



End of Waste Code
Sugar Mill By-Products (ENEW07359817)

Waste Reduction and Recycling Act 2011



Queensland
Government

Version history

Version	Date	Description of changes
1.00	01 January 2019	Commencement of EOW code
2.00	02 December 2022	Amendment of EOW Code – approval by gazette
2.01	23 June 2023	Minor update to reflect the definition of waste moving into the <i>Waste Reduction and Recycling Act 2011</i> . This does not impact the interests of the producer or user of the resource.
2.02	28 March 2024	Updated department name to reflect machinery of government changes and the definition of serious or material harm.

Prepared by: Waste Assessment, Department of Environment, Science and Innovation

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March 2024

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1. Explanatory Statement

This End of Waste (EOW) code for **sugar mill by-products** has been issued by the **chief executive** in accordance with section 159 of the *Waste Reduction and Recycling Act 2011* (WRR Act).

This EOW code states when the **sugar mill by-products** become a **resource** and any relevant requirements and/or conditions for its use. If the **resource** is not being used in accordance with the relevant requirements and/or conditions of this EOW code, or another type of permit that allows for its use, it is considered a waste under section 8AA of the WRR Act and must be disposed of appropriately at a facility that is **lawfully** able to receive the waste.

2. Guidance

2.1 Resource use versus activity

Under section 155 of the WRR Act, a waste stops being a waste and becomes a **resource** when it meets the requirements and conditions of an EOW code. Under section 159 of the WRR Act, an EOW code specifies the circumstances when a waste becomes a resource; how it must be used to be considered a resource; when it is no longer considered a resource but a waste instead; and conditions that must be complied with by resources users and registered resource producers.

An Environmental Authority (EA) under the *Environmental Protection Act 1994* (EP Act) is required where an activity being undertaken triggers the threshold for any environmentally relevant activity (ERA). This means that treating or processing the waste to meet the resource quality criteria under the EOW code may require an EA under the EP Act if the activity meets the threshold for an ERA.

2.2 Resource versus waste

A waste that is a **resource** under an EOW code is considered a **resource** only for the use(s) approved in an EOW code. To be considered a resource under the EOW code, the material used as the resource must meet the requirements of the EOW code and be used in accordance with the conditions of the EOW code, otherwise it is considered a waste and must be managed in accordance with waste management requirements under the EP Act and the WRR Act and their subordinate legislation.

A **resource** under an EOW code, is deemed to be a waste again, if it is not used in accordance with the EOW code; if it is disposed of at a waste disposal site; or if it is deposited at a place in a way that would, apart from its use approved under an EOW code, constitute a contravention of the general littering provision (section 103) or the illegal dumping of waste provision (section 104) under the WRR Act.

2.3 Failure to comply

It is an offence under section 158(1) of the WRR Act for a **registered resource producer** to produce the **resource**, or use, sell or give away the **resource** unless they comply with the requirements under an EOW code. Further, it is an offence under section 158(2) of the WRR Act for a **person** to use the **resource** in a way, or for a purpose, that does not comply with an EOW code for the **resource**. These offences carry a maximum penalty of 1,665 penalty units for an individual and 8,325 penalty units for a corporation¹.

Please refer to Appendix A of this EOW code for general obligations for all **persons** operating under this EOW code, which includes the **resource users**.

¹ The value of a penalty unit is stated in the *Penalties and Sentences Regulation 2015* (Qld).

2.4 Lawfulness of the activity

The issuing of this EOW code for the use of a **resource** does not warrant or imply the lawfulness of the activity under all legislation, or that approvals necessary under other legislation have or will be approved. It is the responsibility of the **registered resource producer** and **resource user** to identify and obtain all other approvals necessary for the relevant activities.

3. Period of this EOW code

This EOW code takes effect from the day of gazettal of this EOW code and remains in force until it is amended, cancelled or suspended by the **chief executive**².

4. Waste to which this EOW code applies

This EOW code is limited to **sugar mill by-products** which constitutes **filter mud, boiler ash, mill mud** or a blend of any of these **sugar mill by-products** generated by sugar mills.

This waste becomes a resource when the requirements and conditions under this EOW code are met.

5. Person to whom this EOW code applies

5.1 Registered resource producers of the resource

5.1.1 A **registered resource producer** for this EOW code must comply with the stated registered resource producer requirements in Section 6 – Registered Resource Producer Requirements.

