

788-864 Mamre Road, Kemps Creek NSW

Bulk Earthwork Specification. Filling, Cutting and Testing (with Blended Topsoil and Compacted Insitu "Topsoil")

PSM3739-006S Rev 6 13 October 2020

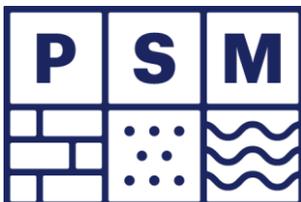


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1 Scope

This specification details the requirements for the bulk earthworks to be undertaken at 788-864 Mamre Road, Kemps Creek. The area where this specification is applicable is shown in Figure 1. This includes areas where material is filled or cut to bulk earthworks level (BEL) within the site for lots 54 to 58.

Fill placed in accordance with this specification is denoted as Engineered Fill.

This specification does not address any environmental, contamination or erosion issues with respect to the fill material.

There is a HOLD POINT on placing fill in Section 2.4 of this Specification.

2 Filling Works

2.1 Subgrade Preparation

The condition of the subgrade should be assessed immediately prior to the commencement of filling.

All Engineered Fill is to be placed on one of the following materials:

1. Bedrock.
2. Natural insitu material of at least stiff consistency.
3. Compacted Insitu Topsoil as defined in Section 2.1.1 as approved by PSM.
4. Engineered compacted fill placed in accordance with this or other approved specifications for which the Geotechnical Inspection and Testing Authority (GITA) has a Level 1 certificate certifying compliance with that approved specification AND of at least stiff consistency.
5. Existing fill and other materials as approved by PSM.

It is likely sediment within existing dams will be required to be removed for the subgrade to meet the above requirement.

Proof rolling shall only be undertaken under the direction of PSM. PSM may also direct a bridging layer of Engineered Fill be placed and compacted to a Dry or Hilt Density Ratio (Standard Compaction) of between 98% and 102%. Any such layer shall be a Lot under Clause 5.3.

The GITA should satisfy itself that the subgrade has not been desiccated, affected by rain or disturbed. If the GITA cannot so satisfy itself, then the subgrade should be moisture conditioned and compacted to be in accordance with Clauses 2.5 and 2.6 of this specification.

Engineered Fill shall be placed only on subgrade approved by the GITA as being in accordance with this specification.

2.1.1 Compacted Insitu Topsoil Subgrade

Compacted Insitu Topsoil is defined as follows:

1. Where there is greater than 2 m of Engineered Fill to be placed over the existing subgrade, the following shall be adopted:
 - a. Removed shrubs and trees, then
 - b. Moisture condition and compact the grass and topsoil insitu.
2. Where there is less than 2 m of Engineered Fill to be placed over the existing subgrade, the following shall be adopted:
 - a. Removed shrubs and trees.
 - b. Strip grass and dispose, then
 - c. assess the subgrade condition in accordance with the subgrade preparation requirements of Clause 2.1 of this specification prior to placement of fill material.



2.2 Base Geometry

The slope of any buried batter shall be less than 1H:1V unless otherwise directed by PSM.

The contractor shall remove or flatten any geometrical obstructions (e.g. protrusions or holes) such that subsequent Engineered Fill can be placed to achieve the requirements of this specification.

Engineered Fill shall be placed only on areas where the base geometry has been approved by the GITA.

2.3 Material

2.3.1 Imported Fill

Imported Engineered Fill is to conform to one of the following definitions:

1. "Virgin excavated natural material" (**VENM**) as defined by the Protection of the Environment Operations Act 1997 No 156, Schedule 1, on Page 209:

"Virgin excavated natural material (e.g. clay, gravel, sand, soil and rock) that is not mixed with any other waste and that:

- a. has been excavated from areas that are not contaminated, as a result of industrial, commercial, mining or agricultural activities, with manufactured chemicals and that does not contain sulphide ores or soils, or.
 - b. consists of excavated natural materials that meet such criteria as may be approved by the EPA".
2. "Excavated natural material" (**ENM**) as defined by the Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption Under Part 6, Clause 51 and 51A, the excavated natural material exemption 2012:

"Excavated natural material is 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.
- d. Excavated Natural Material does not include material that has been located in a hotspot; that has been processed; or that contains asbestos, Acid Sulphate Soils (ASS), Potential Acid Sulphate soils (PASS) or sulfidic ores."

and which meets the requirements of this exemption.

3. Site Specific Resource Recovery Orders and Exemptions similar to the attached sample in Appendix F; and following approval by PSM.

2.3.2 Blended Topsoil

Blended Topsoil is to comprise existing topsoil blended with materials defined by Clause 2.3.1. Blended Topsoil shall:

- not include grass
- be blended at a maximum ratio of 1 part topsoil to 8 parts site won natural clay, shale, imported fill or other material as approved by PSM
- be thoroughly mixed and homogenous.

