

Practice Note
**Managing run-off from
service station forecourts**

Draft for consultation

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Table of Contents

1. About this practice note	4
2. Summary	4
3. Best management practice in forecourt design	4
4. Collecting and disposal of forecourt run-off	5
5. Risk assessment and management	6
Applying a risk-based approach	7
6. Due diligence	7
7. More information	8
Useful links	8
Contacting the appropriate regulatory authority	8
8. Glossary	9

This practice note is to assist service station **occupiers** and **consent authorities** plan for and manage **run-off** from service station **forecourts**.

It aims to prevent or minimise harm to human health and the environment.

1. About this practice note

This practice note encourages the use of best practice strategies and technologies to improve the quality of run-off from service station forecourts. It is aimed at service station occupiers and consent authorities, usually local councils, who assess proposals for new and upgraded service stations.

It is consistent with British/European standards (BS EN 858-1:2002), Australian Industry Best Practice Guidelines 2017 - Australasian Convenience and Petroleum Marketers Association (ACAPMA) and reflects current acceptable practice at many metropolitan and non-metropolitan sites across Victoria, Queensland, Australian Capital Territory, South Australia and New South Wales (NSW). This practice note also advocates a '**risk based**' approach consistent with existing frameworks for conserving ambient water quality, as set out in the *Australian and New Zealand guidelines for fresh and marine water quality* (2018) (ANZAST guidelines).

While this practice note advises using best practice technologies, simply using best practice technology alone does not remove an obligation to comply with relevant environmental laws and planning requirements. This practice note should therefore be read in conjunction with relevant NSW legislation, and state and local government planning policies.

All references used within this practice note are consistent with the definitions and/or meanings provided under the *Protection of Environment Operations Act 1997* and its Regulations, unless otherwise stated in section 8 - Glossary.

2. Summary of best practice

The service station **occupier** should;

- For **new and modified service stations**, consider the design requirements, including site zone delineation, at the planning stage (section 3 and 4).
- Identify the level(s) of risk posed from forecourt run-off from a site (section 5).
- Propose the most appropriate collection and disposal technique(s) to manage identified risks (section 4).
- Ensure the operations meet environmental standards and conditions required by the consent authority, and comply with all legal obligations and requirements (section 6).

The consent authority should:

- Assess the proposed forecourt run-off management option as part of the overall development approval process (section 3 and 4).
- Apply any necessary controls as part of consent conditions to manage identified risks (e.g. treatment, maintenance and monitoring requirements) (section 5).
- Assesses the level of risk to an environmental value on a case-by-case basis (section 5).

3. Best management practice in forecourt design

The forecourts of service stations are generally hard stand surfaces consisting of re-fuelling areas, parking bays, trafficable and pedestrian access areas.

As water flows across these hard stand surfaces, for example during a rain event, it can collect residues of petrol and/or diesel which contain pollutants such as petroleum hydrocarbons, heavy metals, oil and grease, lubricants, coolants as well as suspended solids. These collected pollutants may then be washed into the stormwater system resulting in contaminated run-off.

The potential for chemical contamination across a service station forecourt will vary greatly. The occupier should demonstrate good design and management of the forecourt has been considered during the planning and design phase. A well designed forecourt area will separate those areas presenting the greatest risk of harm to the environment from contaminated run-off, such as where vehicle refilling occurs, from those areas presenting lower risks.

A service station forecourt should be physically divided into distinct zones. Run-off within each zone can then be directed via bunds or gradients to different collection points where it can then be managed/treated accordingly based on the contamination risk posed.

Figure 1 demonstrates good design for managing forecourt runoff at a service station.



Figure 1

1. Sealed surfaces.
2. Physical divide (bund or drain) between zones with higher risk of contamination and lower risk of contamination.
3. Canopy that extends to the maximum reach of fuel dispensing nozzles and has a 10 degree from vertical overhang reducing rainwater entering high contamination zones.
4. Storage area for waste bins.
5. Accessible and visible spill kits.
6. Bunded area for any hazardous chemicals away from fuel dispensers and trafficable areas.
7. Collection pit for treatment and/or removal of contaminated run-off or spills.
8. Stormwater drains collecting forecourt runoff from low contamination zones.
9. Collection pits to collect forecourt runoff from high contamination zones.
10. Bunding that encloses the underground storage tanks fill points to contain fuel spillages during refuelling activities.

