



# **Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014**

## **The “continuous process” recovered fines order 2014**

### **Introduction**

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of “continuous process” recovered fines to which ‘the “continuous process” recovered fines exemption 2014’ applies. The requirements of this order apply in relation to the supply of “continuous process” recovered fines for application to land for the purposes of construction or landscaping.

### **1. Waste to which this order applies**

- 1.1. This order applies to “continuous process” recovered fines. In this order, “continuous process” recovered fines means a soil or sand substitute with a typical maximum particle size of 9.5 mm that is derived from the continuous processing of mixed construction and demolition waste including residues from the processing of skip bin waste.

### **2. Persons to whom this order applies**

- 2.1. The requirements in this order apply, as relevant, to any person who supplies “continuous process” recovered fines that have been generated, processed or recovered by the person.
- 2.2. This order does not apply to the supply of “continuous process” recovered fines to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 ‘waste disposal (application to land)’ or clause 40 ‘waste disposal (thermal treatment)’ of Schedule 1 of the POEO Act.

### **3. Duration**

- 3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

### **4. Processor requirements**

The EPA imposes the following requirements on any processor who supplies “continuous process” recovered fines.

## **Sampling requirements**

- 4.1. On or before supplying “continuous process” recovered fines, the processor must:
  - 4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the “continuous process” recovered fines.
  - 4.1.2. Undertake sampling and testing of the “continuous process” recovered fines as required under clause 4.2 below. The sampling must be carried out in accordance with the written sampling plan and Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent).
- 4.2. Where the “continuous process” recovered fines are generated as part of a continuous process, the processor must undertake the following sampling:
  - 4.2.1. Characterisation of the “continuous process” recovered fines by collecting 1 composite sample of the waste per fortnight, and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of characterisation, and
  - 4.2.2. Routine sampling of the “continuous process” recovered fines by collecting 1 composite sample each week and testing each sample for the chemicals and attributes listed in Column 1 of Table 1 other than those listed as ‘No testing required’ in Column 3. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of routine sampling. However, if characterisation sampling occurs at the same frequency as routine sampling, any sample collected and tested for the purposes of characterisation under clause 4.2.1 may be treated as a sample collected and tested for the purposes of routine sampling under clause 4.2.2.

## **Chemical and other material requirements**

- 4.3. The processor must not supply “continuous process” recovered fines to any person if, in relation to any of the chemical and other attributes of the “continuous process” recovered fines:
  - 4.3.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation or the routine sampling exceeds the maximum absolute concentration or other value listed in Column 4 of Table 1; or
  - 4.3.2. The average concentration or other value of that attribute from the characterisation of the “continuous process” recovered fines exceeds the maximum average concentration or other value (based on the arithmetic mean) listed in Column 2 of Table 1; or
  - 4.3.3. The average concentration or other value of that attribute from the routine sampling of the “continuous process” recovered fines exceeds the maximum average concentration or other value (based on the arithmetic mean) listed in Column 3 of Table 1. The results from 5 composite samples collected and tested in a 5 week period must be used to calculate the routine average.

- 4.4. The absolute maximum concentration or other value of that attribute in any “continuous process” recovered fines supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

