Environment Protection Authority

EPA licensing guideline

Environmental risk levels

© 2022 State of NSW and the NSW Environment Protection Authority

With the exception of photographs, the State of NSW and the NSW Environment Protection Authority (EPA) are pleased to allow this material to be reproduced in whole or in part for educational and non-commercial use, provided the meaning is unchanged and its source, publisher and authorship are acknowledged. Specific permission is required for the reproduction of photographs.

The EPA has compiled this guideline in good faith, exercising all due care and attention. No representation is made about the accuracy, completeness or suitability of the information in this publication for any particular purpose. The EPA shall not be liable for any damage which may occur to any person or organisation taking action or not on the basis of this publication. Readers should seek appropriate advice when applying the information to their specific needs. This document may be subject to revision without notice and readers should ensure they are using the latest version.

All content in this publication is owned by the EPA and is protected by Crown Copyright, unless credited otherwise. It is licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0), subject to the exemptions contained in the licence. The legal code for the licence is available at Creative Commons.

The EPA asserts the right to be attributed as author of the original material in the following manner: © State of New South Wales and the NSW Environment Protection Authority 2022.

Published by:
NSW Environment Protection Authority
4 Parramatta Square
12 Darcy Street, Parramatta NSW 2150
Locked Bag 5022, Parramatta NSW 2124

Phone: +61 2 9995 5000 (switchboard)
Phone: 131 555 (NSW only – environment information and publications requests)
Fax: +61 2 9995 5999
TTY users: phone 133 677, then ask
for 131 555
Speak and listen users:
phone 1300 555 727, then ask for 131 555

Email: info@epa.nsw.gov.au
Website: www.epa.nsw.gov.au

Report pollution and environmental incidents
Environment Line: 131 555 (NSW only) or info@epa.nsw.gov.au
See also www.epa.nsw.gov.au

ISBN 978 1 922778 07 9
EPA 2022P3586
March 2022

Contents

This document outlines the EPA's approach to licensing under the risk-based licensing system.

1. About this document

This guidance has been developed by the NSW Environment Protection Authority (EPA) to provide the public and the regulated community with information on the EPA's approach to environment protection licensing under the risk-based licensing system. This document relates only to environment protection licences for premises and mobile plant: licenses for the transportation of trackable waste are not subject to risk-based licensing. This document is intended as a guide only and reflects the EPA's current operational policies.

2. EPA's regulatory approach

The EPA's regulatory approach is set out in our Regulatory Strategy and Regulatory Policy. The EPA has a balanced regulatory approach with eight elements:

- listen
- educate
- enable
- act
- enforce
- monitor
- require
- influence.

The EPA takes a responsive, risk-based and outcomes-focused approach to its regulatory functions. This includes selecting a response that is fit for purpose and appropriate to the actual or potential harm to the environment and human health, the seriousness of the non-compliance, the compliance history, and the context and occurrence of the non-compliance.

3. Risk-based licensing

The risk-based licensing system aims to ensure that all activities licensed under the *Protection of the Environment Operations Act 1997* (POEO Act) receive an appropriate level of regulation based on the level of risk they pose to the environment and human health.

3.1. Risk assessment process

Risk assessments evaluate potential sources of environmental and human health impacts associated with the activities undertaken at licensed premises and the likelihood of environmental harm occurring. They follow the principles outlined in the Australian Standard *AS/NZS ISO 31000:2009 Risk Management – Principles and guidelines*.

The process considers:

1. the day-to-day operations at the site
2. the risk of a pollution incident
3. the environmental management performance of the licensee.

The first two components of the risk assessment will result in a regulatory priority level being allocated for air (including odour), water, noise emissions and pollution incident risk. The overall regulatory priority for the licence is then determined by the following rules:

- high, if any element is allocated a high regulatory priority
- low, if all elements are allocated a low regulatory priority
- moderate, if all elements are moderate **or** if they are mix of low and moderate.

The methodology for calculating regulatory priorities has been formulated to consider the residual risks that activities pose for the environment and for human health after pollution control and mitigation measures have been taken into consideration. The EPA website has further information on the individual aspects of the risk assessment.

The third component of the risk assessment is to examine the environmental management performance of a licensee, considering:

- a licensee's compliance history, and regulatory actions undertaken by the EPA
- the management systems and practices a licensee has in place to control and mitigate environmental risks
- environment improvement programs.

An environmental management category (A, B, C, D or E) is then allocated to the licence, with E indicating the poorest environmental performers.

The results from the three components of the assessment are used to determine the overall environmental risk associated with the licensed activity. Level 1 indicates the lowest risk and Level 3 the highest.

