

APPENDIX G
SPILL CONTINGENCY PLAN



**SPILL CONTINGENCY PLAN
FOR THE OPERATION OF THE
SPRING GARDEN GENERATING STATION**

Submitted to:

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1.0 INTRODUCTION

1.1 Purpose

Despite the Barbados Light & Power Company's best efforts to prevent spills, no physical operation can attain zero risk. Acts of God, accidents and malfunctions can occur from time to time that result in a spill. To prevent such spills from leaving the site, design features are included in the Spring Garden plant including collection sumps for normal leakage and equipment wash downs and containment structures for fuel tanks. Nevertheless, diligent operational procedures are also required to avoid accidental losses.

The purpose of the plan is to provide a response to spills to minimize:

- Danger to persons;
- Pollution of land and water;
- Size of the affected area;
- Degree of disturbance to plants, fish and animals; and
- Degree of disturbance during cleanup.

This Spill Contingency Plan identifies the types of spills that may occur, and provides procedures to respond to such emergencies. This Plan shall supplement other BLP manuals/plans.

Definition: A spill is the release of a pollutant by accident or other circumstances that has the potential to cause an adverse effect on the environment.

If the release is not within a containment berm or collection system designed for the purpose and has the potential to contaminate soils, groundwater or the marine environment, then it is considered to be a spill.

1.2 Applicability

This Spill Contingency Plan covers spills resulting in a release to the environment. It does not include routine operational leaks of oil into building sumps that are specifically designed for the capture and treatment of oily wastes.

If the incident is not part of normal operations, and there is doubt, consider it a spill.

Although the Plan is primarily aimed at hydrocarbon spills due to the large amount of fuel in storage, it also covers chemical spills and gaseous releases.

2.0 ROLES AND RESPONSIBILITIES

2.1 Response Coordinator

The role of the Response Coordinator is to oversee the emergency response to a spill at the plant. The responsibilities of the Response Coordinator will be as follows:

- a) The Response Coordinator directs all operations but does not get directly involved in the clean-up activities.
- b) The Response Coordinator decides when the spill incident is under control.
- c) All information about the spill should be directed to the Response Coordinator and any changes in the situation should be reported to him.

2.2 Generation Manager

The Generation Manager or his designate will be the Response Coordinator and oversee the emergency response to major spills. This will include all spills to the sea.

He or his designate will be the sole communicators for reporting spills to the government, media or other agencies.

2.3 Shift Charge Supervisor

The Shift Charge Supervisor will assume the role of Response Coordinator for minor spills.

For major spills the Shift Charge Supervisor will assume the role of Response Coordinator until the Generation Manager or his designate is able to take over. He will commence the initial response and take immediate action to stop or reduce the spill and contain it, without endangering the health and safety of workers or the public.

2.4 Safety Officer

The plant Safety Officer will monitor the safety of workers during the response activities.

2.5 Environmental Health and Safety Officer

The Environmental Health and Safety Officer will be an advisor to the response team and monitor extent of spill.

2.6 Plant Chemist

The Plant Chemist will advise on chemical spills and gaseous releases. She will also be an advisor to the response team as required for any spill.



2.7 Other Staff

All staff have a responsibility to report spills immediately to the Shift Charge Supervisor and assist as directed with spill response.

Table 2-1 Key Plant Personnel

NAME	ROLE	HOME TELEPHONE	CELL PHONE
Hallam Edwards	Generation Manager	437-4817	230-4600
George Inniss	Plant Safety Officer	423-6385	234-8865
Wayne Yearwood	Operations Superintendent	422-5371	230-1438
Arthur Lewis	Mechanical Maintenance Superintendent	422-4020	230-1302
Audley Williams	Generation Engineer Electrical Maintenance	424-0767	NA
Albert St. John	Assistant Superintendent	424-9185	231-5877
Wayne Prescod	Generation Engineer Mechanical Maintenance	423-2246	230-2707
Clive Layne	Generation Engineer Operations	424-0669	243-2776
Andrea Jordan	Plant Chemist	423-5368	243-2756
Brian Reece	Environmental Health and Safety Officer	437-7160	234-7555

3.0 STANDARD PROCEDURE FOR ANY SPILL

Consider the safety of all persons FIRST. If any personnel have been affected or injured by the spill, the Diagnostic Clinic should be contacted immediately for advice on treatment. Medical attention should be rendered as soon as possible.

3.1 Identification of Spill

- a) **All employees** must inform the **Shift Charge Supervisor** at once, of a spill.
- b) If the employee can safely stop the spill at the source, this should be done.
- c) The **Shift Charge Supervisor** will investigate and confirm the spill. He will:
 - Determine the source, if possible;
 - Assess the size and nature of the spilled material (oil, chemicals);
 - Mobilise a response team to take immediate action to stop or reduce the spill and contain it, without endangering the health and safety of the workers or local population;
 - Take action to reduce hazards to persons working near the spill.
- d) The **Shift Charge Supervisor** will assume the role of **Response Coordinator** for most minor spill incidents unless relieved as below.
- e) The **Generation Manager or designate** should be called to assume the role of Response Coordinator if the spill is considered major, such as:
 - A bulk oil tank rupture;
 - A fuel pipeline rupture;
 - A release of oil or chemical outside of plant property;
 - A release of oil to the sea;
 - A spill to the canal that has the potential for release to the sea; or
 - It requires additional resources such as mobilizing equipment contractors for response.

3.2 Response

- a) Take any actions necessary to prevent the spill from contaminating groundwater or offsite surface water (e.g. clean-up using an absorbent material mixed with sand).
- b) If the spill has the potential to leave the site via runoff to the sea then the **Generation Manager or designate** must contact the Chief Environmental Engineer of the Environmental Engineering Division of the Ministry of Physical Development and Environment. (If unavailable, contact any agency of CERO such as the Coast Guard). He will activate the Barbados National Response

Team (BNRT) upon notification of a spill. Refer to Section 6 of this plan for coordinating a response with BNRT.

- c) Actions for the different spill types are documented as follows:
- **Oil spills to land see Section 4;**
 - **Oil spills to canal see Section 5;**
 - **Oils spills to sea see Section 6;**
 - **Chemical spills see Section 7; and**
 - **Gaseous releases see Section 8.**

3.3 Documentation

- a) The **Shift Charge Supervisor** involved in the spill discovery will complete a **Spill Reporting Form** of the incident by the end of the shift and provide copies to the **Plant Safety Officer** and the **incoming Shift Charge Supervisor**. A copy of this form is contained in Appendix A.
- b) A daily log will be maintained of the spill cleanup activities.
- c) A full report of the incident shall be completed by the **Response Coordinator** or designate. The report should provide the following information:
- The date and time of spill;
 - The name of the personnel involved in initial response;
 - Location of incident;
 - The substances involved (estimated quantity);
 - Actions taken to respond (containment, cleanup);
 - Government and agency personnel contacted;
 - Media involvement (if any);
 - Estimated costs of incident (cleanup and operating);
 - Evaluation of response effectiveness (lessons learned);
 - Description of ongoing requirements (remediation of soils, monitoring. etc);
 - Identification of cause;
 - Recommendations for prevention of future incidents; and
 - Other relevant information.

3.4 Government Notification

- a) The Environmental Engineering Division (EED) of the Ministry of Physical Development and Environment should be notified of all spills. A written report should be provided as soon as practical (within one week) giving details of actions taken.

- b) For major spills such as releases to the sea or losses off site the EED or other CERO agency should be **notified immediately** by the **Generation Manager or designate**.

3.5 Communications

- a) All external communications to government agencies or the media must go through the **Generation Manager or designate**.
- b) **Employees** must refrain from making statements about the incident to the media (such as newspaper, radio, television) and refer these enquiries to the **Generation Manager or designate**.
- c) **Employees** must refer any enquiries from regulatory personnel to the **Generation Manager or designate**.

