Agricultural ERA standard for sugarcane cultivation– version 1

This **Agricultural Environmentally Relevant Activity** (ERA) standard has been created in accordance with section 318 and 768 of the *Environmental Protection Act 1994* for the purposes of section 81 of the Act. The agricultural ERA standard for sugarcane cultivation provides the minimum standard conditions for an agricultural ERA of carrying out, on a commercial basis on land in the **Great Barrier Reef Catchment**, cultivation of sugarcane**.**

Eligibility criteria category	Eligibility criteria
Activity general	The activity is sugarcane cultivation
Activity location	The activity is located within the Great Barrier Reef Catchment

1. Who this document applies to

This agricultural ERA standard, including the standard conditions, applies to all persons carrying out sugarcane cultivation of land in the Great Barrier Reef catchment. It will apply to persons carrying out the activity of sugarcane cultivation on land that they own or on land the person has arranged to use for the activity. It also applies to persons that are employed or otherwise engaged to carry out sugarcane cultivation in the Great Barrier Reef catchment.

2. When the agricultural ERA standard for sugarcane cultivation takes effect

Conditions	Activity/Regions	Take effect date
General record keeping (standard conditions SC20, SC24 and SC25)	Sugarcane cultivation in the Wet Tropics, Burdekin, Mackay Whitsunday, Fitzroy and Burnett Mary regions within the Great Barrier Reef catchment	1 December 2019
All standard conditions (except SC10-12, SC20-22)	Sugarcane cultivation in the Great Barrier Reef catchment that requires an environmental authority for a prescribed ERA in schedule 2, section 13A of the *Environmental Protection Regulation 2019* (new cropping and horticulture)	Upon commencement of the environmental authority
SC1-8, SC10, SC12-19, SC21 and SC24-25	Sugarcane cultivation in the Wet Tropics, Burdekin and Mackay Whitsunday regions within the Great Barrier Reef catchment	1 December 2019*
SC1-8, SC11-19, SC22 and SC24-25	Sugarcane cultivation in the Fitzroy and Burnett Mary regions within the Great Barrier Reef catchment	1 December 2022**

*As per SC10 and SC21b – the requirement for a Farm Nitrogen and Phosphorus Budget and associated records (Appendix 3) does not commence until 1 December 2021. However, a Farm Nitrogen and Phosphorus Budget can be developed earlier as per SC12.

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**As per SC11 and SC22 - the requirement for a Farm Nitrogen and Phosphorus Budget and associated records (Appendix 3) does not commence until 1 December 2022. However, a Farm Nitrogen and Phosphorus Budget can be developed earlier as per SC12.

3. Standard conditions

Standard conditions are listed in column 1 of standard conditions for an agricultural ERA (sugarcane cultivation) in the table below. The standard conditions are the mandatory requirements that must be met in order for persons carrying out an agricultural ERA to be considered compliant with the agricultural ERA standard for sugarcane cultivation.

4. Advice notes for meeting the standard conditions

Where applicable, advice notes have been provided in column 2 of the standard conditions for an agricultural ERA (sugarcane cultivation) table below, including examples of measures and recognised approaches that may be undertaken in order to be considered compliant with the relevant standard condition. The measures outlined in the advice notes are not compulsory. A person carrying out the agricultural ERA for sugarcane cultivation may choose their own measure/s to comply with the standard condition unless where stated otherwise. The advice notes also provide useful information and links to documents that may be considered relevant.

5. Record keeping

The *Environmental Protection Regulation 2008* states that the person carrying out an agricultural ERA must make and keep records (an **agricultural ERA record**) about the matters prescribed. The person carrying out the agricultural ERA for sugarcane cultivation must make and keep records about the matters prescribed in the standard conditions and Appendix 1, 2 and 3. The person carrying out the agricultural ERA must also keep all relevant primary documents related to the agricultural ERA records (e.g. invoices, receipts). The following standard conditions are the record keeping standard conditions and a lower penalty infringement notice applies under the *State Penalties Enforcement Regulation 2014*:

- SC20
- SC21
- SC22
- SC23
- SC24
- SC25

6. Compliance and enforcement of the agricultural ERA standard for sugarcane cultivation

Failure to comply with any of the standard conditions contained within the agricultural ERA standard for sugarcane cultivation is an offence under section 82 of the *Environmental Protection Act 1994* and penalties apply. Provisions under the *State Penalties Enforcement Regulation 2014* allow for a penalty infringement notice to be given if an offence has been found to have been committed. General obligations under the *Environmental Protection Act* 1994 may also apply to persons conducting an agricultural ERA and those persons are encouraged to familiarise themselves with all requirements related to their specific activity (Appendix 5).

