



Fifth “5th” International Seminar about Persistent Organic Pollutants – Progress and Challenges of PCBs Management



The Quest for a PCB-Free Caribbean

PRESENTING:

Ms Maurissa Charles and Laura Teixeira

**Basel Convention Regional Centre for Training and
Technology Transfer in the Caribbean (BCRC-Caribbean)**

About the BCRC-Caribbean

We assist 15 member states regionally with the implementation of their international obligations to the Basel, Rotterdam, Stockholm and Minamata Conventions as well as other multilateral environmental agreements.



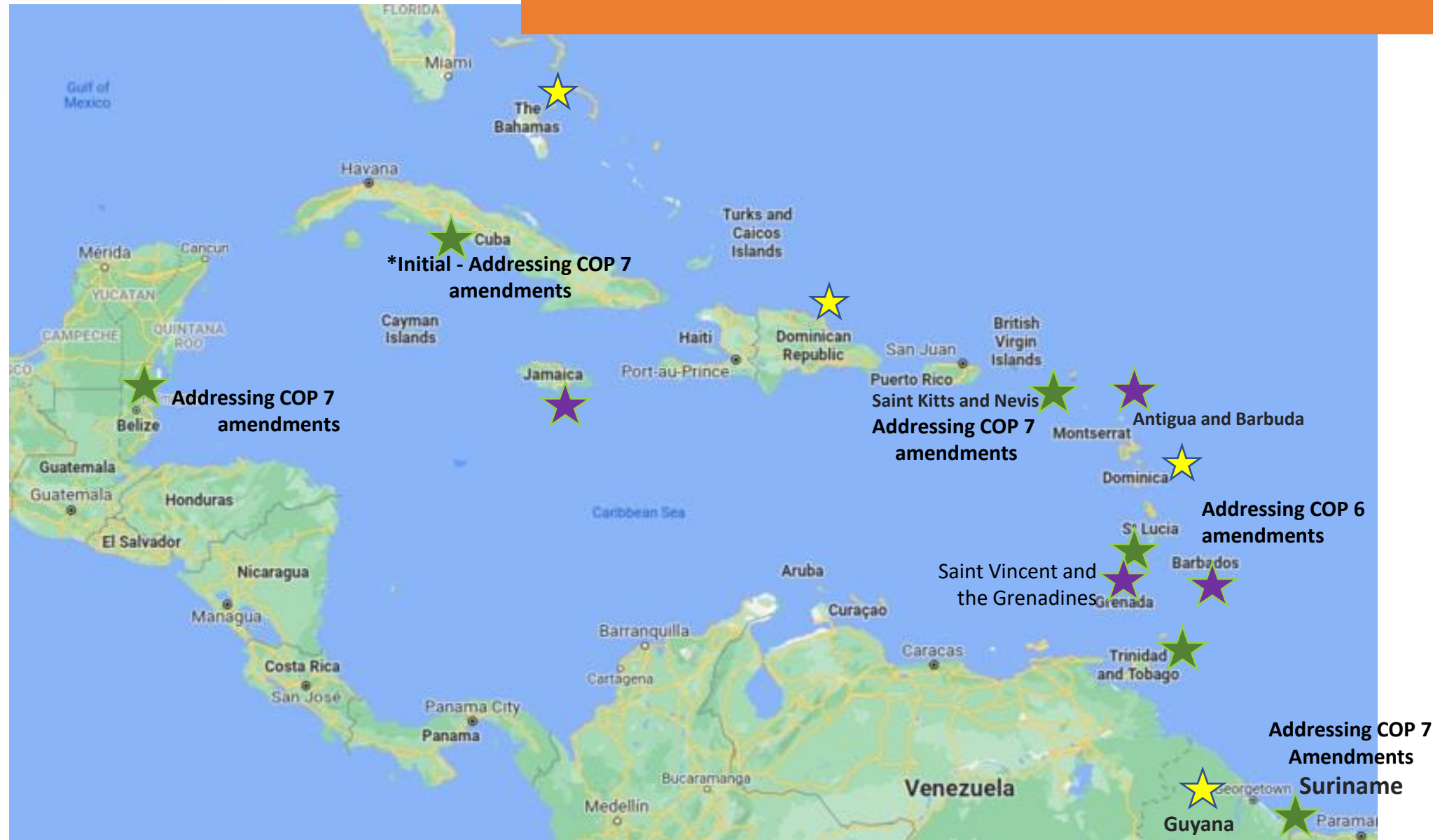
Status of the Development and Transmission of NIPs to the Secretariat

