



General environmental duty

Code of practice for the release of stored water
from privately owned farm storages to receiving waters
in the Queensland Murray-Darling Basin 2024-31
Consultation Draft



Queensland
Government

Prepared by: Healthy Waters and Wetlands, Department of Environment, Science and Innovation

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- Cotton Australia
- Smartrivers
- Border Rivers Food and Fibre
- Queensland Farmers Federation

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- Darling Downs Environment Council Inc.
- Australian Floodplain Association
- Lower Balonne Working Group
- Lower Balonne Water Network
- Northern Basin Aboriginal Nations
- Southern Queensland Landscapes
- Department of Regional Development, Manufacturing and Water (DRDMW)
- Department of Agriculture and Fisheries (DAF)
- Department of Climate Change, Energy, the Environment and Water – Office of the Commonwealth Environmental Water Holder (CEWH).

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1 Introduction

This environmental code of practice provides guidance to operators to help them comply with the *Environmental Protection Act 1994* by meeting their general environmental duty. The code of practice also outlines the environmental best management practices of leaders in the industry.

Under Section 319 of the *Environmental Protection Act 1994*, all persons in Queensland must fulfil their 'general environmental duty'. This is defined as follows: 'A person must not carry out an activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm'. See **Appendix 1**.

This document describes **the activity "release of stored water from privately owned farm storages to receiving waters" (hereafter referred to as the "release of stored water")** the impacts on the environment, and how those impacts can be mitigated against in the interests of achieving environmental compatibility and complying with the *Environmental Protection Act 1994*.

The geographic scope of application of the code of practice is the surface waters of the Queensland Murray-Darling Basin.

Although this environmental code of practice is a voluntarily adopted standard for the release of stored water, complying with this code provides the operator with a defence against a charge of unlawfully causing environmental harm and several other charges to the extent the code is relevant. If you do not comply with this code of practice, you may still rely upon the defence of complying with your general environmental duty but will have to show how you met your general environmental duty another way.

2 Objective of the code

The environmental code of practice, and accompanying explanatory guide, aims to:

- address the matters under Section 319 (2) of the *Environmental Protection Act 1994*, including:
 - the nature of the harm or potential harm, and
 - the sensitivity of the receiving environment, and
 - the current state of technical knowledge for the activity, and
 - the likelihood of successful application of the different measures that might be taken, and
 - the financial implications of the different measures as they would relate to the type of activity.
- describe environmental issues confronting the release of stored water,
- assist operators to better consider the environment with which they interact,
- guide the on-farm planning in relation to possible release of stored water to ensure operations meet requirements of decision-making authorities,
- provide advice to decision-making authorities to enable them to make consistent decisions with respect to release of stored water,
- suggest practical measures to avoid or minimise environmental and social impacts associated with the release of stored water,
- allow industry to establish a benchmark of environmental performance associated with the release of stored water, and
- demonstrate to the community the environmental compatibility of the release of stored water.

3 Scope of the code

Under section 551 of the *Environmental Protection Act 1994*, the Minister may, by gazette notice, make codes of practice stating ways of achieving compliance with the general environmental duty for an activity that causes, or is likely to cause, environmental harm.

This environmental code of practice specifically addresses environmental aspects of the *Environmental Protection Act 1994* related to the release of stored water only. It does not cover

environmental or approval issues associated with planning or construction of storages, of initial water extraction or re-capture, or of any aspect of farming operations, and does not cover aspects covered by other legislation such as occupational health and safety, water resource management or fisheries. It does not cover environmental issues to do with siting or construction and does not cover aspects covered by other legislation such as workplace health and safety.

The code does not restate any requirements of the *Environmental Protection Act 1994*, nor does it override or replace federal, state or local government legislation, regulation, plans or policies.

The code of practice applies only to the waterbodies within the Queensland Murray-Darling Basin.

4 Commencement date

This environmental code of practice commenced on [consultation draft only – insert date of Minister approval at a later date] and has effect for seven years. To continue to have effect the code of practice must be reviewed and approved by the Minister by [consultation draft only – insert date 7 years after Minister approval]. Industry members are encouraged to provide feedback and to report new initiatives to their associations, so the code of practice can evolve through each review.

5 About release of stored water

Initial impetus for the activity was based on consideration by the Commonwealth Environmental Water Holder (CEWH) of the use of private irrigation infrastructure to divert, store, supply and/or re-direct water to achieve environmental outcomes as part of event-based mechanisms in the Northern Unregulated Rivers of the Murray-Darling Basin.

Since the concept was originally raised, release of stored water for purposes other than those of the CEWH have been identified. These could include:

- request by a State agency to satisfy a State purpose
- to allow a landholder to move water from one location to a nearby location, or
- to lower the water level in a private storage which was in urgent need of repair.

Other approvals may be needed to support these purposes and they are not part of this code of practice. The code is concerned with the potential impacts of releasing stored water on the values of the receiving environment, and those impacts and values are essentially the same irrespective of the purpose of release.

Any release requested by the CEWH would be for the purpose of achieving a targeted beneficial environmental outcome related to the environmental watering requirements specified for the region.

Contractual arrangements for the release of stored water would be agreed between landholders and the party requesting release (e.g., CEWH or a State agency). Such contractual arrangements are not part of this code of practice.

5.1 Environmental Risks

There are a number of environmental risks associated with the release of stored water to receiving waters. These primarily relate to the potential for the water to contain prescribed water contaminants, as per Schedule 10 of the *Environmental Protection Regulation 2019* (Refer to **Appendix 2**).

In summary:

- The activity of releasing stored water could potentially cause harm to the environmental values of the receiving waters.
- Contaminants may:
 - be present in the water when initially extracted,
 - be added to the stored water via farming activities,
 - develop as a result of changes to the quality of the stored water, and/or
 - result from erosion of the discharge pathway.

