

Sunken Oil Containment/Protection Techniques and Data Gaps

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The proven and promising techniques for sunken oil recovery include:

- Suction Dredge
- Diver-Directed Pumping and Vacuuming
- Mechanical Removal
- Sorbent/V-SORs
- Trawls and Nets
- Manual Removal
- Agitation/Refloat

Dredging and pumping/vacuuming generates large volumes of oil, water, and sediment for handling, treatment, and disposal. Space for such operations can be limiting.

Mechanical removal generates less waste materials. Excavators are not selective, generating excessive clean sediment, and can have leakage during lift. Existing technology for environmental clamshell excavation allows tracking of each “bite” for documentation and effective removal.

Sorbents can be used for removal of trace amounts of oil, as a final polishing step.

Trawls and nets are very inefficient, with high potential for leakage with low to moderate viscosity oils, have little possibility for reuse, and can snag on debris, rocks, and other obstructions.

There are many methods for agitation/refloat. However, this technology is slow, labor intensive, disturbs the substrate and biota, can mix oil deeper into the sediment, can release suspended oil and turbidity for deposition down current that is difficult to contain, and is limited to shallow water. Careful consideration of these limitations and testing at the spill site are needed before implementation should be considered.

Techniques for waste stream treatment need to be better planned; oftentimes, methods are ad hoc and inefficient.

Data Gaps:

- Optimization of nozzle and stinger designs to minimize water and sediment removal during vacuuming and pumping operations
- Evaluate the performance of wastewater treatment systems for effluents typical in content and variability from sunken oil recovery operations—including offshore conditions