7. Definitions

Words used in this document and defined in Appendix 4, are **bolded** the first time they appear.

8. Other requirements

Other relevant Commonwealth, State and local government legislative requirements may be applicable to sugarcane cultivation activities. A list of additional legislative requirements likely to apply to this activity is listed in Appendix 5.

9. Version history

Version	Date	Description of changes
1	1 December 2019	

Standard conditions for an agricultural ERA for sugarcane cultivation

Standard conditions	**Advice notes for complying with the standard condition**
General	
SC1 Ground-based **broadcast application** of **fertiliser** containing nitrogen must not occur on the **agricultural property**.	
SC2 Ground-based broadcast application of fertiliser containing phosphorus (and not nitrogen) must not occur on the agricultural property unless: a) in preparation for the impending establishment of a **plant crop**; and b) the fertiliser is incorporated into the soil within three (3) days of application.	
Erosion and sediment control	
SC3 Erosion and sediment control **measures** to minimise soil loss and **surface water** run-off must be implemented and maintained on the agricultural property.	**Advice to SC3** Examples of measures that may be implemented to meet the requirements of SC3 include: a) an **adequate surface cover** (including sugarcane trash) is in place on paddocks following harvest; b) a **constant gradient** of less than one (1) percent is maintained in all areas under sugarcane cultivation; c) all **surface water** drainage structures are designed to reduce run-off velocity (e.g. **vegetated spoon drains**); d) all surface water drains to **recycle pits**, **constructed wetlands** or **sediment traps** or similar structures prior to release to **receiving waters**; e) **vegetated buffers** with adequate surface cover are in place; f) **diversion banks** are in place to divert surface water flows away from areas of exposed soil; g) **contour banks** are in place that intercept run-off and channel it into a structure (e.g. **grassed waterway**) that reduces run-off velocity; h) any other measure that achieves SC3.

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SC4 Following harvest, all **fallow** blocks on the agricultural property must have a **cover crop** (which may include grass) established, or sugarcane trash in place, that maintains adequate surface cover.	
SC5 If a **prescribed methodology** applies for the **harvesting of sugarcane trash**, sugarcane trash on the agricultural property must be harvested in accordance with the methodology.	
Nitrogen and phosphorus fertiliser	
SC6 **Soil testing** and analysis must be carried out within the 12 months prior to fertiliser being applied to: a) a new plant cane crop; or b) a new cane crop cycle if no fertiliser is applied to the plant crop, in accordance with the administering authority's latest version of '*Prescribed Methodology for Sugarcane Cultivation*'.	**Advice to SC6** Refer to the Prescribed methodology for sugarcane cultivation on the sugarcane page at www.qld.gov.au/reefregulations
SC7 Prior to applying fertiliser on the agricultural property, the amount of nitrogen and phosphorus to be applied must be calculated for each **block** using the results of soil tests under condition SC6 and the administering authority's latest version of *'Prescribed Methodology for Sugarcane Cultivation'*.	**Advice to SC7** Refer to the Prescribed methodology for sugarcane cultivation on the sugarcane page at www.qld.gov.au/reefregulations
SC8 The application rate of fertiliser applied to each block must not exceed the amount calculated in accordance with condition SC7, unless a **Farm Nitrogen and Phosphorus Budget** has been developed for the agricultural property.	

