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November 2022

# Rehabilitation Management Plan for Badgerys Creek Clay / Shale Mine ML1771 (Act 1992)

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| Summary Table | |
|---|---|
| **Name of Mine** | Badgerys Creek Clay Shale Mine |
| **RMP Commencement Date** | July 2022 |
| **Mining Authorisations** | ML1771 (Act 1992) |
| **Mining Lease Expiry** | 27th September 2031 |
| **Name of Lease Holder** | PGH Bricks and Pavers Pty Limited |
| **Name of Mine Operator (s)** | PGH Bricks & Pavers Pty Ltd |
| **Name and Contact Details of the Mine Manager** | Joe Gauci<br>(02) 9826 3964<br>0417 683 526<br>jgauci@csr.com.au |
| **Name and Contact Details of the Environmental Representative** | Nelma Arancibia<br>0424 186 127<br>narancibia@csr.com.au |
| **Name of the Representative of the Authorisation Holder** | Joe Gauci<br>(02) 9826 3964<br>jgauci@csr.com.au |
| **Signature of the Representative of the Authorisation Holder** | |
| **Date of Submission** | |

Revision Table

| Date | Version | Author | Comments | Reviewed | Approved |
|---|---|---|---|---|---|
| **3/9/2013** | AA0042800-R02_04 | Hyder Consulting Pty Ltd<br>Rebecca Sommer | Initial report for Mod 1 to temporarily cease operations. | DPIE<br>Kane Winwood | DPIE<br>16/10/2013 |
| **2/5/2019** | 6797_BB_RP2019_F0 | VGT Environmental Compliance Solutions Pty Ltd<br>Greg Thomson -Director | Amendment to report for the recommencement of operations under Mod 2. | DPIE<br>Submitted 9/8/2019 | Not approved |
| **29/08/2019** | 6797_BB_RP2019_D1 | VGT Environmental Compliance Solutions Pty Ltd<br>Greg Thomson -Director | Amendments to report due to DPIE review | DPIE<br>Submitted 4/9/2019 | Not approved |
| **30/09/2022** | 12412_BC_RMP_2022_F1 | VGT Environmental Compliance Solutions Pty Ltd<br>Greg Thomson -Director | Draft- amendment to report for the recommencement of operations and importation of VENM and ENM under Mod 5.<br>Amendments due to legislative reforms. | VGT<br>Lisa Thomson<br>PGH<br>Nelma Arancibia | TBA |

Note, amendments to the 2013 Rehabilitation Management Plan are shown in blue and relate to requirements under the reforms to the Mining Act and Amendments.

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# Contents

## Figures



## Tables

## Appendices

# 1 Introduction to Mining Project

## 1.1 HISTORY OF OPERATIONS

~~1 BACKGROUND AND SITE DESCRIPTION~~

The ~~Boral~~ Badgerys Creek Quarry and Brickmaking Project ~~Brickworks~~ (project site) is located at 235 Martin Road, Badgerys Creek within the Liverpool City Council Local Government Area (LGA). The site is ~~currently operating~~ operated as a quarry and brick-making facility under a ~~Project~~ Consent Approval as issued by the NSW Department of Planning and Infrastructure on 27th September 2011.

~~1.2 HISTORY OF THE SITE~~

The Badgerys Creek facility has been operational since 1976 when a Deed of Agreement was issued between Liverpool City Council (LCC) and Pacific Brick Company Pty Ltd for the extraction of materials from the site. ~~Most recently,~~ Boral Bricks Pty Ltd (Boral) were issued a Project Approval granted under Section 75J of the Environmental Planning and Assessment Act 1979, on 27th September 2011, to enable the continuation of quarrying and brick-making operations at the project site until September 2031. A summary of the modifications and consent is provided within *Table 1.* In April 2012, the then proponent, Boral Clay and Concrete (NSW) announced the temporary shutdown of the quarry and brick making facility with effect from 30 March 2012. As of September 2013, the facility remained shut down. ~~Boral will review its operations at a future stage, considering market conditions and business needs to determine when operations will recommence. During the shutdown period, activities at the facility will be limited.~~

The mine has operated under Mining Lease (ML) 1771 since 4 May 2018 to extract clay and shale. It is located on Lot 1 DP 1035249, Lot 1 DP373863 and Lots 54 – 59, DP 3050 and is owned by the PGH under freehold title. The mine lease is valid until 27th September 2031and covers 110.98 hectares.

The site, which encompassed a mine and brickworks, was acquired by PGH Bricks and Pavers Pty Ltd, a subsidiary of CSR Limited, from Boral Bricks Pty Ltd in 2016. The brick making facility has subsequently been demolished. Mining will continue to supply PGH's other Sydney brickworks whilst rehabilitation works are undertaken on the remaining former mine site.

## 1.2 PURPOSE AND OBJECTIVES OR THIS DOCUMENT

In accordance with the conditions of the Project ~~Approval~~ Consent, ~~Boral~~ PGH are required to develop and implement management plans and strategies for the site. Evidence of current approvals of management plans is included in Appendix O. This plan seeks to satisfy both Schedule 3- Condition 36 of SSD 10_0014, which requires a Rehabilitation Management Plan and the Mine Lease conditions that also requires a Rehabilitation Management Plan to be prepared. It should be noted that the mine lease occupies a portion of the whole project site which is subject to consent conditions to prepare a Rehabilitation Management Plan (RMP). This plan may necessarily refer to other documents and plans prepared to meet consent conditions.

The consent requirements for the RMP are described in Section 2.2.1.

This RMP refers to the phase 1A development under the consent conditions.

~~Hyder have been commissioned by APP Corporation to prepare the rehabilitation management plan for the project site in line with condition of approval No. 37 which requires that: 37. The Proponent shall prepare a Rehabilitation Management Plan for the project to the satisfaction of the Director-General. The plan must:~~

~~a) be submitted to the Director-General by the end of March 2012;~~

~~b) be prepared in consultation with OEH and NOW;~~

~~c) be prepared in accordance with any relevant guideline(s); (See Section 2)~~

~~d) achieve the Rehabilitation Objectives specified in the Rehabilitation Strategy (Condition 36); (See Section 4)~~

~~e) take into account any relevant strategic planning limitations in the local and regional areas; (See Section 3) and~~

~~f) build, to the maximum extent practicable, on the other management plans required under this approval (See Section 7).~~

## 1.3 CURRENT DEVELOPMENT CONSENTS, LEASES AND LICENCES

### 1.3.1 Department of Planning, ~~Industry~~ and ~~Infrastructure~~ Environment and Council

*Table 1. Development Approvals*

| No. | Date Approved | Expires | Notes |
|---|---|---|---|
| **1024/1976** | 27/9/1976 | N/A | Granted by Government Appeals Tribunal- consent granted subject to condition of Deed of Agreement. |
| **Section 96 Modification of Consent 921/2006** | 7/9/2006 | 7/9/2010 | Modification to 1976 consent to extend operations on the site for a further four years issued by Liverpool City Council |
| **DA 764/2009** | 31/3/2009 | N/A | Development Application (DA) for the upgrade of the brick making facility to include a new brick unloading machine (Dehacker) issued by Liverpool City Council |
| **Section 96 Modification DA 1024/1976B** | - | - | Modification to consent to allow for a further 12 months of operations at the site issued by Liverpool City Council |
| **SSD 10_0014** | 27/09/2011 | 27/9/2031 | Proposal to expand quarrying operations to extract 420,000tpa and increase the brickmaking activities to produce 252,000tpa |
| **SSD 10_0014 Mod 1** | May 2013 | 27/9/2031 | Modification to facilitate the temporary cessation of brickmaking activities. |
| **SSD 10_0014 Mod 2** | 5/5/2018 | 27/9/2031 | Modification to permit the recommencement of mining and export of raw materials to other PGH brickmaking facilities. |
| **SSD 10_0014 Mod 3 and 4** | 10/08/2020 | 27/9/2031 | To permit dewatering, VENM importation and manufacturing upgrades. |
| **SSD 10_0014 Mod 5** | 5/01/2022 | 27/9/2031 | See Appendix A.<br>Importation of ENM, continued storage of finished building products manufactured offsite. |

### 1.3.2 Regional NSW- Mining Exploration and Geoscience (MEG)

*Table 2. Mining Authorisation*

| No. | Act | Company | Granted | Expires | Area (Ha) | Minerals |
|---|---|---|---|---|---|---|
| **ML1771** | 1992 | PGH Bricks and Pavers Pty Ltd | 4/05/2018 | 27/09/2031 | 110.98 | Clay/Shale |

### 1.3.3 Environmental Protection Authority (EPA)

An Environmental Protection Licence EPL684 was granted under the Protection of the Environment Operations Act (PoEOA) (see *Appendix C*).

## 1.4 LAND OWNERSHIP AND LAND USE

### 1.4.1 Land Ownership and Land Use

*Table 3. Land Ownership and Land Use*

| Lot | DP | Ownership | Land Description |
|---|---|---|---|
| **1** | DP1278780 | PGH Bricks and Pavers Pty Ltd | The mine lease partially occupies this lot. |
| **2** | DP1278780 | PGH Bricks and Pavers Pty Ltd | The mine lease partially occupies this lot. |
| **3** | DP1278780 | PGH Bricks and Pavers Pty Ltd | The mine lease partially occupies this lot |
| ~~**A**~~ | DP406215 | PGH Bricks and Pavers Pty Ltd | No mine lease occupying this lot. |
| **54** | DP3050 | PGH Bricks and Pavers Pty Ltd | No mine lease occupying this lot. |
| **55** | DP3050 | PGH Bricks and Pavers Pty Ltd | No mine lease occupying this lot. |
| **56** | DP3050 | PGH Bricks and Pavers Pty Ltd | No mine lease occupying this lot. |

Badgerys Creek is a small community comprising rural residences, agricultural activities, quarrying and industry. The locality supports a number of small rural residential holdings and a limited number of larger agricultural properties, agricultural enterprises (chicken farms, nurseries) and market gardens. The region forms part of the South West Growth Centre (SWGC) under the *Sydney Metropolitan Strategy* with Liverpool identified as a major centre and the site was rezoned as part of the Aerotropolis rezoning in September 2020. The site is now zoned 'Enterprise' which permits industrial development. The Western Sydney Airport (WSA) has commenced construction and lies to the west of the site.

Historic land uses have been agriculture and horticulture. As outlined in the EAs for the development applications, as the extraction of clay is completed in quarry voids, they will be backfilled with engineered fill to facilitate redevelopment in accordance with the goals of the Enterprise Zone of the WSA Precinct Plan.

An Aboriginal Heritage Impact Assessment was undertaken within the Pit 3, Pit 4 and Pit 5 areas to inform the EA for the original development application for the site approved under SSD 10_0014. No AHIMS sites were located within the proposed Pit 3 Extension, Pit 4 and Pit 5 areas. One isolated find was identified during a fields survey behind a derelict dairy in the Pit 5 location.

An AHIMS Web Services search conducted by Artefact Heritage Pty Ltd in 2018 (*CSR Advanced Manufacturing Hub; Heritage Management Plan)* showed 30 registered sites within the vicinity of a further study area (to the east and outside the mine lease) and no recorded or declared Aboriginal sites on the study area. A site survey located one new archaeological site, an Isolated Find and the study area was confirmed as of moderate archaeological potential. Test excavation identified several scattered finds. The results of the investigations are included in the Heritage Management Plan (see *Appendix E*).

### 1.4.2 Site Summary

The project site is currently operational with the quarrying of clay and shale for the production of bricks, continuing at the site. Features of the site include:

- Three existing quarry pits (Pits 1-3);
- ~~A brick making facility for production and handling of bricks;~~
- A brick product storage area;
- Stockpiles for raw materials and un-useable materials;
- Water storage structures; and
- Access roads

~~Figure 1 Site Layout [Hyder 2013]~~

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Site Location** | **Location:** | Martin Road, Badgerys Creek NSW | **Source:** | Google OpenStreetMap & nearmap - Image Date 24/08/2022 Zone MGA 56, Six Maps spatial data | **Plan By:** | TO/JD |
| **Figure:** | **ONE** | **Council:** | Liverpool City Council | **Survey:** | Not Applicable | **Project Manager:** | TO |
| **Version/Date:** | V1 2/12/2022 | **Tenure:** | ML1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | **Office:** | Thornton |
| **Our Ref:** | 12412_BB_RMP2022_Q001_V1_F1 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | Not Applicable | | |

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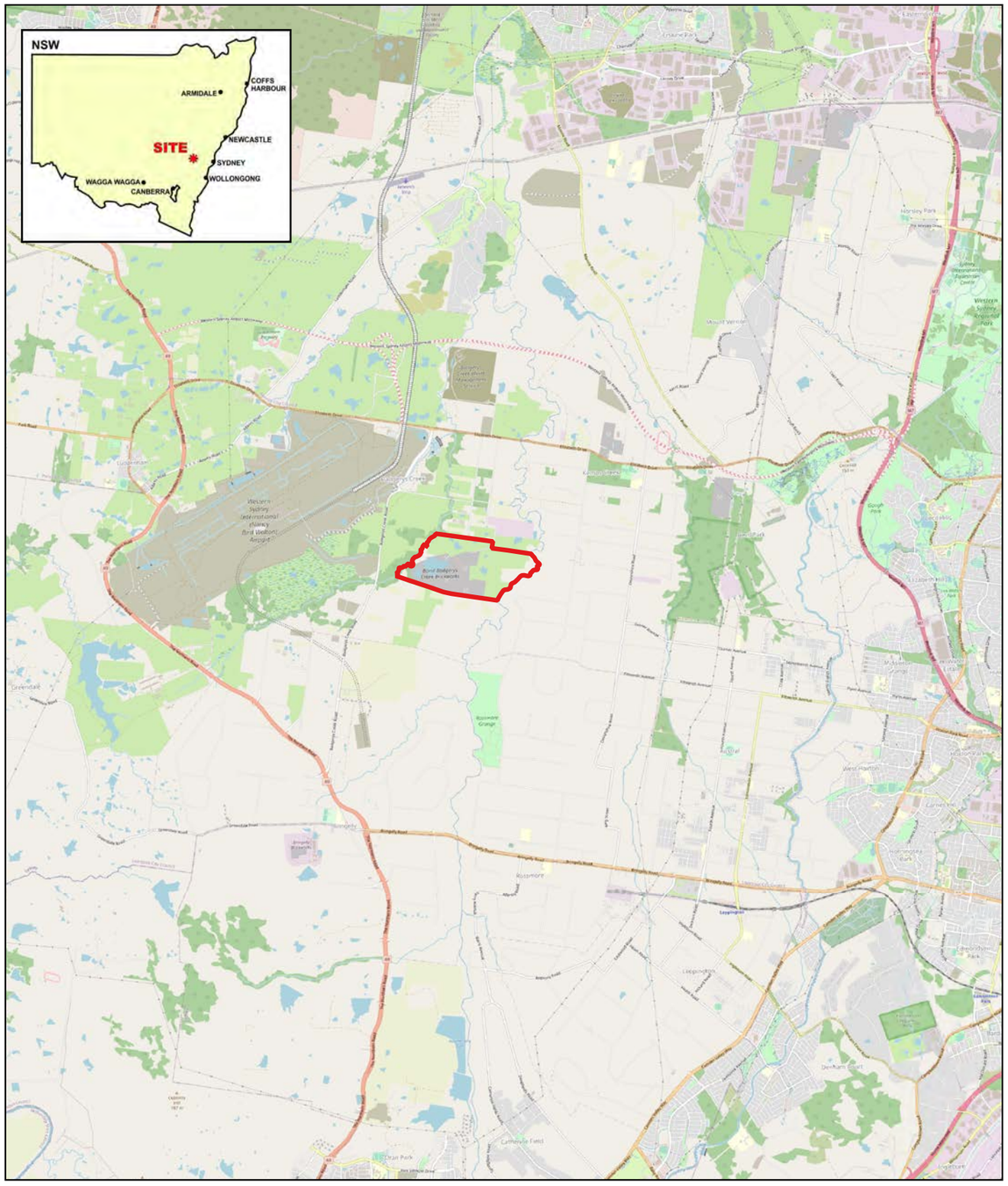


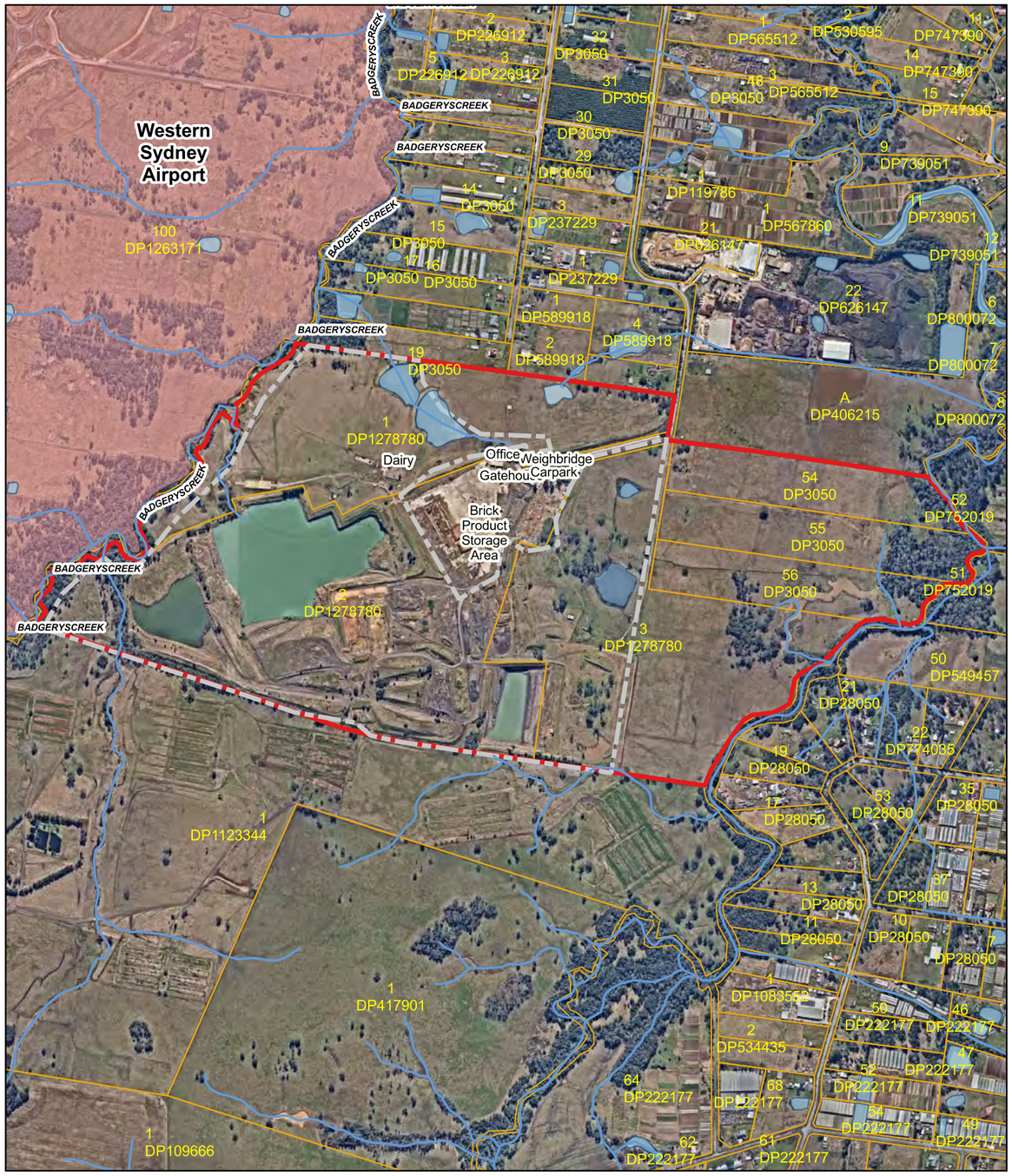


**Legend**

- Property Boundary
- ML1771 (Act 1992)
- Western Sydney Airport
- Creek/Main Drainage Line
- Lot

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022- Land Ownership & Land Use** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **TWO** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q002_V1_F2 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

N

0 100 200 300 400 m

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## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport
- Treed Area

***Water Management Features***

- Farm Dam
- Creek/Major Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Zoning (NSW Zoning WMS Data)***

- ENT - Enterprise Zone
- ENZ - Environment & Recreation Zone
- RU4 - Rural Primary Small Lots
- SP2 - Infrastructure Zone

## 1.4 REHABILITATION STATUS

Most parts of the site are currently operational. Consequently, some progressive rehabilitation has commenced on the site, primarily focused on maintaining site safety and maintenance of a stable landform. This rehabilitation has predominantly been undertaken in the south west of the site and has comprised a regrading of slopes, re-application of topsoil and seeding with endemic grasses resulting in revegetation to pasture and woodland.

