Resource Recovery Order under Section 286A of the Protection of the Environment Operations Act 1997

The Downer recovered aggregate and sand order August 2025

Record Number: SRROE-127

Version Number: 1

Introduction

This order, issued by the Environment Protection Authority (EPA) under section 286A of the *Protection of the Environment Operations Act 1997* (POEO Act), imposes the requirements that must be met by suppliers of Downer recovered aggregate and sand to which 'the Downer recovered aggregate and sand exemption August 2025' applies. The requirements in this order apply in relation to the supply of Downer recovered aggregate and sand for application to land as a road base, or as an asphalt matrix within the road corridor for public road related activities including road construction, maintenance and installation of public road infrastructure facilities.

1. Waste to which this order applies

1.1. This order applies to Downer recovered aggregate and sand. In this order, Downer recovered aggregate and sand means aggregate and sand that:

1.1.1. has been collected from street sweepings, stormwater treatment devices or stormwater management systems; and hydro-excavated soils,

1.1.2. has been processed at the Downer EDI Works Pty Ltd (ACN 008 709 608) Reconomy Rosehill facility, located at 9 Devon Street, Rosehill NSW 2142, Environmental Protection Licence (EPL 21611) to remove other wastes;

1.1.3. does not contain asbestos, acid sulphate soils, potential acid sulphate soils or sulfidic ores and Per- and Polyfluroalkyl Substances (PFAS).

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies Downer recovered aggregate and sand that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of Downer recovered aggregate and sand 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 the date of issue and is valid until 23 August 2027 or until revoked by the EPA by notice in writing.

4. Revocation

4.1. 'The Downer recovered aggregate and sand order July 2023' which commenced on 27 July 2023 is revoked from 21 August 2025.

5. Processor requirements

The EPA imposes the following requirements on any processor who supplies Downer recovered aggregate and sand. The processor in this order is Downer EDI Works Pty Ltd (ACN 008 709 608).

General requirements

5.1. On or before supplying Downer recovered aggregate and sand the processor must:

5.1.1. prepare a written sampling plan which includes a description of sample preparation and storage procedures for Downer recovered aggregate and sand; and

5.1.2. carry out sampling and testing of Downer recovered aggregate and sand by following the written sampling plan, and sampling and testing requirements set in clauses 5.5 to 5.13 below.

5.2. The processor may combine the wastes listed in clause 1.1.1 during processing to generate separate stockpiles of Downer recovered aggregate and sand.

5.3. The processor must identify each stockpile of Downer recovered aggregate and Downer recovered sand separately using a unique batch identifier.

5.4. The processor must store Downer recovered aggregate and sand appropriately until the representative sampling results are validated as compliant with the absolute maximum concentration or other value listed in Column 2 of Table 1.

Sampling requirements for chemicals & attributes

5.5. The processor must undertake representative sampling of Downer recovered aggregate and sand by collecting 3 samples per 250 tonnes (or part thereof) and test each sample for the chemicals and other attributes listed in Column 1 of Table 1.

5.6. The processor must:

5.6.1. collect composite samples for attributes 1 to 9 and 16 in Column 1 of Table 1.

5.6.2. collect discrete samples for attributes 10 to 15 and 17 in Column 1 of Table 1.

5.6.3. carry out sampling in a way that ensures that the samples taken are representative of the material from the entire stockpile. All parts of the stockpile must be equally accessible for sampling.

5.7. The processor must sample and test the sand and aggregate stockpiles separately. A composite sample cannot be formed by adding subsamples from sand and aggregate stockpiles together to form a composite sample.

5.8. The processor must collect samples in sample containers provided by the analytical laboratory that has been chosen for analytical testing, and that has been accredited by the National Association of Testing Authorities (NATA), or equivalent;

5.9. The processor must ensure that the collected samples are tested within the relevant holding times listed in Section 4.4.1 of Schedule B3 'Guideline on Laboratory Analysis of Potentially Contaminated Soils' of the National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEPM).