Farm Nitrogen and Phosphorus Budget The intent of the Farm Nitrogen and Phosphorus Budget is to encourage and assist growers to identify and address constraints to productivity, and to review and refine their nitrogen and phosphorus management at a finer scale. This should lead to improved nutrient use efficiency, improving production and profitability, whilst reducing the amount of surplus nitrogen and phosphorus that could be lost from the farm.	
SC9 Sugarcane cultivation in the Great Barrier Reef catchment that requires an environmental authority for a prescribed ERA in schedule 2, section 13A of the *Environmental Protection Regulation 2019* (new cropping and horticulture) must develop a Farm Nitrogen and Phosphorus Budget prior to fertilising the agricultural property.	
SC10 As of 1 December 2021, for the Wet Tropics, Burdekin and Mackay Whitsunday regions, a Farm Nitrogen and Phosphorus Budget must be developed for the agricultural property prior to fertilising the agricultural property.	
SC11 As of 1 December 2022, for the Fitzroy and Burnett Mary regions, a Farm Nitrogen and Phosphorus Budget must be developed for the agricultural property prior to fertilising the agricultural property.	
SC12 A Farm Nitrogen and Phosphorus Budget developed for an agricultural property prior to the date it is required under SC9, SC10 or SC11 must be developed in accordance with SC13-19 and records kept in accordance with Appendix 3 and SC24-25.	
SC13 The first Farm Nitrogen and Phosphorus Budget for an agricultural property must be developed and verified by an **appropriate person/s.**	**Advice to SC13** A Farm Nitrogen and Phosphorus Budget can be developed and verified by the same, or different appropriate persons.
SC14 The Farm Nitrogen and Phosphorus Budget for the agricultural property must be reviewed and updated (in accordance with SC15), at least annually by the person carrying out the agricultural ERA and completed prior to fertilising.	**Advice to SC14** The Farm Nitrogen and Phosphorus Budget/s can be amended at any time, but the annual review must be completed at least every 12 months.

SC15 A review and update of the Farm Nitrogen and Phosphorus Budget must include: a) a recalculation of the **whole of farm nitrogen amount** for the following harvest period (in accordance with SC7 and SC17); b) a recalculation of the **whole of farm phosphorus amount** (in accordance with SC7 and SC17); c) an update to the farm map (in accordance with SC17); d) consider any other change(s) that may affect the amount of fertiliser calculated under SC7 and SC17.	
SC16 The Farm Nitrogen and Phosphorus Budget for the agricultural property must be reviewed, updated and verified every five (5) years by an appropriate person.	
SC17 A Farm Nitrogen and Phosphorus Budget must be for the **whole of farm** and must include the following: a) a farm map that includes: (i) farm number or unique identifier/s, (ii) block boundaries, (iii) block identifiers, (iv) area of each block (in hectares), (v) area of whole of farm (in hectares), (vi) **crop class** (e.g. plant, first ratoon, second ratoon), (vii) **management zone** boundaries (if management zones have been defined for a farm); b) identification of physical or soil chemical constraints to yield (if they exist) for each management zones and/or blocks; c) soil tests and analysis undertaken in accordance with SC6; d) nitrogen fertiliser rates calculated in accordance with SC7 for each plant block and ratoon block for the following harvest period; e) calculation of the whole of farm nitrogen amount for the following harvest period; f) phosphorus fertiliser rates calculated in accordance with SC7 for each plant block and ratoon block for	**Advice to SC17** Physical or soil chemical constraints to yield might include: • waterlogged soils; • sodic soils; • strongly acidic soils; • compacted soils; • history of low yields compared to other blocks on the farm; • old/last/late ratoons. Measures to address constraints identified under SC17 b) in the Farm Nitrogen and Phosphorus Budget should be implemented on the agricultural property to improve nutrient use efficiency. **Measures** for responding to constraints and improving nutrient use efficiency might include: • ameliorants or organics; • drainage works; • improving soil health; • introducing new varieties; • fallow management; • applying nitrogen and phosphorus rates lower than the rate calculated under SC17 for any specific blocks and/or management zones.