### 1.4.1 WORKS UNDERTAKEN TO DATE

Appendix D *Rehabilitation Plan* of the AECOM Environmental Assessment (2010) presented the proposed rehabilitation works at the site for 2010/2011. These works included:

- Pit 2 Refill Area – complete filling and rehabilitation at ground level;
- Southern Stockpile – reduction of slope steepness, ripping followed by treatment with 10cm of topsoil prior to pasture seeding;
- South Eastern Stockpile – reshaping and vegetating. Treatment with 10cm of topsoil prior to pasture seeding;
- Central Stockpile – reshaping to reduce batter slopes to 1:3 prior to topsoiling and revegetating with pasture;
- Western Section of Raw Material Stockpile – rehabilitating to minimise dust generation. Partial rehabilitation for stability purposes has been undertaken in this area to date to prevent sterilisation of potential future resources;
- Other areas – maintenance and addition of new material to the Western Stockpile, rehabilitation of the elevated haul road in the south west of the site, revegetation of bund south of Pit 3, stabilisation of areas subject to traffic movements;
- South Creek – Fencing of the eastern side of South Creek (50 m from the creek bed) to allow natural regeneration and erosion control by preventing stock entering the area; and
- Badgerys Creek and tributaries – rubbish removal, soil surface preparation, weed and erosion controls, fencing to control grazing and predators, seed collection and tube stock propagation.

The progressive rehabilitation of the site has been undertaken in conjunction with on-going quarrying works. The rehabilitation works implemented aim to minimise risks to safely, stabilise the landform, minimise impacts upon water quality, maintain the land function capability and where possible, create an environment comparable to the surrounding land fabric to progressively meet the closure objectives for the site.

# 2 Final Land Use

## 2.1 REGULATORY AND STRATEGIC PLANNING FRAMEWORK

### 2.1.1 Environmental Planning And Assessment Act 1979

The project was declared a 'major development' under the provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and State Environmental Planning Policy (Major Development) 2005 in 2011 and was subject to the provisions of Part 3A of the EP&A Act.

An Environmental Assessment for both Concept Plan and Project Application was initially approved in September 2011 and subsequent modification applications. This plan forms part of the approval requirements issued for the Project Application.

### 2.1.2 Mining Act 1992

Following receipt of Project Approval, an application for a mining lease ~~will be~~ was made in accordance with the *Mining Act 1992*. Clause 75V of the EP&A Act indicates that subject to the issue of Project Approval, a mining lease for the Project cannot be refused and must be substantially consistent with the terms of the Project Approval.

### 2.1.3 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) Act governs the pollution of waters land and air in NSW in addition to environmental protection and waste management.

Environment protection licence (EPL) No. 684 as issued under the POEO Act is currently held for the site. ~~This EPL is currently being reviewed in accordance with the Project Approval and a variation to the current EPL may be made to reflect the future operations at the site~~.

### 2.1.4 Pesticides Act 1999

The Pesticides Act 1999 requires users of pesticides, which by definition include herbicides, to prepare and retain records of pesticide application and to have pesticide application by qualified personnel (e.g. Farm Chemicals Handling certificate).

### 2.1.5 State Environmental Planning Policy (SEPP) (Resources and Energy) 2021

~~**3.5 SEPP (Mining, Petroleum Production and Extractive Industries) 2007**~~

Under the SEPP, development for the purposes of mining, on land that is, immediately before the commencement of this clause, the subject of a mining lease under the Mining Act 1992, is only permissible with development consent. ~~The SEPP defines mining as including:~~

~~(a) the construction, operation and decommissioning of associated works, and~~

~~(b) the stockpiling, processing, treatment and transportation of materials extracted, and~~

~~(c) the rehabilitation of land affected by mining.~~

The application for a mining lease ~~is currently being~~ was undertaken by Boral and ML1771 has been granted.

### 2.1.6 State Environmental Planning Policy (SEPP) (Precincts-Western Parkland City) 2021

~~**State Environmental Planning Policy (Growth Centres) 2006**~~

~~The rehabilitation plans developed for the project site will align with the land use and development controls and objectives identified in the Growth Centres SEPP as they become defined for the surrounding area.~~

~~These considerations would include assessing implications of development controls and objectives for:~~

- ~~Environment conservation and recreation zones;~~
- ~~Flood prone and major creeks land;~~

- ~~Vegetation; and~~
- ~~Cultural heritage landscape areas.~~

~~The rehabilitation plans would consider the implications for effecting rehabilitation on land within the zone defined for the site as well as any implication for other zones in immediate proximity to the project site.~~

The site is zoned ENT Enterprise Zone and the objectives under this zone are:

- To encourage employment and businesses related to professional services, high technology, aviation, logistics, food production and processing, health, education and creative industries.
- To provide a range of employment uses (including aerospace and defence industries) that are compatible with future technology and work arrangements.
- To encourage development that promotes the efficient use of resources, through waste minimisation, recycling and re-use.
- To ensure an appropriate transition from non-urban land uses and environmental conservation areas in surrounding areas to employment uses in the zone.
- To prevent development that is not compatible with or that may detract from the future commercial uses of the land.
- To provide facilities and services to meet the needs of businesses and workers.

Rehabilitation of the land would align with the objectives of the SEPP with the final rehabilitated site being safe and stable and compatible with the surrounding land fabric.

**~~3.7 Liverpool LEP~~**

~~The Boral Badgerys Creek Brickworks is zoned RU1 Rural – Primary Production under the Liverpool Local Environment Plan 2008 (LEP). The objectives of this zone are:~~

- ~~To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.~~
- ~~To encourage diversity in primary industry enterprises and systems appropriate for the area.~~
- ~~To minimise the fragmentation and alienation of resource lands.~~
- ~~To minimise conflict between land uses within this zone and land uses within adjoining zones.~~
- ~~To ensure that development does not unreasonably increase the demand for public services or public facilities.~~
- ~~To ensure that development does not hinder the development or operation of an airport on Commonwealth land in Badgerys Creek.~~
- ~~To preserve bushland, wildlife corridors and natural habitat.~~

~~Works involving extractive industries are permitted by Council with consent. The Project has recently been granted Project Approval by the Department of Planning and Infrastructure pending meeting the Director-General requirements.~~

~~Rehabilitation of the land would align with the objectives of the LEP with the final rehabilitated site being safe and stable and compatible with the surrounding land fabric.~~

### 2.1.7 Western Sydney Aerotropolis Planning Package

The initial Western Sydney Aerotropolis Planning Package was finalised on 13 September 2020. This package establishes the planning and legislative framework for the future of the Aerotropolis, including land use outcomes and zoning within the initial Aerotropolis precincts. The package included:

- Western Sydney Aerotropolis Plan (WSAP)

- State Environmental Planning Policy (Western Sydney Aerotropolis) 2020
- Western Sydney Aerotropolis Development Control Plan (Phase 1)

The final land use development would comply with the aviation safeguarding provisions under the plans.

## 2.2 REGULATORY REQUIREMENTS FOR REHABILITATION

### 2.2.1 Consent Rehabilitation Requirements

*Table 4. Consent Rehabilitation Plan Requirements*

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 2**<br>**Condition 14** | **Demolition**<br>All demolition work must be carried out in accordance with the Australian Standard AS 2601-2001: The Demolition of Structures (Standards Australia, 2001). | Section 6.2.2.2.1<br>Note, demolition of the brickworks has been completed. |
| **Schedule 3** | **SOIL AND WATER**<br>Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain all necessary approvals and/or water licences for the development. | Section 6.2.3.1<br>Appendix G<br>Appendix H<br>WAL24346 |
| **Schedule 3**<br>**Condition 19** | **Water Discharges**<br>19. The Applicant must ensure that all surface water discharges from the site comply with the limits (both volume and quality) set in any EPL applicable to the site. | Section 6.2.3.1<br>Section 7<br>Section 8<br>Appendix C |
| **Schedule 3**<br>**Condition 19A & 19B** | **Dewatering of Pits 1, 2 and 3**<br>19A. All water that is dewatered from Pit 1 (including any water transferred into Pit 1 from Pit 2 and Pit 3) must be transferred from the site in accordance with the Dewatering Management Plan required under Condition 23A of this Schedule.<br>19B. All dewatering activities from Pit 1 must be completed within Phase 1 unless otherwise agreed by the Secretary. | Section 6.2.3.1<br>Appendix G<br>Appendix H |
| **Schedule 3**<br>**Condition 20** | **Riparian Buffer Distance**<br>20. The Applicant must maintain a minimum setback width of 60 metres (measured from the top of bank) between extraction areas and both Badgerys Creek and Badgerys Creek tributary.<br>Note: This condition does not prohibit overburden emplacement or rehabilitation works in accordance with the Development Layout Plan. | Section 6.2.1.2 |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 3**<br>**Condition 21** | **Alluvial Aquifers**<br>21. The Applicant must ensure that the development has no impact on alluvial aquifers associated with South Creek, Badgerys Creek or their tributaries. | Appendix J<br>Note, the assessment found very little evidence of an alluvium footprint encroaching beyond the extent of the creek. |
| **Schedule 3**<br>**Condition 34** | **REHABILITATION**<br>**Rehabilitation Objectives**<br>34. The Applicant must rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (Mod 3 and 4) and shown in Appendix 4 and must comply with the objectives in Table 5. | Section 4<br>This Report |
| | *Table 5: Rehabilitation Objectives*<br>***Feature*** / ***Objective***<br>*All areas of the site affected by the development*<br>• Safe<br>• Hydraulically and geotechnically stable<br>• Non-polluting<br>• Fit for the intended final land use(s)<br>• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land | Section 4<br>Section 6 |
| | *Surface infrastructure*<br>• Decommissioned and removed, unless otherwise agreed by the Secretary | Section 6.2.2.2.1<br>Note, demolition of the brickworks has been completed. |
| | *Landscaping bunds*<br>• Hydraulically and geotechnically stable<br>• Vegetated | Section 6 |
| | *Pits 1, 2 and 3*<br>• Backfilled to a landform that is consistent with natural ground level and is geotechnically stable<br>• Free draining | Section 6<br>Appendix F |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 3**<br>**Condition 35** | **Progressive Rehabilitation**<br>35. The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.<br>*Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to future re-disturbance.* | Section 6.1<br>Section 6.2 |
| **Schedule 3**<br>**Condition 35A** | The Applicant must complete the backfilling of Pits 1 and 2 within 6 years of commencement of Phase 1, or as otherwise agreed by the Secretary. | Appendix F<br>Appendix G<br>Appendix H<br>Section 6.1<br>Section 6.2.3 |
| **Schedule 3**<br>**Condition 35B** | The Applicant must complete the backfilling of Pit 3 within 2 years of the date of completion of extraction activities in Pit 3, or as otherwise agreed by the Secretary. | Appendix F<br>Appendix G<br>Appendix H<br>Section 6.1<br>Section 6.2.3 |
| **Schedule 3**<br>**Condition 36** | **Rehabilitation Management Plan**<br>36. The Applicant must prepare a Rehabilitation Management Plan for the development, in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992. This plan must: | This Report |
| | (a) be prepared in consultation with the Department, DPIE Water, BCD, TfNSW and relevant WSA authorities and Council; | Section 4.2<br>Appendix P |
| | (b) build upon the Rehabilitation Objectives in Table 5 and the proposed rehabilitation strategy described in the EA (Mod 3 and 4) and shown in Appendix 4; | Section 4 |
| | (c) investigate options for the future use of disturbed areas following the completion of backfilling operations, having regards to the strategic planning associated with the draft Western Sydney Aerotropolis Plan (or subsequently adopted NSW Government strategic plans); | Section 1.4<br>Section 2.3<br>Section 2.4 |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| | (d) describe and justify the proposed rehabilitation strategy for the site, including the landform and use of the site following the completion of quarry operations; | Section 1.4<br>Section 2.3<br>Section 2.4 |
| | (e) include details of the planting of replacement trees in riparian areas consistent with the Statement of Commitments and with vegetation requirements for WSA to minimise wildlife impacts; | Section 6.2.1.2<br>Section 6.2.5 |
| | (f) describe how the rehabilitation of the site would achieve the objectives identified in Table 5 and the requirements of conditions 35A and 35B of this Schedule; | Section 6 |
| | (g) include detailed Rehabilitation Objectives, Rehabilitation Completion Criteria and the Final Landform and Rehabilitation Plan for evaluating the performance of the rehabilitation of the site; | Section 4 |
| | (h) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation; | Section 6 |
| | (i) to the maximum extent practicable, build on and integrate with the other management plans required under this consent; | Section 13<br>Appendices |
| | (j) include a life of mine rehabilitation and mining schedule and a protocol for progressive reviews of key progressive rehabilitation milestones from the commencement of operations through to decommissioning and mine closure; | Section 6.1<br>Section 7<br>Section 8<br>Section 11 |
| | (k) an overview of the identified risks to achieving successful rehabilitation and strategies to be implemented to address these risks; | Section 3 |
| | (l) include a program to monitor, audit and report on the progress against the Rehabilitation Objectives and Rehabilitation Completion Criteria and the Final Landform and Rehabilitation Plan; and | Section 7<br>Section 8<br>Section 11 |
| | (m) describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, including intervention and adaptive management techniques that may be required to ensure rehabilitation remains on a trajectory of achieving the Rehabilitation Objectives, Rehabilitation Completion Criteria and the Final Landform and Rehabilitation Plan as soon as reasonably practical.<br>*Note: The Rehabilitation Management Plan may be combined with a Mining Operations Plan, or similar plan, required under the mining lease granted for the development.* | Section 7<br>Section 8<br>Section 10<br>Section 11 |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 3**<br><br>**Condition 37** | 37A. Within 3 months of commencing quarrying operations in Pit 3, the Applicant must construct landscaped earthen bunds and plant vegetation screens (as shown conceptually in Appendix 3), to minimise the visual impacts of the development. The landscaped earthen bunds and plant vegetation screens must be maintained until Pit 3 area has been fully rehabilitated. | Section 6.2.1.4 |
| | 37B. Within 6 months of the Secretary being advised of the confirmed Eastern Ring Road alignment, as required under condition 25C of this Schedule, the Applicant must construct landscaped earthen bunds and plant vegetation screens around the brickmaking facility and raw material stockpile (as shown conceptually in Appendix 3), to minimise the visual impacts of the development. The landscaped earthen bunds and plant vegetation screens and must be maintained for the life of the development. | Section 6.2.1.4 |
| | **Visual Impact Management Plan**<br><br>37D. Within 6 months of approval of Modification 3 and 4, the Applicant must prepare a Visual Impact Management Plan for the development to the satisfaction of the Secretary. This plan must:<br><br>(a) be prepared by a suitably qualified and experienced person/s;<br><br>(b) be prepared in consultation with Council, TfNSW and relevant WSA authorities;<br><br>(c) describe the measures to be implemented to minimise the visual, landscaping and off-site lighting impacts of the development to the WSA and surrounding community;<br><br>(d) include a landscaping strategy to shield public views of the development (including views from the Eastern Airport Ring Road) that includes: • the measures identified in the EA (Mod 3 and 4);<br><br>• a vegetation strategy utilising a diversity of local provenance tree species from the native vegetation community (or communities) that occur, or once occurred on the site, and would minimise wildlife attraction;<br><br>• a bund vegetation and maintenance schedule; and<br><br>• procedures to notify, consult with and implement site-specific mitigation measures at affected privately-owned residences; and<br><br>(e) include a program to monitor and report on the implementation and effectiveness of the mitigation measures; and<br><br>(f) include a protocol to update the plan to include the requirements of condition 37A and 37B of this Schedule, once the Secretary has been advised of the confirmed Eastern Ring Road alignment, as required under condition 25C of this Schedule. | Appendix I |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| | **Fill Management Plan**<br><br>39A. Prior to the import of Fill to the site, the Applicant must prepare a Fill Management Plan for the development to the satisfaction of the Secretary. This plan must:<br><br>(a) identify the quantities of Fill to be imported to site;<br><br>(b) describe:<br><br>• the procedures for monitoring Fill imported to the site to ensure that it meets relevant quality specifications for VENM or ENM;<br><br>• a protocol to prevent materials that fail to meet the requirements of the ENM Exemption and ENM Order from being accepted;<br><br>• the management of reject materials;<br><br>• management measures for the emplacement and temporary stockpiling of Fill;<br><br>• the process for handling Fill for use in rehabilitation;<br><br>• measures for the on-site use of water captured in sediment basins to ensure that the water does not present a contamination risk; and<br><br>• processes for assessing, recording, handling and managing any contamination found on the site; and<br><br>(c) provide an indicative schedule of Fill material to be imported to the site for each Phase of the development, in order to achieve the conceptual final landform.<br><br>The Applicant must implement the Fill Management Plan as approved by the Secretary. | Appendix F |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 5**<br><br>**Condition 1** | **ENVIRONMENTAL MANAGEMENT**<br><br>**Environmental Management Strategy**<br><br>1. The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:<br><br>(a) be submitted to the Secretary for approval within 6 months of the determination of Modification 3 and 4, unless otherwise agreed by the Secretary;<br><br>(b) provide the strategic framework for environmental management of the development;<br><br>(c) identify the statutory approvals that apply to the development;<br><br>(d) set out the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;<br><br>(e) set out the procedures to be implemented to:<br>• keep the local community and relevant agencies informed about the operation and environmental performance of the development;<br>• receive, record, handle and respond to complaints;<br>• resolve any disputes that may arise during the course of the development;<br>• respond to any non-compliance and any incident; and<br>• respond to emergencies; and<br><br>(f) include:<br>• references to any strategies, plans and programs approved under the conditions of this consent; and<br>• a clear plan depicting all the monitoring to be carried out under the conditions of this consent.<br><br>The Applicant must implement any Environmental Management Strategy as approved by the Secretary. | Appendix D<br><br>Appendix O (Approval of Plan) |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 5**<br><br>**Condition 3** | **Management Plan Requirements**<br><br>3. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:<br><br>(a) a summary of relevant background or baseline data;<br><br>(b) a description of:<br>• the relevant statutory requirements (including any relevant approval, licence or lease conditions);<br>• any relevant limits or performance measures/criteria; and<br>• the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;<br><br>(c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;<br><br>(d) a program to monitor and report on the:<br>• impacts and environmental performance of the development; and<br>• effectiveness of any management measures (see (c) above);<br><br>(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;<br><br>(f) a program to investigate and implement ways to improve the environmental performance of the development over time;<br><br>(g) a protocol for managing and reporting any:<br>• incidents;<br>• complaints; and<br>• non-compliances with statutory requirements;<br><br>(h) a protocol for periodic review of the plan; and<br><br>(i) a document control table that includes version numbers, dates when the management plan was prepared and reviewed, names and positions of the person/s who prepared and reviewed the management plan, a description of any revisions made and the date of the Secretary's approval.<br><br>*Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.* | Background or baseline data is included in each relevant sub-management plan included in the appendices of this report and can be found on the PGH website:<br><br>http://www.pghbricks.com.au/-nsw-environmental-reporting<br><br>For this report,<br><br>Section 2.2, Section 4<br><br>Section 6, Section 7, Section 8, Section 11<br><br>Section 8<br><br>Section 7<br><br>Section 10<br><br>Section 7, Section 8, Section 11<br><br>Environmental Management Strategy - Appendix D<br><br>Section 11<br><br>See *Revision Table* within the Contents of this report. |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 5**<br>**Condition 5** | **Revision of Strategies, Plans & Programs**<br>5. Within 3 months of:<br>(a) the submission of an incident report under condition 10 below;<br>(b) the submission of an Annual Review under condition 12 below;<br>(c) the submission of an Independent Environmental Audit report under condition 14 below; and<br>(d) the approval any modifications to this consent,<br>the Applicant must review the suitability of all strategies, plans and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.<br>*Notes:*<br>• *The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.*<br>• *In the event of an inconsistency between condition 5(d) above and any condition in Schedule 3 of this consent, the latter prevails.* | Section 11 |
| **Schedule 5**<br>**Condition 6** | **Updating and Staging of Strategies, Plans or Programs**<br>6. With the approval of the Secretary, the Applicant may:<br>(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);<br>(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and<br>(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development). | The Environmental Management Strategy (EMS) and this Plan are applicable to Phase 1A of the development.<br>Sub-plans are included in the Appendices and interaction is discussed in Section 13.<br>Section 11 |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 5**<br>**Condition 7** | **Adaptive Management**<br>7. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.<br>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must as soon as becoming aware of any exceedance:<br>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;<br>(b) consider all reasonable and feasible options for remediation (where relevant);<br>(c) within 14 days of the exceedance occurring, submit a report to the Secretary describing these remediation options and any preferred remediation measures or other course of action; and<br>(d) implement remediation measures as directed by the Secretary; to the satisfaction of the Secretary. | Section 10<br>Section 11 |
| **Schedule 5**<br>**Condition 9** | **REPORTING AND AUDITING**<br>Incident Notification<br>9. The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be made in writing through the Department's Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident. | Environmental Management Strategy - Appendix D<br>Section 11 |
| **Schedule 5**<br>**Condition 10** | **Non-Compliance Notification**<br>10. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be made in writing through the Department's Major Projects website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.<br>*Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.* | Environmental Management Strategy - Appendix D<br>Section 11 |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| **Schedule 5**<br>**Condition 11** | **Regular Reporting**<br>11. The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent. | Section 8.4 |
| **Schedule 5**<br>**Condition 12** | **Annual Review**<br>12. Prior to recommencing quarrying operations or Fill import, and annually thereafter, the Applicant must submit a review to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:<br>(a) describe the development (including any progressive rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;<br>(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:<br>• relevant statutory requirements, limits or performance measures/criteria;<br>• requirements of any plan or program required under this consent;<br>• monitoring results of previous years; and<br>• relevant predictions in the documents listed in condition 3 of Schedule 2;<br>(c) evaluate and report on:<br>• the effectiveness of the air quality and noise management systems; and<br>• compliance with the performance measures, criteria and operating conditions in this consent.<br>(d) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;<br>(e) identify any trends in the monitoring data over the life of the development;<br>(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and<br>(g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development. | Section 8.4 |

| Consent Condition | Details | Where Addressed in this Report |
|---|---|---|
| | The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 8 of Schedule 5) and any interested person upon request. | |

### 2.2.2 MEG Rehabilitation Requirements

The prescribed standard conditions in the Mining Regulation 2016, Schedule 8A, Part 2 apply in addition to the conditions in Schedule 2 of the Mine Lease. Conditions in the Regulation that relate to rehabilitation in this report are reproduced below.