The GITA shall assess the above criteria and approve the material as suitable for use as Engineered Fill.

Blended Topsoil shall not be placed within 1.0 m of the final Bulk Earthworks Level (BEL).

2.3.3 All Fill

The Engineered Fill shall be approved by the GITA as suitable for use in a structural fill.

Engineered Fill shall not comprise unsuitable material as defined by Clause 4.3 of AS3798-2007 "Guidelines on earthworks for commercial and residential developments" as:



- a. "organic soils, such as many topsoils, severely root-affected subsoils and peat.
- b. materials contaminated through past site usage which may contain toxic substances or soluble compounds harmful to water supply or agriculture.
- c. materials containing substances which can be dissolved or leached out in the presence of moisture (e.g.: gypsum), or which undergo volume change or loss of strength when disturbed and exposed to moisture (e.g.: some shales and sandstones), unless these matters are specifically addressed in the design.
- d. silts, or materials that have the deleterious engineering properties of silt.
- e. other materials with properties that are unsuitable for the forming of structural fill; and.
- f. fill that contains wood, metal, plastic, boulders or other deleterious material, in sufficient proportions to affect the required performance of the fill."

The GITA shall assess that the proportion of deleterious material in each Lot is not greater than 1% by weight. Deleterious material is defined by Table 3015.3 of the RTA QA Specification 3051 (Edition 5 June 1998) as:

"Type III: Rubber, Plastic, Bitumen, Paper, Cloth, Paint, Wood and Other Vegetable Matter".

If the GITA is not able to visually assess the above criterion, the GITA shall arrange appropriate testing.

All Engineered Fill particles shall be able to be incorporated within a single layer. Further, less than 30% of particles shall be retained on the 37.5 mm sieve.

Engineered Fill shall be able to be tested in accordance with the Standard Compaction method (AS1289.5.4.1) or Hilf test method (AS1289.5.7.1). These methods require less than 20% retained on the 37.5 mm sieve. Where between 20% and 30% of particles are retained on the 37.5 mm sieve the above test methods shall still be adopted and test reports annotated appropriately.

These requirements should be met by the material after placement and compaction.

Only material approved by the GITA shall be placed as Engineered Fill.

2.4 Fill Zonation and Placement

HOLD POINT

Process Held	Placing Of Fill
Submission detail	The Contractor / GITA submit to PSM a Weekly Certificate as defined in Clause 6.2.1 of this specification for the earthworks completed to the previous Saturday no later than 5 pm of the subsequent Wednesday.
Release of Hold Point	PSM to confirm receipt of Weekly Certificate and recommend release of Hold Point if initial assessment of the Weekly Certificate indicates it complies with requirements of this specification. The contract superintendent should then release the Hold Point if it considers appropriate.

Engineered Fill shall be placed in accordance with the following requirements:

1. In near horizontal, laterally extensive layers of uniform material and thickness, deposited systematically across the work area as determined by the GITA.
2. The compacted thickness of each layer shall be equal to or less than 300 mm.
3. Where Engineered Fill is placed on a subgrade comprising Compacted Insitu Topsoil, the compacted thickness of the first layer shall be less than or equal to 150 mm.

Engineered Fill shall only be placed on subgrade in accordance with this specification and approved by the GITA.

The following particular fill zonation requirements apply for this site:

1. Blended Topsoil as defined in Cl. 2.3.2 shall not be placed above BEL-1.0 m.



2.5 Compaction

Engineered Fill shall be placed and compacted to a Dry or Hilf Density Ratios (Standard Compaction) of between 98% and 102%.

The insitu density shall be measured over the full depth of each layer placed.

2.6 Moisture Control

The placement moisture variation or Hilf moisture variation shall be controlled to be between 2% dry of optimum and 2% wet of optimum.

Placement moisture content of the Engineered Fill shall be measured.

3 Cutting

3.1 Subgrade Condition

The subgrade is to comprise one of the following materials:

1. Bedrock.
2. Natural insitu material of at least stiff consistency.
3. Existing fill and other materials as approved by PSM.

Proof rolling shall only be undertaken under the direction of PSM.

The GITA should satisfy itself that the subgrade has not been desiccated, affected by rain or disturbed. If the GITA cannot so satisfy itself, then the subgrade should be excavated and filled to the BEL in accordance with this specification.

4 Survey

4.1 Filling Areas

The survey requirements are as follows:

1. Any approved subgrade shall be surveyed prior to first filling such that subgrade levels are established to within ± 0.1 m. The area subject to approval shall be assessed and shown on a plan drawing to an accuracy of at least ± 5 m in plan.
2. The Lot boundaries shall be assessed and shown on a plan drawing to an accuracy of at least ± 5 m in plan.
3. The location of the field density tests shall be assessed and shown on the Lot boundary plan drawing to an accuracy of at least ± 5 m in plan.
4. The elevation of the field density tests shall be surveyed to an accuracy of ± 0.05 m.

