



End of Waste Code
Ferrous Sulphate Heptahydrate (ENEW07597919)

Waste Reduction and Recycling Act 2011



Queensland
Government

Version history

Version	Date	Description of changes
1.00	16 December 2019	FINAL
1.01	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.
1.02	28 March 2024	Updated department name to reflect machinery of government changes and the definition of serious or material harm.

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

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1. Explanatory Statement

This End of Waste (EOW) code for **ferrous sulphate heptahydrate** 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 **ferrous sulphate heptahydrate** waste becomes 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

An EOW code states when a waste stops being a waste following any necessary processing or treatment. A waste becomes a **resource** when it has been determined to meet the requirements of an EOW code. It may be necessary to treat or process the waste prior to meeting those requirements. 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. If a **resource** does not meet the requirements of the EOW code and/or is not used in accordance with the EOW code, it is not deemed a **resource**. It remains 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** approved under an EOW code is deemed to be a waste again, if it is disposed of at a waste disposal facility, 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 or the illegal dumping of waste provision 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** if they do not 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. 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 **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 **ferrous sulphate heptahydrate** which has been lawfully generated as a by-product of **steel pickling**. The **ferrous sulphate heptahydrate** 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](#).

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.												
Approved resource													
(6.2)	The approved resource is ferrous sulphate heptahydrate 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 complies with all of the following criteria and quality characteristics: <ul style="list-style-type: none"> a) is generated during steel pickling; b) has a purity of at least 97% ferrous sulphate heptahydrate; and c) must not exceed the quality criteria stated in <i>Table 1: Resource quality criteria</i>. 												
(6.4)	Table 1: Resource quality criteria												
	<table border="1"> <thead> <tr> <th>Quality characteristic</th> <th>Total maximum concentration (mg/kg)</th> </tr> </thead> <tbody> <tr> <td>Arsenic</td> <td>0.063</td> </tr> <tr> <td>Cadmium</td> <td>0.006</td> </tr> <tr> <td>Lead</td> <td>0.171</td> </tr> <tr> <td>Zinc</td> <td>162</td> </tr> <tr> <td>Manganese</td> <td>4620</td> </tr> </tbody> </table>	Quality characteristic	Total maximum concentration (mg/kg)	Arsenic	0.063	Cadmium	0.006	Lead	0.171	Zinc	162	Manganese	4620
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Resource monitoring													
(6.5)	The registered resource producer must sample, measure and record the composition of the resource for at least the quality characteristics in <i>Table 1: Resource quality criteria</i> , on a six monthly basis as a minimum.												
(6.6)	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													
(6.7)	The registered resource producer must provide the following to the resource user upon establishment of an arrangement to sell or give away the resource , and annually thereafter: <ul style="list-style-type: none"> a) a copy of the EOW code for <i>Ferrous Sulphate Heptahydrate (ENEW07597919)</i>⁴; b) the registered resource producer's business or individual's name, ABN and address; 												

³ The approved form, *Registered Resource Producer for an EOW code*, is available on the Queensland Government website at www.qld.gov.au, using the publication number (ESR/2018/4082) as a search term.

⁴ This can be a physical copy, an electronic copy or a link to the chief executive's [website](#) where this EOW code is available.

	<ul style="list-style-type: none"> c) confirmation in writing that the resource being supplied is compliant with <i>Requirement (6.3)</i> of this EOW code; d) a most recent certificate of analysis for the quality characteristics listed in <i>Table 1: Resource quality criteria</i>; and e) safety data sheet for the resource.
Records	
(6.8)	<p>The registered resource producer must keep the following records for the resource provided to the resource user:</p> <ul style="list-style-type: none"> a) origin of the resource (e.g. address, lot on plan and/or GPS coordinates); b) quantity (in tonnes) of the resource supplied; c) quality criteria of the resource (including but not limited to the quality characteristics listed in <i>Table 1: Resource quality criteria</i>); d) date of dispatch of the resource; and e) business or individual's name, ABN and address for the person receiving the resource.
(6.9)	<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 and in the format requested and time period specified.
Notification of emergencies, incidents and breaches	
(6.10)	Any breach of a requirement of this EOW code must be reported to the chief executive as soon as practicable and within 24 hours of becoming aware of the breach.
(6.11)	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 and in the format requested and time period specified.

7. Conditions of Use

Notification under this EOW code	
(7.1)	Prior to operating under this EOW code, a person who intends to use the approved resource must notify the chief executive by giving a notice in the approved form ⁵ at least 10 days prior to the commencement of using the resource .
Approved uses	

⁵ The approved form, *Notification of use of a resource* is available on the Queensland Government website at www.qld.gov.au, using the publication number (ESR/2018/4552) as a search term.

