

South Georgia Habitat Restoration Project: Phase 1

Oil Spill Response Plan

South Georgia Heritage Trust

14 August 2010

Contents

1	Introduction	3
1.1	General overview of the South Georgia Habitat Restoration Project, Phase 1.....	3
1.2	Aim and scope of the Oil Spill Response Plan.....	3
1.3	GSGSSI Legislation and Policy on Oil Spills	3
2	Background information	3
2.1	The area covered by the Oil Spill Response Plan	3
2.2	Fuel type, amount, containment and storage.....	3
2.3	Possible fuel spills during SGHR project	4
2.4	Fate of fuel spills in the environment	4
2.5	Level of fuel spill	4
2.6	Roles and responsibilities	4
2.7	Staff training.....	5
2.8	Spill equipment	5
3	Response Procedures.....	5
3.1	Initial actions	5
3.2	General clean up procedures.....	5
3.3	Health and Safety	6
3.4	Communications	6
3.5	Termination of oil spill response	7
4	Reporting.....	7
Appendix A	Spill Reporting form.....	8
Appendix B	Material Safety Data Sheets.....	9
Appendix C	Contacts	9

Acknowledgements

1 INTRODUCTION

1.1 General overview of the South Georgia Habitat Restoration Project, Phase 1

The South Georgia Habitat Restoration Project (SGHR) aims to remove rodents from South Georgia. Phase 1 of the operation will remove rats from Thatcher Peninsula, Greene Peninsula, the area around Mercer Bay and possibly Saddle Island. Anti-coagulant brodifacoum bait will be spread by helicopter to all treatment areas and bait will be laid by hand around buildings and structures. The main operational base will be at Grytviken.

A team of 10 staff will undertake Phase 1. They will travel to South Georgia on the Government of South Georgia and the South Sandwich Islands (GSGSSI) fisheries patrol vessel, *Pharos SG*. British Antarctic Survey (BAS) and tourist vessels will be used to transport a limited amount of cargo. Staff will be accommodated at King Edward Point (KEP) in Larsen House.

1.2 Aim and scope of the Oil Spill Response Plan

The aim of the Oil Spill Response Plan (OSRP) is to describe the response procedures to be used by the SGHR project team in the event of an oil spill incident during the project, as a result of project activities.

The Plan is for Phase 1 of the SGHR Project and will be updated and amended for Phase 2.

This OSRP does not cover spills associated with GSGSSI, BAS or tourist vessels. The *Oil Spill Contingency Plan King Edward Point Applied Fisheries Research Station*, (OSCP; Downie and Shears, 2006), deals with oil spills relating to BAS activities at KEP. The BAS OSCP has been used as a reference for this Plan and contains further background information and useful general clean up advice.

1.3 GSGSSI Legislation and Policy on Oil Spills

GSGSSI policy for prevention of marine pollution is based on Annex IV (prevention of marine pollution) of the Environmental Protocol to the Antarctic Treaty. Vessels must comply with the relevant conventions of the International Maritime Organisation (IMO). All vessels are prohibited from discharging oil, oily mixtures and other hazardous or toxic materials within the South Georgia Maritime Zone (200 nautical miles).

2 BACKGROUND INFORMATION

2.1 The area covered by the Oil Spill Response Plan

The main area covered by the Oil Spill Response Plan is the area of the jetty at King Edward Point (KEP), the track which leads from the jetty to Grytviken and the project operational area at Grytviken. Grytviken and KEP have been impacted by previous fuel spills over the last 100 years.

On a broader scale, the Oil Spill Response Plan covers the areas which will be over-flown by the project helicopters.

2.2 Fuel type, amount, containment and storage

All fuel will be shipped and transferred to a depot at Grytviken in 200 litre drums. There will be around 75 drums of Jet A1 aviation fuel for the helicopters for Phase 1 of the project. A small number of drums of petrol will be used for generators, quad bike and to

fuel the bait spinners. Diesel for the car will be taken from the station supply, subject to agreement with GSGSSI.

2.3 Possible fuel spills during SGHR project

Table 1 below indicates the possible causes of fuel spills during the SGHR project with an indication of the probability, likely size of spill and fuel type.