4.0 RESPONSE TO OIL SPILLS ON LAND

Consider the safety of all persons FIRST.

Small spills:

- a) For small spills the oil should be prevented from escaping to stormwater drains;
- b) Collect the oil or soak up using absorbent material such as Hi-Dri, sand or absorbent pillows.
- c) Once the spill cleanup is completed, place the used absorbent pads or contaminated materials into drums for disposal. Disposal will be coordinated with the Environmental Engineering Division of the Ministry of Physical Development and Environment.
- d) Contaminated soils should be excavated and replaced with clean fill.
- e) Oil soaked sand or soil can be removed and weathered on a biopile until there is no odour or disposed in accordance with instructions of the Environmental Engineering Division of the Ministry of Physical Development and Environment.

Major spills:

- a) Obtain plastic tarp(s), absorbent sheeting, or other ultra-dry absorbent and any other necessary spill containment equipment, hoses, etc.
- b) A berm of soil should be constructed down-slope from the seepage or spill.
- c) A tarp can be placed in such a way that the fuel can pool for collection and removal (such as at the foot of the berm).
- d) If there is a large volume of spilled product, pump the oil into spare empty drums and store in a secure area for reuse or disposal at the Barbados National Oil Terminal.
- e) Absorbent sheeting or sand or "Hi-Dri" can be used to soak up spilled oil. Soaked absorbent pads may be wrung out into the empty drum(s), and used over again to continue cleanup of the spill.
- f) Contaminated soils should be excavated and replaced with clean fill.
- g) Once the spill cleanup is completed, place the used absorbent pads or contaminated materials into the drums for disposal. Disposal will be coordinated with the Environmental Engineering Division of the Ministry of Physical Development and Environment.

- h) Oil soaked sand or soil can be removed and weathered on a biopile until there is no odour or disposed in accordance with instructions of the Environmental Engineering Division of the Ministry of Physical Development and Environment.

5.0 RESPONSE TO OIL SPILLS IN THE CANAL

Consider the safety of all persons FIRST.

- a) If the spill is small, and reaches the canal, deploy hydrophobic (water-repellent) absorbent pads on water surface.
- b) Deploy absorbent booms on the water surface to "fence in" the spill area gradually and to prevent it from spreading. Keep in mind environmental factors such as high winds that can adversely affect attempts at spill cleanup.
- c) Once a boom has been secured, a skimmer or a vacuum truck may be brought on-scene to aid in capture of the oil if it is of sufficient thickness. Once captured, the oil should be pumped to empty drums and held for disposal or reuse.
- d) The containers of recovered oil should be held in a secure storage area for reuse or disposal to the Barbados National Oil Terminal.
- e) **If the spill is sufficiently large and has the potential to reach the sea, then the Generation Manager or designate must contact the Chief Environmental Engineer of the Environmental Engineering Division** of the Ministry of Physical Development and Environment and Environment. (If unavailable, contact the **Coast Guard or any other CERO agency**). He will activate the Barbados National Response Team (BNRT) upon notification of a spill. Refer to Section 6.
- f) Soaked absorbent pads may be wrung out into the empty drum(s), and used over again to continue cleanup of the spill.
- g) Once the spill cleanup is complete, place the used absorbent pads or contaminated materials into drums for disposal. Disposal will be coordinated with the Environmental Engineering Division of the Ministry of Physical Development and Environment.
- h) Oil soaked sediments will be removed and weathered on a biopile until there is no odour or disposed in accordance with instructions of the Environmental Engineering Division of the Ministry of Physical Development and Environment.

6.0 RESPONSE TO OIL SPILLS IN THE SEA

Consider the safety of all persons FIRST.

- a) Spills to the sea must be promptly reported by the Generation Manager or designate to the **Chief Environmental Engineer of the Environmental Engineering Division** of the Ministry of Physical Development and Environment and Environment. (If unavailable, contact the **Coast Guard or any other CERO agency**). He will activate the Barbados National Response Team (BNRT) upon notification of a spill.
- b) Relevant contact numbers for the BNRT are provided in Section 10.
- c) The spill notification should be as complete as possible and include:
 - a. Name, address and telephone number of reporting source;
 - b. On-scene telephone number;
 - c. Exact location and time of spill;
 - d. Estimated amount and type of pollutant;
 - e. Source of pollutant and cause of spill;
 - f. Actions being taken to control spill;
 - g. Wind speed and direction;
 - h. Speed and direction of current if the spill is to the sea; and
 - i. The damage observed.
- d) Plant personnel will be responsible for the cleanup under the direction of the BNRT.

7.0 RESPONSE TO CHEMICAL SPILLS

Consider the safety of all persons FIRST. If any personnel becomes affected or injured by the spill during response, the Diagnostic Clinic should be contacted immediately for advice on treatment. Medical attention should be rendered as soon as possible.

- a) The **Plant Safety Officer** and **Plant Chemist** should be notified immediately.
- b) Determine chemical released (refer to Inventory of Chemicals in Appendix B).
- c) Refer to Table 7-1 for response to releases of commonly used chemicals.
- d) Review the Manufacturers Safety Data Sheets (MSDS) of the material spilled before starting clean up to ensure safe procedures are in effect.
- e) Assemble the necessary safety equipment before attempting to contain the spill, (such as latex or other protective gloves, goggles or safety glasses, masks or breathers, etc.).
- f) Apply absorbents to soak up liquids (refer to MSDS for appropriate type).
- g) Place plastic sheeting over solid chemicals, such as dusts and powders, to prevent them from spreading by wind and to prevent attraction by birds or other mammals.
- h) Neutralize acids or caustics (refer to MSDS sheet). Place spilled material and contaminated cleanup supplies in an empty refuse drum and label and seal drums for disposal.
- i) The disposal containers must be transferred to a secure storage area for future disposal. Disposal will be coordinated with the Environmental Engineering Division of the Ministry of Physical Development and Environment.



Table 7-1 Spill Response for Common On-Site Chemicals

Chemical	Personal Protective Equipment	Hazard	Cleanup Response
Acids & Alkalis	<u>Acids:</u> Goggles, respirator for acid gases and dust, neoprene gloves (red). <u>Alkalis:</u> Goggles, respirator for alkali (bases) gases and dust, neoprene gloves (red).	Corrosive, harmful if inhaled, avoid skin and clothing contact.	Absorb with Hi-Dri and shovel material into clean dry containers and remove to well-ventilated area for later disposal. Do not wash down.
Ammonia	Goggles, respirator for alkali (bases) gases, neoprene gloves (red).	Corrosive, harmful if inhaled, avoid skin and clothing contact.	Absorb with Hi-Dri and shovel material into clean dry containers and remove to well-ventilated area for later disposal. Do not wash down.
Calcium Hypochlorite	Goggles, respirator for acid gases and dust, neoprene gloves (red).	Strong oxidizer, emits chlorine gas on contact with acids, dry powder extinguishers. Harmful if inhaled. Can intensify a fire if ignited.	Shovel into clean/dry container and remove to a well-ventilated area for later disposal. Do not wash down.
Cyclohexylamine	Goggles, respirator for alkali (bases) gases, neoprene gloves (red).	Corrosive, harmful if inhaled, avoid skin and clothing contact.	Absorb with Hi-Dri and shovel material into clean dry containers and remove to well-ventilated area for later disposal. Do not wash down.
Hydrazine	Goggles, respirator for alkalis (bases) gases, neoprene gloves (red).	Strong reducing agent, highly flammable. Harmful if inhaled, avoid skin and clothing contact. Do not allow any contact with calcium hypochlorite. Remove ignition sources.	Do not use "rag" due to potential for spontaneous combustion. Spray to avoid fire and dilute to < 10%. Dyke or trench to contain. Absorb with Hi-Dri and shovel material into clean dry containers and remove to well-ventilated area for later disposal.
Solvents	Goggles, respirator for hydrocarbons, neoprene gloves (red).	Flammable, harmful if inhaled, avoid skin and clothing contact.	Absorb with Hi-Dry and shovel material into clean dry containers and remove to well-ventilated area for later disposal. Do not wash down.

