

# SPREP

South Pacific Regional  
Environment Programme



# PROE

Programme régional  
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## **Marshall Islands POPs Project Country Plan** **(Prepared by SPREP, January 2003)**

### **1. Introduction**

The Australian Agency for International Development (AusAID) several years ago identified the mismanagement of hazardous chemicals in the Pacific Island Countries as a serious environmental concern, and hence the Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) project was developed as an AusAID funded initiative, to be carried out by SPREP. POPs are a group of twelve particularly hazardous chemicals that have been singled out by the recent Stockholm Convention for urgent action to eliminate them from the world. They include polychlorinated biphenyls (PCBs), which are mainly found in transformers, and several pesticides that are very persistent and toxic to the environment.

Phase I of the project involved predominantly an assessment of stockpiles of waste and obsolete chemicals and identification of contaminated sites, for 13 Pacific Island Countries. Other Phase I activities included education and awareness programmes in each country and a review of relevant legislation.

Marshall Islands was a participant in Phase I of this work. A comprehensive report of this Phase I work was prepared and circulated, and significant quantities of hazardous wastes were identified in the countries visited, including estimated figures of 130 tonnes of PCB liquids and 60 tonnes of pesticides (although only about 3 tonnes of POPs pesticides). Many other hazardous wastes were also identified as well. In addition, quite a large number of contaminated sites were discovered, including six locations of buried pesticides. On the basis of this report, it was decided to proceed to the Phase II of the project, which involved the preparation of a more detailed inventory, and then collecting, transporting and disposing of the wastes, to a suitable Australian facility.

The first part (Component 1) of the Phase II work is now nearly complete, and has involved visits to each of the countries involved in the project, except for Marshall Islands, for detailed inventories to be carried out, including testing of all stockpiled

transformers. Other work was also carried out during these visits, including improving the temporary storage arrangements where necessary, and obtaining written agreement from each country for the project to proceed. Due to pressure of time, Marshall Islands was not visited during the Component 1, Phase 2 work. It had been reported in the Phase I work that in 1994 the US EPA had removed from the Marshall Islands all the PCB contaminated transformers, except for one large in-service transformer. In addition, only minor quantities of unwanted pesticides were identified.

The most significant conclusion found from this next stage of the work is that the estimated amount of PCB contaminated oils was far too high. Instead of the expected 130 tonnes, only 12.5 tonnes were found. This presented an opportunity to include additional wastes in the project, and it was decided to collect and dispose of all the pesticides, rather than only the POPs pesticides (as well as all the PCB transformer oils that were confirmed positive). A total of 50,265 kg of pesticides will now be dealt with, including 1825 kg of POPs pesticides and 6542 kg of unknowns, some of which may be POPs pesticides.

A full inventory of all pesticides and PCB contaminated oils was prepared in November 2002 as the basis for bid invitations to appoint an Australian Management Contractor (AMC) to carry out the rest of the Phase II work. As a result, the Australian company GHD Pty Ltd was appointed as AMC. GHD is expected to start work shortly and it is important that all countries agree to a confirmed plan for implementing the rest of the Phase II work. The wastes will all go to the BCDT / SRL Plasma plant in Narangba, north of Brisbane.

AusAID have engaged the Australian legal firm of Blake Dawson Waldron ("**BDW**") and instructed them to provide advice in relation to aspects of the POPs Project. As part of this process BDW has asked SPREP to obtain from participating countries some information as presented in Section 4 below.

## **2. Country Inventory**

(It is possible that more wastes may be found in the categories below, prior to the time of pickup. If so, these could be added to the inventory, subject to negotiation with AusAID and the AMC.)