The most likely scenarios for fuel spills are in the main operational area at Grytviken or during transit from KEP and these spills would be on land.

Possible cause of fuel spill	Probability	Maximum spill size	Type of fuel
Damage to fuel drums during unloading and transfer to Grytviken	Medium	400 litre	Jet A1; diesel; petrol
Damage to drum while at depot site	Low	200 litre	Jet A1; diesel; petrol
Accident involving land based vehicles or helicopter	Very Low	??	Jet A1; diesel; petrol
Damage to fuel drums during helicopter transport	Low	400 litre	Jet A1; diesel; petrol
Minor spills during refuelling or maintenance work	Medium	2 litre	Jet A1; diesel; petrol
Oil or fuel leak from car, quad bike, yacht, helo, spinners or generator	Medium	100 litre	Diesel; petrol; lubricating oil
Collision or grounding of yacht causing damage to tank	Very Low	??	Diesel

2.4 Fate of fuel spills in the environment

Fuel is relatively volatile and small spills will evaporate quickly and may leave a waxy residue. There will be some fugitive emissions dependent on the scale of the spill.

Spills on rock exposures may have a biological effect on plants such as lichens. Fuel spills may also lead to contamination of soil layers and will contribute to the cumulative environmental effects.

If released in the ocean, the fuel would disperse and evaporate fairly quickly, depending on the exact location and weather conditions.

2.5 Level of fuel spill

1. Small (tier 1) – dealt with by one person
2. Medium (tier 2) – require all on site resources
3. Large (tier 3) – exceed local resources and require external help

These levels do not relate exactly to the volume of the spill, but also take into account the complexity of the spill (location, terrain etc.).

2.6 Roles and responsibilities

The SGHT Project Director has overall responsibility for oil spill response. A member of the project team will be given responsibility for maintaining oil spill equipment and ensuring that all team members know how it should be used. Details of the management structure of the SGHR project are given in the Operational Plan.

2.7 Staff training

The Oil Spill Response Plan will be made available to all project staff. A briefing on oil spill response will be given at the start of the season.

2.8 Spill equipment

Absorbents for minor spills and pig putty for drum leaks will be kept close to the refuelling site at Grytviken.

Subject to agreement with GSGSSI, oil spill equipment from KEP will be used for any major spills and will be replaced as necessary. Some good quality “topped” and normal drums should be stored upside down near to the refuelling site for storing waste fuel and absorbents in the event of a spill.

Oil spill response equipment is not to be used for any other purpose unless permission is given by the Project Director.

3 RESPONSE PROCEDURES

3.1 Initial actions

1. Ensure the Health and Safety of all personnel
2. Determine if anyone is injured and if safe to do so take appropriate steps to assist
3. Report spill to Project Director

ASSESS

- risk of fire or harm to human health (ie. fumes in a confined area)
- probable source and cause
- probable quantity of fuel spilled
- type of fuel
- location of the spill
- weather conditions

4. If safe to proceed, take action to stop or minimise further spillage. The Project Director should delegate tasks to project team members as necessary.
5. If the spill occurs at a location away from Grytviken or King Edward Point, the Project Director and Chief Pilot will decide on the appropriate deployment of helicopters and arrange for use of BAS boats as necessary.
6. The Project Director should maintain a log of actions and communications throughout the incident. The form in Appendix A should be used to record information. This should be relayed to the SGHT, GSGSSI Government Officer and the BAS Base Commander as necessary. Photographic records should be taken where possible.

3.2 General clean up procedures

1. If safe to proceed, stop or minimise any further spillage

2. If refuelling, stop immediately
3. Ensure that safety equipment is worn (boots, rubber gloves, overalls)
4. Cordon off area with hazard tape if practicable
5. Deploy absorbents and/or inflatable booms to contain fuel if possible
6. For terrestrial spills, trenches or dams can be dug (avoiding underground services) across the flow of the spill to collect fuel and facilitate collection and clean up
7. Pump or manually remove spilled fuel into empty 200 litre drums. Do not fill completely
8. Contaminated snow should be placed into “topped” empty 200 litre drums. Once the snow has melted, decant the waste fuel into another drum
9. Fuel which cannot be pumped or manually removed should be collected using absorbent pads. Use “topped” empty 200 litre drums to collect waste fuel and absorbents. Do not fill completely
10. Contaminated fauna such as limpets etc. should be removed to prevent ingestion by birds
11. Drums containing waste fuel and absorbents should be clearly labelled according to the BAS Waste Management Handbook, which is available at KEP. The drums should be sent for disposal in the Falkland Islands.