*Table 5. Mine Lease Conditions from the Regulation*

| Mining Regulation Section | Details | Where Addressed in this Report |
|---|---|---|
| **Division 1 Protection of the environment and rehabilitation** | | |
| **4** | **Must prevent or minimise harm to environment**<br>(1) The holder of a mining lease must take all reasonable measures to prevent, or if that is not reasonably practicable, to minimise, harm to the environment caused by activities under the mining lease.<br>(2) In this clause—<br>*Harm* to the environment has the same meaning as in the Protection of the Environment Operations Act 1997. | This Report |
| **5** | **Rehabilitation to occur as soon as reasonably practicable after disturbance**<br>The holder of a mining lease must rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs. | Section 4 |
| **6** | **Rehabilitation must achieve final land use**<br>(1) The holder of a mining lease must ensure that rehabilitation of the mining area achieves the final land use for the mining area. | This Report |
| | (2) The holder of the mining lease must ensure any planning approval has been obtained that is necessary to enable the holder to comply with subclause (1). | Section 1.3 |
| | (3) The holder of the mining lease must identify and record any reasonably foreseeable hazard that presents a risk to the holder's ability to comply with subclause (1).<br>**Note—**<br>Clause 7 requires a rehabilitation risk assessment to be conducted whenever a hazard is identified under this subclause. | Section 3<br>Section 10 |
| | (4) In this clause—<br>final land use for the mining area means the final landform and land uses to be achieved for the mining area—<br>(a) as set out in the rehabilitation objectives statement and rehabilitation completion criteria statement, and<br>(b) for a large mine—as spatially depicted in the final landform and rehabilitation plan, and | Section 4<br>Section 4.3 |

| Mining Regulation Section | Details | Where Addressed in this Report |
|---|---|---|
| | (c) if the final land use for the mining area is required by a condition of development consent for activities under the mining lease—as stated in the condition.<br>planning approval means—<br>(a) a development consent within the meaning of the Environmental Planning and Assessment Act 1979, or<br>(b) an approval under that Act, Division 5.1. | |
| **Division 2 Risk assessment** | | |
| **7** | **Rehabilitation risk assessment**<br>(1) The holder of a mining lease must conduct a risk assessment (a rehabilitation risk assessment) that—<br>(a) identifies, assesses and evaluates the risks that need to be addressed to achieve the following in relation to the mining lease—<br>(i) the rehabilitation objectives,<br>(ii) the rehabilitation completion criteria,<br>(iii) for large mines—the final land use as spatially depicted in the final landform and rehabilitation plan, and<br>(b) identifies the measures that need to be implemented to eliminate, minimise or mitigate the risks | Section 3 |
| | (2) The holder of the mining lease must implement the measures identified. | This Report and annual reporting. |
| | (3) The holder of a mining lease must conduct a rehabilitation risk assessment—<br>(a) for a large mine—before preparing a rehabilitation management plan, and<br>(b) for a small mine—before preparing the rehabilitation outcome documents for the mine, and<br>(c) whenever a hazard is identified under clause 6(3)—as soon as reasonably practicable after it is identified, and<br>(d) whenever given a written direction to do so by the Secretary. | Section 3 |

| Mining Regulation Section | Details | Where Addressed in this Report |
|---|---|---|
| **Division 3 Rehabilitation documents** | | |
| **10** | (1) The holder of a mining lease relating to a large mine must prepare a plan (a rehabilitation management plan) for the mining lease that includes the following— | |
| | (a) a description of how the holder proposes to manage all aspects of the rehabilitation of the mining area, | This Report |
| | (b) a description of the steps and actions the holder proposes to take to comply with the conditions of the mining lease that relate to rehabilitation, | This Report |
| | (c) a summary of rehabilitation risk assessments conducted by the holder, | Section 3 |
| | (d) the risk control measures identified in the rehabilitation risk assessments, | Section 3 |
| | (e) the rehabilitation outcome documents for the mining lease, | Section 4, Section 4.3 |
| | (f) a statement of the performance outcomes for the matters addressed by the rehabilitation outcome documents and the ways in which those outcomes are to be measured and monitored | |
| **12** | **Rehabilitation outcome documents**<br>(1) The holder of a mining lease must prepare the following documents (the rehabilitation outcome documents) for the mining lease and give them to the Secretary for approval—<br>(a) the rehabilitation objectives statement, which sets out the rehabilitation objectives required to achieve the final land use for the mining area,<br>(b) the rehabilitation completion criteria statement, which sets out criteria, the completion of which will demonstrate the achievement of the rehabilitation objectives,<br>(c) for a large mine, the final landform and rehabilitation plan, showing a spatial depiction of the final land use.<br>(2) If the final land use for the mining area is required by a condition of development consent for activities under the mining lease, the holder of the mining lease must ensure the rehabilitation outcome documents are consistent with that condition | Section 4, Section 4.3 |

### 2.2.3 Relevant Guidelines

#### 2.2.3.1 ANZMEC Strategic Framework

The rehabilitation process requires the establishment of a performance framework in order to measure the success of the rehabilitation process and to facilitate a consistent approach. The ANZMEC (Australian and New Zealand Minerals and Energy Council) Strategic Framework (2000) provides a framework for rehabilitation and performance assessment for mining operations.

The performance framework should cover the following:

- Rehabilitation principles and objectives, including final land use;
- Decommissioning requirements;
- Community objectives and criteria;
- Consent criteria;
- Standards and issues related to whole-of-life considerations;
- Financial costing and provisioning;
- Legal requirements;
- Environmental and social management requirements; and
- Safety considerations.

~~As the final end use is yet to be determined~~, This rehabilitation strategy will focus upon documenting a strategic approach that aligns with the requirements of the Conditions of ~~Approval~~ Consent as identified within Section 2.2.

It is recommended that the review of both the rehabilitation strategy and this Rehabilitation Management Plan take the ANZMEC strategic framework into consideration as more information becomes available.

#### ~~2.2.3.2 NSW Department of Trade and Investment Guidelines~~

~~The mine closure, rehabilitation and relinquishment processes are overseen by the Department of Trade and Investment (DT&I). DT&I Guideline EDG03 *Guidelines to the Mining, Rehabilitation and Environmental Management Process* (MREMP) provides guidance in the preparation of Mine Operations Plans (MOP), Mine Closure Plans (MCP) and Annual Environmental Management Reports (AEMR). The guideline document aims to enable mining activities throughout NSW to proceed safely, efficiently extract resources, protect the environment and deliver a rehabilitated landform at the completion of mining activities.~~

~~This Rehabilitation Management Plan aligns with the intent of the DT&I Guideline document.~~

## 2.3 FINAL LAND USE OPTIONS ASSESSMENT

The final land use is defined within the development consent for the whole site (see *Figure Three*) and as approved in the 2021 MOP is shown in *Figure Four* and *Figure Five*. It is envisaged that the site will be available for industrial land uses which is compatible with the adjacent Western Sydney Airport 'Enterprise' zoning classification.

## 2.4 FINAL LAND USE STATEMENT

The final landform has evolved over the project modifications from a series of voids and mounds, to comply with the Aerotropolis rezoning that classified the site as 'Enterprise'. The post mining land use goal is expected to continue to be updated in successive RMP's.

The final landform will be adjacent to the eastern boundary of the WSA drawing the site into an interconnected transport focussed city. As outlined in the EAs, as the extraction of clay is completed in quarry voids, they will be backfilled with engineered fill to facilitate redevelopment in accordance with the goals of the Enterprise zone of the WSA Land Use and Infrastructure Implementation Plan. Backfilled pits will be progressively grassed to provide a stable landform.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Phase 4 Rehabilitation (Appendix 4 Figure 2 of SSD 10_0014)** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | NSW Government Department of Planning, Industry & Environment Badgerys Creek Consolidated Consent Mod 3 & 4 (2011) | **Plan By:** | TO/JD |
| **Figure:** | **THREE** | **Council:** | Liverpool City Council | **Survey:** | Not Applicable | **Project Manager:** | TO |
| **Version/ Date:** | V0 16/09/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q003_V0_F3 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | Not Applicable | | |

N

vgt environmental compliance solutions and laboratories

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.

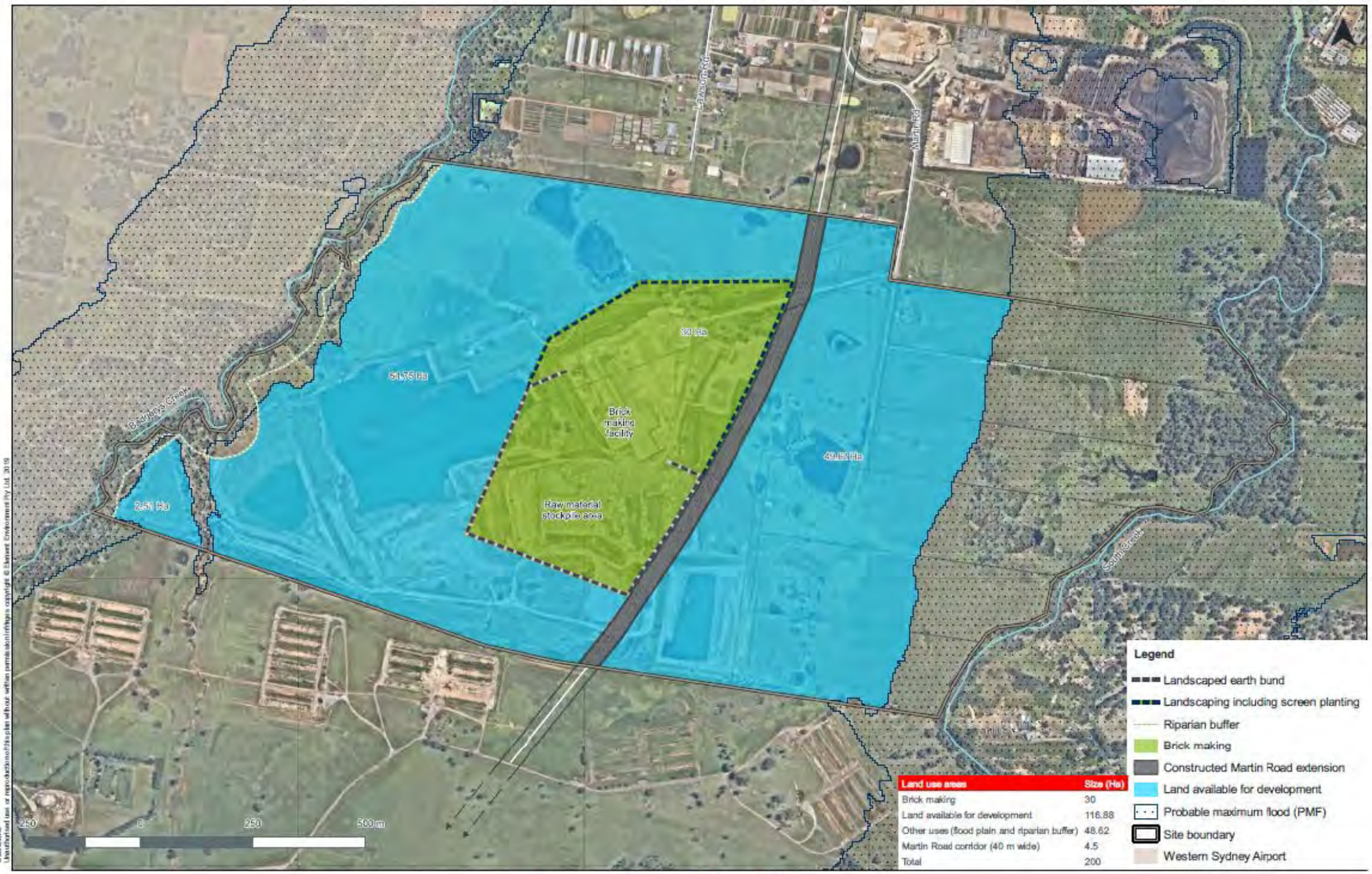


**Figure 2: Phase 4 Rehabilitation**

## 2.5 FINAL LAND USE AND MINING DOMAINS

### 2.5.1 Final Land Use Domains

*Table 6. Post Mining Land Use Domain Codes*

| Secondary Domains (Post Mining) | Description |
|---|---|
| **Industrial** | This Domain comprises the backfilled voids and all other surrounding areas that will be available for industrial development. |
| **Infrastructure** | This domain incorporates the site access road to be retained for future property access. |

### 2.5.2 Mining Domains

*Table 7. Operational Domain Codes*

| Primary Domains (Operational) | Description |
|---|---|
| **Infrastructure Area** | This domain includes the haul roads, hardstand/concrete areas, material stockpile areas and derelict farm buildings. |
| **Water Management Area** | This includes the sedimentation dams and associate infrastructure. |
| **Overburden Emplacement Area** | This domain incorporates the stockpile area and bunds surrounding the extraction area where overburden has been placed. |
| **Active Mining Area (Open cut void)** | This domain incorporates the active extraction area and former voids. |

# 3 Rehabilitation Risk Assessment

Identification of hazards and a risk assessment and identification of risk controls has been undertaken and is summarised below.

*Table 8. General Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Administrative failures.** | Insufficient skills and experience of rehabilitation personnel. | Only experienced contractors will be engaged to conduct rehabilitation activities. | |
| | Lack of clearly defined responsibilities. | Responsibilities and roles for rehabilitation will be defined in the contractual arrangements with contractors and Proponent. | |
| | Insufficient funding for or prioritisation of rehabilitation activities. | Proponent will ensure that sufficient funds are available to conduct rehabilitation activities.<br>Note, a rehabilitation bond is held over the site and will be reviewed annually for the life of the mine. | |
| **Erosion** | Harm to rehabilitation works. | Slopes to be reduced. | Slopes to be reduced to a maximum of 3H:1V within the voids by backfilling. |
| | | Reduce track slopes. | Slopes of major tracks are to be <10 degrees or have cross drains/banks installed.<br>Where unsuitable soils are present, tracks are to be stabilised with crushed bricks, concrete, gravel or similar. |
| | | Roughen exposed surfaces. | Track walk or lightly rip exposed surfaces to encourage infiltration of rainwater. |
| | | Achieve ground coverage factor of at least 0.05 (70%). | Coverage to be achieved via vegetation, mulch or similar within 30 days of completion of works. |
| | | Topsoil stockpile management. | Slopes no greater than 18º.<br>Stockpile height no greater than 2 metres.<br>No stockpiles to be constructed in areas of concentrated flows. |
| | | Overburden stockpile management. | Slopes no greater than 18º.<br>Stockpile height no greater than 3 metres.<br>No stockpiles to be constructed in areas of concentrated flows. |

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Sediment Entrainment** | Entrained sediment harms downstream environments | Runoff from design storm to be contained in-site. | Sediment dams designed for 90$^{th}$ % 5-day storm event.<br>Drains to be designed for 1 in 10-year design storm.<br>Receiving capacity of sediment dams to be maintained by;<br>• Reuse of water on-site for dust suppression; and<br>• Water to be pumped to pit sump if capacity not sufficient to contain design storm prior to storm events.<br>• Pit maintained to have capacity to contain a volume greater than the design storm. |
| | | Surface water captured on exposed surfaces to be directed to sediment dams. | Sediment dam to be constructed for each catchment in the disturbed area.<br>Drains to be installed to direct dirty surface water to sediment dams. |
| | | Silt fences installed. | Installation of silt fences around disturbed area as appropriate.<br>No silt fences to be constructed in areas of concentrated flows. |
| | | Topsoil stockpile management | Slopes no greater than 18º.<br>Stockpile height no greater than 2 metres.<br>No stockpiles to be constructed in areas of concentrated flows. |
| | | Overburden stockpile management. | Slopes no greater than 18º.<br>Stockpile height no greater than 3 metres.<br>No stockpiles to be constructed in areas of concentrated flows. |
| **Surface Water Quality** | Decrease in downstream water quality. | Monitoring. | Surface water monitoring has been undertaken on water to be discharged offsite.<br>All future monitoring will be undertaken in accordance with Approved Methods for Sampling and Analysis of Water Pollutants in NSW (DEC 2004) ands EPL conditions. |
| | | Reuse dirty water on site. | Dirty water to be reused for dust suppression. |
| | | Runoff from design storm to be contained in-site. | Sediment dams designed for 90$^{th}$ % 5-day storm event.<br>Drains to be designed for 1 in 10-year design storm.<br>Receiving capacity of sediment dams to be maintained by;<br>• Reuse of water on-site for dust suppression; and<br>• Water to be pumped to pit sump if capacity not sufficient to contain design storm prior to storm events.<br>• Pit maintained to have capacity to contain a volume greater than the design storm. |
| | | Surface water captured on exposed surfaces to be directed to sediment dams. | Sediment dam to be constructed for each catchment in the disturbed area.<br>Drains to be installed to direct dirty surface water to sediment dams. |
| | | Separation of clean water and dirty water. | Upstream clean water to be diverted via diversion drains or bunds as far as possible. |
| **Geotechnical Stability In-Pit** | Failure of In-Pit Slopes | Reduce slopes. | Voids to be backfilled with VENM and ENM to approximately predevelopment contours. |
| | | Backfilling validated by qualified engineer. | |