the following harvest period or for the **whole crop cycle;** g) calculation of the whole of farm phosphorus amount for the following harvest period or for the whole crop cycle; h) name(s) and contact details of the appropriate person who developed and/or verified the Farm Nitrogen and Phosphorus Budget/s for the agricultural property.	Measures to respond to identified constraints on the property may be identified in consultation with an appropriate person. The whole of farm nitrogen amount is to be calculated annually. The whole of farm phosphorus amount can be either an annual amount or for the whole crop cycle.
SC18 The application rate of fertiliser applied to the agricultural property must not exceed the whole of farm nitrogen amount or the whole of farm phosphorus amount in the Farm Nitrogen and Phosphorus Budget.	**Advice to SC18** The whole of farm nitrogen amount is calculated in accordance with SC7 with reference to the '*Prescribed Methodology for Sugarcane Cultivation'.* The '*Prescribed Methodology for Sugarcane Cultivation'* outlines how the baseline nitrogen amount is calculated for farms where the whole of farm average yield is either: a) at or below **district yield potential**, or b) above the district yield potential in at least 3 of the last 15 years (which must be demonstrated through verifiable yield records or other reasonable evidence from the past 15 years to the satisfaction of the administering authority).
SC19 The application rates of nitrogen and phosphorus fertiliser calculated for the agricultural property in accordance with SC7 for individual blocks and/or management zones, can be exceeded only where: a) a Farm Nitrogen and Phosphorus Budget has been developed for the agricultural property in accordance with SC13-19; and b) the higher rate(s) is offset by lower rate(s) on blocks or management zones elsewhere within the whole of farm so that the whole of farm amount of nitrogen and whole of farm amount of phosphorus in the Farm Nitrogen and Phosphorus Budget are not exceeded.	

Record keeping	
SC20 Records must be kept for sugarcane cultivation in the Wet Tropics, Burdekin, Mackay Whitsunday, Fitzroy and Burnett Mary regions within the Great Barrier Reef catchment, in accordance with **Appendix 1** from 1 December 2019.	**Advice to SC20** SC20 is a record keeping standard condition and subject to a lower penalty infringement notice under the *State Penalties Enforcement Regulation 2014*.
SC21 Records must be kept for sugarcane cultivation in the Wet Tropics, Burdekin and Mackay Whitsunday regions within the Great Barrier Reef catchment, in accordance with: a) **Appendix 2** from 1 December 2019 b) **Appendix 3** when developing or updating a Farm Nitrogen and Phosphorus Budget	**Advice to SC21** SC21 is a record keeping standard condition and subject to a lower penalty infringement notice under the *State Penalties Enforcement Regulation 2014*.
SC22 Records must be kept for sugarcane cultivation in the Fitzroy and Burnett Mary regions within the Great Barrier Reef catchment, in accordance with: a) **Appendix 2** from 1 December 2022 b) **Appendix 3** when developing or updating a Farm Nitrogen and Phosphorus Budget	**Advice to SC22** SC22 is a record keeping standard condition and subject to a lower penalty infringement notice under the *State Penalties Enforcement Regulation 2014*.
SC23 Sugarcane cultivation in the Great Barrier Reef catchment that requires an environmental authority for a prescribed ERA in schedule 2, section 13A of the *Environmental Protection Regulation 2019* (new cropping and horticulture) must keep records in accordance with Appendices 1-3 from commencement of the environmental authority.	**Advice to SC23** SC23 is a record keeping standard condition and subject to a lower penalty infringement notice under the *State Penalties Enforcement Regulation 2014*.
SC24 The person carrying out the agricultural ERA must keep all **relevant primary documents** related to the agricultural ERA records.	**Advice to SC24** SC24 is a record keeping standard condition and subject to a lower penalty infringement notice under the *State Penalties Enforcement Regulation 2014*.
SC25 Records required in conditions SC20-24 must be kept for at least six (6) years and made available to the administering authority when requested within the requested timeframe.	**Advice to SC25** Records can be made and kept in any format, including on a property map. SC25 is a record keeping standard condition and subject to a lower penalty infringement notice under the *State Penalties Enforcement Regulation 2014*.

Appendix 1: Record keeping requirements – General

The following records are required to be kept by all persons carrying out an agricultural ERA involving sugarcane cultivation on land in the Wet Tropics, Burdekin, Mackay Whitsunday, Fitzroy and Burnett Mary regions of the Great Barrier Reef catchment.

