Appendix N: Materials Testing Procedures

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SAMPLE PROCESS & ACCEPTANCE PROCEDURES

BRS Ingleburn

MAY 2020

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Step 1
Customer Request for Tipping

- Customers make contact via email or phone to request availability and rates for tipping.
- This being the first point of contact determines whether the material is acceptable to be brought to site as per our DA and EPL Conditions
- This stage also gauges whether the potential customer is appropriately licensed to transport the specific material to site
- If the customer does not meet any of the above two criteria for this, it is advised to take to a lawfully licensed facility or to contact a licensed transport company
- If they do meet the criteria, a meeting is arranged to visit the site to take sample and assess its credibility to be brought to BRS for treatment

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Stage 2
Site Visit and Sample Taking

- Sales Reps are to visit site to look and see the viability for potential waste material to be brought to BRS for Treatment
- For Liquid waste, a representative sample is to be taken and brought back to BRS for testing or Sent to an independent lab for analysis
- For Solid waste such as Soils and Sands, a sample must be taken and sent for analysis at independent laboratory
- When classification report is supplied for Solid waste, it is to be forwarded to independent consultant for evaluation
- All wastes are to be checked visually by BRS representative for any foreign material that is not as described by the customer and any potential for cross contamination before coming to site

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Stage 3
Sample Lodgement

- All liquid Samples are to be brought to BRS and put in Sample Collection Tub in Laboratory clearly labelled with Date, Customer Name, Address, Contact Name and Phone Number, Waste Type and Volume anticipated
- All solid waste samples are to placed in Dirt Dr's tub clearly labelled with Date, Customer Name, Address, Contact Name and Phone Number, Waste Type and Volume anticipated. These samples are taken daily to Dirt Dr's who then send off for testing by another laboratory or test internally.
- A C.O.C (Chain of Custody) must be filled in for all samples
- Samples must be segregated to avoid cross contamination

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Stage 4
Analysis

- All samples are tested using test methods approved by Technical Manager but always consistent with EPA approved methods
- If external testing is required for instrumentation testing for PPM Levels (Part per Million), these will be sent to ALS, Symbio or other External Testing Agencies. They will produce a C.O.C and report back to Technical Manager
- All testing reports are sent to Operations and Sales Rep for pricing after analysis results received by Technical Manager and Signed off for conformance to licencing criteria
- No Results are to be given to customers without written consent of Sales Manager or Technical Manager
- Any non conformance, will be documented and sent to Sales for the customer to be advised to contact appropriately licensed facility for disposal or recycling
- All results will be stored on X Drive for any follow up Checks

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Stage 5
Report Generation

- All analysis results will be generated in a report and signed off by Technical Manager, these reports must be filed on the X Drive
- The Technical Manager will adjudicate what classification the waste will fall under based on results and licencing criteria for the facility
- For all Solid Waste Results, these will be reported back to Technical Manager with Recommended Classification, however the Technical Manager will have final jurisdiction on waste classification the waste falls under
- All reports are to be sent to Operations and Sales Manager for pricing and for scheduling to make sure there is enough holding volume for waste volumes incoming.
- In the event the Sales, Technical or Operations Manager cannot make these decisions, please refer all queries and requests to the Managing Director
- These reports may only be sent to customer with Sales Manager or Managing Director’s approval

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Stage 6
Operations Pricing to Sales Rep

- All jobs will be priced by the Sales Manager before sending to Sales Rep and copied to Operations Manager
- All jobs pricing is to be formatted in Sales Quote Template and copied to Quote Register
- Operations and Sales Manager must check all information before sending to Rep and confirm pricing in writing via email

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Stage 7
Sales Quote

- Sales quote is to be formatted in approved sales quote template available on X Drive
- Sales quote must be filled out correctly with confirmation of Waste Classification, Pricing Schedule of Waste, estimated quantity and Location of Waste
- Quote must be sent via email to customer with copies going to Sales Manager and Operations Manager, in the event the Sales and Operations Managers are not available, you must copy Managing Director
- All quotes must be dated and copy of Terms and Conditions of Sales attached to all quotes

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Stage 8
Acceptance By Customer

- All accepted quotes must be formally acknowledged by the customer in an email with confirmation of rates
- All accepted jobs by the client must also have a Purchase Order Number or Reference to be sent through so it can be matched with tip dockets by Operations Manager for invoicing purposes
- Customers are to notify BRS for any variances prior to the organisation of transport or if they are bringing in the waste via their own transport

Stage 9
Transport and Logistics

- Customer is to confirm with Sales Rep during Sales Call stage if transport is required or if they are transporting themselves
- All transport organised by customer must be approved by Sales Manager or Managing Director
- All transport companies used or organised by BRS, must be EPA and RMS approved to transport selected waste source and drivers accredited with correct Licences. This all must be approved by the Management prior to accepting waste
- All drivers must be Inducted to site prior to tipping off at BRS and all companies Approved by Management to tip at BRS

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Stage 10
Facility Acceptance Test

- When Waste is delivered to site, it is to proceed to the area designated for that type of waste and await instruction from Yard Staff
- All wastes are to be tested prior to tipping to make sure they comply with the relevant criteria
- Any wastes not conforming to Waste Acceptance Criteria is to be Rejected
- All rejected wastes are to be documented using the Rejected load register. This report is to be signed off by Technical Manager or Operations Manager. In the event these are not available, please refer to Managing Director. Copies of the reports are to be given to Operations to be filed and copies given to drivers. Waste is then to be taken from site by customer to an EPA approved facility licenced to take the waste

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Stage 11
Pumped or Tipped to Approved Tanks or Pits

- All wastes are to be pumped or tipped to approved tanks or Pits as designated by waste type and directed by Yard Staff
- All wastes are to be sampled and kept for any post tip conformance testing using BRS supplied labels and Sample Jars
- Yard Staff are to supervise all tipping off to ensure no cross contamination or unapproved waste being tipped off. This is also to check for items such as Asbestos and hazardous Material
- All BRS Yard Staff and customer Transport Drivers are to be in correct PPE and follow internal traffic management arrangements for site as designated in weighbridge huts and Sign posted around site. All drivers are to leave via the wheel wash to avoid tracking of mud, dirt or waste on public roads

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Stage 12
Treatment of Waste

- All waste is to be treated as per guidelines set out in waste treatment process guide. All operators must be signed off by management for competency before operating plants.
- For any issues relating to the treatment of wastes is to be directed to Technical Manager
- For all plant failures or breakdowns are to be directed immediately to the Operations Manager or Managing Director
- All by-products such as Filter Cake, Treated Water, Sludge or Saleable products Such as Road base or Dust, must be tested by BRS or External Consultants for classification or compliance validation

Stage 13
Invoicing to Customer

- Once all waste has been tipped and drivers have weighed off, an invoice will be produced by operations and sent to the customer. The rates will be applied using the sales quote provided and acceptance by customer
- All customer invoices are due 30 days End of Month unless otherwise advised by and agreed by BRS Management