KEY


★ NIP update completed and transmitted to Secretariat


★ NIP update completed but not yet transmitted to Secretariat

★ NIP review and update in progress



Capacity Building through the GEF 5558 Project

 **AIM:** To Build Institutional and Human Resource Capacity to Deal with the Impacts of POPs and Unintentionally Produced POPs (UPOPs) in 8 Caribbean Countries, who are Parties to the Stockholm Convention (SC).

 **TIMELINE:** 7 years (Dec 2015 – December 2022)

\$ BUDGET: USD 30,534,239.00 (GEF Funding and Co-financing)

Component 1 - Creating an enabling regional mechanism for effective implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs);

Component 2 - Reducing UPOPs emissions by improving poor waste management practices at landfills;

Component 3 - Assessing the potentially contaminated sites to determine the level of soil and groundwater contamination by POPs and developing appropriate remediation strategies;

Component 4 - Developing management and disposal plans for Polychlorinated Biphenyls (PCBs); and

Component 5 - Project monitoring and evaluation.



FUNDING
AGENCY



IMPLEMENTING
AGENCY



EXECUTING
AGENCY

History of PCBs Use in the Caribbean

- ❑ PCBs were imported into the Caribbean for use in the power generation industry, agriculture, and in heavy oil and gas industry, particularly as a **dielectric fluid in electrical equipment such as transformers** manufactured prior to the mid 1980s.
- ❑ Although utility companies, no longer imported PCBs after 1985, due to the harmful impacts to human health and the environment, many of the equipment still remain in service due to its long life of usefulness.
- ❑ For those no longer in use,
 - ❑ There often was no option for the environmentally sound management or disposal of PCBs in the Caribbean, which has led to stockpiles of PCB- contaminated equipment and oils until they can be exported for safe management and disposal
 - ❑ In some cases, however, PCB-containing oils may have been indiscriminately disposed and the equipment sold for scrap metal