A record is a note that something has occurred. The actual documents that relate to the record (e.g. a soil test report, fertiliser contractor print-out, or a fertiliser invoice), are relevant primary documents that provide proof of these records and are also required to be kept under SC24.

Records must be made within three (3) business days of the application of fertiliser, **mill mud** or **mill ash**, or **agricultural chemicals** at the relevant agricultural property, kept for at least six (6) years and made available for inspection to an **authorised person** upon request. Records can be kept in any form.

<u>Property and person details</u>

1. Person(s) who carries out the agricultural ERA
2. Name of person making record
3. Company name (if applicable)
4. Property address(es)
5. Postal address
6. Farm identification number(s) (if applicable)
7. A list of the cadastral lots included in all the farms within the agricultural enterprise

<u>Records of agricultural chemicals, fertiliser and mill mud/mill ash applied</u>

1. Location of each application (e.g. farm number with block name or management zone)
2. Date of each application
3. Agricultural chemicals and/or fertiliser product (including mill mud/mill ash) applied to each location:
    a. Product name
    b. Application rate (kg/ha, L/ha or tonnes/ha for mill mud/mill ash)
    c. For fertiliser, the product percentage of nitrogen and phosphorus

Appendix 2: Record keeping requirements – Standard conditions SC1-SC8

The following records are required to be kept in accordance with SC21-23.

A record is a note that something has occurred. The actual documents that relate to the record (e.g. a soil test report, fertiliser contractor print-out, or a fertiliser invoice), are relevant primary documents that provide proof of these records and are also required to be kept under SC24.

The records below must be made within three (3) business days, kept for at least six (6) years and made available for inspection to an authorised person upon request. Records can be kept in any form.

1. Amounts of nitrogen and phosphorus (kg/ha) calculated for each block using the *Prescribed Methodology for Sugarcane Cultivation*
2. Method of fertiliser application
3. Date of soil testing and a description of the location and the dominant soil type sampled
4. Map of the boundaries of blocks or management zones where:
    a. Soil sampling has been undertaken; and
    b. Where fertiliser and mill mud/mill ash has been applied
5. A soil map showing the dominant soil types covering the blocks or management zones where samples were taken.

Appendix 3: Record keeping requirements – Farm Nitrogen and Phosphorus Budget

The following records are required to be kept in accordance with SC21-23.

A record is a note that something has occurred. The actual documents that relate to the record (e.g. a soil test report, fertiliser contractor print-out, or a fertiliser invoice), are relevant primary documents that provide proof of these records and are also required to be kept under SC24.

The records below must be made within three (3) business days, kept for at least six (6) years and made available for inspection to an authorised person upon request. Records can be kept in any form.

1. Calculated whole of farm nitrogen amount for the following harvest period (kg)
2. Calculated whole of farm phosphorus amount for the following harvest period (kg)
3. Annual amount of nitrogen applied to the whole of farm for the previous harvest period (kg)
4. Annual amount of phosphorus applied to the whole of farm for the previous harvest period (kg)
5. Actual yield achieved for the previous harvest period (tonnes/cane/ha)
6. Historical yields (if applicable to meeting SC18) (tonnes/cane/ha)
7. A farm map, including:
   a. farm number or unique identifier/s
   b. block boundaries
   c. block identifiers
   d. area of each block (in hectares)
   e. area of whole of farm (in hectares)
   f. crop class and fallow areas
   g. identification of any physical or soil chemical constraints to yield (if they exist) for each management zones and/or blocks
8. Name(s) and contact details of the appropriate person who developed and/or verified the Farm Nitrogen and Phosphorus Budget for the agricultural property
9. Date the Farm Nitrogen and Phosphorus Budget was developed and verified.