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Groundwater Quality and Flows** | Decrease in groundwater quality and changes in flows | Groundwater interaction will be minimised. | The excavation is limited to a depth of 35 metres below the pre-existing natural surface of the ground.<br>The backfilling of the pits will result in an overall decline in pit inflows (Mod 4 EA). |
| **Wind Erosion** | Rehabilitation areas impacted by wind erosion. | Air quality monitoring. | Visual observation for the presence of nuisance dust will be undertaken during mining, hauling and rehabilitation operations.<br>Dust gauges have been installed on the site and monitoring is undertaken in accordance with EPA approved methods.<br>A High Volume Air Sampler has been installed and monitored in accordance with consent conditions and the Air Quality Management Plan. |
| | | Dust suppression. | Water cart to be engaged during mining, hauling and rehabilitation activities.<br>During adverse conditions:<br>• Cease mining or hauling activities in adverse wind conditions: and<br>• Increase water cart frequency. |
| | | Achieve groundcover factor of at least 0.05 (70% coverage) on areas of long-term inactivity. | Coverage to be achieved via vegetation, mulch or similar within 30 days of completion of works. |
| **Heritage** | Harm to heritage items | Protection of unexpected heritage items. | In the event that unexpected Aboriginal objects, sites or places are discovered, works will cease, the immediate vicinity will be secured to protect the find and DPIE will be notified as soon as practicable after they are first identified. |
| | | Protection of human skeletal remains | The immediate vicinity will be secured to protect the find.<br>The police will be notified immediately. |
| **Bushfire** | Harm to rehabilitation areas. | Limit access for deliberately lit fires. | Appropriate fencing is to be repaired and maintained.<br>Locked access gate outside of operating hours.<br>Visitors to sign in at the office. |
| | | Maintain fire breaks. | |
| **Waste** | Harm to rehabilitation areas. | Control on-site waste storage and removal | Wastes will be stored in bins with a lid.<br>Wastes will be removed by licenced contractor. |
| **Contamination** | Harm to human and environmental receptors. | Identification and remediation of contaminated materials. | Procedures outlined in the Unexpected Finds Protocol (UFP) will be followed (see Appendix F).<br>Procedures outlined in the Materials Management Plan will be followed for the importation of VENM and ENM (see Appendix F). |

*Table 9. Active Mining Phase Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Salvage of Biological Resources** | Loss of biological resources. | Minimise loss of biological resources through suitable land clearing, salvage and handling practices. | Areas to be land cleared will be clearly marked to ensure only land to be cleared is disturbed.<br>Land clearing is to be supervised by proponent's staff.<br>Felled trees are to be salvaged and reused immediately by placing on rehabilitated land. If no suitable rehabilitation areas are available felled trees will be stored in windrows for reuse in future rehabilitation.<br>Topsoil material to be stripped will be used immediately or stored in stockpiles no greater than 2 metres in height and be revegetated with temporary grass species or otherwise stabilised as described in the erosion risk controls above. |
| | Limited biological resources available on site. | Importation of topsoil/growth medium material. | If on-site topsoil/growth medium deficit is noted, material may be imported to assist in rehabilitation. |
| **Weather Conditions** | Adverse weather conditions during land clearing. | Land clearing activities will not be undertaken during adverse weather conditions. | Land clearing will not be undertaken during periods of prolonged rainfall where damage to soil structure and erosion impacts are greatest. |
| **Geochemical/ Chemical soil conditions** | Adverse geochemical/chemical composition of soil/ interburden / overburden materials. | Soil testing of soils / interburden and overburden material will be undertaken. | Materials stockpiled on site will be tested for suitability prior to re-use in rehabilitation.<br>Ameliorants will be applied to the materials as required. |

*Table 10. Decommissioning Phase Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Infrastructure** | Retained roads and hardstands are not safe and stable. | All roads and hardstand areas to be retained for the final landuse will be reduced in width/size to that suitable for the final landuse. | Roads not required for final landuse are removed.<br>Hardstand areas reduced to a size required for the final landuse.<br>Slopes of major tracks are to be <10 degrees or have cross drains/banks installed.<br>Where unsuitable soils are present, tracks are to be stabilised with crushed bricks, concrete, gravel or similar. |
| | Utility services present a safety hazard. | Services not required for final landuse are disconnected. | Relevant services disconnected by qualified contractors |
| **Hazardous Materials** | Harm to environment due to hazardous materials. | No hazardous materials remain | All hazardous material removed |

*Table 11. Landform Establishment Phase Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Unstable landform** | The final landform is unstable. | Continued monitoring of the landform establishment works by suitably qualified person/s. | Slopes to be reduced until all slopes meet the approved final landform.<br>Suitably qualified geotechnical engineer engaged to assess the instability and provide a range of recommendations to remediate the instability. |
| **Final landform unsuitable for final landuse.** | Final landform does not conform to approved final landform. | Landform to be remediated to approved final landform. | Slopes to be reduced until all slopes meet the approved final landform.<br>Survey plan or similar to be prepared to show final slopes meet the approved final landform. |
| **Landform not suitable for target plant species** | Target plant species unable to establish. | Soil testing of soils / interburden and overburden material will be undertaken. | Materials stockpiled on site will be tested for suitability prior to re-use in rehabilitation.<br>Ameliorants will be applied to the materials as required. |

*Table 12. Growth Medium Establishment Phase Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Unsuitable physical and structural substrate** | Substrate compacted | Substrates to be placed in such a way to maintain soil structure as far as possible. | Minimise vehicle movement over the emplaced substrates.<br>Substrates to be lightly ripped to permit water infiltration and air penetration prior to topsoil placement. |
| **Subsoil and topsoil deficit** | Insufficient on-site material available for growth medium. | Available topsoils are stockpiled appropriately and reused on the site. | Records to include amounts of subsoil and topsoils stripped, locations and depths re-spread.<br>If on-site topsoil/growth medium deficit is noted, material may be imported to assist in rehabilitation. |
| **Substrate chemically unsuitable** | Substrate inadequate to support revegetation or agricultural land capability. | Soil testing of soils / interburden and overburden material will be undertaken. | Materials stockpiled on site will be tested for suitability prior to re-use in rehabilitation.<br>Ameliorants will be applied to the materials as required.<br>Importation of more suitable materials to be investigated and undertaken if deemed necessary. |

*Table 13. Ecosystem and Land Use Establishment Phase Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Poor seed viability and dormancy** | Insufficient germination of seeds to provide groundcover. | Certified seed stock to be utilised as far as possible in rehabilitation. | |
| **Ant and Insect predation** | Seed stock depleted by predation. | Protect sown seeds as far as possible. | Seeds to be lightly covered by soil when spread.<br>Apply liquid tackifier if required to bind seeds to the surface.<br>Keep soil moist by mulching or application of water to deter ants. |
| **Damage to seed through revegetation processes** | Insufficient germination of seeds to provide groundcover. | Protect seeds from damage during rehabilitation. | Experienced contractors to be employed for rehabilitation works.<br>Rehabilitation areas to be protected from vehicular traffic by fencing or similar barriers.<br>Minimise handling of seeds during storage and use. |
| **Weed Infestation** | Weed number overwhelm revegetation. | Regular inspection and spraying for weeds will be undertaken. | Monitoring confirms that after 2 years the non-native/non-target species (weeds) represents less than 20% of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities. |
| **Inappropriate rehabilitation techniques** | Failure of rehabilitation. | Ensure approved rehabilitation plan is followed. | Experienced contractors to be employed for rehabilitation works.<br>Rehabilitation to be undertaken in accordance with the Rehabilitation Plan approved by DPIE and this plan.<br>Proponent to supervise rehabilitation works to ensure compliance with any approved plans and best practice techniques are utilised. |
| | | Approved plans will be reviewed as required to ensure best practice techniques are employed. | |
| **Adverse weather conditions** | Failure of rehabilitation. | Revegetation will not be undertaken during periods of drought. | |
| | | Rehabilitation works will not be undertaken during wet periods where soils and seed planting may be damaged. | |
| | | A water cart may be employed to water rehabilitation areas during dry or windy periods until vegetation is established. | |
| **Inappropriate Seasonal timing of revegetation** | Failure of rehabilitation. | Revegetation will preferably be planted during the spring and autumn seasons to avoid hot and dry weather conditions and winter frost. | |

*Table 14. Ecosystem and Land Use Development Phase Rehabilitation Risk Assessment*

| Hazard | Risks | Risk Controls | Details |
|---|---|---|---|
| **Weather and climatic influences** | Failure of rehabilitation. | A water cart may be employed to water rehabilitation areas during dry or windy periods until vegetation is established. | |
| | | Reseeding of failed areas may be undertaken as advised by ecologist or suitably qualified person/s | |
| **Long term water quality and quantity issues** | Decrease in downstream water quality. | Mine personnel identify site of erosion and remediate through additional earthworks, soil works including addition of ameliorants, supplementary revegetation or other stabilisation method. | |
| **Damage to rehabilitation** | Deliberate vandalism of rehabilitation areas. | Rural fences and gates installed around disturbed area to prevent unauthorised access that may damage rehabilitation. | Monitoring indicates evidence of trespassing and/or damage to rehabilitation areas.<br>Appropriate fencing, signage and bunding is to be repaired and maintained. |
| | Bushfire damages rehabilitation areas. | Where possible regular slashing/mowing of pasture areas will be undertaken. | |
| | Weed number overwhelm revegetation. | Regular inspection and spraying for weeds will be undertaken. | Monitoring confirms that after 2 years the non-native/non-target species (weeds) represents less than 20% of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities. |
| | Insect and plant disease overwhelm revegetation. | Regular inspections to be undertaken and spraying undertaken as appropriate. | |
| **Insufficient establishment of target species and limited species diversity** | Vegetation community does not become established on final landform affecting final land use and ecosystem. | Suitably qualified ecologist or revegetation expert engaged to assess reasons for divergence of failure of endemic species establishment and recommend actions to ensure that the final vegetation community corresponds as closely as possible to the approved community. | Sowing of additional seed mix for targeted species or additional species endemic to the pre-disturbance community.<br>Use of seed and mulch mix or other application techniques.<br>Soil amelioration works such as addition of fertiliser.<br>Additional weed control activities (mechanical and/or chemical). |
| **Erosion and failure of landform** | Vegetation is unable to be established due to erosion. | Mine personnel identify site of erosion and remediate through additional earthworks, soil works including addition of ameliorants, supplementary revegetation or other stabilisation method. | If the above is unsuccessful, a suitably qualified professional in sediment and erosion control will be engaged to prepare and assessment report and recommendations to be implemented. |
| **Erosion and failure of landform** | Visual inspection indicates that the final landform is the source of unacceptable levels of sedimentation downstream. | Mine personnel identify site of erosion and remediate through additional earthworks, soil works including addition of ameliorants, supplementary revegetation or other stabilisation method. | If the above is unsuccessful, a suitably qualified professional in sediment and erosion control will be engaged to prepare and assessment report and recommendations to be implemented. |

## 4 Rehabilitation Objectives and the Rehabilitation Strategy

A Rehabilitation Strategy was developed by Hyder on behalf of Boral in accordance with the conditions of the Project Approval. Condition 36 of the Project Approval required that Boral develop and implement a rehabilitation strategy for the site. This was submitted and approved by the DoPI in February 2012.

Rehabilitation objectives for the site, as presented within the strategy were categorised as follows:

- Safety;
- Landform Stability;
- Water Quality;
- Land Function; and
- Compatibility with the surrounding land fabric

The completion criteria for rehabilitation proposed within the strategy were established with reference to the ANZMEC Strategic Framework (2000) and aim to meet the objectives of the framework. The criteria are presented within Table 2.

Table 2 Completion Criteria for the project site

| Rehabilitation Aspect | Rehabilitation Performance Indicator | Target |
|---|---|---|
| **Safety** | No site hazards | Significant hazards removed or controlled |
| **Landform stability** | Minimal rilling, erosion, sediment deposition in drains and water retention basins<br>Stability of voids<br>Diversion of water flows | No significant erosion or soil loss from site<br>No collapsing of voids |
| **Water quality** | No dirty water leaving the site | Any water leaving the site should meet ANZECC criteria as discussed with OEH |
| **Land function** | Land capability aligned to proposed future use<br>Maintenance of environmental assets currently on or within proximity to the site | Land function commensurate with the surrounding land fabric that doesn't compromise the value of the surroundings.<br>Works undertaken to maintain environmental assets on the site |
| **Comparable to surrounding land fabric** | Visual continuity of landscape<br>Consistent vegetation cover | Comparable to the future use of the surrounds |

This rehabilitation management plan aims to provide guidance in the achievement of the objectives of the rehabilitation strategy for the site.

~~This document does not represent the Mine Closure Plan for the site. The closure plan is to be prepared separately as a standalone document for consultation and engagement with stakeholders and ultimately approval for relinquishment by DT&I.~~

~~Closure objectives and completion criteria will be proposed and confirmed as part of the early indicative closure plan and will inform initial rehabilitation requirements. It is recognised that these objectives and criteria may change over time, and the Closure Plan, and this rehabilitation management plan, would be amended to reflect and accommodate these changes.~~

# 4 Rehabilitation Objectives and Rehabilitation Completion Criteria

## 4.1 REHABILITATION OBJECTIVES AND REHABILITATION COMPLETION CRITERIA

| Final Land Use | Mining Domain | Rehabilitation Objective Category | Proposed Rehabilitation Objectives | Indicator | Proposed Completion Criteria | Validation Method, Monitoring or Record |
|---|---|---|---|---|---|---|
| **Infrastructure**<br>**(A)** | **Infrastructure**<br>**(1)**<br>**Overburden Emplacement**<br>**(4)** | **Retention of infrastructure** | Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Fit for the intended final land use(s)<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Safe | Retention of infrastructure: All infrastructure that is to remain as part of the final land use is safe and does not pose any hazard to the community. | Hazards isolated and secured. | Statement provided by suitably qualified engineer. |
| | | | | Tracks suitable for private access or pedestrian usage. | Slopes of major tracks <10° or have cross drains/banks installed. Where unsuitable soils are present, tracks to be stabilised with crushed bricks, concrete, gravel or similar | Survey on completion by registered surveyor. |
| | | | | Where applicable, necessary approvals are in place (e.g. development consent under the Environmental Planning and Assessment Act 1979) where buildings and infrastructure are to be retained as part of final land use. | Permits and approval documents issued. | Copy of any relevant approvals. |
| | | | | The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use. | The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. | Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to minimise risks to public safety or the environment. |
| | | | | Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use. | Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement. | Formal acceptance from landowner. |
| | | | Wildlife Attraction:<br>Feature- All areas of the site affected by the project<br>Objective- Minimise risk to WSA due to bird strike due to wildlife attraction to retained infrastructure such as fences, lighting etc.. | Structures, fencing and lighting will minimise areas for wildlife, especially birds, to use for breeding, roosting, or perching. This will include: no eaves or ensuring no access to the roof cavity through the eaves; and using ‘bird-spikes’ on roof edges, fences and lighting. | Bird-spikes or other measures are installed as appropriate. | Statement provided and before/after photos. |

| Final Land Use | Mining Domain | Rehabilitation Objective Category | Proposed Rehabilitation Objectives | Indicator | Proposed Completion Criteria | Validation Method, Monitoring or Record |
|---|---|---|---|---|---|---|
| **Industrial**<br>**(E)** | **Infrastructure**<br>**(1)**<br>**Water Management Area**<br>**(3)**<br>**Overburden Emplacement**<br>**(4)**<br>**Active Mining Area (Open cut void)**<br>**(5)** | **Removal of Infrastructure** | Condition 34<br>Feature- Surface Infrastructure<br>Objective- Decommissioned and removed, unless otherwise agreed by the Secretary<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Fit for the intended final land use(s)<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Safe | Removal of all services (power, water, communications) if present, that have been connected on the site as part of the operation. | All utility infrastructure not required for final land use is removed. | Statement provided, utility service disconnection record / notification. |
| | | | | Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, loading facilities, office complex, portable offices, exploration core samples, camp facilities, storage racks, samples. | Infrastructure removed. | As-constructed final landform plan, photos, decommissioning reports etc |
| | | | | Removal of all water management infrastructure (including pumps, pipes and power). | Infrastructure removed. | Statement provided and before/after photos. |

| Final Land Use | Mining Domain | Rehabilitation Objective Category | Proposed Rehabilitation Objectives | Indicator | Proposed Completion Criteria | Validation Method, Monitoring or Record |
|---|---|---|---|---|---|---|
| | | **Land Contamination**<br>**Management of waste and process materials** | Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Fit for the intended final land use(s)<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Safe<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Non-polluting | Waste material and/or visible contamination areas on site surface. | There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site. | Statement provided and before/after photos. |
| | | | | Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type. | Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams. | Contamination Remediation Report prepared by Land Contamination Consultant Site Contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required). |
| | | | | Importation of VENM and ENM material for the backfilling of voids will be in accordance with the Materials Management Plan. | Imported materials for backfilling voids meets the definition of VENM and ENM. | VENM/ENM certificates.<br>Visual inspections. |

| Final Land Use | Mining Domain | Rehabilitation Objective Category | Proposed Rehabilitation Objectives | Indicator | Proposed Completion Criteria | Validation Method, Monitoring or Record |
|---|---|---|---|---|---|---|
| | | **Landform Stability** | Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Fit for the intended final land use(s)<br>Feature- All areas of the site affected by the project<br>Objective- Safe<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land<br>Condition 34<br>Feature- Landscaping bunds<br>Objective- Hydraulically and geotechnically stable<br>Condition 34<br>Feature- Landscaping bunds<br>Objective- Vegetated<br>Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Hydraulically and geotechnically stable<br>Condition 34<br>Feature- Pits 1, 2 and 3<br>Objective- Free draining<br>Condition 34<br>Feature- Pits 1, 2 and 3<br>Objective- Backfilled to a landform that is consistent with natural ground level and is geotechnically stable | Visual - indicators of erosion and land instability.<br>Visual - indicators that surface water management structure are functioning as designed.<br>Measured - survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan.<br>Measured – survey/monitoring of rehabilitated landform to specifically monitor settlement and/or material loss via erosion.<br>Measured- compaction of backfilled lands to meet the appropriate criteria for industrial land use.<br>Measured- Bunds to be constructed with batter slopes of no greater than 3H:1V. | Visual- minimal erosion that would not require moderate to significant ongoing management and maintenance works.<br>Visual – no signs of land instability such as mass movement.<br>Visual - no areas of active gully erosion.<br>Visual - no evidence of tunnel erosion.<br>Visual – no evidence of active scour likely to compromise surface water management structure.<br>Survey verifies final landform complies with final landform construction in accordance with Final Landform and Rehabilitation Plan.<br>Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement.<br>Total projected foliage cover is greater than or equal to 70% (Blue Book C -factor equivalent of 0.05)<br>Measurement of backfilled lands meets the appropriate criteria for industrial land use.<br>Bund batters to be no greater than 3H:1V. | Before and after photos, rehabilitation monitoring reports, as-constructed surveys, erosion surveys, and independent geotechnical reports (where required) that indicate long-term stability of rehabilitated landform.<br>Stability will continue to be evaluated over 2 years.<br>Compaction testing results. |

| Final Land Use | Mining Domain | Rehabilitation Objective Category | Proposed Rehabilitation Objectives | Indicator | Proposed Completion Criteria | Validation Method, Monitoring or Record |
|---|---|---|---|---|---|---|
| | | **Surface Water** | Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Non-polluting | Water Quality meets the objective of Section 120 of the Protection of the Environment Operations Act 1997.<br>In particular, 'downstream' water quality monitoring will record pH between 6.5 and 8.5 and total suspended solids <50mg/L or within 10% of 'upstream' levels (whichever is the greater). | Downstream water to be monitored for pH and TSS and meets the proposed criteria. | Water quality monitoring reports. |
| | | | Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Fit for the intended final land use(s) | Visual - indicators that surface water management structure are functioning as designed. | Significant surface water management structures (e.g. spillways, drop structures, major drains and creek diversions) have been constructed in accordance with Managing Urban Stormwater 'Blue Book' DECC 2008 requirements. | An engineering assessment undertaken by a suitably qualified person concludes that significant surface water management structures (e.g. spillways, drop structures, and major drains) have been constructed in accordance with Managing Urban Stormwater 'Blue Book' DECC 2008 requirements. |
| | | | Condition 34<br>Feature- All areas of the site affected by the project<br>Objective- Hydraulically and geotechnically stable | Measured - survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan. | High risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design. | An engineering assessment undertaken by a suitably qualified person concludes that high risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design. |
| | | | Wildlife Attraction:<br>Feature- All areas of the site affected by the project<br>Objective- Minimise risk to WSA due to bird strike due to wildlife attraction to final water bodies. | Installation of netting or lines across it with moving flags to deter birds prior to the commencement of WSA operations. | Bird deterrents installed. | Statement provided and before/after photos. |
| | | **Bushfire** | Feature- All areas of the site affected by the project<br>Objective- Safe | Appropriate bushfire hazard controls (where required) have been implemented on the advice from the NSW Rural Fire Service. | Bushfire controls implemented. | Statement provided and before/after photos. |

| Final Land Use | Mining Domain | Rehabilitation Objective Category | Proposed Rehabilitation Objectives | Indicator | Proposed Completion Criteria | Validation Method, Monitoring or Record |
|---|---|---|---|---|---|---|
| | | **Agricultural Revegetation** | Revegetation is sustainable for the long-term and only requires maintenance that is consistent with the intended final industrial land use. | Routine Soil Test (bulked soil samples 0-10 cm)<br>Includes: Total Carbon (TC), Total Nitrogen (TN), Organic Matter, TC/TN Ratio; Bray I and II Phosphorus; Colwell Phosphorus; Available cations (Calcium, Magnesium, Potassium, Ammonium, Nitrate, Phosphate, Sulphur); Available Micronutrients (Zinc, Manganese, Iron, Copper, Boron, Silicon); Exchangeable (Sodium, Potassium, Calcium, Magnesium, Hydrogen, Aluminium, Cation Exchange Capacity); pH and EC (1:5 water); Basic Colour, Basic Texture. | The re-established topsoil / subsoil substrate is capable of supporting the targeted pasture (grass) regime on a sustained basis.<br>Pasture establishment is in good health and provides adequate cover. | Rehabilitation monitoring reports, independent soil reports, environmental monitoring records, independent agronomist reports.<br>Achievement of criteria to be evaluated over a period of 5 years unless future industrial development commences. |
| | | | | Resilience demonstrated by the effects of drought and fire on composition, structure and other function attributes of cropping (grassland) lands. | Appropriate and reliable access to water for grassland maintenance.<br>Resilience to drought and fire. | |
| | | | | No further active weed control required beyond that considered necessary at analogue sites. | Monitoring confirms the non-target species (weeds) represent less than 10% of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities. | |
| | | | | Visual - indicators of erosion and land instability. | Total projected foliage cover is greater than or equal to 70% (Blue Book C -factor equivalent of 0.05) | |
| | | | Revegetation minimises aviation safeguarding risks to WSA | No new planting (e.g. for landscaping) will occur on the site that produces fruit or flowers that are likely to attract birds and wildlife. | No vegetation planted that produce fruit or flowers. | Before and after photos, rehabilitation monitoring reports, environmental monitoring records, |
| | | | | Waste/litter that may attract birds and vermin to be removed from the site. | No waste/litter remaining on site. | Before and after photos, rehabilitation monitoring reports, environmental monitoring records, |