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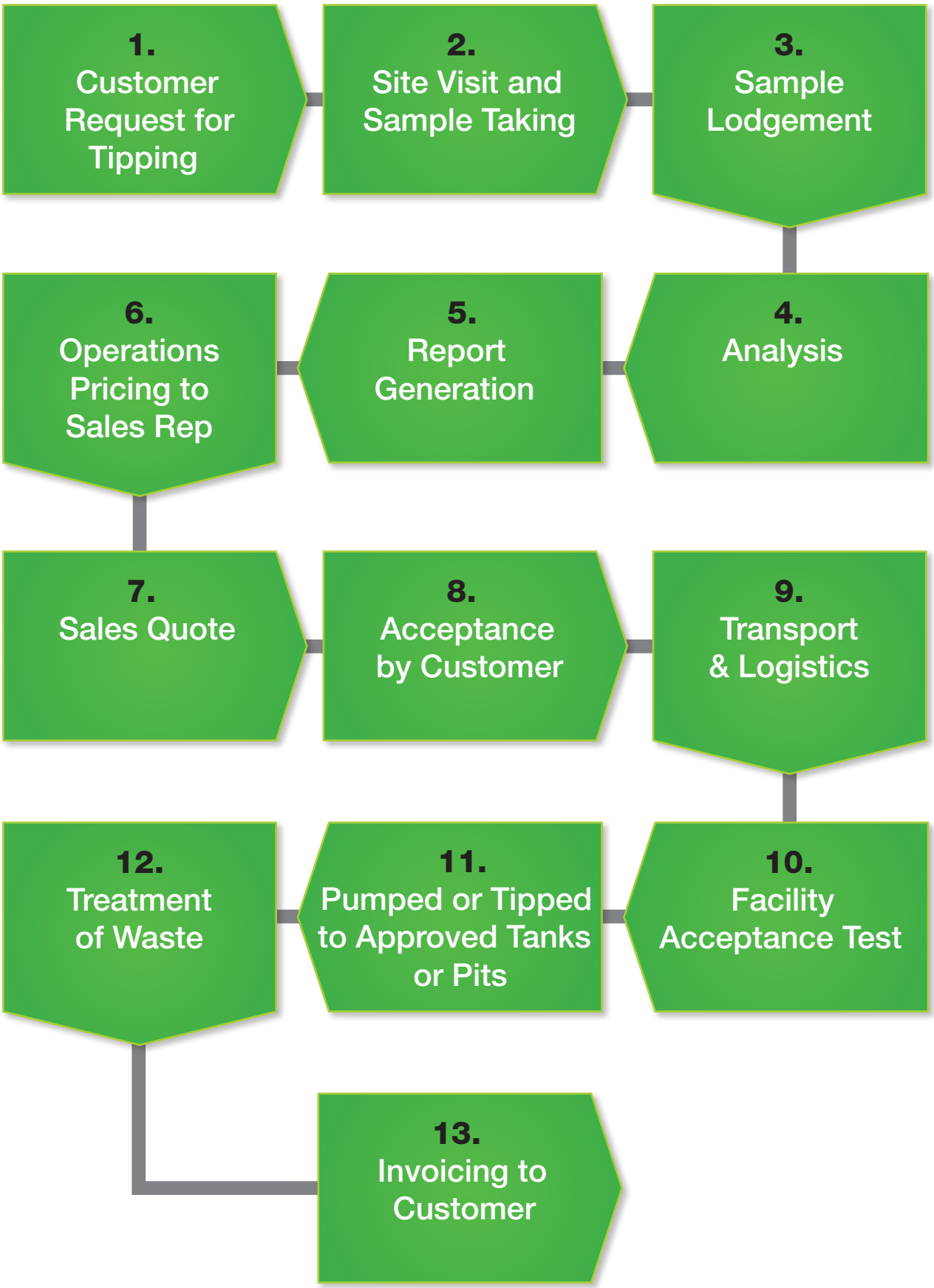
SAMPLE PROCESS ACCEPTANCE



Functional Area:	BRS (Tankers) Nightshift	SOP	LOG-008
Procedure Name:	Tanker Night Safe Procedure	Revision No:	LOG-007
Effective date:	11/06/2019	Applicable Regions:	NSW

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Standard Operating Procedure (SOP) BRS Cement Tankers

Tanker Nights Safe Procedure

Policy Statement

The Night Safe Standard Operating Procedure is designed to enable nightshift deliveries to sites in the event that the AWE DCS system has failed. This procedure enables the nightshift deliveries whilst providing risk mitigation measures for plants regarding product contamination.

Document Purpose

Outline Standard Operating Procedures when utilising the Night safe to complete nightshift deliveries.

SOP Title:	Tanker Night Safe Procedure	**SOP No:**	SOPBRSCP-001
SOP Locations:	Bulk Recovery Solutions Ingleburn NSW 2565	**Associated SWMS:**	Tanker unloading SWMS 012 F01
Date Of Issue:	28/05/2019	**Next Review Date:**	28/05/2020
Frequency:	In line with Customer Product Demand		
Purpose:	Ensure Safe Delivery on Nightshift whilst AWE DCS is down or site is without AWE DCS		
Responsibility:	Tanker Operators Field Supervisors	**Requirement:**	Site Inductions Night Safe SOP
PPE Requirements:	 High Vis, Safety Glasses, Hard Hat, Safety Boots, Gloves, Ear Protection, Long Longs. In line with BRS (Bulk Recovery Solutions) PPE Policy.		

Standard Operating Procedure (SOP)
Tanker Night Safe Procedure

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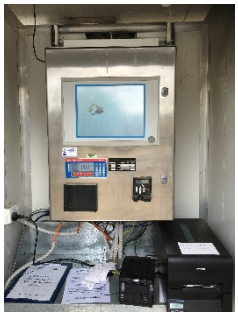
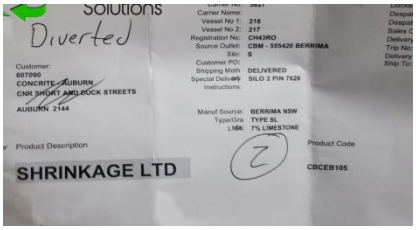
Activity	Safety/Quality/ Performance Notes	Photos
Enter customer site according to Site TMP.	Park in designated Tanker Parking area on weighbridge. Beware of on-site environment, Traffic movement, Trip hazards, Lighting etc.	 
Check on-site DCS is operational, if applicable. Always check DCS and report non-operational sites	In the event that the AWE DCS system is not working, Drivers are to contact Allocations and proceed to on-site night safes. Use caution, reduced lighting on-site.	 
Boral Allocations must give Authorisation before Night Safes can be accessed.	Do not keep, write, or memorise code for future use. Non authorised users will face disciplinary action.	  Diverted Load
Enter 4 digit code into night safe key pad or tumbler to open night safe	Key Pad Safes Enter 4 digits then #,* Tumbler Safes Spin 4 digits press down on tab	 Key Pad Safe  Tumbler Safe

