

**REPORT ON**

**TRAINING WORKSHOPS IN EFFECTIVE  
MANAGEMENT OF HAZARDOUS MATERIALS,  
HAZARDOUS WASTES AND CONTAMINATED SITES  
WORKSHOP REPORT  
COOK ISLANDS**

Submitted to:

South Pacific Regional Environment Programme  
PO Box 240  
Apia, Samoa

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## 1.0 INTRODUCTION

Management of hazardous material, hazardous wastes and contaminated sites has become an increasingly important issue for Pacific Island Countries (PIC's). In 1997, AusAID, in conjunction with SPREP, implemented the Persistent Organic Pollutants in Pacific Island Countries project (POPs in PICs) to address this issue. As part of the POPs in PICs project, training workshops will be held in thirteen PICs to create awareness and understanding on the **effective management of hazardous materials, hazardous wastes and contaminated sites**.

A five day training workshop was delivered in the Cook Islands during 22-26 January 2001, and included interactive activities and exercises, site inspections and practical field demonstrations. The workshops were designed and delivered by Golder Associates under contract to SPREP with the following objectives:

- To upgrade the Cook Islands capacity for the effective management of hazardous materials and hazardous waste;
- To upgrade the Cook Islands capacity for effective management of contaminated sites;
- To encourage the development of specific strategies for managing hazardous materials in the Cook Islands; and
- To raise awareness in the Cook Island communities of issues associated with the generation and management of hazardous wastes.

Prior to the workshop commencing, a Pre-Workshop questionnaire was prepared and distributed to workshop participants, where possible. The purpose of the questionnaire was to obtain preliminary information on participants' understanding of hazardous materials management and any desired workshop outcomes. As only one person filled in the questionnaire, information on expectations and the participants background was elicited at the introduction of the workshop on the first day. A summary of the responses relating to the Pre-Workshop Questionnaire is provided in Appendix A.

## **2.0 WORKSHOP PARTICIPANTS**

### **2.1 Organisations Represented**

A complete list of workshop participants is provided in Appendix B.

### **2.2 Organisations Not Represented**

Several applicable organisations were unable to send a representative to the training workshop, including

- Triad
- Cook Islands Motor Centre Ltd
- Pickering Motors
- Motor vehicles
- JUHI
- Ports Authority
- Transport and Maritime
- Wigmore

## **3.0 MAJOR ISSUES IDENTIFIED**

The major in-country issues were agreed by workshop participants

- The Pesticides Act needs regulations developed to be implemented. While a Pesticide Board has been set up, it needs to be reactivated to develop such regulations and consider how it may assist in the management of hazardous materials.
- An integrated approach to waste management incorporating the key sectors in Government (Environment Service, Ministries of Agriculture and Health) and industry. A person needs to be assigned the responsibility for co-ordinating the programme.
- Improved management of all waste is required, including initiating or upgrading recycling programmes and operation of the landfill.
- Transport costs are a major factor against recycling or suitable treatment of waste streams such as returning waste oil, incineration of hospital waste and off island disposal e.g. for batteries.

## **4.0 COUNTRY REPORT UPDATE**

The following current information was obtained from participants and/or during site inspections:

- Each island is responsible for its own environmental legislation, but only Rarotonga has an act in force, Rarotonga Environment Act, 1994/95. Consultation is underway for a new environment act (Cook Islands Environment Act) which will provide the environmental framework under which all island legislation will sit.
- Sites which may potentially be contaminated owing to historical use were identified as
  - Mitiaro hostel
  - Old landfill site on Aitutaki
  - Kia Orana Foods factory
  - Black Rock Quarry near the airport (participants were unsure as to whether or not it was filled with contaminated material.
- Ethylene dibromide was repackaged and sent to the Ministry of Agriculture Research Station, in Rarotonga.
- Cook16 Takuvaine Valley is a water intake not a dump site. The current dump site is Rangiura, which was initially developed as a reservoir, but was found to be located in an area with insufficient water.

## **5.0 EVALUATION ISSUES**

Thirteen participants filled out the Workshop Evaluation form. All respondents felt that the objectives of the programme were clear and easy to understand. All, but three indicated that the programme was relevant. The following issues were noted in the workshop evaluation forms filled in on the last day of the workshop:

- Responsibility of government's role in implementing control and disposal and monitoring
- Contaminated site monitoring, evaluation and remediation
- Improvement needed in PPE use in government and the private sector
- Follow up programmes and ongoing training
- Battery disposal

- Use of asbestos is widespread throughout the Islands

## **6.0 ACTION PLANS**

### **6.1 General Action Plan**

To address the identified major issues during the workshop the participants developed and agreed to implement the Action Plan Shown in Table 1 below. As many of the participants did not feel that they had the authority to undertake some of the tasks, no time frame was given, but the items remain included in the action plan as it was agreed that they were important issues.