8.0 RESPONSE TO GASEOUS RELEASES

Consider the safety of all persons FIRST.

- a) The **Plant Safety Officer** and **Plant Chemist** should be notified immediately.
- b) Assess the hazard of the released material by referring to the Manufacturers Safety Data Sheets (MSDS) where possible.
- c) Attempt to shut off the source if it is safe to do so.
- d) Determine if there are safety issues for on site and off-site and take action.
- e) If it is a natural gas leak contact the National Petroleum Corporation at **430 4099** (Emergency contact number).
- f) If releases of sulphur hexafluoride occur ensure that personnel do not enter without personal protective equipment (self contained breathing apparatus). Sulphur hexafluoride is contained in:
 - 24 kV and 69 kV Substations;
 - LSD 415 Auxiliaries room (D10 - D13)

For most gaseous releases there is no ability to capture the release and hence the response is to shut off the source and rely on dispersion. As these releases can affect persons on neighbouring properties, it is important to observe wind direction and conditions to assess areas of potential impact.

9.0 EMERGENCY SUPPLIES

Absorbents

Hi-Dri or equivalent– A granular clay based material. It absorbs 100% of its weight in liquid. Large quantities are available in the stores. Use for rapid absorption of oil or oily water. Can also be used for acids.

Absorbent booms – Kept in the stores. Use for retention of larger spills or containment of spills in the canal

Absorbent pads/ pillows– Kept in the stores. Use for mopping up minor spills

Building Sand – Stockpiles kept on site. Use for containment of spills and mopping up larger spills.

Rags – Available throughout site.

Equipment

Large pumps kept in station.

Small pumps kept in Tool Room.

Oil skimmer available from BNOC

Refer to Appendix C for a comprehensive list of equipment available through the BNRT.

10.0 EMERGENCY INFORMATION

Table 10-1 Emergency Numbers

EMERGENCY SERVICES		
Medical	Diagnostic Clinic	426 5051 / 5053 / 2423
	QEH Ambulance	511
	FMH Emergency Centre	228 6120
	Queen Elizabeth Hospital	436 6450
Fire		311
Police		211
CONTRACTORS		
Vacuum trucks	Sani Services	429 5989
	Poly Septic Services	435 3518
	Skip and Sewage Services	436 9581
	Jose y Jose	427 1935
	Anti Septic	426 4030
Tanker Trucks	Hinds Transport	437 1960 / 1961 /1962 / 1485
Heavy Equipment	C O Williams	436 3910 (office)
		429 1692 (home)
438 7336 (home)		
432 9085 (home)		
425 2719 (home)		
432 7560 (home)		
		424 5443 (home)
		438 6500 (home)
	Arthur Construction	421 4224 232 7718 (home)
Labour	WE Jemmott	230 6765 (cell) 433 4305 (home)
	F&B Mechanical (Noel Forde)	231-3094 (cell) 423 3208 (home) 423 6091(home – alternate)
	Qualtech Services	430 6634 (office) 245 5005 (cell) 428 2390 (home)
OTHER CONTACTS		
	Esso	426 2181
	Texaco	417 8972 / 6300 417 6400 (day)
	Shell	431 4800 / 4862 417 4225 (emergency)
	Barbados National Oil Company	430 4099

**Table 10-2 Barbados National Response Team
 Spill Notification and Reporting Contact Numbers**

Organizational / Representative	Telephone Number(s)
National Communication Centre	427-8819 (<u>Coast Guard Emergency</u>)
National Coordinator (Director of Emergency Services, CERO)	427-8513 (office)
<u>National Response Team</u> Chairman (Chief Environmental Engineer) Chief of Staff, Barbados Defence Force Commanding Officer, Barbados Coast Guard Staff Officer, Operations and Training Director, Coastal Zone Management Unit Harbour Master, Port Authority (24 hr duty phone) Manager, National Conservation Commission Commissioner of Police Chief Fire Officer Chief Fisheries Officer <u>Ministry of Public Transport and Works</u>	426-1871 (home) 436-4820 (office) 436-6185 (office) 428-6858 (home) 437-7133 (home) 429-6742 (office) 436-6185 ext. 2220 (office) 228-5955 (office) 426-1010 (office) 423-6280 (home) 425-1200 (office) 436-7060 (office) 427-7385 (home) 426-1236 (office) 426-3745 (office) 429 2191
<u>Non-Governmental Groups</u> Barbados National Oil Company Esso Standard Oil Shell Antilles and Guianas Ltd. Texaco Eastern Caribbean Ltd.	420-1800 426-2181 431-4800 417-6400
Clean Caribbean Cooperative	1-954-983-9880

11.0 OIL STORAGE VOLUMES

Table 11-1 Bulk Storage Tanks in Tank Farm

TANK	QUANTITY	PRODUCT	VOLUME (m ³)
Sludge	1	Bunker C & Diesel	63
Sludge	1	Bunker C & Diesel	25
Bunker C	2	Bunker C	5000
Diesel	1	Diesel	252
Diesel	1	Diesel	850

Table 11-2 Oil Storage Tanks in LSD Station (D10-13)

TANK	QUANTITY	PRODUCT	VOLUME (m ³)
HFO Control Tank	2	Bunker C	10
HFO Service Tank	2	Bunker C	40
Diesel Service Tank	1	Diesel	19
Diesel Control Tank	1	Diesel	10

Table 11-3 Oil Storage Tanks in LSD Station (D14-15)

TANK	QUANTITY	PRODUCT	VOLUME (m ³)
HFO Service Tank	2	Bunker C	55
LFO Service Tank	1	Diesel	55
HFO Control Tank	2	Bunker C	14
Main Lube Oil Tank	1	Lubricating Oil	39
Cylinder Lube Oil Tank	2	Lubricating Oil	25



12.0 UPDATE AND REVIEW

The Spill Contingency Plan will be reviewed and updated as information changes or at least annually. The review should include checks of all relevant contacts (confirmation of correct telephone numbers) and availability of resources. The most recent review of the plan was completed as follows:

Date	Description & Page Number	Approved by
September 2004	Draft Plan	

Prepared by:

Reviewed by:

Peter Rostern, P.Eng.
Principal Consultant

APPENDIX A
SPILL REPORTING FORM



The Barbados Light & Power Company Limited

Spill Reporting Form

Date & time of spill discovery:	Duration: _____ Minutes _____ Hours _____ Days
Estimated date and time of spill:	
Location:	
Substance involved estimated quantity: <input type="checkbox"/> Heavy fuel oil <input type="checkbox"/> Diesel <input type="checkbox"/> Other _____ Quantity _____	Type of Incident: <input type="checkbox"/> Leaking container <input type="checkbox"/> Pipe/valve leak or rupture <input type="checkbox"/> Loading/unloading release <input type="checkbox"/> Vehicle collision <input type="checkbox"/> Other _____
Names of persons that discovered spill (if reported by public provide telephone #):	
Did any person(s) require medical attention due to spill (Provide names and refer to accident report form):	
Describe actions taken during initial response:	
Describe actions taken for cleanup:	
Names of staff involved in cleanup:	

Staff contacted for response or advice (Name / time):	
Factors contributing to release: <input type="checkbox"/> Equipment failure <input type="checkbox"/> Operator error <input type="checkbox"/> Weather conditions <input type="checkbox"/> Faulty design	Release reached: <input type="checkbox"/> Retained on ground on site <input type="checkbox"/> Drainage system to canal <input type="checkbox"/> Canal <input type="checkbox"/> Beach <input type="checkbox"/> Off site (neighbouring properties) <input type="checkbox"/> Sea
Describe any external contacts with media, government representatives or other agencies including statements made:	
Other relevant information:	
Current status of spill: <input type="checkbox"/> Ongoing <input type="checkbox"/> Terminated Is further spillage possible? <input type="checkbox"/> Yes <input type="checkbox"/> No	Current status of cleanup: <input type="checkbox"/> Cleanup unnecessary <input type="checkbox"/> Cleanup underway <input type="checkbox"/> Cleanup completed
Shift Charge Supervisor:	Date/time:

The Shift Charge Supervisor should complete this form by the end of the shift and provide copies to the Plant Safety Officer and the incoming Shift Charge Supervisor.

