relevant for hazardous waste management and mercury in each country;
- Report on the basic management options, including evaluation and recommendations in each country;
- Results workshop;
- Report of the results workshop.

As part of the activities, a national workshop is required to acquaint the national steering committee and key stakeholders of the required outputs of the project.

WORKSHOP ACTIVITIES

The Trinidad and Tobago national workshop was held on Wednesday 18th May at the Ministry of Planning Conference Room, Level 26, Tower D, International Waterfront Complex, 1A Wrightson Road, Port of Spain. A total of twelve (12) of the eighteen (18) invited participants attended and included persons from the oil and gas sector, dental association, civil society and academia. The full list of participants is detailed at Table 1, Annex I and the agenda is detailed at Table 2, Annex II.

PRESENTATIONS

The meeting started at 9:30 am and ended promptly at 2:55pm. Dr David Persaud, Environmental Manager, Environmental Policy and Planning Division, Ministry of Planning and Development gave opening remarks. He indicated that he was happy that Trinidad and Tobago was fortunate to be a part of this project and highlighted the dangers of mercury in the environment. He also took time to commend the BCRC-Caribbean on its successes in obtaining international funding for its projects and noted that the Ministry of Planning and Development was fully aware of how difficult the process can be.

Dr. Khan brought opening remarks on behalf of the BCRC-Caribbean. He was brief in his remarks and highlighted the importance of the project and the need for partners to collaborate on same as the data sets will ensure the success of the project.

The following table details the presentations that were made throughout the course of the day:

Table 3: List of Presentations

	PRESENTER	TITLE OF PRESENTATION	DESCRIPTION
1	Ahmad Khan Ph.D., BCRC- Caribbean	Overview of the Minamata Convention	Quick overview of the genesis and objectives of the Minamata Convention
2	Jewel Batchasingh, BCRC-Caribbean	Overview of the Mercury Storage and Disposal Project	Objectives and expected outputs of the project
3	Jewel Batchasingh, BCRC-Caribbean	Mercury Inventory	Details on the different sources of mercury in the environment and details on the UNEP Level 1 Inventory Toolkit
4	Ahmad Khan Ph.D., BCRC- Caribbean	Types and Sources of Mercury Wastes	Details on the different types and sources of mercury wastes
5	Jewel Batchasingh, BCRC-Caribbean	Survey and Analysis of Possible Temporary Storage Locations	Highlights the different types of temporary storage locations for mercury
6	Ahmad Khan Ph.D., BCRC- Caribbean	Review of the Regulatory Framework	Overview of what is required for the review of the legal framework and case studies from Argentina, Uruguay and what exists in Trinidad and Tobago
7	Jewel Batchasingh, BCRC-Caribbean	I. Recovery and Disposal Options II. Assessing basic management options: Disposal operations	Details on the recovery and disposal options including permanent storage. Assessing the disposal options.
8	Jewel Batchasingh, BCRC-Caribbean	Developing National Mercury Storage and Disposal Action Plan	Quick overview of what are the key elements in developing the National Action Plan
9	Trisha Beejai, EMA & Keima Gardiner, Ministry of Planning and Development	Mercury Initiatives in Trinidad and Tobago	Overview of existing work done in the field of mercury Review of the National Action Plan developed in August 2015

The presentations highlighted the overview of the project, detailed the inventory and then sought to highlight to participants the options for storage and disposal. There was also a discussion on the regulatory framework and examining the existing framework for opportunities and gaps as it relates to waste management.

The discussions were centred on trying to populate the inventory and who/m were the best persons and organisations to contact. This proved useful to the BCRC-Caribbean. Discussions were also centred on the issue of disposal versus storage and what is the best option for Trinidad and Tobago.

Additionally, the country representatives presented on available sources of mercury in the country as well as on the draft work plan. The national work plan was revised by the participants and is attached at Annex III.

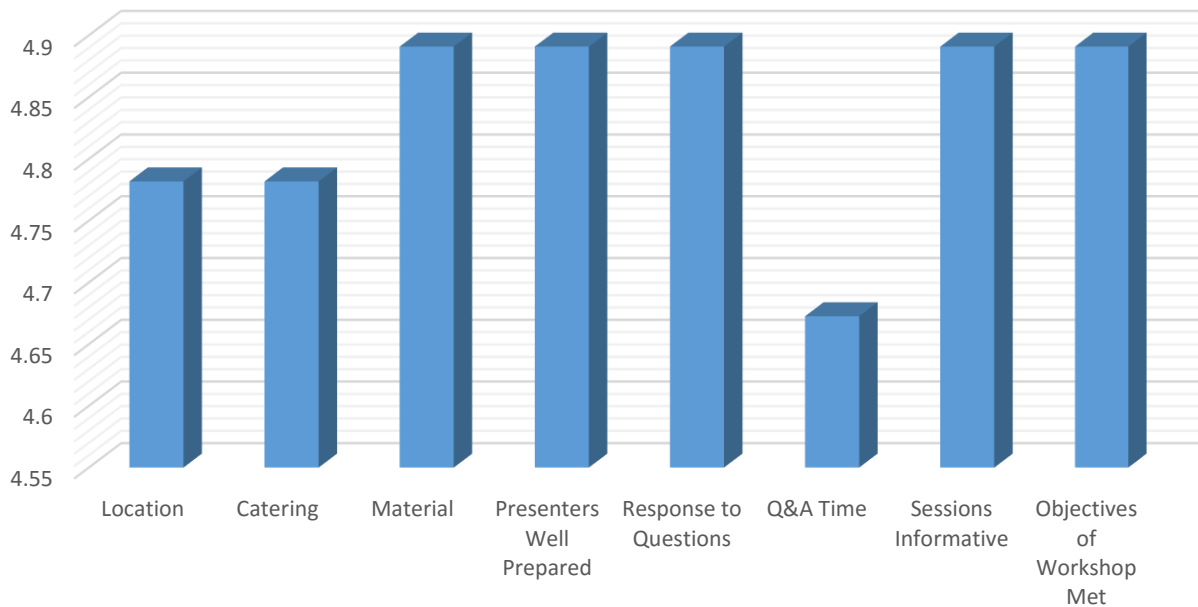
NEXT STEPS

The attendees agreed that obtaining the data was critical to the project success and indicated that they will assist with the facilitation of meetings at their respective institutions. This will be done by attendees spearheading coordination efforts and assisting with the development of questionnaires for each sector. They also agreed to the proposed timeline as illustrated at Annex IV.

STAKEHOLDER AND WORKSHOP ATTENDEES

The evaluation forms (attached at Annex V) examined several criteria including planning and logistics as well as material content and the manner of presentation. Overall as shown in Figure 1, the results show that the overall workshop was excellent in all facets.

Figure 1: National Workshop Assessment Form Results - Trinidad and Tobago



LESSONS LEARNT AND RECOMMENDATIONS

A. STAKEHOLDER COMMENTS

Based on the results of the workshop assessment forms, the areas for improvement are:

1. Spend more time on the UNEP Inventory Toolkit
2. Allow more time between the presentations to facilitate discussion rather than questions

B. GENERAL STAKEHOLDER COMMENTS

Based on the results of the workshop assessment forms, other comments of note were:

1. Most participants learnt new information
2. Participants wanted to be part of the results workshop

B. BCRC- CARIBBEAN COMMENTS

Based on an internal assessment by the BCRC – Caribbean team, it was felt that the presentation # 3 Types and Sources of Mercury Wastes be merged with the Presentation on Recovery and Disposal which will also allow sufficient time for discussions.

ANNEX I

ANNEX I
TABLE 1: PARTICIPANTS LIST
MERCURY STORAGE AND DISPOSAL PROJECT
NATIONAL WORKSHOP
MAY 18TH 2016

	NAME	TITLE	ORGANISATION & ADDRESS	CONTACT INFORMATION
1	Trisha Beejai	Technical Officer - Waste	Technical Services, Waste Unit, #8 Elizabeth Street, St. Clair, Port of Spain	Tel(W): - 868-628-8042 ext. 3257 Email: tbeejai@ema.co.tt
2	Deon Brebnor	Environmental Officer II	Environmental Management Unit, Department of Natural Resources and the Environment (DNRE), Tobago House of Assemble, Montessori Drive, Glen Road, Scarborough, Tobago	Tel(W):868 – 634-2273 ext. 3617 Mobile: 868-485-0459 Email: thadnre@yahoo.com , deon_brebnor@hotmail.com
3	Samantha Chadee Ph.D.	Assistant Professor	Environmental Studies Department, The University of Trinidad and Tobago, Lots # 74-998, O'Meara Industrial Park, Arima, Trinidad	Mobile: 868-731-9901 Fax: 868-643-2116 Email: samantha.chadee@gmail.com
4	Tadis Dillon	Quality and Environment Officer	Quality, Health, Safety and Environment Department Solid Waste Management Company Limited (SWMCOL). #34	Email: tdillon@swmcol.co.tt

			Independence Square, Port of Spain, Trinidad	
5	Najila Elias-Samlalsingh	Team Lead Environment	Atlantic LNG, HSSE, Point Fortin, Trinidad	Tel(W): 868-290-2699 Email: nelias-samlalsingh@atlanticlng.com
6	Keima Gardiner	Environmental Engineering Specialist	Ministry of Planning and Development, Level 26, Tower D, International waterfront Complex, 1A Wrightson Road, POS, Trinidad	Tel(W):868-225-3391 Mobile: Email: keima.gardiner@mewr.gov.tt
7	Daryll Griffith	Chairman	Council of Presidents of the Environment, #179 Maxi Assee Place, Malabar, Arima, Trinidad	Tel(W): Mobile: 868-470-6558 Email: daryllgriffith@gmail.com
8	Avyrl Mohammed	Senior HSE Specialist	Petroleum Company of Trinidad and Tobago (PETROTRIN), HSE Department, Southern Main Road, Pointe- a- Pierre, Trinidad	Tel (W): 868-658-6129 Mobile: 868-481-9245
9	Azad Mohammed Ph.D.	Lecturer	Department of Life Sciences, University of the West Indies, St. Augustine, Trinidad	Tel(W): Mobile: 868-756-1062 Email: azad.mohammed@sta.uwi.edu
10	Dr. Amit Paryag	Secretary Dental Council of Trinidad and Tobago	The Dental Council of Trinidad and Tobago, Professional Centre, Fitzblackman Drive, Port of Spain, Trinidad	Tel (W): 868-797-1695 Mobile: 868-223-7523 Email: a.paryag@gmail.com
11	Rhonda Sieunarine	Pesticides and Toxic	Ministry of Health, Pesticides and Toxic Chemicals	Tel (W): 868-623-7544 Fax: 868-623-9014 Email: rhonsieu@hotmail.com

		Chemicals Inspector I	Inspectorate, #92 Frederick Street, Port of Spain, Trinidad	
12	LaToya Smith	Legal Officer I	Legal Unit, Ministry of Planning and Development, Eric Williams, Financial Complex, Independence Square, Port of Spain, Trinidad	Tel: Email: latoya.smith@planning.gov.tt
BCRC-CARIBBEAN STAFF				
13	Ahmad Khan Ph.D.	Director	BCRC-Caribbean, #8 Alexandra Street, St. Clair, POS, Trinidad	Tel:6868-628-8369 Fax:868-628-2151 Email: ahmad.khan@bcrc-caribbean.org
14	Jewel Batchasingh	Research Analyst	BCRC-Caribbean, #8 Alexandra Street, St. Clair, POS, Trinidad	Tel:6868-628-8369 Fax:868-628-2151 Email: jewel.batchasingh@bcrc-caribbean.org

ANNEX II

ANNEX II

Table 2: National Workshop Agenda



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NATIONAL WORKSHOP

Mercury Storage and Disposal Project in the Caribbean

DATE May 18th, 2016

LOCATION: Conference Room, Level 26, Tower D, International Waterfront Complex, 1A Wrightson Road, Port of Spain

DRAFT AGENDA		
DAY 1		
DATE May 18, 2016		
9.00	Opening Remarks	Country Representative Dr. Ahmad Khan, BCRC-Caribbean
9.15	Introduction of Participants	Participants
9.30	Overview of the Minamata Convention	Dr. Ahmad Khan – BCRC-Caribbean
9.50	Overview of the Mercury Storage and Disposal Project	Jewel Batchasingh – BCRC-Caribbean
10.10	Mercury Inventory	Jewel Batchasingh – BCRC-Caribbean
10.30	COFFEE BREAK	

DRAFT AGENDA**DAY 1**

11.00	Types and Sources of Mercury Wastes	Dr. Ahmad Khan - BCRC- Caribbean
11.30	Survey and Analysis of Possible Temporary Storage Locations	Jewel Batchasingh- BCRC- Caribbean
12.00	LUNCH	
13.00	Review of the Regulatory Framework	Dr. Ahmad Khan – BCRC - Caribbean
13.20	I. Recovery and Disposal Options II. Assessing basic management options: Disposal operations	Jewel Batchasingh- BCRC- Caribbean
13.50	Developing National Mercury Storage and Disposal Action Plan	Jewel Batchasingh- BCRC-Caribbean
2.00	Presentation of Mercury Initiatives and Draft Project Workplan for Trinidad & Tobago	Country Representative
2.30	Logistics of Stakeholder Meetings on Day 2 & 3	All Participants
3.00	Closure of Meeting	Country Representative Dr. Ahmad Khan - BCRC - Caribbean

ANNEX III

ANNEX III

TABLE 3: WORKPLAN FOR THE IMPLEMENTATION OF THE MERCURY STORAGE AND DISPOSAL PROJECT IN TRINIDAD & TOBAGO

GENERAL OBJECTIVE : To Create A Framework For ESM Of Hg Storage And Disposal For T&T

OUTPUT/ACTIVITIES	TASKS	RESPONSIBLE	PARTNERS	TIMEFRAME	RESOURCES
Specific Objective 1: Determine whether the Project is still a National Priority following General Elections					
Obtain written confirmation on whether the Project is still a National Priority	Conduct internal meetings to determine the priority of the Project following General Elections.	EPPD	-	5 months	GORTT (Government of the Republic of Trinidad & Tobago)
Specific Objective 2: To establish a National Steering Committee for the Project.					
Establishment of a National Steering Committee	Identify the stakeholders (private and public sector including NGOs and CBOs) and contact persons for each stakeholder.	Ministry of Planning & Development (MPD)	<ul style="list-style-type: none"> Environmental Management Authority (EMA) BCRC-Caribbean 	2 weeks	GORTT
	Formally contact stakeholders (via official correspondence, telephone, e-mail) to discuss the requirements of the Project.	MPD	-	1 month	GORTT
Define the Work Plan for the Committee	Identify the objectives of the Committee and form National Working Group to implement the respective modules. Establish milestones for the NWG.	MPD	<ul style="list-style-type: none"> BCRC-Caribbean 	1 month	GORTT, INTERNATIONAL FUNDING

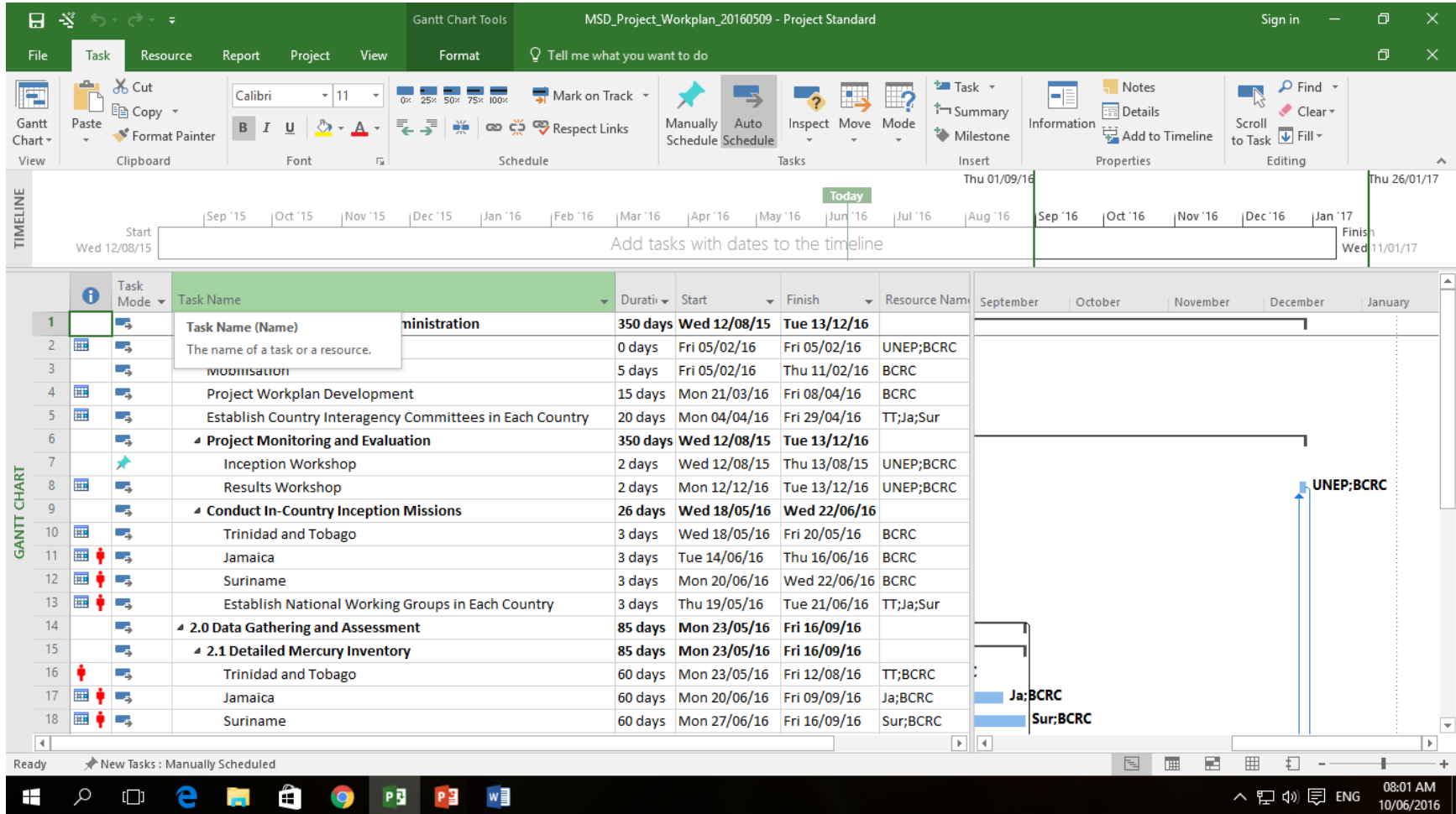
	Host informal meetings to implement the project's objectives.	MPD	<ul style="list-style-type: none"> • BCRC-Caribbean 	8 months	GORTT
Specific Objective 3: Assess National Legislation and Propose Regulation as necessary					
Generate a Report on the review of all existing legislation, conventions and operational plans/policies with the Minamata Convention	Review and compare the existing legislation and conventions to which T&T is signatory (local and regional) to the Minamata Convention.	MPD Legal department	<ul style="list-style-type: none"> • EMA • BCRC-Caribbean • Min. of Energy and Energy Affairs • Min. of Health • Min. of Transport • Min. of Trade & Industry • Customs and Excise Division • Tobago House of Assembly/TEMA • Min. of National Security (ODPM, Coast Guard, Fire Services) • DNRE • SWMCOL 	2 months	GORTT
Generate a Report	Review and compare the operational plans and procedures of the various governmental agencies and private sector with the Minamata Convention.	MPD	<ul style="list-style-type: none"> • Private Sector Organizations (AUOTT, TTMA, AMCHAM, Chamber of Commerce, TTCIC, Energy Chamber) • BCRC-Caribbean 	2 months	GORTT
Develop a Gap Analysis of the existing regulatory framework with the Minamata Convention	Compile the information generated from the review of existing regulatory framework (above) and make recommendations.	MPD	<ul style="list-style-type: none"> • National Committee • BCRC-Caribbean • Ministry of Legal Affairs 	2 months	GORTT

Specific Objective 4: Conduct or Update a Mercury Waste Inventory					
Develop a Mercury Waste Inventory	Review the existing Hazardous Waste Inventory and use the Mercury Toolkit to develop a Mercury Waste Inventory.	EMA	<ul style="list-style-type: none"> • BCRC-Caribbean • MPD • SWMCOL • Ministry of Energy & Energy Industries • NLWG 	3 months	GORTT, GREEN FUND, GEF
Specific Objective 5: Determine the Organizational Structure					
Confirm the Organizational Structure	Identify the staffing demands to manage the requirements of the mercury waste storage and disposal plan.	EMA	<ul style="list-style-type: none"> • MPD • BCRC-Caribbean 	3 months	GORTT, GREEN FUND, GEF
Specific Objective 6: Identify the ESM options for Storage and Disposal					
Identify Environmentally Sound Management (ESM)	Assess the current storage and disposal options in T&T (disposal companies and technologies used to process mercury waste).	EMA	<ul style="list-style-type: none"> • National Committee 	4 months	GORTT, GREEN FUND, GEF
	Conduct a feasibility study on the use of local options versus export; inclusive of the possibility of establishing a local treatment facility to reduce the volumes for final export (will involve registration and licensing).	EMA	<ul style="list-style-type: none"> • MPD 	2 months	GORTT
Specific Objective 7: Assess costs of implementation (funding options)					
Generate a Report on the cost of Implementation	Determine the funding options for developing or improving on local options for storage and disposal versus export.	National Committee	<ul style="list-style-type: none"> • BCRC-Caribbean 	3 months	GORTT, INTERNATIONAL: GEF, Special Fund

Specific Objective 8: Determine Schedule for Implementation					
Specific Objective 9: Implementation					
Implementation of the Action Plan	Identify the responsible persons/entities for various aspects of the Plan.	National Committee	<ul style="list-style-type: none"> • BCRC-Caribbean 	3 months	GORTT, INTERNATIONAL
Specific Objective 10: Develop an Education & Public Awareness Campaign					
Development of an education and public awareness campaign	Use the outcomes arising out of the study to produce sector specific public awareness materials.	EMA MPD	<ul style="list-style-type: none"> • COPE & other NGOs • UWI & UTT • BCRC-Caribbean 	3 months	GORTT
Specific Objective 11: Formulate a decision to ratify the Minamata Convention on Mercury					
Generate a country position.	Compile all relevant documents and materials arising from the study for submission to the Minister for use in making a determination on the country's position with respect to acceding to the Minamata Convention.	MPD	<ul style="list-style-type: none"> • BCRC-Caribbean 	1 month	GORTT

ANNEX IV

ANNEX IV PROJECT WORKPLAN



MSD_Project_Workplan_20160509 - Project Standard

File Task Resource Report Project View Format Tell me what you want to do

Clipboard: Paste, Copy, Format Painter
 Font: Calibri, 11
 Schedule: Mark on Track, Manually Schedule, Auto Schedule, Inspect, Move, Mode
 Tasks: Task, Summary, Milestone
 Properties: Notes, Details, Add to Timeline
 Editing: Find, Clear, Scroll to Task, Fill

Move Task
 Move the selected tasks forward or back in the project schedule.
 You can also move the task to when the resources are available to work on the task.

