Notice

Waste Reduction and Recycling Act 2011

Decision to amend a general approval of a resource— Coal Combustion Products

This Notice is issued by the chief executive to advise of a decision made under section 172 of the Waste Reduction and Recycling Act 2011 *(WRR Act) to amend a general approval for a resource for beneficial use.*

This notice amends and replaces general approval reference ENBU01043609 and is a general approval of coal combustion products as a resource of which everyone has the benefit where they are able to meet the conditions imposed on the approval. This approval is subject to the following conditions imposed in accordance with s. 166 of the WRR Act and remains in force until **31 December 2018** (the period of the approval).

The granting of this approval 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 each person operating under this approval to identify and obtain all other approvals necessary for the proposed activity.

The granting of this approval also does not remove the obligation to take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused (the 'general environmental duty' in accordance with s. 319 of the *Environmental Protection Act 1994* (EP Act)).

Environmental harm is any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance. It also does not remove the obligation to comply with the notification provisions contained in the EP Act where an event causes or threatens to cause serious or material environmental harm.

Advice about this general approval

Persons wishing the use coal combustion products (the resource) under this general approval must comply with the approval conditions relevant to them and/or the end use for which the resource will be applied.

Failure to comply with a condition of this approval is an offence carrying a maximum penalty of $189,560 for an individual and $947,801 for a corporation (as at 1 July 2014).

Approved by:

Lindsay Delzoppo
Director, Statewide Environmental Assessments
Delegate of the chief executive
Waste Reduction and Recycling Act 2011
Date: 12 June 2014

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CONDITIONS

Contents

Section 1—General conditions

Limits on the resource

1. The approved resource is limited to coal combustion products[1] that are beneficially used as stated in Table 1 and comply with the associated quality characteristics for the use listed in Table 2[2].

Table 1 Beneficial uses for the resource

Class of beneficial use	Description of beneficial use
Bound applications	The resource can be used in manufacturing processes and applications which encapsulate or chemically transform and incorporate the resource into a final product that complies with relevant Australian Standards for that product. Final products for the purpose of this approval are limited to: a. cementitious mixes b. cement products c. concrete products d. asphalt e. binder for road stabilisation pavements f. rigid and composite pavements structures g. ceramic products h. insulation i. inert mineral fillers (for use in products such as paints, varnishes, plastics, ceramics, ultra-light concrete and metal alloys) j. paints, coatings and adhesives k. plastics l. geopolymers m. rubbers.
Unbound applications	The resource can be used in the following applications on standard areas[3]: a. pipe bedding materials b. sub-surface drainage c. selected backfill for structures d. road pavement, base, sub-base and subgrade structures e. structured and engineered fill f. select layers which act as working platforms at the top of earthworks g. fill for reinforced soil structures (including geo-grid applications).
Soil ameliorant	The resource can be used as a soil ameliorant[4] in agricultural and horticultural activities throughout Queensland where it provides an agricultural benefit.

[1] See definition of 'coal combustion products' in Section 5—DEFINITIONS.

[2] Any resource that is not used as stated in condition 1 is considered a waste and must be managed in accordance with the *Environmental Protection Act 1994* and *Waste Reduction and Recycling Act 2011*, and their subordinate legislation.

[3] Standard areas means land use including residential, parks, recreational play fields, open spaces and commercial and industrial sites; excluding waters and the bed and banks of waters.

[4] A soil ameliorant must have a property that corrects an identified agronomic deficiency in land to which it is applied or if incorporated into a soil conditioner product, properties on balance beneficial to safe use of that product.

Table 2 Resource quality characteristics

Quality characteristic	Limits for specific uses *				Limit type
	Bound applications (mg/kg)	Unbound applications		Soil ameliorant applications (mg/kg)	
		Total Concentration (mg/kg)	TCLP Leachable Concentration (mg/L)		
Arsenic (total)	NS	100	0.5	20	maximum
Barium	NS	NS	10	NS	maximum
Beryllium	NS	60	NS	60	maximum
Boron	NS	4500	NS	10**	maximum
Cadmium	NS	20	0.05	1	maximum
Chromium (total)	NS	NS	0.5	100	maximum
Chromium (III)	NS	NS	NS	100	maximum
Chromium (VI)	NS	100	NS	1	maximum
Cobalt	NS	100	NS	100	maximum
Copper	NS	6000	10	100	maximum
Lead	NS	300	0.5	150	maximum
Manganese	NS	3800	NS	3800	maximum
Mercury	NS	10	0.01	1	maximum
Molydenum	NS	NS	NS	10	maximum
Nickel	NS	400	0.5	60	maximum
Selenium	NS	200	0.1	5	maximum
Vanadium	NS	NS	NS	NS	-
Zinc	NS	7400	50	200	maximum
Electrical conductivity (dS/m)	NS	NS	NA	10	maximum
pH (pH units)	NS	5 - 14	NA	5 – 14	range

NA = Not applicable
NS = No specific concentration specified.
* measured using reference test methods
**measured using hot $CaCl_2$ method

2. In addition to condition 1, the resource must not have any properties nor contain any other contaminants at concentrations which may cause environmental harm[5] when used in accordance with the conditions of this approval.