**Table 1 General Action Plan for the Cook Islands**

<b>Action</b>	<b>Who</b>	<b>Timeline</b>	<b>Status</b>
Development of regulations and monitoring of regulations to put into effect the existing legislation on pesticides.	Environment Service/Pesticide Board/Health Ministry/Ministry of Agriculture		
Develop a total and integrated waste management plan for Cook Islands	Environment Service/Pesticide Board/Health Ministry		
Industry to ensure that PCB is safely stored, if on site	Industry		
Revise the existing recycling programmes for aluminium cans and glass and increase public awareness of it	Environment Service		
Waste Oil to be returned to supplier. Mobil to expand existing service to domestic consumers. The other oil company to be encouraged to provide the same service. (Transport costs are a problem for other islands)	Environment Service, individual SOE		
Ensure the waste oil at Aitutaki is secured	Environment Service or Power Company or Aitutaki Island Government		
Use the routine General Inspection for Public Health as an opportunity for education of the public on managing domestic waste	Health Ministry		
Convene a working group to identify the key sectors where Codes of Practices/Standards are required	Industry, Government, SOE	31 July 2001	
Reconvene existing Pesticide Board to consider its current role, or a changing role in managing hazardous substances, or to develop guidelines on pesticide disposal.	Ministry for Agriculture	30 June 2001	
Continue with the Integrated Pest Management Strategy – field work, research, training, farmer education	Ministry of Agriculture	On-going	
Marine Oil Spill response plan	Environment Service/Others		
Use a landfill management plan to monitor and control activities at the proposed landfills, including monitoring, type of waste to be deposited, controlling burning and access.	Environment Service		
Increase control of activities at the old landfill e.g. controlled access, monitoring and third party inspections, increased separation of waste	Environment Service		
Guidelines on disposal of hazardous waste	SPREP	2006	
Increase resources, equipment and training for Environment Service for monitoring and compliance	Environment Service		

Action	Who	Timeline	Status
To identify all procedures required to collect and send samples away for analysis overseas, in the event that there was a significant incident.	Environment Service	31 Mar 2001	
Feedback to people within each organisation on the workshop	All participants	31 Mar 2001	
Develop maintenance programmes within industry and government to minimise the potential for generation or release of hazardous material	Management within industry and government		
Internal audit of site management procedures	Mobil	31 July 2001	In progress
Audit of Compliance of Avatui Power Station	Avatui Power Station	28 Feb 2001	In progress
Raise awareness of hazardous waste management by providing additional copies of SPREP video	Golder Associates/SPREP	28 Feb 2001	
<p>The Environment Service has a waste management programme in place. It could consider and report back on the following ideas to raise awareness of waste management</p> <ul style="list-style-type: none"> <li>• school curriculum,</li> <li>• farmer education</li> <li>• World Environment Day,</li> <li>• media,</li> <li>• posters/pamphlets</li> <li>• newsletter.</li> </ul>	Environment Service (with Ministry of Agriculture for farmer education)	31 Mar 2001	



## 6.2 Action Plan for Existing Stockpiles

A proposed action plan to manage existing stockpiles of hazardous material was developed by the participants, following site inspection, as shown in Table 2.

**Table 2 – Action Plan for Existing Stockpiles**

Site No.	Site Activity	Problems	Action	Responsibility
Cook02	Research Facility (storage of hazardous chemicals)	Wide range of chemicals including pesticides, insecticides, nematocides, herbicides and ethylene dibromide (but some unidentified) stored in one location. Access to some chemicals is not controlled. The condition of some of the containers in which chemicals are is deteriorating.	Site Management Plan including Incident Response while waiting for off island disposal by end of April with a review at the end of July to see if Management Plan is still in operation	Ministry of Agriculture
Cook12	Avatui Power Station	Waste oil has already been returned to Mobil. An arrangement is in place to enable the power station to return waste oil to Mobil (the supplier) but this service is not available to the other islands.	Continue to return waste oil to supplier	Power Station
Cook15	Power generation	Soak hole used to dispose of waste oil	Secure site to prevent further contamination of environment from the oil	Environment Service
Cook02	Research Facility (storage of hazardous chemicals)	The fate of the PCB stockpile was unclear to participants and the material was not sighted at the Research Facility.	Report recommended on PCB issues in Cook Islands e.g. are they secure, have all equipment likely to contain them been tested. Ensure PCB are safely stored and that the situation is monitored while they are waiting for off island disposal	Environment Service

## 7.0 RECOMMENDATIONS

Based on the training workshop outcomes, Golder Associates' recommendations to achieve the defined project objectives in the Cook Islands are outlined in Table 3 below.

