

Trade Waste Management for the Automotive/Engineering Industry



What is Trade Waste?

Trade waste is the liquid or liquid-borne waste generated from any industry, business, trade, manufacturing process or similar that is approved for discharge to sewer.

Why is trade waste an important environmental issue?

The automotive/engineering industry has the capacity to discharge large quantities of harmful substances into the sewerage system.

These substances may include lubricating oil, engine additives, rust inhibitors, paint, etc. and can harm Power and Water staff and severely inhibit treatment plant processes.

Power and Water prohibits these products from entering the sewerage system to ensure staff safety and effective treatment plant operations to ensure compliant discharge to environment.

Trade Waste Management System

The Trade Waste Management System (TWMS) provides a framework for the administration, acceptance and regulation of the disposal of trade waste to the Power and Water sewerage system.

Under the TWMS, a business that discharges trade waste to sewer will need to apply to Power and Water for a trade waste permit/agreement.

As a general rule, businesses that use substances such as lubricating oil, engine additives, rust inhibitors, paints or degreasers will need to install equipment to pre-treat their waste prior to discharge into the sewer.

Affected businesses and services

Premises affected include (but are not limited to):

- bus depot wash bays
- car detailers
- mechanical workshops
- car washes
- equipment hire companies
- construction equipment maintenance
- engine/gearbox reconditioning
- panel beaters/spray painter
- service stations (workshop only – forecourts and refuelling areas not accepted to sewer)
- car hire companies.

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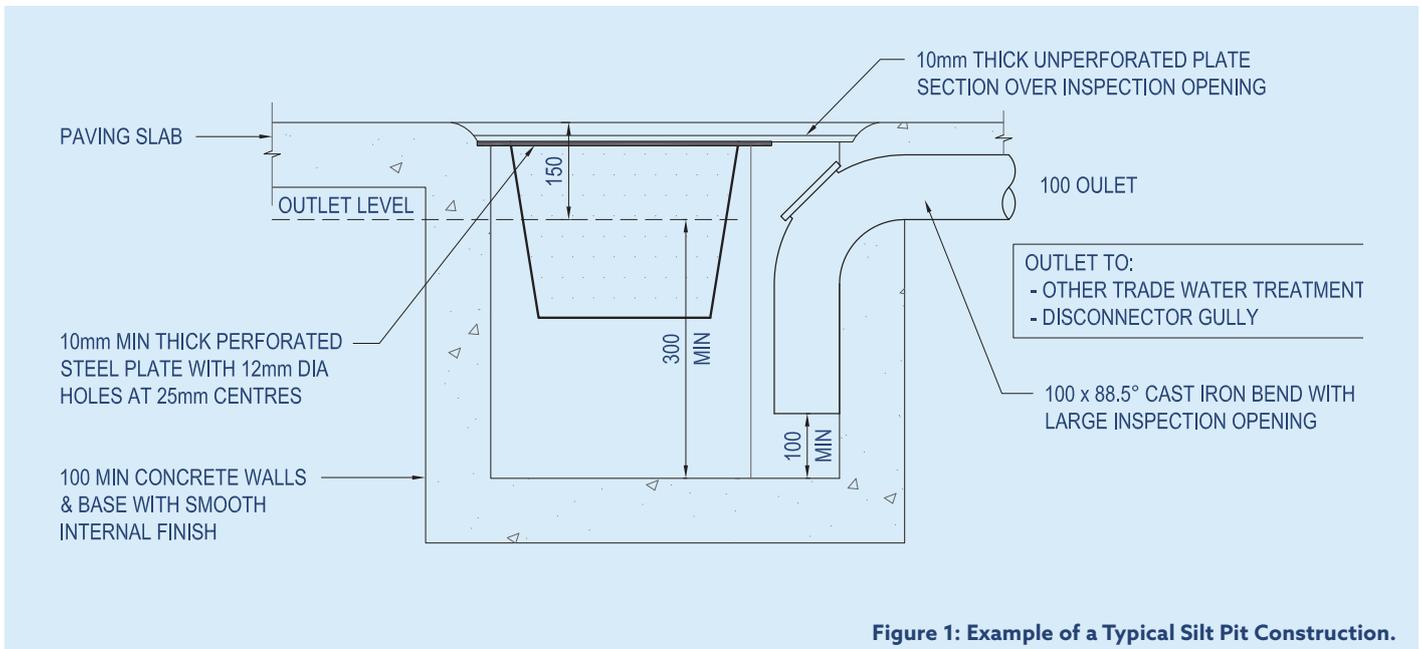


Figure 1: Example of a Typical Silt Pit Construction.