Task Mode	Task Name	Durati	Start	Finish
	2.2 Survey and analysis of Temporary Storage Locations	80 days	Mon 30/05/16	Fri 16/09/16
	Trinidad and Tobago	60 days	Mon 30/05/16	Fri 19/08/16
	Jamaica	60 days	Mon 20/06/16	Fri 09/09/16
	Suriname	60 days	Mon 27/06/16	Fri 16/09/16
	2.3 Review of regulatory framework	80 days	Mon 30/05/16	Fri 16/09/16
	Trinidad and Tobago	60 days	Mon 30/05/16	Fri 19/08/16
	Jamaica	60 days	Mon 20/06/16	Fri 09/09/16
	Suriname	60 days	Mon 27/06/16	Fri 16/09/16
	3.0 Assessing basic management options	30 days	Mon 19/09/16	Fri 28/10/16
	Trinidad and Tobago	30 days	Mon 19/09/16	Fri 28/10/16
	Jamaica	30 days	Mon 19/09/16	Fri 28/10/16
	Suriname	30 days	Mon 19/09/16	Fri 28/10/16
	4.0 Develop Management Action Plans	52 days	Mon 31/10/16	Wed 11/01/17
	4.1 Draft Action Plan	20 days	Mon 31/10/16	Fri 25/11/16
	4.2 Review by Countries	20 days	Mon 31/10/16	Fri 25/11/16
	4.3 Final Action Plan	20 days	Wed 14/12/16	Tue 10/01/17
	4.4 Submit to UNEP CW	0 days	Wed 11/01/17	Wed 11/01/17

Timeline: Start Wed 12/08/15, Finish Wed 11/01/17

Resources: CRC, Ja;BCRC, Sur;BCRC, BCRC, TT;Ja;Sur

Timeline: October, November, December, January

Ready | New Tasks : Manually Scheduled | 08:01 AM 10/06/2016

ANNEX V

ANNEX V



BASEL CONVENTION



Mercury Storage and Disposal Project in the Caribbean: Jamaica, Suriname, Trinidad & Tobago Workshop

EVALUATION FORM

Port of Spain, Trinidad and Tobago

May 18th, 2016

WORKSHOP ASSESSMENT FORM						
<p>Thank you for attending the Inception Workshop for the Mercury Storage and Disposal Project in Trinidad and Tobago.</p> <p>We would be very grateful if you could please take a moment to complete this workshop assessment form. Your comments will assist us in improving our future workshops.</p>						
ASSESSMENT OF WORKSHOP CONTENT AND ORGANIZATION						
SCALE:	1 – STRONGLY AGREE	2 – AGREE	3 – NEUTRAL	4 – DISAGREE	5 – STRONGLY DISAGREE	
Please also provide feedback in the comments box						
	1	2	3	4	5	Comments
1. The workshop location and facilities were appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. The catering arrangements were appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. The workshop material was presented in a clear and organized manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4. The presenters were well prepared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. The presenters responded to questions in an informative, appropriate and satisfactory manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. The time allocated to presentations and interactive group work was appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Overall, the sessions were informative and valuable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. The workshop met its stated aims and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. What aspects of the workshop, if any, would you change in future? Why?						
10. Which session/elements of the workshop did you find most useful? Why?						
11. Do you have any suggestions for future workshops/events that you would like us to organize?						

12. What new information have you learnt from the workshop?

THANK YOU FOR COMPLETING THE ASSESSMENT FORM

APPENDIX 2
REPORT ON KEY STAKEHOLDER INCEPTION MEETING –
JAMAICA

Mercury Storage and Disposal Project Jamaica June 14th, 2016



BASEL CONVENTION



MINAMATA
CONVENTION
ON MERCURY

Basel Convention
Regional Centre -
Caribbean

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MERCURY STORAGE AND DISPOSAL PROJECT

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region (BCRC-Caribbean) in collaboration with the UNEP “Chemicals and Waste Branch” of the United Nations Environment Programme’s Division of Technology, Industry and Economics (UNEP/DTIE) has received funding from the Norway Official Development Assistance Agency (ODA) for the project “Mercury Storage and Disposal Project in the Caribbean: Jamaica, Trinidad and Tobago and Suriname”.

The specific objectives of this project are:

1. Establish effective decision-making processes as they relate to mercury use, storage and disposal at the national level;
2. Gain an understanding of mercury waste streams, management options and the regulatory framework relevant for the environmentally sound management of mercury
3. Enhance countries’ understanding of the mercury waste and commodity issues as these relate to surplus mercury at country level;
4. Assist government to understand the key elements of a framework enabling the environmentally sound management of mercury waste, including through the development of national storage and waste management action plans;
5. Support the three (3) countries efforts towards the accession, ratification and early implementation of the Minamata Convention on Mercury;
6. Create awareness on the hazards and risks posed by mercury and mercury waste.

PROJECT ACTIVITIES

In order to meet the above mentioned objectives, the following activities will be conducted:

ACTIVITIES

- Inception workshop;
- Establishing decision-making processes;
- National interagency meetings and workshops;
- Detailed inventories of mercury waste streams;
- Survey and analysis of possible temporary storage locations;
- Review of regulatory framework;
- Assessing basic management options;
- Developing national storage and waste management action plans;
- Results workshop.

The following are the outputs that are expected:

OUTPUTS

- Inception workshop; (COMPLETED August 2015)
- Report of the inception workshop;
- Establishment of an inter-agency/inter-ministerial committee in each country;
- Establishment of a national working group in each country;
- National interagency meetings and workshops in each country;
- List of generators of mercury wastes for each country;
- Inventories of mercury waste streams in each country;
- Preliminary list of potential temporary storage locations in each country;
- List of companies authorized for the treatment, storage or disposal of hazardous waste in each country;
- Assessment of the domestic management infrastructure in each country;
- Summary report on the regulatory framework relevant for hazardous waste management and mercury in each country;
- Report on the basic management options, including evaluation and recommendations in each country;
- Results workshop;
- Report of the results workshop.

As part of the activities, a national workshop is required to acquaint the national steering committee and key stakeholders of the required outputs of the project.

WORKSHOP ACTIVITIES

The Jamaica National Workshop was held on Tuesday 14th June, 2016 at the Conference Room, Ministry of Economic Growth and Job Creation, Kingston, Jamaica. A total of thirty (30) attended the workshop and meetings and included persons from the mining sector, Ministry of Health, regulatory agency and academia. The full list of participants is detailed at Table 1, Annex I and the agenda is detailed at Table 2, Annex II.

PRESENTATIONS

The meeting started at 9:45 am and ended at 3:10pm. Lieutenant Colonel Oral Khan, Chief Technical Director, Ministry of Economic Growth and Job Creation delivered opening remarks on behalf of the Ministry. Ms Gillian Guthrie, also gave opening remarks. She highlighted the dangers of mercury and the issue facing Jamaica and the global importance of the Minamata Convention. She elaborated on the genesis of the Convention.

Dr. Khan brought opening remarks on behalf of the BCRC-Caribbean. He was brief in his remarks and highlighted the importance of the project and the need for partners to collaborate on same as the data sets will ensure the success of the project.

The following table details the presentations that were made throughout the course of the day:

Table 3: List of Presentations

	PRESENTER	TITLE OF PRESENTATION	DESCRIPTION
1	Andrea Jones-Bennett	Overview of the Minamata Convention	Quick overview of the genesis and objectives of the Minamata Convention
2	Jewel Batchasingh, BCRC-Caribbean	Overview of the Mercury Storage and Disposal Project	Objectives and expected outputs of the project
3	Jewel Batchasingh, BCRC-Caribbean	Mercury Inventory	Details on the different sources of mercury in the environment and details on the UNEP Level 1 Inventory Toolkit
4	Ahmad Khan Ph.D., BCRC-Caribbean	I. Types and Sources of Mercury Wastes II Recovery and Disposal Options	Details on the different types and sources of mercury wastes Details on the recovery and disposal options including permanent storage
5	Jewel Batchasingh, BCRC-Caribbean	Temporary Storage Locations	Highlights the different types of temporary storage locations for mercury
6	Ahmad Khan Ph.D., BCRC-Caribbean	Review of the Regulatory Framework	Overview of what is required for the review of the legal framework and case studies from Argentina, Uruguay and what exists in Trinidad and Tobago
7	Jewel Batchasingh, BCRC-Caribbean	Assessing basic management options: Disposal operations	Assessing the disposal options.
8	Jewel Batchasingh, BCRC-Caribbean	Developing National Mercury Storage and Disposal Action Plan	Quick overview of what are the key elements in developing the National Action Plan
9	Andrea Jones Bennett	National Action Plan for Jamaica	Overview of the action plan for Jamaica

The presentations highlighted the overview of the project, detailed the inventory and then sought to highlight to participants the options for storage and disposal. There was also a discussion on the regulatory framework and examining the existing framework for opportunities and gaps as it relates to waste management.

The discussions were centred on trying to populate the inventory and who/m were the best persons and organisations to contact. This proved useful to the BCRC-Caribbean. Discussions were also centred on the issue of disposal versus storage and what is the best option for Jamaica.

Additionally, the country representatives presented on available sources of mercury in the country as well as on the draft work plan. The national work plan was revised by the participants and is attached at Annex III.

NEXT STEPS

The attendees agreed that obtaining the data was critical to the project success and indicated that they will assist with the facilitation of meetings at their respective institutions. This will be done by attendees spearheading coordination efforts and assisting with the development of questionnaires for each sector. They also agreed to the proposed timeline as illustrated at Annex IV.

The second and third days of the mission were spent meeting stakeholders in face to face meetings.

Day 2 – Wednesday 15th June, 2016

Participants included:

1. Ministry of Health
2. National Environmental Planning Agency
3. Customs and Excise Division
4. Chemistry Department, Ministry of Health
5. JAMALCO
6. Jamaica Bauxite Institute
7. Windalco

Day 3 – Thursday 16th June, 2016

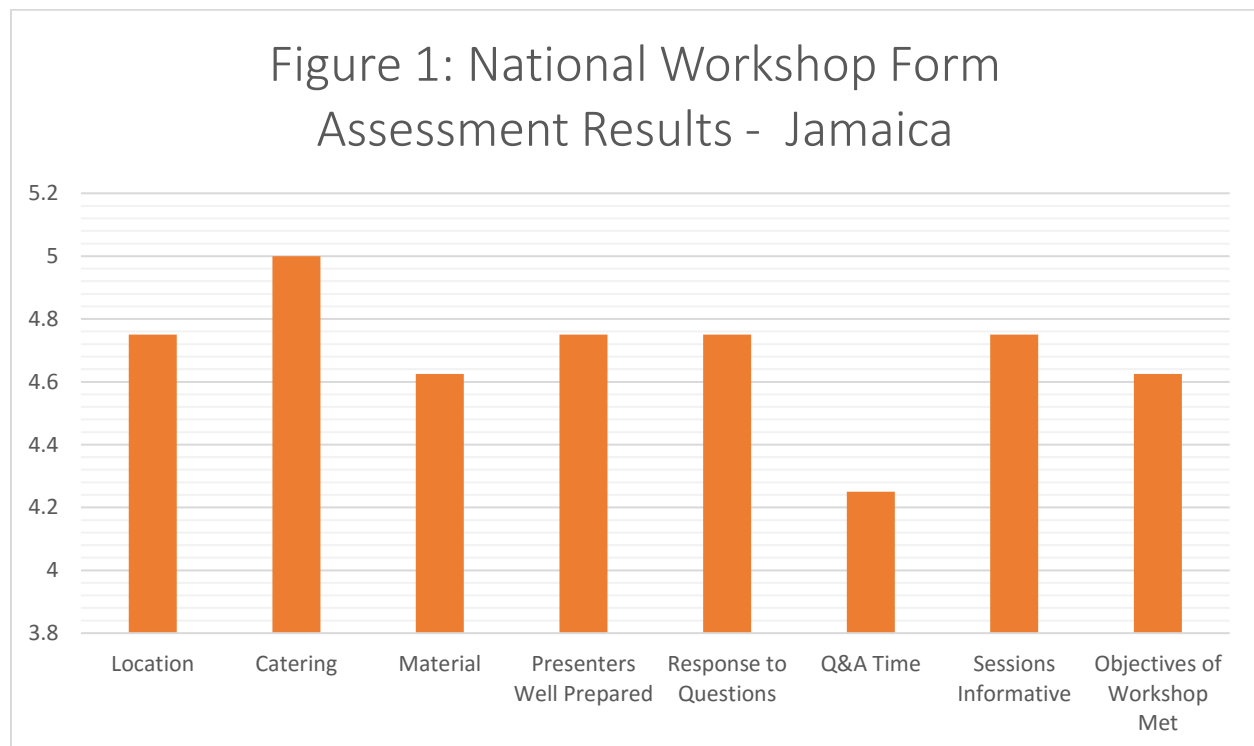
Participants included:

1. University of the West Indies

2. University of Technology
3. International Centre for Environment and Nuclear Sciences
4. Statistical Division

STAKEHOLDER AND WORKSHOP ATTENDEES

The evaluation forms (attached at Annex VI) examined several criteria including planning and logistics as well as material content and the manner of presentation. Overall as shown in Figure 1, the results show that the overall workshop was excellent in all facets.



LESSONS LEARNT AND RECOMMENDATIONS

A. STAKEHOLDER COMMENTS

Based on the results of the workshop assessment forms, the areas for improvement are:

1. Spend more time on the UNEP Inventory Toolkit
2. Allow more time between the presentations to facilitate discussion rather than questions

B. GENERAL STAKEHOLDER COMMENTS

Based on the results of the workshop assessment forms, other comments of note were:

1. Most participants learnt new information
2. Participants wanted to be part of the results workshop

ANNEX I

ANNEX 1
PARTICIPANTS LIST
MERCURY STORAGE AND DISPOSAL PROJECT
NATIONAL WORKSHOP JAMAICA
JUNE 14TH 2016

	NAME	TITLE	ORGANISATION & ADDRESS	CONTACT INFORMATION
1	Errol Dakin	Toxicologist/Analyst	Ministry of Industry, Commerce, Agriculture and Fisheries, Veterinary Services Division, #193 Old Hope Road, Kingston 6, Hope Gardens	Phone: 876-977-2489 Email: ecdakin@yahoo.com
2	Suresh Bhalai	Director	Economic Minerals(Geology), Mines and Geology Division, Ministry of Transport and Mining, Hope Gardens, Kingston 6, PO BOX 141	Phone: 876-927-1936 Email: sbhalai@mgd.gov.jm
3	Leighton Bennett	Scientific Officer	Analytical Services, Jamaica Bauxite Institute, Hope Gardens Kingston 6, PO BOX 355	Phone: 876-927-2073-9 Email: lbennett@jbi.org.jm
4	Kamilah Hylton	Faculty Dean	Science and Sport, University of Technology, 235 Old Hope Road, Kingston 6	Phone: 876-818-7464 Email: kshylton@utech.edu.jm
5	Karen Brown	Regional Environmental Health Officer	Environmental Health, North East Regional Health Authority, Ocean Village, Ocho Rios, St Ann	Phone: 876-770-8173 Email: Karen.brown@nerha.gov.jm karensims@yahoo.com

6	Denis Miller	Director, Mineral Economics and Development	Minerals Policy Planning and Development. Ministry of Transport and Mining, 138 Maxfield Avenue, Kingston 10	Phone: 876-564-6474 Email: damiller@mtw.gov.jm
7	Marsha Ann Palmer	Occupational Health and Safety Specialist	Environmental Health Unit, Ministry of Health, 10-16 Grenada Way, New Kingston, Kingston	Phone: 876-397-8765 Email: palmerm@moh.gov.jm Damiah77@gmail.com
8	Gerald Lindo	Senior Technical Officer	Climate Change Division Ministry of Economic Growth and Job Creation 16A Half Way Tree Road, Kingston 5	Phone: 876-822-7847 Email: Gerry.lindo@gmail.com
9	Orville Grey	Senior Technical Officer	Climate Change Division Ministry of Economic Growth and Job Creation 16A Half Way Tree Road, Kingston 5	Phone: 876-633-7353 Email: orville.grey@mwlecc.gov.jm
10	Tara Dasgupta	Emeritus Professor	Chemistry Department, University of the West Indies, Mona, Kingston 7	Phone: 876-927-1910 or 876-977-7164 Email: tara.dasgupta@gmail.com
11	Paulette Kolbusch	Senior Manager	Environmental Management and Conservation Division, National Environment and Planning Agency, 10 + 11 Caledonia Avenue, Kingston 5	Phone: 876-754-7540 or 876-878-1271 Email: pkolbusch@nepa.gov.jm
12	Dionne Williams	QSPTF Project Administrator	Environmental and Risk Management Division, Ministry of Economic Growth and Job Creation, 16 A Half Way Tree Road, Kingston 5	Phone: 876-633-7500 Email: Dionne.williams@mwlecc.gov.jm
13	Andrea Jones Bennett	Director Projects and Enforcement	Environmental and Risk Management Division, Ministry of Economic Growth	Phone: 876-550-0558 Email: andrea.jones@mwlecc.gov.jm

			and Job Creation, 16 A Half Way2 Tree Road, Kingston 5	
14	Mei Har Lau	Chemist	Chemistry Department, Ministry of Health	Phone: 876-927-1830 Email: harlaum@moh.gov.jm
15	Leonard Smith	Chief Environmental Engineer	Ministry of Health National Public Health Laboratory	Phone: 876-399-0967 Email: leonard.smith@ymail.com
16	Andrea Spence	EHS Manager	JAMALCO	Phone: 876-469-4550 Email: andrea.spence@jamalco.com
17	Ramon Hutchinson	E&S Manager	WINDALCO	Phone: 876-508-9720 Email: ramon.hutchinson@rusal.com
18	Shanti Persaud	Environmental Officer	Jamaica Bauxite Institute	Phone: 876-927-2073-7 Email: spersaud@jbi.org.jm
19	Annette Henry	Manager	NEPA	Phone: 876-754-7540 ext 2330 Email: Annette.henry@nepa.gov.jm
20	Stephen Wedderburn	Chief Technical Officer	MICAF Ministry of Industry Commerce Agriculture and Fisheries	Phone: 876-968-8730/876-382-8118 Email: swedderburn@miic.gov.jm
21	Janet Geohagen- Martin	Director	Statistical Institute of Jamaica	Phone: 876-630-1661 Email: sesu@statinja.gov.jm
22	Daniel Gillings	Lab Technician	UWI	Phone: 876-887-6737 Email: Daniel.gillings02@uwimona.edu.jm
23	Raymond Reid	Quality Manager	UWI	Phone: 876-426-6978 Email: rrreid1@gmail.com
24	Leslie Hoo Fung	Research Scientist	ICENS	876-927-1777, 876-352-5589 Email: leslie.hoofung@uwimona.edu.jm
25	Arlene Lawrence	Director safety and Health	Jamaica Customs	Phone: 876-433-1542 Email: Arlene.lawrence@jacustom.gov.jm
26	Kerri Ann Guyah	Officer Safety and Health	Jamaica Customs	Phone: 876-363-6386 Email: kerriann.guyah@jacustom.gov.jm
27	Jason Brown	Lab Technician	UWI	Phone: 876-821-5044 Email: jbdistrict@yahoo.com
28	Roy Porter	Head Department of Chemistry	UWI	Phone: 876-792-3856 Email: roy.porter@uwimona.edu.jm

29	Robert Johnson	Head Division of Chemistry	UTECH	Phone: 876-870-9585 Email: rjohnson@utech.edu.jm
30	Gillian Guthrie	Senior Director	Environmental and Risk Management Division, Ministry of Economic Growth and Job Creation, 16 A Half Way2 Tree Road, Kingston 5	Phone: 876-550-0558 Email: gillian.guthrie@mwlecc.gov.jm
BCRC-CARIBBEAN STAFF				
31	Ahmad Khan Ph.D.	Director	BCRC-Caribbean, #8 Alexandra Street, St. Clair, POS, Trinidad	Tel:6868-628-8369 Fax:868-628-2151 Email: ahmad.khan@bcrc-caribbean.org
32	Jewel Batchasingh	Research Analyst	BCRC-Caribbean, #8 Alexandra Street, St. Clair, POS, Trinidad	Tel:6868-628-8369 Fax:868-628-2151 Email: jewel.batchasingh@bcrc-caribbean.org

ANNEX II

ANNEX II

Table 2: National Workshop Agenda



BASEL CONVENTION



NATIONAL WORKSHOP

Mercury Storage and Disposal Project in the Caribbean

DATE: June 14, 2016

**LOCATION: Conference Room, Ministry of Economic Growth and Job Creation (MEGJC)
16A Half-Way-Tree Road, Kingston 5, Jamaica**

AGENDA		
DAY 1: June 14th, 2016		
DATE: June 14, 2016		
9.00	REGISTRATION	
9.30	Opening Remarks	Gillian Guthrie, Senior Director -Environment & Risk Management Division, MEGJC Dr. Ahmad Khan, Director Basel Convention Regional Centre for the Caribbean Region (BCRC-Caribbean)
9.45	Introduction of Participants	Participants
10.00	Overview of the Minamata Convention	Andrea Jones Bennett

AGENDA

DAY 1: June 14th, 2016

		Director Projects & Enforcement, MEGJC
10.15	Overview of the Mercury Storage and Disposal Project	Jewel Batchasingh - BCRC- Caribbean
10.30	COFFEE BREAK	
11.00	Mercury Inventory	Jewel Batchasingh – BCRC- Caribbean
11.20	Types and Sources of Mercury Wastes	Dr. Ahmad Khan - BCRC- Caribbean
11.50	Recovery and Disposal Survey and Analysis of Possible Temporary Storage Locations	Jewel Batchasingh- BCRC- Caribbean
12.20	Review of the Regulatory Framework	Dr. Ahmad Khan – BCRC - Caribbean
12.45	LUNCH	
13.45	Assessing basic management options: Disposal operations	Jewel Batchasingh- BCRC- Caribbean
14.15	Developing National Mercury Storage and Disposal Action Plan	Jewel Batchasingh- BCRC- Caribbean
14.30	Presentation of Mercury Initiatives and Draft Project Workplan for Jamaica	Andrea Jones Bennett- MEGJC
14.45	Logistics of Stakeholder Meetings on Day 2 & 3	All Participants
15.00	Closure of Meeting	Gillian Guthrie –MEGJC Dr. Ahmad Khan - BCRC - Caribbean

DRAFT AGENDA

DAY 2: June 15, 2016

STAKEHOLDER MEETINGS

TIME	NAME	ORGANISATION	CONTACT INFORMATION
9.00 -10.00			
10.00 -11.00			
11.00-12.00			
LUNCH			
13.00-14.00			
14.00-15.00			
15.00- 16.00			
16.00-17.00			

DRAFT AGENDA

DAY 3: June 16, 2016

STAKEHOLDER MEETINGS

TIME	NAME	ORGANISATION	CONTACT INFORMATION
9.00 -10.00			
10.00 -11.00			
11.00-12.00			
LUNCH			
13.00-14.00			
14.00-15.00			
15.00- 16.00			
16.00-17.00			