APPENDIX B
CHEMICALS INVENTORY

THE BARBADOS LIGHT & POWER COMPANY LIMITED

SPRING GARDEN GENERATING STATION

INVENTORY OF CHEMICALS

Trade Name of Substance or Material	Chemical Name of Substance/ Hazardous Material	UN Classification Number	Volume / Mass per Container	Number of Containers on Site annually	State	Associated Hazards e.g Toxic, Flammable etc.
Acetone	Acetone	1090	5L	30	L	Irritating to skin and mucous membranes, poisonous by inhalation. Highly flammable.
Alpo Kleen	Sodium Dodecylbenzene sulfonate	Currently not regulated by DOT, IMO, IATA and AFI	55	85	L	Irritating to skin and mucous membranes
Ameroid DC Disc Cleaner	Phosphoric Acid Dipropylene Glycol Monomethyl Ether	1805	5gal	7	L	Will burn eyes and skin. Can cause nasal, respiratory and central nervous system effects including nausea, headache, and dizziness.
Ammonia Solution	Ammonia	2672	4.75L	30	L	Corrosive, irritating to mucous membranes, poisonous by inhalation. Not flammable
Ancosteam 2010	Morpholine, Diethylaminoethanol, Cyclohexylamine	2054	20L	2	L	Corrosive, irritating to mucous membranes. Flammability hazard - 2

Trade Name of Substance or Material	Chemical Name of Substance/ Hazardous Material	UN Classification Number	Volume / Mass per Container	Number of Containers on Site annually	State	Associated Hazards e.g Toxic, Flammable etc.
Ancosteam 2030	Cyclohexylamine	2357	20L	0	L	Corrosive, irritating to mucous membranes. Flammability hazard – 2
Baschem 2070	Magnesium Oxide, Overbased Magnesium sulphonate, No. 2 Fuel Oil	Currently not regulated by DOT, IMO, IATA and AFI	55 gal	80	L	Irritating to the eye and upper respiratory tract Chronic exposure may cause degenerative changes in the liver. Flammability hazard - 1
Calcium Hypochlorite	Calcium Hypochlorite	2880	45kg	180	S	Corrosive to eyes and skin and can cause severe irritation of the upper respiratory tract. Combustible
Carbo-solv	Mineral Spirits Methylene Chloride Isopropyl Alcohol 2-Butoxy Ethanol	*Manufactured in Barbados	55gal	4	L	Methylene chloride has been described as a potential human carcinogen. Irritating to the eyes and the upper respiratory tract. Can cause headache, dizziness and nausea. Flammability hazard - 2
Caustic Soda	Sodium Hydroxide	1823	500lb	28	S	Corrosive to eye tissue and skin, will cause permanent damage if contact with tissue is for more than a few seconds. Combustible.
Citric Acid	Citric Acid	Currently not regulated by DOT, IMO, IATA and AFI	25kg	15	S	Causes severe eye irritation, irritation to skin and respiratory tract. Flammability hazard - 1

Trade Name of Substance or Material	Chemical Name of Substance/ Hazardous Material	UN Classification Number	Volume / Mass per Container	Number of Containers on Site annually	State	Associated Hazards e.g Toxic, Flammable etc.
50% Cyclohexylamine	Cyclohexylamine	2357	32L	9	L	Irritating to the nasal cavity and upper respiratory tract. It is extremely irritating to the eyes and will cause severe burns to the skin. Flammable liquid.
Dewt-NC Diesel Engine Water Treatment	Sodium Nitrite Sodium Metaborate Tetrahydrate	1500	96lb	104	S	Irritating to skin, mild eye irritant. Severe irritant to nose throat and respiratory tract. Not flammable
Disodium Phosphate Crystals	Disodium Phosphate	Currently not regulated by DOT, IMO, IATA and AFI	50lb	22	S	Mild irritant to eyes and skin. Not flammable.
Electrosolve II	Isopropyl Alcohol Xylene	*Manufactured in Barbados	55gal	10 (8 drums at Garrison)	L	May be an irritant, prolonged or repeated contact may result in skin irritation. Flammability hazard - 3
Hidrosolvent	Mineral Spirits Isopropyl alcohol 2-butoxy ethanol	*Manufactured in Barbados	55gal	4	L	Can be extremely irritating to eyes and may cause headache, dizziness, nausea and upper respiratory tract irritation. Flammability hazard - 2
Hydrazine	Hydrazine	2030	55gal	2	L	Toxic by all routes of entry, is thought to cause cancer. Highly flammable
Isoamyl Alcohol	Isoamyl Alcohol	1105	4L	4	L	Can cause eye, skin or upper respiratory tract irritation. Can cause nervous system injury. Combustible. Disposal should be by incineration in a chemical incinerator. Flammable.
Korromeen	Octadecylamine	Currently not regulated by DOT, IMO, IATA and AFI	55gal	Ordered once every five (5) years	L	Irritating to skin, eyes and the upper respiratory tract. Non flammable.

Trade Name of Substance or Material	Chemical Name of Substance/ Hazardous Material	UN Classification Number	Volume / Mass per Container	Number of Containers on Site annually	State	Associated Hazards e.g Toxic, Flammable etc.
Monosodium Phosphate	Monosodium Phosphate	Currently not regulated by DOT, IMO, IATA and AFI	50lb	10	S	Irritating to eyes, skin and the upper respiratory tract. Non flammable.
Muriatic Acid	Hydrochloric Acid	1789	55gal	6	L	Corrosive to eye tissue and skin, will cause permanent damage if contact with tissue is for more than a few seconds. Combustible.
Nalfleet Maxivap Plus	A polycarboxylic Acid mixture	Currently not regulated by DOT, IMO, IATA and AFI	25L	25	L	May cause mild irritation to eyes, skin and mucous membranes. Not flammable.
Oil Spill Remover	2-Butoxy Ethanol	2369	55gal	1	L	May be harmful if swallowed, may cause eye irritation. Flammable. Spilled liquid should be collected in sealed containers.
Sea Shield 79101 ACC	Hydrodesulphurised Naptha Aliphatic Hydrocarbon	Currently not regulated by DOT, IMO, IATA and AFI	200L 25L	1 4	L	May cause mild irritation of eyes, skin and mucous membranes. Combustible. Do not allow to enter sewers or watercourses.
Soda Ash	Sodium Carbonate	Currently not regulated by DOT, IMO, IATA and AFI	100lb	5	S	May cause severe irritation of the eyes, skin and mucous membranes of the upper respiratory tract. Non combustible. Should be disposed of in a secure landfill, this material should be prevented from entering ground or surface waters.
Sodium Molybdate	Sodium Molybdate	Currently not regulated by DOT, IMO, IATA and AFI	—	Ordered only as required	S	Irritating to the skin and upper respiratory tract. Non flammable.