Silt pit

A silt pit is installed to collect and trap solids and silt that are washed or hosed into it. Solids are collected at the surface or in a removable basket. Silt is trapped at the base of the pit. When installing a silt pit ensure stormwater is not directed to sewer.

Collections Sump

A collections sump and non-emulsifying pump must be provided to collect:

- Water used for washing mechanical equipment or parts
- Floor wash-down
- Dedicated wash bay areas.

Where high loads of silt are expected a dedicated settling pit may be required.

What is an oil-water separator?

An oil-water separator removes non-emulsified oil from waste water. It uses the difference in specific gravity between two or more components in the wastewater to allow wastes to separate. Oil rises to the top and solids sink to the bottom. These units only treat oil contaminated water - not pure products.

A coalescing plate separator (CPS) or a vertical gravity separator (VGS) with a minimum capacity of 1000L/h must also be installed to treat waste water.

Where maximum flow rate exceeds 1000L/h, a larger capacity unit will be required and must be sized according to the maximum influent flow rate.

The units should be installed as per the manufacturer's

instructions, and where applicable, the distributor or supplier must be able to guarantee supply of parts and service maintenance.

An oil-water separator is more efficient if detergents are not used, i.e. cleaning with high-pressure water. If the use of detergents cannot be avoided, only quick-break detergents should be used.

- Degreasers should not be discharged into the sewerage system.
- The contaminated wastewater must be pumped to the oil-water separator with a low speed, non-emulsifying pump similar to a helical rotor or diaphragm pump.

Pre-treatment equipment maintenance

A maintenance schedule as specified by the manufacturer must be applied to ensure equipment is operational and is effective in preventing oil and grease from entering the sewerage system. A schedule of maintenance conducted on the equipment should be kept for review by the Power and Water Trade Waste Department.

The schedule shall provide:

- A description of activities to be undertaken (e.g. for coalescing, plate separators, the removal and cleaning of plates, sludge withdrawal from the hopper etc.)
- The date at which these service activities occur.
- Any repairs conducted on the equipment.

Residual waste from silt pits and oil-water separators must be removed on a regular basis and disposed in an approved manner by licensed bulk waste contractors.

House-keeping practices

- Businesses that use detergents to clean vehicles, mechanical parts or workshop floors are required to use quick-break detergents.
- Oil spills should be dry cleaned prior to wash down.
- Grease deposits should be removed prior to wash down.
- Screens may be used to prevent nuts and washers from fouling the pump intake.
- Oils and solvents should be stored in a separate dedicated embankment that cannot drain to the sewerage or stormwater systems.
- Petrol, diesel fuel, discrete oil, kerosene, solvents and other flammable/explosive substances must not be discharged to sewer.
- Any oil or chemical containers must be stored to prevent spills or leaks from entering the sewerage or stormwater systems.
- Careful selection of cleaning products can greatly impact on the quality of waste discharged to sewer. It is important to check products such as tyre cleaners do not contain high percentages of volatile concentrations.

Draining of Radiator Coolant

Large quantities of ethylene glycol have the potential to disrupt the operation of the sewerage treatment plant and must not be discharged to the sewerage system. Further, ethylene glycol can increase the emulsification of oils and greases and thereby reduce the efficiency of treatment systems.

Use and disposal of solvents

Solvents are often used to clean parts. Spent solvents must not be discharged to sewer - they must be collected and taken offsite for recovery or disposal. Take care to ensure the area used for parts washing does not drain to sewer or pre-treatment equipment. Final rinse water can be discharged to sewer via the pre-treatment equipment, provided the parts are dried and wiped clean prior to rinsing.