3.2. Overall environmental risk matrix

Table 1 **Overall environmental risk, calculated from environmental management category and regulatory priority**

Environmental management category	Low overall regulatory priority	Moderate overall regulatory priority	High overall regulatory priority
E	Level 2	Level 3	Level 3
D	Level 2	Level 3	Level 3
C	Level 1	Level 2	Level 3
B	Level 1	Level 2	Level 3
A	Level 1	Level 1	Level 2

The overall environmental risk associated with each licensed activity (level 1, 2 or 3) is published on the EPA's Public Register. This provides the community with more information on the environmental risks, the performance of individual licensees and the EPA's regulatory activities.

4. EPA licensing approach to environmental risk levels

Risk-based licensing informs the level of regulatory and compliance oversight for activities that hold an environment protection licence under the POEO Act.

Environment protection licences may be issued subject to conditions or unconditionally. The EPA sets outcomes-based conditions in a licence, which allows flexibility for the licensee to determine how they achieve the environmental outcome.

The EPA drafts conditions to ensure they:

- are for an environment protection purpose (including the kinds specifically referred to in Part 3.5 of the POEO Act)
- fairly and reasonably relate to the activities being licensed
- are not unreasonable in the sense that only a reasonable decision-maker would have imposed such a condition
- impose similar regulatory requirements (in terms of performance outcomes) as other licences issued by the EPA (e.g. licences issued to premises from the same sector or within similar operating characteristics).

Below is the rationale for the EPA attaching conditions to environment protection licences and the range of conditions we may attach. The list starts with the conditions that are always attached to licences and then moves to those that may be applied as environmental risk, environmental sensitivity and operational complexity increase.

4.1. Standard conditions

The EPA attaches standard conditions to all licences that set out the legal, administrative, and procedural requirements for the licence holder. All licences require that:

- the activity is undertaken in an competent manner
- complaints received are monitored, investigated and reported
- a statement of compliance against licence conditions is reported each year through an annual return
- the licensee notifies the EPA of pollution incidents causing or threatening material harm to the environment.

These conditions play an important role in ensuring the integrity of the regulatory system for licensees across NSW. They provide the EPA with the confidence that the licence holder is accountable at the highest level for its environmental performance and for the self-monitoring of that performance.

4.2. Operating conditions

The POEO Act specifically requires that industry must not cause air pollution by failing to operate or maintain plant, carry out work or deal with materials in a proper and efficient manner. Operating equipment competently, maintaining equipment in a good working condition and employing best management practices will reduce potential impacts on the surrounding environment.

Overarching operating conditions; commonly referred to as Operating Condition 1 (O1) and Operating Condition 2 (O2), are attached to all licences to reflect requirements set out by the POEO Act.

Operating condition O1 states that licensed activities must be carried out in a competent manner. This includes:

- the processing, handling, movement and storage of materials and substances used to carry out the activity
- the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Operating condition O2 relates to the maintenance of plant and equipment. O2 states that all plant and equipment installed at the premises or used in connection with the licensed activity:

- must be maintained in a proper and efficient condition
- must be operated in a proper and efficient manner.

The EPA considers the relevant Australian standards, best-practice guidelines, industry guidelines and EPA policy and guidelines when assessing a licence holder's compliance with these overarching operating conditions.

4.3. Monitoring and limit conditions

The POEO Act requires industry to comply with any emission standards designed to protect against adverse impacts on the receiving environment and human health. Monitoring allows both the EPA to understand whether the licensee has complied with the POEO Act and the associated regulations, and the licensee to understand and demonstrate compliance with the requirements.

In some instances the EPA may attach performance-based conditions, such as concentration and volume limits, to a licence. Pollutant limits are based on applicable environmental goals for the receiving environment. Where limits have been set, it may also be necessary for the EPA to put conditions on the licence requiring representative monitoring, to determine compliance with the pollutant limits.

The EPA does not use licensing to regulate every potential pollutant that could be contained in a discharge from an activity. This is because some pollutants are present at such low levels in a discharge that they are highly unlikely to pose a reasonable risk of harm to human health or the environment. Also, some activities are conducted by licensees in such a way that discharges to the environment are avoided (such as where an intensive agricultural activity uses an engineered run-off retention basin).

4.4. Environmental risk, environmental sensitivity and operational complexity

Where an activity poses a higher risk to the environment, the EPA may address this by varying the licence and attaching new or revised licence conditions that are more prescriptive, specific and complex. The EPA may require the licence holder to:

- undertake pollution studies or pollution reduction programs to investigate the extent of the pollution and the impacts caused by the pollution
- determine possible measures that can be taken to mitigate the pollution
- implement additional requirements as needed.