All transformers containing PCB oils (on all atolls) were identified by the US EPA in 1994 and moved to a central location in Marshall Islands. The oil was then drained and shipped to San Francisco for disposal, and the empty transformer carcasses were buried in a concrete bunker that now forms the foundations of a building near the Dry Dock. There was one exception and that was a large "in-service" transformer that was confirmed as positive. This transformer is at the Majuro Power Station operated by the Marshalls Energy Company. SPREP records indicate the following data about this transformer, but this needs to be confirmed.

| <b>Location</b>      | <b>No of Transformers</b> | <b>Wt of Oil (kg)</b> | <b>PCB Conc (mg/kg)</b> | <b>No of Flushes</b> | <b>Total Waste Wt (incl Flushes) (kg)</b> |
|----------------------|---------------------------|-----------------------|-------------------------|----------------------|---|
| Marshall's Energy Co | 1                         | 720                   | 350                     | 3                    | 2880                                      |

During the Phase I visit, it was recorded that the Marshall Islands has the following **Pesticides** to be collected:

**Marshall Islands Pesticides Inventory (All located at Arno Farm)**

| <b>Chemical</b>     | <b>Active Agent</b> | <b>Quantity</b> | <b>Comments</b>           |
|---------------------|---------------------|-----------------|---------------------------|
|                     |                     | <b>kg</b>       |                           |
| Dinocap             | Dinocap             | 3               | Good packaging            |
| Sevin               | Carbaryl            | 7.5             | Good packaging            |
| Warfarin            | Warfarin            | 4               | Good packaging            |
| Metaldehyde         | Metaldehyde         | 4               | Good packaging            |
| Kelthane            | Dicofol             | 2               | Good packaging            |
| Brestan             | triphenyl acetate   | 1               | Good packaging            |
| Mixed known powders | Various             | 15.5            | Good packaging            |
| Mixed known liquids | Various             | 7               | Good packaging            |
| Unknown             |                     | 14              | Liquid, 27 bots, Good pkg |

**3. Other Comments**

The Phase I report noted the following matters that warranted follow-up at that time. These problems may now be resolved.

1. Waste oil is a problem at power stations on three atolls (Kwajalein, Jaluit and Enewetak)
2. There is minor evidence of oil dumping around the vehicle workshops.
3. Disposal of tank bottom sludge is a problem at the Mobil Bulk Oil Depot and Airport Terminal.
4. There is visible oil dumping in front of the workshops at the dry dock.
5. Disposal of perchloroethylene sludges and residues (from Island Dry Cleaners) is a problem.

6. There is minor evidence of oil contamination in the rear yard of Pacific International Inc.
7. Four drums of waste oil are stored on open land at the airport.
8. Approximately 100 very old rusted drums are dumped on Kwajalein Atoll. These drums were abandoned from past road and runway construction.
9. The hospital incinerator is unserviceable and needs to be replaced.

#### **4. Domestic Laws on Collection, Packaging, Transportation and Export of Hazardous Waste**

AusAID have engaged the Australian legal firm of Blake Dawson Waldron ("BDW") and instructed them to provide advice in relation to aspects of the POPs Project. As part of this process BDW has asked SPREP to obtain from Marshall Islands (as well as all other participating countries) the following information:

- a) What are the legal responsibilities in Marshall Islands for persons involved in collection, packaging, transportation and disposal of hazardous wastes and who are those responsibilities allocated to by the laws in Marshall Islands.
- b) Who is the owner of the hazardous wastes in Marshall Islands.
- c) Does Marshall Islands have domestic legislation which allocates responsibility for POPs waste during collection, packaging and export? If so, how is this responsibility allocated? Please consider that liability and responsibility may arise from:
  - requirements to comply with clean-up notices or Government directions relating to the waste;
  - requirements to meet safety, environmental and other standards in relation to the waste; and
  - requirements to compensate others for damage to property, human health or the environment.
- d) Does Marshall Islands have a domestic policy in relation to providing or withholding consent under the prior informed consent provisions of the Waigani Convention (Article 6) for:
  - Marshall Islands
  - any other Pacific Island Countries planning to 'transit' wastes through Marshall Islands.

e) Has Marshall Islands developed a national hazardous waste management strategy in accordance with Article 4(4)(e) of the Waigani Convention? If so, how is the strategy relevant to:

- the collection, packaging, transportation and exportation of POP waste; and
- responsibility for and ownership of the POP waste at each of the steps in (i).

Should you have any enquiries, please contact the following relevant Blake Dawson Waldron staff, Tony Hill on (02) 9258 6185 or Joanna Perrens on (02) 9258 6401 in Sydney, Australia.