- The water in storage originates from river flows and / or overland flow, extracted under licence and primarily during elevated flow events. As such, whatever the quality of this water, the initial level of risk associated with extracted water is consistent with that of the water in the river. The code of practice cannot offer controls on the quality of this ambient water.
- The potential to add contaminants via farming activities relates to either:
 - direct contamination from spills during transport or mixing of chemicals, incorrect use, or poor control of application leading to drift
 - indirect contamination via the farm water management system.
- Each of the above risks has been addressed within the code of practice via incorporation of existing and accepted management strategies which have a high probability of success.
- The quality of stored water may change due to the time the water is held in storage and aging effects related to stratification (affecting temperature, dissolved oxygen and other attributes). The code of practice includes a simple monitoring approach to determine if stratification exists and suggests physical management options to reduce the effects of stratification prior to release of water.
- Erosion of the discharge pathway or storage walls may add suspended sediment (a prescribed water contaminant) to released water. The code of practice includes measures to reduce the risk of such erosion and mandates repair of any evident erosion.
- The event-based mechanisms nominated by the CEWH relate to enhancing (or supplementing) a naturally occurring flow event. As such, when releases from storages are activated, they are likely to represent a relatively low proportion of total flow in the river. While the annual flow management priorities of the CEWH will change over time and as determined by recent climate, as long as the environmental watering requirements remain as specified in current planning documents, the likely link of releases to naturally occurring flow events will remain strong.
- With appropriate implementation of the control measures within the code of practice, the risk of environmental harm from release of stored water is considered very low to low and any consequences likely to be localised and at a minor or inconsequential level.

5.2 Risks to Aboriginal Values and Uses

Aboriginal people have a strong spiritual, physical and cultural connection to land and water. Rivers and waterholes have significant value to the Aboriginal community for cultural, spiritual and ceremonial purposes. These aquatic ecosystems are important for people of the Aboriginal Nations in the Murray-Darling Basin for many activities, including, but not limited to, recreation, storytelling, fishing, singing and ceremonies, as well as water for economic development.

Consultation with representatives from the Northern Basin Aboriginal Nations identified that the release of stored water from privately owned farm storages to receiving waters presents potential risks to downstream Aboriginal values and uses. The activity should be managed in a way that ensures the quality of water is suitable to support cultural, spiritual and ceremonial values and uses as demonstrated by maintaining, at a minimum, the current water quality of the receiving waters.

5.2.1 Aboriginal Waterways Assessment

An Aboriginal Waterways Assessment (AWA) was undertaken under the former code of practice by the Euahlayi Nation for the waterways of the Lower Balonne to assess the cultural health index of the respective waterways. Aboriginal values and uses under the Murray-Darling Basin Plan 2012. Section 3.1.1.1 of the Explanatory Guide to this Code of Practice summarises the work.

The Department is committed to funding an additional AWA in the next 7 year term, upon agreement with Euahlayi Nation, to compare the results.

6 Using the code of practice

Best Management Practice (BMP) for broadacre irrigation is currently represented by the *myBMP* program of Cotton Australia. The program is also applicable to other crops and shares similar

modules with other agricultural BMP programs, such as Grains BMP (developed by Agforce, Fitzroy Basin Association and Department of Agriculture and Fisheries).

This code of practice has mirrored the structure of *myBMP* to make it easier for landholders to relate to their current practices; however, compliance with *myBMP* per se is not required in order to comply with this code of practice, which is a stand-alone document and includes additional measures specific to the activity.

As such, this code of practice:

- gives practical guidance on how environmental best management practices can be achieved during the release of stored water
- should be followed unless there is an alternative course of action that achieves the same, or better, environmental objective.

When using the code of practice, operators should tick each box (Section 7.1) if they comply, and such compliance must be able to be supported by documentary evidence.

It should be noted that a laboratory and field based analysis of the quality of water in storage:

1. conducted shortly before release of the stored water; and
2. with no potentially contaminating events in the interim; and
3. showing no contamination above water quality objectives, or
4. showing results no worse than the ambient water quality of the receiving waters;

will be taken as evidence of the success of control measures, without further need to show compliance with each control measure in this code of practice. This is taken as an appropriate alternative course of action (Refer to the alternative control measure listed under Performance Outcome 1.9).

Where the Code refers to legislation by date, it should be read as referring to any updates of that legislation applicable at the time of conducting the activity.

Environmental objectives are objectives or goals that the Queensland Government considers are necessary for operators to achieve in order to meet the 'general environmental duty' described under the *Environmental Protection Act 1994* when conducting releases of stored water.

The environmental objectives relevant to the release of stored water are as follows:

- *The activity will be operated in a way that protects the environmental values of waters*
- *The activity will be operated in a way that protects the environmental values of wetlands.*

Performance outcomes are the end result that the operator needs to achieve to meet the environmental objectives. You may decide to use the control measures in this code of practice to achieve the performance outcome or you may choose to use your own control measures. However, if you do not use the control measures in this code of practice, you will **not** be able to rely on complying with the code as a defence if you cause unlawful environmental harm. You may still rely upon the defence of complying with your general environmental duty but will have to show how you met your general environmental duty another way.

***Note:** Some performance outcomes provide the option for an environmentally harmful activity to be prevented or minimised. Prevention is the more desirable outcome. If the operator selects to minimise the harmful activity, it must be demonstrated that consideration has been made to the following:*

- *the nature of the harm or potential harm; and*
- *the sensitivity of the receiving environment; and*
- *the current state of technical knowledge for the activity; and*

- the likelihood of successful application of the different measures that might be taken; and
- the financial implications of the different measures as they would relate to the type of activity.

There is a single performance outcome in this code of practice:

- *There is no discharge to water of contaminants at a level which causes or is likely to cause material or serious environmental harm or create a nuisance from release of stored water to receiving waters.*

A number of sub-outcomes to achieve this overall performance outcome are specified in Section 7.

Control measures are examples of ways of achieving the overall performance outcome and sub-outcomes and are considered minimum requirements for complying with this code of practice. In some cases, a number of compliance control measures may be listed for one process. In these cases, you are advised to aim for the control measure, or combination of control measures, that is most likely to achieve the performance outcome for that process. Alternatively, you may be able to meet a performance outcome in a manner that is not listed in this code of practice (effectively choosing your own control measure or measures).