Standard Operating Procedure (SOP)
Tanker Night Safe Procedure

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Activity	Safety/Quality/ Performance Notes	Photos
Verify Product Documentation and Silo key are for the same product.	Check Delivery Docket Check Key Ensure they match	 
Access Site control box and open correct Silo valve using night safe keys.	Verify Product is correct, Silo Signage is visible and a matches up with Boral Delivery Docket	
Ensure to Close Roller Door before loading	Dust Mitigation for Site	
Start and complete delivery process	In line with Boral Cement Tanker Unloading SWMS	 
Turn Silo valve off and return Night Safe Keys to Night Safe	Ensure there is no pressure in tanker or hose before disconnecting	 

Standard Operating Procedure (SOP)
Tanker Night Safe Procedure

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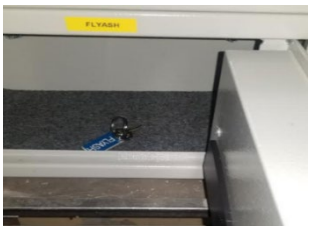
Activity	Safety/Quality/ Performance Notes	Photos
Ensure safe is locked and tumbler has been spun	Beware of pinch points.	 

Please report any damaged or defective night safes to Allocations or Supervisor.

Purpose

This SOP is used for:

- **WHS risk controls** - SWMS requirements have been converted into this SOP with the SWMS referenced and maintained as evidence of risk assessment being completed
- **Environmental risk controls** – captured from the site aspects and impacts register for day to day operational activities to minimise impact on the environment
- **Quality Assurance** – evidence that our control procedures conform to essential standards for safety and quality
- **Training** – reference document for trainee and trainer
- **Monitoring** – a means of ensuring that the actual method concurs with the standard and is common across operators and shifts
- **Improvement** – documents and locks in the current best practice and provides the scaffold for future improvement
- **LEAN** - to document the 'lowest repeatable time' taken for the step or activity, that has been observed and signed off by all workers involved in the site based task, allowing identification of efficiency opportunities in work sequences.

(* note: the 'lowest repeatable time' indicated for each task is not a defined or required timeframe, it is only used to identify potential work flow bottlenecks)

Training record

Once workers have been trained in the tasks or activities of the SOP, a record of training and competency must be completed and filed. The training competency record must also be forwarded to the contractors offices for statement of attainment at BRS

SOP No: SOPBRSCP-001		
Employee / Contractor:	Name	
	Signature	
Date Training Completed:		
Training Recognised By:	Name	
	Signature	
Date Sent To BRS HR:		
Date Sent To External Contractor HR:		

Standard Operating Procedure (SOP)
Tanker Night Safe Procedure

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Revision History

This section should record all changes to facilitate skill updates of experienced users, to allow back-tracking of changes, and as evidence of continuous improvement. The next full review of this SOP is due no later than three (3) years from the date of issue.

Updates/Improvements Since Last Issue Date			
Change	**Page (s)**	**By**	**Date**

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Testing Procedures

Drilling Mud / NDD

Visual Checks

1. Check Solution for any foreign material such as Asbestos
2. Check pH of incoming load using pH meter or papers. Range should be 8-10

Physical testing

1. Centrifuge Spin Test for Solids. Take 100ml sample and fill test tube to 100ml mark. Put spin test on for 2 mins at 2500rpm. Once spun, check solids content of the lower mark of angle gradient. If over 80%, contact Branch Manager or Technical Manager
2. Performance Testing. Take 50ml sample and add 0.5ml of made up 1% Anionic Polymer and shake. If no flocculation, add 0.1ml at a time and repeat

Polymer Matrix:

0.5ml to 50ml sample equates to 100lts polymer in 20,000lt Solution. For every 0.1ml Polymer in jar test, add 10lts to 20KL Batch

Stormwater/Groundwater

Visual Checks

1. Check Solution for any foreign material such as Asbestos
2. Check pH of incoming load using pH meter or papers. Range should be 8-10

Physical testing

3. Centrifuge Spin Test for Solids. Take 100ml sample and fill test tube to 100ml mark. Put spin test on for 2 mins at 2500rpm. Once spun, check solids content of the lower mark of angle gradient. If over 80%, contact Branch Manager or Technical Manager
4. Performance Testing. Take 50ml sample and add 0.5ml of made up 1% Anionic Polymer and shake. If no flocculation, add 0.1ml at a time and repeat

Polymer Matrix:

0.5ml to 50ml sample equates to 100lts polymer in 20,000lt Solution. For every 0.1ml Polymer in jar test, add 10lts to 20KL Batch

Cement Slurry

Visual Checks

1. Check Solution for any foreign material such as Asbestos
2. Check pH of incoming load using pH meter or papers. Range should be 8-10. Adjust using 60% Sulfuric Acid.
3. Matrix for pH adjustment: 1 drop in 50ml equates to 500ml in 20,000lt batch tank

Physical testing

4. Centrifuge Spin Test for Solids. Take 100ml sample and fill test tube to 100ml mark. Put spin test on for 2 mins at 2500rpm. Once spun, check solids content of the lower mark of angle gradient. If over 80%, contact Branch Manager or Technical Manager

5. Performance Testing. Take 50ml sample and add 0.5ml of made up 1% Anionic Polymer and shake. If no flocculation, add 0.1ml at a time and repeat

Polymer Matrix:

0.5ml to 50ml sample equates to 100lts polymer in 20,000lt Solution. For every 0.1ml Polymer in jar test, add 10lts to 20KL Batch

J120 / Hydrocarbon Containing Waters

Visual Checks

1. Check Solution for any foreign material such as Asbestos

2. Check pH of incoming load using pH meter or papers. Range should be 8-10. Adjust using 30% Liquid Caustic.

3. Matrix for pH adjustment: 1 drop in 50ml equates to 750ml in 20,000lt batch tank

Physical testing

4. Centrifuge Spin Test for Solids. Take 100ml sample and fill test tube to 100ml mark. Put spin test on for 2 mins at 2500rpm. Once spun, check solids content of the lower mark of angle gradient. If over 80%, contact Branch Manager or Technical Manager

5. Performance Testing. Take 50ml sample and add 2 drops of PAC Coagulant and 0.5ml of made up 1% Cationic Polymer and shake. If no flocculation, add 0.1ml at a time and repeat

6. Flashpoint Testing. Take 10ml sample and fill Pensky Cup. Select Auto Flash. If flashpoint below 60 degrees, contact technical or branch manager immediately to reject load as not within criteria. IF above 60 degrees, solution is ok to be tipped

Polymer Matrix:

0.5ml to 50ml sample of Cationic Polymer equates to 1.5lts/min dosage to DAF. For every drop of PAC into 50ml sample equates to 10ppm/min dosage. For each additional 0.1ml of Polymer in jar test, increase flowrate of Cationic Polymer 0.3mls/min to DAF

SANDS, CT1 & CT2 SOIL

All sand, soil or solid jobs must be accompanied with a soil classification report.