ANNEX III

ANNEX III

TABLE 3: WORKPLAN FOR THE IMPLEMENTATION OF THE MERCURY STORAGE AND DISPOSAL PROJECT IN JAMAICA

GENERAL OBJECTIVE : TO ENHANCE CAPACITIES AND PROMOTE THE ENVIRONMENTALLY SOUND MANAGEMENT (ESM) AND DISPOSAL OF SURPLUS MERCURY IN JAMAICA

11122 Specific Objective 1: To establish decision making processes to support the implementation of the Project					
Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
Establishment of a National Inter-agency/ Inter-ministerial Committee (NIC)	<ol style="list-style-type: none"> 1. Invite Ministries, Departments and Agencies to become members of the NIC 2. Establish the NIC 3. Facilitate the coordination and monitoring of the Project through the NIC. 	Ministry of Economic Growth & Job Creation (MEGJC)	<ul style="list-style-type: none"> • Ministry of Transport and Mining (MTM) • Ministry of Health (MOH) • National Environment & Planning Agency (NEPA) • Jamaica Bureau of Standards (JBS) • Jamaica Bauxite Institute (JBI) • National Solid Waste Management Authority (NSWMA) 	1.5 months	Staff time

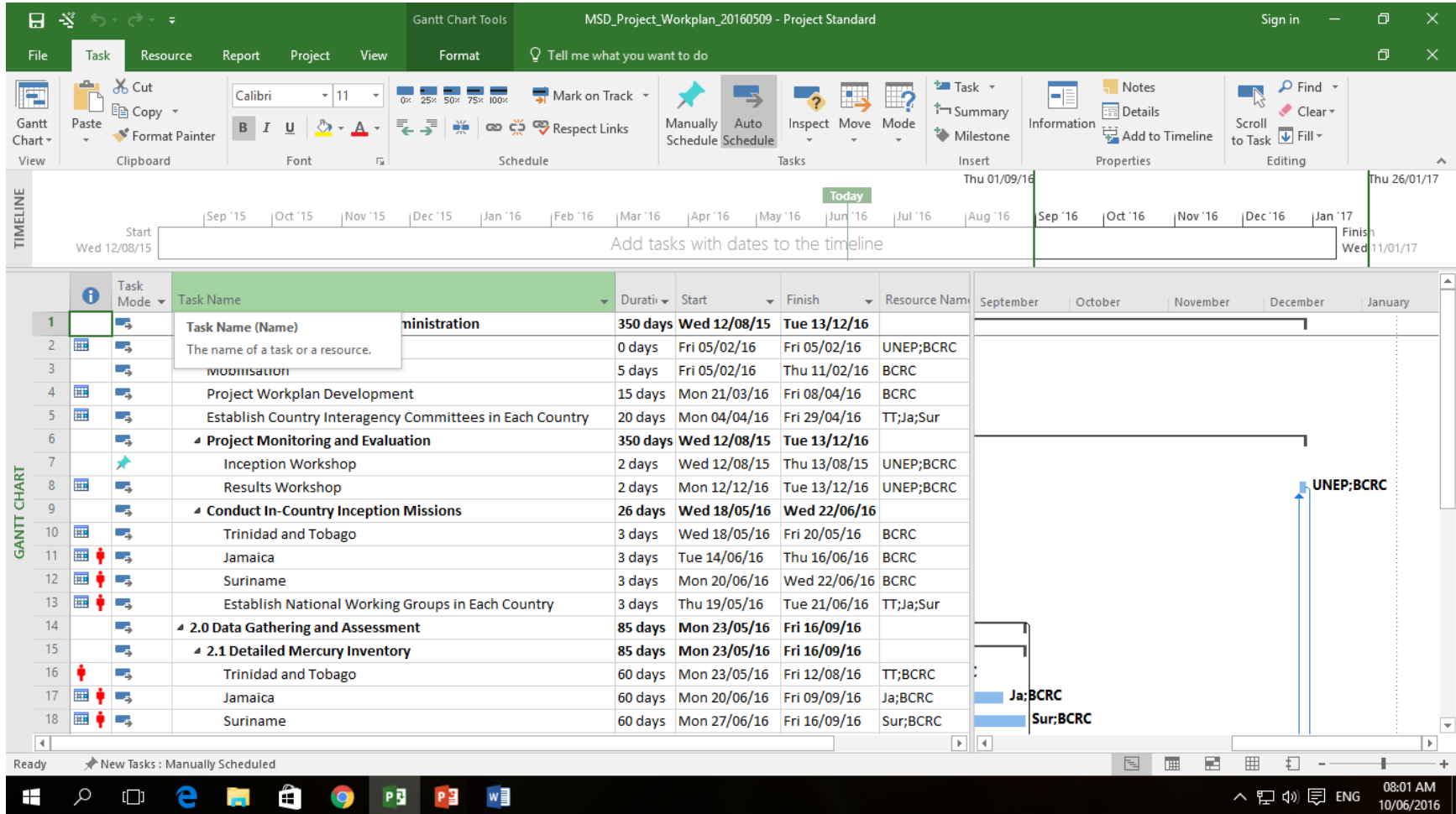
National Inter-agency Meetings and Workshops	<ol style="list-style-type: none"> 1. Identify key stakeholders 2. Organise meetings/workshops/consultations 3. Facilitate and or conduct meetings/workshops/consultations 4. Make decisions associated with the recommendations arising from the findings of the project 	MEGJC BCRC	NIC Users of mercury products Generators of mercury wastes	2 months	At least one face-to-face meeting Teleconferences Emails
Specific Objective 2: To assess the national situation on mercury					
National Inventory of mercury	<ol style="list-style-type: none"> 1. Obtain detailed information from stakeholders on mercury sources and types of mercury wastes for the inventory 2. Updating of existing inventories 	NEPA BCRC	MEGJC MOH NIC Working group Private enterprises	4 months	Existing Inventories UNEP Toolkit Staffing Project funds
Specific Objective 3: To review existing regulations addressing Mercury and Mercury Waste and update or develop new regulations as needed and implement the National Action Plan					

Review of Regulatory framework related to Mercury and Mercury Wastes	<ol style="list-style-type: none"> 1. Review of relevant laws and policies on chemicals including hazardous wastes 2. Identification of gaps in the regulatory framework 3. Conduct needs analyses in regulatory framework on chemicals 	BCRC MEGJC		2 months	Staffing Project Funds
Specific Objective 4: To develop national storage and waste management action plans for the ESM of mercury and mercury wastes					
Identify potential locations for temporary storage of mercury and mercury wastes	<ol style="list-style-type: none"> 1. generate list of approved treatment, storage and disposal facilities 2. investigate the suitability of the identified facilities 3. assess public owned wastes facilities 4. conduct analyses/explore how the recommended storage facilities may be utilized 	BCRC	NEPA NSWMA PRIVATE ENTERPRISES	4 months	
Assessment of Management Options and Development of Action Plans	<ol style="list-style-type: none"> 1. identify basic management options based in the results of the inventory, assessment of the regulatory framework and assessment of the existing infrastructure 2. assessment of technologies/ storage sites available in country 	BCRC MEGJC NIC	Working Group Private enterprises	5 months	Data on storage and disposal facilities Inventory

	3. develop action plan with recommendations, strategies and timelines				
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ANNEX IV

ANNEX IV PROJECT WORKPLAN



MSD_Project_Workplan_20160509 - Project Standard

File Task Resource Report Project View Format Tell me what you want to do

Clipboard: Paste, Copy, Format Painter
 Font: Calibri, 11
 Schedule: Mark on Track, Manually Schedule, Auto Schedule, Inspect, Move, Mode
 Tasks: Task, Summary, Milestone
 Properties: Information, Notes, Details, Add to Timeline
 Editing: Find, Clear, Scroll to Task, Fill

Move Task
 Move the selected tasks forward or back in the project schedule.
 You can also move the task to when the resources are available to work on the task.

Task Mode	Task Name	Durati	Start	Finish
	2.2 Survey and analysis of Temporary Storage Locations	80 days	Mon 30/05/16	Fri 16/09/16
	Trinidad and Tobago	60 days	Mon 30/05/16	Fri 19/08/16
	Jamaica	60 days	Mon 20/06/16	Fri 09/09/16
	Suriname	60 days	Mon 27/06/16	Fri 16/09/16
	2.3 Review of regulatory framework	80 days	Mon 30/05/16	Fri 16/09/16
	Trinidad and Tobago	60 days	Mon 30/05/16	Fri 19/08/16
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	3.0 Assessing basic management options	30 days	Mon 19/09/16	Fri 28/10/16
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	Jamaica	30 days	Mon 19/09/16	Fri 28/10/16
	Suriname	30 days	Mon 19/09/16	Fri 28/10/16
	4.0 Develop Management Action Plans	52 days	Mon 31/10/16	Wed 11/01/17
	4.1 Draft Action Plan	20 days	Mon 31/10/16	Fri 25/11/16
	4.2 Review by Countries	20 days	Mon 31/10/16	Fri 25/11/16
	4.3 Final Action Plan	20 days	Wed 14/12/16	Tue 10/01/17
	4.4 Submit to UNEP CW	0 days	Wed 11/01/17	Wed 11/01/17

Timeline: Start Wed 12/08/15, Finish Wed 11/01/17

Resources: CRC, Ja;BCRC, Sur;BCRC, BCRC, TT;Ja;Sur

Ready | New Tasks : Manually Scheduled | 08:01 AM 10/06/2016

ANNEX V

ANNEX V



BASEL CONVENTION



Mercury Storage and Disposal Project in the Caribbean: Jamaica, Suriname, Trinidad & Tobago Workshop

EVALUATION FORM

Kingston, Jamaica

June 14, 2016

WORKSHOP ASSESSMENT FORM						
<p>Thank you for attending the Inception Workshop for the Mercury Storage and Disposal Project in Trinidad and Tobago.</p> <p>We would be very grateful if you could please take a moment to complete this workshop assessment form. Your comments will assist us in improving our future workshops.</p>						
ASSESSMENT OF WORKSHOP CONTENT AND ORGANIZATION						
SCALE:	1 – STRONGLY AGREE	2 – AGREE	3 – NEUTRAL	4 – DISAGREE	5 – STRONGLY DISAGREE	
Please also provide feedback in the comments box						
	1	2	3	4	5	Comments
1. The workshop location and facilities were appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. The catering arrangements were appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. The workshop material was presented in a clear and organized manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4. The presenters were well prepared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. The presenters responded to questions in an informative, appropriate and satisfactory manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. The time allocated to presentations and interactive group work was appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Overall, the sessions were informative and valuable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. The workshop met its stated aims and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. What aspects of the workshop, if any, would you change in future? Why?						
10. Which session/elements of the workshop did you find most useful? Why?						
11. Do you have any suggestions for future workshops/events that you would like us to organize?						

12. What new information have you learnt from the workshop?

THANK YOU FOR COMPLETING THE ASSESSMENT FORM

APPENDIX 3
REPORT ON KEY STAKEHOLDER INCEPTION MEETING –
SURINAME

Mercury Storage and Disposal Project Suriname June 20th, 2016



BASEL CONVENTION



**MINAMATA
CONVENTION
ON MERCURY**

Basel Convention
Regional Centre -
Caribbean

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MERCURY STORAGE AND DISPOSAL PROJECT

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region (BCRC-Caribbean) in collaboration with the UNEP “Chemicals and Waste Branch” of the United Nations Environment Programme’s Division of Technology, Industry and Economics (UNEP/DTIE) has received funding from the Norway Official Development Assistance Agency (ODA) for the project “Mercury Storage and Disposal Project in the Caribbean: Jamaica, Trinidad and Tobago and Suriname”.

The specific objectives of this project are:

1. Establish effective decision-making processes as they relate to mercury use, storage and disposal at the national level;
2. Gain an understanding of mercury waste streams, management options and the regulatory framework relevant for the environmentally sound management of mercury
3. Enhance countries’ understanding of the mercury waste and commodity issues as these relate to surplus mercury at country level;
4. Assist government to understand the key elements of a framework enabling the environmentally sound management of mercury waste, including through the development of national storage and waste management action plans;
5. Support the three (3) countries efforts towards the accession, ratification and early implementation of the Minamata Convention on Mercury;
6. Create awareness on the hazards and risks posed by mercury and mercury waste.

PROJECT ACTIVITIES

In order to meet the above mentioned objectives, the following activities will be conducted:

ACTIVITIES

- Inception workshop;
- Establishing decision-making processes;
- National interagency meetings and workshops;
- Detailed inventories of mercury waste streams;
- Survey and analysis of possible temporary storage locations;
- Review of regulatory framework;
- Assessing basic management options;
- Developing national storage and waste management action plans;
- Results workshop.

The following are the outputs that are expected:

OUTPUTS

- Inception workshop; (COMPLETED August 2015)
- Report of the inception workshop;
- Establishment of an inter-agency/inter-ministerial committee in each country;
- Establishment of a national working group in each country;
- National interagency meetings and workshops in each country;
- List of generators of mercury wastes for each country;
- Inventories of mercury waste streams in each country;
- Preliminary list of potential temporary storage locations in each country;
- List of companies authorized for the treatment, storage or disposal of hazardous waste in each country;
- Assessment of the domestic management infrastructure in each country;
- Summary report on the regulatory framework relevant for hazardous waste management and mercury in each country;
- Report on the basic management options, including evaluation and recommendations in each country;
- Results workshop;
- Report of the results workshop.

As part of the activities, a national workshop is required to acquaint the national steering committee and key stakeholders of the required outputs of the project.

WORKSHOP ACTIVITIES

The Suriname national workshop was held on Monday 20th June 2016 at the Conference Room, Office of the President of the Republic of Suriname, Paramaribo. A total of thirty-three (33) participants attended and included persons from the mining sector, oil and gas sector, health civil society and academia. The full list of participants is detailed at Table 1, Annex I and the agenda is detailed at Table 2, Annex II.

PRESENTATIONS

The meeting started at 9:05 am and ended at 3:10pm. Ms Marci Gompers – Small, Policy Officer, Office of the President of the Republic of Suriname chaired the opening session. She provided an overview of the workshop agenda and then invited Dr Berrenstein to deliver opening remarks. Dr Haydi Berrenstein, National Coordinator and Advisor Environmental Policy, Office of the President of the Republic of Suriname delivered the opening remarks, in which she highlighted the dangers of mercury and the issue facing Suriname especially in the gold mining sector. She also provided an overview of the project.

Dr. Khan brought opening remarks on behalf of the BCRC-Caribbean. He advised participants about the role of the BCRC and the additional projects that the Centre is currently collaborating with Suriname on, including the Disposal of Pesticides and Waste Electrical and Electronic Devices. In his remarks he highlighted the importance of the mercury project and the need for partners to collaborate on same as the data sets will ensure the success of the project.

The following table details the presentations that were made throughout the course of the day:

Table 3: List of Presentations

	PRESENTER	TITLE OF PRESENTATION	DESCRIPTION
1	Ahmad Khan Ph.D., BCRC- Caribbean	Overview of the Minamata Convention	Quick overview of the genesis and objectives of the Minamata Convention
2	Jewel Batchasingh, BCRC-Caribbean	Overview of the Mercury Storage and Disposal Project	Objectives and expected outputs of the project
3	Jewel Batchasingh, BCRC-Caribbean	Mercury Inventory	Details on the different sources of mercury in the environment and details on the UNEP Level 1 Inventory Toolkit
4	Ahmad Khan Ph.D., BCRC- Caribbean	I. Types and Sources of Mercury Wastes II Recovery and Disposal Options	Details on the different types and sources of mercury wastes Details on the recovery and disposal options including permanent storage
5	Jewel Batchasingh, BCRC-Caribbean	Temporary Storage Locations	Highlights the different types of temporary storage locations for mercury
6	Ahmad Khan Ph.D., BCRC- Caribbean	Review of the Regulatory Framework	Overview of what is required for the review of the legal framework and case studies from Argentina, Uruguay and what exists in Trinidad and Tobago
7	Jewel Batchasingh, BCRC-Caribbean	Assessing basic management options: Disposal operations	. Assessing the disposal options.
8	Jewel Batchasingh, BCRC-Caribbean	Developing National Mercury Storage and Disposal Action Plan	Quick overview of what are the key elements in developing the National Action Plan
9	Marci Gompers- Small, Office of the President of the Republic of Suriname	National Action Plan for Suriname Previous work done on mercury research in Suriname	Overview of the action plan for Suriname Highlighting research on mercury in Suriname

The presentations highlighted the overview of the project, detailed the inventory and then sought to highlight to participants the options for storage and disposal. There was also a discussion on the regulatory framework and examining the existing framework for opportunities and gaps as it relates to waste management.

The discussions were centred on trying to populate the inventory and who/m were the best persons and organisations to contact. This proved useful to the BCRC-Caribbean.

Discussions were also centred on the issue of disposal versus storage and what is the best option for Suriname.

Additionally, the country representative (Ms Gompers- Small) presented the draft work plan and the available research on mercury that has been completed in Suriname. The national work plan was revised by the participants and is attached at Annex III.

NEXT STEPS

The attendees agreed that obtaining the data was critical to the project success and indicated that they will assist with the facilitation of meetings at their respective institutions. This will be done by attendees spearheading coordination efforts and assisting with the development of questionnaires for each sector. They also agreed to the proposed timeline as illustrated at Annex IV.

The second and third days of the mission were spent meeting stakeholders in face to face meetings.

DAY 2 – Tuesday 21st June, 2016

Participants included:

1. Ministry of Labour
2. Ministry of Natural Resources
3. Organising Gold Sector Suriname (OGS)
4. Suriname Bauxite Institute
5. Ourominas N.V.
6. Kaloti
7. ProBios
8. Staatsolie

DAY 3 – Wednesday 22nd June, 2016

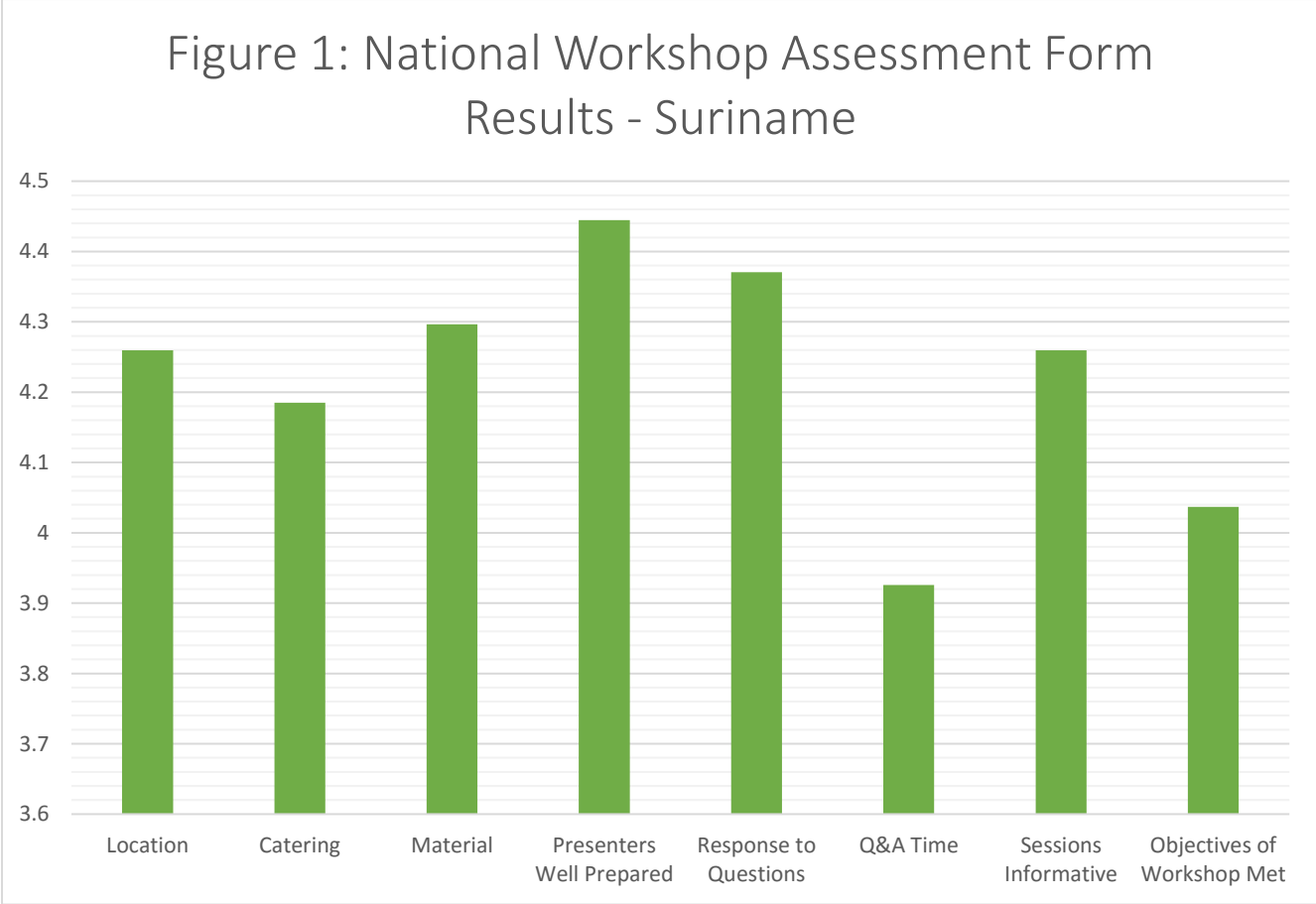
1. NIMOS
2. Grassalco
3. Sugrema
4. University of Suriname
5. Ministry of Health
6. Recomsur
7. Zoological Collection of Suriname
8. Suriname Environmental and Mining Foundation

These meetings were very useful as participants highlighted their role in the various industries and will provide information on their organisations to the BCRC-Caribbean.

Additionally, it was an excellent opportunity for the stakeholders to better understand the data that is required by the project.

STAKEHOLDER AND WORKSHOP ATTENDEES

The evaluation forms (attached at Annex V) examined several criteria including planning and logistics as well as material content and the manner of presentation. Overall as shown in Figure 1, the results show that the overall workshop was excellent in all facets.



LESSONS LEARNT AND RECOMMENDATIONS

A. STAKEHOLDER COMMENTS

Based on the results of the workshop assessment forms, the areas for improvement are:

1. Allow more time between the presentations to facilitate discussion rather than questions.
2. Attendees did indicate that the venue was not the best choice due to constraints with parking and the absence of tables to facilitate taking of notes.

B. GENERAL STAKEHOLDER COMMENTS

Based on the results of the workshop assessment forms, other comments of note were:

1. Most participants learnt new information
2. Participants wanted to be part of the results workshop
3. The Recovery and Disposal of Mercury had the greatest interest in Suriname

B. BCRC- CARIBBEAN COMMENTS

Having completed the workshops in Trinidad and Tobago and Jamaica, it was felt that participants may not be aware of the role of the BCRC – Caribbean. As such a brief introduction was done orally by the Director. However, in future, a few slides will be allocated towards the BCRC -Caribbean and its role.