5.2 Resource users

5.2.1 The **resource user** must only use the **resource** in a way, and for a purpose allowed under this EOW code.

5.2.2 The **resource user** must comply with the stated conditions of use in Section 7 – Conditions of Use.

² If an EOW code is to be amended, cancelled or suspended, the chief executive will provide an opportunity to make written submissions by providing a proposed action notice to the registered resource producers; and publishing the proposed action notice on the chief executive's [website](https://www.business.qld.gov.au/running-business/environment/waste-management/regulated-waste/eow-framework) (<https://www.business.qld.gov.au/running-business/environment/waste-management/regulated-waste/eow-framework>).

6. Registered Resource Producer Requirements

Registration under this EOW code																																									
(6.1)	Prior to operating under this EOW code, the producer of the resource must register with the chief executive by giving a notice in the approved form ³ to become a registered resource producer for this EOW code.																																								
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(6.2)	The approved resource is sugar mill by-products which complies with <i>Requirement (6.3)</i> of this EOW code.																																								
(6.3)	The registered resource producer must not use, sell or give away the resource unless it is at or below the levels set out in <i>Table 1 – Resource quality criteria</i> for the approved use in accordance with this EOW code.																																								
<table border="1"> <thead> <tr> <th colspan="4">Table 1 – Resource quality criteria</th> </tr> <tr> <th rowspan="3">Quality criteria</th> <th colspan="3">Total maximum concentration</th> </tr> <tr> <th colspan="2">Filter mud, mill mud or a blend of filter mud, boiler ash and/or mill mud</th> <th>Boiler ash</th> </tr> <tr> <th>% as dry product</th> <th>% as wet product</th> <th>% as dry product</th> </tr> </thead> <tbody> <tr> <td>Nitrogen (N)</td> <td style="text-align: center;">1.7</td> <td style="text-align: center;">0.37</td> <td style="text-align: center;">0.15</td> </tr> <tr> <td>Phosphorous (P)</td> <td style="text-align: center;">1.9</td> <td style="text-align: center;">0.41</td> <td style="text-align: center;">0.41</td> </tr> <tr> <td>Potassium (K)</td> <td style="text-align: center;">0.76</td> <td style="text-align: center;">0.13</td> <td style="text-align: center;">1.40</td> </tr> <tr> <td>Sulphur (S)</td> <td style="text-align: center;">0.15</td> <td style="text-align: center;">0.03</td> <td style="text-align: center;">0.19</td> </tr> <tr> <td>Calcium (Ca)</td> <td style="text-align: center;">3.7</td> <td style="text-align: center;">0.81</td> <td style="text-align: center;">1.22</td> </tr> <tr> <td>Magnesium (Mg)</td> <td style="text-align: center;">0.68</td> <td style="text-align: center;">0.15</td> <td style="text-align: center;">0.72</td> </tr> </tbody> </table>				Table 1 – Resource quality criteria				Quality criteria	Total maximum concentration			Filter mud, mill mud or a blend of filter mud, boiler ash and/or mill mud		Boiler ash	% as dry product	% as wet product	% as dry product	Nitrogen (N)	1.7	0.37	0.15	Phosphorous (P)	1.9	0.41	0.41	Potassium (K)	0.76	0.13	1.40	Sulphur (S)	0.15	0.03	0.19	Calcium (Ca)	3.7	0.81	1.22	Magnesium (Mg)	0.68	0.15	0.72
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(6.4)	The resource must not have any properties nor contain any other contaminants at concentrations which may cause environmental harm when used in accordance with this EOW code.																																								
Resource monitoring																																									
(6.5)	The registered resource producer must sample, measure and record the composition of the resource for at least the quality criteria in <i>Table 1 – Resource quality criteria</i> , on an annual basis as a minimum.																																								
(6.6)	The sampling of the resource must be conducted in accordance with Environmental Protection Authority Victoria Industrial Waste Resource Guideline on ‘Sampling and analysis of waters, wastewaters, soils and wastes.																																								
(6.7)	Where the composition of the resource has changed or is likely to change, additional monitoring must be conducted, which is sufficient to detect and characterise the extent of any change ⁴ , until such time that results demonstrate the material is compliant with <i>Table 1 - Resource quality criteria</i> .																																								
(6.8)	Any determination of the suitability or characterisation of the resource (including ongoing sampling) must be made by an appropriately qualified person .																																								