Appendix 4: Terms and definitions

Terms	Definitions
Activity	The agricultural environmentally relevant activity (ERA) to which this agricultural ERA standard applies.
Adequate surface cover	Means: a) A thing that covers the paddock soil surface (not including roads, drains and headlands); and, b) Is of sufficient depth and composition that the cover remains in place and is effective in protecting soil from wind and water erosion to minimise soil and nutrient loss.
Aerial broadcast Application	Means the application of fertiliser by aircraft used where ground-based application is not practicable.
Agricultural chemical	Means any herbicides, insecticides and fungicides applied as part of carrying out the agricultural ERA (sugarcane cultivation).
Agricultural Environmentally Relevant activity (agricultural ERA)	Has the same meaning as in the *Environmental Protection Act 1994.* (1) An activity is an agricultural ERA if it is— (a) carrying out any of the following on a commercial basis— (i) cattle grazing; (ii) horticulture; (iii) cultivation of another crop. (b) carried out on a lot that is in the Great Barrier Reef catchment. (2) However, if only part of the lot is in the Great Barrier Reef catchment, the activity is an agricultural ERA if the part of the lot that is in the catchment is – (a) More than 75 percent of the lot; or (b) More than 20,000 hectares.
Agricultural property	In relation to a relevant activity, means the parcel or parcels of land on which the activity is carried out.
Agricultural ERA record	A record that is required to be kept by a person carrying out an agricultural ERA under a relevant agricultural ERA standard.
Appropriate person	Means a person who has professional qualifications, training or skills or experience relevant to completing a Farm Nitrogen and Phosphorus Budget. This must include the ability to give an authoritative assessment, advice and analysis relevant to the farm, block and/or management zone, using protocols, standards, methods or literature, where relevant. A grower can be considered an appropriate person if they demonstrate they have the appropriate skills, qualifications, or experience to complete the Farm Nitrogen and Phosphorus Budget acquired through a recognised program endorsed by the department.
Authorised person	Means a person appointed as an authorised person under the *Environmental Protection Act 1994* by the chief executive or chief executive officer of a local government.

Block	An area of land that is typically used to grow sugarcane.
Broadcast application	Means application of fertiliser across the entire surface of a block on the agricultural property. Ground-based broadcast application is not considered to be: • **Surface banded application** of fertiliser on the stool; or • **Aerial broadcast application** of fertiliser; or • Broadcast application of **soil conditioner/s** (including mill mud or mill mud/ash mix) in the fallow, if it is incorporated into the soil during the fallow period.
Constant gradient	Means a slope employed to facilitate furrow irrigation.
Constructed wetland	Means an artificial system designed to mimic certain conditions of natural wetlands.
Contour banks	Means a constructed earth embankment, incorporating a channel on the upslope side, typically traversing a slope on or close to the contour to control and/or prevent the erosion of that slope. Also referred to as graded banks, terraces, or bunds.
Cover crops	Means plants (including grass) that are grown during the fallow period in order to provide soil cover.
Crop class	Means the stage of the plant's lifecycle, e.g. plant, first ratoon, second ratoon.
District Yield Potential	Means yield potential for a **sugarcane growing district** as per the *'Prescribed Methodology for Sugarcane Cultivation'*.
Diversion banks	Means a structure to divert run-off away from areas where it could cause problems (such as cultivated paddocks or buildings) into stable waterways, natural depressions or water storages.
Fallow	An area of land that is typically used to grow sugarcane, and that is left with either grass/weedy cover, green manure or a leguminous crop (i.e. crop or ground cover with low or no nitrogen demand) for a period of at least six (6) months.
Farm Nitrogen and Phosphorus Budget	Is the farm map and any other documents (including records, fertiliser recommendations, and soil test results) used to prepare the Farm Nitrogen and Phosphorus Budget.
Fertiliser	Means a product that contains a quantified amount, obtained by analysis, of nitrogen and/or phosphorus.
Grassed waterway	Means a vegetated, stable, longitudinally sloping water disposal area of sufficient capacity used to discharge surplus run-off and allow it to flow to a lower level without causing erosion.
Great Barrier Reef catchment	Has the same meaning in the *Environmental Protection Act 1994.* The Great Barrier Reef catchment is the area shown on a map prescribed by regulation as the Great Barrier Reef catchment.
Harvesting of sugarcane trash	Means post-harvest trash removal from the agricultural property for another purpose. This does not refer to harvesting of sugarcane that is transported to a sugarcane mill to produce sugar.
Management zone	For the purpose of this standard, means a block, or groups of blocks, with the same or similar yields and management history. Zones are defined in conjunction with an