## 4.2 REHABILITATION OBJECTIVES AND REHABILITATION COMPLETION CRITERIA – STAKEHOLDER CONSULTATION

Stakeholders to be informed and consulted regarding rehabilitation works are:

- NSW Department of ~~Trade and Investment~~ Planning and Environment;
- Liverpool City Council;
- ~~NSW Office of Environment and Heritage (OEH~~) Environment, Energy and Science Group- Biodiversity and Conservation Division;
- EPA:
- ~~NSW Water~~ Natural Resources Access Regulator;
- Transport for NSW
- Western Sydney Airport;
- NSW Rural Fire Service; and
- Local landowners and residents.

Consultation undertaken to date is summarised below.

*Table 15. Stakeholder Consultation*

| Stakeholder | Consultation Activities | Matters Subject to Consultation | Actions |
|---|---|---|---|
| **NSW Resources Regulator** | Approved Mine Operations Plans<br>Annual Rehabilitation Reports | Nil | Nil |
| **Department Planning and Environment** | Development Application SSD 10_0014 and Modifications 1 to 5 | Items as described within the development applications. | As per consent requirements. |
| **Environment, Energy and Science Group- Biodiversity and Conservation Division** | Review of Mine Operation Plan (VGT 2021) approved by the Regulator.<br>Note: MOP is no longer valid due to legislative reforms. | Nil | Nil |
| **Liverpool City Council** | Annual Review | Nil | Nil |
| | Review of Mine Operation Plan (VGT 2021) approved by the Regulator.<br>Note: MOP is no longer valid due to legislative reforms. | Nil | See Table 16. |
| **Natural Resources Access Regulator** | Review of Mine Operation Plan (VGT 2021) approved by the Regulator.<br>Note: MOP is no longer valid due to legislative reforms. | See Table 16. | See Table 16. |

| Stakeholder | Consultation Activities | Matters Subject to Consultation | Actions |
|---|---|---|---|
| **Transport for NSW** | Development Application SSD 10_0014 and Modifications 1 to 5 | Items as described within the development applications. | As per consent requirements. |
| | Review of Mine Operation Plan (VGT 2021) approved by the Regulator.<br>Note: MOP is no longer valid due to legislative reforms. | See Table 16. | See Table 16. |
| **Western Sydney Airport** | Review of Mine Operation Plan (VGT 2021) approved by the Regulator.<br>Note: MOP is no longer valid due to legislative reforms. | See Table 16. | See Table 16. |
| **Community Consultative Committee** | Annual Review on request<br>Meetings | No meetings to date | Nil |
| **EPA** | Approval of EPL 684.<br>Most recent variation of licence in 2021. | Nil | Nil |
| **Residential Neighbours** | Nil | Nil | Nil |

## 4.3 CONSULTATION

Consultation has been sought with the relevant authorities on the Mine Operation Plan (MOP) prepared by VGT, representing the RMP, in July 2021, and was approved by the Resources Regulator in August 2021. Since that time the consent has been modified (Mod 5) and the Mining Act and Regulation have been amended. Under the legislative reforms, the MOP is no longer valid, and this plan has been updated to meet both the Regulator and DPIE requirements. The however the responses to the MOP are included in *Appendix P* and summarised below. Further comments will be sought on the updated RMP.

*Table 16. Consultation with Authorities (October 2021)*

| Authority | Response/ Items to Address | Where Addressed |
|---|---|---|
| **Liverpool City Council** | Biodiversity related matters have been suitably addressed. | - |
| **Environment, Energy and Science Group- Biodiversity and Conservation Division** | ***'Public Authority Response***<br>*Thank you for your consultation request. Please be advised however that EES will not be reviewing the plan and providing comments.'* | - |
| **Natural Resources Access Regulator** | Condition 36 e) states include details of the planting of replacement trees in riparian areas consistent with the Statement of Commitments and with vegetation requirements for WSA to minimise wildlife impacts. While Pit 3 is acknowledged in the Rehabilitation Plan, there is no mention of the area near Pit 2 which is in the riparian area of Badgerys Creek. Further detail is requested in the Plan on how this area will be managed. | Section 2<br>Section 5.1<br>Section 6.1<br>Section 6.2.5 |
| **Transport for NSW** | TfNSW has reviewed the submitted rehabilitation management plan which was prepared as per the requirements of the approval and advises that details of any light and heavy vehicle movement generation associated with the rehabilitation of the development site should be provided in the rehabilitation management plan. | Section 13.6<br>Appendix M |
| **Western Sydney Airport** | Page 11: In accordance with Condition 36, note that the federal Department of Infrastructure, Transport, Regional Development and Communications is also a relevant authority, and should be provided the opportunity to comment on this document (if it hasn't been already). | Consultation to be undertaken |
| | Page 16: Time estimates regarding years for the following Phases (2-4) could be detailed here, which would assist in WSA reviewing the works against construction / operation of the airport | Section 6.1 |
| | Page 17: WSA supports the statement that landscaping will be selected to 'minimise wildlife attraction'. | Noted |
| | Page 27, Section 4.2.1: Measures regarding how water quality would be controlled in relation to water being pumped out to WSA should be detailed here. | Section 6.2.3.1<br>Section 13.4<br>Appendix G<br>Appendix H<br>Appendix J |

| | | |
|---|---|---|
| | Page 29, Section 4.2.2: Erosion and Sediment Controls may include measures relevant to the common boundary with WSA, which should be specified here if relevant | Section 13.4<br>Appendix G<br>Appendix H<br>Appendix J |
| | Page 30: Section 4.2.7 notes that "The vegetation will form communities endemic to the Badgerys Creek region and will not attract wildlife or otherwise impact on the Western Sydney Aerotropolis" – Suggest that this should reference Western Sydney Airport – if this is intended to refer to the Aerotropolis, an additional point should be included which specifically references Western Sydney Airport. | Noted<br>Section 6.2.5 |
| | Page 32, Section 5.1: Minor changes to reflect regulatory framework:<br>• Replace "Western Sydney Aerotropolis – Land Use and Infrastructure Implementation Plan" with "Western Sydney Aerotropolis Plan".<br>• Add "State Environmental Planning Policy (Western Sydney Aerotropolis) 2020"<br>• Add "Western Sydney Aerotropolis Draft Precinct Plans" | Section 2.1.7 |
| | Page 32, Section 5.2: The Enterprise zone is prescribed under the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020. Also relevant to mention here is that the final land use development would be required to comply with the aviation safeguarding provisions under the policy. | Section 2.1.6<br>Section 2.1.7 |
| | Page 32, Section 5.2: In relation to the strategic outcomes for the site, then the Draft Precinct Plan would provide for the most aligned vision for this portion of the Western Sydney Aerotropolis. Note that this document will likely be finalised in the short to medium term. | Section 2.1.6<br>Section 2.1.7 |
| | Page 32, Table 15: Additional objective "minimise aviation safeguarding risks to WSA" | Section 4.1 |
| | Page 42: Under "Vegetation cover is suitable for final land use", additional completion criteria that "vegetation does not result in adverse wildlife attraction risk to WSA". | Section 4.1 |

# 5 Final Landform and Rehabilitation Plan

## 5.1 FINAL LANDFORM AND REHABILITATION PLAN – ELECTRONIC COPY

# Badgerys Creek Quarry ML1771 FLRP Plan 1: Final Landform Features 08/06/2022



## Legend

- Final Landform Features
- Final Landform Contours
- Final Landuse
  - Agricultural – Cropping
  - Agricultural – Grazing
  - Rehabilitation Biodiversity Offset Ar
  - Final Void
  - Heritage Area
  - Industrial
  - Infrastructure
  - Native Ecosystem
  - Water Management Areas
  - Water Storage (Excluding Final Voi
  - Other
- Project Approval Boundary
- Mine Operations Area
- MINERALS - CURRENT TITLE
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

## Notes

Mine Rehab Portal Submission Themes: 2264

543.2 0 271.58 543.2 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

# Badgerys Creek Quarry - PGH ML1771 FLRP Plan 2: Final Landform Contours



## Legend

- Final Landform Contours
- Project Approval Boundary
- Mine Operations Area
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

## Notes

Date: 13/07/2022
Data submission IDs: 1823, 1839

543.2 0 271.58 543.2 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

# 5 REHABILITATION

As stated within Appendix D *Rehabilitation Plan* of the AECOM Environmental Assessment (2010):

*Quarries ideally undertake staged and progressive treatment of disturbed areas rather than undertaking large-scale rehabilitation works at the conclusion of quarrying in order to:*

- Minimise areas of potential soil erosion, dust nuisance, water contamination and aesthetic impacts and the resultant adverse off-site environmental effects;
- Spread the cost of rehabilitation throughout the life rather than one high cost clean-up event at the end of the project when cash flow is reduced;
- Reduce unnecessary rehandling of materials;
- Allow the use of topsoil which has not been stored for a long period; and
- Allow for practical trials of rehabilitation techniques (e.g. pasture and native woodland establishment) that may require refining before more widespread use.

Boral is committed to rehabilitating the project site to meet the objectives for future use of the land, once determined. In the immediate short term, rehabilitation works have been focused upon minimising dust generated by the stockpiles, sections of haul road and perimeter bunding. These interim progressive works assist in minimising the areas requiring rehabilitation at the end of the quarry life and contribute to a reduction in operational impacts.

As the future end use of the site is yet to be determined, the rehabilitation of the site would aim to preserve the opportunity for continued extraction of resources below the 35 m average depth.

## 5.1 SHUTDOWN PERIOD MANAGEMENT MEASURES

In April 2012, the proponent, Boral Clay and Concrete (NSW) announced the temporary shutdown of the quarry and brick making facility with effect from 30 March 2012. As at September 2013, the facility remained shut down. Boral will review its operations at a future stage, considering market conditions and business needs to determine when operations will recommence. During the shutdown period, activities at the facility will be limited. Hence, the opportunity for interactions with the environment during this period is limited. Notwithstanding, the following rehabilitation management measures will be employed during the shutdown.

The most recent quarrying campaign was in Pit 3 and was completed in winter 2011. Following that campaign, the Pit 3 was stabilised in accordance with the rehabilitation plan. Similarly, all raw material and overburden stockpiles are stabilised or rehabilitated. The HSE Manager will inspect the site on a weekly basis to ensure the rehabilitated areas remain stable.

During the shutdown period Boral will continue to monitor the status and effectiveness of rehabilitation measures on the site on a regular basis. As required, rehabilitation measures will be maintained to ensure effectiveness and promote ongoing compliance with Condition 36f of the project approval.

In the event that the quarrying operations do not recommence on the site the appropriateness of measures documented in this plan will be reviewed to ensure that they are aligned to the designated final land use.

## 5.2 PROPOSED WORKS 2012/2013

To avoid the need for large-scale rehabilitation across the project site at the end-of-use, progressive rehabilitation will be undertaken to work towards achieving the rehabilitation objectives for the site. Works proposed during the 2012/2013 period will work towards meeting the rehabilitation objectives for the site whilst avoiding any restriction upon current, or prospective, extraction activities. Proposed rehabilitation works for 2012/2013 are presented within Table 3.

Table 3 Proposed rehabilitation Works 2012/2013

| Proposed Actions | Timing | Rehabilitation Aspect |
|---|---|---|
| Commission a detailed ground survey to provide a baseline for the rehabilitation process | By end June 2012 and then once every 5 years | All |
| Further investigations<br>- Confirm stability of voids<br>- Confirm drainage across and immediately surrounding the site following results of ground survey<br>- Confirm receiving water quality criteria with NSW OEH<br>- Determine cut/fill balance | By end June 2013 | Stability<br>Water quality |
| Earthworks<br>- Stabilise dust generating voids and unworkable steep slopes or unused stockpiles and hardstand areas.<br>- Undertake necessary cut/fill works to stabilise site, maintaining a safe environment that minimises exposed surface areas to reduce generation of dust to the surrounds<br>- Install water management structures as required to minimise any dirty water flows exiting the site | By end June 2013 | Stability<br>Land function<br>Water quality |
| Revegetation<br>- Spread clean topsoil and endemic pasture seed on remaining exposed and stabilised areas<br>- Plantings, as necessary on already stabilised and topsoil covered areas | As required from June 2012 – June 2013. | Stability<br>Land function |
| Weed management to minimise weeds across the project site and onto surrounding areas (weed control activities using herbicides must be undertaken in accordance with the provisions of the Pesticides Act 1999 ) | Ongoing | Land function |
| Installation of fencing at access points around Badgerys Creek to restrict access by livestock | By December 2012 | Land function<br>Comparable to surrounding land fabric |

| Proposed Actions | Timing | Rehabilitation Aspect |
|---|---|---|
| Badgerys Creek Riparian – fencing, planting and weed control for the portion of Badgerys Creek and Badgerys Creek Tributary located within the site (in accordance with provisions of the Water Management Act 2000) | June 2013 | Land function<br>Water quality<br>Comparable to surrounding land fabric |
| Monitoring and review of rehabilitation performance and outcomes | As per Table 4 and ongoing through life of operation | All |

# 6 Rehabilitation Implementation

## 6.1 LIFE OF MINE REHABILITATION SCHEDULE

It should be noted that the life of the mine is limited to the expiration of the Mining Lease on 27th September 2031 unless renewed. This report related to the Phase 1A development of the site. The following describes the proposed progressive rehabilitation of the site over the life of the mine.

*Table 17. Life of Mine Rehabilitation Schedule*

| Rehabilitation Activity | | Timing | Assumptions and Principles (Milestones) |
|---|---|---|---|
| **Active mining** | Any topsoil generated will be stored in perimeter bunds if final surfaces not available.<br>Any overburden generated will be stored in perimeter bunds or placed onto final faces. | Up to 2031 (estimated) | Topsoil stripping is anticipated to be complete prior to 2031, when mining is expected to be completed.<br>Overburden generation is also anticipated to be complete prior to 2031, when mining is expected to be completed. |
| **Removal of product stockpiles** | Any remaining material stockpiles will be removed offsite.<br>If stockpile material remains it will be utilised in battering slopes to achieve the final landform. | Up to 2031 | Raw material exhausted from extraction area.<br>Mining has ceased. |
| **Water Management** | Dewatering of Pits 1, 2 and 3 will be undertaken in accordance with the Dewatering Infrastructure Plan and the Dewatering Management Plan.<br>If water is present in active pit sump, the volume will be reduced to permit access to pit for mining and then rehabilitation.<br>Water collected in the pit sump will be discharged, if required, when EPL criteria is met, until the final landform has a coverage of at least 70% and is not prone to sediment entrainment.<br>Clean water will be diverted around the disturbed area. | Up to 2027 | Water management will continue until mining has ceased and the void has ground coverage of at least 70%. |
| **Removal of Infrastructure** | Removal of roads not required in the final landform for rehabilitation and maintenance.<br>Removal of services not required in final landform. | Up to 2037 | Mining has ceased.<br>Infrastructure is no longer required for rehabilitation purposes. |

| Rehabilitation Activity | | Timing | Assumptions and Principles (Milestones) |
|---|---|---|---|
| **Backfilling Final Voids** | Overburden material will be utilised to assist in battering in pit slopes.<br>Importation of VENM and ENM to backfill voids.<br>Slopes will be lightly ripped where possible to key in overburden material. | Up to 2027- Pits 1, 2, and 3.<br>2032- Former stockpile area and areas outside the pits.<br>2037- Pit 3 extension. | Mining has ceased in target areas.<br>Water levels in the pit are lowered sufficiently to permit access to each final face. |
| **Topsoil Emplacement** | Topsoil material stored in bunds will be tested for suitability and ameliorated if required.<br>Final slopes will be lightly ripped where possible to key in topsoil material.<br>Topsoil bunds will be removed and reused on final surfaces. | 2023- Stored topsoil testing.<br>2023 to 2042 | Applicable when final slopes have been achieved.<br>Final slopes have been ripped.<br>Topsoil is suitable for target species. |
| **Establishment of Vegetation** | Seeding/planting of pasture species is undertaken on finished surfaces<br>Watering/Irrigation as required to assist establishment of vegetation. | 2023 to 2042 | Applicable where final slopes have been achieved.<br>Suitable topsoil has been spread on final surfaces available to date.<br>Watering/irrigation to occur after seeding/planting. |
| **Monitoring and Maintenance of Rehabilitation** | Monitor progress of rehabilitation areas.<br>Continue weed management and pest management.<br>Repair failed rehabilitation areas. | 2023 to 2042 | Completion of vegetation establishment. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Current Rehabilitation 2022** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **SIX** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q006_V1_F6 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