**Table 1**

<b>Column 1</b>	<b>Column 2</b>	<b>Column 3</b>	<b>Column 4</b>
<b>Chemicals and other attributes</b>	<b>Maximum average concentration for characterisation</b> (mg/kg 'dry weight' unless otherwise specified)	<b>Maximum average concentration for routine testing</b> (mg/kg 'dry weight' unless otherwise specified)	<b>Absolute maximum concentration</b> (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	No testing required	1.5
2. Cadmium	0.5	No testing required	1.5
3. Lead	100	100	250
4. Arsenic	20	No testing required	40
5. Chromium (total)	60	60	150
6. Copper	70	70	200
7. Nickel	40	No testing required	80
8. Zinc	250	250	600
9. Total Organic Carbon	5%	No testing required	10%
10. Electrical Conductivity	2.5 dS/m	2.5 dS/m	3.5 dS/m
11. pH *	7.5 - 9	7.5 - 9	7.0 - 10
12. Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	No testing required	80
13. Benzo(a)pyrene	1	No testing required	6
14. Total Petroleum Hydrocarbons (TPHs) C <sub>6</sub> - C <sub>9</sub>	80	No testing required	150
15. Total Petroleum Hydrocarbons (TPHs) C <sub>10</sub> - C <sub>36</sub>	800	No testing required	1600
16. Individual Chlorinated Hydrocarbons	Not applicable	No testing required	1
17. Individual Organochlorine Pesticides	Not applicable	No testing required	1
18. Individual Polychlorinated Biphenyls (PCBs)	Not applicable	No testing required	1
19. Glass, metal and rigid plastics	0.1%	0.1%	0.3%
20. Plastics - light flexible film	0.05%	0.05%	0.1%

21. Proportion (by weight) retained on a 0.425 mm sieve	80%	No testing required	90%
22. Proportion (by weight) retained on a 9.5 mm sieve	Not applicable	No testing required	5%
23. Proportion (by weight) retained on a 26.5 mm sieve	Not applicable	No testing required	0%

\*Note: The ranges given for pH are for the minimum and maximum acceptable pH values in the “continuous process” recovered fines.

## Test methods

4.5. The processor must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.

4.6. The processor must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the “continuous process” recovered fines it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.

4.6.1. Test methods for measuring the mercury concentration:

4.6.1.1. USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 20% of the stated absolute maximum concentration in Table 1, Column 4 (i.e. <0.3 mg/kg dry weight).

4.6.1.2. Report as mg/kg dry weight.

4.6.2. Test methods for measuring chemicals 2 - 8:

4.6.2.1. Sample preparation by digestion using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils (or an equivalent analytical method).

4.6.2.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of the stated absolute maximum concentration in Table 1, Column 4 (i.e. 25 mg/kg dry weight for lead).

4.6.2.3. Report as mg/kg dry weight.

4.6.3. Test methods for measuring the total organic carbon content:

4.6.3.1. Method 105 (Organic Carbon) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.6.3.2. Reporting as % total organic carbon.

4.6.4. Test methods for measuring the electrical conductivity and pH:

4.6.4.1. Sample preparation by mixing 1 part recovered fines with 5 parts distilled water.

- 4.6.4.2. Analysis using Method 103 (pH) and 104 (Electrical Conductivity). In Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
- 4.6.4.3. Report electrical conductivity in deciSiemens per metre (dS/m).
- 4.6.5. Test method for measuring PAHs and benzo(a)pyrene:
  - 4.6.5.1. Analysis using USEPA SW-846 Method 8100 Polynuclear aromatic hydrocarbons (or an equivalent analytical method).
  - 4.6.5.2. Calculate the sum of all 16 PAHs for total PAHs.
  - 4.6.5.3. Report total PAHs as mg/kg dry weight.
  - 4.6.5.4. Report benzo(a)pyrene as mg/kg.
- 4.6.6. Test method for measuring TPHs:
  - 4.6.6.1. Method 506 (Petroleum Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
  - 4.6.6.2. Report C6 – C9 as mg/kg.
  - 4.6.6.3. Report C10 – C 36 as mg/kg.
- 4.6.7. Test methods for measuring chlorinated hydrocarbons:
  - 4.6.7.1. Analysis using USEPA SW-846 Method 8021B Aromatic and halogenated volatiles by gas chromatography using photoionization and/or electrolytic conductivity detectors (or an equivalent analytical method).
  - 4.6.7.2. Measure the following chlorinated hydrocarbons: carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene, dichloromethane (methylene chloride), 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride and hexachlorobutadiene concentrations.
  - 4.6.7.3. Report individual listed chlorinated hydrocarbons as mg/kg.
- 4.6.8. Test methods for measuring organochlorine pesticides:
  - 4.6.8.1. Analysis using USEPA SW-846 Method 8081B Organochlorine pesticides by gas chromatography (or an equivalent analytical method).
  - 4.6.8.2. Measure the following organochlorine pesticides: aldrin, alpha BHC, beta BHC, gamma BHC (lindane), delta BHC, chlordane, DDT, DDD, DDE, dieldrin, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorobenzene, methoxychlor and endosulfan (includes endosulfan I, endosulfan II and endosulfan sulphate).
  - 4.6.8.3. Report individual listed organochlorine pesticides as mg/kg.
- 4.6.9. Test methods for measuring the PCBs:
  - 4.6.9.1. USEPA SW-846 Method 8082A Polychlorinated Biphenyls (PCBs) by gas chromatography (or an equivalent analytical method).