The plan drawing shall show at the boundaries of the site and other identifiable site features, so as to allow the location of the lots and the test to be recoverable.

4.2 Cutting Areas

Any approved subgrade for cut areas shall be surveyed such that subgrade levels are established to within ± 0.1 m.



5 Inspection and Testing

5.1 Role of the GITA

The Geotechnical Inspection and Testing Authority (GITA) shall be contracted to document and certify that the works undertaken by the contractor has been completed in accordance with the relevant design and specifications.

5.2 Level 1 Control

The GITA shall adopt Level 1 responsibility as described in Section 8.2 of AS 3798-2007 "Guidelines on earthworks for commercial and residential developments":

"The primary objective of Level 1 Inspection and Testing is for the geotechnical inspection and testing authority (GITA) to be able to express an opinion on the compliance of the work. The GITA is responsible for ensuring that the inspection and testing are sufficient for this purpose.

The geotechnical inspection and testing authority need to have competent personnel on site at all times while earthwork operations are undertaken. Such operations include:

- Completion of removal of topsoil
- Placing of imported or cut material
- Compaction and adding/removal of moisture
- Trenching and backfilling
- Test rolling
- Testing.

The superintendent should agree a suitable inspection and testing plan prior to commencement of the works.

On completion of the earthworks, the GITA will usually be required to provide a report setting out the inspections, sampling and testing it has carried out, and the locations and results thereof. Unless very unusual conditions apply, the GITA should also be able to express an opinion that the works (as far as it has been able to determine) comply with the requirements of the specification and drawings."

For this particular contract, Level 1 responsibility includes:

1. Lot testing as per Clause 5.3 of this specification.
2. A frequency of compaction testing not less than that specified in Clause 5.4 of this specification.
3. The GITA documenting and reporting its activity in the terms required by Clause 6 of this specification.
4. The GITA undertaking adequate inspections and testing to comply with the above requirements and to be able to certify the fill in the terms required by Clause 6 of this specification.

5.3 Lot Testing

This specification requires lot testing to be undertaken.

A Lot is defined as a single layer of Engineered Fill consisting of uniform material which has undergone similar treatment.

Lot testing comprises the following:

1. A Lot shall be identified by the Contractor or the GITA with a Lot Number and presented for testing.
2. A Lot shall be deemed to be in accordance with the specification if all the tests undertaken within the Lot are in accordance with the specification, i.e. "a none to fail basis".
3. If any one test undertaken within a Lot fails, the whole of the Lot shall be reworked and retested.

Any portion of the placed Engineered Fill must be part of a single lot and all Lots will require approval by the GITA.

5.4 Testing Frequency (Compaction Testing)

The frequency of compaction testing for each lot shall not be less than the greater of:



1. For lot less than 50 m³
 - a. 1 test per lot.
2. For lot between 50 m³ and 100 m³
 - a. 2 tests per lot.
3. For lot greater than 100 m³
 - a. 1 test per 300 m³ of material placed as Blended Topsoil as defined in Clause 2.3.2 of this specification
 - b. 1 test per 500 m³ of material placed
 - c. 3 tests per lot.

A laboratory moisture content test shall be undertaken for each field density test.

5.5 Proof Rolling and Plate Load Testing

Proof rolling, together with minor boxing out and refilling, of the upper surface of the bulk earthworks will be undertaken as directed by PSM. The plant to be adopted depends upon the design loads adopted by the structural engineers for each section of the site.

Plate load testing shall be undertaken at the direction of PSM at the following stages:

1. Prior to placement of Engineered Fill where the subgrade comprises Compacted Insitu Topsoil.
2. Following placement and compaction of the first two (2) layers of Blended Topsoil and subsequently as directed by PSM. The expected test frequency is 1 test per 5000 m³ of Blended Topsoil.
3. At final bulk earthworks level (BEL). Expected test frequency is approximately a day of testing for each building pad.

The contractor is to make a suitable reaction (e.g. 20 tonne excavator) available for the tests.

5.6 Inspection, Testing and Survey

The GITA shall at least undertake the following tasks:

Cut areas

1. Identify the subgrade as one of the three (3) subgrade types listed in Clause 3.1 of this specification and assess that the subgrade condition of cut areas is in accordance with the subgrade condition requirements of Clause 3.1 of this specification. If the cut subgrade has been approved by PSM, the GITA will be required to reference the approval in its weekly report.
2. Should Engineered Fill be required to fill overcut areas, assess that filling has been placed in accordance with this specification.