If you choose to use your own control measure, you will **not** be able to rely on complying with the code as a defence if you cause unlawful environmental harm. You may still rely upon the defence of complying with your general environmental duty but will have to show how you met your general environmental duty another way.

Best practice control measures are control measures considered to be in addition to the minimum requirements and are what industry leaders are achieving. Best practice incorporates concepts such as cleaner production, waste minimisation, recycling and reuse. Use of best practice control measures may help to improve industry standards and progress towards best practice in the industry. All control measures listed in Section 7 are best practice control measures unless marked as Level 1 *myBMP* – which identifies minimum standards and legal requirements.

In order that sustainable outcomes are achieved for both the industry and the environment, industry will endeavour to follow the principle of best practice environmental management (see section 21 of the *Environmental Protection Act 1994*).

Note: Best management practice in broadacre irrigated cropping is equated with Level 2 compliance with the myBMP program operated by Cotton Australia.

The relevant sections of myBMP presented in Section 7 represent current best practice (Level 2 myBMP) with respect to the release of stored water, unless marked as Level 1 myBMP – which identifies minimum standards and legal requirements. myBMP is regularly updated to ensure it remains best practice. The code may be amended if necessary (Section 4) but otherwise remains in force.

An operator can implement updated control measures contained within myBMP (which are not the same as those in the code of practice) and still comply with their environmental duty if they can show that the updated actions represent an alternative course of action that achieves the same, or better, environmental objective.

7 Environmental management plan

7.1 Develop a plan to protect your environment, reduce your business risks and gain a competitive advantage

An environmental management plan or system identifies environmental risks caused by the operation

and puts activities in place to manage these risks. The performance outcomes and examples for meeting environmental objectives listed in this document will form a solid basis for creating your management plan or system.

By reducing your environmental impact and adopting eco-efficient practices, you will be able to:

- minimise your environmental risk
- measure, plan and implement control measures to reduce energy, water, waste and materials
- enhance product quality and productivity
- improve financial performance
- reduce your business's carbon footprint.

An environmental management plan or system should achieve the following outcomes:

- all potential environmental risks from the activity are identified and control measures are in place to prevent or minimise the potential for environmental harm
- contingency measures are in place to avoid environmental harm in the event of unforeseen circumstances or natural disasters (e.g., flood)
- staff are trained and aware of their requirements of the *Environmental Protection Act 1994*
- reviews of environmental performance are undertaken periodically
- records of monitoring, incidents and complaints are kept
- an inspection/maintenance program is in place to ensure plant is running optimally and to help ensure emissions are minimised.

*By developing and following an **environmental management plan or system** your business can demonstrate that all reasonable care is being taken to avoid causing environmental harm. Your business will be able to use this reasonable care, or due diligence, as a defence for compliance purposes.*

7.2 Provide staff training

Encourage environmental awareness and responsibility amongst staff by providing appropriate staff training. It is your staff who will ensure that your operation remains compliant by recognising and minimising environmental hazards.

7.3 Environmental management plan for the release of stored water

The performance outcome, sub-outcomes and control measures listed in this code of practice constitute an appropriate Environmental Management Plan (EMP). If an action is brought against an operator (landholder) related to environmental harm or depositing a prescribed water contaminant, Section 493A (5) (a) and (b) of the *Environmental Protection Act 1994* determines the operator will be deemed to have complied with their general environmental duty if they are able to demonstrate compliance with this code of practice (to the extent relevant).

Alternative EMPs may be developed by individual operators. However, in such cases, operators will not be able to rely on complying with this code of practice as a defence if they cause unlawful environmental harm. Operators may still rely upon the defence of complying with the general environmental duty but will have to show how they met their general environmental duty another way.

This EMP ensures:

- all potential environmental risks from the activity are identified and control measures are in place to prevent, or minimise the potential for, environmental harm
- operators, staff and contractors are trained and aware of their requirements of the *Environmental Protection Act 1994*
- reviews of environmental performance are undertaken periodically

- records of monitoring and incidents are kept.

To reiterate, the performance outcome, sub-outcomes and control measures listed in this code of practice constitute an appropriate Environmental Management Plan (EMP). When using the code, operators should tick each box if they comply, and such compliance must be able to be supported by documentary evidence.

Prior to conducting a release of stored water, the operator should notify the Water Management unit of the Department of Regional Development, Manufacturing and Water regional business centre relevant to the region.

7.4 Performance outcome 1

There is no discharge to water of contaminants at a level which causes, or is likely to cause, material or serious environmental harm, or create a nuisance from the release of stored water.

Water	
Background	<p>The focus of the control measures is on best management practice related to all aspects of management of chemicals on farm, as this is considered the area of highest risk. This is because the quality of water in storage may be altered as a result of storage, or due to contamination from surrounding farming activities. Control measures have also been incorporated to address the issues of possible changes in water quality due to the length of time the water is stored, and erosion of channels or discharge locations. While some measures may not be specifically related to the release of stored water, good housekeeping across all aspects will minimise the possibility of contamination affecting stored water or the discharge channel.</p> <div style="background-color: #d9ead3; padding: 10px; margin-top: 10px;"> <p><i>Note: All control measures listed below are best practice control measures unless marked as Level 1 myBMP – which identifies minimum standards and legal requirements.</i></p> </div>
Definitions	<p>For the purposes of this code of practice, a reference to sensitive areas includes watercourses, bodies of water (including storages and intake/release channels/drains) and areas of remnant vegetation.</p>
Potential risks and impacts	<p>Stored water which contains prescribed contaminants may cause environmental harm if released to the aquatic ecosystem or may adversely affect the environmental values of the waterbody.</p>
Performance outcome 1.1	<p>Develop a farm map to identify sensitive areas and potential hazards.</p>
Best practice control measures	<p>✓ Suggested control measures</p> <p><input type="checkbox"/> A detailed farm map(s) has been developed, that shows:</p> <p style="padding-left: 20px;"><input type="checkbox"/> North orientation arrow</p>