GEF 5558 PCB Inventories - Methodology

1. Stakeholder Engagement & Awareness

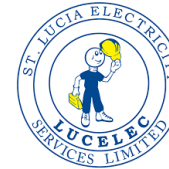
2. Site Screening

3. Identification of equipment

4. Collection of samples

5. Laboratory Analysis

6. Analysis of results and development of inventory report

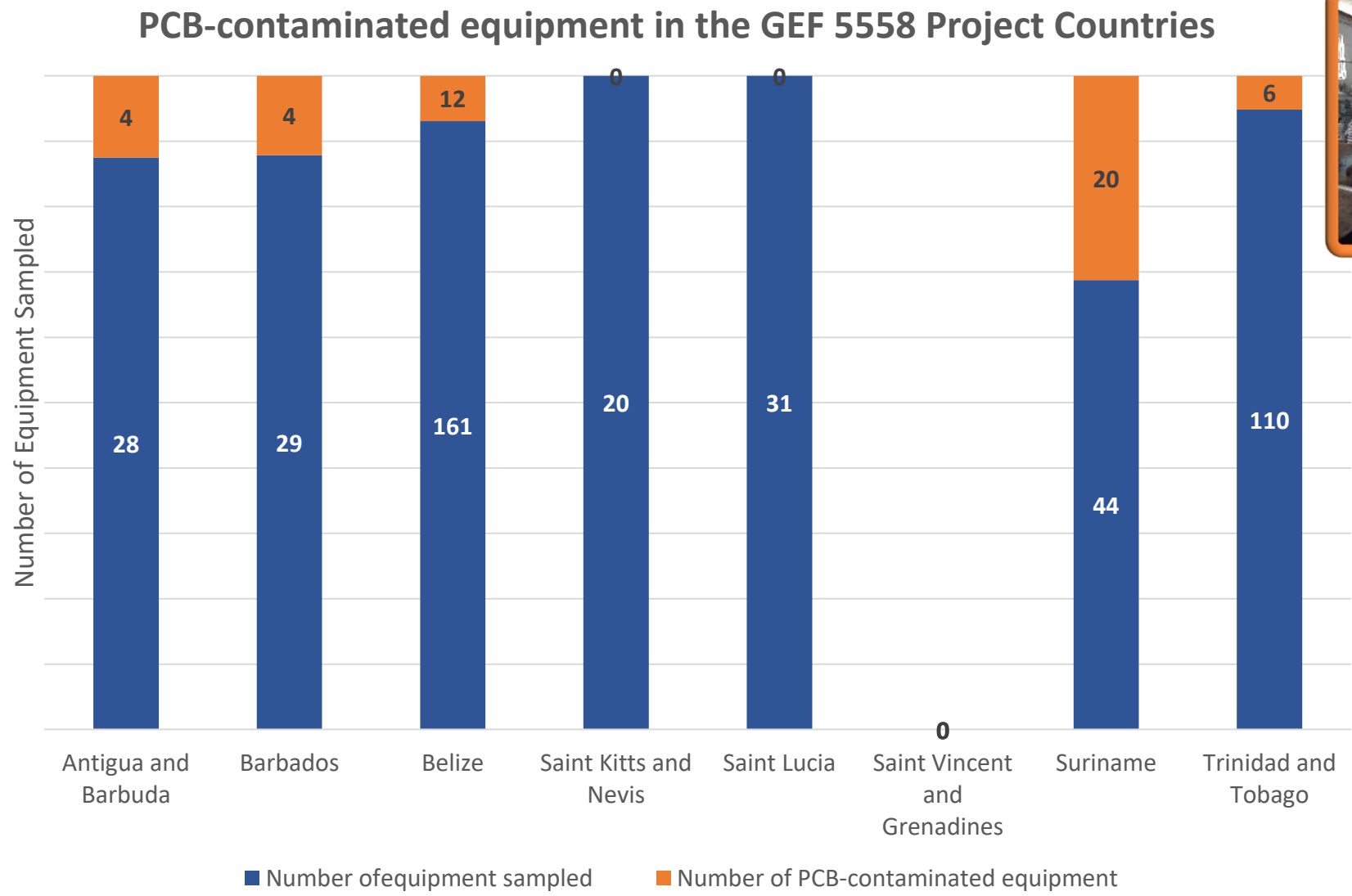


EBS ▲ EnergieBedrijven Suriname



Certificate of Analysis					
<div> <div> aevitas (AYR) </div> <div> <small>ANALYTICAL CHEMISTRY DEPARTMENT</small> <small>15 WINDYBERRY AVE. CANTON, MA 01921</small> <small>WWW.AEVITAS.COM</small> </div> </div> <div> <small>Printed: Sep 21, 2016</small> </div>					
<div> <div> <small>Mr. Richard Laydon</small> <small>BCRC-Caribbean</small> <small>45 Alexandra Street, ST. Clair Port Of Spain, Trinidad</small> </div> <div> <small>Report Description: 114 samples, 3 sludges, 4 swabs and 187 oils were submitted for the following chemical analysis</small> </div> </div>					
<div> <div> <small>Project Name: GEF/UNIDO</small> <small>Project No.: GEF 5558</small> <small>Site Location: Trinidad & Tobago</small> </div> <div> <small>Date Sampled: Various</small> <small>Date Tested: Sep 16, 2016</small> <small>Sampled by: Charles B. R. Jr.</small> </div> </div>					
Report Number: 16-1635					
No.	Analyte	Result	Units	MDL	Comments / Test Method
1	Sample ID: TT-05-01 PCBs in Oil	<1	mg/kg	1	LAB-ME (ASTM D6900-00 modified)
2	Sample ID: TT-05-02 PCBs in Oil	<1	mg/kg	1	LAB-ME (ASTM D6900-00 modified)
3	Sample ID: TT-05-03 PCBs in Oil	<1	mg/kg	1	LAB-ME (ASTM D6900-00 modified)
4	Sample ID: TT-75-01 PCBs in Oil	<1	mg/kg	1	LAB-ME (ASTM D6900-00 modified)

GEF 5558 PCB Inventories - Results



Overall, **15 tonnes of PCB contaminated oil** and **43.6 tonnes of PCB contaminated equipment and oils** were identified for disposal under the **FAO/GEF #5407 project**.