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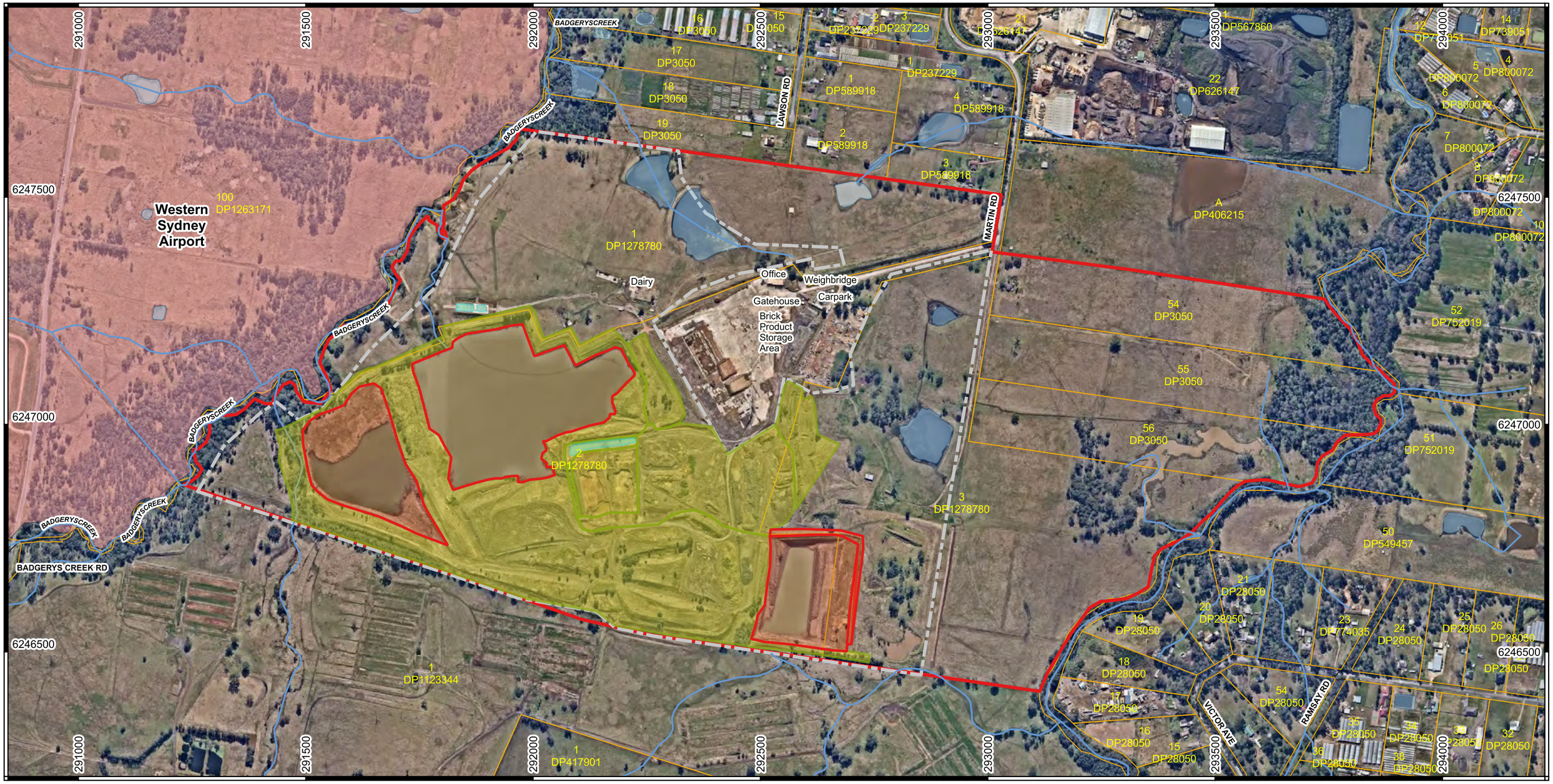


## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport

***Water Management Features***

- Farm Dam
- Creek/Major Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Rehabilitation Phase***

- Infrastructure Area
- Active Mining

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Proposed Rehabilitation 2022 to 2027** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **SEVEN** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q007_V1_F7 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

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## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport

***Water Management Features***

- Farm Dam
- Creek/Major Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Rehabilitation Phase***

- Active Mining
- Landform Establishment

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Proposed Rehabilitation 2027 to 2032** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **EIGHT** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q008_V1_F8 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

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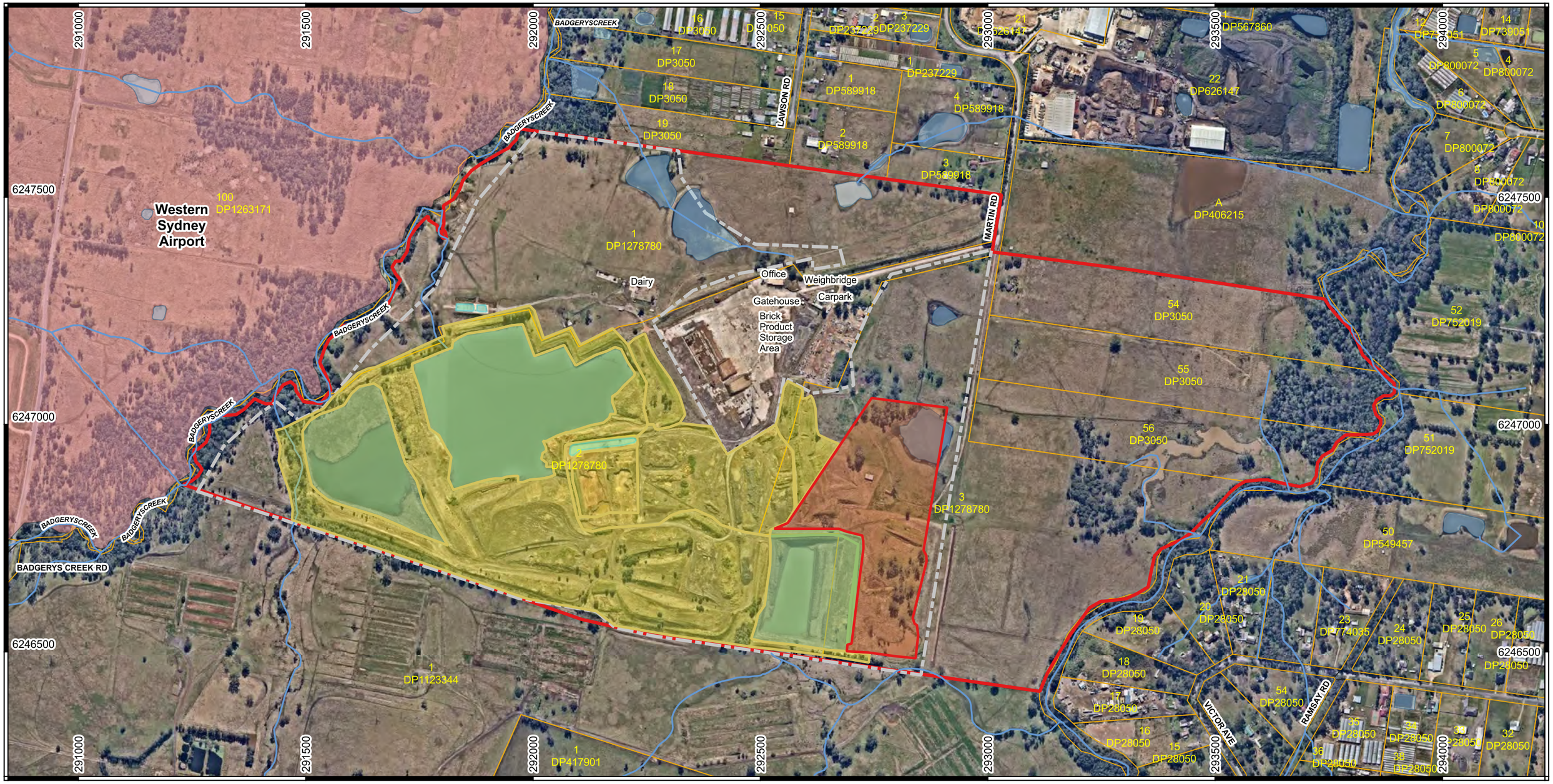


## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport

***Water Management Features***

- Farm Dam
- Creek/Major Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Rehabilitation Phase***

- Landform Establishment
- Ecosystem & Landuse Establishment
- Active Mining

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Proposed Rehabilitation 2032 to 2037** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **NINE** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q009_V1_F9 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

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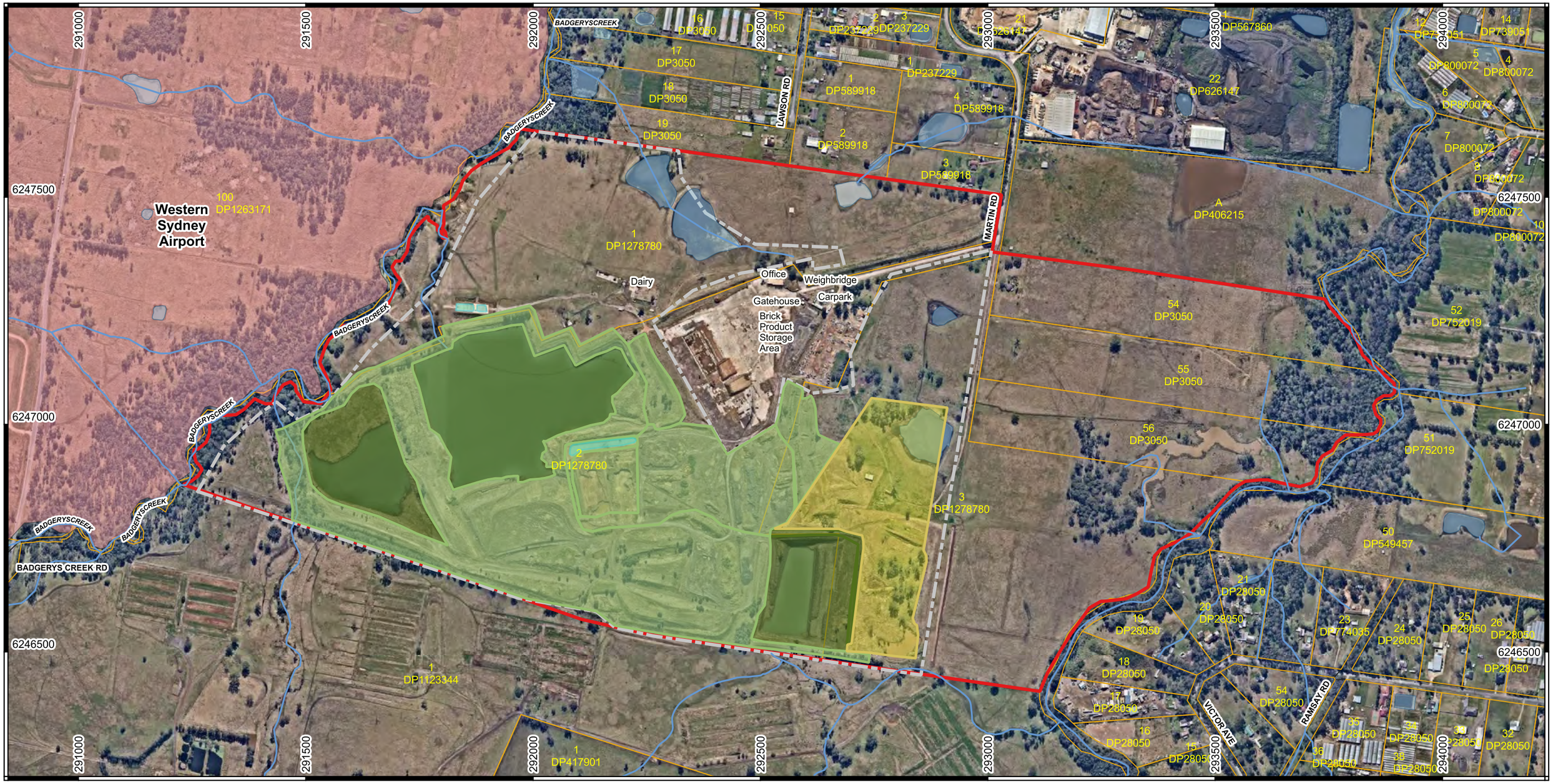


## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport

***Water Management Features***

- Farm Dam
- Creek/Major Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Rehabilitation Phase***

- Landform Establishment
- Ecosystem & Landuse Establishment
- Ecosystem & Landuse Development

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Proposed Rehabilitation Completion 2037 to 2042** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **TEN** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q010_V1_F10 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

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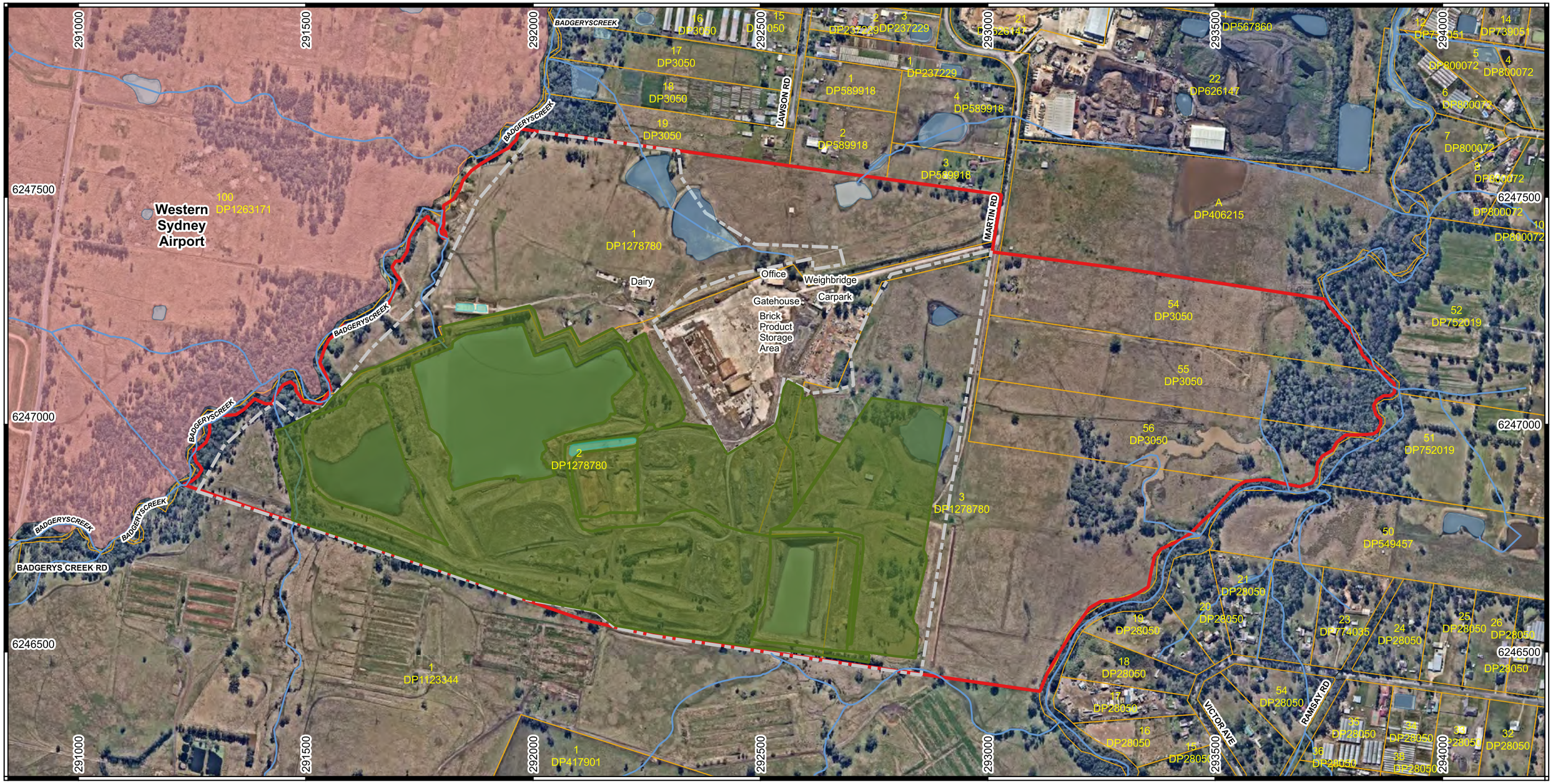


## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport

***Water Management Features***

- Farm Dam
- Creek/Major Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Rehabilitation Phase***

- Ecosystem & Landuse Development

## 6.2 PHASES OF REHABILITATION AND GENERAL METHODOLOGIES

### 6.2.1 Active Mining Phase

#### 6.2.1.1 Soils and Materials

##### *6.2.1.1.1 Soil Characterisation*

Soil data has been obtained from the eSPADE online database from NSW Office of Environment & Heritage. There were three local topsoil pH test sites: Badgerys Creek Road to the west (pH between 6 and 6.5), Pitt Street to the north (pH between 5.5 and 7.3) and Victor Avenue to the east (pH 6 and 6.5). This suite of results indicates a neutral to a slightly acidic topsoil. Ground water bores within the site range from a pH 6 to 7 which also indicate a neutral pH.

Soil characterisation results will be undertaken during the next reporting period (2023) and are to be incorporated into the rehabilitation risk assessment and this plan where appropriate. Results and recommendations of ongoing soil characterisations will also be discussed in future Annual Reviews and advice from a specialist will be sought to assist with the assessment of soil suitability.

##### *6.2.1.1.2 Topsoil Stripping and Storage*

Land clearing will be undertaken in future years to the southeast of the site, in Pit 3, as mining progresses into this area. The removal of trees impeding the progress of the mine will be required. Felled trees may be mulched to provide groundcover in rehabilitation of future industrial areas. Trees not used immediately will be stored in windrows around the perimeter of the site until suitable rehabilitation areas become available.

Prior to stripping all water management features will be constructed which include earth banks (Stormwater Collection Drains) to divert as much clean water as possible and capture the dirty water within the pit sump. Prior to stripping the vegetation will be sprayed for weeds to assist in reducing the weed content in topsoil that may be transferred to new rehabilitation areas.

Stripping will not occur when in either an excessively dry or wet condition. Grading or pushing soil into windrows with graders or dozers for later collection for loading into rear dump trucks by front-end loaders are examples of preferential less aggressive soil handling systems. This minimises compression effects of the heavy equipment that is often necessary for economical transport of soil material.

Where immediate reuse of the topsoil is not possible it will be stored appropriately on the perimeter of the site. That is, stockpiles of topsoil to be located at least five metres from areas of likely concentrated or high velocity flows, especially drainage lines and access roads. The surface of soil stockpiles should be left in as coarsely structured a condition as possible in order to promote infiltration and minimise erosion until vegetation is established, and to prevent anaerobic zones forming.

Topsoil stockpiles are not to exceed 2m in height, overburden stockpiles are kept less than 3 metres in height and are to be seeded with a temporary vegetation cover if stockpiles are to remain longer than 12 months. If necessary, earth banks or drains will be constructed to divert localised run-on.

Topsoil to a depth of 10 to 15cm will be stripped first with the subsoils, if found, to a depth of a further 20 to 30cm stripped and stored separately. The actual depth of stripping of each layer will be recorded and a total volume of topsoil and subsoils estimated, and an inventory kept. Each stockpile location will be logged. Barrier fencing will be installed to limit access to rehabilitated areas or the stockpiles. Management practices will be carried out to minimise areas being affected by wind and water erosion.

To date, topsoil and overburden not for immediate use in earth mound construction or rehabilitation has been stockpiled in perimeter bunds. It is planned to store any topsoil and overburden won from the land clearing in separate bunds around the perimeter of the site to provide a visual and acoustic screen.

The current stockpiles and bundwalls on the site have been assessed for suitability as brickmaking material. The stockpiles suitable for brickmaking will be transported off-site for use in PGH brickworks. Remaining overburden stockpiles will be used to back fill the voids. If a topsoil shortage is apparent, the shortfall for rehabilitation will be obtained vis the importation of VENM and/or ENM material.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Topsoil & Overburden Storage Locations** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **ELEVEN** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q011_V1_F11 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

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## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport
- 10 Material Stockpile
- 7 Overburden/Topsoil Stockpiled Material

***Water Management Features***

- Farm Dam
- Creek/Main Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

#### 6.2.1.2 Flora

When mining to the southeast is necessary, trees will be moved but kept on site for future rehabilitation and erosion minimisation.

Weed eradication and control will be undertaken; if noxious weeds are identified a qualified weed contractor will spray these.

Due to the highly disturbed nature of the site, it is unlikely that rare or endangered flora are present on site within the extraction footprint. There were no Endangered Ecological Communities identified in the EIS within the extraction footprint. Native vegetation to be removed is restricted to isolated paddocks trees and a patch of regrowth Forest Red Gum (in the Pit 4 Area) and would not significantly impact significant species. The removal of these trees will be offset by the proposed mitigation measures, in particular, rehabilitation of a 50-metre buffer along Badgerys Creek and South Creek.