4. Collection and disposal of forecourt run-off

High contamination risk zone(s) - refuelling and fuel delivery areas

The forecourt area containing the fuel dispensers and delivery points poses the greatest contamination risk from fuel spillage and a range of other potential pollutants. To avoid a pollution incident and minimise impacts on the environment, forecourt run-off and spillages from these high contamination zones should be managed using one of the following approaches:

1. The run-off is collected and stored in a **blind pit, tank or sump** for later disposal.

Note: Contaminated water, sludge and oily residues collected in a blind pit, tank or sump is classified as liquid waste and must only be removed off site by a licenced waste transporter and disposed of at a facility lawfully able to accept liquid waste.

A person who wilfully or negligently disposes of waste in a manner that harms or is likely to harm the environment is guilty of an offence under s 115 of the *Protection of Environment Operations (POEO) Act 1997*.

2. The run-off is discharged to the sewer system with prior written approval from the local water/sewerage authority.

As treatment of the run-off may be necessary to meet trade waste-water limits set by the local water/sewerage authority, it is recommended that proponents contact the local water/sewerage authority to discuss these requirements.

Note: Requirements for premises with refuelling points located in **non-metropolitan NSW**.

Discharging from service stations and other fuel handling facilities to the sewerage system for both new and refurbished service station businesses **is prohibited** (NSW Department of Industry (DPI) 2012 – Circular Local Water Utility (LWU) 13).

Existing service stations and refuelling points may continue to discharge to LWU sewerage systems in accordance with their trade waste approval.

3. The run-off is directed to the stormwater system, with prior treatment to a level of water quality that does not harm the environment. The **environmental values** of the receiving waters should be considered for this approach. See section 5 – Risk assessment and management.

Note: Any person who pollutes waters (or permits any waters to be polluted) is guilty of an offence under s 120 of the POEO Act.

The high contamination risk zone must have a spill containment system with capacity to contain the maximum spillage likely to occur within the catchment area. Site factors such as surface area, canopy coverage, average rainfall, tanker delivery volumes and gradients should be considered when determining the appropriate retention capacity. This assessment should be undertaken by a duly qualified person to ensure all standards, local planning and legislative requirements are met.

For new and modified service stations, these requirements, including site zone delineation, should be considered at the planning stage and addressed in the development application. The consent authority will assess the proposed forecourt run-off management option as part of the overall development approval process.

Low contamination risk zone(s) – parking, footpath and trafficable areas

If properly managed and maintained, low contamination zones identified across the service station forecourt area have far less potential to generate contaminated run-off. Even so, stormwater falling on these lower risk areas may still become contaminated via diffuse pollution sources.

The EPA considers it best practice to divert forecourt run-off from low contamination zones for treatment prior to discharge to the stormwater system. Treatment options may include but not be limited to;

- A **water sensitive urban design (WSUD)** approach suitable for either a new or existing service station (see [Water Sensitive Urban Design at Sydney Water](#))
- Diverting run-off to the treatment system that is already servicing the high contamination zone, ensuring that it has adequate treatment and retention capacity for both high and low contamination areas.

An assessment should be undertaken by a **‘duly qualified person’** to ensure all standards, local planning and legislative requirements are met.

5. Risk assessment and management

Each service station forecourt management option will inevitably pose a level of ongoing environmental risk. The risk will vary depending on the nature and location of the service station, the maintenance and adherence to management procedures by the operator, and the likely consequence to identified environmental values.

Note: The NSW Water Quality Objectives (WQOs) are the agreed environmental values and long-term goals for assessing and managing the likely impact of activities on surface and groundwater in NSW.

These WQOs support the environmental values outlined in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality Guidelines (ANZAST Guidelines).

The relevant considerations to assess the level of risk from forecourt run-off may include, but are not necessarily limited to:

- the type and quantity of likely pollutants contained in collected forecourt run-off and its impact on the environment, and
- the management measures that can be taken to prevent harm to the environment, and
- the environmental values affected by the proposed discharge, and
- the management measures that can be taken to restore or maintain those environmental values.

The risk of causing harm to the environment will significantly increase if forecourt run-off treatment options are under-designed, poorly installed or maintained and managed inappropriately.

Options for design, use, selection, installation, operation and maintenance of water treatment systems vary significantly. This practice note does not attempt to identify nor prescribe all the forecourt run-off treatment and/or management options currently available. New technologies are continually being developed that will further reduce risks. The EPA supports and encourages the use of new and innovative technology that reduces the impact of activities on the environment.

Applying a risk-based approach

The ANZAST guidelines provide key 'indicators' to consider when assessing if identified environmental values are at risk.