**Meeting the 2025/2028 Global
Targets for Elimination of PCBs**

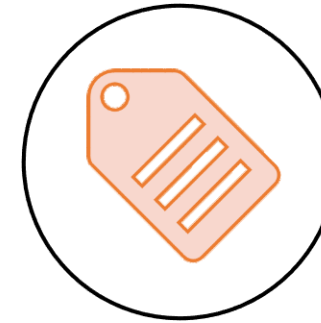
Management of PCBs under GEF 5558 Project



Assessment of the inventories from NIPs and prioritisation of PCB contaminated equipment



Development PCB phase-out plan



Labelling and consolidation of PCB waste at secure locations

Implementation of the environmentally sound management (ESM) of PCBs



Mechanisms for the Management of PCBs in the Caribbean

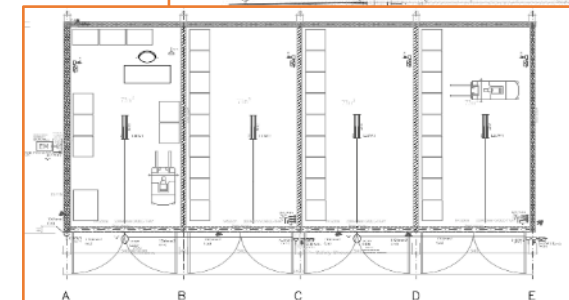
- There are no facilities available in project countries which carry out the environmentally sound management (ESM) of POPs.
- Collection and interim storage pending export is therefore practiced.
- Under the GEF 5558 project, model front-end engineering designs for **interim hazardous waste storage facilities (I-HWSF)** were developed for three (3) Caribbean countries.



- A country-specific design was completed for Antigua and Barbuda, - co-financed construction of the I-HWSF is ongoing

Design of Hazardous Waste Storage Facilities

(Conceptual Design Drawings, BoQs and Tender docs)



GEF 5558 Project - Handling, Safeguarding, & Export of PCBs for Disposal

- In **2021** - PolyEco S.A. was selected as disposal company by **FAO** following tender evaluation under the GEF 5407 project. Facility located in Tredi, Saint Vulbas, France.
- Disposal method: Incineration on land (D10)

Total weight PCBs from five (5) Caribbean countries:
67.8 MT

Belize



Disposed of
2.6 tonnes of
PCBs

Saint Kitts
and Nevis

Saint Vincent and
the Grenadines

Antigua and
Barbuda



Disposed of 21.6 tonnes
of PCBs

Saint Lucia

Disposed of
0.26 tonnes of PCBs

Barbados



Trinidad and
Tobago

Disposed of
13.11 tonnes of PCBs



Suriname



Disposed of
30.22 tonnes of PCBs

- In **2023** - Booy-Greenway Consultancy B.V. was selected as disposal company by **UNIDO** following tender evaluation under the GEF 5558 project.
- Disposal - Aprochim Geteserp Rymoil S.A, Spain
- Treatment operation- decontamination by autoclave

Considerations - Handling, Safeguarding, & Export of PCBs for Disposal

- Administrative procedures involved:
 - Basel Convention Prior Informed Consent Procedure
 - Clearance documents and export permits
 - Health and Safety Plan
 - Transport and Logistics Plan
 - Emergency Response Plan
 - Infectious Disease Preparedness and Response Plan (COVID-19)