Trade Name of Substance or Material	Chemical Name of Substance/ Hazardous Material	UN Classification Number	Volume / Mass per Container	Number of Containers on Site annually	State	Associated Hazards e.g Toxic, Flammable etc.
Sodium Sulphite Anhydrous	Sodium Sulphite	Currently not regulated by DOT, IMO, IATA and AFI	50lb	220	S	May cause mild irritation to eyes, skin and the respiratory tract. Non flammable.
Techniclean DG 1	Kerosene Alcohol Ethoxylate	3082	5gal	3	L	Vapour may cause eye irritation, headache, dizziness and central nervous system depression. Defatting can occur on skin contact. Combustible.
Trichloroethane	Trichloroethane	2831	1gal	5	L	May cause eye, skin and respiratory tract irritation. A Central nervous system depressant. Flammable.
Trisodium Phosphate Crystals	Trisodium Phosphate	Currently not regulated by DOT, IMO, IATA and AFI	50lb	35	S	Overexposure can result in severe irritation of the eyes, nose and throat. Non flammable.
Turbotect 667	Solvent naptha Overbased magnesium sulphonate Chromium Ethylhexanoate	3082	55gal	2	L	Irritating to eyes and skin. Combustible. Product must be prevented from entering ground and surface water.

* The manufacturer does not have UN Classification numbers for these products, as they are not used in the United States.

Waste Category I, O	State S, L, G	Type of Process	Hazardous Constituents	Quantity Generated	Quantity Recycled	Quantity Reused	Quantity Stored	Quantity Disposed Of	Method of Disposal
I	L	Low Speed Diesel and Steam boiler washings	The chemical characterization of this waste is currently being conducted.	80000 US gal	None	None	None	80000 US gal	This liquid is not treated and is disposed of at the Lonesome Hill site.
O	L	Waste oil generated from leakage and spillage from the Low Speed Diesel Engines	Bunker "C" Lubricating Oil		All	All	All	None	Not applicable
I, O	L	Oily Water from various areas at the Spring Garden plant	Bunker "C" Lubricating Oil		The waste oil is recycled	The waste oil is reused	_____	_____	The wastewater is allowed to percolate through a sand filter and eventually flows to the sea.

I - Inorganic O - Organic
S - Solid L - Liquid G - Gas

Date: 25/10/02 **Signature:** _____

APPENDIX C

**NATIONAL OIL SPILL CONTINGENCY PLAN
FOR BARBADOS**

**National Oil Spill
Contingency Plan
For
Barbados**

(Cabinet Approved: January 24, 2002)

1.0 PURPOSE AND SCOPE

- 1.1 This Plan, including the Annexes, provides for coordinated response actions by agencies of the Government of Barbados and the local petroleum industry to protect the terrestrial and marine environment from the damaging and polluting effects of oil discharges.
- 1.2 The Plan focuses on establishing organizational and decision-making structures, coordinating available expertise, and acquiring and deploying required resources in order to provide an effective response in the event of an oil pollution incident.
- 1.3 The Plan is intended to complement other contingency plans for disasters or emergencies, as a component of an overall response action.
- 1.4 The Plan provides for:
 - a. Assignment of duties and responsibilities among Government agencies and the petroleum industry;
 - b. Identification, acquisition and maintenance of equipment and supplies;
 - c. A system of surveillance and reporting designed to ensure the earliest possible notification of discharges of oil;
 - d. Establishment of a national center to provide coordination and direction for operations in carrying out the Plan;
 - e. Procedures to be employed in containment, dispersal, removal and disposal of oil;
 - f. Links to international agencies for the acquisition of assistance and resources if so required.
- 1.5 This Plan will protect and monitor the exclusive economic zone of Barbados, its adjoining shorelines and the high seas where a threat to Barbados's waters, shore face, or shelf-bottom exists.

2.0 AUTHORITY

- 2.1 There is no single local Act that covers all the actions to be carried out under this Plan. The following is a list of those Acts which address aspects of oil pollution, with respect to parks and beaches, environmental control, transportation, vessels, and navigation.
- a. Oil in Navigable Waters Act (1927);
 - b. National Conservation Act (1985);
 - c. Marine Areas Preservation and Enhancement Act (1976);
 - d. Health Services Act (1969);
 - e. Barbados Port Authority Act (1975);
 - f. Shipping Act (1996)
 - g. Barbados Territorial Waters Act (1977);
 - h. The Defense Act (1979);
 - i. Coastal Zone Management Act (1998);
 - j. Marine Pollution Control Act (1998);
 - k. Road Traffic Act (1981).

3.0 DEFINITIONS

- 3.1 A minor discharge is a spill or slick of less than 1000 gallons* of oil.
- 3.2 A medium discharge is a spill or slick of 1000 to 20,000 gallons of oil.
- 3.3 A major discharge is a spill or slick of more than 20,000 gallons of oil.
- 3.4 A potential discharge is any accident or other circumstances threatening to result in the discharge of oil.
- 3.5 An oil spill is any accident or other circumstances resulting in the discharge of oil into the marine or terrestrial environment.
- 3.6 The National Coordinator (NC) is the designated Government officer with overall responsibility for all contingency arrangements and response action in the event of an oil spill.
- 3.7 The On-Scene Coordinator (OSC) is the direct on-scene representative of the National Coordinator, designated to carry out response activities in accordance with the Plan. The OSC has responsibility for operational

decisions and the co-ordination of governmental on-scene response activities under the Plan. He shall maintain close liaisons with the National Coordinator, shall provide progress reports and maintain detailed records of all on scene activities.

- 3.8 The National Operations Group comprises persons with relevant expertise and resources designated to assist the OSC with the operational aspects of his task in the event of an oil pollution incident.
- 3.9 Lead Agency means an agency designated in the National Oil Spill Contingency Plan to receive oil spill information and initiate action during times of an oil spill emergency.
- 3.10 Response Agency means an organization that normally responds to an oil spill during times of emergency.
- 3.11 The Barbados National Response Team (BNRT) comprises a decision making group of senior representatives designated by various agencies to assist the OSC with the technical aspects of his tasks in the event of an oil pollution incident. The BNRT also focuses on the policy aspects of oil spill response and facilitates the securing of necessary expertise and resources.
- 3.12 The Marine Oil Spill Action Plan (MOSAP) is a mutual aid plan put in place by members of the petroleum industry in Barbados in order to provide immediate and effective response to any oil spill that may result from industry operations, or other request for assistance that may be made by Government agencies.

*Note: 42 gallons = 1 barrel

4.0 GENERAL POLICY

- 4.1 The primary thrust of this Plan is to provide a coordinated response at the scene of an unplanned or accidental discharge of oil. The response action involves organizing the activities of the various Government agencies involved in the response to an oil pollution incident and

monitoring the spill control and cleanup operation (which should be undertaken by the person responsible for the discharge).

- 4.2 At all times, the discharger will bear responsibility for carrying out measures to properly remove the oil at his expense. If the person responsible for the oil discharge is unknown, response action shall be instituted by the BNRT in accordance with this Plan. Public and private sector agencies will be required to make available equipment and/or other resources that may be used for clearing the oil spill.

5.0 GOVERNMENT AGENCIES AND THEIR RESPONSIBILITIES

A. Lead Agency

- 5.1 The Ministry of Housing, Lands and Environment, through the Environmental Engineering Division (EED), has the responsibility for environmental/oil pollution control, including regulation of waste discharges into the sea, disposal of waste on land and disposal of waste at sea.
- 5.2 The EED's role is to ensure that in the event of an oil spill the discharger undertakes a prompt response and complies with requirements for clean-up and disposal.
- 5.3 In the event of an oil spill, the EED will have the overall responsibility for monitoring clean-up operations and ensuring adequate disposal of waste materials.
- 5.4 The Chief Environmental Engineer (CEE) of the Environmental Engineering Division is the Chair of the Barbados National Response Team.