ANNEX I

PARTICIPANTS LIST
MERCURY STORAGE AND DISPOSAL PROJECT
NATIONAL WORKSHOP SURINAME
JUNE 20TH 2016

	NAME	TITLE	ORGANISATION & ADDRESS	CONTACT INFORMATION
1	Adley Breeveld	Technical Officer	Ministry of Health Planning Department Henck Aaronstraat 64, Paramaribo Suriname	Phone: 597-8787879 Email: arbreeveld@gmail.com
2	Mitanand Jokhoe	Director	Multi Options N.V. Crownstraat 508, Nickerie	Phone: 597-888-4025 Email: info@multioptionsnv.com
3	Radjni Ramsukul	Senior Environmental Officer	National Institute for Environment and Development in Suriname (NIMOS) Mr Jaggernath Lachmonstraat #100 Paramaribo, Suriname	Phone: 597-490044 rramsukul@nimos.org
4	Grace Wagimin	Waste Treatment Technician	Staatsolie Maatschappij Suriname Adhinstr.21 (Head Office) Flora, Paramaribo, Suriname	Phone: 597-37522 ext 66558 Email: gwagimin@staatsolie.com
5	Carla Isaacs	Assistant Finance Manager	Durominas Suriname NV Anamoestraat #42, Tourtonne 1 Paramaribo, Suriname	Phone: 597-458577/452611 Email: carla_isaacs@hotmail.com
6	Anamika- Mieke Mokhoe	Assistant Supervisor	Multi Options N.V. Recycling E-Waste Battery Scrap Metal Crownstreet 500 Po Box, Nickerie, Suriname	Phone: 597-8884025/597-8628555 Email: info@multioptionsnv.com miekejiam@gmail.com

7	Anjali De-Abreu-Kisoensingh	Data Collection	General Bureau of Statistics Klipstenen Straat #5 Paramaribo, Suriname	Phone: 597-473737 Email: anjali_kisoensingh@hotmail.com
8	Mariska Vyent	Junior Staff	Foundation of Youth Dental Care Stichting Jeugd tandverzorging	Phone: 597-0108618 Email: mdvyent@live.nl velddienst@jlvsuriname.com
9	Sandhia Punwasi	Beleidsmedewerker	Ordering Gondsector (OGS)/Kabinet van de President	Phone: 597-8902913/597-439820 Email: psandhya@hotmail.com mt.orderinggoudsector@president.gov.sr
10	Jan Quik		Chemistry Department Ministry of Health Central Laboratory Bureau Opeubare Gezoholheidszorg (BOG) Central Lab Rode Kruislaau, Paramaribo Suriname	Phone: 597-8741680 Email: janquik@gmail.com Jan.quik@bogsur.sr
11	Glenn Ramdjan		SureSur Nieuw Charlesburg 55 Paramaribo Suriname	Phone: 597-7113926 Email: glenn.ramdjan@gmail.com
12	Bianca Ferrier	Praktijk docent	Stg. Jeugd tandverzorging Bowti #9 Morgenstond Paramaribo Noord Suriname	Phone: 597-556355/597-08532137 Email: bmferrier@hotmail.com
13	Vanessa Sabajo	Junior Staff Member Environment	Bauxiet Instituut Suriname Zonnebloemstraat 68 Paramaribo	Phone: 597-499834 Email: varasa12@yahoo.com Vanessa_sabajo@bauxietinstituut.com
14	Nataly Plet	Environment Policy Officer	Office of the President Kleine Water Straat 2-4	Phone: 597-8584656 Email: nataly_plet@yahoo.com
15	Moedio Tirtotaroeno	Manager General		Phone: 597-8626594 Email: moedio@tirtotaroeno.com
16	Haydi Berrestein	National Coordinator and Advisor	Office of the President Kleine Combe Weg 2-4 Paramaribo Suriname	Phone: 597-0787895/ 597-472-841 Email: haydi.berrestein@president.gov.sr queenhib@yahoo.com

		Environmental Policy		
17	Winston Wilson	Managing Director	Kaloti Suriname Mint House	Phone: 597-7111559 Email: Winston.wilson@kalotisuriname.com
18	Tjadikrama Kimberly	Geologist	Ministry of Natural Resources Geological and Mining Service Gongrypstraat No 285 Paramaribo Suriname	Phone: 597-8881530 Email: kimtjadikrama@hotmail.com
19	Lalieta Somwaru	Program Manager/ Chief Operation Officer	The Suriname Waste Management Foundation, Recycling Company Suriname Fanchepanestraat 20B Paramaribo Suriname	Phone: 5978506363 Email: lalieta.somwaru@recomisur.com
20	Farisha Moennoe	Meclewerker Plankton Analist	Ministry of Public Works	Phone: 597-8547816 Email: farisha2011@hotmail.com
21	Harvey Bijnaar	CEO	Business Match Business Group NV GadoFowevestreet 26 Paramaribo Suriname	Phone: 597-8240961 Email: hbijnaar@gmail.com
22	Marci Gompers Small	Policy Officer for Environment	Office of the President Kleine Combe weg 2-4 Paramaribo Suriname	Phone: 597-8654883 Email: macha83@gmail.com
23	Clementine Ponirin Djakiman	Laboratory Employee	National Zoological Collection of Suriname Leysweg 86 PO Box 9212 Paramaribo Suriname	Phone: 597-494756 Email: clemintino.djakiman@uvs.edu
24	Anand Chotkan	Veterinary Officer	Ministry of Agriculture, Animal Husbandry and Fisheries, Cornelis Jongbawstraat #50 Paramaribo Suriname	Phone; 597-8625587 Email: a_chotkan@hotmail.com

25	Giovanna Amatsoeran	Statistician Worker	General Bureau of Statistics	Phone: 597-5974737373 Email: Giovanna_amat@hotmail.com
26	Stephanie Cheuk-Alam	Head Policy Officer	Bureau Of public Health Nicolinelaan #4 Sekrepatu Kontren Kwalta Paramaribo Suriname	Phone: 597-8502113 Email: stephaniecheukalam@gmail.com
27	Janelle Caupain	Environmental Policy Officer	Ministry of Natural Resources Mr J.C. de Mirandastc 13-15	Phone: 597-474666 Email: jcaupain@yahoo.com
28	Gisele Nederbiel	Environmental Specialist	Rosebel Gold Mines NV Brokopods, Suriname	Phone: 597-325115 #204912 Email: Gisele_nederbiel@iamgold.com
29	Aroena Lalta	Environmental Specialist	NV Grassalco Sr Winston Churchill Street #3 Paramaribo Suriname	Phone: 597-0733598 Email: aroena.lalta@grassalco.com
30	Suraya Mohan	Health and Safety Lead Officer	NV Energiebedrijven Suriname Noorderkerkstreet 2-14 Suriname	Phone: 597-8500986 Email: suraya.mohan@ebs.sr
33	Henk Deel	Rep of Ps of Ministry of Regional Development	Ministry of Regional Development Van Roseveltkade #2 Paramaribo Suriname	Phone: 597-8605061 Email: deelhenk@hotmail.com
BCRC-CARIBBEAN STAFF				
34	Ahmad Khan Ph.D.	Director	BCRC-Caribbean, #8 Alexandra Street, St. Clair, POS, Trinidad	Tel:6868-628-8369 Fax:868-628-2151 Email: ahmad.khan@bcrc-caribbean.org
35	Jewel Batchasingh	Research Analyst	BCRC-Caribbean, #8 Alexandra Street, St. Clair, POS, Trinidad	Tel:6868-628-8369 Fax:868-628-2151 Email: jewel.batchasingh@bcrc-caribbean.org

ANNEX II

ANNEX II

Table 2: National Workshop Agenda



NATIONAL WORKSHOP

Mercury Storage and Disposal Project in the Caribbean

DATE: June 20, 2016

LOCATION: Conference Room, Office of the President of the Republic of Suriname, Paramaribo

Kleine Combe weg 2-4

SURINAME

AGENDA		
DAY 1: June 20th, 2016		
DATE June 20, 2016		
9.00	Opening Remarks	Dr. Haydi Berrenstein Dr. Ahmad Khan, BCRC-Caribbean
9.15	Introduction of Participants	Participants
9.30	Overview of the Minamata Convention	Dr. Ahmad Khan – BCRC-Caribbean
9.50	Overview of the Mercury Storage and Disposal Project	Jewel Batchasingh – BCRC-Caribbean

AGENDA**DAY 1: June 20th, 2016**

10.10	Mercury Inventory	Jewel Batchasingh – BCRC- Caribbean
10.30	COFFEE BREAK	
11.00	Types and Sources of Mercury Wastes	Dr. Ahmad Khan - BCRC- Caribbean
11.30	Survey and Analysis of Possible Temporary Storage Locations Recovery and Disposal	Jewel Batchasingh- BCRC- Caribbean
12.00	LUNCH	
13.00	Review of the Regulatory Framework	Dr. Ahmad Khan – BCRC - Caribbean
13.20	Assessing basic management options: Disposal operations	Jewel Batchasingh- BCRC- Caribbean
13.50	Developing National Mercury Storage and Disposal Action Plan	Jewel Batchasingh- BCRC- Caribbean
2.00	Presentation of Mercury Initiatives and Draft Project Workplan for Suriname	Marci Gompers-Small
2.30	Logistics of Stakeholder Meetings on Day 2 & 3	All Participants
3.00	Closure of Meeting	Dr Haydi Berrenstein Dr. Ahmad Khan - BCRC - Caribbean

AGENDA

DAY 2: June 21st, 2016

STAKEHOLDER MEETINGS

TIME	NAME	ORGANISATION	CONTACT INFORMATION
9.00 -10.00			
10.00 -11.00			
11.00-12.00			
LUNCH			
13.00-14.00			
14.00-15.00			
15.00- 16.00			
16.00-17.00			

AGENDA

DAY 3: June 22nd, 2016

STAKEHOLDER MEETINGS

TIME	NAME	ORGANISATION	CONTACT INFORMATION
9.00 -10.00			
10.00 -11.00			
11.00-12.00			
LUNCH			
13.00-14.00			
14.00-15.00			
15.00- 16.00			
16.00-17.00			

ANNEX III

TABLE 3: WORKPLAN FOR THE IMPLEMENTATION OF THE MERCURY STORAGE AND DISPOSAL PROJECT IN SURINAME

Specific Objective 1: strategies and programs available for identification and assessment of polluted areas					
Output/Activities	Tasks	* Responsible	* Partners	Timeframe	Resources
1.1 development guidelines for identification and assessment of polluted areas	POLICY LEVEL: Kab Pres/ NCM STEERING COM LEVEL: <ul style="list-style-type: none"> - NCM - BIS - Grassalco - NIMOS - BOG - OGS - Min. Labour EXECUTING LEVEL: (to be determined)	Government of Suriname /Kab Pres/ NCM	PRIVATE SECTOR NGO's: <ul style="list-style-type: none"> - ProBioS - WWF - CI - GHFS PUBLIC SECTOR: Min NH / GMD AdeK/ MW Staatsolie NV EBS	SHORT TERM (1 – 2 yr.)	GOV. BUDGET (In- kind) GEF PRIVATE FUNDING: SEMIF Alcoa Foundation Kaloti (funding)

1.2 adoption of ILO OSH in mining for occupational and environmental health risks and related issues	SENSIBILIZATION AND DISSEMINATION ILO-OSH, NEMS, DWCP	Min Arbeit Min Health AdeK	Min NH SSB Min Arbeit BOG Min of NH/GMD MZ AdeK SORTS	SHORT TERM (to be determined)	GOV BUDGET (in kind) ILO FUNDING
Specific Objective 2: standards for treatment and waste management is in place					
2.1 Development guidelines for waste management	REGULAR MEETINGS: SC CONSULTING: UNEP guidelines Basel Convention	Kab Pres/NCM+BNV Min OW Min RO NIMOS	-Min Arbeit -Min OW -Min VG -Min RO - ADEK/ MW - Private Sector: Suresur Suwama BMB Group	SHORT TERM	GOV BUDGET (in kind)
2.2 Development of guidelines for temporarily storage facility	IDENTIFICATION OF POTENTIAL SITES	- Kab Pres/ NCM+BNV - Min RGB - Min NH - Min RO - NCCR - NIMOS	PUBLIC SECTOR - Min Arbeit - Min OW - Min RO - AdeK/ MW PRIVATE SECTOR - BMB Group - Sugrema (M. Tirtotaroeno)	SHORT TERM	GOV BUDGET (in kind) PRIVATE FUNDING: SEMIF Alcoa foundation WWF GEF World bank (grant) IDB (grant)

2.3 standards in Mineral decree is reviewed and updated in accordance with Basel	<p>INVITATION EXPERTS:</p> <p>AdeK</p> <p>Min NH/GMD</p> <p>BIS</p> <p>REGULAR MEETINGS:</p> <p>SC</p>	<p>Kab Pres/NCM</p> <p>Min NH</p> <p>OGS</p> <p>GMD</p> <p>BIS</p>	<p>Private sector:</p> <p>MULTINATIONALS</p> <p>- Surgold</p> <p>- lam gold</p> <p>NATIONALS:</p> <p>- Stg. Mijnbouwrechthouders</p> <p>-(Staatsolie)</p>	SHORT TERM	<p>GOV BUDGET (in kind)</p> <p>PRIVATE FUNDING:</p> <p>SEMIF</p> <p>ALCOA Foundation</p> <p>WWF</p> <p>GEF</p>
Specific Objective 3: management of contaminated sites					
3.1 Preliminary assessment in the	EXECUTING STAFF	<p>- Kab Pres/NCM</p> <p>- Min Arbeid</p> <p>-OGS</p> <p>- GMD</p>	<p>Min VG</p> <p>Min NH</p> <p>Min RO</p> <p>PRIVATE SECTOR</p>	SHORT TERM	<p>GOV BUDGET (in kind)</p> <p>PRIVATE FUNDING:</p>

workplace and in ASGM sites	COORDINATING MECHANISM		Local Mining Organizations (via OGS)		SEMIF Alcoa Foundation Kaloti (funding)
3.2 Site investigation in the oil, bauxite gold and refineries (mining industries)	EXECUTING UNITS: SC WEEKLY MEETINGS: Coordination team	- Kab Pres/NCM + BNV - OGS - Min RO - Min NH/GMD - Min RGB -Min Arbeid -AdeK	WWF BIS I am gold Surgold Staatsolie Grassalco Kaloti	SHORT TERM	GOV BUDGET (in kind) PRIVATE FUNDING: Surgold I am Gold Alcoa Foundation Kaloti (funding) Staatsolie Grassalco
3.3 contamination of aquifers (site)??	SC	- Min OW/WLA - AdeK			GOV BUDGET (in kind) Alcoa Foundation SMIF

Table 1: Work Plan Suriname

* Note: "Responsible" and "Partners" must not overlap

Abbreviations:

SC = Steering Committee

Kab Pres = the Cabinet of the President of the Republic of Suriname

NCM = Environmental Coordination at the Cabinet of the President

BIS = Bauxite Institute Suriname

BOG = Bureau of Public Health Care

NIMOS = National Institute for Environmental Research in Suriname

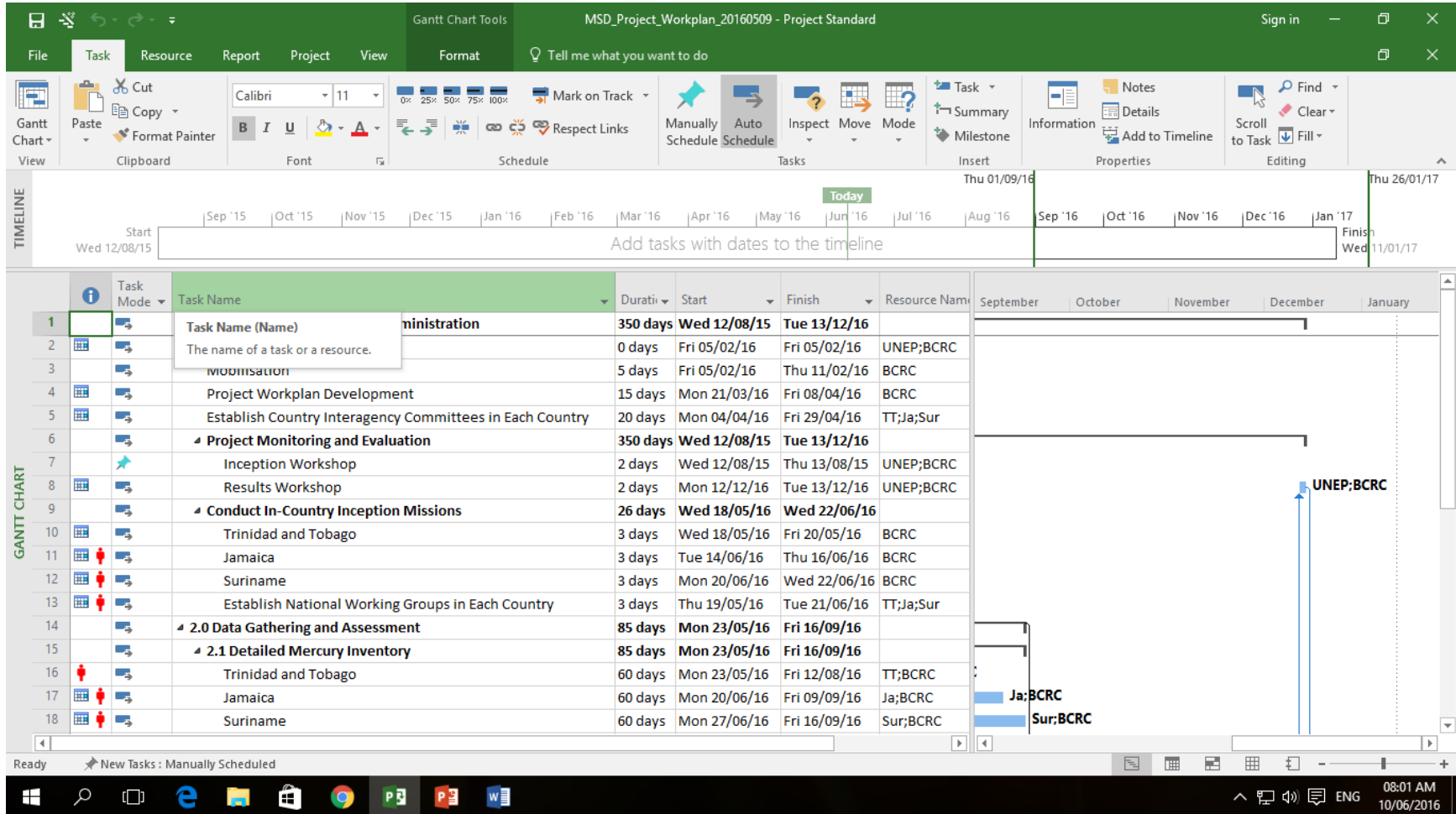
Min Arbeid = Ministry of Labour

Min NH = Ministry of Natural Resources
Min VG = Ministry of Health
Min OW = Ministry of Public Works
Min RO = Ministry of Regional Development
Min RGB = Ministry of Spatial Planning, Land and Forrest Management
OGS = Presidential Commission for the Structuring of the Gold Sector
GMD = Geological Mining Service
MZ = Medical Mission
AdeK = Anton de Kom University of Suriname
MW = Environmental Sciences Division on the AdeK University
Staatsolie NV = States Oil Company
EBS = Energy Company Suriname
ProBioS = Protect our Biodiversity in Suriname
GHFS = Green Heritage Fund Suriname
ABS = General Bureau of Statistics Suriname
SSB = Surinamese Standards Bureau
SORTS = Foundation for Development through Radio and Television in Suriname
BNV = Bureau for National Security
Suresur = Support Recycling Suriname Foundation
Suwama = Suriname Waste Management
BMB Group = Business Match Business Group NV
NCCR = National Coordination Commission for Disaster Management
Stg. Mijnbouwrechthouders = Foundation for Mining Extenders
Sugrema = Suriname Green Management
SEMIF = Suriname Environmental and Mining Foundation
SurGold = Surinamese limited liability company fully owned by Newmont
I am Gold = Mining and exploration company engaged in exploring and mining precious metals, primarily gold, under exploration portfolios, also in Suriname
Kaloti = Kaloti Suriname Mint House

ANNEX IV



ANNEX IV PROJECT WORKPLAN



MSD_Project_Workplan_20160509 - Project Standard

File Task Resource Report Project View Format Tell me what you want to do

Clipboard: Paste, Copy, Format Painter
 Font: Calibri, 11
 Schedule: Mark on Track, Manually Schedule, Auto Schedule, Inspect, Move, Mode
 Tasks: Task, Summary, Milestone
 Properties: Notes, Details, Add to Timeline
 Editing: Find, Clear, Scroll to Task, Fill

Move Task
 Move the selected tasks forward or back in the project schedule.
 You can also move the task to when the resources are available to work on the task.

Task Mode	Task Name	Durati	Start	Finish
	2.2 Survey and analysis of Temporary Storage Locations	80 days	Mon 30/05/16	Fri 16/09/16
	Trinidad and Tobago	60 days	Mon 30/05/16	Fri 19/08/16
	Jamaica	60 days	Mon 20/06/16	Fri 09/09/16
	Suriname	60 days	Mon 27/06/16	Fri 16/09/16
	2.3 Review of regulatory framework	80 days	Mon 30/05/16	Fri 16/09/16
	Trinidad and Tobago	60 days	Mon 30/05/16	Fri 19/08/16
	Jamaica	60 days	Mon 20/06/16	Fri 09/09/16
	Suriname	60 days	Mon 27/06/16	Fri 16/09/16
	3.0 Assessing basic management options	30 days	Mon 19/09/16	Fri 28/10/16
	Trinidad and Tobago	30 days	Mon 19/09/16	Fri 28/10/16
	Jamaica	30 days	Mon 19/09/16	Fri 28/10/16
	Suriname	30 days	Mon 19/09/16	Fri 28/10/16
	4.0 Develop Management Action Plans	52 days	Mon 31/10/16	Wed 11/01/17
	4.1 Draft Action Plan	20 days	Mon 31/10/16	Fri 25/11/16
	4.2 Review by Countries	20 days	Mon 31/10/16	Fri 25/11/16
	4.3 Final Action Plan	20 days	Wed 14/12/16	Tue 10/01/17
	4.4 Submit to UNEP CW	0 days	Wed 11/01/17	Wed 11/01/17

Timeline: Start Wed 12/08/15, Finish Wed 11/01/17

Resources: CRC, Ja;BCRC, Sur;BCRC, BCRC, TT;Ja;Sur

Ready | New Tasks : Manually Scheduled | 08:01 AM 10/06/2016

ANNEX V

ANNEX V



BASEL CONVENTION



Mercury Storage and Disposal Project in the Caribbean: Jamaica, Suriname, Trinidad & Tobago Workshop

EVALUATION FORM

Paramaribo Suriname

June 20, 2016

WORKSHOP ASSESSMENT FORM						
<p>Thank you for attending the Inception Workshop for the Mercury Storage and Disposal Project in Trinidad and Tobago.</p> <p>We would be very grateful if you could please take a moment to complete this workshop assessment form. Your comments will assist us in improving our future workshops.</p>						
ASSESSMENT OF WORKSHOP CONTENT AND ORGANIZATION						
SCALE:	1 – STRONGLY AGREE	2 – AGREE	3 – NEUTRAL	4 – DISAGREE	5 – STRONGLY DISAGREE	
Please also provide feedback in the comments box						
	1	2	3	4	5	Comments
1. The workshop location and facilities were appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. The catering arrangements were appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. The workshop material was presented in a clear and organized manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4. The presenters were well prepared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. The presenters responded to questions in an informative, appropriate and satisfactory manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. The time allocated to presentations and interactive group work was appropriate and satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Overall, the sessions were informative and valuable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. The workshop met its stated aims and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. What aspects of the workshop, if any, would you change in future? Why?						
10. Which session/elements of the workshop did you find most useful? Why?						
11. Do you have any suggestions for future workshops/events that you would like us to organize?						