Applicability of conditions

3. Any person operating under this approval must comply with the general conditions and all additional conditions relevant to their role(s) and class of beneficial use. Roles specified in this approval are:
    a) generator[6]
    b) transporter[7]
    c) user[8]

[5] See section 14 of *Environmental Protection Act 1994*. Environmental harm includes any adverse effect or potential adverse effect on public amenity and safety, waters, and health of stock grazed and plants grown on land ameliorated by the resource.
[6] See definition of 'generator' in Section 5—DEFINITIONS.
[7] See definition of 'transporter' in Section 5—DEFINITIONS.

Notification of operation under this approval

4. Any generators and users operating under this approval must notify the chief executive[9] of their name, address, contact information and details of intended resource usage, in writing using the approved form[10] within 10 business days of beginning use of the resource under this general approval.

Preventing environmental harm

5. The resource must not be released directly or indirectly to land, air, or waters in a way that causes or may cause actual or potential environmental nuisance or environmental harm.

6. As soon as the relevant person becomes aware of any release of the resource that causes or may cause actual or potential environmental harm, the release must be stopped, the environmental harm promptly rectified with the necessary equipment and remediation methods, and all reasonable actions taken to prevent a recurrence of the release.

Exception reporting

7. Any breach of a condition of this approval must be reported to the chief executive within 24 hours of becoming aware of the breach, and full details of the breach and any subsequent actions and results recorded.

Records

8. The following information must be recorded for each load[11] of the resource transported by a person occupying the relevant role[12]:

    a) origin of the resource
    b) quantity of the resource
    c) quality characteristics of the resource (for at least the parameters stated in Table 2)
    d) date of the collection of the resource
    e) date of the delivery of the resource
    f) destination of the resource.

9. All records required by the conditions of this approval must be kept for at least five (5) years and provided to the chief executive on request.

Section 2—Additional conditions for generators

Monitoring of the resource

10. Monitoring of the resource quality characteristics to determine compliance with condition 1 (including TCLP leachable concentration testing) must be conducted for the quality characteristics in Table 2 and records kept for each source not less frequently than specified in Table 3.

[8] See definition of 'user' in Section 5—DEFINITIONS.

[9] See definition of 'chief executive' in Section 5—DEFINITIONS.

[10] The approved form is available on the chief executives website at www.ehp.qld.gov.au.

[11] 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.

[12] As described in condition 3.

Table 3 Resource monitoring frequency

Resource variability	Frequency
Proven resource[13]—Where statistical analysis has been undertaken that demonstrates no significant (at minimum 95% Confidence Interval) difference in the mean and standard variation of contaminant concentrations and TCLP leachable concentrations with 80% statistical power (chance of detecting a significant difference).	Annually
Unproven resource—Not a proven resource as above.	Once every 500 tonnes or every three months, whichever is more frequent.

11. In addition to the monitoring conducted in accordance with condition 10, where the composition of the resource has changed or is likely to change, more frequent monitoring must be conducted sufficient to detect and characterise the extent of any change.
12. All determinations of the quality of the resource must be carried out on appropriately representative samples.
13. Analysis of samples taken as a requirement of a condition of this approval must be undertaken by a National Association of Testing Authorities (NATA) accredited laboratory or one holding an equivalent certification.

Information to be provided

14. The generator of the resource must provide transporters and users, information detailing the contaminant concentrations and TCLP leachable concentrations of the resource for at least the characteristics listed in Table 2, a safety data sheet[14].

Section 3—Additional conditions for transporters

15. The resource must be transported in a manner that prevents the release of the resource.
16. Should a delivery of the resource be rejected at its destination, it must be immediately returned to the generator or a facility that can lawfully receive the material.
17. Any resource adhering to the truck body after unloading is to be cleaned off and returned to the load or a facility that can lawfully receive the material.
18. If any supplied resource is surplus to user requirements, it must be returned to the supplier or disposed of to a waste management facility suitably licensed to accept and manage such material.

[13] Any resource that has been determined to be a 'proven resource' under specific approval ENBU00682907 while in force (effective from 22 January 2008, expiring 30 June 2014) is taken to be a 'proven resource' under this general approval only for bound and unbound applications, excluding soil ameliorant applications.

[14] A Safety Data Sheet (SDS) is a document that provides information on the properties of hazardous chemicals and how they affect health and safety in the workplace. SDS shall be compliant with Safe Work Australia's code of practice for production of SDS.

