

Methods of Response – Shoreline Clean up

Safer Lives, Safer Ships, Cleaner Seas

Shoreline Clean-up

- General Principles for clean-up
- Assessment of the problem
- Phases of the clean-up
- Clean-up techniques by shoreline type
- Points to remember

Safer Lives, Safer Ships, Cleaner Seas

General Principles

- Consider the shoreline type
- Minimise oiled material recovery
- Labour intensive
 - Minimise use of heavy equipment
 - Maintain morale
- Act quickly
- Technical reasonableness

Safer Lives, Safer Ships, Cleaner Seas



Technical Reasonableness

- Cost recovery
- Documentation on decision making
- Look for expert advice
- Unreasonable actions may not be cost recoverable

Safer Lives, Safer Ships, Cleaner Seas



Assessment of the Problem

- Evaluation:
 - Type and amount of oil
 - Geographical extent
 - Length and nature of affected coastline
 - Source of oil – collect samples
 - Further impact

Safer Lives, Safer Ships, Cleaner Seas



Assessment of the Problem

- Estimating oil quantity
 - Difficult task
 - Rough estimates desirable
 - Determining most appropriate response
 - Equipment requirements
 - Manpower requirements

Safer Lives, Safer Ships, Cleaner Seas

Assessment of the Problem

- Shoreline survey - major spill
 - Overall situation assessment aerial survey
 - Detailed evaluation on foot
 - Repeat surveys for sections of different shore type and level of oil impact

Safer Lives, Safer Ships, Cleaner Seas

Phases of the Clean-up

Stage 1 –

Removal of heavy contamination and floating oil

Stage 2 –

Removal of moderate contamination and stranded oil

Stage 3 –

Clean-up of light contamination and final polishing where necessary

Safer Lives, Safer Ships, Cleaner Seas

Clean-up Techniques

- Dependant on:
 - Environmental Sensitivity
 - Type of oil and amount of oiling
 - Beach access
 - Substrate type
- Priorities decided after consideration of potential conflicts of interest
 - Most effective techniques may be most damaging
- Decisions on a site by site basis

Safer Lives, Safer Ships, Cleaner Seas

Rocky Shores



Safer Lives, Safer Ships, Cleaner Seas

Clean-up of rocky shores

- Mechanical - skimmers / vacuum
- Manual - buckets / rock wiping
- Sorbents
- High volume flushing
- High pressure washing?
- Environmental Sensitivity Issues

Safer Lives, Safer Ships, Cleaner Seas

Problems of Access



Huntsmans Leap

- Recreation
- Environmental sensitivity
- Bulk oil - remobilisation
- Adjacent to bird colony
- Health and Safety



Access seaward



Safer Lives, Safer Ships, Cleaner Seas



- Foot access only
- 2000 bags OBM
- 500m to roadway
- 80 people
- 3 hours work

Safer Lives, Safer Ships, Cleaner Seas

Boulders and Cobble



- Stage 1- Bulk oil removal
- Poor load bearing hinders movement of vehicles and personnel
- Pumping bulk oil - mechanical/vacuum
- Health and Safety

Safer Lives, Safer Ships, Cleaner Seas

Boulders and Cobble

- Stage 2 – Removal of stranded oil
- High pressure flushing
- Stone removal for disposal
- Push into sea for natural cleaning
- Stone washing



Safer Lives, Safer Ships, Cleaner Seas

In-situ Stone Washing



Mechanical washing in skips

Maritime &
Coastguard
Agency



Skips must be sealed
Requires energy
Releasing agent
Oily water separation

Maritime &
Coastguard
Agency

Shingle



Maritime &
Coastguard
Agency

Shingle Washing

- Suitable only for small pebble size
- Costly, must have rationale
- 1/2 hour wash cycle, 4 ton loads
- Strict housekeeping required
- Strict record keeping required

Safer Lives, Safer Ships, Cleaner Seas

Shingle Washing





Safer Lives, Safer Ships, Cleaner Seas

Berm Relocation



Sand



- Priorities
- Amenity
- Env Assessment
- Mechanical vs Manual

Safer Lives, Safer Ships, Cleaner Seas

Mechanical clean-up - trenching and scraping

- Only for bulk quantities of oil
- Only on hard sand beaches
- Aim to minimise beach material pick-up
- Avoid vehicle movements in oil
- Work from clean end of beach upwards
- Work only manageable lengths of trench

Safer Lives, Safer Ships, Cleaner Seas

Saundersfoot beach

1 mile trench - inadequate resources to
evacuate trenched oil



36 2 29

Mechanical scraping



- Steel blade
- Vertical sided trench
- Increased obm pickup?
- Sand oil mixture in trench - unpumpable?

Safer Lives, Safer Ships, Cleaner Seas

Ideal trench configuration



Manual Clean-up



Manual clean-up

- Can be supported by front end loader
- Into bags or drums
- Slow but precise
- Minimises sand pick-up



Safer Lives, Safer Ships, Cleaner Seas

Sand - washing



Saltmarsh and Mudflats

- Few options
- Small quantity of oil
 - leave alone?
- Bulk oil -
 - Approach from seaward?
 - Shallow draft vessels
 - Low pressure flushing
 - Vegetation cutting



Summary

- Shoreline type largely dictates technique
- Stages of clean-up
- Mechanical Vs Manual
- Sensitive shorelines are often best left alone
- Logistics / organisation
- Identify temporary storage sites

Safer Lives, Safer Ships, Cleaner Seas