12. What new information have you learnt from the workshop?

THANK YOU FOR COMPLETING THE ASSESSMENT FORM

APPENDIX 4
KEY STAKEHOLDER INCEPTION MEETINGS –
POWERPOINT PRESENTATIONS



BASEL CONVENTION



MINAMATA
CONVENTION
ON MERCURY

Overview of the Minamata Convention

Basel Convention Regional Centre – Caribbean

Contents

- Mercury - a Global Pollutant
- Causes of Mercury Air Emissions
- Genesis of the Minamata Convention
- Key Articles of the Minamata Convention



Mercury - A Global Pollutant

- Mercury is a highly toxic element that is found both naturally and as an introduced contaminant in the environment



Causes of Mercury Air Emissions

- Burning oil that contains mercury
- Burning wood that contains mercury
- Burning mercury-containing wastes, including wastes from the manufacture of Portland cement, consumer products that contain mercury, like electronic devices, batteries, light bulbs and thermometers
- Using certain technologies to produce chlorine
- Breaking products that contain mercury
- Burning iron ore, coke and limestone in electric arc furnaces used to produce steel
- Using coal-fired boilers in many industries to generate forms of thermal heat like steam

Genesis of the Minamata Convention

- The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury.
- The Minamata Convention on Mercury was consented to at the fifth session of the Intergovernmental Negotiating Committee on mercury in Geneva, Switzerland, January 19, 2013.

Minamata Convention

- The Convention draws attention to a global and ubiquitous metal that, while naturally occurring, has broad uses in everyday objects and is released to the atmosphere, soil and water from a variety of sources.
- Controlling the anthropogenic releases of mercury throughout its lifecycle has been a key factor in shaping the obligations under the Convention.

Minamata Convention

- 128 Signatories thus far...
- 25 Parties have ratified, accepted/approved
- The Convention shall enter into force on the ninetieth day after the date of deposit of the fiftieth (50th) instrument of ratification, acceptance, approval or accession.

Minamata Convention

- **ARTICLE 1 - OBJECTIVE**
- To protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds

Minamata Convention

- **ARTICLE 3 – MERCURY SUPPLY SOURCES AND TRADE**
- Each Party shall not allow primary mercury mining that was not being conducted within its territory at the date of entry into force of the Convention.
- Each Party shall only allow primary mercury mining that was being conducted within its territory at the date of entry into force of the Convention, for a period of up to fifteen (15) years after that date.
- Each Party shall not allow the export of mercury (with exceptions).

Minamata Convention

ARTICLE 4 – MERCURY ADDED PRODUCTS

- Governments have agreed on a range of mercury containing products whose production, export and import will be banned by 2020.
- These include:
 - Batteries, except for 'button cell' batteries used in implantable medical devices
 - Switches and relays
 - Certain types of compact fluorescent lamps (CFLs)
 - Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps
 - Soaps and cosmetics
 - Certain kinds of non-electronic medical devices such as thermometers and blood pressure devices are also included for phase-out by 2020.

Minamata Convention

- **ARTICLE 5 - Manufacturing Processes in which Mercury or Mercury Compounds are Used**
- Phase out of the use of mercury and mercury compounds in the manufacturing processes.
- Overall discouragement of the development of any facility using any other manufacturing process in which mercury or mercury compounds are intentionally used that did not exist prior to the date of entry into force of the Convention
- Exchange of information amongst Parties on relevant new technological developments, economically and technically feasible mercury free alternatives and possible measures and techniques to reduce and where feasible eliminate the use of mercury.

Minamata Convention

- **Article 7 - Artisanal and Small Scale Gold Mining (ASGM)**
- Each Party that has ASGM shall take steps to reduce, and where feasible eliminate the use of mercury and mercury compounds in and the emissions and releases to the environment of mercury from sources such as mining and processing.
- Nations with artisanal and small-scale gold mining operations will draw up national plans within three (3) years of the treaty entering into force to reduce and if possible eliminate the use of mercury in such operations
- Public awareness campaigns and support for mercury-free alternatives will also be part of the plans

Minamata Convention

- **ARTICLE 8 – Emissions**
- Where feasible, reducing the emissions of mercury and mercury compounds to the atmosphere through measures to control emissions from the point sources.
- **ARTICLE 9 – Releases**
- Reducing releases where feasible to land and water from the relevant point sources not addressed in other provisions of this convention.

Minamata Convention

- **ARTICLE 10 – ENVIRONMENTALLY SOUND INTERIM STORAGE OF MERCURY , OTHER THAN WASTE MERCURY**
- Each party shall take measures to ensure that the interim storage of such mercury and mercury compounds intended for a use allowed to a Party under this Convention is undertaken in an environmentally sound manner.
- **ARTICLE 11 – MERCURY WASTES**
- Parties will ensure that mercury waste is:
 - Managed in an environmentally sound manner (ESM)
 - Only recovered, recycled, reclaimed or directly re-used for a use allowed to a Party under this Convention or for ESM disposal

Minamata Convention

- **ARTICLE 12 – CONTAMINATED SITES**
- Each Party shall endeavour to develop appropriate strategies for identifying and assessing sites contaminated by mercury or mercury compounds
- Actions must be geared to reduce the risks posed by such sites in an ESM.

Any
Questions?



OVERVIEW OF THE MERCURY STORAGE AND DISPOSAL PROJECT

BASEL CONVENTION REGIONAL CENTRE – CARIBBEAN



BASEL CONVENTION

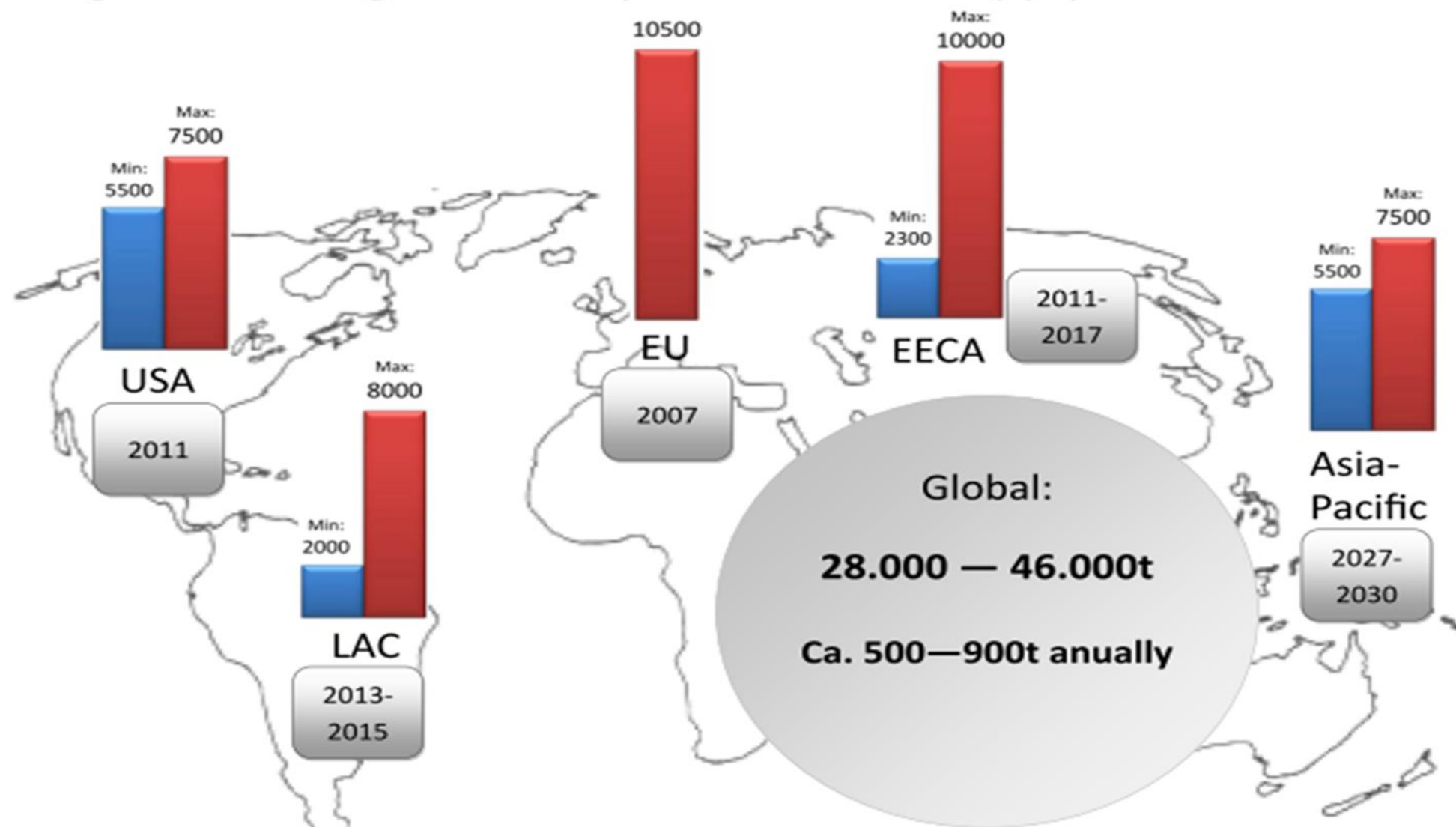


MINAMATA
CONVENTION
ON MERCURY

CONTENTS

- Mercury - A Global Issue
- Project Background
- Project Objective
- Expected Outcomes and Activities
- What Do We Need From You?
- Workplan in MS Project
- Any Questions?

Regions with Significant Expected Excess Supply until 2050 (in tonnes)



Sources: UNEP, (2009a). 'Excess Mercury Supply in Latin America and the Caribbean, 2010-2050': http://www.chem.unep.ch/mercury/storage/LAC%20Mercury%20Storage%20Assessment_Final_1July09.pdf. (2009b). 'Assessment of Excess Mercury Supply in Asia, 2010-2050': <http://www.unep.org/hazardoussubstances/Mercury/Informationmaterials/ReportsandPublications/tabid/3593/Default.aspx>. (2010). 'Excess Mercury Supply in Eastern Europe and Central Asia, 2010-2050': http://www.unep.org/hazardoussubstances/Portals/9/Mercury/Documents/supplystorage/EECA%20Excess%20Mercury_Final%20Draft_Apr2010.pdf. (2011). Power Point Presentation held by Desirée Narvaez, 'Overview of the Global Mercury Partnership', AP Regional Consultation Presentations Final.

ASSESSMENT OF EXCESS MERCURY SUPPLY IN LATIN AMERICA AND THE CARIBBEAN (LAC), 2010-2050

- Excess or surplus mercury \approx 8,300 tonnes mostly coming from chlor-alkali plants, non-ferrous metals mining, etc.;
- Need for proper collection systems for end of life products and environmentally sound management of waste.

PROJECT BACKGROUND

- Three (3) Participating Countries – Jamaica, Suriname and Trinidad and Tobago
- Funding from:
 - Norway ODA Funds – USD\$ 60,000
 - BCRC – Caribbean – USD\$ 30,000
- Inception Workshop held in Trinidad August 12th – 13th , 2015



KEY PLAYERS

- National level implementation by the BCRC - Caribbean and support by CARICOM secretariat
- With the assistance of UNEP ROLAC and guidance of UNEP Chemicals
- Implemented under the UNEP Global Mercury Partnership on Supply and Storage

PROJECT OBJECTIVE

- To promote the environmentally sound management of storage and disposal of mercury and mercury waste in Jamaica, Suriname, Trinidad and Tobago

ACTIVITIES AND EXPECTED OUTPUTS

- Establishing decision-making process at the national level;
- Gain an understanding of mercury waste streams, management options = **INVENTORY & STORAGE;**
- Understand the regulatory framework for the environmentally sound management of mercury;
- Enhance Countries' understanding of the mercury waste and commodity issues as it relates to surplus mercury.

PROJECT STEPS

National
Workshops

Mercury
Inventory,
Storage
Locations,
Review
Legislation



Assess Basic
Management
Options



Action
Plan

Results
Workshop

ACTIVITIES AND EXPECTED OUTPUTS

- Assist Governments to understand the key elements of a framework enabling ESM of Mercury waste including through the development of national storage and waste management action plan;
- Support the participating countries efforts towards the accession, ratification and early implementation of the Minamata Convention on Mercury;
- Awareness and education raising activities.

WHAT DO WE NEED FROM YOU?

- Establishment of the Inter-Agency Committee 
- Hosting of National Workshop 
- Detailed list of Stakeholders and Facilitation of Meetings
- Each country to do a review of local legislation as it applies to the environmentally sound management of mercury and mercury contaminated materials and wastes.
- Access to your data including GIS maps of Locations of Point Source and Potential Storage Sites

DATA



© Can Stock Photo



WORKPLAN IN MS PROJECT

- <E:\MSD Project Workplan 20160509.mpp>
- <E:\MSD Project Workplan 20160509.pdf>

ANY QUESTIONS?



CONDUCTING MERCURY WASTE INVENTORIES

Basel Convention Regional Centre – Caribbean

Contents

- Basel Methodological Guide for Developing of Inventories of Hazardous Wastes and Other Wastes 2013
- UNEP Toolkit for Identification
- Mass Balance Principle
- Inventory Modules
- How to start the inventory/data collection
- Data Gaps
- Data Origin
- Confidentiality
- Inventory Level 1 Excel Spreadsheet

Basel Methodological Guide for Developing of Inventories of Hazardous Wastes and Other Wastes 2013

- ✓ Step 1. Interpretation of definitions Definition of waste, Definition of hazardous waste
- ✓ Step 2. Classification of Hazardous Waste(HW) streams
- ✓ Step 3. Defining the scope of the inventory
- ✓ Step 4. Identifying major HW generating facilities
- ✓ Step 5. Collecting site specific data from generators
- ✓ Step 6. Verifying site specific data from generators
- ✓ Step 7. Calculating national waste generation summaries
- ✓ Step 8. Data on HoW disposal and recycling
- ✓ Step 9. Data on HoW import and export
- ✓ Step 10. Assessment of results and conclusions

UNEP Toolkit for Identification and Quantification of Mercury Release Guideline for Inventory Level 1 & 2 April 2015

- The Toolkit can be found on UNEP Chemicals Branch's website:

<http://www.unep.org/hazardoussubstances/Mercury/MercuryPublications/GuidanceTrainingMaterialToolkits/MercuryToolkit/tabid/4566/language/en-US/Default.aspx>

- This guideline works closely together with the Toolkit electronic Inventory Level 1 spreadsheet for calculation of estimates of mercury inputs and releases

- All the UNEP Mercury Toolkit documents can be found on UNEP's website:

<http://www.unep.org/hazardoussubstances/Mercury/MercuryPublications/GuidanceTrainingMaterialToolkits/MercuryToolkit/tabid/4566/language/en-US/Default.aspx>

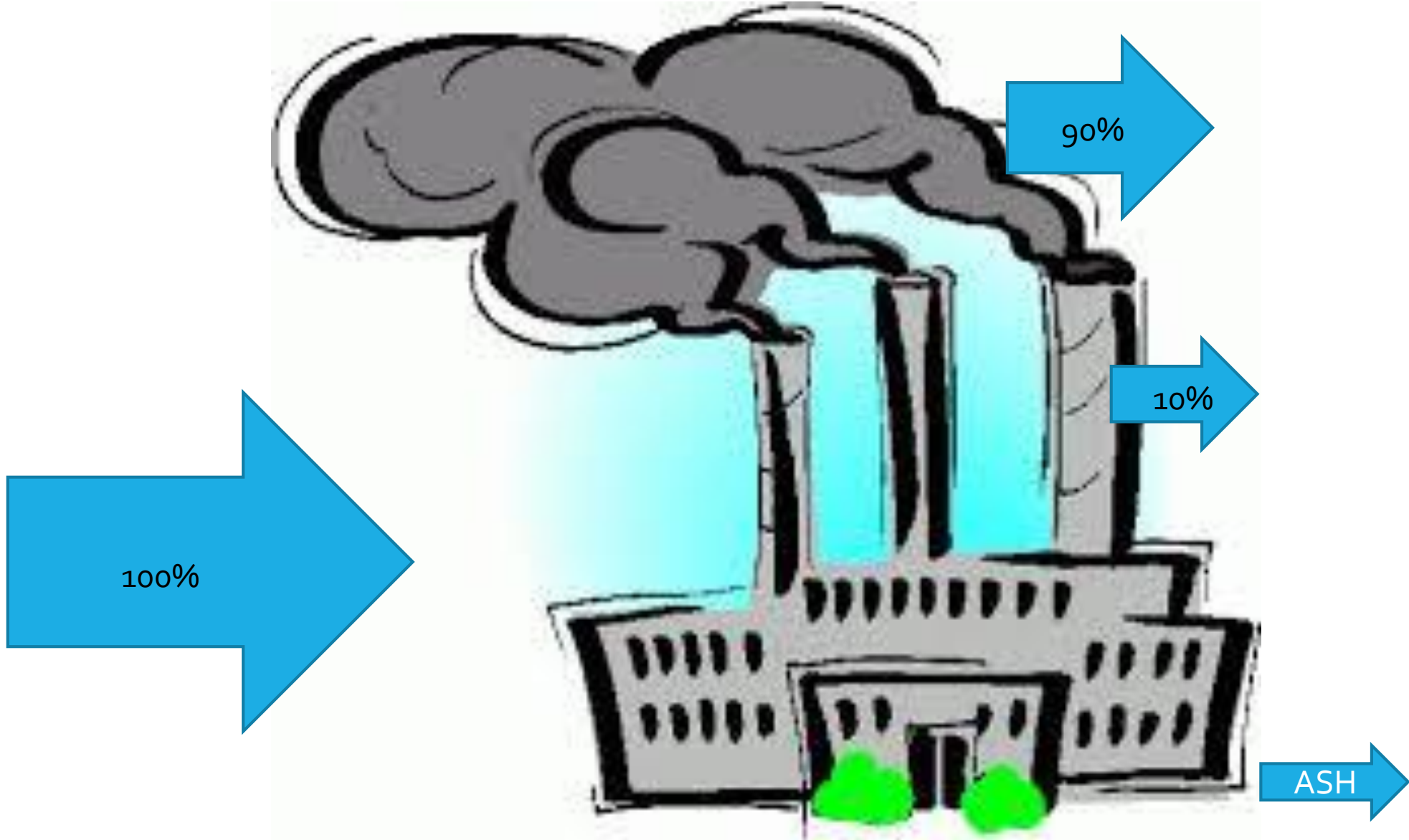
- Two levels of Inventories : Level 1 and Level 2

UNEP Toolkit Guidelines for Inventory

- Level 1 Inventory forms are accessible as EXCEL spreadsheets
- Level 1 also includes a draft format for the report which would summarize the findings of the Level 1 (or 2) inventory
- The Level 2 document includes detailed descriptions of sources of mercury releases and mercury input/output factors for 64 types of production or use
 - Mineral oils extraction, refining is noted in the Level 2 guide at 5.1.3
 - Natural gas extraction, refining is noted in the Level 2 guide at 5.1.4
 - Gold extraction using mercury amalgamation is noted in the Level 2 guide at 5.2.2
 - Aluminum extraction and initial processing is noted in the Level 2 guide at 5.2.7

Mass Balance Principle is Key

- Can be used because mercury is an element
- Total Inputs = Total Outputs



Inventory Modules

- Module 3: Production and Consumption of Energy Fuels
- Module 4: Production of Metals and Other Raw Materials
- Module 5: Industrial Mercury Use
- Module 6: Waste Treatment and Recycling
- Module 7: Consumption of Mercury Products
- Module 8: Crematories and Cemeteries

Module 3: Production and Consumption of Energy Fuels

- Coal combustion in large power plants and other coal uses
- Use of petroleum, coke, heavy oil, diesel, gas oil or kerosene
- Oil extraction and refining
- Use of natural gas
- Extraction and processing of natural gas

Module 4: Production of Metals and Other Raw Materials

- Mercury Extraction and Processing
- Production of zinc, copper, and lead from concentrates
- Gold extraction by other methods than mercury amalgamation
- Alumina production from bauxite
- Primary ferrous metal production (pig iron production)
- Gold extraction with mercury amalgamation
- Cement production ✓
- Pulp and paper production

Module 5: Industrial Mercury Use

- Chlor-alkali production with mercury cells
- Vinyl chloride monomer (VCM) production with mercury catalyst
- Acetaldehyde production with mercury catalyst
- Industrial production of mercury-added products

Module 6: Waste Treatment and Recycling

- Production (secondary) of recycled mercury
- Production of recycled ferrous metals (iron and steel)
- Incineration of general / municipal waste
- Incineration of hazardous waste
- Incineration of medical waste
- Sewage sludge incineration
- Open fire waste burning
- Controlled landfills and deposits
- Informal Dumping of Waste
- Wastewater Treatment

Module 7: Consumption of Mercury Products

- Dental amalgam fillings
- Mercury-containing thermometers
- Electrical switches and relays with mercury
- Mercury-containing lamps
- Mercury-containing batteries
- Polyurethane produced with mercury catalyst
- Paints with mercury preservatives
- Skin lightening creams
- Medical blood pressure gauges
- Laboratory chemicals and other laboratory / medical equipment

How to Start the Inventory

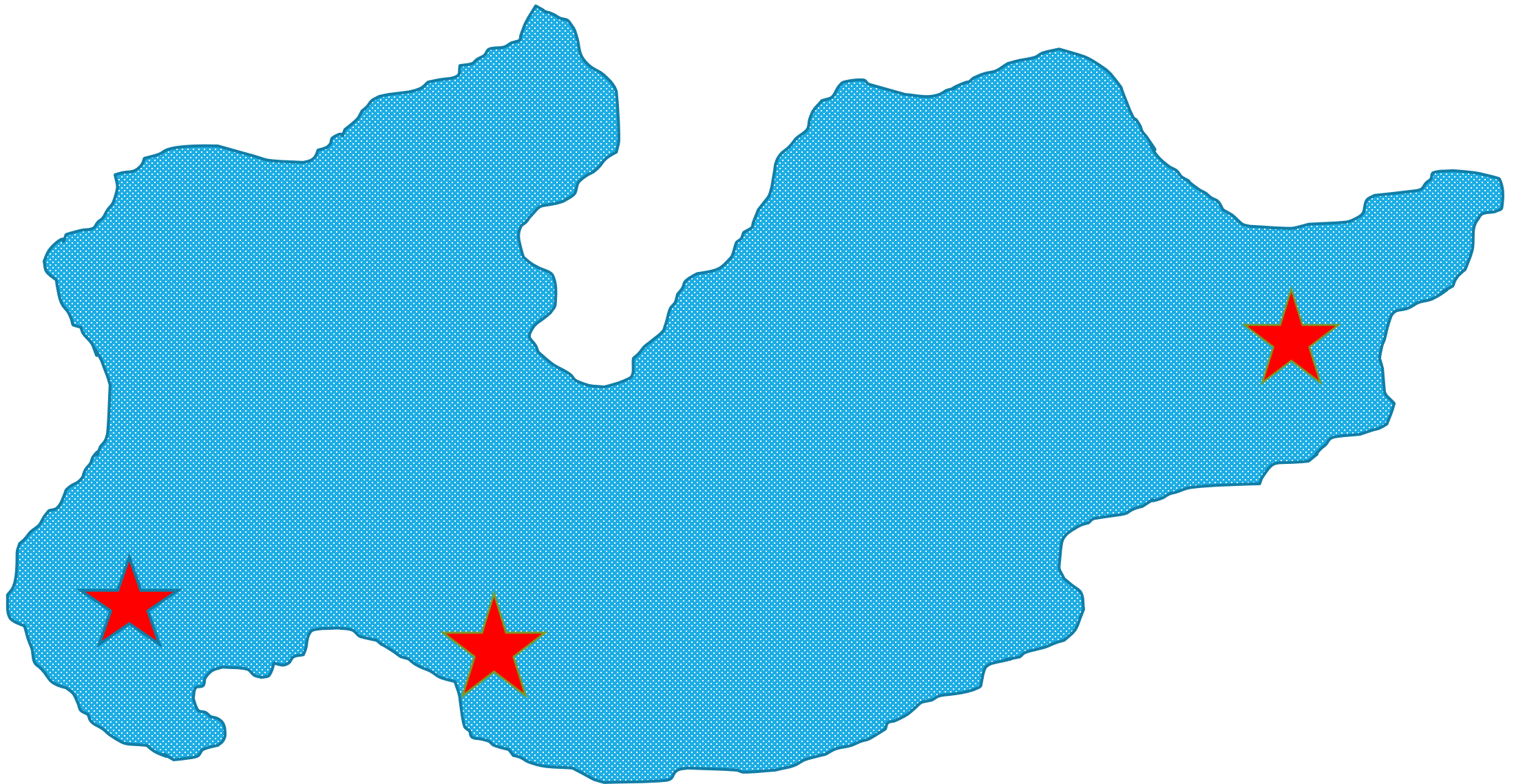
- Fill in the first tab of your Inventory Level 1 spreadsheet with country and contact data (use data of the basis year of your inventory).
- Do a preliminary round of identification of sources in your country from your own knowledge. Indicate Y, N or ? in your spreadsheet according to that knowledge.
- Read the training module of each source, identify the necessary data and make a list of people and institutions that may provide you with important data for that source.