The following measures are recommended to minimise potential impacts associated with tree removal:

- The canopy of the trees is to be visually inspected prior to clearing to assess for the presence of fauna.
- Where bird species are detected, the tree is to be nudged prior to felling to encourage the fauna to vacate the tree prior to felling. The trees will be left in situ until the birds leave the canopy.
- Felled trees will be left in-situ for at least 24 hours to allow fauna species to relocate. Ensure qualified personnel are on hand to check for wildlife and relocate them.
- Felled wood will be relocated to the remnant woodland (and not placed in piles) or chipped and used in rehabilitation areas.
- If any wildlife is inadvertently injured during the proposed works, WIRES or an accredited veterinarian will be contacted.
- A 50-metre buffer area will be provided along Badgerys Creek and the Badgerys Creek tributary. This area is to undergo rehabilitation works in accordance with the Rehabilitation Plan prepared as part of the EIS (AECOM 2010).
- Five native tree seedlings will be planted for each mature native tree that is removed. The plantings will be located adjacent to the riparian vegetation along Badgerys Creek and its tributary.

The dewatering of the existing voids presents a risk of impact on aquatic ecosystems within the voids and in the creeks to which discharge may occur. The Dewatering Management Plan (*Appendix H*) will include a program to monitor and report on the stream health, riparian vegetation and channel stability of creeks that could be affected by discharges.

Vegetation to be established on the site will be consistent with pasture species to provide sufficient temporary ground cover until future development of the industrial commences. Planting of vegetation is likely to be a combination of direct seeding and casting as appropriate. The newly planted vegetation will be watered, if required, in order to assist in establishment.

#### 6.2.1.3 Fauna

Fauna habitat values within the proposed quarry footprint are limited due to the degraded nature of the Project Site. There are no hollow bearing trees, fallen logs, leaf litter or dense understorey and groundcover. Within the vegetated areas on the property that occur outside the proposed quarry footprint, there are some scattered tree hollows (with a hollow entrance diameter of less than 20 cm) and some scattered fallen logs. Leaf litter is scarce. This vegetation is likely to provide foraging and shelter resources for common native species, particularly birds. The creeks and artificial waterbodies provide habitat for aquatic species such as ducks and frogs.

The EIS found that no threatened fauna species were recorded at the Project Site and none are considered to have potential habitat within the proposed development area.

Nevertheless, the mitigation measures to mitigate indirect impacts to the fauna on site will include:

- a speed limit of 20 km/h on unsealed internal roads;
- roads will be regularly maintained by managing vegetation to main visibility to prevent vehicle strike;
- The site is fenced with rural fencing to prevent incursions by livestock. Fencing will be maintained throughout the life of the project and rehabilitation activities; and
- If evidence of feral animal impacts on revegetation is noted, control measures such as rabbit proof fencing will be investigated. A baiting program may also be investigated with the appropriate authorities if required.

#### 6.2.1.4 Rock and Overburden Emplacement

Schedule 3, condition 37A & 37B of the consent states:

> *"Within 3 months of commencing quarrying operations in Pit 3, the Applicant must construct landscaped earthen bunds and plant vegetation screens (as shown conceptually in [consent] Appendix 3), to minimise the visual impacts of the development. The landscaped earthen bunds and plant vegetation screens must be maintained until the Pit 3 area has been fully rehabilitated.*
>
> *37B. Within 6 months of the Secretary being advised of the confirmed Eastern Ring Road alignment, as required under condition 25C of this Schedule, the Applicant must construct landscaped earthen bunds and plant vegetation screens around the brickmaking facility and raw material stockpile (as shown conceptually in Appendix 3), to minimise the visual impacts of the development. The landscaped earthen bunds and plant vegetation screens and must be maintained for the life of the development.'*

The remaining bund walls will be constructed from overburden or mid-burden materials encountered within the initial extraction of Pit 3 or imported VENM/ENM. It will be topsoiled using imported materials and vegetated utilising a diversity of local provenance tree species from the native vegetation community (or communities) that occur or once occurred on the site, and will minimise wildlife attraction, as described in the Visual Impact Management Plan.

Overburden not required for earth mound construction will be used within the site as cover material and to achieve the final landform profile. It is not anticipated that there will be any surplus overburden material.

#### 6.2.1.5 Waste Management

Historical activities on the site may have left a legacy of unsuitable materials within the pit voids and within the infrastructure and stockpile areas not covered by the Mining Lease. A Materials Management Plan (see Appendix F) will be prepared to ensure that surface water, backfilled material and imported soils, VENM and ENM are handled appropriately, do not pose a risk to human health or the environment and will be suitable for the proposed land use. The plan will provide procedures to appropriately quantify, classify, dispose of and report on potential contaminants. Overburden and other stockpiles stored on the site will be tested to ensure that it is suitable prior to be used for rehabilitation purposes. Any stockpiles of coal fines previously stored on the site for use in brickmaking will be assessed for a spontaneous combustion risk.

An Unexpected Finds Protocol (UFP) (see *Appendix F*) will be prepared, providing guidance in the event that future below ground excavations identify contaminated materials (e.g. asbestos, staining, odours). The UFP will outline procedures for handling, assessing and managing any contamination. If previously unidentified contaminated materials are encountered during construction, mining or rehabilitation activities, relevant statutory requirements, including potential soil testing and waste classification, will be complied with, and the material managed and disposed of appropriately, in accordance with the UFP.

The mine will produce only produce minor quantities of waste during continued mine operations:

- general waste, including putrescible waste such as minimal food scraps; and
- comingled recycling (from office activities and site employees);

General domestic waste is collected in rubbish bins and disposed of via a licensed waste disposal facility.

#### 6.2.1.6 Geology and Geochemistry

The site is underlain by the Bringelly Shales which occur within the Wianamatta Group. This sequence was formed predominantly as lagoonal – coastal marsh in the lower section of the 257-metre sequence grading up to terrestrial alluvial plains sediments (source: A Guide to the Sydney Basin; Herbert and Helby). This could indicate the lower depositional sequences could be affected by salty water and the upper by fresh.

The lithologies are predominantly Claystone, Siltstone, Laminite and Sandstone with minor coal laminae and carbonaceous claystones.

Espade web site has three local topsoil pH test sites: Badgerys Creek Road to the west (pH between 6 and 6.5), Pitt Street to the north (pH between 5.5 and 7.3) and Victor Avenue to the east (pH 6 and 6.5). This suite of results indicates a neutral to a slightly acidic topsoil. Ground water bores within the site range from a pH 6 to 7 which also indicate a neutral pH.

Overburden consists of topsoil, sub soil and clay with vegetation these are stored and used in rehabilitation. Inter-burden consists of Sandstone, Laminite and any lithology with high percentages of Siderite and Calcite.

A detailed assessment of all the identified lithologies will be undertaken to better understand their individual chemistry and the potential risk to rehabilitation.

#### 6.2.1.7 Material Prone to Spontaneous Combustion

There is no material on the site that is prone to spontaneous combustion.

#### 6.2.1.8 Material Prone to Generating Acid Mine Drainage

There is no material on the site that is prone to generating acid mine drainage.

#### 6.2.1.9 Ore Beneficiation Waste Management

There is no ore beneficiation waste produced on the site.

#### 6.2.1.10 Erosion and Sediment Control

A Soil and Water Management Plan (SWMP) has been prepared (see Appendix J).

### 6.2.1.11 Ongoing Management of Biological Resources for Use in Rehabilitation

#### *6.2.1.11.1 Topsoil Management*

Topsoil stripping and storage management is discussed in *Section 6.2.1.1.2*. Topsoil will be analysed prior to respreading to determine if amelioration measures are required such as lime, fertilisers or other nutrients to make the soil suitable for the species to be planted.

Prior to re-spreading stockpiled topsoil onto reshaped overburden, an assessment of weed infestation on stockpiles will be undertaken to determine if individual stockpiles require herbicide application and / or "scalping" of weed species prior to topsoil spreading. If insufficient on-site topsoil material is available, VENM may be imported to meet the shortfall.

#### *6.2.1.11.2 Methods of Propagation*

Pasture seed will be required to be purchased to meet the requirements of a temporary grass cover until future industrial development commences. Certified seeds will be preferential. Consultation with an ecologist will be sought determine the most effective methods for propagating plant species, although broadcasting or direct seeding is most likely.

### 6.2.1.12 Mine Subsidence

There are no areas of mine subsidence that require management on the site.

### 6.2.1.13 Management of Potential Cultural and Heritage Issues

An AHIMS Web Services search conducted by Artefact Heritage Pty Ltd in 2018 (*CSR Advanced Manufacturing Hub; Heritage Management Plan)* showed 30 registered sites within the vicinity of a further study area (to the east and outside the mine lease) and no recorded or declared Aboriginal sites on the study area. A site survey located one new archaeological site, an Isolated Find and the study area was confirmed as of moderate archaeological potential. Test excavation identified several scattered finds. The results of the investigations are included in the Heritage Management Plan (see *Appendix E*). Specific management measures are also outlined in the plan.

### 6.2.1.14 Exploration Activities

Exploration activities will be limited in nature and are likely to include costeaning within existing mining footprint and the Pit 3 portion of the mining lease. There will be no rehabilitation of exploration activities in these areas as they will be subject to extraction activities prior to final site rehabilitation.

## 6.2.2 Decommissioning

### 6.2.2.1 Site Security

Vandalism and dumping poses a risk to both operational environmental impacts and rehabilitation activities. There has been instances of dumping of hazardous materials on the site in the past. It is expected that the increased activity and security on the site will reduce the chances for vandalism and dumping. The site is fully fenced with alarms and security cameras throughout. Access is gained via a locked gate at the entrance.

Visitors onto the site must report to the site supervisor. All visitors must be always accompanied by PGH personnel.

### 6.2.2.2 Infrastructure to be Removed or Demolished

Demolition and/or construction activities were described in the Infrastructure Management Plan and works were completed in early 2022.

#### *6.2.2.2.1 Demolition and/or Construction of the Brickworks*

The brick making facility infrastructure, parking and storage facilities are not within the Mining Lease boundaries. Demolition and/or construction activities within that portion of the site were described in an Infrastructure Management Plan. This plan included conducting a hazardous materials survey on the structures prior to demolition or alteration. A detailed stormwater drainage design was submitted to Council for these works. In accordance with Schedule 2 conditions 13 and 14, all building construction and alterations were undertaken in accordance with Building Code of Australia, and all demolition work was undertaken in accordance with the Australian Standard AS2601.

The demolition works of the brickworks was completed in early 2022.

### 6.2.2.3 Buildings, Structures and Fixed Plant to be Retained

Some structures on the site are be retained such as the former office and amenities buildings. These are located off the mine lease. Water management features on the mine lease may be retained to facilitate construction of future industrial areas.

### 6.2.2.4 Management of Carbonaceous/Contaminated Material

There is no carbonaceous or contaminated material remaining on site.

### 6.2.2.5 Hazardous Materials Management

There are no hazardous materials stored on the site. During mining, hauling and rehabilitation activities, contractors may bring fuel or oils onto the site via mobile equipment. Mobile vehicles are required to carry spill kits and a spill kit is located at the site office.

Site management processes will periodically review conformance with these controls and standards.

### 6.2.2.6 Underground Infrastructure

There is no underground infrastructure on the mining lease.

### 6.2.3 Landform Establishment

#### 6.2.3.1 Water Management Infrastructure

##### *6.2.3.1.1 Pit Dewatering Options*

The water contained within the voids is required to be dewatered under an Enforceable Undertaking agreement with Natural Resources Access Regulator (NRAR). Surface water captured on the site is also required to be prevented from entering the voids, excepting incident rainfall received over the water bodies.

Three options for dewatering were considered in the Mod 4 EA which included:

- Onsite reuse of water for dust suppression and irrigation:
- Transfer of water to nearby sites; and
- Discharge of water to waterways.

According to the EA total demand for dust suppression and irrigation will range from approximately 180 ML/year at the start of the project to 120 ML/year following initial dewatering of pits 1, 2 and 3. This represents approximately 20% of water to be dewatered from Pit 1 in Year 1. Therefore, additional uses for the water need to be investigated.

Ongoing use of water for dust suppression and irrigation will use 100-200 ML/year, which will be sufficient in most years except wet years, where it would use approximately 16% of the water requiring management.

Potential offsite users were investigated as onsite use may not manage all excess water.

PGH investigated the provision of pit water to WSA for dust suppression during major earthworks. Initial WSA construction activities will need 6-10 ML/day, with an average daily use of 5 ML. Water would be supplied via pipe bored under Badgerys Creek. The pipe would terminate in a standpipe, where trucks and carts will fill up as required. Dewatering of the voids must be undertaken in accordance with the Dewatering Infrastructure Plan (*Appendix G*) and the Dewatering Management Plan (*Appendix H*).

As a last resort, pit water discharge to Badgerys Creek was investigated in the Mod 4 EA.

*'The optimal discharge arrangement/sequence would be:*

- *Pump water from Pits 2 and 3 to Pit 1.*
- *Pump water from Pit 1 to Badgerys Creek at 100,000 L/hour using a single pump and reducing the flow rate for ongoing dewatering (Refer to Figure 3.2 for proposed discharge point location).*
- *Extending initial dewatering from 12 to 14 months given the additional Pit 2 and 3 water requiring discharge*.'

Water will need to be transferred between pits after initial dewatering as different sections of pits are extracted. This could increase the risk of turbidity and total suspended solids and, therefore, will be transferred to the Sediment Basin to the north of Pit 1 for treatment prior to reuse, transfer to WSA or discharge to the creek via an existing vegetated drainage line.

The Soil and Water Management Plan (see *Appendix J*) outlines the discharge water quality criteria. Any future EPL discharge water quality criteria is expected to be similar. The proposed concentration limits are:

The pH is between 6.5 to 8.0; and

Turbidity is <150NTU.

##### *6.2.3.1.2 Other Infrastructure*

As described above, surface water captured over the disturbed area, excluding the voids, must be retained, and treated, if required, and returned to the downstream environment.

A new Treatment Dam has been constructed to the north and adjacent to Pit 1, described above, and is designed to received pumped water from the other Sediment Dams, constructed as required, over the disturbed site. Currently rainfall received on the former stockpile and overburden storage areas is directed to a sediment dam located between

Pit 1 and the storage area. From there it is pumped via pipes to the Treatment Dam and discharged to Badgerys Creek. The locations and number of the Sediment Dams may vary depending on the progress of the backfilling of the voids. It is anticipated that the dams will be retained beyond the relinquishment of the mine lease to service future industrial development works.

Sediment and erosion controls are discussed in the Soil and Water Management Plan (see Appendix J) and as updated from time to time.

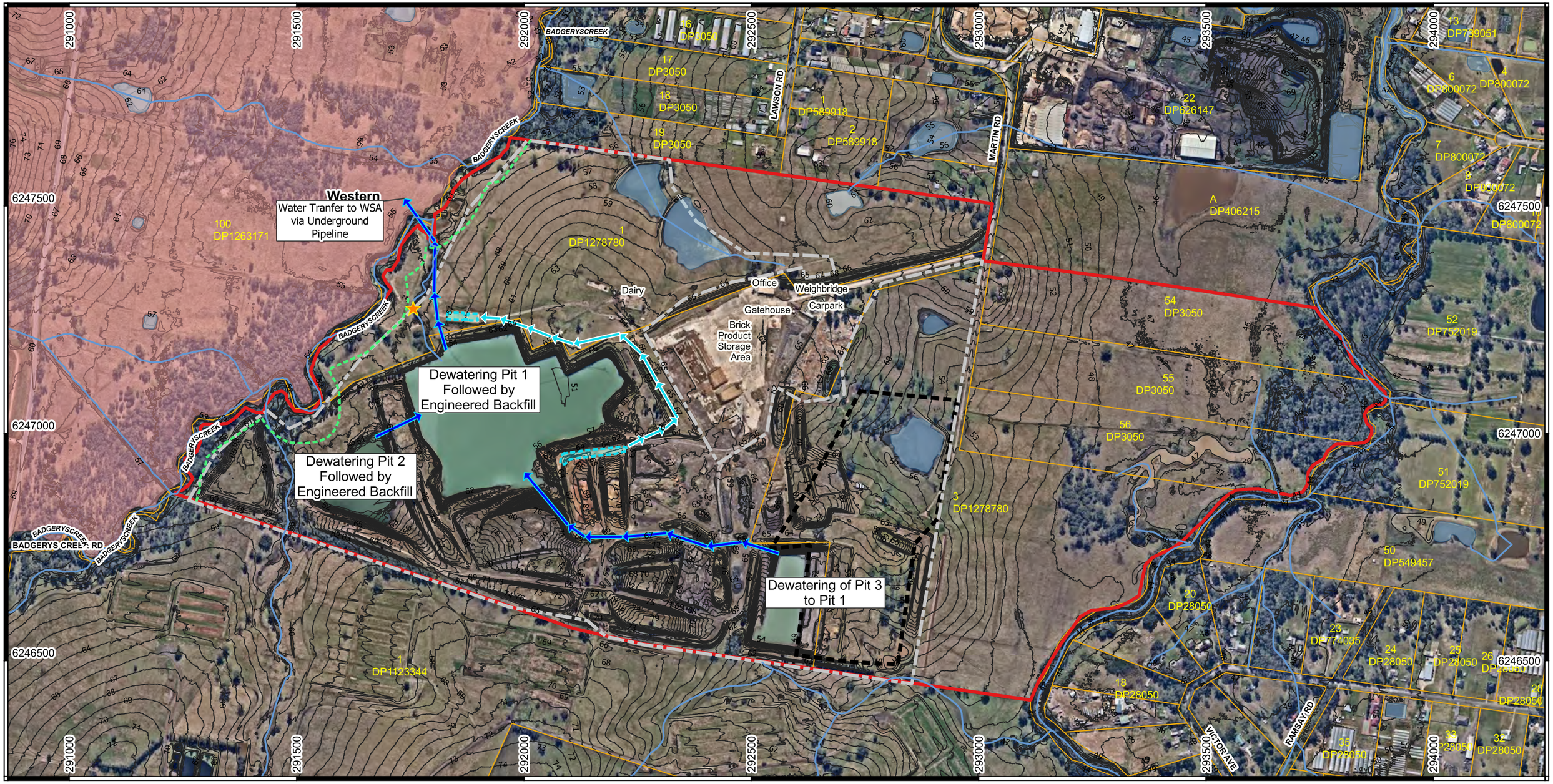
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plan of:** | **Rehabilitation Management Plan for Badgerys Creek Clay/Shale Mine 2022 - Water Management** | **Location:** | Martins Road, Badgerys Creek, NSW | **Source:** | nearmap - Image Date 24/08/2022 Zone MGA 56 & Sixmaps Spatial Data | **Plan By:** | TO/JD |
| **Figure:** | **TWELVE** | **Council:** | Liverpool City Council | **Survey:** | Client Supplied & ELVIS Spatial Data | **Project Manager:** | TO |
| **Version/ Date:** | V1 2/12/2022 | **Tenure:** | ML 1771 (Act 1992) | **Projection:** | GDA2020/MGA Zone 56 EPSG:7856 | | |
| **Our Ref:** | 12412_BB_RMP2022_Q012_V1_F12 | **Client:** | CSR Group Property Ltd | **Contour Interval:** | 1m | | |

N

0 100 200 300 400 m

vgt environmental compliance solutions and laboratories

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.




## Legend

***Feature/Domain***

- Property Boundary
- Lot Boundary (Cadastral)
- Road Corridor
- Western Sydney Airport
- 1m Contour
- Mod 3 & 4 Consent Pit 3 Extraction Area
- Creek/Main Drainage Line

***Mining Tenement***

- Authority Boundary (ML1771 (Act 1992))

***Water Management Features***

- Farm Dam
- Sediment Basin
- Water Transfer to WSA
- Water Transfer
- Surface Water Monitoring Location
- Discharge Point
- 60m Creek Buffer

#### 6.2.3.2 Final Landform Construction: General Requirements

Backfilling of the voids will be in accordance with the Fill Management Plan (see *Appendix F*).

Generally, the voids will be backfilled with VENM and ENM to approximately original ground level and compacted to a criteria that is suitable for the future industrial uses. The backfilled voids will be geotechnically and hydraulically stable when the required compaction criteria are met. Visual and acoustic bunds will be constructed with slope batters of no greater than 3H:1V to maintain geotechnical and hydraulic stability.

