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Shoreline Clean up

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Shoreline Clean-up

- General Principles for clean-up
- Technical reasonableness and cost recovery
- Assessment of the problem
- Phases of the clean-up
- Clean-up techniques by shoreline type
- Points to remember

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General Principles

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

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Technical Reasonableness

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

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"Preventive measures" means any reasonable measures taken by any person after an incident has occurred to prevent or minimise pollution damage **– International Convention on Civil Liability for Oil Pollution Damage**

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What is a 'technically unreasonable' response action?

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Examples of a 'technically unreasonable' response action

- Removing tonnes of sand from a beach for small numbers of 50p sized tar balls;
- Deploying boom perpendicular to a fast flowing current;
- Continuing to spray dispersant after a test spray has been ineffective;
- Keeping response vessels on-hire when at sea oil encounter rate is minimal;

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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

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Assessment of the Problem

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

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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

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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

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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

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Rocky Shores

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Clean-up of rocky shores

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

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Problems of Access

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Huntsmans Leap

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

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Access seaward

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

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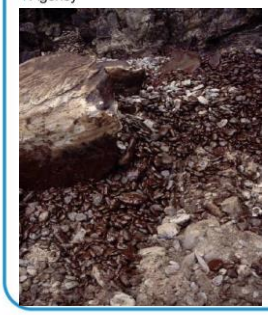
Boulders and Cobble



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

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Boulders and Cobble

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

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In-situ Stone Washing

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Mechanical washing in skips

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Shingle

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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

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Shingle Washing

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Berm Relocation

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Sand

- Priority?
- Amenity
- Environmental Assessment
- Mechanical vs Manual

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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

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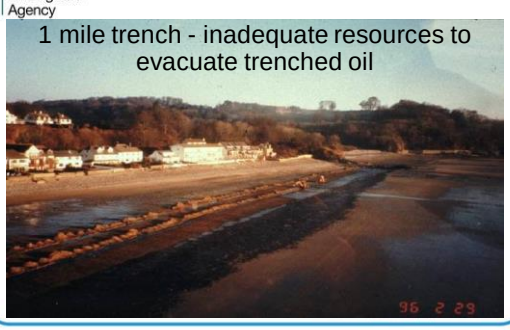
Saundersfoot beach

1 mile trench - inadequate resources to evacuate trenched oil



31

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Mechanical scraping

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

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Ideal trench configuration

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Manual clean-up

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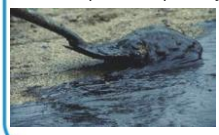
Manual clean-up

- Can be supported by front end loader
- Into bags or drums
- Slow but precise
- Minimises sand pick-up
- 1-2m^3 per man per day



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Cleaning salt marsh and mud flats

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- Few options
- Small quantity of oil
  - leave alone? Resist pressure to clean if no benefit
- Bulk oil
  - Would we ignore 5,000 tonnes on a saltmarsh? What result?
  - Approach from seaward?
  - Shallow draft vessels
  - Low pressure flushing
  - Vegetation cutting

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Sensitive sites – always consult with the EG

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Beachmaster Role

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- Overall supervisor of a specified section of a shoreline response operation.
- Operation manager at the front line of the response - levels of technical competence.
- Implements the cleanup strategy
- Reports back on progress and problems
- Record keeping

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Summary

- Shoreline type largely dictates technique
- Strategy and stages of clean-up
- Technical reasonableness
- Mechanical versus Manual
- Sensitive shorelines are often best left alone
- Logistics / organisation / record keeping
- Identify temporary storage sites

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