For example, to understand the full range of pollutants contained in a water discharge from a licenced premises, a licence holder will generally need to characterise the discharge. The EPA may require:

- sampling and chemical analysis
    - at each discharge point, where the pollutants in the discharge may vary

    - at different times, where the pollutant types and concentrations in the discharge may vary with different operational activities at the premises
- an environmental audit of a premises, to develop a profile of chemical pollutants or naturally occurring pollutants that may be in the discharge from the premises. The audit may include
    - an inventory of the chemicals used at the premises
    - an assessment of the risks of water pollution, based on the adequacy of storage, handling and management of the chemical pollutants at the premises
    - an assessment of whether the activity is increasing the rate of generation of naturally occurring pollutants compared with natural background levels
- comprehensive flow data on the discharge and receiving waters
- an understanding of the environmental values of the water affected by the discharge and the practical measures available to restore or maintain those values
- research to identify the range of pollutants commonly found in discharges from an industry type or similar premises.

After considering the information obtained as a result of the above licence requirements and other relevant matters under section 45 of the POEO Act, the EPA will determine if further specific conditions are required to regulate the licensed activity.

5. Applying the licensing approach to specific risk levels

5.1. Level 1 licences – low-risk and good environmental performers

Generally, a level 1 licence is for an activity (or activities) that poses a low risk to the environment because:

- it generates minimal or no discharges (due to its nature, or because there are good environmental controls and management procedures in place)

or

- it is not situated in a sensitive environment.

Good environmental performers may also have a certified environmental management system (EMS) in place, or have elements of an environmental management system in place.

Licensees may:

- identify the aspects of their activities that interact with the environment and have the potential to pollute, and manage these aspects
- undertake monitoring of activities
- analyse and assess the results of measurements on an ongoing basis
- identify trends to make informed decisions regarding site operations.

Licensees that are low-risk and/or good performers will generally be regulated through the requirements of standard conditions, operating conditions O1 and O2 in particular.

While a level 1 licence will generally not have conditions that require monitoring to be undertaken, licensees remain responsible for understanding the pollutants discharged from their premises and the environmental impacts of these pollutants.

All licensees are required to comply with the POEO Act and regulations, regardless of the conditions, if any, that are imposed on their licence.

5.2. Level 2 and 3 licences

Level 2 and 3 licences are for activities that will pose a higher risk to the environment and therefore receive a greater level of regulatory oversight. Where a potential impact is determined to be a risk to the environment, the EPA may attach additional performance-based conditions to a licence.

Additional conditions that the EPA may attach to level 2 and 3 licences include:

- limit conditions
- operating conditions
- monitoring conditions
- pollution reduction programs.

For example, Section 128 of the POEO Act requires occupiers of non-residential premises to comply with any air emission standards prescribed by regulations. These standards are contained in Part 5 of the POEO (Clean Air) Regulation 2010. However, the EPA may attach limit conditions to a licence that are more stringent than the requirements of the Clean Air Regulation, to account for site-specific features such as meteorology and background air quality, and to protect against adverse air quality impacts in the areas surrounding the premises.

Level 2 and 3 licences will generally require monitoring to be done so that the EPA can determine compliance with licence limits. The licence will generally also require licensees to report the results of monitoring, including any exceedances of licence limits, in the annual return.

For higher-risk licences the EPA may attach additional conditions to supplement pollutant limits. In certain circumstances the EPA may attach pollution studies or pollution reduction programs or outcome-based, prescriptive operational conditions on a licence. These conditions may require high-risk licensees to undertake activities designed to reduce the overall quantity of pollutants being discharged to the environment, to reduce the potential for discharges of pollutants, or to collect information that could be used in determining future licence requirements.

There may be various premises-specific reasons to incorporate additional conditions into a licence, including:

- to address **exceptional situations**, such as premises discharging pollutants for which data are absent or limited, where it is difficult to develop licence limits based on water or air quality
- to incorporate **preventive requirements**, such as requirements to install process controls, containment structures, good housekeeping practices, and so on
- to address **foreseeable changes to discharges**, such as planned changes to process, products, or raw materials that could affect discharge characteristics
- to incorporate **pollution reduction programs** to provide the time necessary to comply with licence conditions
- to increase or decrease **monitoring requirements**, depending on monitoring results or changes in processes or products
- to impose requirements for **special studies** such as ambient stream surveys, bioaccumulation studies, sediment studies, pollutant-reduction evaluations, or other such information-gathering studies.