Notification No. 14-2 Address: PO Box 1000, Road 1000, Antigua & Barbuda Tel: +1 264 496 1234 Fax: +1 264 496 1234 Email: info@polyecogroup.com Emergency Response No. 2400000000		Notification No. 14-2 Notification concerning: (a) <input type="checkbox"/> Individual shipment (b) <input type="checkbox"/> Multiple shipments (c) <input type="checkbox"/> Disposal (d) <input type="checkbox"/> Recovery (e) <input type="checkbox"/> Pre-arranged recovery facility (22) Yes <input type="checkbox"/> No <input type="checkbox"/> 4. Total intended number of shipments: 2 5. Total intended quantity (4): (a) Tons (22): 20 (b) m³: 6. Intended period of time for shipment(s) (24): (a) From: 01/01/2020 To: 31/12/2020 (b) Last departure: 09/05/2020 7. Packaging type(s) (25): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100 8. Special handling requirements (26): Yes <input type="checkbox"/> No <input type="checkbox"/> 9. Disposal / recovery operation(s) (27): (a) <input type="checkbox"/> Incineration (b) <input type="checkbox"/> Landfill (c) <input type="checkbox"/> Other: <input type="checkbox"/> Incineration on board 10. Technology employed (28): Incineration on board 11. Reason for export (29): NO RECOVERY FACILITY IN ANTIGUA & BARBUDA 12. Designation and composition of the waste (4): (a) Polychlorinated biphenyls, and other waste contaminated with PCB 13. Physical characteristics (30): 2, 3 14. Waste identification (31) (in relevant codes): (a) Basel Annex I/II (or 33 if applicable): A3100 (b) EC list code of different waste (32): (i) PC list of waste: 13 03 01*, 14 02 01*, 14 02 02*, 14 02 03*, 14 02 04*, 14 02 05*, 14 02 06*, 14 02 07*, 14 02 08*, 14 02 09*, 14 02 10*, 14 02 11*, 14 02 12*, 14 02 13*, 14 02 14*, 14 02 15*, 14 02 16*, 14 02 17*, 14 02 18*, 14 02 19*, 14 02 20*, 14 02 21*, 14 02 22*, 14 02 23*, 14 02 24*, 14 02 25*, 14 02 26*, 14 02 27*, 14 02 28*, 14 02 29*, 14 02 30*, 14 02 31*, 14 02 32*, 14 02 33*, 14 02 34*, 14 02 35*, 14 02 36*, 14 02 37*, 14 02 38*, 14 02 39*, 14 02 40*, 14 02 41*, 14 02 42*, 14 02 43*, 14 02 44*, 14 02 45*, 14 02 46*, 14 02 47*, 14 02 48*, 14 02 49*, 14 02 50*, 14 02 51*, 14 02 52*, 14 02 53*, 14 02 54*, 14 02 55*, 14 02 56*, 14 02 57*, 14 02 58*, 14 02 59*, 14 02 60*, 14 02 61*, 14 02 62*, 14 02 63*, 14 02 64*, 14 02 65*, 14 02 66*, 14 02 67*, 14 02 68*, 14 02 69*, 14 02 70*, 14 02 71*, 14 02 72*, 14 02 73*, 14 02 74*, 14 02 75*, 14 02 76*, 14 02 77*, 14 02 78*, 14 02 79*, 14 02 80*, 14 02 81*, 14 02 82*, 14 02 83*, 14 02 84*, 14 02 85*, 14 02 86*, 14 02 87*, 14 02 88*, 14 02 89*, 14 02 90*, 14 02 91*, 14 02 92*, 14 02 93*, 14 02 94*, 14 02 95*, 14 02 96*, 14 02 97*, 14 02 98*, 14 02 99*, 14 03 01*, 14 03 02*, 14 03 03*, 14 03 04*, 14 03 05*, 14 03 06*, 14 03 07*, 14 03 08*, 14 03 09*, 14 03 10*, 14 03 11*, 14 03 12*, 14 03 13*, 14 03 14*, 14 03 15*, 14 03 16*, 14 03 17*, 14 03 18*, 14 03 19*, 14 03 20*, 14 03 21*, 14 03 22*, 14 03 23*, 14 03 24*, 14 03 25*, 14 03 26*, 14 03 27*, 14 03 28*, 14 03 29*, 14 03 30*, 14 03 31*, 14 03 32*, 14 03 33*, 14 03 34*, 14 03 35*, 14 03 36*, 14 03 37*, 14 03 38*, 14 03 39*, 14 03 40*, 14 03 41*, 14 03 42*, 14 03 43*, 14 03 44*, 14 03 45*, 14 03 46*, 14 03 47*, 14 03 48*, 14 03 49*, 14 03 50*, 14 03 51*, 14 03 52*, 14 03 53*, 14 03 54*, 14 03 55*, 14 03 56*, 14 03 57*, 14 03 58*, 14 03 59*, 14 03 60*, 14 03 61*, 14 03 62*, 14 03 63*, 14 03 64*, 14 03 65*, 14 03 66*, 14 03 67*, 14 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Considerations - Handling, Safeguarding, & Export of PCBs for Disposal