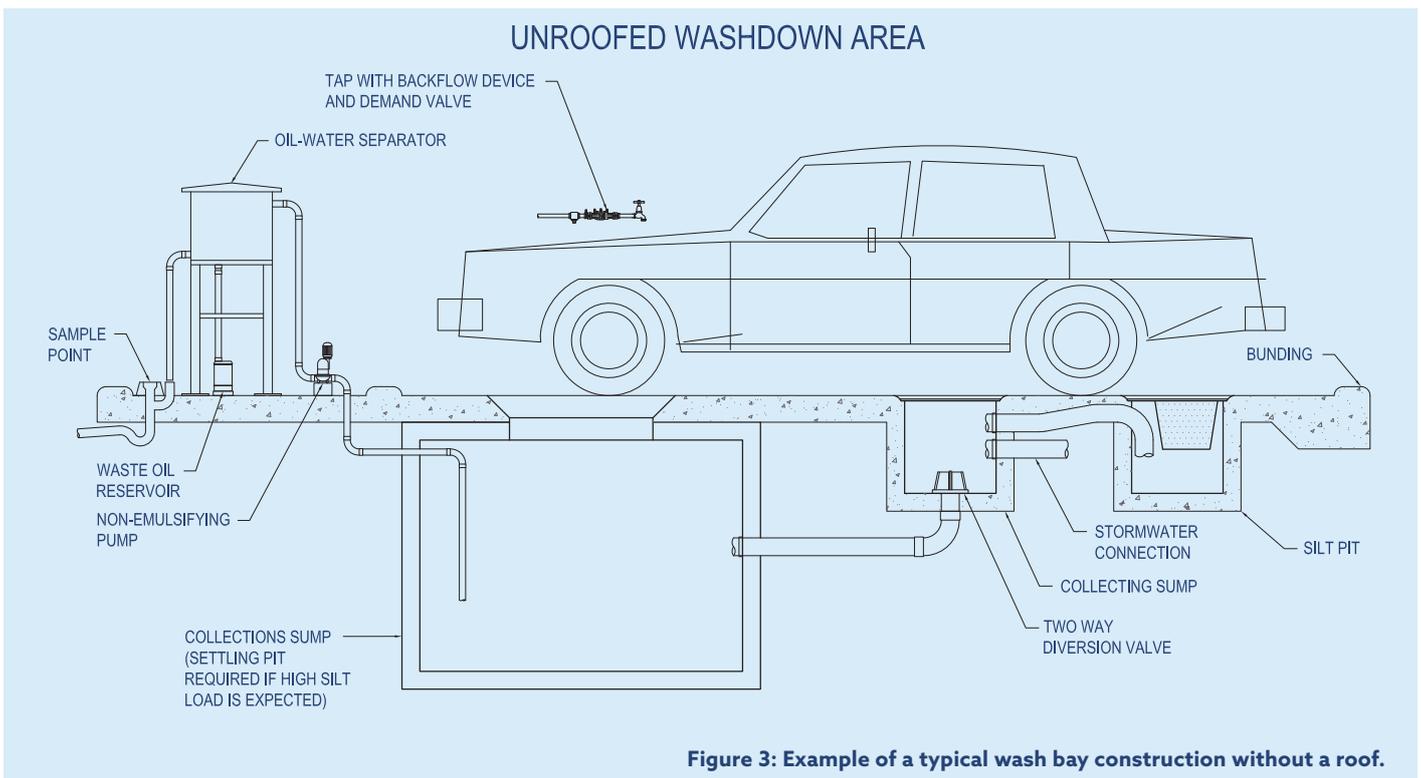
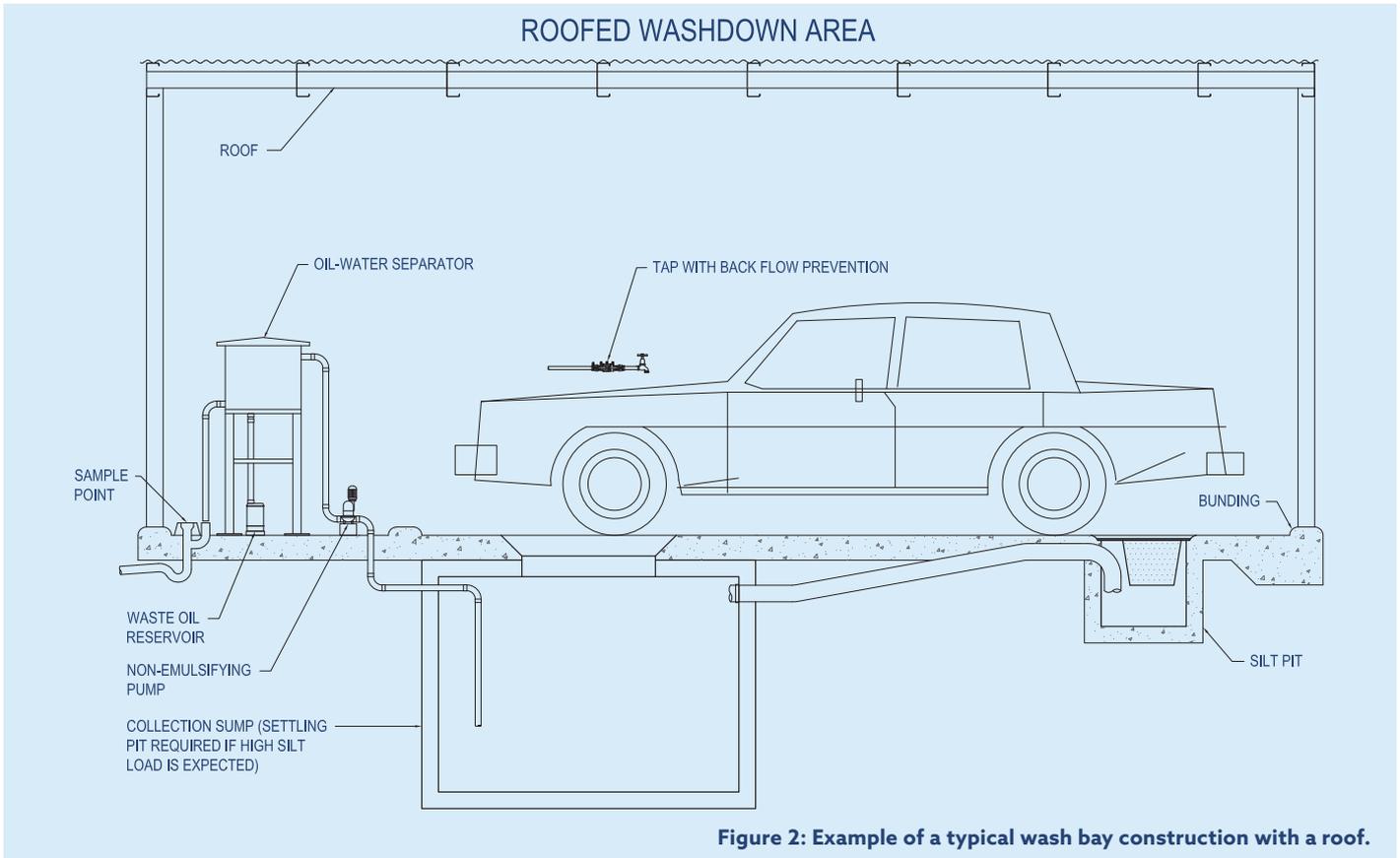
Wash Bays (vehicle, plant and equipment)