	<ul style="list-style-type: none"> <input type="checkbox"/> Accurate scale <input type="checkbox"/> Location of property boundaries <input type="checkbox"/> Crop area <input type="checkbox"/> On-farm and neighbouring houses and buildings <input type="checkbox"/> Neighbouring agricultural areas identified (e.g., crops, grazing, bees, dairy, tree crops) <input type="checkbox"/> Buffer zones and sensitive areas <input type="checkbox"/> Aircraft and spray rig hazards e.g., powerlines <input type="checkbox"/> Windsocks, weather stations, public roads, railway lines, stock routes and school bus routes <input type="checkbox"/> Chemical and fuel storage. <p><input type="checkbox"/> Contact details (phone, UHF) for the farm, relevant employees, and neighbours are listed and kept with the farm maps.</p> <p><input type="checkbox"/> SataCrop is updated at the beginning of each season.</p>
Performance outcome 1.2	Workers are trained and provided information for the safe use of pesticides.
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures <input type="checkbox"/> All persons are instructed and trained in the safe use of pesticides including transport, application, mixing and loading and emergency procedures (Level 1 <i>myBMP</i>). <input type="checkbox"/> Workers know emergency procedures and emergency contact details (Level 1 <i>myBMP</i>). <input type="checkbox"/> All workers are informed about pesticide applications and crop re-entry period prior to spraying (Level 1 <i>myBMP</i>). <input type="checkbox"/> Personal Protective Equipment (PPE) is available and used as described on the label for mixing, loading and applying pesticides (Level 1 <i>myBMP</i>). <input type="checkbox"/> Safety Data Sheets (SDS) are available to workers for all chemical products used on farm (Level 1 <i>myBMP</i>). <input type="checkbox"/> Any person using pesticides as part of their work must have accredited training. <input type="checkbox"/> Hazardous work that includes pesticide preparation and application is carried out by healthy people who are not under 18 years of age, pregnant or nursing.
Performance outcome 1.3	Pesticide application requirements are discussed with spray consultants, spray applicators (ground and aerial) and property neighbours.
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures Spray consultant <input type="checkbox"/> A pre-season discussion is held with the spray consultant and documented [e.g., Pesticide Application Management Plan (PAMP)]. <input type="checkbox"/> Spray consultant is provided with a current farm map and contact details.

- Spray consultant provides all spray recommendations in writing.
- Communication for spray applications is clearly defined for:
 - who makes final decision on spraying
 - product selection
 - who orders the application
 - notification of job completed.

Spray Applicator (ground and aerial)

- Spray contractors agree to comply with all label requirements (Level 1 *myBMP*).
- Spray contractors must maintain and supply a copy of all application records that are legally required by State requirements (Level 1 *myBMP*).
- Contractors in Queensland applying herbicides must have chemical user accreditation (Level 1 *myBMP*).
- A pre-season discussion is held with all aerial and ground-rig spray contractors and documented (e.g., within the PAMP).
- Guidelines for acceptable spraying parameters are developed and provided to spray contractors (e.g., windspeed / direction, temperature, machine speed, water volumes, nozzles).
- Spray contractors are provided a current farm map and contact details.
- All pesticide application orders are provided in writing to the spray contractor (ground and aerial).
- Spray contractors provide written confirmation of job completed (e.g., pesticide application record).

Property neighbours

- Neighbours are notified of applications where legally required by the pesticide label (Level 1 *myBMP*).
- A pre-season discussion is held with all neighbours and documented (e.g., PAMP). Discussion includes:
 - location of neighbouring houses
 - location of neighbouring cropping, grazing, and sensitive areas
 - pesticide to be used and timing and method
 - the method and timing of notification
 - contact details for both parties
 - weather conditions to spray
 - how complaints are to be handled.
- Neighbours are notified of applications according to their pre-season instructions / requests.
- In the event of an adverse pesticide application or experience, it is reported.

Performance outcome 1.4	All chemicals are transported, stored, handled and disposed of in an appropriate manner.
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Best practice
control
measures

✓ Suggested control measures

- Only legal quantities of pesticides are transported by farm vehicles (Level 1 *myBMP*).
 - Pesticides are transported:
 - securely in the back of an open vehicle
 - isolated from people, food stuffs and other goods,
 - in containers that have been checked for leaks and breakages before loading and unloading (Level 1 *myBMP*).
 - All farm chemicals are stored securely (e.g., prevent theft, not accessible by children) (Level 1 *myBMP*).
 - All farm chemicals are stored in their original, labelled containers (Level 1 *myBMP*).
 - The pesticide store is located in an appropriate location and a safe distance from:
 - sensitive areas (water bodies, drains)
 - houses
 - the property boundary
 - ignition sources – e.g., fuel, corrosive substances or gas cylinders, free of vegetation
 - risk of flooding is considered (Level 1 *myBMP*).
 - The pesticide store is bunded to contain spills:
 - storage facility floor is made of an impermeable surface such as concrete or steel
 - the floor is bunded to contain spills (bunding is to contain 25% of the total volume stored, or 100% of the largest container, or whichever is greater (Level 1 *myBMP*)).
 - The pesticide store has adequate ventilation for its size:
 - one or more sides of the storage building is open, or
 - vents are installed in walls or ceilings (Level 1 *myBMP*).
 - Pesticides are stored in an appropriate shed / store:
 - separate building, room or enclosure
 - access to running water (e.g., eye wash, emergency shower)
 - large enough to store the largest amount of pesticide at one time
 - constructed of fire resistant and chemical resistant materials (Level 1 *myBMP*).
 - A register of hazardous chemicals is kept (Level 1 *myBMP*).
- Note: If hazardous chemicals exceed Manifest Quantities, notification is required to the Queensland SafeWork agency. A hazardous chemical manifest records, site plan and emergency procedures will need to be provided.*
- Chemical groups (flammables, poisons, herbicides and insecticides) are separated from each other in the store (Level 1 *myBMP*).
 - Wherever practical, only minimum quantities are stored on farm with extra product sourced as required (Level 1 *myBMP*).
 - Appropriate safety signs are clearly visible at the chemical store (Level 1 *myBMP*).
 - An emergency plan has been written, is clearly displayed and