The level of risk to an environmental value will need to be determined on a case-by-case basis by the relevant consent authority. A more comprehensive assessment is required where there is a higher risk of forecourt run-off causing harm to the environment.

Where forecourt run-off from a service station is assessed as likely to pose a higher risk, strict controls may be imposed by a consent authority as part of consent conditions to manage the risk (e.g. treatment, maintenance and monitoring requirements).

It is the responsibility of the occupier of a service station to ensure the operations of the site meet environmental standards and conditions required by the consent authority, and comply with all legal obligations and requirements.

6. Due diligence

The occupier of a service station is responsible for environmental compliance and ensuring regular and appropriate maintenance and testing is undertaken on water treatment equipment. Further, all staff should be skilled in the operation of the treatment system and well trained in spill response procedures.

However, merely following best practice does not remove the occupier's obligation to comply with relevant legislation to prevent harm to the environment. While applying the risk-based approach may assist in minimising the risk of causing environmental harm, ultimately it does not provide a defence if a pollution offence occurs.

Any pollution incident that causes or threatens harm to the environment in accordance with the *Protection of Environment Operations Act 1997* should be investigated by the Appropriate Regulatory Authority as an offence under that Act.

It is essential that the service station occupier exercise all due diligence in order to minimise the environmental risk of the day-to-day operation, maintenance and management activities causing harm to the environment.

7. More information

The NSW EPA [Underground Petroleum Storage Systems – Best Practice Guide](#) provides useful information that can help in the development of a forecourt water management plan. The sections on spill actions and clean-up equipment are also important for ensuring better forecourt design and management.

Useful links

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZAST, August 2018),
- [Using the ANZAST Guidelines and Water Quality Objectives in NSW](#)
- [Local planning for healthy waterways using NSW Water Quality Objectives](#)
- NSW Government water quality objectives website: [NSW Water Quality and River Flow Objectives](#)
- EPA website: [Water Pollution Overview](#)
- EPA website: [About the Protection of the Environment Operations Act](#)
- EPA website: [Duty to notify pollution incidents](#)
- SafeWork NSW website: [Work Health and Safety Legislation](#)

Contacting the appropriate regulatory authority

Local councils are the appropriate regulatory authority in relation to surface water pollution from service stations.

Local council is usually also the consent authority for assessing development applications for new and significantly modified service stations, including forecourt water management systems.

General enquiries:

- Your local council. To establish which local council your site is in visit: [My local council | Office of Local Government](#)
- Environment Line: Phone 131 555
(or from outside New South Wales phone (02) 9995 5555)
- Email info@environment.nsw.gov.au (please state the nature of your enquiry in the subject line)
- Email upssreq@environment.nsw.gov.au
- Visit or contact your [local EPA office](#).

8. Glossary

All references used within this practice note are consistent with the definitions and/or meanings provided under the *Protection of Environment Operations Act 1997* and its Regulations, unless otherwise stated.

Blind pit, tank or sump

A collection point for forecourt run-off that is not connected to either the stormwater or sewer drainage systems.

Consent authority

The council, government agency or person having the function to determine a development application for land use under the *Environmental Planning & Assessment Act 1979*.

Duly qualified person

In relation to any activity, means a person who has such competence and experience in relation to that activity as is recognised in the relevant industry as appropriate for that activity.

Environmental values

Particular values or uses of the environment that are important for a healthy ecosystem or for public benefit, welfare, safety or health and that require protection from the effects of pollution, waste discharges and deposits. Several environmental values may be designated for a specific water body – for example an aquatic ecosystem, homestead, irrigation or livestock water supply, primary or secondary recreation waterway or visual amenity.

Forecourt

An open area, before the entrance to a building or group of buildings.

Indicator

A measurable or quantifiable characteristic or feature that can be used to provide a measure of the quality of water or the condition of an ecosystem – for example dissolved oxygen, total suspended solids, total petroleum hydrocarbons.

New or modified service station

Requires development consent under the *Environmental Planning and Assessment Act 1979*.

Occupier

Means the person who has management and control of the premises

Risk

A statistical concept defined as the expected likelihood or probability of undesirable effects resulting from a specified exposure to known or potential environmental concentrations of a material. A material is considered safe if the risks associated with its exposure are judged to be acceptable.

Run-off

The draining away of water (or substances carried in it) from the surface of an area of land, a building or structure.

Water sensitive urban design (WSUD)

A [land planning](#) and engineering design approach which integrates the urban water cycle (including [stormwater](#)) into urban design to minimise environmental degradation and improve aesthetic and recreational appeal.