Chemical and other material requirements

5.10. The processor must not supply Downer recovered aggregate and sand to any person if, in relation to any of the chemical and other attributes of Downer recovered aggregate and sand, the concentration or other value of that attribute of any sample collected and tested as part of the characterisation of Downer recovered aggregate and sand exceeds the absolute maximum concentration or other value listed in Column 2 of Table 1.

5.11. The absolute maximum concentration or other value of that attribute in any Downer recovered aggregate and sand supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 2 of Table 1.

Table 1

Column 1	Column 2
Chemicals and other attributes	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	1.0
2. Cadmium	1.5
3. Lead	150
4. Arsenic	40
5. Chromium (total)	120
6. Copper	150
7. Nickel	80
8. Zinc	350
9. pH[1]	4.5 to 10.0
10. Total Polycyclic Aromatic Hydrocarbons (PAHs)	50
11. Benzo(a)pyrene TEQ	3.0
12. Total recoverable hydrocarbons (TRH) F1 [2]	45
13. TRH F2 [3,4]	110
14. TRH F3 (>C_{16}-C_{34}) [3]	300
15. TRH F4 (>C_{34}-C_{40}) [3]	1000
16. Rubber, plastic, paper, cloth, paint, wood and other vegetable matter [5]	0.3%
17. Asbestos	No asbestos detected

Note:

[1] The ranges given for pH are for the minimum and maximum acceptable pH values in the Downer recovered aggregate and sand.

[2] TRH F1 means C_6-C_{10} fraction minus the sum of BTEX concentrations.

[3] The TRH test may include silica gel clean-up. The absolute maximum concentration may include silica gel clean-up. TRH silica gel clean-up may be undertaken if the initial TRH test (without silica gel clean- up) exceeds the absolute maximum concentration.

[4] TRH F2 means >C_{10}-C_{16} fraction minus the concentration of naphthalene.

[5] The absolute maximum concentration applies to the total percentage of physical contaminants present in each physical contaminant test, the limits do not apply to each individual physical contaminant listed within the physical contaminant test.

Test methods

5.12. The processor must ensure that any testing of samples required by this order is

undertaken by analytical laboratories accredited by NATA, or equivalent.

5.13. The processor must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in Downer recovered aggregate and sand supplied 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.

5.13.1. Test method for measuring the mercury concentration:

5.13.1.1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 10% of the stated absolute maximum concentration in Table 1, Column 2 (i.e. < 0.10 mg/kg dry weight).

5.13.1.2. Report as mg/kg dry weight.

5.13.2. Test methods for measuring chemicals 2 - 8:

5.13.2.1. Sample preparation by digesting using USEPA SW-846 Method 3051A - Microwave assisted acid digestion of sediments, sludges, soils, and oils.

5.13.2.2. Analysis using USEPA SW-846 Method 6010D Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of stated absolute maximum concentration in Table 1, Column 2 (i.e. 15 mg/kg dry weight for lead).

5.13.2.3. Report as mg/kg dry weight.

5.13.3. Test methods for measuring pH:

5.13.3.1. Sample preparation by mixing 1 part Downer recovered aggregate and sand with 5 parts distilled water.

5.13.3.2. 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).

5.13.4. Test method for measuring total PAHs and benzo(a)pyrene TEQ:

5.13.4.1. Analysis using USEPA SW-846 Method 8100 Polynuclear aromatic hydrocarbons (or an equivalent analytical method).

5.13.4.2. Calculate the sum of all 16 PAHs for total PAHs.

5.13.4.3. Report total PAHs as mg/kg dry weight.

5.13.4.4. Report benzo(a)pyrene TEQ as mg/kg, whereby Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b+j)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Chrysene, Dibenz(a,h)anthracene, and Indeno(1,2,3-c,d)pyrene are multiplied by their toxicity equivalence factor (potency relative to B(a)P) in Schedule B1 of NEPM 1999 (April 2013), and summing these concentrations to give benzo(a)pyrene TEQ.

5.13.4.5. If any of the chemicals listed in clause 5.12.4.4 report the limit of reporting, the full limit of reporting value must be used for the calculations to give benzo(a)pyrene TEQ.

