cleanup activities

MECHANICAL SCREENING/MANUAL SIEVING

PRINCIPLE

This technique is carried out using beach cleaning machines, often used to clean tourist beaches.
A vibrating blade digs into the sediment to lift up the surface layer, which is then pushed onto a mesh conveyor belt where the screening occurs. Elements which are larger than the size of the mesh are dropped into a receptacle at the end of the belt.
This equipment is widely available, especially in popular tourist areas.

Small, self-propelled beach-cleaning machine

CONDITIONS OF USE

- ✓ **Pollution**: exclusively on clusters of viscous oil (tar balls to patties) and soiled debris; for use during final stage of cleanup, but also during initial recovery, with adaptation of equipment and methods
- ✓ **Pollutant**: very viscous oil
- ✓ **Substrate**: homogeneous sand, not too coarse, free from too many large elements (stones, shells); not too compact (slightly humid to dry). Good to moderate load-bearing capacity
- ✓ **Site**: access possible for farm machinery; large enough and free of obstructions to allow easy manoeuvrability, flat beaches.

Large beach-cleaning machine powered by a tractor

EQUIPMENT

- **Basic equipment**:
  - ✓ Beach cleaning machine
  - ✓ Tractor
- **Extra equipment**:
  - ✓ Tractor with loader (for removal)
- **PPE**: Safety shoes, gloves.

- ✓ Work at low speed (1 to 3 km/h, and even down to 0.3 km/h), with a powerful tractor (120 hp mini), fitted with wide, slightly under-inflated tyres
- ✓ Stop regularly to check selectivity (not too much sand in the receptacle) and state of the beach after screening
- ✓ Requires brief training beforehand on the necessary adaptations to equipment (initial cleanup), specific operational modes and the potential ecological impact
- ✓ Follow environmental and operational instructions
- ✓ Use existing access points to the beach.

- ✓ Don't use at the foot of a dune and in areas with vegetation
- ✓ Don't drive too fast (this reduces selectivity)
- ✓ Don't leave collected waste on the beach
- ✓ Don't use on sloping beaches
- ✓ Don't use on pebbles
- ✓ Don't drive on dunes.

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IMPACT

- ✓ In the event of poor usage, removal of large quantities of clean sediment; deconstruction and destabilisation of the foot of the dune (upper end of beach); erosion, destruction of the dune and the associated vegetation, decrease in biodiversity and fertility by reduction of the low water mark
- ✓ Can tend to fragment the pollutant in certain conditions.

PERFORMANCE

Efficiency: varies considerably according to the site, pollutant, degree of pollution (a few tens to a few hundreds of m²/h for displacement on the beach, from 1 to 5 m²/h in the case of dislodgement).

Minimum workforce required: 1 driver

Waste: varied solid waste, tar balls, patties of oil with a small quantity of sand; overall oil content: at least 20% (but very much less if the technique is misused).

Manual sieving using different devices


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WHERE MECHANICAL SCREENING IS INAPPROPRIATE

MANUAL SIEVING OF SAND

Separate small pieces of tar from the beach sand by hand sieving.

EQUIPMENT

Basic equipment:

- ✓ Sand sieve, mason's sieve
- ✓ Nets with small mesh size
- ✓ Small baskets made of meshing or perforated sheet metal with a handle to drag them along the beach

CONDITIONS OF USE

Pollution: for use during final stage of cleanup, on tar balls and small soiled debris.

Site: sensitive areas (dunes) or areas that cannot be accessed by mechanical screeners.

Organise work and traffic to avoid spreading the oil

PERFORMANCE

Yield: hand sieving is slow and labour intensive.