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

The excavated natural material 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 excavated natural material to which 'the excavated natural material exemption 2014' applies. The requirements in this order apply in relation to the supply of excavated natural material for application to land as engineering fill or for use in earthworks.

1. Waste to which this order applies

1.1. This order applies to excavated natural material. In this order, excavated natural material means naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and
b) contains at least 98% (by weight) natural material, and
c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies excavated natural material, that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of excavated natural material 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. Generator requirements

The EPA imposes the following requirements on any generator who supplies excavated natural material.

Sampling requirements

4.1. On or before supplying excavated natural material, the generator must:

4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the excavated natural material.

4.1.2. Undertake sampling and testing of the excavated natural material as required under clauses 4.2, 4.3, and 4.4 below. The sampling must be carried out in accordance with the written sampling plan.

4.2. The generator must undertake sampling and analysis of the material for ASS and PASS, in accordance with the NSW Acid Sulfate Soil Manual, Acid Sulfate Soils Management Advisory Council, 1998 and the updated Laboratory Methods Guidelines version 2.1 – June 2004 where:

4.2.1. the pH measured in the material is below 5, and/or

4.2.2. the review of the applicable Acid Sulfate Soil Risk Maps (published by the former Department of Land and Water Conservation and available at http://www.environment.nsw.gov.au/acidsulfatesoil/riskmaps.htm) indicates the potential presence of ASS.

4.3. For stockpiled material, the generator must:

4.3.1. undertake sampling in accordance with Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent);

4.3.2. undertake characterisation sampling by collecting the number of samples listed in Column 2 of Table 1 with respect to the quantity of the waste listed in Column 1 of Table 1 and testing each sample for the chemicals and other attributes listed in Column 1 of Table 4. For the purposes of characterisation sampling the generator must collect:

4.3.2.1. composite samples for attributes 1 to 10 and 18 in Column 1 of Table 4.

4.3.2.2. discrete samples for attributes 11 to 17 in Column 1 of Table 4.

4.3.2.3. The generator must 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.

4.3.2.4. for stockpiles greater than 4,000 tonnes the number of samples described in Table 1 must be repeated.

4.3.3. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 1

Sampling of Stockpiled Material		
Column 1	**Column 2**	**Column 3**
Quantity (tonnes)	**Number of samples**	**Validation**
<500	3	Required
500 – 1,000	4	
1,000 – 2,000	5	
2,000 – 3,000	7	
3,000 – 4,000	10	

4.4. For in situ material, the generator must:

4.4.1. undertake sampling by collecting discrete samples. Compositing of samples is not permitted for in-situ materials.

4.4.2. undertake characterisation sampling for the range of chemicals and other attributes listed in Column 1 of Table 4 according to the requirements listed in Columns 1, 2 and 3 of Table 2. When the ground surface is not comprised of soil (e.g. concrete slab), samples must be taken at the depth at which the soil commences.

4.4.3. undertake sampling at depth according to Column 1 of Table 3.

4.4.4. collect additional soil samples (and analyse them for the range of chemicals and other attributes listed in Column 1 of Table 4), at any depth exhibiting discolouration, staining, odour or other indicators of contamination inconsistent with soil samples collected at the depth intervals indicated in Table 3.

4.4.5. segregate and exclude hotspots identified in accordance with Table 2, from material excavated for reuse.

4.4.6. subdivide sites larger than 50,000 m² into smaller areas and sample each area as per Table 2.

4.4.7. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 2

***In Situ* Sampling at surface**				
Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**
Size of *in situ* area (m^2)	**Number of systematic sampling points recommended**	**Distance between two sampling points** (m)	**Diameter of the hot spot that can be detected with 95% confidence** (m)	**Validation**
500	5	10.0	11.8	Required
1000	6	12.9	15.2	
2000	7	16.9	19.9	
3000	9	18.2	21.5	
4000	11	19.1	22.5	
5000	13	19.6	23.1	
6000	15	20.0	23.6	
7000	17	20.3	23.9	
8000	19	20.5	24.2	
9000	20	21.2	25.0	
10,000	21	21.8	25.7	
15,000	25	25.0	28.9	
20,000	30	25.8	30.5	
25,000	35	26.7	31.5	
30,000	40	27.5	32.4	
35,000	45	27.9	32.9	
40,000	50	28.3	33.4	
45,000	52	29.3	34.6	
50,000	55	30.2	35.6	

Table 2 has been taken from NSW EPA 1995, *Contaminated Sites Sampling Design Guidelines*, NSW Environment Protection Authority.

Table 3

***In Situ* Sampling at Depth**	
Column 1	**Column 2**
Sampling Requirements *	**Validation**
1 soil sample at 1.0 m bgl from each surface sampling point followed by 1 soil sample for every metre thereafter. From 1.0 m bgl, sample at the next metre interval until the proposed depth of excavation of the material is reached. If the proposed depth of excavation is between 0.5 to 0.9 m after the last metre interval, sample at the base of the proposed depth of excavation.	Required if the depth of excavation is equal to or greater than 1.0 m bgl

* Refer to Notes for examples

Chemical and other material requirements

4.5. The generator must not supply excavated natural material waste to any person if, in relation to any of the chemical and other attributes of the excavated natural material:

4.5.1. The chemical concentration or other attribute of any sample collected and tested as part of the characterisation of the excavated natural material exceeds the absolute maximum concentration or other value listed in Column 3 of Table 4:

4.5.2. The average concentration or other value of that attribute from the characterisation of the excavated natural material (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 4.

4.6. The absolute maximum concentration or other value of that attribute in any excavated natural material supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 4

Column 1	Column 2	Column 3
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	1
2. Cadmium	0.5	1
3. Lead	50	100
4. Arsenic	20	40
5. Chromium (total)	75	150
6. Copper	100	200
7. Nickel	30	60
8. Zinc	150	300
9. Electrical Conductivity	1.5 dS/m	3 dS/m
10. pH *	5 to 9	4.5 to 10
11. Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	40
12. Benzo(a)pyrene	0.5	1
13. Benzene	NA	0.5
14. Toluene	NA	65
15. Ethyl-benzene	NA	25
16. Xylene	NA	15
17. Total Petroleum Hydrocarbons C_{10}-C_{36}	250	500
18. Rubber, plastic, bitumen, paper, cloth, paint and wood	0.05%	0.10%

* The ranges given for pH are for the minimum and maximum acceptable pH values in the excavated natural material.