- **Technical procedures:**

- Procurement of **procuring safeguarding materials** and shipping these to each country prior to the commencement of the transboundary movement.
- Training of Local contractors to enhance national capacity for future safeguarding operations.
- Adequate and safe preparation of the equipment for export
 - Use of UN approved steel drums
 - PPE and spill kits
 - Use of acceptable packaging media



- Following repackaging, waste was temporarily stored in empty shipping containers at a dedicated area of the generator sites.
- Containers loaded with PCB repacked waste was transported to the port for customs clearance procedures and final loading to the booked Vessel.
- Contractors supervised loading of PCB waste with shipping line.

Container no.	Incineration facility	Date of departure from Antigua	Date of arrival in France	Receipt date by the incineration facility	Date of disposal completion
CXDU2130318	TREDI	23/2/2021	2/4/2021	13/4/2021	17/8/2021

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Waste Acceptance Document

Waste Disposal Certificate

Working towards a PCB-Free Caribbean

Training, Capacity Building and enhancing Analytical Capacity



Workshop – SC Article 15 Reporting, Trinidad (Jan 2020)



*Workshop – Practical Training on
Extraction of PCBs in selected
matrices Antigua (Jan 2023)*

Development of PCBs Phase out and Management Plans



GEF #5558 Project
DEVELOPMENT AND IMPLEMENTATION OF A
SUSTAINABLE MANAGEMENT MECHANISM FOR POPs
IN THE CARIBBEAN

Component 4 - Managing and disposing of PCBs

Activity 4.1.2: PCB Management and Disposal Plan for Belize



June 30, 2021

A. PCB Management in Belize

- Guidance on the development of a National Environmentally Sound Management (ESM) Plan for PCBs and PCB-Contaminated Equipment
- Interim recommendations towards the Environmentally Sound Management Plan for PCBs and PCB-Contaminated Equipment in Belize
- Maintenance of the national inventory
- Labelling and analysing PCBs and PCB-containing equipment, and general technical prevention measures
- Development of a technical plan for the management of PCBs and PCB-containing equipment (storage, transport, final elimination etc.
- Awareness, Education and Collaboration with relevant stakeholders
- Development of a financial plan
- Explore domestic or regional solutions for the decontamination of PCB-containing equipment