Section 4—Additional conditions for users

19. The use of the resource must be undertaken in accordance with written procedures that:
    a) identify potential risks of environmental harm for the use of the resource during routine operations and emergencies
    b) establish and maintain control measures that minimise the potential for environmental harm
    c) ensure, where the resource is incorporated into a product, the product complies with the relevant Australian Standards (where applicable)
    d) ensure reviews of environmental performance are undertaken at least annually.
20. Users undertaking an **unbound application** must not use the resource:
    a) below the groundwater table
    b) within 50m of a water supply bore
    c) in or in a way which allows the resource to wash, blow, fall or otherwise move into waters.
21. Users undertaking **soil ameliorant applications** must only apply the resource to the land where the:
    a) resource applied contains elements, compounds or other qualities that have been identified as being deficient in the relevant land and cropping system to which it will be applied by an appropriately qualified person
    b) application is conducted at an agronomic loading rate calculated to correct the deficiency identified in clause (a), considering the resource composition, crop and soil characteristics, having been determined by an appropriately qualified person
    c) application does not cause an adverse impact on the vegetation or soil characteristics or any stock grazing on the land
    d) quality of groundwater and stormwater runoff is not adversely affected.
22. Users undertaking **soil ameliorant applications** involving resource application to land (excluding application of a soil ameliorant material in which the resource has been used, as described in condition 23) must keep the following records of each resource application to land:
    a) details of the land on which the application occurs
    b) date when the resource is applied
    c) the application rate.
23. Users undertaking **soil ameliorant applications** may only mix, blend, or otherwise incorporate the resource into a material to be used as a soil ameliorant for supply to another user where the material to be provided complies with Australian Standard 4454: *Composts, soil conditioners and mulches*, or Australian Standard 4419: *Soils for landscaping and garden use*, including monitoring and keeping records of product quality.

Section 5—DEFINITIONS

"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.

"cenospheres" means inert, hollow, essentially thin-walled glass spheres of approximately 10–350 microns having a typical density of 0.4–0.8g/cm3, comprised largely of silica and alumina and filled with air and/or gasses which are formed from coal combustion ash when in a molten state.

"chief executive" means the Department of Environment and Heritage Protection or its successor.

"contaminant concentration" means the specific contaminant concentration of any chemical contaminant in the resource, expressed as milligrams per kilogram (mg/kg), and quality parameters of pH (expressed in pH units) and electrical conductivity (expressed in decisiemens per metre (dS/m)).

"coal combustion products" means fly ash, furnace bottom ash and cenospheres produced primarily from the combustion of coal within coal fired power stations.

"fly ash" means solid material extracted from the flue gasses of a boiler fired with pulverised coal, consisting essentially of the oxides of silicon, aluminium, iron and some calcium of which particle sizes range from less than 1µm (micrometre) to 200µm and are irregular to spherical shape.

"furnace bottom ash" means the agglomerated particles formed at the bottom of the furnace. Bottom ash is typically grey to black in colour, is quite angular, and has a porous surface structure.

"generator" means a person who generates the resource to be used.

"relevant person" means a generator, transporter or user.

"reference test methods"—The reference test methods for determining both the contaminant and TCLP leachable concentration are as described in the most recent version of the United States Environmental Protection Agency's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* [available December 2013 at www.epa.gov/epaoswer/hazwaste/test/sw846.htm, also known as SW-846]. The following procedures for leachate preparation are recommended:

1. *AS 4439.1–1999: Wastes, Sediments and Contaminated Soils – Preparation of Leachates, Preliminary Assessment* (Australian Standard 1999b).
2. *AS 4439.3–1997: Wastes, Sediments and Contaminated Soils – Preparation of Leachates, Bottle Leaching Procedure* (Australian Standard 1997a).
3. *AS 4439.2–1997: Wastes, Sediments and Contaminated Soils – Preparation of Leachates, Zero Headspace Procedure* (Australian Standard 1997b).
4. The standard pH for the leaching solutions used must be either 4.93 ± 0.05 if the pH of the waste sample is less than 5.0, or 2.88 ± 0.05 if the pH of the waste sample is greater than 5.
5. To determine the pH of the waste sample, use the test method specified in Clause 7.5 (Selection of Leaching Fluid) of *AS 4439.3–1997* (above).

"site" means the land on which the resource is being used in accordance with the conditions of this approval.

"surface waters" means waters excluding groundwater.

"TCLP Leachable Concentration" is the leachable concentration of any chemical contaminant using the toxicity characteristics leaching procedure (TCLP), expressed as milligrams per litre (mg/L).

"transporter" means a person who is transporting the resource.

"user" means a person who uses the resource and includes a person who processes, mixes, blends or otherwise incorporates the resource into a material for supply to another user.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, 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 OF CONDITIONS