	<p>employees and spray contractors must know the emergency plan and clean up procedures for chemical spills (Level 1 <i>myBMP</i>).</p> <ul style="list-style-type: none"> <input type="checkbox"/> Safety Data Sheets (SDS) are available for all chemicals and fuel stored on farm (Level 1 <i>myBMP</i>). <input type="checkbox"/> Emergency equipment is available for use in the event of a spill, poisoning or fire and the following are kept at the storage facility: <ul style="list-style-type: none"> <input type="checkbox"/> emergency spill kit <input type="checkbox"/> first aid kit, <input type="checkbox"/> fire extinguisher <input type="checkbox"/> ready access to clean water or an emergency eye wash / emergency shower (Level 1 <i>myBMP</i>). <input type="checkbox"/> Label recommendations for correct mixing order are always followed (Level 1 <i>myBMP</i>). <input type="checkbox"/> Suitable equipment is available to accurately measure quantities of pesticides (Level 1 <i>myBMP</i>). <input type="checkbox"/> The mixing site/ wash down bay is at an appropriate location (Level 1 <i>myBMP</i>). <input type="checkbox"/> Emergency equipment is available on the spray rig or at the mixing loading site when mixing and loading pesticides (Level 1 <i>myBMP</i>). <input type="checkbox"/> Closed transfer systems are used for highly hazardous pesticides. <input type="checkbox"/> Mixing equipment is checked for breaks and leaks regularly and calibrated prior to use. <input type="checkbox"/> Water quality has been considered as poor water quality can affect product efficacy. <input type="checkbox"/> Petrochemical storage tanks used at, or near, bodies of water are set back where possible, bunded as required by Australian Standard (AS) 1940 and potential spills are prevented from reaching the water. <input type="checkbox"/> Out of date, or products that are no longer registered, are disposed of using Chemclear®, ChemCollect® or through a hazardous waste disposal centre (Level 1 <i>myBMP</i>). <input type="checkbox"/> All containers are triple rinsed during mixing. The rinsate is added to the spray tank (Level 1 <i>myBMP</i>). <input type="checkbox"/> Disposal of empty chemical containers is managed responsibly (e.g., drumMUSTER® program) (Level 1 <i>myBMP</i>). <input type="checkbox"/> Empty containers are stored securely prior to disposal. <input type="checkbox"/> Pesticides are purchased in recyclable or returnable containers where available. <input type="checkbox"/> Intermediate Bulk Containers (IBC) are returned to the local reseller or recycled through an appropriate recycling program.
Performance outcome 1.5	Careful consideration is given to chemical selection and application.
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures <input type="checkbox"/> Only registered products or products with current permits are selected and used on farms (Level 1 <i>myBMP</i>).

	<ul style="list-style-type: none"> <input type="checkbox"/> All product selections take into account potential for off-target damage (e.g., formulation type, adjuvant, odour, toxicity, effect on beneficial insects including bees) (Level 1 <i>myBMP</i>). <input type="checkbox"/> Pesticide labels that state 'spray drift restraints' and mandatory 'no spray zones' are adhered to, and a record of the no spray zone must be kept (e.g., map or spray record) (Level 1 <i>myBMP</i>). <input type="checkbox"/> The Insecticide Resistance Management Strategy (IRMS) for the region and Herbicide Resistance Management Strategy (HRMS) are followed for production selection and timing of application. <input type="checkbox"/> Weather conditions are monitored and recorded at the site of application at the start, during and completion of each spray job (Level 1 <i>myBMP</i>). <input type="checkbox"/> The grower ensures pesticide application takes place only during appropriate weather conditions (i.e., field specific weather parameters are established) for the application method as stated on the label (Level 1 <i>myBMP</i>). <input type="checkbox"/> Weather forecasts are used where possible to determine appropriate application windows. <input type="checkbox"/> Regular maintenance of weather monitoring equipment. <input type="checkbox"/> Where a specific spray quality is a label requirement, nozzles are selected and operated at pressures, for both ground-rig or aerial application, to satisfy this requirement (Level 1 <i>myBMP</i>). <input type="checkbox"/> Nozzles to reduce drift are selected where possible (e.g., coarse output). <input type="checkbox"/> Nozzle flow rates are calibrated prior to seasonal spraying activities (winter and summer) <input type="checkbox"/> Automatic rate controller (where fitted) setting is checked and adjusted according to the application as required. <input type="checkbox"/> Pressure gauges are checked for accuracy and spray lines are checked for even pressure. <input type="checkbox"/> Travel speed is selected to ensure boom stability is maintained. <input type="checkbox"/> Where banded applications are made, the boom / nozzle height is adjusted to match band width chosen. <input type="checkbox"/> Plumbing and nozzle spacing are set to match row spacing and planting configurations. <input type="checkbox"/> Shielded sprayers are used where appropriate and practical. <input type="checkbox"/> Spray equipment is cleaned and decontaminated between different product applications.
Performance outcome 1.6	Plans are developed and implemented to manage tailwater and stormwater on farm.
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures <input type="checkbox"/> All irrigation tailwater is contained either on-farm or in a shared group water supply scheme (Level 1 <i>myBMP</i>), but should be separated from the stored water which may later be released under this code.