## **5. Discussion**

Confirmation is needed that the one remaining in-service transformer that was confirmed positive for PCBs does in fact contain 750 kg of oil at 350 mg/kg PCB concentration. It also needs to be confirmed that the Marshalls Energy Company is prepared to take part in the project and have the PCB contaminated oil removed. If the level of contamination is only 350 mg/kg and the transformer is still in service, then the best course of action probably would be to drain and flush the oil from the transformer, and then refill it with new “non-PCB” oil. It could then be quickly brought back into service. Based on the information currently available, about 15 drums would be needed to deal with the drained oil and contaminated flushing solvent.

The pesticides noted in 1998 as being stored at the Arno Farm consisted of only 58 kg in total, including small amounts of six different pesticides, some mixed known powders and liquids and 14 kg of unknowns. The visit to this farm took place 5 years ago, however and this information is therefore quite out of date and now needs to be reconfirmed. Based on this information, three drums should be sufficient to manage this amount of pesticides including the packaging.

The total number of drums needed is therefore about 18 drums. A total of 80 drums will fit inside a 20 ft container, so one 20 ft container should be sufficient.

A staging location will be needed for the container, and possibly a good location would be at the main port, as this is where the container will depart from. The drummed waste from the Majuro Power Station and the pesticides from Arno Farm will need to be brought there. The local transport of the drums to the container staging area needs to be on safe covered trucks with good containment.

It is also important that consent procedures are in place to process the application from GHD to Marshall Islands to export the waste. Marshall Islands has not ratified the Waigani Convention, so bilateral arrangements will need to be made between the Governments of Marshall Islands and Australia, so that Marshall Islands is ready to handle effectively, the export application, including any appropriate public consultation

processes. SPREP plans to hold a workshop soon to assist countries with this consent process.

The impact on the public in Marshall Islands should be minimal, provided everything is organized and implemented according to a well-designed management plan. The local transport routes and movement times will be part of the plan, and the only risk of public exposure will be if some incident occurs during this local transport, which leads to a spill. The basis of the management plan should be communicated to the public effectively via radio, and printed media, but not in an alarmist fashion, as the risk to the public is very low.

## **6. Conclusions**

1. Marshall Islands has one PCB contaminated transformer that was still in service in 1998.
2. A total of 58 kg of pesticides is to be picked up from Arno Farm in the Marshall Islands.
3. About 18 drums will be required for Marshall Islands, which will fit into two containers.
4. Marshall Islands also several other waste management problems (as at 1998), including several sites contaminated with waste oil.
5. Marshall Islands has a problem with about 100 drums of waste bitumen abandoned on Kwajalein Atoll.

## **7. Actions**

1. Discussions need to be held with Marshalls Energy Co, regarding the removal of PCB contaminated oil from the last remaining PCB contaminated transformer. If it is still in service, then it is likely that the best technique will be to drain and flush the transformer and refill with clean PCB-free oil. The transformer can then remain in service.
2. The pesticides for collection need to be isolated and secured. It needs to be confirmed with the owners / managers that these pesticides are definitely to be removed as part of the project. The quantities need also to be confirmed, as the information of 5 years ago may now be well out of date. The Arno Farm pesticides may no longer be there, or alternatively the quantities may have increased. There may also be other stockpiles of pesticides uncovered in Marshall Islands in the last five years.

3. A local management plan will need to be prepared for all local operations, including the determination of the location of the container while the collection operations are going on. This plan will need to address such issues as local transportation arrangements, local contact focal point, and the best way of carrying out consultation with Marshall Islands public on the local implementation of the project. This plan needs to be developed in conjunction with the AMC.
4. Local systems need to be put in place to ensure effective processing of the application from the AMC to export hazardous waste from Marshall Islands to Australia. This application will be lodged under bilateral arrangements, as Marshall Islands is not signatory to the Waigani Convention. A SPREP workshop is planned for April this year to assist countries with these procedures, and a Marshall Islands representative should attend this workshop. (Financial assistance will be provided.)
5. Note that it would be appropriate to do further testing to establish properly the full extent of the contamination of several sites by waste oil, and the bitumen dumped on Kwajalein Atoll. This should be done as soon as a suitable opportunity arises, which will probably be during the preparation of the National Implementation Plan (NIP) for the Stockholm Convention. Substantial funding is available from the GEF for the preparation of the NIP.
6. Provide SPREP with appropriate responses to the BDW questions regarding Domestic Laws on Collection, Packaging, Transportation and Export of Hazardous Waste