B. Participating Agencies

- 5.5 The following Government agencies have primary statutory responsibility and/or resources to respond to oil spills:
 - a. The Ministry of Housing, Lands and the Environment, through the National Conservation Commission (NCC), has responsibility for control, maintenance and development of public parks and beaches. The Commission also have the authority to protect the marine flora and fauna in special areas. The NCC has responsibility to carry out the roles of shoreline supervisor in the event of an oil spill;
 - b. The Ministry of Housing, Lands and the Environment, through the Coastal Zone Management Unit, is responsible for the preservation and management of the coastal areas of Barbados. The Coastal Zone Management Unit will, in the event of an oil spill, offer technical advice on the potential impacts of the pollution on the coastal and marine environment;

- c. The Barbados Coast Guard, which falls under the aegis of the Barbados Defence Force and thus the Ministry of Home Affairs, will be responsible for carrying out the roles of the On-Scene Commander and Off-Shore Supervisor during an off-shore spill. This responsibility will include commanding, controlling and carrying out surveillance activities for oil spill or potential oil spill occurring in territorial waters and on the high seas;
- d. The Barbados Port Authority has responsibility for controlling vessels entering and leaving Barbados, vessel safety, marine law enforcement and navigational controls, as well as implementing the provisions of the Oil in Navigable Waters Act. The Port Authority will contribute resources to facilitate the exercise of these responsibilities for an oil spill incident in the Port.

6.0 BARBADOS NATIONAL RESPONSE TEAM

- 6.1 The Barbados National Response Team is an inter-agency group established under this Plan to address policy matters and technical issues that require timely and appropriate consideration.
- 6.2 The Barbados National Response Team (BNRT) will consist of representatives from the:
 - a. Barbados Defence Force
 - b. Central Emergency Relief Organization (CERO);
 - c. National Conservation Commission;
 - d. Barbados Port Authority;
 - e. Coastal Zone Management Unit;
 - f. Barbados Fire Service;
 - g. Royal Barbados Police Force;
 - h. Environmental Engineering Division;
 - i. Local Petroleum Industry;
 - j. Energy Division.
- 6.3 The Response Team will be organized as illustrated in Figure 1.
- 6.4 The functions of the BNRT, and the duties of its members, are:
 - a. To develop response plans prior to a spill;

- b. To coordinate activities during an oil spill response action;
 - c. To provide collective advice and assistance to the OSC so that effective response actions can be formulated;
 - d. To be fully aware of actions proposed by the OSC by monitoring all reports and evaluating the possible impacts of decisions made or actions taken;
 - e. To facilitate appropriate resolutions to administrative matters over which their respective host agencies have authority and influence;
 - f. To facilitate the provision of necessary support staff for the proper functions of a Response Centre;
 - g. To inform the relevant authorities and the public of actions taken;
 - h. To facilitate in the recording of relevant information, included costs incurred;
 - i. To participate in the preparation of post-incident reports.
- 6.5 The Chair of the BNRT will be the Chief Environmental Engineer of the Environmental Engineering Division, Ministry of Housing, Lands and the Environment.
- 6.6 The BNRT reports to the National Coordinator.
- 6.7 The BNRT will be activated automatically in the event of an oil spill or potential oil spill. The Team may be activated during any other emergency involving oil spill at the request of the National Coordinator or any member of the Team.
- 6.8 Upon implementation of this Plan, the BNRT will make provision to deal with policy and technical matters relating to environmental impacts, designation of sensitive areas, best methods for removal and ultimate disposal of oil and contaminated materials, and the use of dispersants. (Note: Policies and procedure relating to the use and type of dispersants and the identification and delineation of sensitive areas will be developed and accurately detailed by the BNRT.)
- 6.9 When not activated for a pollution discharge, the BNRT serves as a standing committee to recommend policy changes in the response organization, and to evaluate the preparedness of the Government to

cope with oil pollution. The Barbados National Response Team will meet at least quarterly, to review pollution emergency response action. Based on a continuing evaluation of the response action, the BNRT will make recommendations relating to

- a. training and equipping the response team;
- b. research and evaluation of activities to improve response capabilities; and
- c. stockpiling equipment/material and other operational matters.

6.10 The Barbados National Response Team will work closely with

- a. representatives of the Marine Oil Spill Action Plan and the local petroleum industry on the development of contingency plans, stockpiling of equipment, and related matters, and ensure mutual response to an oil spill incident;
- b. other Governments in the development and implementation of regional plans such as the proposed Caribbean Oil Spill Contingency Plan.

6.11 The Team will evaluate industrial cooperative plans such as the Clean Caribbean Cooperative (CCC) and establish appropriate mechanisms to utilize these capabilities during major oil spills.

7.0 ON-SCENE COORDINATOR (OSC)

- 7.1 The On-Scene Coordinator will be the responsible person for the coordination and direction of the response activity at the scene of an oil spill.
- 7.2 The OSC for offshore incidents will be an appropriate representative from the Barbados Coast Guard. For on-shore incidents representatives from the Barbados Fire Service and the Royal Barbados Police Force will act jointly as the On-Scene Coordinator.
- 7.3 The OSC reports to the National Coordinator through the BNRT.
- 7.4 Upon receipt of a report of an oil spill the OSC shall determine the pertinent facts about the incident, including
 - a. the amount of material discharged;
 - b. the location of the discharge;
 - c. the probably direction and time of travel of the discharge;
 - d. resources required and available;
 - e. agencies that need to be advised of the incident.
- 7.5 The OSC is to maintain a current and accurate information flow to the BNRT to ensure that response activities under the Plan are executed with maximum effectiveness.
- 7.6 The OSC shall prepare and submit such reports, including records of costs incurred, as may be deemed necessary by the National Coordinator.
- 7.7 The OSC's responsibility in the event of an oil spill will continue until the discharge has been dealt with satisfactorily or until the OSC is relieved of duties by the invocation of a contingency plan of a higher order.

8.0 NATIONAL COORDINATOR (NC)

- 8.1 Upon implementation of the Plan, the Director of the Central Emergency Relief Organization (CERO) will serve as the National Coordinator.

- 8.2 The National Coordinator (NC) will be responsible for activating the Plan and responding to all levels of discharges.
- 8.3 The National Coordinator will be responsible for the overall management of an oil pollution response for which the Plan is activated.
- 8.4 The National Coordinator, in carrying out routine response functions for minor or medium oil discharges, may consult with any member of the ResponseTeam and may also place the Team on Alert status.
- 8.5 Upon activation of this plan, the NC will establish a National Operations Group to provide operational support functions under the plan.
- 8.6 The NC will have overall responsibility for coordination and direction of oil pollution control efforts during an oil spill or potential oil spill, and will liaise with representative of the local petroleum industry where appropriate.
- 8.7 The NC, with the assistance of the Environmental Engineering Division (EED) of the Ministry of Housing, Lands and the Environment, will be responsible for coordination detection, surveillance, monitoring and response actions with other governments in accordance with regional and sub-regional contingency plans for the Caribbean Sea.
- 8.8 The NC in conjunction with the Government Information Service will act as the focal point for public information releases so as to minimize or prevent dissemination of inaccurate information. The NC will compile statistics on oil spill incidents and prepare reports on removal action for review and evaluation by the BNRT.

9.0 NATIONAL OPERATIONS GROUP

- 9.1 Members of the National Operations Group (NOG) are nominated by members of the BNRT, with membership to be confirmed by the NC as soon as possible after the activation of the Plan.
- 9.2 The NOG shall consist of staff from the Lead Agency and other participating agencies with responsibility, authority and expertise in operational elements.