	<ul style="list-style-type: none"> <input type="checkbox"/> Irrigation discharge points should direct tailwater away from sensitive areas. <input type="checkbox"/> Where possible, vegetative barriers at least six (6) metres wide are maintained between cropping lands and sensitive areas. <input type="checkbox"/> An effective stormwater management system is in place for managing storm events (e.g., minor, moderate, severe events) (Level 1 <i>myBMP</i>). <input type="checkbox"/> The first flush of stormwater runoff from treated areas is retained on-farm (Level 1 <i>myBMP</i>), but should be separated from the stored water which may later be released under this code. <input type="checkbox"/> Any planned new infrastructure to contain tailwater and/or stormwater storages complies with legislation. <input type="checkbox"/> A documented stormwater management plan exists to manage storm events.
Performance outcome 1.7	Practices are used to manage storage and discharge systems to prevent or minimise environmental harm.
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures <input type="checkbox"/> Any planned new infrastructure which effects flow of water to, or from, a river complies with legislation (Level 1 <i>myBMP</i>). <input type="checkbox"/> Compliance with State legislation for the capture of overland flow and rainfall runoff (Level 1 <i>myBMP</i>). <input type="checkbox"/> Storages and channels (new and reconfigured) are located, designed to minimise evaporation, seepage losses and constructed by a qualified person. <input type="checkbox"/> Storages are surveyed to determine accurate storage volumes. <input type="checkbox"/> Regular monitoring and maintenance of storages and channels for leaks, seepage and erosion. <input type="checkbox"/> Storages are managed to minimise evaporation and seepage losses. <input type="checkbox"/> Regular pump maintenance is undertaken. <input type="checkbox"/> Storages do not receive solid or liquid waste from any aspect of farming operations. <input type="checkbox"/> Any water storage which was used as a cropping area within the previous twelve (12) months must undertake water quality testing for contaminants and show satisfactory results prior to being eligible to release water under this code.
Performance outcome 1.8	Riverbanks and waterways in the location of the discharge point are stabilised (if necessary) to prevent and reduce erosion caused by the discharge.
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures <input type="checkbox"/> Natural resources are identified and recorded on a farm map or whole farm plan (e.g., natural resources include riparian vegetation, native vegetation, rivers, creeks, wetlands etc.).

	<ul style="list-style-type: none"> <input type="checkbox"/> Areas of erosion risk (e.g., uncontrolled sediment and salt movement into waterways) have been assessed. <input type="checkbox"/> Obtain technical advice and relevant approvals before commencing any works in-stream or along banks including the removal of materials such as logs and gravel (Level 1 <i>myBMP</i>). <input type="checkbox"/> Identify and manage bank instability and erosion along riverbanks (e.g., pump sites), including by construction of approved bank stabilisation works if necessary. <input type="checkbox"/> Native vegetation is retained (minimum of 30 metres along top of bank) and protected in riparian areas, with natural regeneration actively promoted. <input type="checkbox"/> Leave native vegetation, logs, woody debris and rocks along banks to provide bank stability. <input type="checkbox"/> Stock access is managed to minimise bank instability, loss of groundcover, damage to native vegetation and promote regeneration.
Performance outcome 1.9	<p>There will be no release of stored water containing contaminants at a level which may lead to material or serious environmental harm or create a nuisance.</p>
Best practice control measures	<ul style="list-style-type: none"> ✓ Suggested control measures <input type="checkbox"/> Upon becoming aware of a possible requirement to release stored water to a receiving environment, the operator will review all relevant documents related to compliance with this code and consider the likelihood that the stored water has been contaminated by farming activities, stratification or erosion. Compliance with this code of practice will result in a low level of risk. <input type="checkbox"/> In undertaking the assessment of the suitability of the storage water for release, the operator should consider any water quality monitoring data available for the storage and the receiving watercourse. <input type="checkbox"/> If no recent analytical data¹ is available at the time the release is desired, the operator should visually inspect the storage for evidence of healthy aquatic life including algal² or macrophyte growth, fish or macroinvertebrates. Visually apparent healthy aquatic life reduces the risk that the water is significantly contaminated. The converse is also true. <input type="checkbox"/> Physical evidence of contamination such as slicks, discolouration, reduced clarity and odour should be included within the inspection. <input type="checkbox"/> If the water in storage proposed for release received tailwater or field derived stormwater runoff, the quality of the water must be tested for contaminants through laboratory and field based analysis (Refer to

¹ Recent analytical data is defined for the purpose of this code of practice as data collected in the three (3) weeks prior to the current date.

² Note: To identify a Harmful Algal Bloom, in which the storage water would not be suitable for release, refer to the following document: https://environment.des.qld.gov.au/__data/assets/pdf_file/0025/90790/biological-assessment-background-information-on-freshwater-and-marine-microalgae-and-harmful-algal-blooms.pdf

Appendix 3). ‘Quick test’ sticks may be used if available for water quality parameters identified as a risk.

A release to receiving waters may be conducted if:

- 1) the results show no contamination above the water quality objectives for the receiving waters (to protect the environmental values); or
 - 2) the results of a particular indicator do not exceed the ambient water quality of the receiving waters.
- In the period October to May, if the storage is more than four (4) metres deep and water has been undisturbed for at least four (4) months, the temperature difference between top and bottom waters should be measured. If a difference of 5°C or more is evident, the water should be circulated (mixed) prior to release to the environment (e.g., by moving to another storage cell or by passing the water through re-aeration structures).
 - The depth of water in storage should be noted and included within the assessment of the suitability of the storage water for release. Shallow water (less than 1 metre deep on average when release is requested) is less likely to be suited for release.
 - Water quality monitoring samples should be collected, stored and analysed in accordance with the *Queensland Monitoring and Sampling Manual 2018*, as amended, and any specific requirements of the laboratory conducting the analysis.
 - Water quality monitoring samples should be analysed at a National Association of Testing Authorities (NATA) laboratory that has been accredited to conduct the relevant analyses.
 - Outcomes of the assessment of the suitability of the storage water for release will be documented and reported to the body requesting the release and to the Department of Environment and Science by email at evinfo@des.qld.gov.au.

If any observation suggests the release is causing or may cause environmental harm, the release must be stopped, and the Department of Environment and Science must be notified in accordance with Section 320A of the *Environmental Protection Act 1994*.

Alternative control measure to achieve Performance Outcome 1.9:

✓ Suggested control measure

Laboratory and field based analysis of the quality of water in storage and in the receiving waters conducted within three (3) weeks of the release of the stored water (and with no potentially contaminating events in the interim) will be taken as evidence of the success of control measures, without further need to show compliance with each control measure in this code of practice, if:

- (1) the results show no contamination above the water quality objectives for the receiving waters (to protect the environmental values); or
- (2) the results of a particular indicator do not exceed the ambient water quality of the receiving waters.