(6.9)	All analysis required under this EOW code must be carried out by a laboratory that has NATA certification, or an equivalent certification, for such analyses.
Information to be provided	
(6.10)	<p>The registered resource producer must make the following available to any person to whom they provide the resource, at least annually:</p> <ul style="list-style-type: none"> a) confirmation in writing that the resource being supplied is compliant with the requirements of this EOW Code; b) a current certificate of analysis for the quality of the resource for at least the quality criteria in <i>Table 1 - Resource quality criteria</i>; c) Users Method Statement for the resource; d) Safety Data Sheet for the resource; e) information in writing about potential risks to the environment from the activity during routine operations and emergencies; f) information in writing about control measures that minimise the potential for environmental harm; and g) for the provision of mill mud to be packaged for retail sale only, the following written information must be included on the product package labelling: <ul style="list-style-type: none"> a. instructions on the safe usage and application of the product; and b. information on potential risks from product usage.
Records	
(6.11)	<p>The registered resource producer must keep the following records:</p> <ul style="list-style-type: none"> a) quantity of the resource provided for use; b) quality criteria of the resource (at least for parameters listed in <i>Table 1 – Resource quality criteria</i>); c) date of delivery of the resource; and d) destination of the resource (including the name and address of the resource user).
(6.12)	<p>All records required to be kept by the registered resource producer under this EOW code must be:</p> <ul style="list-style-type: none"> a) kept by the registered resource producer for a period of not less than five (5) years; and b) provided to the chief executive upon request, in the format requested and in the time period specified.
Notification of emergencies , incidents and breaches	
(6.13)	Any breach of a requirement of this EOW code must be reported to the chief executive within 24 hours of becoming aware of the breach ⁴ .

⁴ Reporting can be via the **chief executive's** Pollution Hotline (1300 130 372 – option 2) or via online reporting through the **chief executive's website** (<https://www.business.qld.gov.au/running-business/environment/waste-management/regulated-waste/eow-framework>).

(6.14)	Records of any breach of a requirement of this EOW code, including full details of the breach and any subsequent actions taken, must be kept and provided to the chief executive upon request, in the format requested and in the time period specified.
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7. Conditions of Use

Approved uses	
(7.1)	The approved resource is sugar mill by-products that comply with the quality criteria listed in 'Requirement 6.3' and is used for the following purposes: <ul style="list-style-type: none"> a) as a soil ameliorant or conditioner on agricultural land; or b) as a feedstock in composting or soil conditioner manufacturing activities; or c) as a soil ameliorant or conditioner for use on domestic lawns, gardens, or landscaping.
Preventing environmental harm	
(7.2)	All reasonable and practicable measures must be taken to prevent or minimise environmental harm caused by use of the resource .
Storage of the resource	
(7.3)	Stormwater or runoff that has come in contact with the resource must be managed to prevent causing environmental harm to the environmental values of the receiving environment.
(7.4)	Excepting use of the resource in accordance with 7.1(c), any pond used for the storage of the resource must be constructed and maintained so that: <ul style="list-style-type: none"> a) there is no release of resource over or through bed or banks of the pond to any waters; and b) a freeboard of not less than 0.5 meters is maintained at all times, except in an emergency.
Land application of the resource	
(7.5)	Unless used in accordance with 7.1(c), the resource must only be applied to the land where the application is conducted at an agronomic loading rate and in a way determined by an appropriately qualified person or as recommended by industry guidelines and/or best management practices considering the resource composition, crop requirements and soil characteristics.
(7.6)	The resource user must maintain the following records for all applications of the resource to land as a soil ameliorant or conditioner as follows except when used in accordance with 7.1(c): <ul style="list-style-type: none"> a) business name, ABN and address of the registered resource producer who supplied the resource; b) details of the land on which application occurs (e.g. farm map block/paddock details and/or GPS coordinates (where available)); c) date of application of the resource; d) actual application rate (expressed as the quantity e.g. wet tonnes per hectare per application) for each application); and e) application method.

Records	
(7.7)	<p>All records required to be kept by the resource user under the conditions of this EOW code must be:</p> <ul style="list-style-type: none"> a) kept by the resource user for a period of not less than five (5) years; and b) provided to the chief executive upon request, in the format requested and in the time period specified.
Notification of emergencies , incidents and breaches	
(7.8)	<p>Unless the resource is being used under 7.1(c), any breach of a condition of this EOW code must be reported to the chief executive as soon as practicable within 24 hours of becoming aware of the breach.</p>
(7.9)	<p>Records of any breach of a condition of this EOW code, including full details of the breach and any subsequent actions taken, must be kept and provided to the chief executive upon request, in the format requested and in the time period specified</p>

8. Definitions

Words and phrases used throughout this EOW code in **bold** are defined below. Where a definition for a term used in this EOW code is sought and the term is not defined within this EOW code the definitions provided in the relevant legislation shall be used.