Test methods

4.7. The generator 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.

4.8. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 4) in the excavated natural material 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.

4.8.1. Test methods for measuring the mercury concentration.

4.8.1.1. 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 < 20% of the stated absolute maximum concentration in Column 3 of Table 2 (i.e. < 0.20 mg/kg dry weight).

4.8.1.2. Report as mg/kg dry weight.

4.8.2. Test methods for measuring chemicals 2 to 8.

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

4.8.2.2. 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 Column 3 of Table 2, (e.g. 10 mg/kg dry weight for lead).

4.8.2.3. Report as mg/kg dry weight.

4.8.3. Test methods for measuring electrical conductivity and pH.

4.8.3.1. Sample preparation by mixing 1 part excavated natural material with 5 parts distilled water.

4.8.3.2. 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).

4.8.3.3. Report electrical conductivity in deciSiemens per metre (dS/m).

4.8.4. Test method for measuring Polynuclear Aromatic Hydrocarbons (PAHs) and benzo(a)pyrene.

4.8.4.1. Analysis using USEPA SW-846 Method 8100 Polynuclear Aromatic Hydrocarbons (or an equivalent analytical method).

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

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

4.8.4.4. Report benzo(a)pyrene as mg/kg.

4.8.5. Test method for measuring benzene, toluene, ethylbenzene and xylenes (BTEX).

4.8.5.1. Method 501 (Volatile Alkanes and Monocyclic Aromatic 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).

4.8.5.2. Report BTEX as mg/kg.

4.8.6. Test method for measuring Total Petroleum Hydrocarbons (TPH).

4.8.6.1. 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).

4.8.6.2. Report as mg/kg dry weight.

4.8.7. Test method for measuring rubber, plastic, bitumen, paper, cloth, paint and wood.

4.8.7.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Concrete (or an equivalent method).

4.8.7.2. Report as percent.

Notification

4.9. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the excavated natural material:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the excavated natural material exemption, or a link to the EPA website where the excavated natural material exemption can be found; and
- a copy of the excavated natural material order, or a link to the EPA website where the excavated natural material order can be found.

Record keeping and reporting

4.10. The generator 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;
- all characterisation sampling results in relation to the excavated natural material supplied;
- the volume of detected hotspot material and the location;
- the quantity of the excavated natural material supplied; and
- the name and address of each person to whom the generator supplied the excavated natural material.

4.11. The generator must provide, on request, the characterisation and sampling results for that excavated natural material supplied to the consumer of the excavated natural material.

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.

Bgl means below ground level, referring to soil at depth beneath the ground surface.

composite sample means a sample that combines five 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 excavated natural material to land.

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

generator means a person who generates excavated natural material for supply to a consumer.

hotspot means a cylindrical volume which extends through the soil profile from the ground surface to the proposed depth of excavation, where the level of any contaminant listed in Column 1 of Table 2 is greater than the absolute maximum concentration in Column 3 of Table 2.

***in situ* material** means material that exists on or below the ground level. It does not include stockpiled material.

***in situ* sampling** means sampling undertaken on *in situ* material.

N/A means not applicable.

stockpiled material means material that has been excavated from the ground and temporarily stored on the ground prior to use.

systematic sampling means sampling at points that are selected at even intervals and are statistically unbiased.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of excavated natural material that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of excavated natural material, the first supply of excavated natural material 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

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 excavated natural material 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 excavated natural material 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.

Examples

In situ sampling at depth

Example 1.

If the proposed depth of ENM excavation is between 1 m bgl and 1.4 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- No further depth sampling after 1 m bgl, unless required under section 4.4.4.

Example 2.

If the proposed depth of ENM excavation is at 1.75 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 1.75 m bgl.
- No further depth sampling after 1.75 m bgl, unless required under section 4.4.4.

Example 3.

If the proposed depth of ENM excavation is at 2.25 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 2 m bgl.
- No further depth sampling after 2 m bgl, unless required under section 4.4.4.

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

The processed foundry sand 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 foundry sand to which ' the foundry sand exemption 2014' applies. The requirements in this order apply in relation to the supply of foundry sand for application to land in a blend with either (i) recovered aggregate or (ii) compost.

1. Waste to which this order applies

1.1. This order applies to processed foundry sand which is foundry sand that has been blended with either recovered aggregate or compost.

1.2. In this order, foundry sand means material recovered from the moulds used in the hot casting of iron, steel and aluminium metals, comprised predominantly of sand and fine sand rejects from sand recovery systems. Foundry sand does not include other materials from foundries such as bag dusts, dross and slags, or foundry sand from the casting of other materials, including brass, bronze, stainless steel or any other metal alloys, combination of alloys or hot dipping or surface treating.

2. Persons to whom this order applies

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

2.2. This order does not apply to the supply of processed foundry 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 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Generator requirements

The EPA imposes the following requirements on any generator who supplies foundry sand to a processor.

Sampling requirements

4.1. On or before supplying foundry sand to a processor, the generator must:

4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the foundry sand.

4.1.2. Undertake sampling and testing of the foundry sand as required under clauses 4.2 and 4.3 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 foundry sand is generated as part of a continuous process, the generator must undertake the following sampling:

4.2.1. Characterisation of the foundry sand by collecting 20 composite samples of the waste 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. Characterisation must be conducted for foundry sand generated and processed during each 1-year period following the commencement of the continuous process; and

4.2.2. Routine sampling of the foundry sand by collecting either 5 composite samples from every 1,000 tonnes (or part thereof) processed or 5 composite samples every 1 month (whichever is the lesser); and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1 other than those listed as 'not 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.

4.3. Where the foundry sand is not generated as part of a continuous process, the generator must undertake one-off sampling of a batch, truckload or stockpile of the foundry sand, by collecting 10 composite samples from every 1,000 tonnes (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 1 and the absolute maximum concentration or other value listed in Column 4 of Table 1 prior to the supply of the foundry sand.

Chemical and other material requirements

4.4. The generator must not supply foundry sand to any person if, in relation to any of the chemical and other attributes of the foundry sand:

4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation, or the routine or one-off sampling, of the foundry sand exceeds the absolute maximum

concentration or other value listed in Column 4 of Table 1, or

4.4.2. The average concentration or other value of that attribute from the characterisation or one-off sampling of the foundry sand (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1, or

4.4.3. The average concentration or other value of that attribute from the routine sampling of the foundry sand (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 3 of Table 1.

4.5. The absolute maximum concentration or other value of that attribute in foundry sand supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

Table 1

Column 1	Column 2	Column 3	Column 4
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Maximum average concentration for routine testing** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.15	Not required	0.3
2. Cadmium	0.5	0.5	1
3. Lead	15	15	30
4. Arsenic	5	Not required	10
5. Beryllium	1.5	Not required	3
6. Chromium (total)	40	40	80
7. Copper	40	40	80
8. Molybdenum	10	Not required	20
9. Nickel	20	20	40
10. Selenium	3	Not required	5
11. Silver	5	Not required	10
12. Zinc	50	50	100
13. Fluoride	100	Not required	200
14. Electrical Conductivity	1 dS/m	1 dS/m	2 dS/m
15. pH*	7 to 8	Not required	6 to 9

*Note: The ranges given for pH are for the minimum and maximum acceptable pH values in the foundry sand.