5.13.5. Test method for measuring TRHs F1:

5.13.5.1. Analysis using Method A1 in Section 13.2 of Schedule B3:

Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), or an equivalent analytical method.

5.13.5.2. Report F1 as mg/kg dry weight by subtracting the sum of BTEX concentrations from the C_6-C_{10} fraction.

5.13.6. Test method for measuring chemicals 13-15:

5.13.6.1. Analysis using Method A2 in Section 13.3 in Schedule B3: Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), or an equivalent analytical method.

5.13.6.2. Report F2 as mg/kg dry weight by subtracting naphthalene from >C_{10}-C_{16} fraction.

5.13.6.3. Report F3 and F4 as mg/kg dry weight.

5.13.7. Test method for measuring rubber, plastic, paper, cloth, paint, wood and other vegetable matter:

5.13.7.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Concrete (or an equivalent method), using a 2.36 mm sieve.

5.13.7.2. Results must be reported as % contamination dry weight.

5.13.8. Test method for measuring asbestos:

5.13.8.1. Analysis must include qualitative and quantitative analysis of asbestos.

5.13.8.2. The weight of the sample must be recorded prior to analysis.

5.13.8.3. A minimum of 1 kilogram of recovered soil must be analysed.

5.13.8.4. Analysis must comply with the Australian Standard AS4964-2004, *Method for the qualitative identification of asbestos in bulk samples*, Standards Australia with the exception of sieve size.

5.13.8.5. Analysis must gravimetrically determine the mass of asbestos containing material ('ACM') (bonded asbestos) retained on a 7mm sieve and assumes 15% of ACM as asbestos.

5.13.8.6. Analysis must gravimetrically determine the mass of asbestos fines ('AF') and fibrous asbestos ('FA') retained on and passing a 2mm sieve post 7mm sieving. Assumes AF and FA are 100% asbestos containing. Asbestos retained must be calculated as a percentage of the total sample weight.

5.13.8.7. Qualitative analysis must be undertaken by using phase-contract microscopy (PCM) or polarised - light microscopy (PLM) as asbestos identification.

5.13.8.8. Where a laboratory has qualitatively observed asbestos present in a sample through PCM or PLM analysis, but have quantitatively measured that asbestos is below the reporting limit, the laboratory must still report that asbestos was observed.

Reprocessing and disposal of Downer recovered aggregate and sand

5.14. Where the sampling and testing of a stockpile of Downer recovered aggregate or sand does not meet the absolute maximum concentration criteria set for

attributes 1 to 16 in Column 1 of Table 1, the processor must either:

5.14.1. reprocess the stockpile of Downer recovered aggregate or sand through the Reconomy Detritus Plant to re-generate the stockpile of Downer recovered aggregate or sand, and re-sample the stockpile as per the sampling requirements of clauses 5.5 to 5.9; or

5.14.2. dispose the stockpile of Downer recovered aggregate or sand to a facility lawfully able to receive this waste for disposal purposes.

5.15. The processor must not further reprocess the stockpile of Downer recovered aggregate or sand if re-sampling in clause 5.14.1 does not meet the absolute maximum concentrations set for attributes 1 to 16 in Column 1 of Table 1, and must dispose the stockpile of Downer recovered aggregate or sand to a facility lawfully able to receive this waste for disposal purposes.

5.16. The processor must not apply clauses 5.14 and 5.15 to attribute 17. If asbestos is detected or identified in a stockpile of Downer recovered aggregate or sand, the waste must not be reprocessed and must be disposed at a facility lawfully able to receive this waste for disposal purposes.

Retesting of samples

5.17. The processor must not retest, or request or require the retesting of, any sample of recovered aggregate or sand.

5.18. Retesting of a sample is only permitted when an accredited laboratory issues a laboratory report which demonstrates an error occurred during the analysis of the sample and states the test result(s) cannot be relied upon and the accredited laboratory determines to retest that sample. The laboratory report must also state the nature of the error and the reasons why the test results cannot be relied upon. For the purposes of this clause, sample heterogeneity does not constitute an error.