Refer to **Appendix 3** for a description of monitoring to be conducted during the release of water from privately owned farm storages to receiving waters.

Note: If undertaking the alternative control measure to achieve Performance Outcome 1.9, erosion of riverbanks and waterways in the location of the discharge point will still need to be managed in accordance with Performance Outcome 1.8.

Appendix 1: General obligations under the *Environmental Protection Act 1994*

This appendix is not intended to provide a comprehensive assessment of all obligations under Queensland law. It provides general information and persons are encouraged to familiarise themselves with all requirements related to their specific operation.

General environmental duty

The *Environmental Protection Act 1994* section 319 states that we all have a general environmental duty. This means that we are all responsible for the actions we take that affect the environment. We must not carry out any activity that causes or is likely to cause environmental harm unless we take all reasonable and practicable measures to prevent or minimise the harm. To decide what meets your general environmental duty, you need to think about these issues:

- the nature of the harm or potential harm
- the sensitivity of the receiving environment
- the current state of technical knowledge for the activity
- the likelihood of successful application of the different measures to prevent or minimise environmental harm that might be taken
- the financial implications of the different measures as they would relate to the type of activity.

It is not an offence not to comply with the general environmental duty however maintaining your general environmental duty is a defence against the following acts:

- a) an act that causes serious or material environmental harm or an environmental nuisance
- b) an act that contravenes a noise standard
- c) a deposit of a contaminant, or release of stormwater run-off, mentioned in section 440ZG.

Duty to notify

The duty to notify (sections 320-320G of the *Environmental Protection Act 1994*) requires a person or company to give notice where serious or material environmental harm is caused or threatened to occur. Notice must be given of the event, its nature and the circumstances in which the event happened. Notification can be verbal, written or by public notice depending on who is notifying and being notified.

For more information on the duty to notify requirements refer to the guideline '*The duty to notify of environmental harm*'³.

Relevant offences under the *Environmental Protection Act 1994*

Causing serious or material environmental harm (sections 437-439)

Material environmental harm is environmental harm that is not trivial or negligible in nature. It may be great in extent or context, or it may cause actual or potential loss or damage to property. The difference between material and serious harm relates to the costs of damages or the costs required to either prevent or minimise the harm or to rehabilitate the environment. Additionally, serious environmental harm may have irreversible or widespread effects, or it may be caused in an area of high conservation significance. Serious or material environmental harm excludes environmental nuisance.

³ Available at www.qld.gov.au, using the publication number ESR/2016/2271 as a search term.

Causing environmental nuisance (section 440)

Environmental nuisance is unreasonable interference or likely interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke. It may also include an unhealthy, offensive or unsightly condition because of contamination.

Depositing a prescribed water contaminant in waters (section 440ZG)

Prescribed water contaminants include a wide variety of contaminants listed in Schedule 10 of the *Environmental Protection Regulation 2019*. It is your responsibility to ensure that prescribed water contaminants are not left in a place where they enter, or have the potential to enter, a waterway, the ocean or a stormwater drain. This includes making sure that stormwater falling on, or running across your site, does not leave the site contaminated. Where stormwater contamination occurs, you must ensure that it is treated to remove contaminants. You should also consider where and how you store material used in your processes onsite to reduce the chance of water contamination.

Placing a contaminant where: serious or material environmental harm may be caused (section 443); or environmental nuisance may be caused (section 443A).

Penalties can apply if a person causes, or allows, a contaminant to be placed in a position where it could reasonably be expected to cause serious or material environmental harm, or an environmental nuisance.

Relevant offences under the Waste Reduction and Recycling Act 2011

Littering (section 103)

Litter is any domestic or commercial waste and any material a person might reasonably believe is refuse, debris or rubbish. Litter can be almost any material that is disposed of incorrectly. Litter includes cigarette butts and drink bottles dropped on the ground, fast food wrappers thrown out of the car window, poorly secured material from a trailer or grass clippings swept into the gutter. Litter can also be an abandoned vehicle. However, litter does not include any gas, dust, smoke or material emitted or produced during, or because of, the normal operations of a building, manufacturing, mining or primary industry.

Illegal dumping of waste (section 104)

Illegal dumping is the dumping of large volumes of litter (200 litres or more) at a place.

Appendix 2: Prescribed water contaminants as listed in Schedule 10 of the *Environmental Protection Regulation 2019*

1. a chemical, or chemical waste containing a chemical

Examples—

- biocide, including herbicide, fungicide and pesticide
 - chemical that causes biochemical or chemical oxygen demand
 - per and poly-fluoroalkyl substances (PFAS)
2. a gas other than oxygen
 3. a liquid containing suspended or dissolved solids
 4. a liquid that has a temperature different by more than 2°C from ambient water temperature
 5. animal matter, including dead animals, animal remains and animal excreta, and water used to clean animals, animal enclosures or vehicles used for transporting animals
 6. ashes, clay, gravel, sediment, stones and similar organic or inorganic matter
 7. a substance that has a pH outside the range 6.5 to 8.5
 8. building and construction materials, including bitumen, brick, cement, concrete and plaster

Examples—

- cement washed to create exposed aggregate treatment
 - coloured powder used to create stencilled concrete features
9. building, construction and demolition waste, including bitumen, brick, concrete cuttings, plaster and waste water generated by building, construction or demolition
 10. clinical waste
 11. glass, metal parts, paper, piping, plastic and scrap metal
 12. industrial waste
 13. oil, including, for example, petroleum or vegetable based oil
 14. paint, paint scrapings or residues, paint sludge, water used for diluting paint or washing painting utensils, and waste from paint stripping
 15. plant matter, including, for example, bark, lawn clippings, leaves, mulch, pruning waste, sawdust, shavings, woodchip and other waste from forest products
 16. putrescible waste, including, for example, food scraps
 17. regulated waste
 18. sewage and sewage residues, whether treated or untreated, and any other matter containing faecal coliforms or faecal streptococci, including, for example, waste water pumped out from a septic tank
 19. vehicles and components of vehicles, including, for example, batteries and tyres
 20. waste and waste water, generated from indoor cleaning, including, for example, waste from carpet or upholstery cleaning and steam cleaning
 21. waste and waste water, generated from outdoor cleaning, including, for example, waste generated from high pressure water blasting of commercial or industrial premises, fuel dispensing areas, plant or equipment, roofs, streets, vehicles and wharves
 22. waste generated from repairing or servicing motor vehicles, including, for example, engine coolant, grease, lubricants and oil
 23. waste water, including backwash from swimming pools, condensate from compressors, water from air-conditioning or cooling systems and waste water from grease traps.