Test methods

4.6. The generator must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities, or equivalent.

4.7. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the foundry sand 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.

4.7.1. Test methods for measuring the mercury concentration:

4.7.1.1. 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 < 20% of the stated absolute maximum average concentration in Table 1, Column 2 (i.e. < 0.03 mg/kg dry weight).

4.7.1.2. Report as mg/kg dry weight.

4.7.2. Test methods for measuring chemicals 2 - 12:

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

4.7.2.2. 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 maximum average concentration in Table 1, Column 3 (i.e. 1.5 mg/kg dry weight for lead).

4.7.2.3. Report as mg/kg dry weight.

4.7.3. Test methods for measuring the fluoride concentration:

4.7.3.1. Particle size reduction & sample splitting may be required.

4.7.3.2. Analysis using Method 404 (Fluoride) 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 with a detection limit < 10% of the stated maximum average concentration in Table 1, Column 3 i.e. 10 mg/kg dry weight).

4.7.3.3. Report as mg/kg dry weight.

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

4.7.4.1. Sample preparation by mixing 1 part foundry sand with 5 parts distilled water.

4.7.4.2. 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).

4.7.4.3. Report electrical conductivity in deciSiemens per metre (dS/m), and pH as pH.

Notification

4.8. On or before each transaction, the generator must provide the following to each processor to whom the generator supplies the foundry sand:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the processed foundry sand exemption, or a link to the EPA website where the processed foundry sand exemption can be found; and
- a copy of the processed foundry sand order, or a link to the EPA website where the processed foundry sand order can be found.

Record keeping and reporting

4.9. The generator 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;
- all characterisation, routine and/or one-off sampling results in relation to the foundry sand supplied;
- the quantity of any foundry sand supplied; and
- the name and address of each processor to whom the generator supplied the foundry sand.

4.10. The generator must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for foundry sand supplied to any processor of the foundry sand.

4.11. The generator must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clause 4.1 to 4.7.

5. Processor requirements

The EPA imposes the following requirements on any processor who supplies foundry sand.

5.1. The foundry sand must be mixed or blended with, or otherwise incorporated into:

5.1.1. Recovered aggregate where the foundry sand is added at a rate <20% by weight; or

5.1.2. Compost where the foundry sand is added at a rate <10% by weight.

5.2. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the processed foundry sand:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the processed foundry sand exemption, or a link to the EPA website where the processed foundry sand exemption can be found; and
- a copy of the processed foundry sand order, or a link to the EPA website where the processed foundry sand order can be found.

5.3. The processor must keep a written record, for a period of six years, of the quantity of**:**

- any foundary sand received from the generator, and the generator's name and address; and
- any processed foundary sand supplied to the consumer and the consumer's name and address.

6. 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 five discrete sub-samples of equal size into a single sample for the purpose of analysis.

compost means material that meets all chemical and other material requirements,

for compost which are required on or before the supply of compost under 'the compost order 2014'.

continuous process means a process that produces foundry sand on an ongoing basis.

generator means a person who generates foundry sand for supply to a processor.

processor means a person who processes, mixes, blends, or otherwise incorporates foundry sand into compost or recovered aggregate producing a material in its final form for supply to a consumer.

recovered aggregate means material that meets the chemical and other material requirements for recovered aggregate which are required on or before supply of recovered aggregate under 'The recovered aggregate order 2014'.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of foundry sand that is not repeated,
- in the case where the supplier has an arrangement with the recipient for more than one supply of foundry sand, the first supply of foundry sand 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

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 foundry 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 foundry 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 (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.

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

The recovered aggregate 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 recovered aggregate to which 'the recovered aggregate exemption 2014' applies. The requirements in this order apply in relation to the supply of recovered aggregate for application to land as a road making material, or in building, landscaping or construction works.

1. Waste to which this order applies

1.1. This order applies to recovered aggregate. In this order, recovered aggregate means material comprising of concrete, brick, ceramics, natural rock and asphalt processed into an engineered material. This does not include refractory bricks or associated refractory materials, or asphalt that contains coal tar.

2. Persons to whom this order applies

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

2.2. This order does not apply to the supply of recovered aggregate 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 recovered aggregate.

Sampling requirements

4.1. On or before supplying recovered aggregate, the processor must:

4.1.1. Prepare a written sampling plan which includes a description of sample

preparation and storage procedures for the recovered aggregate.

4.1.2. Undertake sampling and testing of the recovered aggregate as required under clauses 4.2 and 4.3 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 recovered aggregate is generated as part of a continuous process, the processor must undertake the following sampling:

4.2.1. Characterisation of the recovered aggregate by collecting 20 composite samples of the waste 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. Characterisation must be conducted for recovered aggregate generated and processed every year following the commencement of the continuous process; and

4.2.2. Routine sampling of the recovered aggregate by collecting either 5 composite samples from every 4,000 tonnes (or part thereof) processed or 5 composite samples every 3 months (whichever is the lesser); and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1 other than those listed as 'not 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.

4.3. Where the recovered aggregate is not generated as part of a continuous process, the processor must undertake one-off sampling of a batch, truckload or stockpile of the recovered aggregate, by collecting 10 composite samples from every 4,000 tonnes (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 1 and the absolute maximum concentration or other value listed in Column 4 of Table 1 prior to the supply of the recovered aggregate.

Chemical and other material requirements

4.4. The processor must not supply recovered aggregate to any person if, in relation to any of the chemical and other attributes of the recovered aggregate:

4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation, or the routine or one-off sampling, of the recovered aggregate exceeds the absolute maximum concentration or other value listed in Column 4 of Table 1, or

4.4.2. The average concentration or other value of that attribute from the characterisation or one-off sampling of the recovered aggregate (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1, or

4.4.3. The average concentration or other value of that attribute from the routine sampling of the recovered aggregate (based on the arithmetic mean) exceeds the maximum average concentration or other value

listed in Column 3 of Table 1.

4.5. The absolute maximum concentration or other value of that attribute in any recovered aggregate supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

Table 1

Column 1	Column 2	Column 3	Column 4
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Maximum average concentration for routine testing** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	Not required	1
2. Cadmium	0.5	0.5	1.5
3. Lead	75	75	150
4. Arsenic	20	Not required	40
5. Chromium (total)	60	60	120
6. Copper	60	60	150
7. Nickel	40	Not required	80
8. Zinc	200	200	350
9. Electrical Conductivity	1.5 dS/m	1.5dS/m	3 dS/m
10. Metal	1%	1%	2%
11. Plaster	0.25%	0.25%	0.5%
12. Rubber, plastic, paper, cloth, paint, wood and other vegetable matter	0.2%	0.2%	0.3%

Test methods

4.6. 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.