Fill areas

3. For fill areas, identify the subgrade as one of the five (5) subgrade types listed in Clause 2.1 of this specification and assess that the subgrade condition of any area prior to placement of fill material is in accordance with the subgrade preparation requirements of Clause 2.1 of this specification. For the following subgrade types, GITA needs to include / refer to PSM approval in its weekly report:
 - a. Compacted Insitu Topsoil as defined in Section 2.1.1 as approved by PSM
 - b. Existing fill and other materials as approved by PSM.
4. Assess that the base geometry of any area prior to placement of fill material is in accordance with the base geometry requirements of Clause 2.2 of this specification.
5. For each Lot, identify the material as either Site Won, Imported or Blended Topsoil as defined in Clause 2.3 of this specification and assess that the material placed is in accordance with the fill material requirements of Clause 2.3 of this Specification.
6. Assess that Blended Topsoil placed is in accordance with the requirements of Clause 2.3.2 and Clause 2.3.3 of this specification.



7. Assess the proportion of deleterious material is in accordance with the requirements of Clause 2.3.3 of this Specification.
8. Assess that the Engineered Fill has been placed in accordance with the requirements for fill zonation and placement of Clause 2.4 of this specification.
9. Assess that each Lot as presented for approval by the contractor is in accordance with the requirements for Lot definition of Clause 5.3 of this specification.
10. Ensure that the survey requirements in Clause 5 of this specification have been completed.
11. Estimate the approximate volume of Engineered Fill placed in each Lot presented for approval.
12. Conduct Lot testing in accordance with the construction control testing requirements of Clauses 5.3 and 5.4 of this specification.
13. Assess that the compaction of each Lot is in accordance with the requirements of Clause 2.5 of this specification. The GITA shall select a depth of insitu density tests that allows the density of the full layer to be assessed.
14. Assess that the moisture variation of each Lot is in accordance with the requirements for moisture control in Clause 2.6 of this specification.
15. Conduct material property testing in accordance with the material testing requirements in this specification.

6 Reporting and Certification

6.1 Reporting

The GITA shall produce at least the following reports:

1. *VENM / ENM Validation Reports*. Such a report shall transmit the VENM or ENM validation certificates for the fill imported to site.
2. *Subgrade Approval Reports* (a sample is attached). Such a report shall:
 - Document assessments undertaken for tasks 1 and task 3 of Clause 5.6 including reporting the subgrade type
 - Document the subgrade survey that has been undertaken
 - Approve or reject the subgrade condition and base geometry for filling, based on tasks 3 and 4 of Clause 5.6
 - Approve or reject the subgrade condition for cut areas based on task 1.
3. *Lot Approval Reports* (a sample is attached). Such a report shall:
 - Document assessments, testing and survey undertaken for tasks 3 to 15 of Clause 5.6.
 - Report material identification undertaken for task 5 of Clause 5.6
 - Report the assessed proportion of deleterious material for task 7 of Clause 5.6
 - Report the results of testing undertaken for task 12 of Clause 5.6
 - Approve or reject lots based on tasks 13 and 14 of Clause 5.6.
4. *Material Testing Reports*. Such a report shall:
 - Report the results of material property testing undertaken for task 15 of Clause 5.6.
5. *Daily Reports* (a sample is attached). Such a report shall be completed daily and shall:
 - Document time spent on site by the GITA personnel
 - List subgrade assessments and approvals undertaken each day with reference to relevant Subgrade Approval Report(s)
 - List Lots presented, accepted and approved or rejected each day, with reference to relevant Lot Approval Report(s)
 - List survey undertaken each day as for task 10 of Clause 5.6 and not already documented in the Subgrade or Lot Approval Reports.
 - Document other relevant activities undertaken on site that day (site instructions, breakdowns, compaction equipment used, etc.).



6.2 Certification

6.2.1 Weekly Certificates

The GITA shall produce a Weekly Certificate for any week in which earthworks are undertaken in accordance with this specification. The Weekly Certificate will cover all works from the previous Weekly Certificate until the end of work on a Saturday.

The Weekly Certificate shall transmit the following:

- Copy or reference to the complete specification document(s)
- Subgrade Approval Reports
- Lot Approval Reports
- Material property testing reports
- Daily Reports
- Survey of subgrade geometry prior to filling or in cut areas
- Plan survey drawing showing lot boundaries and location of density tests
- Survey documenting filling undertaken to date and showing location of testing
- Provide an Excel spreadsheet presenting the results of the week's acceptance testing completed by the GITA.

And certify that:

"All the earthworks undertaken and the subgrade condition in the cut areas [in the stated period] are documented in the above reports and have been undertaken in accordance with the Specification (Ref. PSM3739-006S Rev XX dated XXX)."