The approach in this guideline is not binding, and does not fetter the discretion of the EPA in regards to exercising licensing functions under the POEO Act. The EPA may depart from the approach if required by the circumstances. The EPA will continue to take into account all matters in section 45 of the POEO Act and will consider each licensed premises on a case-by-case basis.

5.3. Summary of the EPA's approach

The EPA's suggested approach to regulating environmental risk levels is summarised in Table 2. This indicates where more conditions than the standard operating, monitoring and reporting conditions may be required.

Table 2 Summary of the EPA's approach

Licence risk level	Approach
1	Level 1 licences will generally be regulated through standard conditions. Monitoring conditions may be required for licences with a discharge component. Monitoring may be required at the minimum frequency to be representative.
2	Licensees that demonstrate good environmental performance will generally be regulated through standard operating conditions. Higher-risk components of an activity may be managed through specific performance-based conditions. Once environmental performance has been demonstrated to reduce risks posed, and achieved improved environmental outcomes, the conditions may be removed. Monitoring of specific pollutants may be required. Monitoring conditions should be at a frequency required to be representative. Pollution studies and pollution reduction programs may be implemented to address any environmental issues.
3	Activities that pose an inherent risk to the environment will generally be regulated through standard conditions and may be subject to specific performance-based conditions aimed at reducing risks and improving environmental outcomes. Limit, monitoring and reporting conditions will usually be required. Pollution studies and pollution reduction programs may also be required to address activities that pose a risk to the environment. Some licences will have components of their activities that pose a high risk to the environment. The EPA may determine that these activities require limit conditions and the monitoring and reporting of emissions regardless of environmental performance.

There will always be individual premises that will not fit into this table. Decisions to attach additional operating, monitoring and reporting, financial assurance and audit conditions are made on a site-by-site basis. In addition, some licensees may request that additional conditions attached to their licence are retained. When considering such requests, the EPA will take into account the context of each individual request.

6. Effluent re-use by irrigation – an example

Effluent re-use by irrigation is a common activity carried on at many licensed premises. This example provides the general approach that the EPA takes to regulating an activity for environmental risk levels 1, 2 and 3.

The EPA has produced the effluent re-use guidelines to help licensees manage effluent re-use in a way that reduces the potential risk to the environment. To achieve sustainable effluent re-use and

maximise the value of the effluent resource, licensees conducting effluent re-use activities should meet the following objectives:

- protect surface waters
- protect groundwater
- protect lands
- protect plant and animal health
- protect public health risks
- use resources efficiently
- protect community amenity.

Irrigation systems must be sustainable. Depending on the strength and volume of effluent generated, a program of continuous monitoring and progressive modification may be necessary to correct design flaws and deficiencies.

A good environmental manager will adjust the system as more complete information about the site becomes available, accommodate changes in operation over time, identify trends, and continually assess effluent monitoring results against previous results and relevant criteria.

6.1. Level 1 licence

Effluent re-use by irrigation may be classed as a low-risk activity, if:

- the effluent generated is of low volume and strength
- the activity is not located in a sensitive environment
- the licensee has good environmental controls and management procedures in place.

Under this scenario, the operator is reasonably able to carry out an activity in a way that avoids discharge of pollutants to water – for example, where water is re-used in a way that avoids a discharge or run-off by using an engineered run-off capture basin.

In order to assess compliance with O1 for the activity of effluent irrigation, the EPA will examine the management practices in place, to identify any changes in the risks posed to the environment. This may include checking that a licensee is monitoring the strength and volume of effluent generated and soil conditions, and whether any samples have been collected and analysed in accordance with Australian Standards and the EPA's approved methods.

6.2. Level 2 and 3 licences

Level 2 and 3 licences will pose a higher risk to the environment and therefore will receive a greater level of regulatory oversight. The higher risk may reflect an operator located in a sensitive receiving environment, high volume and strength effluent being applied to the irrigation area, or the potential to discharge to waters.

Dependent upon the risk posed and the licensee's environmental performance in managing these risks, this may include a range of site-specific conditions and a greater frequency of site inspections.

The EPA may attach additional conditions that minimise any impacts of the activity and deliver improved environmental outcomes. For example, the EPA may attach:

- volume limits for discharge onto the premises, e.g. a volume limit for effluent applied to the utilisation area within the premises
- pollutant concentration limits for discharge onto the premises, e.g. a limit on pollutant concentrations permitted in effluent applied to utilisation area within the defined premises
- volume monitoring

- pollutant concentration monitoring
- ambient monitoring
- pollution reduction programs – to improve the performance of the licensee in the management of the activity of effluent re-use by irrigation.