Wash Bays that are connected to sewer must comply with Power and Water regulations to prevent rain or storm-water entering the sewer.

Wash Bays must be appropriately roofed, bunded on all sides and have a water-resistant material base, preferably concrete.

When designing or installing a wash bay, the following conditions must be considered:

- The quality of waste discharged to sewer must meet the 'Acceptance Guidelines' set out in the Trade Waste Code.
- Practical re-use of water should be an important priority.
- External surface water must be prevented from flowing onto the wash down area.
- The roof should have sufficient overhang to prevent general rain from falling onto the slab area.
- Ensure that silt and fine particles settle out before the waste water enters the oil-water separator.
- The oil-water separator must be correctly sized to peak flow predictions.
- A dedicated sample point must be installed prior to discharge to sewer.
- A 'first flush/ two way diversion system' may be considered where a roof is impractical.
- Unroofed wash bays under 20 m² may be approved without a stormwater diversion system, pending written approval from a trade waste officer.
- Plans and details of the wash bay and treatment facilities must be submitted to Power and Water for approval prior to construction.
- The water supply to must be fitted with approved backflow prevention device/s.
- Where high volume use is expected (>10KL per day), an approved magnetic flow meter is to be installed to record the volume of trade waste discharged to sewer.



For further information

Contact a Power Water Trade Waste Officer on **1800 245 092** or email tradewastedept.pwc@powerwater.com.au

Further details can be found on the Power and Water website at <http://powerwater.com.au/tradewaste>