6.2.2 Interim or Final Filling Certificate

At the completion of the bulk earthworks, or as requested by the Client, the GITA shall provide an Interim or Final Filling Certificate which shall:

1. Transmit a reference list of the Weekly Certificates.
2. Provide an Excel spreadsheet presenting the results of all the acceptance testing completed by the GITA.
3. Certify that *"All the earthworks undertaken and the subgrade condition in the cut areas [in the stated period] are documented in the above reports and have been undertaken in accordance with the Specification (Ref. PSM3739-006S Rev XX dated XXX)."*



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Perth

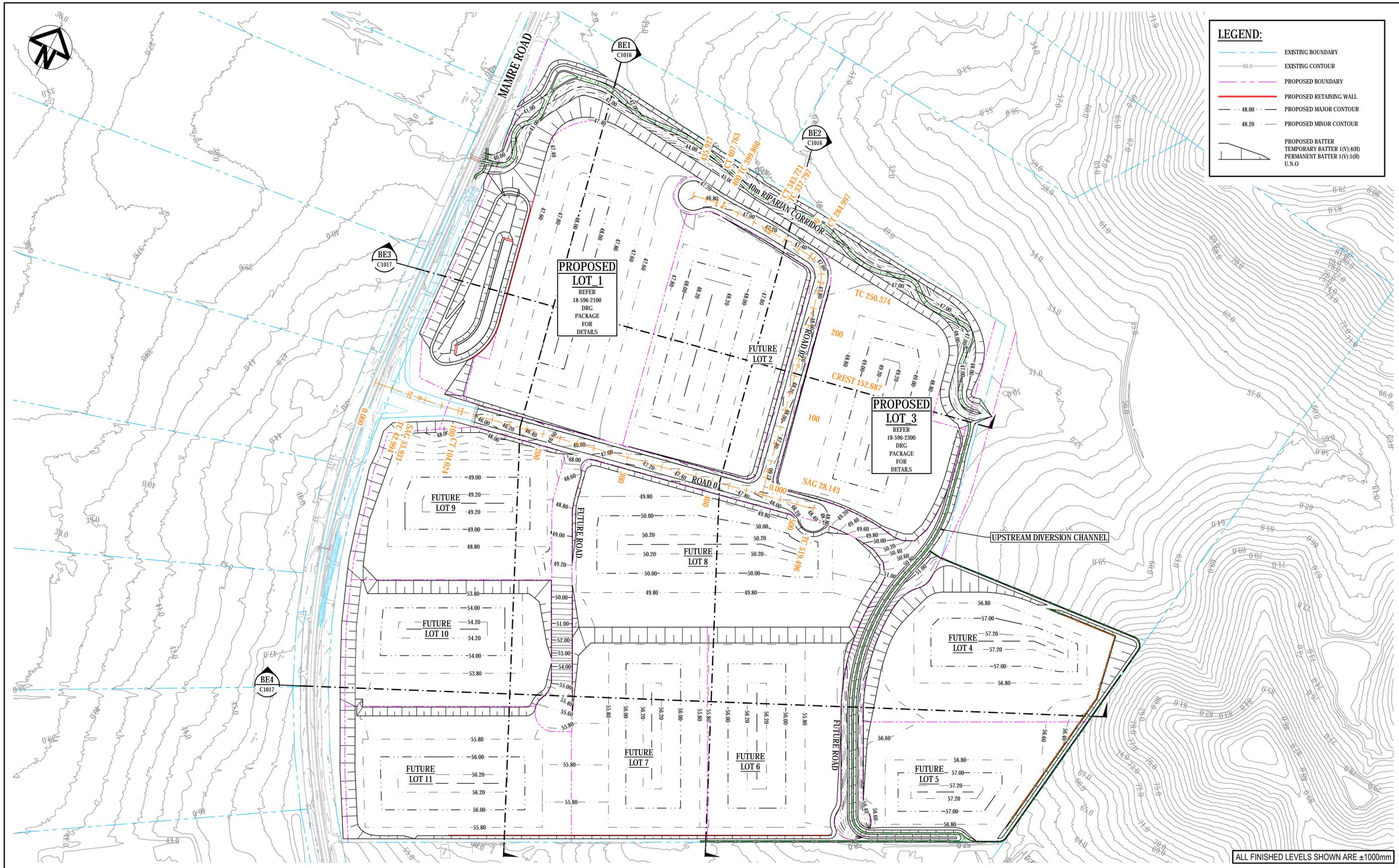
Level 3 22 Delhi Street
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Appendix A

Figure 1



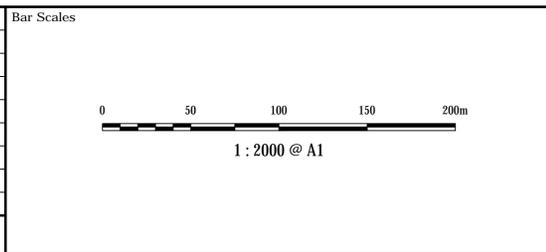


LEGEND:

	EXISTING BOUNDARY
	EXISTING CONTOUR
	PROPOSED BOUNDARY
	PROPOSED RETAINING WALL
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED BATTER
	TEMPORARY BATTER 1(V):4(H)
	PERMANENT BATTER 1(V):5(H)
	U.N.O