'appropriately qualified person' means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

'boiler ash' means a by-product produced by sugar mill boilers as fuel is burnt to power the manufacturing process. Varying amounts of soil and other residues are separated out as boiler ash.

'chief executive' means the Department of Environment, Science and Innovation or its successor.

'contaminants' (as defined in Section 11 of the *Environmental Protection Act 1994*), unless authorised under this EOW code means —

- (a) a gas, liquid or solid; or
- (b) an odour; or
- (c) an organism (whether alive or dead), including a virus or parasite; or
- (d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
- (e) a combination of contaminants.

'emergency(ies)' means a situation where either human health or safety is threatened, or serious or material environmental harm has been or is likely to be caused; and urgent action is necessary to protect the health or safety of persons, or prevent or minimise the harm, or rehabilitate or restore the environment because of the harm.

'environmental authority' is an approval granted by the **chief executive** pursuant to the *Environmental Protection Act 1994* which authorises the holder of the environmental authority to carry out an environmentally relevant activity or a mining activity.

'environmental harm' means environmental harm as defined in Chapter 1 of the *Environmental Protection Act 1994*.

'environmental value' as defined in Chapter 1 of the *Environmental Protection Act 1994*.

'filter mud' means the residual mud and fibre filtered from the raw juice steam after lime addition and juice clarification. It is comprised mainly of water, fibre, mud solids (from soil) and natural impurities in the sugar cane.

'measures' have the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competency.

'mill mud' means a by-product of the sugar cane crushing process undertaken at sugar mills which consists of soil, sugars, bagasse, lime and ash.

'NATA' is the National Association of Testing Authorities.

'person(s)' means an individual or a corporation.

'records' include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition or requirement of this EOW code.

‘registered resource producer’ means a **person** who generates or receives the waste, produces the **resource**, and has registered with the **chief executive** (in accordance with *Requirement (6.1)*) to use, sell or give away the **resource** to be used under this EOW code.

‘resource(s)’ means **filter mud, boiler ash, mill mud** or **a blend of any of these sugar mill by-products** that meet the resource quality criteria in *Table 1 – Resource quality criteria* of this EOW code, and is sourced from a sugar mill.

‘resource user(s)’ means a **person** who uses the **resource** for a use approved under this EOW code and in such a manner which does not cause any **environmental harm**. This includes any **registered resource producer(s)** who use the **resource**.

‘safety data sheet’ means a document containing data regarding the properties of the resource which provides information on handling or working with that substance in a safe manner; and includes information such as physical data toxicity, environmental characteristics, health effects, first aid, reactivity; and storage, disposal, protective equipment and spill handling procedures. The Safety Data Sheet must be compliant with Safe Work Australia’s code of practice for production of Safety Data Sheet.

‘soil ameliorant or conditioner’ means a substance added to soil to improve the growing conditions for plant roots by providing nutritional requirements.

‘users method statement’ means a method statement for the loading, transport and storage of the **resource**.

‘waters’ includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, artificial watercourse, bed and bank of any watercourse, dams that are not fit for purpose, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

- END -

Appendix A — General obligation for all persons

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

Responsibilities under the *Environmental Protection Act 1994*

All persons within the State of Queensland must also meet their obligations under the *Environmental Protection Act 1994*, and the regulations made under that Act.

General environmental duty

Section 319 of the *Environmental Protection Act 1994* (EP Act) 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 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
- the financial implications of the different measures as they would relate to the type of activity.

More information is available on the Department of Environment, Science and Innovation website www.des.qld.gov.au.

Some relevant offences under the *Environmental Protection Act 1994*

Causing serious or material environmental harm (sections 437–39)

Material and serious environmental harm are defined in sections 16 and 17 of the EP Act. 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. Damages, or costs required to rehabilitate the environment, of over thresholds amounts in the EP Act also constitutes material or serious environmental harm. 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 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 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.

Some 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. 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.

Failure to comply with EOW code (section 158)

A registered resource producer for an EOW code must not use, sell or give away the resource unless the registered resource producer complies with the requirements of the EOW code relating to the resource.

A person, other than a registered resource producer, must not use a resource in a way, or for a purpose, that does not comply with an EOW code for the resource.

Approved:

24 November 2022

Enquiries:

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