	appropriate person by identifying areas based on fertiliser recommendations using soil test results, soil type and/or advice from the appropriate person.
Measures	Means an action or procedure planned and implemented to minimise the risk to the environment of releases of sediment or nutrients into the environment as a result of the agricultural ERA.
Mill ash	Means a by-product produced by sugar mill boilers. Also known as boiler ash.
Mill mud	Means the residual mud and fibre filtered from the raw sugar juice during the sugar refining process. Also called filter mud, filter cake or sugarcane press mud.
Plant crop	For the purposes of this standard means the initial sugarcane crop after planting.
Prescribed methodology	Means a methodology prescribed by the *Environmental Protection Regulation 2008.*
Ratoon	For the purposes of this standard means a new crop of sugarcane that regrows from the portion of stalk left underground after harvesting of the previous crop.
Receiving waters	Means the *waters* into which the relevant agricultural ERA drains. *Waters* has the meaning in the *Environmental Protection Act 1994* and includes all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the sea), and underground water. For the purposes of this standard, receiving waters also includes structures or features which may reasonably be expected to drain to *waters* including a stormwater channel, stormwater drain, or roadside gutter.
Recycle pit	Means a retention pond that captures farm run-off. Water from recycle pits can be used for irrigation. Also known as sediment or retention ponds.
Relevant primary document	Means a document relating to the carrying out of the activity that is the subject of the record from which information in the record was obtained, and include: - Receipts and invoices for the purchase of a chemical or fertiliser product; - A summary of tailored advice about carrying out the agricultural ERA (e.g. recommended application rates and frequency); and - A fertiliser or mill mud/mill ash invoice showing the product, amounts, and date(s) of delivery; - A soil test report which shows the results of soil testing and any nutrient recommendations made; - A contractor receipt which shows the amounts and locations of fertiliser products applied; - A fertiliser product bag tag or other information which shows the percentage of nitrogen and phosphorus.
Sediment trap	Means a basin that removes sediment, debris and litter from run-off water by allowing it to settle out and be left behind when the water moves on.

Soil conditioner/s	Means a substance added to soil to improve the growing conditions for plant roots. Examples are gypsum, lime and organic matter. For the purpose of this standard, mill mud and mill ash are also considered soil conditioners.
Soil testing	Means a test of the characteristics of soil, analysed by a National Association of Testing Authorities (NATA) or Australasian Soil and Plant Analysis Council (ASPAC) accredited laboratory, or one holding an equivalent certification.
Sugarcane growing district	Means a sugarcane growing district as per the regulated method under SC7. (refer to the '*Prescribed Methodology for Sugarcane Cultivation*')
Surface banded application	Means fertiliser applied in bands along the crop rows on the soil surface.
Surface water	Has the meaning in the *Environmental Protection (Water) Policy 2009* and means "waters other than ground waters."
Vegetated spoon drain	Means shallow, open, vegetated channels between crop rows primarily designed for conveying water along a drainage pathway.
Whole crop cycle	A period of five (5) years (one (1) plant and four (4) ratoons).
Whole of farm	Means the area to which the Farm Nitrogen and Phosphorus Budget applies where: (a) the activity is carried out under the day-to-day management of a single responsible individual, for example, a site or operations manager; (b) the activity is operationally interrelated; (c) the activity is, or will be, carried out at one (1) or more places; (d) places where the activities are carried out are separated by distances short enough to make feasible the integrated day-to-day management of the activities; (e) the activity is carried out within the same **sugarcane growing district** as per the method under SC7.
Whole of farm nitrogen amount	Means the total amount of nitrogen fertiliser (sum of each block calculated under SC7) for the whole of farm for a 12 month period.
Whole of farm phosphorus amount	Means the total amount of phosphorus fertiliser (sum of each block calculated under SC7) for the whole of farm for an annual period or for a period of five (5) years.