Data Collection

- Start collecting data in existing literature and statistics, simultaneously as you request data from your list of contacts (phone interview, e-mail, paper letter, meetings).
- Fill in the tabs in your spreadsheet and use the “Total Summary” tab to get an overview of your progress and need for follow-up.
- As individual steps are completed, start describing input in your inventory report, while it is still fresh in your memory, and supported by your notes made during data collection

<http://mercurylearn.unitar.org/>

<http://mercurylearn.unitar.org/mod/page/view.php?id=11>



Data Gaps

- There will be data gaps in all emission inventories.
- Incomplete information will result in the need to make extrapolations and assumptions about those sources where only incomplete specific information could be collected.
- All assumptions should be transparent. Two overall approaches are presented:
 1. A “middle ground” approach assumes that missing data is distributed similarly to available data (e.g., high vs. low emitters or state of compliance with technology requirements). For example, with this approach an average (mean) or median factor may be used to estimate emissions for plants with missing data.

Data Gaps

2. A “conservative” approach is based on a decision that it is better to overestimate emissions rather than underestimate emissions for sources with missing data. Therefore, under a conservative approach missing sources are assumed to be similar to the higher emitters. For example, the highest (or a high) emission factor in the database or the highest input factor of those plants providing information could be used to generate a conservative estimate.
 - You should state your choice in this regard explicitly in the report.
 - Assumptions should be based on best judgment, making use of available data, presented clearly.

Report Data Origin

- In all cases, it is important to report the year and the origin of data with detailed, explicit references. Internal records of all data, including year, location and name of data suppliers, should be kept, for possible future internal verification.

Confidentiality

- Such data can be aggregated and processed to a degree where they do not reveal industry secrets, and the data sources should be held anonymous and presented in reporting as "industry sources", "suppliers", "producers" etc., as relevant.
- Data sets submitted to receivers where they may be made publicly available, including UNEP Chemicals, should be presented in such a way that specific, confidential data cannot be disclosed.
- Internal record of the detailed, confidential data, including year, location and name of data suppliers, should be kept (following proper confidential business information storage procedures) for possible future internal verification.

Lets Have a Quick Look...

[E:\PRESENTATIONS\Level 1 Inventory.xls](#)

Any Questions?





BASEL CONVENTION



MINAMATA
CONVENTION
ON MERCURY

Types and Sources of Mercury Wastes

Basel Convention Regional Centre –
Caribbean

Contents

- Definition
- Categories of Mercury Wastes
- Environmentally Sound Management
- Handling, Packaging & Labelling of Wastes
- Storage
- Recovery & Recycling Options
- Disposal

Definition

- Mercury is a chemical of global concern owing to its long-range atmospheric transport, its persistence in the environment once anthropogenically introduced, its ability to bioaccumulate in ecosystems and its significant negative effects on human health and the environment

Types of Mercury Wastes

- The Basel Technical Guidelines as well as the Minamata Convention on Mercury identify three (3) categories of mercury wastes:
 1. Wastes Consisting of Mercury Compounds;
 2. Wastes Containing Mercury Compounds and
 3. Wastes Contaminated with Mercury Compounds

Types of Mercury Wastes

1. Wastes consisting of mercury or mercury compounds

- May become available from manufacturing processes in which mercury is used (e.g. mercury cell chlor-alkali facilities), be extracted from end-of-life mercury-added products or wastes contaminated with mercury, or be captured during the processing of raw materials with mercury impurities (such as non-ferrous metals (NFM) (e.g. zinc) or natural gas)

Potential Sources of Wastes Containing of Mercury or Mercury Compounds

2. Wastes Containing Mercury or Mercury Compounds: Include wastes of mercury-added products that easily release mercury into the environment when they are broken, wastes of other mercury-added products and stabilized or solidified wastes containing mercury.



Types of Mercury Wastes

3. Wastes Contaminated with Mercury or Mercury Compounds

- Wastes contaminated with mercury are mainly generated via industrial processes using materials with mercury impurities (e.g. natural gas) and industrial processes with intentional use of mercury (e.g. vinyl chloride monomer (VCM))
- Some sources (e.g. primary mining or chlor-alkali) may generate both wastes consisting of mercury or mercury compounds and wastes contaminated with mercury or mercury compounds. Artisanal and smallscale gold mining (ASGM) is another significant source of wastes contaminated with mercury or mercury compounds.

Mercury Supply Exceeding Demand

- Excess mercury is the amount of mercury supply that exceeds demand for uses allowed under national law and the Minamata Convention.
- As mercury is a naturally occurring element, it cannot be destroyed.
- Excess mercury needs to be stored in an environmentally sound manner or transformed to a form having minimal mobility, and reliably sequestered from the environment.

Environmentally Sound Management

- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal defines ESM as:

"taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes" (Art. 2 para. 8)

Environmentally Sound Management

- ESM of mercury wastes under the Minamata Convention: Art. 11, para. 3
 - Managed in an environmentally sound manner, taking into account the guidelines developed under the Basel Convention;
 - Only recovered, recycled, reclaimed or directly re-used for a use allowed to a Party under this Convention or for environmentally sound disposal pursuant to para. 3 (a);
 - For Parties to the Basel Convention, not transported across international boundaries except for the purpose of environmentally sound disposal in conformity with this Article;
 - Where the Basel Convention does not apply to transport across international boundaries, a Party shall allow such transport only after taking into account relevant international rules, standards, and guidelines.

Elements of ESM

- Not mixed with other wastes;
- Not discarded in uncontrolled landfills;
- Not (co-)incinerated without dedicated flue gas cleaning and controls;
- Treated to extract the mercury or to immobilize it in an environmentally sound manner;
- Development and implementation of: 1) public health and safety activities and 2) worker and public health and safety activities which prevent and minimize exposure to mercury wastes;
- Development and implementation of regulation of mercury waste collection, transport, Storage, treatment and disposal facilities.

Handling, Packaging, Labelling, and Transport of Mercury Wastes

- Handling: When handling wastes consisting of elemental mercury, it is important to pay particular attention to the prevention of evaporation and spillage of elemental mercury into the environment;
- Packaging: The containers in which mercury wastes are transported provide the most direct barrier to prevent releases;
- Labelling: Appropriate labelling is also important, to help with the separation of mercury wastes from other wastes and ensure that the hazards of the waste are clearly communicated during transport;
- Transport: Waste shipment acceptance procedures and consistency controls are keys to successful transport of mercury wastes.

Storage

- On-site at industrial facilities pending collection;
- On-site in public institutions pending collections.
- Off-site in suitable centralized storage facilities or treatment plants pending disposal;
- Off-site in dedicated facilities specially equipped for storage of elemental mercury for a long period of time pending disposal.

Recovery Recycling Options

- Recovery operations are those operations which may lead to resource recovery, recycling, reclamation, direct re-use or alternative uses;
- Where the mercury is extracted for subsequent disposal operations, this is referred to as physico-chemical treatment;
- Recovery operations may yield mercury-free, sometimes valuable raw materials (e.g. glass from the recycling of lamps, zinc and iron from the recycling of batteries or silver from the recycling of dental amalgam), as well as mercury.

The 3 Basic Steps of Recovery Operations

- Step 1: Pretreatment
- Step 2: Thermal Treatment
- Step 3: Purification

Disposal Operations

- Physico-chemical Treatment (Stabilisation/Solidification)
 - In stabilisation processes, mercury is brought into reaction with chemical agents that convert it into a substance that is thermodynamically more stable, less soluble and less volatile;
 - In solidification processes mercury wastes are embedded in a solid and stable matrix. **Micro-encapsulation** means mixing the waste with the encasing material. **Macro-encapsulation** means pouring the encasing material over and around the waste mass, thus enclosing it in a solid block.

Disposal: Specially Engineered Landfill

- A specially engineered landfill (SEL) is an environmentally sound system for solid waste disposal and is a site where solid wastes are capped and isolated from each other and from the environment;
- There are concerns that the placement of treated wastes consisting of mercury or mercury compounds in SELs may lead to the leaching of contaminants over a long time period;
- Need to pay particular attention to the measures required to protect groundwater resources from leachate infiltration into the soil if SEL is the preferred option.

Permanent Storage (Underground Facilities)

- Mercury wastes, after having been solidified or stabilized, where appropriate, which meet the acceptance criteria for permanent storage may be permanently stored in special containers in designated areas in an underground storage facility such as in salt rock;
- Potential host rocks include the following: salt rock, clay formations, hard rock formations;
- The sealing and permanent isolation from the biosphere may be achieved through a multi-barrier system;
- A long-term, thorough and holistic **site-specific risk and safety assessment** is necessary to provide firm evidence on the isolation potential offered by the barriers and to identify a potential need for additional action.

Export of Mercury Wastes

- Shipments must comply with Minamata Convention, Basel Convention;
- The importing country should have the infrastructure to manage the waste in an environmentally sound manner according to its national legislation;
- Seek regional solutions in order to avoid unnecessary risks associated with transportation of mercury wastes;
- Address issues of ownership, liability and traceability.

Management of Sites Contaminated with Mercury Wastes

- The management of sites contaminated with mercury is a complicated, time consuming and often costly effort;
- Governments should identify and inventory sites contaminated with mercury, ensure that the source of the contamination is contained to prevent any further contamination;
- Remediate the site as soon as feasible to reduce exposure to humans and the environment;
- At contaminated sites the surface and sub-soil, sediment, surface and ground water may need to be adequately treated.

Any
Questions?



RECOVERY & DISPOSAL OPERATIONS

BASEL CONVENTION REGIONAL CENTRE - CARIBBEAN



BASEL CONVENTION



MINAMATA
CONVENTION
ON MERCURY

CONTENTS RECOVERY

- Basel Guidelines for Recovery Operations
- Recovery Operations
- Treatment of mercury wastes – Containing or contaminated with mercury or mercury compounds
- Mercury recovery/recycling
- Basic steps in the recovery/recycling of mercury wastes through thermal treatment
- Management of residues, emissions and releases from recovery operations

BASEL TECHNICAL GUIDELINES

- R4- Recycling/reclamation of metals and metals compounds
- R5 – Recycling/ reclamation of other inorganic materials
- R8 - Recovery of components from catalysts
- R12 – Exchange of wastes for submission to operations R4, R5, R8 or R13
- R13 – Accumulation of material intended for operations R4, R5, R8 or R12

RECOVERY OPERATIONS

- Recovery operations are those operations that may lead to:
 - Resource Recovery
 - Recycling
 - Reclamation
 - Direct Re-use or Alternative Use

TREATMENT OF MERCURY WASTES – CONTAINING OR CONTAMINATED WITH MERCURY OR MERCURY COMPOUNDS

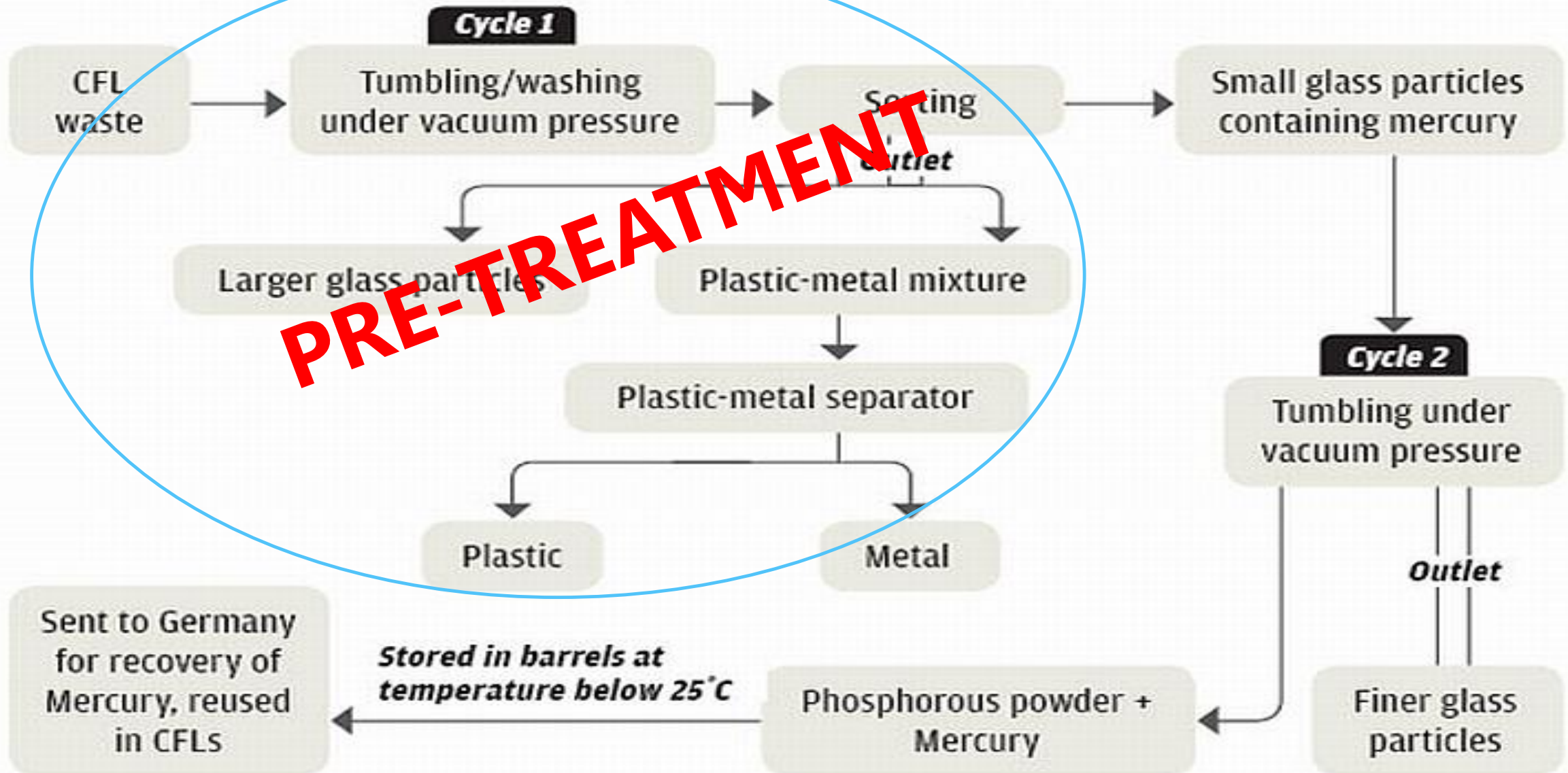
- Extract and Purify the mercury contained in the waste for re-use or disposal operations
- Decontaminate the waste to recover the components or to make eligible for disposal

BASIC STEPS IN THE RECOVERY/RECYCLING OF MERCURY WASTES THROUGH THERMAL TREATMENT

- Pre-Treatment – serves to increase the efficiency of the subsequent steps by removing materials other than those containing mercury;
- Thermal Treatment – mercury is separated by heating it above its vaporisation temperature;
- Purification – this is done through successive distillation to render it re-useable.

Bulb breakdown

What happens inside the Mercury Recovery Technology machine



MANAGEMENT OF RESIDUES, EMISSIONS AND RELEASES FROM RECOVERY OPERATIONS

- Environmentally Sound Treatment;
- Establish a Mass Balance – what goes in is what comes out;
- Closed System – Prevent Vapour Emissions;
- Mercury in the Exhaust Air is captured;
- Mercury in the wastewater is isolated;
- Mercury emissions and releases are continuously monitored.

CONTENTS DISPOSAL

- Basel Technical Guidelines for Disposal Operations
- Types of Disposal Operations
 - Stabilisation
 - Solidification
 - Evaluation Criteria for Physico-chemical Treatment
 - Opportunities and Challenges of Physico-chemical Treatment
- Specially Engineered Landfill
 - Opportunities and Challenges
- Permanent Storage
 - Opportunities and Challenges

BASEL TECHNICAL GUIDELINES

- D5 – Specially-engineered landfill
- D9 – Physico-chemical treatment
- D12 – Permanent storage
- D13 – Blending or mixing prior to submission to D5, D9, D12, D14 or D15
- D14 – Repackaging prior to submission to D5, D9, D12, D13 or D15
- D15 – Storage pending any of the operations D5, D9, D12, D13 or D14

PHYSICO-CHEMICAL TREATMENT (STABILISATION/SOLIDIFICATION)

- Stabilisation – Mercury brought into reaction with chemical agents that convert it into a substance that is thermodynamically more stable, less soluble and less volatile making it less mobile and thereby reducing release and exposure potential.

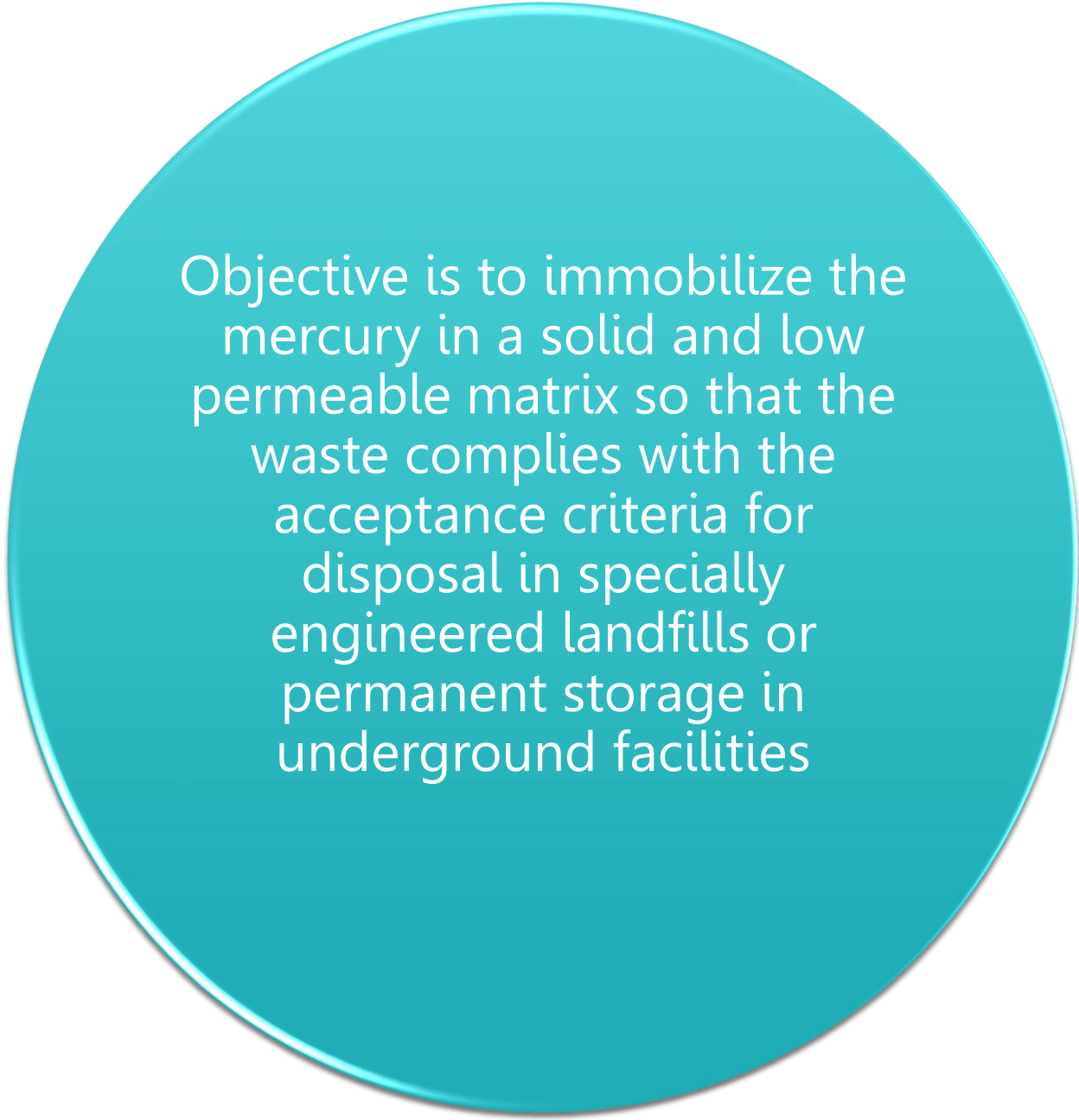
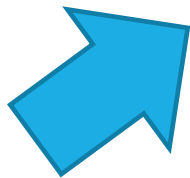
STABILISATION

- Sulphur Stabilisation of Mercury: Sulphur and mercury are mixed under heat in a vacuum mixer forming mercury sulphide;
- Sulphur Polymer Stabilisation and Solidification (SPSS): mercury wastes are stabilized with sulphur as mercury sulphide and then incorporated and microencapsulated in a polymeric sulphur matrix;
- S/S with Sulphur Microcements: mixture of mercury waste with the sulphur microcement and water; the mixture is then discharged into the desired mould.