ALL FINISHED LEVELS SHOWN ARE ±1000mm

Issue	Description	Date
B	ISSUED FOR DEVELOPMENT APPLICATION	12-10-20
A	ISSUED FOR DEVELOPMENT APPLICATION	15-05-20



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Scales	1:2000	Drawn	PDK	
	Grid	MGA	Designed	PDK
		Height Datum	AHD	Checked
		Approved	AM	

Project
**ASPECT INDUSTRIAL ESTATE
 MAMRE ROAD,
 KEMPS CREEK
 STAGE 1**

Title
**BULK EARTHWORKS
 CONTOUR PLAN**

Civil Engineers and Project Managers

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Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION	A1
Project - Drawing No.	18-596-C1020	Issue
		B

Appendix B

Subgrade Approval Report



GEOTECHNICAL INSPECTION AND TESTING AUTHORITY

NATA accreditation number



SUBGRADE APPROVAL REPORT

Client:	Contractor:
Job number:	Report number:
Project:	Technician:

Subgrade areas assessed:

Area ID	Date	Approximate extent	Subgrade description	Geometry summary	Specification reference	Compliance (Pass/Fail)	Survey reference	Approved (Yes/No)

COMMENTS:

Signed: _____ Date: _____

Appendix C

Lot Approval Report





GEOTECHNICAL INSPECTION AND TESTING AUTHORITY
NATA accreditation number

LOT APPROVAL REPORT

Client: _____	Report number: _____
Job number: _____	Report date: _____
Project: _____	Technician: _____
Contractor: _____	Test methods: _____

LOT ID: _____	Sheet _____	of _____
Retest (Yes/No) _____	Original test report number: _____	
Specification reference _____	_____	
Location: _____	_____	
Lot boundary survey reference/location: _____	_____	
Materials description: _____	<i>(MATERIAL TYPE, colour, minor components, maximum particle size)</i>	
Material identification: _____	<i>(Identify the material as defined in Clause 2.3.1, Clause 2.3.2 or Clause 2.3.3 of the Specification)</i>	
Deleterious material assessment: _____	<i>(Report proportion of deleterious material)</i>	
Layer thickness: _____	_____	
Accepted as Lot: (Yes/No) _____	Date: _____	_____
Approximate volume (m3) _____	Number of tests required: _____	

Test ID No.				
Test soil description				
Date tested:				
Grid reference				
Surveyed test locations (RL,E,N)				
Test depth (mm)				
Max size (mm)				
% Oversize material (wet)				
Field wet density (t/m ³)				
Field moisture content (%)				
PWCD (t/m ³)				
Compactive effort				
Moisture variation (%)				
HILF density ratio (%)				
TEST (Pass/Fail)				

LOT APPROVAL	(Pass/Fail)	Signed: _____	Date: _____
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Appendix D

Daily Report





GEOTECHNICAL INSPECTION AND TESTING AUTHORITY

NATA accreditation number

DAILY REPORT

Client:	Report number:
Job number:	Report date:
Project:	Level of testing: Level 1
Location:	Technician:
Contractor	

Time on site:
Time off site:

1. Subgrade Approval

Areas ID	Subgrade Approval Report No:	Comments

2. Lot Approval

Lot ID	Lot Approval Report No:	Comments

3. Survey

Type of survey	Survey undertaken by:	Reference

4. Instructions received on site

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5. Instructions given on site

--

COMMENTS:

--

Signed:

Date:

Appendix E

Certification Letter (Sample Only)



Our Ref:

Date:

Addressed to: Earthwork Contractor

Attention: Earthwork Contractor Representative

Dear

**RE: SAMPLE INTERIM (OR FINAL) FILLING CERTIFICATE
INDUSTRIAL DEVELOPMENT, BULK EARTHWORKS
CERTIFICATION OF EARTHWORKS
BETWEEN [DATE OF COMMENCEMENT] AND [DATE OF COMPLETION]**

In the period between [date start] and [date finish] the contractor has undertaken earthworks in areas XXX and XXX.

During the above period:

- The GITA has prepared the following Subgrade Approval Reports:

1. Subgrade Approval Report No 1
2.

- The GITA has prepared the following Lot Approval Reports:

1. Lot Approval Report No 1
2.

- The GITA has prepared the following Daily Reports:

1. Daily Report No 1.....
2.

- The following subgrade survey was undertaken:

1. Subgrade Survey reference.....
2.

- The following weekly survey was undertaken:

1. Weekly survey of week endingreference.....
2.

Copies of all the above documents are attached.