**Table 3 – Recommendations Arising From Workshop**

RECOMMENDATION	RESPONSIBILITY
1. Use the existing legislation to develop regulations for control of hazardous materials.	Environment Service, Ministry of Agriculture, Internal Affairs
2. Develop a co-ordinated approach to waste management using the knowledge of individuals in the different government departments and industry, e.g. Codes of Practice for the management of hazardous substances which present a high risk to the environment	Environment Service
3. Ensure that chemicals waiting for off island disposal are appropriately stored, that site management plans have been developed and that the sites are monitored regularly.	Environment Service, Ministry of Agriculture
4. Upgrade recycling programmes especially for waste oil, aluminium cans and glass, as these already exist. Identify all the steps required for effective recycling as part of the programme (e.g. collection, storage, disposal) and increase public awareness	Environment Service
5. The proposed landfill should be developed so that it can be used for disposal of some hazardous waste with a management plan which is monitored	Environment Service/ Ministry of Works
6. Improve management at existing landfill – access, type of waste accepted, monitoring programme on effects on stream and leachate, prohibit burning	Environment Service
7. Prevent any further environmental damage from waste oil at Aitutaki and remediate contaminated soil	Environment Service
8. SPREP to develop guidelines for management and disposal of hazardous waste relevant to PICs	SPREP

Golder also recommends undertake a scoping study on the problem of production of hazardous air emissions from incineration of plastic (which is common) and whether the Rarotonga hospital incinerator could be upgraded to safely burn plastics and to take other island waste, although this was not identified by participants as being a problem.

**GOLDER ASSOCIATES (NZ) LTD**

Margaret Leonard  
Workshop Facilitator

Allan Boase  
Project Manager

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## **APPENDIX A**

### **Responses to Pre-Workshop Questionnaire**

## **RESPONSES TO PRE-WORKSHOP QUESTIONNAIRE**

Only one participant had answered the pre-workshop questionnaire, so during the introduction to the workshop participants expectations were canvassed and other information was obtained from feedback during the workshop.

### **Profile of Participants:**

- Most of the participants were from government agencies, including the Health Ministry, Ministry of Agriculture, Ministry of Works, Environment Service and Internal Affairs, with three from private industry and one from public service (Airport Authority, Fire Service).
- Most of the participants felt that the course was relevant. Only three of the responses to feedback did not consider the workshop relevant.
- Three participants indicated that they had tertiary training (Polytechnic Institute, Technology Institute, University or Fiji School of Medicine). Given the positions held by most participants it is however, likely that most participants had tertiary level education.
- The participants from the Fire Service and Mobil had practical experience in hazard control and undertaken training exercises in fire fighting.

### **Expectations:**

Participants indicated they expected to gain further information on the following

- Definition and identification of hazardous materials and Dangerous Goods
- Effects of hazardous materials on humans, wild life and the environment in general
- Legislative controls (e.g. importation, prosecution)
- Effects of using and disposing of hazardous waste in the short and long term
- Inventory of hazardous materials, including old, unused chemicals
- Management of hazardous materials
  - Storage
  - Handling
  - Recycling
  - Disposal
  - Safety issues including fire and emergency procedures, and protection of human health
  - Decontamination procedures
- Education and Training
- Risk minimisation

### **Current Perceptions on Hazardous Materials and Hazardous Wastes:**

- Most participants were unsure of what is hazardous waste.
- Most associated it with an adverse impact on the environment and health.

**Sites to Visit During Workshop:**

- Dump sites
- Kia Orana Foods factory (Asbestos roof and walls and about to be demolished)
- Mobil
- Incinerator at the Hospital

**Techniques of Interest:**

- Contaminated land sampling
- Monitoring

**Other Comments:**

- Participants from the Ministry of Health and Environment Service expressed concern about asbestos in a factory about to be demolished

**Implications For Workshop:**

The workshop material fitted in well with people's expectations. Although not mentioned in the POPs in PICs survey, additional information on asbestos from the New Zealand Department of Labour's Occupational Safety and Health web site was distributed to interested parties and the hazardous nature of asbestos was discussed. All nominated sites were included in the site visit itinerary.

## **APPENDIX B**

### **Workshop Participants**

## **WORKSHOP PARTICIPANTS**

### **RAROTAONGA, COOK ISLANDS**

#### **Name**

#### **Organisation**

#### **Workshop Participants (16):**

Tai Simiona	Cook Island Trading Corporation
Reremoana Reremoana	Te Aponga Uira
Takapi Kora	Ministry of Agriculture
Tiara Mataora	Ministry of Agriculture
Poona Samuel	Ministry of Agriculture
Nooroa Tupa	MOWEPP Energy Division
James Auora	Omia Public Health Division
Oirua Joseph	Public Health Division
Mii Nicholls	Mobil Oil
George Nicholls	Airport Authority
Mataiti Rave	Public Health Aitutaki
Teariki Reva George	Aitutaki
Antoine Nia	Environment Service
David A. Greig	Internal Affairs
Helen Maunga	Internal Affairs
Timoti Tangiruaiane	Ministry of Works

#### **Facilitator:**

Margaret Leonard	Golder Associates
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