(7.2)	The approved resource is ferrous sulphate heptahydrate that complies with <i>Requirement (6.3)</i> of this EOW code and is used for the following purposes: <ul style="list-style-type: none"> a) as a supplementary feedstock in the manufacture of compost; b) as a fertiliser; and/or c) as an anti-foulant.
Resource use as a supplementary feedstock in the manufacture of compost	
(7.3)	The resource must only be used to manufacture compost that meets the requirements of AS 4454 .
Resource use as a fertiliser	
(7.4)	Prior to the application of the resource as a fertiliser , an appropriately qualified person must determine the agronomic loading rate after considering the resource composition, crop nutritional demand and soil characteristics of the site of use .
(7.5)	The resource must only be applied to the site of use at the agronomic loading rate determined by an appropriately qualified person .
(7.6)	The resource user must maintain the following records for all applications of the resource to land: <ul style="list-style-type: none"> a) details of the assessment carried out by the appropriately qualified person to determine the agronomic loading rates in accordance with <i>Condition (7.4)</i>; b) details of the site of use on which application occurs (e.g. soil pH, farm map block/paddock details and/or GPS coordinates); c) date of application of the resource; and d) actual application rate (expressed as the quantity (e.g. cubic metres per hectare per application)) for each application.
Storage of the resource	
(7.7)	The resource must be stored in a way that prevents or minimises contact with stormwater or runoff.
Records	
(7.8)	The resource user must record the following information for each load of the resource received by the resource user under this EOW code: <ul style="list-style-type: none"> a) business or individual's name, ABN and address of the registered resource producer who supplied the resource; b) date the resource user received the resource; c) quantity (in tonnes) of the resource received by the resource user; and d) site of use of resource (e.g. street address, lot on plan and/or GPS coordinates).
(7.9)	All records required to be kept by the resource user under this EOW code must be:

	<p>a) kept by the resource user for a period of not less than five (5) years; and</p> <p>b) provided to the chief executive upon request and in the format requested and time period specified.</p>
Notification of emergencies , incidents and breaches	
(7.10)	Any breach of a condition of this EOW code must be reported to the chief executive as soon as practicable and within 24 hours of becoming aware of the breach.
(7.11)	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 and in the format requested and time period specified.

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 *Waste Reduction and Recycling Act 2011* or the *Environmental Protection Act 1994* shall be used.

'ABN' means Australian Business Number which is a unique 11 digit number issued by the Australian Business Register and identifies a business in Australia.

'anti-foulant' means a substance designed to remove or prevent biofouling caused by any number of organisms on wetted surfaces within cooling towers, air-conditioning units and associated infrastructure.

'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.

'AS 4454' means Australian Standard 4454 Composts, soil conditioners and mulches (2012), or its most recent version.

'business' means a body of persons, whether incorporated or unincorporated.

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

'compost' has the meaning in **AS 4454** and is the organic product that has undergone controlled aerobic and thermophilic biological transformation through the composting process to achieve pasteurisation and reduce phytotoxic compounds, and achieved a specified level of maturity required for compost.

'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.

'ferrous sulphate heptahydrate' is a crystallised by-product which has been **lawfully** generated during **steel pickling**.

'fertiliser(s)' (as defined in *Schedule 2 – Code of Practice for the Labelling of Fertilisers and for Contaminants in Fertilisers* of the Biosecurity Regulation 2016) means a 'substance that is manufactured, represented, supplied or used for the purpose of directly or indirectly—

- a) fertilising soil; or
- b) supplying nutrients to plants; or

c) conditioning the soil by altering the chemical, physical or biological condition of the soil;

however, does not include a substance declared, under a Commonwealth Act or regulation, to be an agricultural chemical product or a veterinary chemical product.

‘**lawful(ly)**’ means allowed or permitted by law and not contrary to law.

‘**load**’ means the volume of **resource** put in or on something for conveyance or transportation, carried at one time. A truck and trailer carrying the **resource** is considered as one load as well as multiple bins travelling by rail. Where the **resource** is transported via conveyor systems, information should be recorded on a daily basis until the transfer ceases.

‘**NATA**’ is the National Association of Testing Authorities.

‘**person**’ means an individual or a corporation.

‘**records**’ include breach notifications, written agreements, analysis results, monitoring reports and monitoring programs required under a requirement or a condition of this EOW code.

‘**registered resource producer(s)**’ means a **person** who 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 **ferrous sulphate heptahydrate** that meets the criteria and quality characteristics in *Requirement (6.3)* of this EOW code.

‘**resource user(s)**’ means a **person** who has notified the **chief executive** (in accordance with *Condition (7.1)*) to receive the **resource** from a **registered resource producer** and uses the **resource** for a use approved under this EOW code and does so in such a manner which does not cause any **environmental harm**.

‘**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 *Model Code of Practice: Preparation of safety data sheets for hazardous chemicals*.

‘**site of use**’ means the relevant location or locations where the **resource** is used in accordance with this EOW code.

‘**steel pickling**’ means the treatment of manufactured steel with sulphuric acid to remove surface mill scale and rust prior to the steel undergoing further processing such as rolling, coating, or galvanising.

‘**supplementary feedstock**’ means adding the **resource** to the **compost** manufacturing process in small proportions (e.g. 1:400 tonnes) to add beneficial properties to the **compost** produced.

‘**waters**’ includes river, stream, lake, lagoon, pond, swamp, wetland, surface water, artificial watercourse, bed and bank of any watercourse, dams, 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 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 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 or grass clippings swept into the gutter. 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. Illegal dumping can also include abandoned vehicles.

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:

16 December 2019

Enquiries:

Permit and Licence Management
Ph: 13 QGOV (13 74 68)
Email: palm@des.qld.gov.au