The GITA certifies that all the earthworks undertaken in the above stated period are documented in the above reports and have been undertaken in accordance with the Specifications (ref. PSM3739-006S REV4, dated XXX) a copy of which is attached, with the exception of:

1. List outstanding issues (not approved subgrade, lots, unsuitable material, failed tests etc.)
2.

Signed

GITA

Appendix F

Resource Recovery Order and Exemptions Example





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

The Rozelle Interchange tunnel spoil order 2019

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 Rozelle Interchange tunnel spoil to which 'the Rozelle Interchange tunnel spoil exemption 2019' applies. The requirements in this order apply in relation to the supply of Rozelle Interchange tunnel spoil for application to land as engineering fill, or for use in earthworks, or for use as an alternative raw material in the manufacture of bricks, or applied to land within the road corridor for public road related activities including road construction, maintenance and installation of road infrastructure facilities.

1. Waste to which this order applies

- 1.1. This order applies to Rozelle Interchange tunnel spoil. In this order, Rozelle Interchange tunnel spoil means approximately 7 million cubic meters of naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that:
 - (a) has been generated from the WestConnex M4-M5 Link Rozelle Interchange Tunnel Project extending from the M4-M5 Link Tunnel (Leichhardt) to Victoria Road (Balmain);
 - (b) has been excavated by the use of machinery;
 - (c) contains no more than 0.4% w/w shotcrete;
 - (d) has not been contaminated with manufactured chemicals or process residues (except for shotcrete);
 - (e) does not meet the definition of virgin excavated natural material in the POEO Act; and
 - (f) may have been processed by intermediate waste facilities licensed by the EPA.

Rozelle Interchange tunnel spoil does not include material that has been mixed with glass fibre plastic reinforced rods and bolts; 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 to any person who supplies Rozelle Interchange tunnel spoil that has been generated, or recovered by John Holland CPB Contractors Joint Venture ('JHCPBJV').
- 2.2. This order does not apply to the supply of Rozelle Interchange tunnel spoil to a consumer for land application or 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 17 December 2019 and is valid until 17 December 2023 unless revoked by the EPA by notice in writing at an earlier date.

4. Generator requirements

The EPA imposes the following requirements on any generator who supplies Rozelle Interchange tunnel spoil.

Notification

- 4.1. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the Rozelle Interchange tunnel spoil to:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
 - a copy of the 'Rozelle Interchange tunnel spoil exemption 2019'; and
 - a copy of the 'Rozelle Interchange tunnel spoil order 2019'.

Record keeping and reporting

- 4.2. The generator must keep a written record of the name and address of each person to whom the generator supplied Rozelle Interchange tunnel spoil and quantity supplied for a period of six years.
- 4.3. The generator of Rozelle Interchange tunnel spoil must make information available to the EPA upon request.

5. Processor requirements

The EPA imposes the following requirements on any processor who supplies Rozelle Interchange tunnel spoil that has been processed:

- 5.1. The processor must only process Rozelle Interchange tunnel spoil by crushing, grinding, separating and screening.

Notification

- 5.2. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the Rozelle Interchange tunnel spoil to:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
 - a copy of the 'Rozelle Interchange tunnel spoil exemption 2019'; and
 - a copy of the 'Rozelle Interchange tunnel spoil order 2019'.

Record keeping and reporting

- 5.3. The processor must keep a written record of the name and address of each person to whom the processor supplied Rozelle Interchange tunnel spoil and quantity supplied for a period of six years.
- 5.4. The processor of Rozelle Interchange tunnel spoil must make information available to the EPA upon request.

6. Definitions

In this order:

application or apply to land means applying to land by:

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

consumer means:

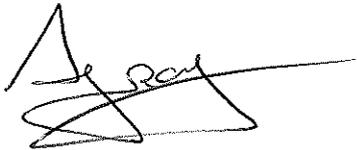
- a person who applies, or intends to apply, Rozelle Interchange tunnel spoil to land; and
- a person who uses, or intends to use, Rozelle Interchange tunnel spoil in connection with a process involving thermal treatment.

generator means a person who generates Rozelle Interchange tunnel spoil for supply to a processor or consumer. The generator in this order is LSBJV.

metal staples means small pieces of metal that resemble the shape of staples, with each staple having an approximate dimension of 35 mm x 1 mm.

processor means a person who processes Rozelle Interchange tunnel spoil into a material in its final form for supply to a consumer.

shotcrete means cement grout reinforced with metal staples used to line the tunnel of the WestConnex Rozelle Interchange project.



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(by delegation)**

Notes

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

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 Rozelle Interchange tunnel spoil 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 Rozelle Interchange tunnel spoil 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 Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014

The Rozelle Interchange tunnel spoil exemption 2019

Introduction

This exemption, issued by the Environment Protection Authority (EPA) under clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), exempts a consumer of Rozelle Interchange tunnel spoil from certain requirements in relation to the application of that waste to land or use as a raw material, provided the consumer complies with the conditions of this exemption.

This exemption should be read in conjunction with 'the Rozelle Interchange tunnel spoil order 2019'. This exemption applies to Rozelle Interchange tunnel spoil that is, or is intended to be, applied to land as engineering fill, or for use in earthworks, or for use as an alternative raw material in the manufacture of bricks, or applied to land within the road corridor for public road related activities including road construction, maintenance and installation of road infrastructure facilities.