5.19. The processor must provide the EPA, on request, with a copy of the laboratory report referred to in clause 5.18.

Notification

5.20. On or before each transaction, the processor must provide the following to each person to whom the processor supplies Downer recovered aggregate and sand:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of 'the Downer recovered aggregate and sand exemption August 2025'; and
- a copy of 'the Downer recovered aggregate and sand order August 2025'.

Record keeping and reporting

5.21. 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 5.1.1;
- all sampling results, including summarised sampling results, chain-of custody documentation between the certified environmental practitioner and the laboratory, laboratory sample receipts, and laboratory reports in relation to Downer recovered aggregate and sand sampled;
- the unique batch identifiers in relation to the Downer recovered aggregate and sand sampled;
- the quantity of Downer recovered aggregate and sand supplied; and
- the name and address of each person to whom the processor supplied the Downer recovered aggregate and sand.

5.22. The processor must provide, on request, the most recent characterization results for Downer recovered aggregate and sand supplied to any consumer of the Downer recovered aggregate and sand.

5.23. The processor must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clauses 5.1 to 5.19.

6. Definitions

In this order:

application or apply to land means applying to land by:

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

asbestos has the same meaning as in Schedule 1 to the POEO Act

asphalt matrix means the solid material typically comprising of sand, aggregates and similar materials bound together with bituminous and/or other similar binders.

batch sampling means samples are collected from a stockpile, and Downer recovered aggregate and sand are appropriately stored until test results are validated as compliant with the order.

consumer means a person who applies, or intends to apply, Downer recovered aggregate and sand to land.

discrete sample means a sample collected and analysed individually that will not be composited.

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

environmental practitioner means a professional environmental practitioner with appropriate qualifications, training and proven experience in soil sampling and waste classification in NSW. The environmental practitioner must have comprehensive knowledge of sampling principles for soil and waste-derived materials.

PFAS means per- and polyfluoroalkyl substances specifically related to Perfluorooctane sulfonate ('PFOS'), perfluorooctanoic acid ('PFOA'), and perfluorohexane sulfonate ('PFHxS') where the sum of the concentrations of PFOS + PFHxS, and PFOA are more than the laboratory limit of reporting of 5 µg/kg.

processor means a person who processes, mixes, blends, or otherwise incorporates Downer recovered aggregate and sand into a material in its final form for supply to a consumer. The processor in this order is Downer EDI Works Pty Ltd (ACN: 008 709 608).

public roads means:

(a) any road that is opened or dedicated as a public road, whether under the *Roads Act 1993* (the Roads Act) or any other act or law, and

(b) any road that is declared to be a public road for the purposes of the Roads Act.

public road infrastructure facilities means:

(a) tunnels, ventilation shafts, emergency accessways, vehicle or pedestrian bridges, causeways, road-ferries, retaining walls, toll plazas, toll booths, security systems, bus lanes, transit lanes, transitways, transitway stations, rest areas and road related areas (within the meaning of the *Road Transport (General) Act 2005*), and

(b) associated public transport facilities for roads used to convey passengers by means of regular bus services within the meaning of the *Passenger Transport Act 1990*, and

(c) bus layovers that are integrated or associated with roads (whether or not the

roads are used to convey passengers by means of regular bus services within the meaning of the *Passenger Transport Act 1990*), and

(d) traffic control facilities (as defined by the *Transport Administration Act 1988*), Transport for NSW road safety training facilities and safety works.

road corridor means land that is used for the purposes of a road or road infrastructure facilities or for maintaining or constructing a road or road infrastructure facilities and that is owned or managed by Transport for NSW or council.

stockpile means material that has been processed and temporarily stored on the ground prior to use.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of Downer v that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of Downer recovered aggregate and sand the first supply of Downer recovered aggregate and sand as required under the arrangement.

SIGNATURE
Karen Marler
Director Technical (Chemicals, Land and Radiation)
Environment Protection Authority
(by delegation)

Issue date: 21 August 2025

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each processor to ensure it complies with all relevant requirements of the most current order.

In 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 minimize 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 Downer recovered aggregate and sand 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 Downer recovered aggregate and sand 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 (s. 144AAB), 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 section 286A of the POEO Act.