- 9.3 Members of the NOG report to the OSC, and serve to support the many requirements placed on the OSC. The NOG serves as the OSC's operational support staff.
- 9.4 Membership on the NOG may change to satisfy changing operational requirements of the oil spill, and to allow for the participation of the best expertise to suit the current operational requirements.

10.0 NATIONAL RESPONSE CENTRE

- 10.1 When the Plan is activated, a National Response Centre and communication system will be established at the headquarters of the Barbados Defense Force or the Royal Barbados Police Force.
- 10.2 The National Response Centre will serve as the operations quarters for the OSC and the BNRT.
- 10.3 The Response Centre will serve to supply the following:
- a. A continuously manned communication center for receiving reports of discharges or potential discharges;
 - b. Physical facilities for coordination and control of a pollution emergency;
 - c. Current and updated charts for the economic zone/territorial waters of Barbados and ocean areas adjacent to Barbados;
 - d. Charts and/or other equipment to plot and demonstrate the geographic position, movement and extent of the oil discharge;
 - e. An updated telephone notification list for BNRT members and alternates including other Government offices [Emergency telephone numbers are listed in Annex I];
 - f. An updated inventory of oil spills response equipment [A current equipment inventory is contained in Annex II].

11.0 NATIONAL PLAN IMPLEMENTATION

- 11.1 The Plan will ensure that the person(s) responsible for an oil spill (the discharger) takes remedial actions, including covering the cost of removal of the oil spills. If the discharger fails to take action or is unknown, the Government will undertake the remedial actions and the cost borne by the Government until such time as an oil spill contingency fund is established.
- 11.2 It is the responsibility of all participating agencies to the Plan to advise the Environmental Engineering Division of the Ministry of Physical Development and Environment, in a timely manner of any relevant

changes that may be necessary to the Plan and to convey related current information of which they may become aware.

- 11.3 All update information will be assessed by the BNRT Chair, who will evaluate and incorporate into the Plan the information submitted, with the input of the BNRT as appropriate.
- 11.4 The BNRT will hold general annual meetings for the purpose of reviewing and updating requirements of the Plan. Further topics and issues for the general BNRT meetings may be suggested by any Plan participant as appropriate.

12.0 RESPONSE OPERATIONS & COORDINATION

- 12.1 The actions taken to respond to a pollution discharge may be divided into five (5) operational phases. These are:

- Phase I – Discovery and Notification
- Phase II – Evaluation and Initiation of Action
- Phase III – Containment and Countermeasures
- Phase IV – Removal, Mitigation and Disposal
- Phase V – Documentation and Cost Recovery.

- 12.2 It must be recognized that elements of any one phase may take place concurrently with one or more of the other phases, and that all phases are not necessarily applicable to all oil spills.
- 12.3 The NC will initiate and direct as required Phase II, Phase III, Phase IV and Phase V operations.
- 12.4 In the event of an oil spill, the first officer to arrive at the site from an agency having responsibility under this Plan will assume responsibility for coordination of the activities under the Plan until the arrival of the designated On-Scene Coordinator.
- 12.5 If support is required from regional or international agencies the National Coordinator will request the Chief Immigration Officer and the Comptroller of Customs to make the necessary arrangements to

expedite the entry and exit of all required manpower, materials and equipment.

- 12.6 For minor or medium oil pollution incidents involving tar balls on the beaches, the NC may elect not to designate an OSC if the National Conservation Commission is undertaking removal. In such cases, the Commission will report to the NC concerning actions taken, and will carry out the operations in accordance with this Plan.
- 12.7 In carrying out this Plan, the NC will fully inform and coordinate closely with the BNRT to ensure the maximum effectiveness of the Government effort in protecting the natural resources and the environment from pollution damage.

13.0 OPERATIONAL RESPONSE PHASES

A. Phase I – Discovery and Notification

- 13.1 A discharge may be discovered through: -
- a. A report submitted by a discharger;
 - b. Deliberate search by vessel patrols and aircraft; or
 - c. Random or incidental observation by Government agencies or the general public.
- 13.2 Notification of oil spills by fishing or pleasure boats, police department, the media, commercial aircraft, and others should be encouraged.
- 13.3 Reports of an oil spill should, as far as possible, include: -
- a. Name, address and telephone number(s) of the reporting source;
 - b. On-scene telephone number;
 - c. Exact location and time of spill;
 - d. Estimated amount and type of pollutant;
 - e. Source of pollutant and cause of spill;
 - f. Actions being taken to control the oil spill;
 - g. Wind speed and direction;
 - h. Speed and direction of current;
 - i. Damage observed.

- 13.4 All reports of an oil spill should be transmitted to the Chair of the BNRT (i.e. the Chief Environment Engineer), the NC (the Director, CERO), and the appropriate OSC (i.e. the Barbados Coast Guard for spill at sea/offshore and the Royal Barbados Police Force or the Barbados Fire Service for spills on land).
- 13.5 The National Conservation Commission will report all situations involving oil tar balls on the beaches and advise the NC and the Chair of the BNRT of action taken to remove and dispose of the oil tar balls. At the request of the NC and the Chair of the BNRT, the Commission will provide equipment and personnel to assist in the clean up of oil discharges.
- 13.6 The Port Authority should report all incidents involving oil pollution from vessels entering Barbados to the NC and the Chair of the BNRT. The Authority will provide advice and guidance to the NC and the Chair of the BNRT on matters relating to vessels entering and leaving Barbados, bunkering operations, and navigation as they relate to an oil spill. The Authority will make vessels, tugs, barges, pumps and other equipment available for combating oil spills, at the request of the NC.

B. Phase II – Evaluation and Initiation of Action

- 13.7 The Chair of the BNRT, in cooperation with the NC, will ensure that a report of a discharge is immediately investigated. Based on all available information, the Chair and the NC will:
- a. Evaluate the magnitude and severity of the oil spill;
 - b. Estimate potential impacts of the spill including hazards to life, marine resources and property;
 - c. Determine the feasibility of removal; assess the effectiveness of removal actions if undertaken by the discharger;
 - d. Determine the need for further assistance, whether local or external; liaise with CERO, the Chief Immigration Officer and the Comptroller of Customs to expedite the entry and export of all required man-power, materials and equipment in the case of an oil spill which requires external support.

- 13.8 The NC will, as soon as possible after receipt of a report, determine the need to initiate further governmental response actions. This may be limited to activation of the NRT or a request for additional resources to conduct further surveillance or initiation of Phase III or Phase IV removal operations.
- 13.9 The Chair of the BNRT will ensure that adequate monitoring is maintained to determine that removal actions are being adequately carried out. If removal is not being appropriately done, the Chairman will so advise the responsible party and the NC. If the responsible party has been advised and does not initiate proper removal action, the NC shall initiate necessary actions to clean up the oil spill, and thereafter recover the cost from the polluter.
- 13.10 If the discharger is unknown or otherwise unavailable, the NC, under the advice of the BNRT, shall ensure that removal actions are carried out.

C. Phase III -- Containment and Countermeasures

- 13.11 These defensive actions should be initiated as soon as possible after discovery and notification of an oil spill. These actions may include environmental protection activities, source control procedures, salvage operations, placement of physical barriers to halt or slow the spread of a discharge, placement of booms or barriers and the use of chemicals and other materials to restrain the discharge.
- 13.12 The use of dispersants or other chemical agents will be sanctioned only after evaluating the impact, and with due recognition of sensitive ecosystems and other areas of sensitivity.
- 13.13 Where shoreline impact is inevitable, preparation of areas should be undertaken including appropriate use of deflection booms, sorbants and other arrangements to minimize the extent of impact.
- 13.14 Under this Plan, operational priorities for containment and countermeasures activities will be established by the OSC under advice from the NC and the BNRT.