A pollution reduction program may be attached to higher-risk licences, with the aim of minimising any impacts of the activity. A pollution reduction program may require that effluent irrigation systems are be located, designed, constructed and operated:

- in such a way that surface waters do not become contaminated by any flow from irrigation areas. These surface waters include effluent, rainfall run-off, contaminated sub-surface flows or contaminated groundwater
- in ways that do not diminish groundwater use, either now or in the future. Diminishment can occur from groundwater contamination caused by effluent or run-off from the irrigation scheme. It can also be due to the watertables changing because of over-irrigation
- to avoid unreasonable interference with any commercial activity or the comfortable enjoyment of life and property outside the site. Give special consideration to odour, dust, insects and noise
- so as not to compromise public health. Special consideration is given to providing barriers that prevent human exposure to pathogens and contaminants.

In addition, a pollution reduction program may require that:

- effluent irrigation systems are ecologically sustainable. In particular, the system should maintain or improve the capacity of the land to grow plants. There should be no deterioration of land quality through degradation of the soil structure, salinisation, waterlogging, chemical contamination or soil erosion
- effluent irrigation systems do not compromise the health and productivity of plants, domestic animals, wildlife and the aquatic ecosystem. Risk-management procedures will help avoid or manage the impacts of pathogenic microorganisms, biologically active chemicals, nutrients and oxygen depleting substances
- effluent irrigation schemes identify any potential resources in effluent – such as water, plant nutrients and organic matter – and develop and implement agronomic systems to effectively use these resources.

For further information on developing appropriate monitoring programs or undertaking practical measure to minimise impacts from effluent re-use by irrigation, see the EPA's effluent re-use guidelines.

Appendix: Examples of additional conditions

Activity of effluent re-use by irrigation

The tables in this appendix show what different types of conditions would look like on a licence.

Limit conditions

Tables 3 and 4 below show examples of two limit conditions for a monitoring point.

Concentration limits

For each monitoring/discharge point or utilisation area specified, the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table(s).

Table 3 Point 1 – water and land – concentration limits

Pollutant	Units of measure	50% concentration limit	90% concentration limit	3DGM concentration limit	100% concentration limit
		Data provided as an example only			
Biochemical oxygen demand	Milligrams per litre	15	20	-	30
Total suspended solids	Milligrams per litre	20	30	-	40
Phosphorus (total)	Milligrams per litre	-	-	-	5
Nitrogen (total)	Milligrams per litre	-	-	-	20

Volume and mass limits

For each discharge point or utilisation area specified below (by a point number), the volume/mass of

- liquids discharged to water
- solids or liquids applied to the area

must not exceed the volume/mass limit specified for that discharge point or area.

Table 4 Point 1 – volume/mass limit

Units of measure	Volume/mass limit
	Data provided as an example only
Kilolitres per day	20,000

Operating conditions

Management of utilisation area

The quantity of effluent/solids applied to the utilisation area must not exceed the capacity of the area to effectively utilise the effluent/solids.

For the purpose of this condition, 'effectively utilise' includes the use of the effluent/solids for pasture or crop production, as well as the ability of the soil to absorb the nutrient, salt, hydraulic load and organic material.

And/or

Effluent application must not occur in a manner that causes surface runoff.

Monitoring and recording conditions

Tables 5 and 6 below show examples of conditions related to monitoring.

Requirement to monitor concentration of pollutants discharged

For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.

Table 5 Point 2 – water and land – sampling method and frequency

Pollutant	Unit of measure	Frequency	Sampling method
Data provided as an example only			
Biochemical oxygen demand	Milligrams per litre	Every 6 days	Grab sample
Total suspended solids	Milligrams per litre	Every 6 days	Grab sample
Phosphorus (total)	Milligrams per litre	Every 13 days	Grab sample
Nitrogen (total)	Milligrams per litre	Every 13 days	Grab sample

Note: The monitoring results can be used to determine compliance with the pollutant concentration limits.

Requirement to monitor volume or mass

For each discharge point or utilisation area specified below, the licensee must monitor:

a) the volume of liquids discharged to water or applied to the area
b) the mass of solids applied to the area
c) the mass of pollutants emitted to the air

over the interval, at the frequency and using the method and units of measure, specified below.

Table 6 Point 3 – monitoring volume or mass

Interval for	Frequency	Units of measure	Sampling method
Data provided as an example only			
24 hr	Daily	Kilolitres/day	Pump hours multiplied by pump capacity

Note: The monitoring results can be used to determine compliance with the volume limits.