



NOPSEMA

AT A GLANCE

OIL SPILL RESPONSE STRATEGIES

July 2018

In the event of an oil spill, NOPSEMA requires the responsible petroleum company to, among other things, stop the flow of oil, clean up the escaped oil, monitor the impact on the environment and remediate any resulting damage.

In Australia, petroleum companies can form cooperative arrangements to access mutual spill response equipment aid stockpiles maintained through the National Plan for Maritime Environmental Emergencies, state contingency plans, the Australian Marine Oil Spill Centre, Subsea First Response Toolkit and individual company owned equipment. Stockpiles are strategically located around the Australian coastline for timely deployment.

To ensure the best environmental outcomes are achieved, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) requires every petroleum company to have an accepted oil pollution emergency plan (OPEP) in place that identifies an appropriate suite of response strategies for varying spill scenarios that could arise from the activity. The OPEP will identify how the petroleum company will maintain the arrangements and capability to be able to implement their OPEP at any given time.

When responding to an oil spill, there are a range of techniques and technologies petroleum companies must consider, and not all of them will be appropriate for every spill scenario.

Source control

The various methods of stopping the flow of oil at the source to minimise the total release volume. This could involve deploying a remotely operated underwater vehicle (ROV) to activate blow-out prevention devices or subsea valves. Source control could also include installing subsea capping or containment equipment or drilling relief wells to intercept and gain control of an uncontrolled well.

Monitoring and evaluation

Observing and analysing the movement of spilled oil to inform response actions. Field observation can be undertaken on the ground, by vessel or aerial surveillance, and by satellite remote sensing. Monitoring can include deterministic computer modelling which predicts the future movement of the spilled oil based on expected ocean and weather conditions.

Chemical dispersants

Dispersants are applied to an oil spill to minimise surface oil reaching sensitive environments particularly in coastal waters. Dispersants can be applied to oil on the sea surface from planes and vessels but can also be applied subsea by installing a subsea injection system which applies the dispersant to the oil at the release point. Dispersants are not typically used where they may result in additional impact for example, near shorelines and shallow low-flow environments.

Containment and recovery

Mechanically removing spilled oil from the sea surface and transporting it for treatment or disposal at an appropriate waste management facility. A wide range of booms, skimmers, storage tanks and other devices can be used for containment and recovery at sea and near shorelines.





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In-situ burning

The controlled ignition of spilled oil in a safe location to quickly reduce the total volume of oil on the sea surface. This is not a common response option in Australian waters.

Shoreline assessment, protection and deflection

Assessing shoreline areas to identify the features and sensitivities that could potentially be impacted by spilled oil. This valuable information assists in prioritising the locations for protection. Deploying protection booms or other physical barriers, or deflecting oil to less sensitive locations, to prevent spilled oil from impacting shorelines.

Shoreline clean-up

The majority of shoreline clean-up techniques are fairly labor intensive and require limited technology, for example personnel removing debris from a sandy beach with shovels. The techniques will vary depending on the type of oil, the type of shoreline (sandy, rocky, mangrove) and the intended outcomes of the clean-up.



Inland water response

Containing and recovering spilled oil from inlets, rivers, lakes and wetland areas. If spilled oil comes ashore or enters inland waters, protection of that location is usually a key priority to avoid impacts to those habitats.

Waste management

Response activities can generate large volumes of waste in excess of the capacity of existing regional waste management facilities. Waste management requires specific planning, including identifying how oiled waste will be disposed to ensure the response is not hindered.

Oiled wildlife response

A significant oil spill will likely result in wildlife being exposed to oil. Extensive planning is necessary to ensure the facilities and competencies are available, or can be rapidly established, to adequately capture, handle, clean and rehabilitate a range of wildlife that may be present in the area. Wildlife response activities may take place at sea, on shorelines and in specialised facilities further inland.

Monitoring of environmental effects

Observing and undertaking scientific sampling programs to assess the environmental impacts of an oil spill. Detailed planning is required to ensure robust monitoring programs can be continued into the future to enable assessment of impacts and evaluate the success of remediation.

Remediation

Returning the environment to pre-spill conditions, to the extent practicable. Natural recovery and active rehabilitation efforts may be required, for example restoring or creating wetland habitats. Consideration must also be given to the socioeconomic environment to ensure communities, facilities and livelihoods impacted by a spill are adequately addressed, with consideration to financial compensation where appropriate.

For more information

For further information visit nopsema.gov.au or email communications@nopsema.gov.au.