B. PCB Disposal Plan for Belize (under the GEF 5558 Project 2021)

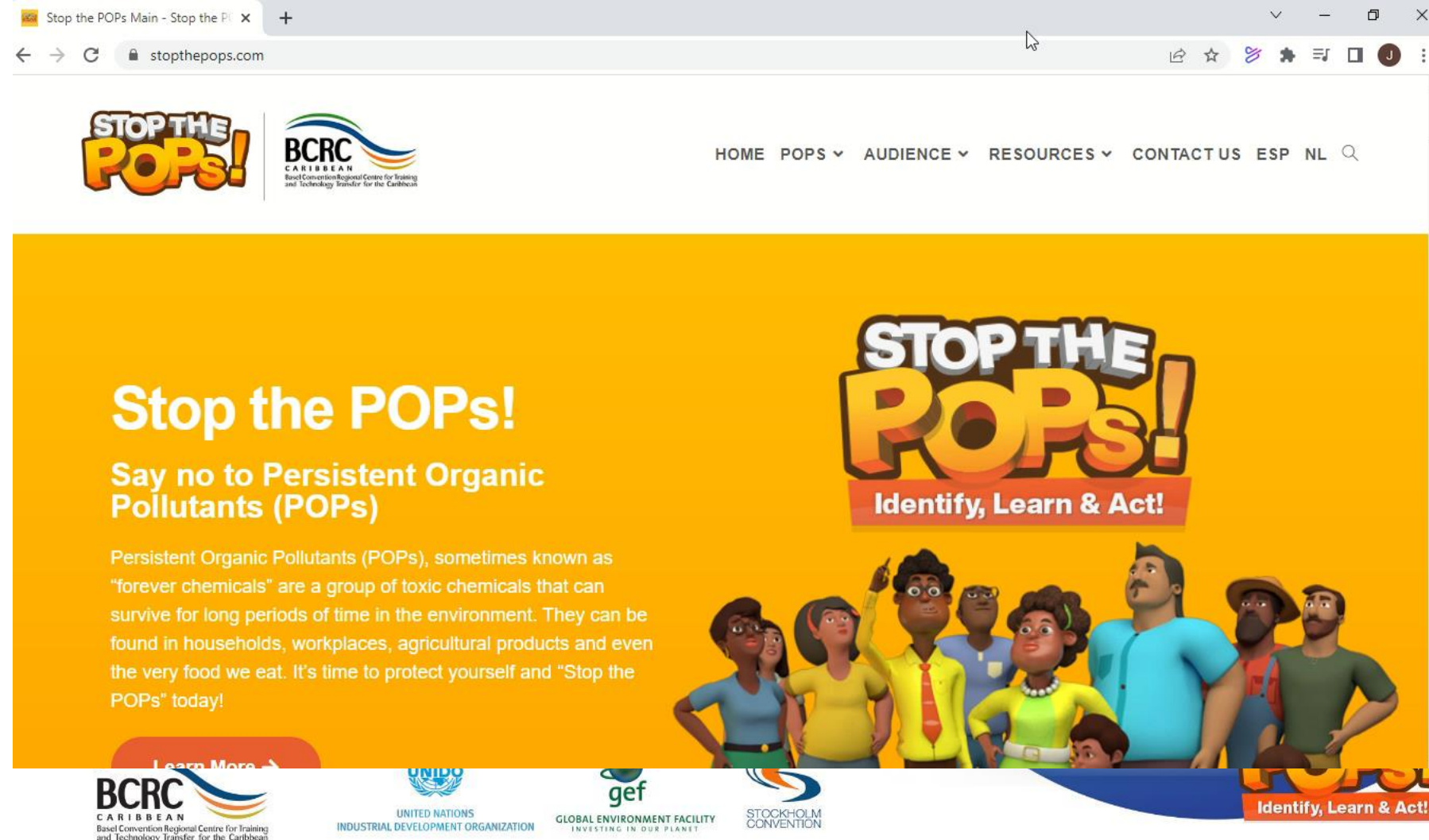
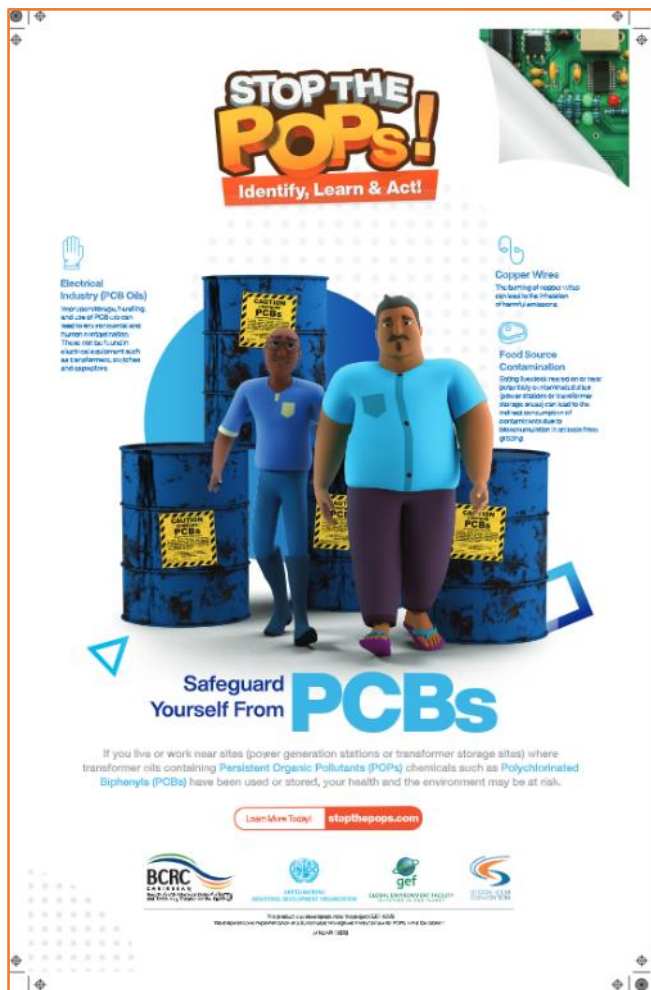
- Summary of PCB Contaminated Equipment and Oils (Belize Inventory 2020/2021)
- Management and disposal of the PCB Contaminated Equipment and Oils
- Outline of the PCB phase out plan for Belize