Appendix 5: General obligations under the *Environmental Protection Act 1994*

This appendix is not intended to provide a comprehensive list of all obligations under Queensland law. It provides some general information and person(s) carrying out an agricultural ERA for sugarcane cultivation are encouraged to familiarise themselves with all requirements related to their specific activity.

Separate to the sugarcane cultivation standard, a person carrying out an agricultural ERA for sugarcane cultivation must also be aware of and meet their obligations under the *Environmental Protection Act 1994*, and the regulations made under that Act including the following provisions.

General environmental duty

Section 319 of the *Environmental Protection Act 1994* states that any person who carries out an activity that causes or is likely to cause environmental harm must comply with their 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 consider:

- 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.

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:

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.

More information is available on the Queensland Government website https://www.business.qld.gov.au.

Duty to notify

Section 320A of the *Environmental Protection Act 1994* explains the duty to notify. The duty to notify applies to all persons and requires a person or company to give notice where serious or material environmental harm is caused or threatened. 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.

The duty to notify arises where:

- a person carries out activities or becomes aware of an act of another person arising from, or connected to, those activities that causes or threatens serious or material environmental harm;
- while carrying out activities, a person becomes aware of the happening of one or both of the following events:
    - the activity negatively affects (or is reasonably likely to negatively affect) the water quality of an aquifer
    - the activity has caused the unauthorised connection of two or more aquifers;

- the owner or occupier of contaminated land or an auditor performing an auditor's function (as defined in section 568(b) of the *Environmental Protection Act 1994*) becomes aware of:
    - the happening of an event involving a hazardous contaminant on the contaminated land; or
    - a change in the condition of the contaminated land; or
    - a notifiable activity having been carried out, or being carried out, on the contaminated land that is causing, or is reasonably likely to cause, serious or material environmental harm.

For more information on the duty to notify requirements refer to the guideline 'Duty to notify of environmental harm' (ESR/2016/2271).

Some relevant offences under the *Environmental Protection Act 1994*

Causing serious or material environmental harm (sections 437 and 438)

Material environmental harm is when the harm is not trivial or negligible in nature. Serious environmental harm is harm that is irreversible, of a high impact or widespread, or that is caused to an area of high conservation value or special significance.

Serious or material environmental harm excludes environmental nuisance.

Causing environmental nuisance (section 440)

Environmental nuisance is unreasonable 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 9 of the *Environmental Protection Regulation 2008*.

It is your responsibility to ensure that prescribed water contaminants are not left in a place where they may or do 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 environmental harm or nuisance may be caused (section 443)

A person must not cause or allow a contaminant to be placed in a position where it could reasonably be expected to cause serious or material environmental harm or environmental nuisance.

Responsibilities under other legislation

An agricultural ERA pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for the activity that might be required by other state and/or Commonwealth legislation. Other legislation for which a permit may be required includes, but is not limited to:

- *Aboriginal Cultural Heritage Act 2003;*
- *Fisheries Act 1994;*
- *Forestry Act 1959;*

- *Nature Conservation Act 1992;*
- *Petroleum and Gas (Production and Safety) Act 2004 / Petroleum Act 1923;*
- *Queensland Heritage Act 1992;*
- *Planning Act 2016;*
- *Waste Reduction and Recycling Regulation 2011;*
- *Water Supply (Safety and Reliability) Act 2008;*
- *Water Act 2000;*
- *Work Health and Safety Act 2011*, *Work Health and Safety Regulation 2011* and Work Health and Safety (Codes of Practice) Notice 2011

Additional obligations may be applicable including, but not limited to:

- Safe Work Australia Code of Practice on How to Safely Remove Asbestos 2011 or the Safe Work Australia Code of Practice on How to Manage and Control Asbestos in the Workplace 2011 or any subsequent versions
- Australian Dangerous Goods Code
- Australian and New Zealand Environment and Conservation Council (ANZECC) Polychlorinated Biphenyls Management Plan Revised Edition – April 2003.

Persons are advised to check with all relevant statutory authorities and comply with all relevant legislation.