1. Waste to which this exemption applies

1.1. This exemption applies to Rozelle Interchange tunnel spoil. In this exemption, Rozelle Interchange tunnel spoil means approximately 7 million cubic meters of naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that:

- (a) has been generated from the WestConnex M4-M5 Link Rozelle Interchange Tunnel Project extending from the M4-M5 Link Tunnel (Leichhardt) to Victoria Road (Balmain);
- (b) has been excavated by the use of machinery;
- (c) contains no more than 0.4% w/w shotcrete;
- (d) has not been contaminated with manufactured chemicals or process residues (except for shotcrete);
- (e) does not meet the definition of virgin excavated natural material in the POEO Act; and
- (f) may have been processed by intermediate waste facilities licensed by the EPA.

Rozelle Interchange tunnel spoil does not include material that has been mixed with glass fibre plastic reinforced rods and bolts; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

2. Persons to whom this exemption applies

2.1. This exemption applies to any person who applies or intends to apply Rozelle Interchange tunnel spoil as set out in 1.1.

3. Duration

- 3.1. This exemption commences on 17 December 2019 and is valid until 17 December 2023 unless revoked by the EPA by notice in writing at an earlier date.

4. Premises to which this exemption applies

- 4.1. This exemption applies to the premises at which the consumer's actual or intended application of Rozelle Interchange tunnel spoil is carried out.

5. Exemption

- 5.1. Subject to the conditions of this exemption, the EPA exempts each consumer from the following provisions of the POEO Act and the Waste Regulation in relation to the consumer's actual or intended application of Rozelle Interchange tunnel spoil to land as engineering fill, or use in earthworks, Public road related activities including road construction, maintenance and installation of road infrastructure facilities, or for use as an alternative input into thermal processes for non-energy recovery purposes in the manufacture of bricks at the premises:
- section 48 of the POEO Act in respect of the scheduled activities described in clauses 39, 40 and 42 of Schedule 1 of the POEO Act;
 - Part 4 of the Waste Regulation;
 - section 88 of the POEO Act; and
 - clause 109 and 110 of the Waste Regulation.
- 5.2. The exemption does not apply in circumstances where Rozelle Interchange tunnel spoil is received 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.

6. Conditions of exemption

The exemption is subject to the following conditions:

- 6.1. At the time Rozelle Interchange tunnel spoil is received at the premises, it must meet all material requirements for Rozelle Interchange tunnel spoil which are required under 'the Rozelle Interchange tunnel spoil order 2019'.
- 6.2. Rozelle Interchange tunnel spoil can only be:
- 6.2.1. applied to land as engineering fill, or use in earthworks; or
 - 6.2.2. applied to land within the road corridor for public road related activities including road construction, maintenance and installation of road infrastructure facilities; or
 - 6.2.3. used as an alternative input into thermal processes for non-energy recovery purposes in the manufacture of bricks at the premises.
- 6.3. The consumer must keep a written record of the following for a period of six years:
- 6.3.1. the quantity of Rozelle Interchange tunnel spoil received; and
 - 6.3.2. the name and address of the supplier of Rozelle Interchange tunnel spoil received.
- 6.4. The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.
- 6.5. The consumer must ensure that any application of Rozelle Interchange tunnel spoil to land must occur within a reasonable period of time after receipt.

7. Definitions

In this exemption:

application or apply to land means applying to land by:

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

consumer means:

- a person who applies, or intends to apply, Rozelle Interchange tunnel spoil to land; and
- a person who uses, or intends to use, Rozelle Interchange tunnel spoil in connection with a process involving thermal treatment.

generator means a person who generates Rozelle Interchange tunnel spoil for supply to a processor or consumer. The generator in this order is Lendlease Samsung Bouygues Joint Venture ('LSBJV').

metal staples means small pieces of metal that resemble the shape of staples, with each staple having an approximate dimension of 35 mm x 1 mm.

processor means a person who processes Rozelle Interchange tunnel spoil into a material in its final form for supply to a consumer.

shotcrete means cement grout reinforced with metal staples used to line the tunnel of the WestConnex Rozelle Interchange project.



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Notes

The EPA may amend or revoke this exemption at any time. It is the responsibility of the consumer to ensure they comply with all relevant requirements of the most current exemption.

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

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

The consumer should assess whether or not Rozelle Interchange tunnel spoil is fit for the purpose the material is proposed to be used for, and whether this use will cause harm. The consumer may need to seek expert engineering or technical advice.

Regardless of any exemption 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 receipt of Rozelle Interchange tunnel spoil remains subject to other relevant environmental regulations in the POEO Act and the 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 having an exemption, is guilty of an offence and subject to prosecution.

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

Failure to comply with the conditions of this exemption constitutes an offence under clause 91 of the Waste Regulation.