



CONTAINMENT OF SPILLS

Prompt action following a spillage can prevent or reduce its effects, whilst inappropriate action may cause or worsen the polluting effects. The response in the first thirty minutes to such spillages is often crucial. Containment may be on the highway, within the drainage system or in the watercourse. There are a number of containment techniques available, which are described below.

a. Spillage Control Devices

Pollution control devices such as oil separators, penstocks, catchpits and lagoons are often installed as part of the highway drainage system and may be used to contain pollutants. Oil separators and catchpits may contain small and medium spills directly, although they are likely to be overwhelmed by larger spillages unless fitted with a shut off valve, which should be closed as soon as possible.

The location of these devices should be clearly marked on drainage maps and in emergency plans and it is recommended that a sign clearly indicating the location and type of device be placed at the road side. Type approval must be sought for any signs that are placed within the highway boundary from the highway authority. Regular exercises to ensure familiarity with their location and operation are recommended.

It is important that, once installed these structures are regularly inspected and maintained. For example, oil separators should be regularly inspected and emptied when required and the operation of valves and structures routinely checked.

During the planning of new roads or road improvements, the EPA will provide advice through the Department of Planning and Infrastructure about the installation of such devices. There may also be circumstances where the Branch may press for retrospective fitting of devices at known accident black spots or in areas draining to sensitive receiving waters.

When shut off valves, penstocks and other containment devices are fitted, it is important to ensure that the drainage system behind the device is of sufficient capacity to allow the full containment of any possible spillage. This will allow subsequent safe removal by licensed contractors. Further advice on the containment volumes required is available from the Agencies.

b. Pollution Control Equipment and Materials There are many types of portable equipment and materials available for containing and removing pollution that may also be used in conjunction with pollution traps. A short description of each is given below.

- **Sand** This is a versatile containment material which may be used to soak up spillages of oil and chemicals and used in sand bags to block off drains, or channel substances to a collection point. Sand should be kept dry and, once contaminated, properly disposed of. It must not be washed into drainage systems.
- **Proprietary Absorbents** Usually taking the form of granules, sheets, pillows or loose powders, these absorbents are designed to deal with hydrocarbon spills, although there are varieties that can be used on aqueous chemical spills and some that can be used on both. Once contaminated, these products must be properly disposed of.
- **Booms** Primarily designed for use on watercourses to control oil and other floating liquids, booms may also be used to isolate drains or contain and/or divert spillages on hard surfaces. There are two main types. An absorbent boom is filled with loose absorbent fibres, which can be designed for hydrocarbons, aqueous chemicals or both. A physical barrier boom is made from materials such as PVC or PU and inflated with air and/or water.



- **Drain Seals** These are designed to block drains and there are two main types.

The first can be used to seal a drain by covering the surface of a drainage gully. This type comes in a variety of forms, including purpose made devices such as clay mats and water filled bags.

Alternatively, they can be improvised using available materials such as a car footwell mat or a simple sheet of polythene weighted down with sand or earth.

The second type can be fitted inside a pipe. These are usually purpose made bags or tubes that are inflated with air, although a builder's bung can also be used very effectively. By using a pipe seal, the drainage system may itself be utilised as a temporary containment system where the pollutant can be safely held until it can be dealt with properly. In some cases it may also be possible to hose any spilt material still on the road surface into the blocked drain, allowing the incident to be dealt with more quickly and safely. However, care must be taken to ensure that the pressure head of the contained liquid does not cause the pipeblocker to fail. Extreme care should be exercised to ensure that a person installing a drainage blocker is not exposed to any hazardous conditions or materials. Care also has to be taken to ensure that the contained pollutant does not overflow and bypass contained drainage systems.

- **Sealing Devices and Substances for Damaged Containers** These devices and materials are designed for use when a tank, storage drum, valve etc has been punctured or damaged. Leak sealing equipment may take the form of a pad or clamp, which is put over the damaged area like a plaster, or be preshaped and inserted into the damaged area and then inflated.

Leak sealing putties are also available, ready made or supplied in a dry powder form to be mixed with water. These can be applied over the damaged area to form a temporary seal. A more permanent method may be required before moving the damaged vessel.

- **Overdrums and Portable Tanks** Overdrums are designed to safely store a leaking or damaged drum. They can also be used as a temporary store for a small quantity of a spilt liquid. For larger quantities, portable tanks in a range of sizes are available. In many cases, the use of a disposable liner will allow an overdrum or portable tank to be reused.

- **Neutralising Agents** Many substances can be safely neutralised once contained, for example Soda Ash may be used for dealing with acid spillages. Further advice on the most appropriate technique and availability of such agents will be available from CHEMSAFE member companies. If a soluble non-organic substance enters the water environment it may be possible to chemically neutralise the substance. This will need to be considered on a case by case basis. However, in most cases the only option with these substances will be to dam the watercourse to contain the pollutant for subsequent removal.

Availability Stocks of some materials may be held by government agencies and may therefore be available to deal with spillages. In some areas, the NTFRS have been supplied with pollution equipment, which can be brought rapidly to the scene of an incident.

Companies belonging to the CHEMSAFE scheme may also hold stocks of suitable equipment and materials that could be brought to the scene by the responding company.

Highway maintenance organisations are encouraged to keep stocks of suitable equipment and materials at their depots and it is recommended that vehicle operators carry a limited supply of absorbent and sealing materials on their vehicles, for use by the driver or emergency services. The rapid response to a leak or spillage this allows will prevent or mitigate pollution in many cases.

Many suppliers and manufacturers of pollution equipment offer an emergency response service. Further details should be obtained directly from such companies. (A list of these companies is kept by the Branch).

d. Improvised Equipment



Northern Territory Government

Department of Natural Resources, Environment and the Arts

Although proprietary equipment can be used to great effect, it may not be always be readily available. In these situations, containment may still be possible by using available materials. Examples include: the use of salvage sheets or tarpaulin and wooden planks to produce a temporary boom in a river; the use of fire hoses as a boom on the highway; using straw bales as a boom and absorbent; spreading earth onto small spillages; or constructing a dam using a shovel.