13.15 Input to the decisions for Phase III activities will normally be made by the NC, the BNRT, and the NRT as applicable.

D. Phase IV -- Cleanup, Mitigation and Disposal

13.16 This phase includes actions taken to recover the oil from the water or land and affected (public and private) shoreline areas, and monitoring activities to determine the scope and effectiveness of the removal actions. Actions that may be taken include the use of sorbants, skimmers, and other collection devices for floating oil, the use of vacuum trucks for the removal of contained oil, and beach cleaners for the removal of oil reaching the shoreline.

13.17 Oil and contaminated materials recovered in the cleanup operations shall be disposed of in accordance with the procedures stipulated by the Environmental Engineering Division of the Ministry of Housing, Lands and the Environment.

13.18 The OSC or his designate will be responsible for obtaining EED clearance for disposal of oil and contaminated materials recovered in the cleanup operation. The BNRT will facilitate such clearance.

13.19 Under this Plan, operational priorities for cleanup, mitigation, and disposal activities will be established by the OSC under advice from the NC and the BNRT.

13.20 Input to the decisions for Phase IV activities will normally be made by the NC, the BNRT and the NOG, as applicable.

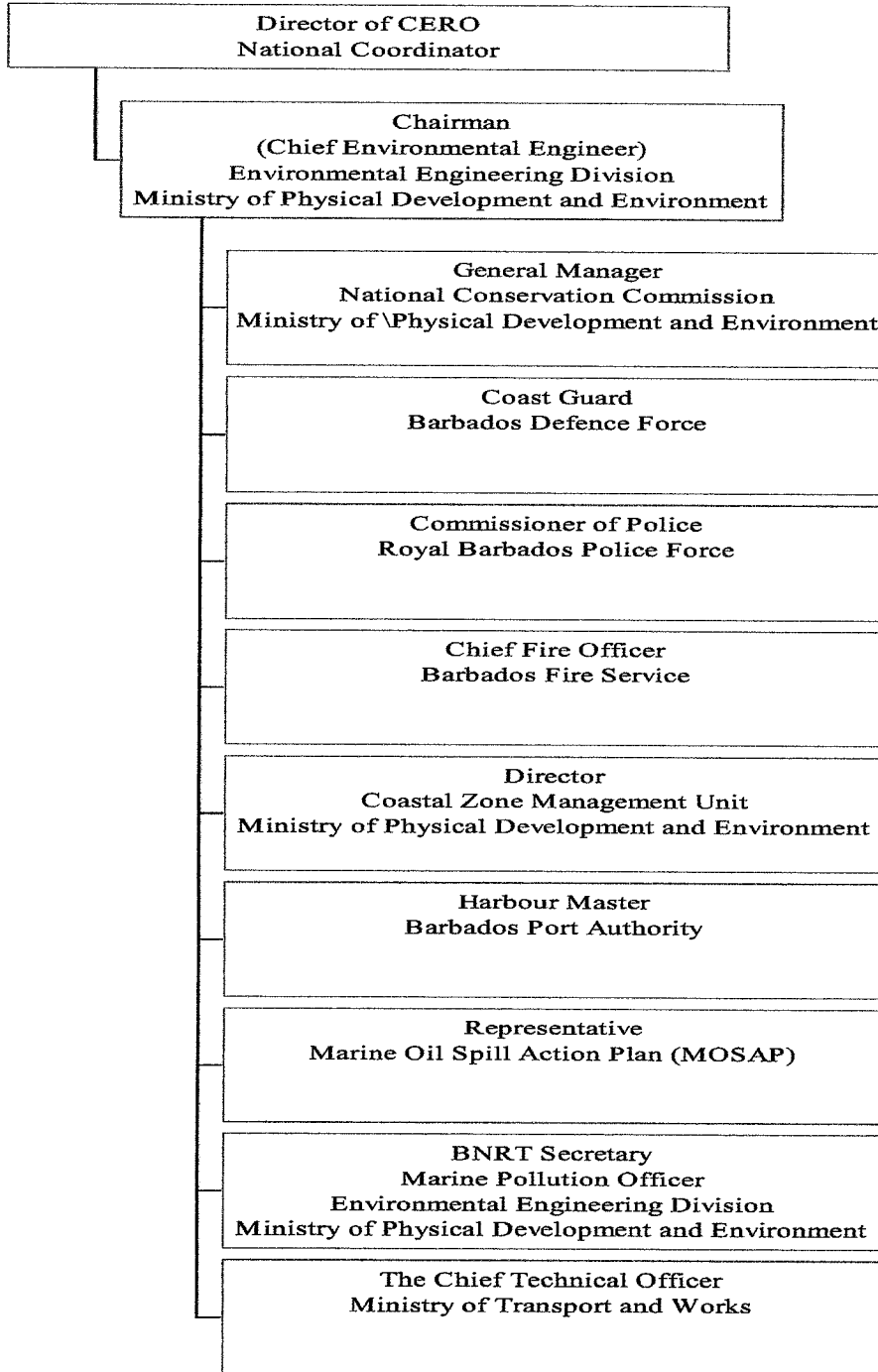
E. Phase V -- Documentation, Reporting and Cost Recovery

13.21 This phase comprises a variety of activities, depending on the location of and the circumstances surrounding a particular oil spill. Recovery of removal costs borne by Government and recovery for damages done to Government property is included in this Phase.

13.22 The On-scene Coordinator will ensure that the collection of samples, necessary data, and other information is performed at the proper times during the incident, in order to fix liability and for other purposes.

13.23 The Ministry of Housing, Lands and the Environment will be responsible for the preparation of a post-incident report, if so required. All agencies and persons who participated in the oil pollution response may be required to contribute to the preparation of the post-incident report.

Figure 1 : Barbados National Response Team



Annex I : Notification and Reporting

Organization	Telephone Number(s)
National Coordinator Central Emergency Relief Organisation	427-8513
On-Scene Commanders Barbados Coast Guard Barbados Fire Service Royal Barbados Police Force	427-8819 311 / 426-3504 211 / 430-7100
Barbados National Response Team <u>Environmental Engineering Division</u> Chief Environmental Engineer (Chair) <u>Coastal Zone Management Unit</u> Director <u>Barbados Port Authority</u> Harbour Master Manager, Training and Special Services <u>National Conservation Commission</u> Manager <u>Barbados National Oil Company Ltd.</u> Health, Safety and Environmental Officer <u>Barbados National Terminal Company Ltd.</u> Terminal Manager Terminal Superintendent <u>Esso Standard Oil S.A. Ltd.</u> Country Manager <u>Energy Division</u> Chief Geologist <u>Ministry of Public Works</u> Chief Technical Officer	436-4826 / 230-1359 (c) 228-5950 / 430-4777 / 428-6858 (h) / 232-7817 (c) 430-4712 / 230-1057 (c) 425-1200 420-1800 / 242-2947 (c) / 428-7239 (h) 228-4811 / 243-3504 (c) 228-4811 / 231-9526 (c) 426-2181 / 230-1945 (c) 467-5761 / 435-1194 (h) 429-3225 / 231-1851 (c)

Annex I : Notification and Reporting

Organization	Telephone Number(s)
National Oil Spill Advisory Committee Ministry of Finance Ministry of Foreign Affairs Office of the Attorney General International Transport Division Immigration Department Customs Department Fisheries Division	 436-6435 431-2200 431-7700 429-4813 426-1011 430-2300 426-3745
Auxiliary Agencies Shell Antilles and Guianas Ltd. ChevronTexaco Eastern Caribbean SRL Clean Caribbean Cooperative	 431-4800 / 431-4862 (24hr) 417-6300 / (954) 983-9880 / (954) 987-3001 (fax)