- 4.6.9.2. Measure the following PCBs: Aroclor 1016 (CAS Registry No. 12674-11-2), Aroclor 1221 (CAS Registry No. 11104-28-2), Aroclor 1232 (CAS Registry No. 11141-16-5), Aroclor 1242 (CAS Registry No. 53469-21-9), Aroclor 1248 (CAS Registry No. 12672-29-6), Aroclor 1254 (CAS Registry No. 11097-69-1), Aroclor 1260 (CAS Registry No. 11096-82-5).
  - 4.6.9.3. Report individual listed PCBs as mg/kg.
- 4.6.10. Test method for measuring 19 - 20:
- 4.6.10.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Concrete (or an equivalent method), using a 2.36 mm sieve.
  - 4.6.10.2. Report as %.
- 4.6.11. Test method for measuring 21 -23:
- 4.6.11.1. NSW Roads & Traffic Authority Test Method T106 Coarse particle distribution in road construction materials (by dry sieving) and T107 Fine particle distribution in road construction materials (or an equivalent method).
  - 4.6.11.2. Report as %.

## **Notification**

- 4.7. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the "continuous process" recovered fines:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
  - a copy of the "continuous process" recovered fines exemption, or a link to the EPA website where the "continuous process" recovered fines exemption can be found; and
  - a copy of the "continuous process" recovered fines order, or a link to the EPA website where the "continuous process" recovered fines order can be found.

## **Record keeping and reporting**

- 4.8. The processor must keep a written record of the following for a period of six years:
- the sampling plan required to be prepared under clause 4.1.1;
  - a record of weekly sampling times and other operational information;
  - all characterisation and routine sampling results in relation to the "continuous process" recovered fines supplied;
  - the quantity of the "continuous process" recovered fines supplied; and
  - either the name and address of each person to whom the processor supplied the "continuous process" recovered fines or the registration details of the vehicle used to transport the "continuous process" recovered fines.
- 4.9. The processor must provide, on request, the most recent characterisation and sampling (including routine) results for "continuous process" recovered fines supplied to any consumer of the "continuous process" recovered fines.
- 4.10. The processor must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clause 4.1 to 4.6.

## 5. Definitions

In this order:

**application or apply to land** means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

**composite sample** means a sample that combines 5 discrete sub-samples of equal size into a single sample for the purpose of analysis.

**consumer** means a person who applies, or intends to apply, “continuous process” recovered fines to land.

**continuous process** means a process that produces “continuous process” recovered fines on an ongoing basis.

**processor** means a person who processes, mixes, blends, or otherwise incorporates “continuous process” recovered fines into a material in its final form for supply to a consumer.

**transaction** means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of “continuous process” recovered fines that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of “continuous process” recovered fines, the first supply of “continuous process” recovered fines as required under the arrangement.

**Manager Waste Strategy and Innovation**

**Environment Protection Authority**

**(by delegation)**

## Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au)

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies “continuous process” recovered fines should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of “continuous process” recovered fines remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet.

Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.