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

4.7.1. Test method for measuring the mercury concentration:

4.7.1.1. 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 < 20% of the stated maximum average concentration in Table 1, Column 2 (i.e. < 0.1 mg/kg dry weight).

4.7.1.2. Report as mg/kg dry weight.

4.7.2. Test methods for measuring chemicals 2 - 8:

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

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

4.7.2.3. Report as mg/kg dry weight.

4.7.3. Test methods for measuring the electrical conductivity:

4.7.3.1. Sample preparation by mixing 1 part recovered aggregate with 5 parts distilled water.

4.7.3.2. Analysis using Method 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).

4.7.3.3. Report deciSiemens per metre (dS/m).

4.7.4. Test method for measuring the attributes 10 - 12:

4.7.4.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Aggregate (or an equivalent method), for the materials listed in 10 - 12 of Column 1, Table 1.

4.7.4.2. Report as %

Notification

4.8. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the recovered aggregate:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the recovered aggregate exemption, or a link to the EPA website where the recovered aggregate exemption can be found; and
- a copy of the recovered aggregate order, or a link to the EPA website where the recovered aggregate order can be found.

Record keeping and reporting

4.9. 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;
- all characterisation, routine and/or one-off sampling results in relation to the recovered aggregate supplied;
- the quantity of the recovered aggregate supplied; and
- the name and address of each person to whom the processor supplied the recovered aggregate.

4.10. The processor must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for recovered aggregate supplied to any consumer of the recovered aggregate.

4.11. 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 4.7.

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 five 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, recovered aggregate to land.

continuous process means a process that produces recovered aggregate on an ongoing basis.

processor means a person who processes, mixes, blends, or otherwise incorporates recovered aggregate 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 recovered aggregate that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of recovered aggregate the first supply of recovered aggregate 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

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 recovered aggregate 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 recovered aggregate 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.

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

The recovered glass sand 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 recovered glass sand to which 'the recovered glass sand exemption 2014' applies. The requirements in this order apply in relation to the supply of recovered glass sand for application to land for the purpose of pipe bedding, drainage or for road making activities.

1. Waste to which this order applies

1.1. This order applies to recovered glass sand. In this order, recovered glass sand means recovered glass that has been processed to produce a 'sand-like' glass material with a particle size diameter generally less than 5 mm, and that contains at least 98% recovered glass.

2. Persons to whom this order applies

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

2.2. This order does not apply to the supply of recovered glass sand to a consumer for land application at the 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 recovered glass sand.

Sampling requirements

4.1. On or before supplying recovered glass sand the processor must:

4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the recovered glass sand.

4.1.2. Undertake sampling and testing of the recovered glass sand as required under clauses 4.2 and 4.3 below. The sampling must be carried out in accordance with Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent).

4.2. Where the recovered glass sand is generated as part of a continuous process, the processor must undertake the following sampling:

4.2.1. Characterisation sampling of recovered glass sand by collecting 20 composite samples of the waste and testing each sample for the chemical 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. Where there is a change in inputs that is likely to affect the properties of the recovered glass sand, characterisation must be repeated. Characterisation samples can be used for routine testing and subsequent calculations. Characterisation must be conducted for recovered glass sand generated and processed during each 2-year period following the commencement of the continuous process; and

4.2.2. Routine sampling of the recovered glass sand by collecting either 5 composite samples from every 4,000 tonnes (or part thereof) processed or 5 composite samples every 3 months (whichever is the lesser); and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1 other than those listed as 'not 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.

4.3. Where the recovered glass sand is not generated as part of a continuous process, the processor must undertake one-off sampling of a batch, truckload or stockpile of the recovered glass sand, by collecting 10 composite samples from every 4,000 tonnes (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 1 and the absolute maximum concentration or other value listed in Column 4 of Table 1 prior to the supply of the recovered glass sand.

Chemical and other material requirements

4.4. The processor must not supply recovered glass sand to any person if, in relation to any of the chemical and other attributes of the recovered glass sand:

4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation, or the routine or one-off sampling, of the recovered glass sand exceeds the absolute maximum concentration or other value listed in Column 4 of Table 1, or

4.4.2. The average concentration or other value of that attribute from the characterisation or one-off sampling of the recovered glass sand (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1, or

4.4.3. The average concentration or other value of that attribute from the routine sampling of the recovered glass sand (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 3 of Table 1.

4.5. The absolute maximum concentration or other value of that attribute in any recovered glass sand supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

Table 1

Column 1	**Column 2**	**Column 3**	**Column 4**
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Maximum average concentration for routine testing** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	Not required	1
2. Cadmium	0.5	0.5	1.5
3. Lead	50	50	100
4. Arsenic	10	Not required	20
5. Chromium (total)	20	Not required	40
6. Copper	40	Not required	120
7. Molybdenum	5	Not required	10
8. Nickel	10	Not required	20
9. Zinc	100	100	300
10. Total Organic Carbon	1.0%	Not required	2.0%
11. Electrical Conductivity	1 dS/m	1 dS/m	2 dS/m
12. Metals	0.25%	0.25%	0.50%
13. Plaster, clay lumps and other friable materials	0.25%	0.25%	0.50%
14. Rubber, plastic, bitumen, paper, cloth, paint, wood and other vegetable matter	0.3%	0.3%	0.5 %

Test methods

4.6. 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.

4.7. The processor must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the recovered glass sand 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.

4.7.1. Test methods for measuring the mercury concentration:

4.7.1.1. 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 < 20% of the stated absolute maximum concentration in Table 1, Column 4 (i.e. 0.2 mg/kg dry weight).

4.7.1.2. Report as mg/kg dry weight.

4.7.2. Test methods for measuring chemicals 2 - 9:

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

4.7.2.2. 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. 0.15 mg/kg dry weight for cadmium).

4.7.2.3. Report as mg/kg dry weight.

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

4.7.3.1. Method 105 (Organic Carbon) and using a 2 gram sample 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).

4.7.3.2. Reporting as % total organic carbon.

4.7.4. Test methods for measuring the electrical conductivity:

4.7.4.1. Sample preparation by mixing 1 part recovered aggregate ‘as received’ with 5 parts distilled water.

4.7.4.2. Analysis using Method 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).

4.7.4.3. Report in deciSiemens per metre (dS/m).

4.7.5. Test method for measuring the attributes 12 - 14:

4.7.5.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Aggregate (or an equivalent method), for the materials listed in 12 - 14 of Column 1, Table 1.

4.7.5.2. Report as %.

Notification

4.8. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the recovered glass sand:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the recovered glass sand exemption, or a link to the EPA website where the recovered glass sand exemption can be found; and
- a copy of the recovered glass sand order, or a link to the EPA website where the recovered glass sand order can be found.