Note: Consult the *Environmental Protection Regulation 2019* for any updates to the list of prescribed water contaminants since publication of the Code of Practice.

Appendix 3: Description of monitoring to be conducted during the release of water from privately owned farm storages to receiving waters

The following applies when the code of practice requires laboratory and field based analysis to inform the release of stored water. Water quality monitoring samples and in situ water quality parameters should be collected, stored and analysed in accordance with the *Queensland Monitoring and Sampling Manual 2018*, as amended, and any specific requirements of the NATA accredited laboratory conducting the analysis.

Prior to the release of stored water:

Water samples should be collected within three (3) weeks prior to the scheduled release of stored water at the following site locations:

Site location	No. of samples
From the storages identified for the potential release of stored water.	A minimum of 2 samples collected per storage, with the samples collected from different sites within the storage.
From the receiving watercourse immediately upstream of the discharge point.	A minimum of 1 sample.
From the receiving watercourse at least 500 metres downstream of the discharge point.	A minimum of 1 sample.

If sampling has been conducted in the three (3) weeks prior to the scheduled release, ensure that the storage receives no contaminated water in the time between sample collection and the release.

During this time, the operator should visually inspect the storage for evidence of healthy aquatic life including algal⁴ or macrophyte growth, fish or macroinvertebrates. Physical evidence of contamination such as slicks, discolouration, reduced clarity and odour should be included within the inspection.

Recommended analytes include:

- Agricultural Water Suite: Major elements, anions, pH, Electrical Conductivity, Alkalinity, Hardness, Sodium Adsorption Ratio (SAR)
- Water: Metals ultra-trace total ICPMS⁵ after HNO₃ digest
- Water: Metals ultra-trace dissolved ICPMS
- Water: Nutrients Kjeldahl (TKN TKP)
- Water: Nutrients dissolved (NH₄ NOX FRP)
- Water: Chlorophyll a spectrometric
- Low level pesticide suite, and

⁴ Note: To identify a Harmful Algal Bloom, in which the storage water would not be suitable for release, refer to the following document: https://environment.des.qld.gov.au/__data/assets/pdf_file/0025/90790/biological-assessment-background-information-on-freshwater-and-marine-microalgae-and-harmful-algal-blooms.pdf

⁵ Inductively coupled plasma mass spectrometry.

- Low level herbicide suite.

Note: Check with the laboratory that the pesticide and herbicide suite selected for analysis includes the chemicals in use within the vicinity of the storage. For example, glyphosate is typically an additional analysis and should be added if a risk of this contaminant has been identified.

In situ water quality sampling using a multi-parameter meter should be taken at the water surface (0.2 metres depth) and every 0.5 metres until the bottom of storage, or receiving waters, is reached, or to a depth of at least four (4) metres. Ensure readings for the following parameters are collected: Water temperature, dissolved oxygen (concentration and saturation), electrical conductivity, pH and turbidity at the surface (0.2 metres depth), and at least every 0.5 metres until the bottom of the storage, or receiving waters, is reached, or to a maximum depth of four (4) metres.

Ensure that the site conditions at time of sampling are documented to inform the context of the results. This includes the flow conditions in the receiving waters based on the nearest gauging station.

During the release of stored water:

- If the release lasts less than three (3) weeks, sampling during the release is not required as sample results will not be available in time to inform decision-making.
- If the release lasts longer than three (3) weeks, repeat the sampling regime above to inform decision-making on the ongoing suitability of the stored water for release.

Following the release of stored water:

Water samples should be collected shortly (ideally within five (5) days but no more than fourteen (14) days) after the release of stored water ceases, at the following site locations:

Site location	No. of samples
From the receiving watercourse immediately upstream of the discharge point.	A minimum of 1 sample.
From the receiving watercourse at least 500 metres downstream of the discharge point.	A minimum of 1 sample.

Recommended analytes include:

- Agricultural Water Suite: Major elements, anions, pH, Electrical Conductivity, Alkalinity, Hardness, Sodium Adsorption Ratio (SAR)
- Water: Metals ultra-trace total ICPMS after HNO₃ digest
- Water: Metals ultra-trace dissolved ICPMS
- Water: Nutrients Kjeldahl (TKN TKP)
- Water: Nutrients dissolved (NH₄ NO_x FRP)
- Water: Chlorophyll a spectrometric
- Low level pesticide suite, and
- Low level herbicide suite.

Note: Check with the laboratory that the pesticide and herbicide suite selected for analysis

includes the chemicals in use within the vicinity of the storage. For example, glyphosate is typically an additional analysis and should be added if a risk of this contaminant has been identified.

In situ water quality sampling using a multi-parameter meter should be taken at the water surface (0.2 metres depth) and every 0.5 metres until the bottom of storage, or receiving waters, is reached, or to a depth of at least four (4) metres. Ensure readings for the following parameters are collected: Water temperature, dissolved oxygen (concentration and saturation), electrical conductivity, pH and turbidity at the surface (0.2 metres depth), and at least every 0.5 metres until the bottom of the storage, or receiving waters, is reached, or to a maximum depth of four (4) metres.

Ensure that the site conditions at time of sampling are documented to inform the context of the results. This includes the flow conditions in the receiving waters based on the nearest applicable gauging station.