Solidification – mercury wastes are embedded in a solid and stable matrix.

Micro-encapsulation means mixing the waste with the encasing material

Macro encapsulation means pouring the encasing material over and around the waste mass, thus enclosing it in a solid block



EVALUATION OF METHODS FOR PHYSICO-CHEMICAL TREATMENT

It is suggested to evaluate physico-chemical treatment methods in **pilot-scale tests** before commercial use. This includes:

- a **verification of the quality of the stabilization process** by determining the conversion rate and the mercury vapour release from the stabilized waste;
- an **evaluation of the leaching potential** over a range of plausible disposal conditions (especially over a range of pH values); and
- an **evaluation of plausible changes to the treated waste in the long-term** due to exposure to the environment and biological activity at disposal sites.

OPPORTUNITIES & CHALLENGES OF PHYSICO-CHEMICAL TREATMENT

Challenges

- Increased Storage and Disposal Costs;
- Measure to prevent decomposition in the long term should be identified;
- Completeness of the reaction between mercury and treatment chemicals should be established;
- Further research towards largescale commercialization needed.

Opportunities

- Reduces vapour pressure, solubility and mobility enhances physical strength;
- Enhances safeguards against illegal use;
- Stabilised/solidified mercury wastes are relatively easy and safe to handle;
- Allows safe storage and disposal in SELs or permanent underground storage.

SPECIALLY ENGINEERED LANDFILL

- SEL is an environmentally sound system for solid waste disposal and is a site where solid wastes are capped and isolated from each other and from the environment.
- Inherent concerns that SELs may have leaching of contaminants
- Wastes are to be tested to ensure long term stability in SELs

PERMANENT STORAGE: SPECIALLY ENGINEERED LANDFILLS

Important ESM landfill considerations include the following:

- Examine the long-term stability of treated mercury wastes in specially engineered landfills and establish methods to evaluate such long-term stability;
- Design a facility with attention to protect ground water;
- Establish a permit system, stipulating leachate and gas control systems, closure and post-closure measures *etc.*;
- Identify existing landfills that could be retrofitted for the disposal of stabilized mercury;
- Make thorough environmental impact assessments and analyse the long-term behaviour of stabilized mercury wastes in the specific settings of the facility; and
- Continuously manage and monitor specially engineered landfills in which treated mercury wastes have been disposed.

CHALLENGES/OPPORTUNITIES OF SPECIALLY ENGINEERED LANDFILL

Challenges

- Long term stability of treated mercury wastes in SELs should be examined and methods to evaluate such long term stability should be established
- SELs where treated mercury wastes are disposed of should be continuously managed and monitored to prevent mercury releases to the environment

Opportunities

- ✓ Well established concept globally
- ✓ Low investment costs
- ✓ Long isolation time
- ✓ Solution to countries without an underground option

PERMANENT STORAGE UNDERGROUND

- Mercury wastes can be permanently stored in deep geological cavities (underground mines)
- Best for mercury wastes that have been solidified or stabilised
- Site selection:
 - Salt Rock – considered impermeable to liquids and gases (rare)
 - Clay Formations – Very good barrier (common)
 - Hard rock formations – can be useful if combined with a technical barrier (common)

SAFETY REQUIREMENTS

- Must utilise a multi-barrier system
- Accident proof containers
- Properly sealed off from old mines or shafts
- In geological formations that are well below the groundwater and water bearing zones
- In stable geological formations

CHALLENGES AND OPPORTUNITIES FOR PERMANENT STORAGE

Challenges

- Diligent selection processes and assessments
- Costly
- Safeguards must be in place in case of accidents

Opportunities

- Little aftercare
- Allows isolation from the biosphere
- Existing experience with hazardous wastes

ANY QUESTIONS?





BASEL CONVENTION



REVIEW OF THE REGULATORY FRAMEWORK

BASEL CONVENTION REGIONAL CENTRE - CARIBBEAN

CONTENT

1. Objective
2. Methodology
3. Case studies
 - Argentina
 - Uruguay
 - Trinidad and Tobago
 - Jamaica
 - Suriname

OBJECTIVE

- To evaluate existing national, regional and international legislation/ regulatory measures that may affect the storage and disposal of mercury.
- Examples include legislation on hazardous substances, waste, trade, products phase-out, and others

METHODOLOGY

- Review of regulatory chapters/issues in several documents, among others:
- “Basel Technical Guidelines on the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury”,
- “Options Analysis and Feasibility Study for the Long Term Storage of Mercury in Latin America and the Caribbean”
- “A suggested framework for decision making for the safe management of surplus mercury”

METHODOLOGY

- Elaboration of a list of legal/regulatory instruments, grouped in three categories:
 - ❖ Environmental standards
 - ❖ Mercury, products (as waste) and processes
 - ❖ Facilities
- 3. Use of these instruments in a matrix against local, national, regional and international categories

PROGRESS IN LATIN AMERICA

- ARGENTINA
 - 19 national instruments (laws, regulations, decrees and resolutions) in place.
 - At the regional level, three relevant instruments adopted under Mercosur.
 - At the international sphere, Argentina adopted national laws implementing Basel and Rotterdam Conventions.
 - Provincial legal instruments also exist, regulating the import of HW into their territories. Only 5 out of 23 provinces allow the import of HW

PROGRESS IN LATIN AMERICA

- URUGUAY

- Twenty-five regulatory instruments were identified.
- Departmental guidelines complement nineteen national instruments, two of which also apply at the municipal level.
- At the regional level, two framework agreement and one action plan are relevant, all adopted under Mercosur.
- At the international level, Uruguay has implemented Basel and Rotterdam Conventions via national laws.
- Particular regulations for hazardous waste and substances are still incipient and non-specific .

PROGRESS IN TRINIDAD AND TOBAGO

- Draft Hazardous Waste Rules, 2014 – EMA

http://www.ema.co.tt/new/images/public_comments/adminrecord_draftwaste.pdf

- Basel, Rotterdam and Stockholm Ratified
- Not a signatory to Minamata
- National Environment Policy
- Integrated Waste Management Policy

PROGRESS IN JAMAICA

- Rotterdam and Stockholm Ratified
- Signatory to Minamata
- National Solid Waste Management Act (Deals with solid waste primarily?)
- The Natural Resources (Hazardous Waste) (Control of Transboundary Movement) Reg. 2003
- The Natural Resources Conservation Authority Act 1991 and NEPAs Role?
- The Natural Reso

Source: http://www.nepa.gov.jm/symposia_03/Others/199_3300.pdf furces
(Marine Park) Regulations 1992

PROGRESS IN SURINAME

- Rotterdam and Stockholm Ratified
- Not a signatory to Minamata

ANY QUESTIONS?



STORAGE OF MERCURY WASTES

BASEL CONVENTION REGIONAL CENTRE – CARIBBEAN



BASEL CONVENTION

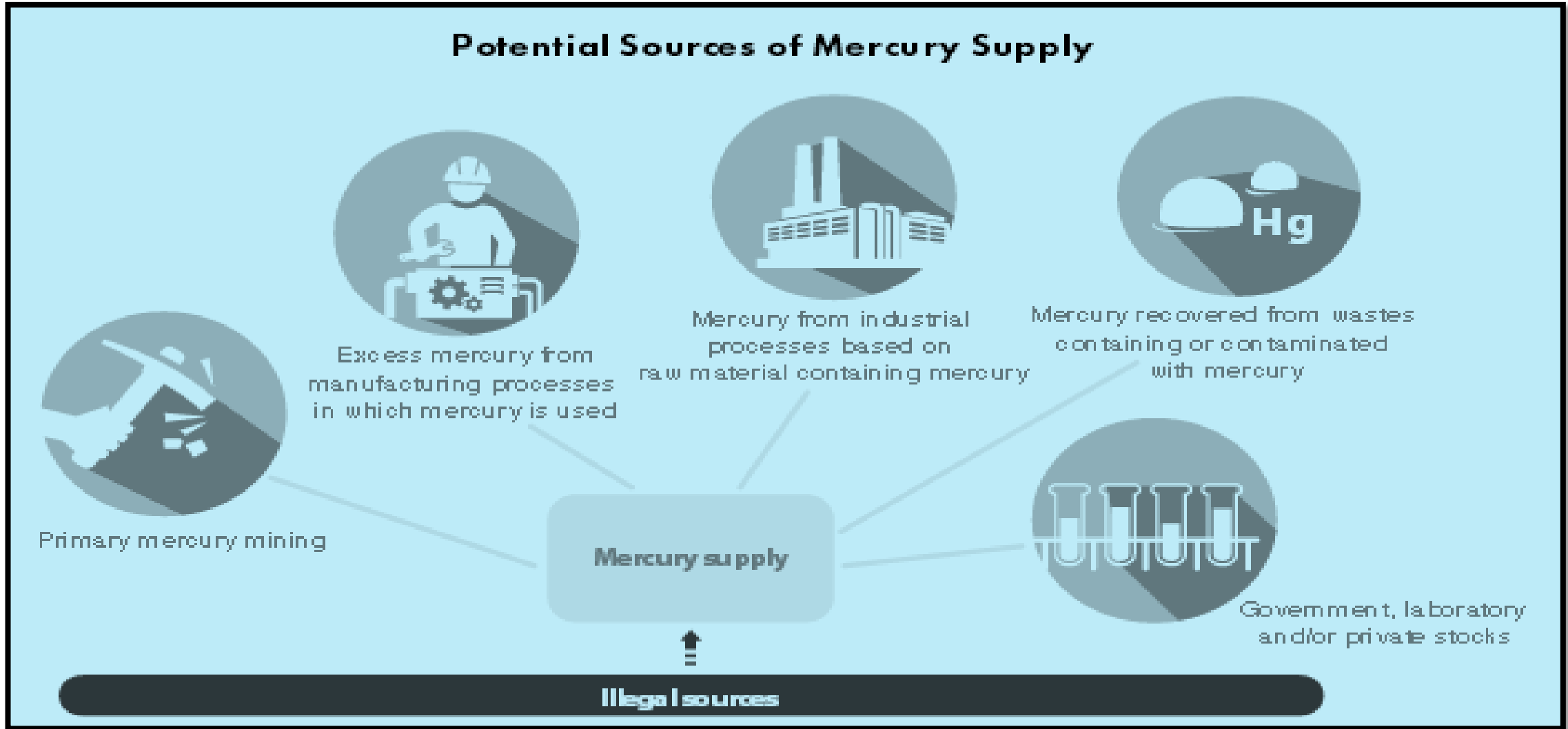


MINAMATA
CONVENTION
ON MERCURY

CONTENTS

1. Potential Sources of Mercury Wastes
2. Storage of Mercury Wastes
 - Handling, Packaging, Labelling and Transport
3. Packaging of Wastes
 - Consisting of Mercury
 - Containing Mercury
 - Contaminated With Mercury
4. Traceability
5. Storage Options
 - General Criteria for Operation and Safety
6. Storage Locations

POTENTIAL SOURCES OF MERCURY SUPPLY



STORAGE OF MERCURY WASTES

- The Basel Technical Guidelines list two (2) disposal operations for the storage of mercury wastes namely R13 and D 15;
- R13 – Accumulation of material intended for operations R4, R5, R8 or R12: Mercury wastes may be accumulated with intent to conduct recycling/reclamation or recovery . Such storage is often regulated at the national level, where specific time periods may be set after the expiry of which the mercury wastes are transported to the appropriate recycling/reclamation or recovery facility.
- D15 – Storage pending any of the operations D5, D9, D12, D13 or D14: Mercury wastes may be stored pending physico-chemical treatment or placement into SELs or permanent storage.

HANDLING, PACKAGING, LABELLING AND TRANSPORT

- Handling: When handling wastes consisting of mercury, it is important to pay particular attention to the **prevention of evaporation and spillage of mercury** into the environment. Breakage or damage to mercury-added products is to be prevented whenever possible.
- Packaging: The containers in which mercury wastes are transported provide the most direct barrier to prevent releases. It is therefore necessary to carefully package mercury wastes in **appropriate containers** that have been manufactured to conform to UN standards for the packaging of mercury wastes or hazardous wastes before shipping them to designated facilities.

HANDLING, PACKAGING, LABELLING AND TRANSPORT

- Labelling: Appropriate labelling is also important, among others to help with the **separation of mercury wastes** from other wastes and ensure that the hazards of the waste are **clearly communicated** during transport.
- Transport: Prior to transportation, contingency plans need to be developed and implemented in order to prevent/minimize environmental impacts associated with spills, fires and other potential emergencies. **Waste shipment acceptance procedures and consistency controls** are keys to successful transport of mercury wastes.

HANDLING, PACKAGING, LABELLING, AND TRANSPORT OF MERCURY WASTES

- Handling: When handling wastes consisting of elemental mercury, it is important to pay particular attention to the prevention of evaporation and spillage of elemental mercury into the environment.
- Packaging: The containers in which mercury wastes are transported provide the most direct barrier to prevent releases;
- Labelling: Appropriate labelling is also important, to help with the separation of mercury wastes from other wastes and ensure that the hazards of the waste are clearly communicated during transport;
- Transport: Waste shipment acceptance procedures and consistency controls are keys to successful transport of mercury wastes.



CAUTION



**MERCURY VAPOUR
RESPIRATORS
REQUIRED
IN THIS AREA**



Number: OCE-4001 www.CorpSigns.com

Mercury

Odorless, heavy, silvery liquid. Corrosive! Toxic! Inhalation causes respiratory and CNS effects including bronchitis, headache, and ringing in ears. Causes severe delayed neurotoxicity and kidney damage. Possible reproductive hazard.



CAS No.

Face Shield, Glove
 First Aid Procedure
 Eyes/Skin: Remove
 soap and water. In
 tract uneventfully.

Fire Procedures: Noncombustible. Use extinguishing agents suitable for surrounding fire.

Spill Procedures: Notify safety personnel, isolate and ventilate area, deny entry, stay upwind. Keep a mercury spill kit on hand. If spill can't be cleaned promptly, dust with calcium polysulfide to prevent vapor dispersion. Clean spill **THOROUGHLY!**

CAS No. 7439-97-6



PACKAGING OF WASTES CONSISTING OF MERCURY

- Wastes consisting of mercury are stored in exclusively designed stainless steel containers. These are stored in a dry location, upright on pallets off ground with over packing and have the following characteristics:
 - Gas-and liquid-tight
 - Coated from the outside
 - No damage to the structural integrity of the container
 - No materials adversely reacting with mercury (e.g. ammonia or halogens) previously stored in the container.

MERCURY FLASKS



PACKAGING OF WASTES CONTAINING MERCURY

- Wastes containing mercury are transported in appropriate packages (such as original boxes or closed containers) that prevents them from breaking and releasing mercury.

PACKAGING OF WASTES CONTAMINATED WITH MERCURY

- Liquid wastes contaminated with mercury are packed in appropriate containers which are placed in containment trays or a curved and leak-proof area.
- Solid wastes contaminated with mercury are stored in sealed containers, steel waste containers or specially constructed containers.

TRACEABILITY

- Traceability is an approach which identifies and records every activity of hazardous waste management from generation to disposal. Ideally, mercury wastes are traceable throughout the lifecycle, including after disposal.
- Traceability applies to relevant parties upstream (e.g. waste generators) and downstream (e.g. transporters, recyclers, disposers).
- When a comprehensive traceability approach is implemented, important information on the characteristics, concentration, and quantity of the mercury waste in question as well as the risks associated with its management are available to the relevant local and/or national authorities at all times. It is suggested to request detailed reports and tracking records from dealers, transporters, recyclers, disposers and others involved.

STORAGE OPTIONS

- **USEFUL CRITERIA:**

- Not in sensitive areas(floodplains, earthquake zones)
- Floors covered with mercury resistant material
- Constant, low temperature
- Storage area clearly marked with warning signs



GENERAL CRITERIA FOR OPERATION AND SAFETY

- Mercury Wastes stored separately from other wastes;
- Full Inventory; regular monitoring, audits and inspections;
- Keep facility locked and secure from theft; restricted area access;
- Trained Personnel; fire alarm and suppression system, emergency plan, vapour detection instruments.

STORAGE LOCATIONS

1. On site Industrial Facilities – pending collection, recovery operations or disposal operations
2. On-site in public institutions – pending collection, recovery or disposal operations
3. Off –site in suitable centralised hazardous waste management facilities pending recovery operations or disposal
4. Off site in dedicated facilities specially equipped for storage of mercury for a long period of time pending disposal

ANY QUESTIONS?



Assessing Basic Management Options – Disposal Operations

BASEL CONVENTION REGIONAL CENTRE- CARIBBEAN





Contents

- ▶ Objectives
- ▶ Methodology

Objectives

- ▶ To determine the best management options based on the information gleaned during the project.

Methodology

- ▶ Inventory of Mercury Wastes 
- ▶ Survey and Analysis of Potential Sites 
- ▶ Analysis of Domestic Infrastructure 
- ▶ Review of Regulatory Framework 

BASIC
MANAGEMENT
OPTION

METHODOLOGY

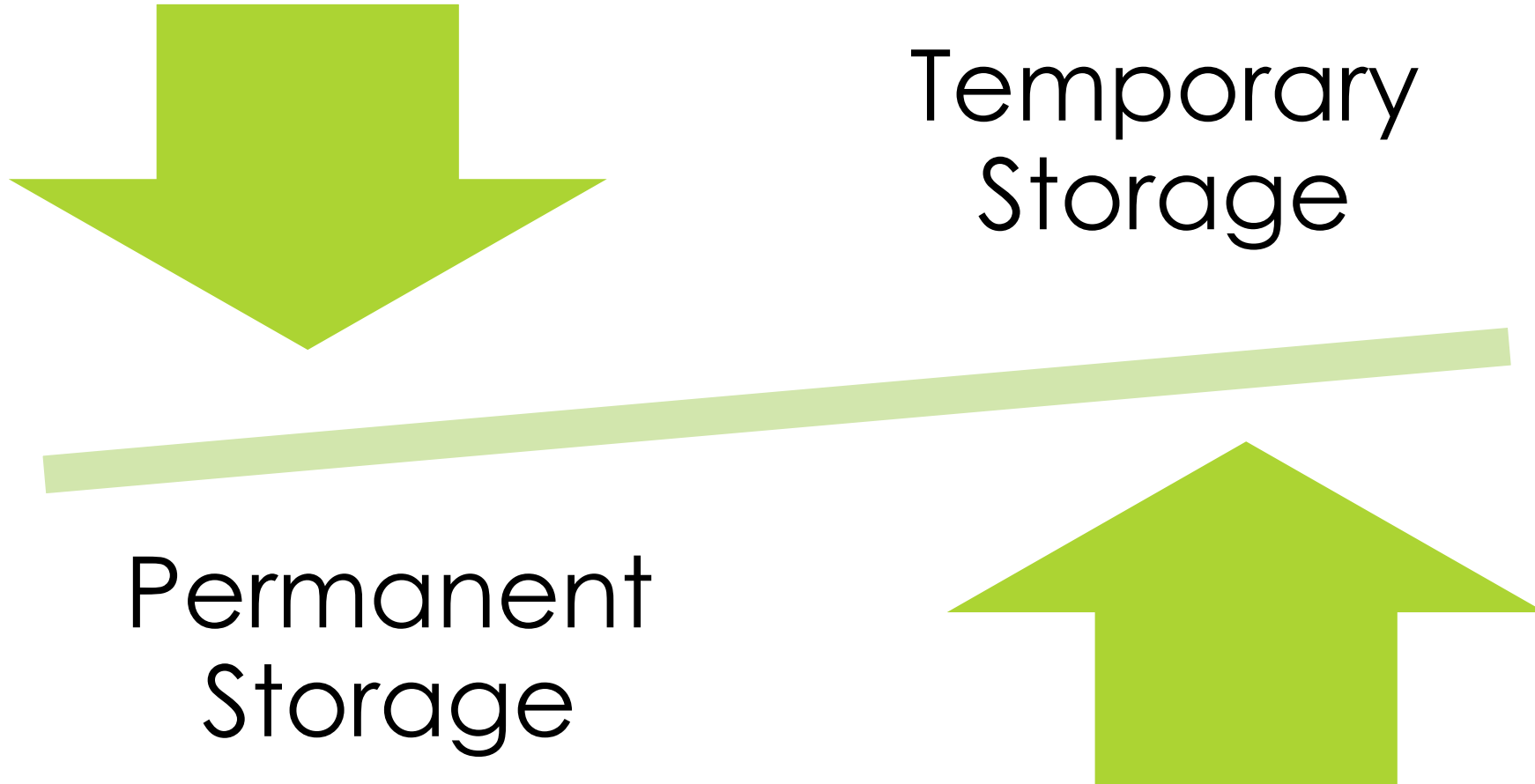
- ▶ The Management Option must be specific to the national context
- ▶ Is this the BEST option for YOU?



METHODOLOGY

- ▶ Technologies will be assessed based on criteria such as such as their:
 - ❖ Performance Characteristics
 - ❖ Economic Aspects
 - ❖ Environmental Considerations
 - ❖ Availability
- ▶ Preliminary list developed in Activity 3
- ▶ May examine certain specific site improvements

METHODOLOGY – POTENTIAL SITES



ANY QUESTIONS?



Contact Us!



MINAMATA
CONVENTION
ON MERCURY

Basel Convention Centre for Training and Technology
Transfer for the Caribbean Region

#8 Alexandra Street, St. Clair. Port of Spain, Trinidad

Tel: 868-628 – 8369;

Fax: 868-628-2151;

Email: bcrc.caribbean@gmail.com



BASEL CONVENTION

POSSIBLE ELEMENTS OF A NATIONAL ACTION PLAN FOR MERCURY WASTE STORAGE AND DISPOSAL

BASEL CONVENTION REGIONAL CENTRE – CARIBBEAN

1



- **CREATE A STAKEHOLDER/NATIONAL STEERING COMMITTEE;**
- **ASSESS NATIONAL LEGISLATION AND PROPOSE REGULATION/S AS NECESSARY;**
- **DETERMINE THE ORGANIZATIONAL STRUCTURE AND STAFFING DEMANDS TO MANAGE THE MERCURY WASTE STORAGE AND DISPOSAL PROGRAM;**

- **CONDUCT OR UPDATE A MERCURY WASTE INVENTORY;**
- **IDENTIFY THE ESM OPTIONS FOR STORAGE AND/OR DISPOSAL (IN-COUNTRY VERSUS EXPORT);**
- **ASSESS COSTS OF IMPLEMENTATION (FUNDING OPTIONS);**
- **DETERMINE SCHEDULE FOR IMPLEMENTATION;**
- **IMPLEMENTATION: OVERSIGHT, MONITORING, REPORTING, VALIDATION.**

Contact Us!