Record keeping and reporting

4.9. 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;
- all characterisation, routine and/or one-off sampling results in relation to the recovered glass sand supplied;
- the quantity of the recovered glass sand supplied; and
- the name and address of each person to whom the processor supplied the recovered glass sand.

4.10. The processor must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for recovered glass sand supplied to any consumer of the recovered glass sand.

4.11. 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 4.7.

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 five 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, recovered glass sand to land.

continuous process means a process that produces recovered glass sand on an ongoing basis.

processor means a person who processes, mixes, blends, or otherwise incorporates recovered glass sand into a material in its final form for supply to a consumer.

recovered glass is glass sourced from the collection of domestic or commercial waste. This includes glass collected from domestic commingled recycling collections. This does not include glass recovered from the sorting or processing of:

- mixed municipal waste, or
- mixed commercial and industrial waste, or
- construction and demolition waste, or
- Cathode Ray Tubes, or
- other glass recovered from electrical equipment, or
- fluorescent or incandescent lights.

transaction means:

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

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 recovered glass 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 recovered glass 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 (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.

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

The treated drilling mud 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 treated drilling mud to which 'the treated drilling mud exemption 2014' applies. The requirements in this order apply in relation to the supply of treated drilling mud for application to land as engineering fill or for use in earthworks.

1. Waste to which this order applies

1.1. This order applies to treated drilling mud. In this order, treated drilling mud means drilling mud that has undergone dewatering such that the resultant solid:

- does not have an angle of repose of less than 5 degrees above horizontal; or
- does not become free-flowing at or below 60 degrees Celsius or when it is transported; or
- is generally capable of being picked up by a spade or shovel.

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies treated drilling mud that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of treated drilling mud 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 treated drilling mud.

Sampling requirements

4.1. On or before supplying treated drilling mud, the processor must:

4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the treated drilling mud.

4.1.2. Undertake sampling and testing of the treated drilling mud as required under clauses 4.2 and 4.3 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 treated drilling mud is generated as part of a continuous process, the processor must undertake routine sampling of the treated drilling mud by collecting 10 composite samples per 100 tonnes (dry weight) (or part thereof) processed, and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1.

4.3. Where the treated drilling mud is not generated as part of a continuous process, the processor must undertake one-off sampling of a batch, truckload or stockpile of the treated drilling mud, by collecting 5 composite samples from every 10 tonnes (dry weight) (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1.

4.4. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 1 and the absolute maximum concentration or other value listed in Column 4 of Table 1 prior to the supply of the treated drilling mud.

Chemical and other material requirements

4.5. The processor must not supply treated drilling mud to any person if, in relation to any of the chemical and other attributes of the treated drilling mud waste:

4.5.1. The concentration or other value of that attribute of any sample collected and tested as part of the routine or one-off sampling, of the treated drilling mud exceeds the absolute maximum concentration or other value listed in Column 3 of Table 1, or

4.5.2. The average concentration or other value of that attribute from the routine or one-off sampling of the treated drilling mud (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1.

4.6. The absolute maximum concentration or other value of that attribute in any treated drilling mud supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 1.

Table 1

Column 1	Column 2	Column 3
Chemicals and other attributes	**Maximum average concentration** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	1
2. Cadmium	0.5	1
3. Lead	50	100
4. Arsenic	20	40
5. Chromium (total)	50	100
6. Copper	50	100
7. Nickel	30	60
8. Zinc	100	200
9. Electrical Conductivity	1.5 dS/m	3 dS/m
10. pH *	6 to 9	5.5 to 10
11. Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	40
12. Benzo(a)pyrene	0.5	1
13. Total Petroleum Hydrocarbons (TPHs)	250	500
14. Total Chlorinated Hydrocarbons	0.5	1

*Note: The ranges given for pH are for the minimum and maximum acceptable pH values in the treated drilling mud.

Test methods

4.7. 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.

4.8. The processor must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the treated drilling mud 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.

4.8.1. Test methods for measuring the mercury concentration:

4.8.1.1. 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 < 20% of the stated absolute maximum concentration in Table 1, Column 3 (i.e. < 0.2 mg/kg dry weight).

4.8.1.2. Report as mg/kg dry weight.

4.8.2. Test methods for measuring chemicals 2 - 8:

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

4.8.2.2. 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 3 (i.e. 10 mg/kg dry weight for lead).

4.8.2.3. Report as mg/kg dry weight.

4.8.3. Test methods for measuring electrical conductivity and pH:

4.8.3.1. Sample preparation by mixing 1 part treated drilling mud with 5 parts distilled water.

4.8.3.2. 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).

4.8.3.3. Report electrical conductivity in deciSiemens per metre (dS/m).

4.8.4. Test method for measuring PAHs and benzo(a)pyrene:

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

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

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

4.8.4.4. Report benzo(a)pyrene as mg/kg.

4.8.5. Test method for measuring TPHs:

4.8.5.1. 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).

4.8.5.2. Report as mg/kg dry weight.

4.8.6. Test methods for measuring total chlorinated hydrocarbons:

4.8.6.1. 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).

4.8.6.2. Calculate the total sum of carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichlorothene (2 isomers), 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.

4.8.6.3. Report total chlorinated hydrocarbons as mg/kg.

Notification

4.9. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the treated drilling mud:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the treated drilling mud exemption, or a link to the EPA website where the treated drilling mud exemption can be found; and
- a copy of the treated drilling mud order, or a link to the EPA website where the treated drilling mud order can be found.

Record keeping and reporting

4.10. 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;
- all routine or one-off sampling results in relation to the treated drilling mud supplied;
- the quantity of the treated drilling mud supplied; and
- the name and address of each person to whom the processor supplied the treated drilling mud.

4.11. The processor must provide, on request, the most recent sampling (whether routine or one-off or both) results for treated drilling mud supplied to any consumer of the treated drilling mud.

4.12. 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 4.8.

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 five 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, treated drilling mud to land.

continuous process means a process that produces treated drilling mud on an ongoing basis.

drilling fluid means a mixture of water and chemical additives including but not limited to bentonite, soda ash (sodium carbonate), sodium hydroxide, lime and polymers.

drilling mud means a mixture of naturally occurring rock and soil, including but not limited to materials such as sandstone, shale and clay, and drilling fluid generated during drilling operations such as horizontal directional drilling or potholing. This does not include drilling mud that has been generated by:

(a) deep drilling for mineral, gas or coal exploration, or

(b) drilling through contaminated soils, acid sulphate soils (ASS) or potential acid sulphate soils (PASS).

processor means a person who generates, processes, mixes, blends, or otherwise incorporates treated drilling mud 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 treated drilling mud that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of treated drilling mud, the first supply of treated drilling mud 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 processor 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

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 treated drilling mud 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 treated drilling mud 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.