Further clean up advice is given in the BAS OSCP, a copy of which is available at KEP.

Further information on the fuels and oils which will be used during the SGHR project is available from the appropriate Material Safety Data Sheets (see Appendix B).

3.3 Health and Safety

Care should be taken during any spill response to ensure the health and safety of all staff and staff wellbeing should be monitored by the Project Director at all times during a clean-up operation.

The following measures should be taken during response procedures:

1. Ensure adequate ventilation in clean-up areas as inhalation of fumes can cause headaches and nausea.
2. Ensure that staff do not enter station buildings in oiled clothes. An emergency drying room should be established and station areas should be cleaned if any areas become contaminated with oil.
3. Skin irritation can result from contact with oils and fuels. Appropriate PPE should be worn during clean up.
4. Care should be taken to avoid slips and trips on contaminated surfaces and during manual handling.
5. Particular care should be taken if working in difficult terrain or in poor weather conditions. Clean up should be halted if it means that personal safety is compromised.
6. Any medical problems should be reported to the SGHR project paramedic in the first instance.

3.4 Communications

Depending on the size of the spill, contact will be made with SGHT and GSGSSI to give regular situation reports (every 3, 6, 12 and then 24 hours after initial notification). The form in Appendix A can be used to compile these reports.

In the event of a serious oil spill which may attract media attention, the Project Director will coordinate with the SGHT to provide information to the media. No unauthorised SGHT personnel are to contact or talk to the media.

A project contact list will be prepared (see Appendix C).

3.5 Termination of oil spill response

The Project Director will determine when the spill response should be terminated. For a larger spill this decision will be taken in consultation with SGHT, GSGSSI and BAS.

All equipment should be cleaned and put away. The amount of spill equipment used should be recorded so that replacement equipment can be ordered.

4 REPORTING

Following a spill incident, the Project Director will prepare a report which includes the following information:

1. Time (GMT) and date of spill
2. Amount (estimate) of fuel lost (litres)
3. Type of fuel
4. Source and cause
5. Location and extent of spill (map)
6. Resources affected
7. Response action taken
 - a. stopping or minimising spill (any repair works)
 - b. clean-up (team members, techniques used, amount and nature of waste)
 - c. monitoring (photographs, video, visual inspection, water and soil samples)
8. Effectiveness of oil spill response
9. Any health effects experienced by SGHR response team
10. Quantity of usable fuel remaining
11. Environmental impact
12. Final classification of spill (Tier 1, 2 or 3)
13. Post-spill evaluation of contingency plan, and suggested amendments if necessary
14. Other further actions if necessary.

The report will be submitted to the SGHT and copies will be sent to GSGSSI and BAS.

APPENDIX A SPILL REPORTING FORM

This form, based on the BAS form can be used for initial recording purposes and also for notification of SGHT, GSGSSI etc.

1. Initial Report Situation Report	
2. Date : Time	
3. Type of fuel and estimated quantity / revised estimate of quantity of fuel spilled (litres)	
4. Source and cause	
5. Location, area covered and movement of spill (attach map if possible)	
6. Weather conditions	
7. Resources at risk and environmental impact	
8. Response action (include actions to stop or minimise spill, clean-up techniques, no. of personnel involved, quantity of fuel recovered, environmental monitoring / samples taken)	
9. Impact on HR Project activities	
10. Classification /revised classification of spill (small, medium, large)	
11. Useable fuel remaining (litres)	
12. Advice requested	
13. Additional comments (continue on separate sheet if necessary)	
	Signature:

APPENDIX B MATERIAL SAFETY DATA SHEETS

These can be added for the oils and fuels which will be used for the project.

APPENDIX C CONTACTS

A contact list will be prepared for the SGHR project and appended here.

In addition the following contact details may be useful:

BAS Environment Office

Oil Spill Response Ltd