C. Upgrade of Analytical Capabilities

- Assessment of Current Capability
- Inventory informed the need for national analytical upgrades/support
- DOE Laboratory GC-MS Equipment

Working towards a PCB-Free Caribbean

Public Education and Awareness

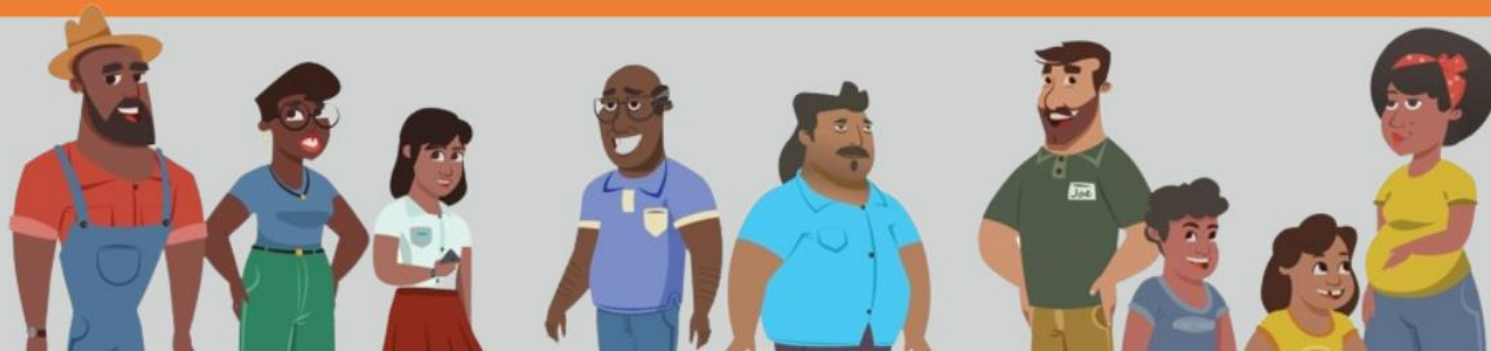






Continuing the Work Towards a PCB-Free Caribbean

Ongoing and Planned Activities





GEF 10154 - Review and Update of the National Implementation Plan for Guyana under the Stockholm Convention on POPs

POP_s
PERSISTENT
ORGANIC
POLLUTANTS



ON-GOING



- Twenty-seven (27) oil samples were submitted for chemical analysis from the main power company
- **Eleven (11) samples** were found to be contaminated with PCBs between **290 and 1200 ppm**



UPCOMING



GEF 10785 - Global Development, Review and Update of the National Implementation Plans under the Stockholm Convention on POPs - The Bahamas and Dominica



POP_s
PERSISTENT
ORGANIC
POLLUTANTS

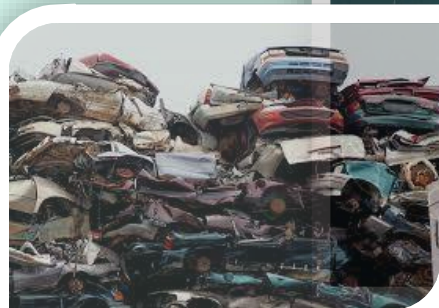




Implementing Sustainable Low and Non-Chemical Development in Small Island Developing States (ISLANDS)



Development of strategy to validate inventories of PCBs for disposal abroad



To identify and address regional barriers for implementation of Stockholm Convention

CO. NAME	
ISO CERTIFICATION	
I.D. No.	
<input type="checkbox"/>	MEETS ISO 9003 STANDARDS
<input type="checkbox"/>	REQUIRES RECERTIFICATION
<input type="checkbox"/>	SCHEDULED ON _____
<input type="checkbox"/>	OTHER _____
DATE _____	BY _____
DO NOT REMOVE	

Regional labelling standard will be developed to support identification of POPs in products



THANK YOU!



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