BASEL CONVENTION CENTRE
FOR TRAINING AND
TECHNOLOGY TRANSFER FOR
THE CARIBBEAN REGION

#8 ALEXANDRA STREET, ST.
CLAIR. PORT OF SPAIN,
TRINIDAD

TEL: 868-628 – 8369;

FAX: 868-628-2151;

EMAIL:

BCRC.CARIBBEAN@GMAIL.COM



APPENDIX 5
QUESTIONNAIRES

**QUESTIONNAIRE FOR AMMONIA AND METHANOL SECTOR
MERCURY STORAGE AND DISPOSAL PROJECT**

COMPANY NAME			
MAILING ADDRESS (NUMBER, STREET, VILLAGE/CITY)/P.O. Box No.			
CEO/VICE PRESIDENT/DIRECTOR			
COMPANY CONTACT	Name (first,last):		
	Official Position:		
	Mailing Address (number, street, village/city)/ P.O. Box No.:		
	Telephone No.:		
	Fax No.:		
	Mobile No.:		
	Email:		
SIGNATURE			
DATE (DD/MM/YYYY)			

1. For the past five (5) years, kindly indicate the following information where applicable:

	Processing of Natural Gas
Years	(Nm³/y)
2011	
2012	
2013	
2014	
2015	

2. Does the facility consume treated (to remove trace mercury) natural gas or does it treat incoming natural gas to remove trace mercury at the plant?
3. If there is an operating mercury treatment process at the plant, describe this treatment system to address mercury in feed natural gas?
4. Does the facility currently use a non-regenerative sorbent system to remove mercury? If yes describe how the system operates.
5. Does this non- generative sorbent system generate liquid or solid wastes? If yes describe the types of wastes, annual amounts generated and how they are disposed.
6. Does the facility use regenerative adsorbents to remove mercury? If yes describe that process.
7. If regenerative adsorbents are used, do they generate liquid or solid wastes? If yes describe the waste types, the annual amounts of wastes and how each waste is disposed of.
8. Mercury Management Programme

Describe the company's mercury management program to reduce mercury waste generation, manage the disposal of mercury wastes and actions to prevent Mercury from entering into the atmospheres, land, and water.

9. Confidentiality Claim

If any information provided is considered to be a trade secret, confidential business information and/or if disclosed, would be contrary to the public interest; please indicate below:

Yes

No

Please explain:

Please submit this data within three (3) weeks of receipt of this correspondence.

Thank you for taking the time to complete this survey

**QUESTIONNAIRE FOR POWER GENERATION SECTOR
MERCURY STORAGE AND DISPOSAL PROJECT**

COMPANY NAME			
MAILING ADDRESS (NUMBER, STREET, VILLAGE/CITY)/P.O. Box No.			
CEO/VICE PRESIDENT/DIRECTOR			
COMPANY CONTACT	Name (first,last):		
	Official Position:		
	Mailing Address (number, street, village/city)/ P.O. Box No.:		
	Telephone No.:		
	Fax No.:		
			Mobile No.:
			Email:
SIGNATURE			
DATE (DD/MM/YYYY)			

1. For the past five (5) years, kindly indicate the following information where applicable:

	Processing of Natural Gas
Years	(Nm³/y)
2011	
2012	
2013	
2014	
2015	

2. What is the MW rating for the plant?
3. How much electricity (MW) do you produce annually? At Peak?
4. Is the purchased natural gas treated to remove mercury? If yes what is the purchase specification for mercury content in purchased natural gas?
5. Is there any mercury air emission monitoring systems operating at your plant? If so describe their operation and results.
6. Mercury Management Programme:
Describe the company's mercury management program to reduce mercury waste generation, manage the disposal of mercury wastes and actions to prevent Mercury from entering into the atmospheres, land, and water.

Please submit this data within three (3) weeks of receipt of this correspondence.

Thank you for taking the time to complete this survey

**QUESTIONNAIRE FOR OIL AND GAS SECTOR
MERCURY STORAGE AND DISPOSAL PROJECT**

COMPANY NAME			
MAILING ADDRESS (NUMBER, STREET, VILLAGE/CITY)/P.O. Box No.			
CEO/VICE PRESIDENT/DIRECTOR			
COMPANY CONTACT	Name (first,last):		
	Official Position:		
	Mailing Address (number, street, village/city)/ P.O. Box No.:		
	Telephone No.:		
	Fax No.:		
	Mobile No.:		
	Email:		
SIGNATURE			
DATE (DD/MM/YYYY)			

10. Facility Category

- Petroleum
- Natural Gas Production, Compression, Blending or Liquifaction Facility
- Other (*please specify*)

11. Provide a brief description of the facility's operations and activities that generate or are expected to generate Mercury, Mercury containing or Mercury Contaminated Waste.

Process	Raw Materials	Products & By-products	Wastes and Emissions	Frequency of Production

12. For the past five (5) years, kindly indicate the following information where applicable:

FUEL PRODUCTION			
	Oil Extraction	Oil Refining	Extraction and Processing of Natural Gas
Years	Crude Oil produced (t/y)	Oil refined (t/y)	Produced gas (Nm³/y)
2011			
2012			
2013			
2014			
2015			

13. Please provide any information on mercury, mercury containing or mercury contaminated waste/effluent/wastewater/liquids/materials generated through your process/es and company facilities.

	Industry Segment	Category	Amount Discharged (including what is stored and what is disposed of) (Please state appropriate units)
Water	Natural Gas Production, Compression, blending or liquifaction facility	Produced Water	
	Oil Refining	Refinery WasteWater	
	Oil Transport	Tanker Ballast Wastewater	
Solid Waste	Oil and Gas Exploration	Drilling Waste	
	Oil Refining	Refinery Waste	
Air	Natural Gas Production, Compression, blending or liquifaction facility	Spent catalyst, carbon beds, Absorbent material, other	
	Oil and Gas Production, Compression, Compression, blending or liquifaction facility	Flared Gas/Stack Emissions	
	Oil Production	Fugitive Emissions	

	Natural Gas Production, Compression,blending or liquifaction facility and Transmission	Fugitive Emissions	
	Oil Production	Fuel Combustion	
	Natural Gas Production, Compression, ,blending or liquifaction facility	Fuel Combustion	
OTHER Examples: Mercury Containing or Contaminated Material, Condensate, bulbs and light fixtures, etc.			
CATALYST (if used in your process please identify the type of catalyst material)			

14. Mercury Management Programme

Is there any mercury management program or are there any measured in place currently to reduce, manage or prevent the use of Mercury and/or to prevent Mercury from entering into the atmospheres, land, water or disposal of Mercury, Mercury containing and Mercury contaminated waste?

15. Confidentiality Claim

If any information provided is considered to be a trade secret, confidential business information and/or if disclosed, would be contrary to the public interest; please indicate below:

Yes

No

Please explain:

Please submit this data within three (3) weeks of receipt of this correspondence.

Thank you for taking the time to complete this survey

**QUESTIONNAIRE FOR MERCURY AND MERCURY CONTAINING
DEVICES**

MERCURY STORAGE AND DISPOSAL PROJECT

NAME			
COMPANY NAME (IF APPLICABLE)			
ADDRESS			
CONTACT INFORMATION	PHONE	MOBILE	EMAIL

	Do You Import These Items?	Yes/No	Quantity /Year	Purchasing Institution (i.e. who purchases this from you)	Comments (Is it still imported, replacement devices on market?)
1	Mercury Lab Thermometer				
2	Mercury Fever Thermometer				
3	Mercury Cooking Thermometer				
4	Mercury Sphygmomanometer				
5	Mercury Barometer				
6	Mercury Hygrometer				
7	Mercury Hydrometer				
8	Mercury Vacuum Gauge				
9	Mercury Spectral Tube				
10	Mercury Sling Psychrometer				
11	Mercury Gas Law Apparatus				
12	Mercury Anemometer				
13	Other metallic mercury containing instruments (Please list as needed)				

Please submit this data within two (2) weeks of receipt of this correspondence.

Thank you for taking the time to complete this survey

**QUESTIONNAIRE FOR BAUXITE AND CEMENT SECTOR
MERCURY STORAGE AND DISPOSAL PROJECT**

NAME			
COMPANY NAME			
ADDRESS			
CONTACT INFORMATION	PHONE	MOBILE	EMAIL

1. For the past five (5) years, kindly indicate the following information where applicable:

	Primary Metal Production	Other Materials production
Years	Alumina Production from bauxite [aluminium production] (Bauxite processed, t/y)	Cement Production (tonnes of cement produced, t/y)
2011		
2012		
2013		
2014		
2015		

2. What type of fuel do you use at your facility for processing cement?
3. Do your scrubbers contain mercury?
4. If 'YES' to #3 above, please describe the disposal process.

Please submit this data within two (2) weeks of receipt of this correspondence.

Thank you for taking the time to complete this survey

**QUESTIONNAIRE FOR DENTAL SECTOR
MERCURY STORAGE AND DISPOSAL PROJECT**

NAME			
COMPANY NAME (IF APPLICABLE)			
ADDRESS			
CONTACT INFORMATION	PHONE	MOBILE	EMAIL

1. Which do you use in your dental practice?

- Elemental mercury (from a dispenser)
- Pre-capsulated mercury
- None

2. Can you indicate the dental amalgam supplier to your dental practice?

3. For the past year (1), kindly indicate the following information where applicable:

Years	Old Amalgams Removed	New Amalgams Placed
2015		

4. What type of chair side trap filter do you use?

Reusable

Disposable

5. How do you manage your waste from chair side traps? (please tick all that are applicable)

- Recycle
 - General garbage
 - Biohazard Waste
 - Wash down sink
 - Don't know
 - Other (please explain)
-
-

Please submit this data within two (2) weeks of receipt of this correspondence.

Thank you for taking the time to complete this survey

QUESTIONNAIRE FOR WASTE MANAGEMENT SECTOR
MERCURY STORAGE AND DISPOSAL PROJECT

NAME			
COMPANY NAME			
ADDRESS			
CONTACT INFORMATION	PHONE	MOBILE	EMAIL

WASTE INCINERATION					
Years	Incineration of Municipal/ General Waste Waste incinerated (t/y)	Incineration of hazardous waste Waste incinerated (t/y)	Incineration of medical waste Waste incinerated (t/y)	Sewage Sludge Incineration Waste incinerated (t/y)	Open fire waste burning (on landfills and informally) Waste burned (t/y)
2011					
2012					
2013					
2014					
2015					

QUESTIONNAIRE FOR MINING SECTOR

MERCURY STORAGE AND DISPOSAL PROJECT

Your mining operation has been identified as a potential source for releases of mercury from primary metal production. Please see the attached cover letter providing more information about the project.

In order to more accurately compile our national inventory please provide us with and enter your data as requested in the table below. PLEASE FILL IN ALL THE BLANK BOXES IN THE TABLE BELOW. Kindly provide data from [*the year*], or the last year with available data.

Does your mining operation cover any of the following activities?	Yes or No	Requested data covering your company's activity in this country	Annual consumption of relevant concentrate/ore**	Year for data provided
Production of zinc from concentrates*		Metric Tonnes concentrate used per year		
Production of copper from concentrates*		Metric Tonnes concentrate used per year		
Production of lead from concentrates*		Metric Tonnes concentrate used per year		
Alumina production from bauxite (aluminium production)		Metric Tonnes bauxite processed per year		
Large scale gold extraction by methods other than mercury amalgamation		Metric Tonnes gold ore used per year		

Notes: *In cases of co-production of several metals from the same concentrate, please report the amount of concentrate for the metal produced in the highest amount. If different concentrates are used for the different metals, please report the annual data for each concentrate type. **as specified in column 3.

Does your mining operation cover any of the following activities?	Yes or No	Requested data covering your company's activity in this country	Annual production	Year for data provided
Primary ferrous metal production (raw iron production)		Metric Tonnes pig iron produced per year		
Extraction and processing of other non-ferrous metals (nickel)		Metric Tonnes produced per year		
Gold extraction with mercury amalgamation with use of retorts		Kg gold produced per year		

We anticipate that you have the types of data requested above, should you however only have other data types for the same operations, please provide us with these data with clear indication of the units used.

Please also forward us, as feasible, any additional documentation for the numbers provided and other information you may have at hand (e.g. direct measurements or information about emission controls in place).

Name and location of mine:

Name and contact data for your contact person in case of questions:

Kindly return you reply to this questionnaire to NO LATER THAN [*insert date, approx. 2 weeks only*] to:

[*insert name, e-mail and postal address to recipient in research team*]

Thank you for your cooperation in this regard!

APPENDIX 6

**TERMS OF REFERENCE FOR
INTERNSHIP**

MERCURY STORAGE AND DISPOSAL PROJECT

JAMAICA, SURINAME, TRINIDAD AND TOBAGO

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean in Trinidad and Tobago (BCRC-Caribbean) and its partners will implement a series of activities under the Project 'Mercury Storage and Disposal Project in the Caribbean: Jamaica, Trinidad and Tobago and Suriname' designed to enhance capacities and promote the environmentally sound storage and disposal of surplus mercury in Jamaica, Trinidad and Tobago and Suriname as well as to enhance these countries' understanding of the mercury waste and commodity issues as these relate to surplus mercury at country level.

All three countries face similar challenges: An understanding of the mercury waste streams is lacking. Accurate data on the sources and quantities of mercury waste as well as the amounts of mercury released to the environment are not available. The problem is aggravated by a lack of dedicated facilities for the environmentally sound temporary storage of mercury and mercury wastes. This is in part due to a lack of efficient decision-making processes bringing together stakeholders from all relevant sectors and insufficient coordination between the different government agencies. Consequently, dedicated regulatory frameworks and strategies to ensure the environmentally sound storage and waste management are not in place.

OBJECTIVES OF THE PROJECT

- I. Establish effective decision-making processes at the national level;
 - II. Gain an understanding of mercury waste streams, management options and the regulatory framework relevant for the environmentally sound management of mercury
 - III. Enhance countries' understanding of the mercury waste and commodity issues as these relate to surplus mercury at country level;
 - IV. Assist government to understand the key elements of a framework enabling the environmentally sound management of mercury waste, including through the development of national storage and waste management action plans;
 - V. Support the three countries efforts towards the accession, ratification and early implementation of the Minamata Convention on Mercury;
 - VI. Create awareness on the hazards and risks posed by mercury and mercury waste.
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DUTIES AND RESPONSIBILITIES OF INTERN

Under the overall guidance of the Basel Convention Regional Centre – Caribbean, the intern will support the data collection and drafting of the individual country report over the period of eight (8) weeks.

Assignments will include:

- Disseminating questionnaires and collecting data from stakeholders;
- Continuous follow up with stakeholders to gather data;
- Data analysis;
- Assistance with collection of information related to the legislative and regulatory framework;
- Research, collect, analyse documents related to mercury sources, storage and disposal;
- Perform other duties as required.

MINIMUM QUALIFICATIONS AND EXPERIENCE

1. Final year (or just completed degree) Environmental Studies or Chemistry student or equivalent;
2. Written and spoken proficiency in English;
3. Demonstrated interest in the field of environmental studies;
4. Good oral and written communications skills and demonstrated research abilities and interest;
5. Internet proficiency as well as proficiency in MS Office (Word, Excel, PowerPoint) is required;
6. Experience with the development of statistics, charts in Excel an asset.

APPLICATION

Please send CV to bcrc.caribbean@gmail.com and jewel.batchasingh@bcrc-caribbean.org on or before July 06th, 2016.

The successful candidate will be expected to start work as of July 11th, 2016.

APPENDIX 7

RESUMES OF INTERNS

TRINIDAD AND TOBAGO

Kishan Patloo

#489 Bonne Aventure Road, Gasparillo, Republic of Trinidad & Tobago

1-868-783-1313

kishanpatloo@ymail.com or patlookishan@gmail.com

Profile

I am a reliable and imaginative university graduate seeking a job opportunity where dynamism and attentiveness are needed. I am well versed in the environmental field and I have studied multiple disciplines relating to it and as a result I am able to conduct research efficiently and adjust quickly to new environments. A good communicator and a team player I excel in fast paced environments.

Education

University of the West Indies: 2013-2016

B.Sc. Environmental Science and Sustainable Technology

Presentation College, San Fernando: 2005-2012

CAPE - 8 passes

CSEC- 7 passes

GCE- 1 pass

Experience

Clerical Assistant: Aluminium Suppliers Limited (June 2015)

- Taking messages, answering and transferring phone calls
- Use of office equipment such as photocopier, shredder, printer
- Interacting with customers and collecting packages

Memberships

Peer Advisor: Faculty of Science and Technology, University of the West Indies

- Assisting new students of the faculty of science and technology with registration
- Providing counselling and tutoring services to students of the faculty
- Giving information to students about the faculty
- Organising faculty fun events like cake sales and all fours tournaments

Recommendations

Kereen Olivier, secretary at the University of the West Indies, St Augustine Campus, Faculty of Science and Technology, Office of the Deputy Dean of Student Affairs.

Contact: 662-2002 ext 84478

Dayle Jogie, Instructor III at the Department of Mathematics and Statistics, Faculty of Science and Technology, University of the West Indies, St Augustine Campus.

Contact: 662-2002 ext 82298

JAMAICA

APRIL A. JOHNSON

55 Golding Circle,
Golding Avenue,
Kingston 7.
Email: aprilj42@hotmail.com
Cell Phone: (876)854-4726

Qualifications

A Bachelor of Science Degree (upper second class honours) with a major in Chemistry. I have obtained passes in four CAPE subjects, along with nine O'level passes.

Education

2008-present The University of the West Indies
PhD Organic Chemistry
2010 Purposeful speechwriting and effective public speaking
CARIMAC, UWI
2003-2006 The University of the West Indies
Kingston, Jamaica.
Bachelor of Science Degree in Chemistry
1996-2003 Manning's School
Savanna La Mar, Westmoreland.

Scholarships and Awards

2008 – 2015 Departmental Awardee, Department of Chemistry, University of the West Indies, Mona
2014 Commonwealth Science Conference Grant, Royal Society.

Research and Teaching Experience

2014-present Tutorial Assistant-UWI, Mona
2012-2016 Teaching Assistant-UWI, Mona
2008-2014 Laboratory Demonstrator-UWI, Mona
2008 Research Assistant -Environmental Health Foundation
2006-2008 Scientific Officer (Research Chemist)-UWI, Mona

Conference Presentations

- 2014 The 25th Mona Symposium, Natural Products and Medicinal Chemistry, UWI, Mona Antimicrobial 4-hydroxy-2-octadec-(11Z)-enoylcyclohexane-1,3-dione and other secondary metabolites from various Jamaican *Peperomia* sp. (poster)
- 2014 Commonwealth Science Conference, Bangalore, India Antimicrobial 4-hydroxy-2-octadec-(11Z)-enoylcyclohexane-1,3-dione and other secondary metabolites from various Jamaican *Peperomia* sp. (poster)
- 2014 ACS 247th National Meeting, Texas, USA Antimicrobial 4-hydroxy-2-octadec-(11Z)-enoylcyclohexane-1,3-dione and other secondary metabolites from various Jamaican *Peperomia* species (poster)
- 2010 The 23rd Mona Symposium, Natural Products and Medicinal Chemistry, UWI, Mona A 2-acylcyclohexane-1,3-dione from *Peperomia* sp. nov. of Jamaica (poster)

Skills

Competent with Microsoft Office Applications
Good interpersonal, oral and written communication skills

Involvements

Vice President	Kiwanis Club of Mona
President	Chemistry Association of Postgraduate Students (CAPS)
President	Key Club of Manning's School
Prefect	Manning's School

Personal Data

Date of Birth: August 21, 1985
Gender: Female

SURINAME

Curriculum Vitae

Tiffany van Ravenswaay

Personal information

Name: van Ravenswaay
First names: Tiffany Chanelle
Gender: Female
Birthday: 04-05-1990
Birth place: Paramaribo, Suriname
Address: Kinderdorpstraat 2
Paramaribo Suriname
Phone: +597 8579970
E-mail: tiffanycvr@hotmail.com
Nationality: Surinamese
Marital status: Single
Driving liscence: Yes

Education

Okt 2010 - today Environmental sciences, orientation environmental technology, the Anton De Kom University of Suriname.

Okt 2007 - Jul 2010 Vwo S-package, Scholen Gemeenschap Lelydorp, Wanica Suriname. Diploma July 2010.

Okt 2006 -Jul 2007 Vwo Q-package, Scholen Gemeenschap Lelydorp, Wanica Suriname.
(state examination passed promoted to S package)

Work experience

Oct 2015 – today Marthiland (agro -processing company)
Duty: Manager
Tasks: Purchase and sale of products, keeping records and adoption orders.

Feb 2009 – Sept 2015 Marthi-Max (cellphones and electronics shop)
Duty: Manager
Tasks: Buying and selling of goods and maintain records.

Feb 2012 – today Mcdonald's
Duty: Promo member of the Mcdonald's team (part time)
Tasks: Promotional work and collecting for 'het ouderkamerproject'.

Oct 2013 – Apr 2014 Telenamic N.V. (Customer contact center)
Duty: Call-agent
Tasks: Customer service.

Projects Adek

Nov 2012 Staatsolie E15 test program
Tasks: Surveying the drivers, pump control and processing data.

Mar 2013 Researching the use/application Solar Energy at Kwamalasamutu
Tasks: Surveying the residence, data processing and reporting.

Nov 2012 Researching the use/application incinerator at Brokopondo Center
in collaboration with Mrs. L. F. Zuilen, PhD for the medical mission.
Tasks: Make sure the oven reached the right temperature and finding out
what kind of plume formation there emerged while burning.

Mar 2014 Sanitation research for PAHO at Pikinslee and Nieuw Aurora
Tasks: Surveying the villagers, collecting water samples for lab tests and
processing data.

Social projects

Aug 2014 Go Glo project
Tasks: Supervising the participating Go Glo children.

Aug 2015 Go Glo project
Tasks: Supervising the participating Go Glo children.

Organisations

Board member of agro cooperation Wi! Uma Fu Sranan
Member of Rotaract club F.R.E.S.H.

IT skills

Office MS office (Word, Excel, Outlook, Publisher, PowerPoint)
Data analysis: SPSS

Language

Surinamese: native language, listening, reading and writing
Dutch: native language, listening, reading and writing
English: fluent in speaking, listening, reading and writing
Spanish: Basic speaking, listening, reading and writing

Skills

Cooperative, enthusiastic, inquisitive, independent, disciplined, helpful and motivated.