#### 6.2.3.3 Final Landform Construction: Reject Emplacement Areas and Tailings Dams

There are no reject emplacement areas or tailing dams on the site.

#### 6.2.3.4 Final Landform Construction: Final Voids, Highwalls and Low Walls

Backfilling of the voids with VENM and ENM will eliminate any voids, highwalls and low walls.

#### 6.2.3.5 Construction of Creek/ River Diversion Works

There are no creek or river diversions on the site.

### 6.2.4 Growth Medium Development

Where topsoil resources allow, topsoil will be spread to a nominal depth of 100 mm (unless studies indicate an alternative depth) on all re-graded subsoils. Subsoils will be emplaced first over the overburden/VENM/ENM material used to create the final landform. The depth of subsoils will aim to replicate that of the original soil profile. Mulching of vegetation removed during land clearing may be used to assist in developing the growth medium. VENM material may be required to be imported if a topsoil shortfall is identified.

The existing topsoil and overburden are suitable for rehabilitation but may require some amelioration, depending on the vegetation species selected. Soil testing would be undertaken prior to permanent revegetation and advice from a suitably qualified specialist would be sought. Soil ameliorants would be added if recommended by soil testing results to provide a suitable soil medium for the growth of the targeted species and ecosystems. Topsoil will be spread, treated with fertiliser and seeded in one consecutive operation, to reduce the potential for topsoil loss to wind and water erosion.

Thorough seedbed preparation will be undertaken to ensure optimum establishment and growth of vegetation. All topsoiled areas will be lightly contour ripped (after topsoil spreading) to create a ‘key’ between the soil and the spoil. Ripping will be undertaken on the contour. Best results will be obtained by ripping when soil is moist and when undertaken immediately prior to sowing. The respread topsoil surface will be scarified prior to, or during seeding, to reduce run-off and increase infiltration. This can be undertaken by contour tilling with a fine-tyned plough or disc harrow.

Establishment of the growth medium is preferable in late winter early spring to enable planting to occur during spring to give the vegetation the optimum growing conditions. Weed control measure will continue to be undertaken as required.

### 6.2.5 Ecosystem and Land Use Establishment

Sowing methods may be via broad casting or direct drilling. Seedlings will be directly planted. Consideration will be given to short lived sterile grasses to establish ground cover and temporary stabilising of soil whilst the target cropping species establish. Five local native trees shall be planted for each mature native tree that is removed. The replacement trees shall consist of a diversity of local provenance tree species from the native vegetation community (or communities) that occur, or once occurred on the site. The plantings shall be located adjacent to the riparian vegetation along South Creek, Badgerys Creek and its tributary. Advice from an agronomist will be sought to determine the most suitable species. Bunds will be vegetated with grass species and native trees to provide further visual screening. Vegetation will be selected that will not attract wildlife, as far as is practical, in order to minimise impacts to the Western Sydney Airport.

Plant guards may be considered if necessary to ensure the establishment of some tubestock within the riparian areas and will be erected at the time of planting. These will be regularly inspected to ensure that they are providing sufficient protection for the juvenile plants and replaced when necessary.

Watering of the rehabilitated areas may be undertaken via the use of a water cart if required i.e. prolonged dry periods. Once established the grassland species will not require continued watering. Regular monitoring and control for weeds will continue and will be of a similar frequency requirement to neighbouring pastures.

### 6.2.6 Ecosystem and Land Use Development

- Weed monitoring will continue and will confirm that after 2 years the non-target species (weeds) represents less than 20% of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities;
- Inspection of dams, drains and other water management structures will be undertaken monthly for the first six months then six monthly until completion criteria are achieved. Repairs will be undertaken as required;
- Inspections to identify any land instability such as mass movement to be undertaken and if identified, advice from geotechnical experts to be sought and repairs effected;
- Vegetation will be monitored and areas where establishment has failed will be identified and assessed by an agronomist or similar. Remediation will be undertaken as advised. Remediation may include application of ameliorants, reseeding, mulching etc;
- Monitoring of soil parameters to determine continued suitability for developing ecosystem. Application of ameliorants to be undertaken, including fertilisation if required. Routine Soil Test (bulked soil sample 0-10 cm) may include but no limited to;
    - Total Carbon (TC), Total Nitrogen (TN), Organic Matter, TC/TN Ratio; Bray I and II Phosphorus; Colwell Phosphorus; Available cations (Calcium, Magnesium, Potassium, Ammonium, Nitrate, Phosphate, Sulphur); Available Micronutrients (Zinc, Manganese, Iron, Copper, Boron, Silicon); Exchangeable (Sodium, Potassium, Calcium, Magnesium, Hydrogen, Aluminium, Cation Exchange Capacity); pH and EC (1:5 water); Basic Colour, Basic Texture;
- Inspection and repair of fencing as appropriate;
- Inspection and repair of access tracks as appropriate; and
- Bushfire controls are to continue and monitored for effectiveness.

## 6.3 REHABILITATION OF AREAS AFFECTED BY SUBSIDENCE

There are no areas affected by subsidence on the site.

# 7 Rehabilitation Quality Assurance Process

*Table 18. Rehabilitation Quality Assurance Process*

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| **Active Mining (Land Clearing)** | | | |
| ***Topsoil Stockpile Management***<br>• Slopes no greater than 3H:1V.<br>• Topsoil stockpile height no greater than 2 metres.<br>• No stockpiles to be constructed in areas of concentrated flows.<br>• Record volumes and locations of topsoil stockpiles.<br>• Volume of material, topsoil and subsoil required for application to current and future disturbance areas<br>• Chronology of treatments (e.g. weed control, application of cover crop) undertaken on the stockpile.<br>• Achieve groundcover factor of at least 0.05 (70% coverage) on stockpiles with long term inactivity.<br>• Estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material, topsoil and subsoil deficits. | Mine Manager<br>Surveyor | Survey data of topsoil stockpiles.<br>GIS data and plans.<br>Soil inventory.<br>Reports from weed contractors.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Overburden Stockpile Management***<br>• Slopes no greater than 3H:1V.<br>• Stockpile height no greater than 3 metres.<br>• No stockpiles to be constructed in areas of concentrated flows.<br>• Record volumes and locations of overburden stockpiles.<br>• Volume of material, overburden required for application to current and future disturbance areas<br>• Chronology of treatments (e.g. weed control, application of cover crop) undertaken on the stockpile.<br>• Achieve groundcover factor of at least 0.05 (70% coverage) on stockpiles with long term inactivity.<br>• Estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material deficits. | Mine Manager<br>Surveyor | Survey data of overburden stockpiles.<br>GIS data and plans.<br>Soil inventory.<br>Reports from weed contractors.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Flora and Fauna***<br>• Trees are tapped with the bucket to alert fauna and then laid down with an ecologist on site to assist any injured wild life. | Mine Manager | Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Waste***<br>• Domestic type wastes will be stored in a small, designated waste storage area within the site.<br>• Wastes will be removed by licenced contractor. | Mine Manager | Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| ***Erosion***<br>• Consider benched mining design on highwalls.<br>• Slopes of major tracks are to be <10 degrees or have cross drains/banks installed.<br>• Where unsuitable soils are present, tracks are to be stabilised with crushed bricks, concrete, gravel or similar.<br>• Track walk or lightly rip exposed surfaces to encourage infiltration of rainwater.<br>• Achieve ground coverage factor of at least 0.05 (70%) via vegetation, mulch or similar within 30 days of completion of works on rehabilitated areas. | Mine Manager | Survey data.<br>GIS data and plans.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Sediment***<br>• Sediment dams designed for 90th % 5-day storm event.<br>• Capacity of sediment dams to be monitored for available capacity.<br>• Drains to be designed for 1 in 10-year design storm.<br>• Spillways to be designed for 1 in 100-year design storm.<br>• Receiving capacity of sediment dams to be maintained by reuse of water on-site for dust suppression and discharge when required in accordance with EPL conditions.<br>• Drains to be installed to direct dirty surface water to sediment dams.<br>• Installation of silt fences around disturbed area as appropriate.<br>• No silt fences to be constructed in areas of concentrated flows.<br>• Upstream clean water to be diverted via diversion drains or bunds as far as possible. | Mine Manager | Survey data.<br>GIS data and plans.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Wind Erosion***<br>• Water cart to be engaged during mining, hauling and rehabilitation activities.<br>During adverse conditions:<br>• Cease mining or hauling activities in adverse wind conditions; and<br>• Increase water cart frequency | Mine Manager | Weather data.<br>Watercart usage/pumping volumes.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Water Quality***<br>• Water quality discharged meets the objective of Section 120 of the Protection of the Environment Operations Act 1997 and EPL 684 conditions. In particular, 'downstream' water quality monitoring will record pH between 6.5 to 8.5 and total suspended solids <50mg/L. | Mine manager<br>NATA Accredited laboratory | Water testing reports.<br>EPL annual returns | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| **Active Mining (Production)** | | | |
| ***Topsoil Stockpile Management***<br>• Slopes no greater than 3H:1V.<br>• Topsoil stockpile height no greater than 2 metres.<br>• No stockpiles to be constructed in areas of concentrated flows.<br>• Record volumes and locations of topsoil stockpiles.<br>• Volume of material, topsoil and subsoil required for application to current and future disturbance areas<br>• Chronology of treatments (e.g. weed control, application of cover crop) undertaken on the stockpile.<br>• Achieve groundcover factor of at least 0.05 (70% coverage) on stockpiles with long term inactivity.<br>• Estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material, topsoil and subsoil deficits. | Mine Manager<br>Surveyor | Survey data of topsoil stockpiles.<br>GIS data and plans.<br>Soil inventory.<br>Reports from weed contractors.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Overburden Stockpile Management***<br>• Slopes no greater than 3H:1V.<br>• Stockpile height no greater than 3 metres.<br>• No stockpiles to be constructed in areas of concentrated flows.<br>• Record volumes and locations of overburden stockpiles.<br>• Volume of material, overburden required for application to current and future disturbance areas<br>• Chronology of treatments (e.g. weed control, application of cover crop) undertaken on the stockpile.<br>• Achieve groundcover factor of at least 0.05 (70% coverage) on stockpiles with long term inactivity.<br>• Estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material deficits. | Mine Manager<br>Surveyor | Survey data of overburden stockpiles.<br>GIS data and plans.<br>Soil inventory.<br>Reports from weed contractors.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Waste***<br>• Domestic type wastes will be stored in a small, designated waste storage area within the site.<br>• Wastes will be removed by licenced contractor. | Mine Manager | Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Erosion***<br>• Consider benched mining design on highwalls.<br>• Slopes of major tracks are to be <10 degrees or have cross drains/banks installed.<br>• Where unsuitable soils are present, tracks are to be stabilised with crushed bricks, concrete, gravel or similar.<br>• Track walk or lightly rip exposed surfaces to encourage infiltration of rainwater.<br>• Achieve ground coverage factor of at least 0.05 (70%) via vegetation, mulch or similar within 30 days of completion of works on rehabilitated areas. | Mine Manager | Survey data.<br>GIS data and plans.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| ***Sediment***<br>• Sediment dams designed for 90th % 5-day storm event.<br>• Capacity of sediment dams to be monitored for available capacity.<br>• Drains to be designed for 1 in 10-year design storm.<br>• Spillways to be designed for 1 in 100-year design storm.<br>• Receiving capacity of sediment dams to be maintained by reuse of water on-site for dust suppression and discharge when required in accordance with EPL conditions.<br>• Drains to be installed to direct dirty surface water to sediment dams.<br>• Installation of silt fences around disturbed area as appropriate.<br>• No silt fences to be constructed in areas of concentrated flows.<br>• Upstream clean water to be diverted via diversion drains or bunds as far as possible. | Mine Manager | Survey data.<br>GIS data and plans.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Wind Erosion***<br>• Water cart to be engaged during mining, hauling and rehabilitation activities.<br>During adverse conditions:<br>• Cease mining or hauling activities in adverse wind conditions: and<br>• Increase water cart frequency | Mine Manager | Weather data.<br>Watercart usage/pumping volumes.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |
| ***Water Quality***<br>• Water quality discharged meets the objective of Section 120 of the Protection of the Environment Operations Act 1997 and EPL 684 conditions. In particular, 'downstream' water quality monitoring will record pH between 6.5 to 8.5 and total suspended solids <50mg/L. | Mine manager<br>NATA Accredited laboratory | Water testing reports.<br>EPL annual returns | Annual Rehabilitation Report<br>Section 8.3<br>See Section 11 |

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| **Decommissioning** | | | |
| ***Infrastructure (Retained)***<br>• Damage to access tracks has been repaired and stabilised.<br>• Slopes of major tracks <10° or have cross drains/banks installed. Where unsuitable soils are present, tracks to be stabilised with crushed bricks, concrete, gravel or similar.<br>• Roads reduced in width to that suitable for final land use.<br>• Where applicable, necessary approvals are in place (e.g. development consent under the Environmental Planning and Assessment Act 1979) where buildings and infrastructure are to be retained as part of final land use.<br>• The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use. | Mine Manager<br>Structural Engineer<br>Surveyor | Survey data.<br>Structural reports<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |
| ***Infrastructure (Removed)***<br>• Removal of all services (power, water, communications) that have been connected on the site as part of the operation.<br>• Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, and loading facilities, office complex, portable offices, exploration core samples, camp facilities, storage racks, samples.<br>• Removal of all water management infrastructure (including pumps, pipes and power). | Mine Manager | Utility service disconnection record / notification.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |
| ***Overburden and Stockpile Areas***<br>• All overburden stockpiles are removed and or incorporated into the final landform. | Mine Manager | Survey data.<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |
| ***Waste***<br>• All rubbish/ waste materials removed from site.<br>• Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999).<br>• Excess sludge/material has been removed from surface water dams. | Mine Manager<br>Land Contamination Consultant<br>EPA Accredited Auditor | Contamination Remediation Report<br>Site Contamination Audit Report<br>Site Audit Statement (where required)<br>Photography and site inspections reports. | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| **Landform Establishment** | | | |
| • Slopes are no greater than 3 horizontal to 1 vertical.<br>• Slope Lengths shall not exceed 80 metres before being broken by earth banks or similar.<br>• Sediment dams designed for 90th % 5-day storm event.<br>• Capacity of sediment dams to be monitored for available capacity.<br>• Drains to be designed for 1 in 10-year design storm.<br>• Spillways to be designed for 1 in 100-year design storm.<br>• Drains to be installed to direct dirty surface water to sediment dams prior to vegetation establishment.<br>• Installation of silt fences around disturbed area as appropriate.<br>• No silt fences to be constructed in areas of concentrated flows.<br>• High risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design.<br>• Final landform conforms to the approved final landform.<br>• Overburden material stored on site has been utilised to achieve the final landform.<br>• Water quality discharged meets the objective of Section 120 of the Protection of the Environment Operations Act 1997 and EPL 684 conditions. In particular, 'downstream' water quality monitoring will record pH between 6.5 to 8.5 and total suspended solids <50mg/L. | Mine Manager<br>Earth moving contractor<br>CPESC<br>Surveyor<br>NATA Accredited laboratory | Engineering drawings<br>Survey data.<br>Photography and site inspections reports.<br>Topsoil and overburden material inventory<br>Water testing results | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |

| Key Actions | Responsibilities | Records | Review |
|---|---|---|---|
| **Growth Medium Development** | | | |
| • The re-established topsoil / subsoil substrate is capable of supporting the targeted cropping/grassland regime on a sustained basis. Analysis to determine suitability may include:<br>o Total Carbon (TC), Total Nitrogen (TN), Organic Matter, TC/TN Ratio; Bray I and II Phosphorus; Colwell Phosphorus; Available cations (Calcium, Magnesium, Potassium, Ammonium, Nitrate, Phosphate, Sulphur); Available Micronutrients (Zinc, Manganese, Iron, Copper, Boron, Silicon); Exchangeable (Sodium, Potassium, Calcium, Magnesium, Hydrogen, Aluminium, Cation Exchange Capacity); pH and EC (1:5 water); Basic Colour, Basic Texture.<br>• Ameliorants to be applied to topsoil material if required as identified by testing.<br>• A topsoil established of at least 100 millimetres thick, in accordance with the consent, (unless studies determine otherwise) and comprising clean soils, which can include compost to help with vegetation establishment and growth.<br>• Imported topsoil (if required) conforms to consent conditions and is certified in accordance with EPA requirements.<br>• Track walk or lightly rip exposed surfaces to encourage infiltration of rainwater. | Mine Manager<br>Earth moving contractor<br>NATA Accredited laboratory<br>Agronomist or similar | Photography and site inspections reports.<br>Topsoil and overburden material inventory<br>Soil testing results | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |
| **Ecosystem and Landuse Establishment** | | | |
| • Advice from an agronomist will be sought to determine the most suitable species.<br>• Seeds for use in rehabilitation will be certified where possible.<br>• Reseeding of the final landform with suitable grassland species will be undertaken by direct seeding where terrain permits or spray emulsion<br>• Watering of the rehabilitated areas may be undertaken via the use of a water cart if required i.e. prolonged dry periods.<br>• Regular monitoring and control for weeds will continue and will be of a similar frequency requirement to neighbouring pastures. | Mine Manager<br>Agronomist or similar<br>Weed/pest control contractor | Photography and site inspections reports.<br>Water testing results<br>Seed viability certificates<br>Water cart volumes and frequency<br>Weather data | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |
| **Ecosystem and Landuse Development** | | | |
| • Total foliage cover is greater than or equal to 70%.<br>• Monitoring confirms that after 2 years the non-target species (weeds) represents less than 20%of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities.<br>• Rural fences and gates installed around disturbed area to protect rehabilitation areas.<br>• Feral animal controls will be implemented if required.<br>• Minimal erosion or land instability evident that would not require moderate to significant ongoing management and maintenance works.<br>• Water quality discharged meets the objective of Section 120 of the Protection of the Environment Operations Act 1997 and EPL 684 conditions. In particular, 'downstream' water quality monitoring will record pH between 6.5 to 8.5 and total suspended solids <50mg/L. | Mine Manager<br>NATA Accredited laboratory<br>Agronomist or similar<br>Weed/pest control contractor | Photography and site inspections reports.<br>Water testing results | Annual Rehabilitation Report<br>Decommissioning Report<br>See Section 11<br>Section 8.3 |

# 8 Rehabilitation Monitoring Program

~~5.3 PROPOSED MONITORING PROGRAM~~

~~To monitor the progress of rehabilitation works towards the rehabilitation objectives of the project site, a monitoring program, as presented within Table 4, is to be implemented.~~

~~Table 4 Proposed monitoring program and recommended frequency~~

| ~~Rehabilitation Aspect~~ | ~~Monitoring Activity~~ | ~~Proposed Frequency~~ |
|---|---|---|
| ~~Safety~~ | ~~Visual inspection of site for hazards.~~ | ~~6 monthly~~ |
| ~~Landform Stability~~ | ~~Visual inspection of site for evidence of erosion and confirmation of performance of water management structures.~~ | ~~6 monthly~~ |
| ~~Water Quality~~ | ~~Hand held water quality testing by qualified professional at 3 locations.~~ | ~~Quarterly and immediately after significant events (event based)#~~ |
| ~~Land Function~~ | ~~Visual inspection of revegetation progress.~~<br>~~Photographic record of progress.~~ | ~~6 monthly~~ |
| ~~Compatibility with surrounding land function~~ | ~~Visual inspection of revegetation progress. Photographic record of progress.~~<br>~~Visual inspection of site to confirm if any spraying, seeding of planting program has taken. Photographic record of progress.~~<br>~~Comparative assessments with adjoining land.~~ | ~~6 monthly~~<br>~~Once – 6 months after spraying.~~ |

~~# Event based monitoring will occur one day subsequent to any significant rainfall event, defined as a 1 in 10 year storm event. Results after event based monitoring would be reviewed to determine if additional on-site monitoring might be required in the short-medium term.~~

~~It is recommended that three monitoring locations within Badgerys Creek (upstream, downstream and at discharge point) be identified and sampled in accordance with the regime presented in Table 4.~~

~~This monitoring program is to be implemented from the approval of this Rehabilitation Management Plan and sustained until the mining lease (once obtained) for the project site has been relinquished (See Section 6).~~

## 8.1 ANALOGUE SITE BASELINE MONITORING

Control analogue sites will be identified in consultation with a MEG representative and person(s) suitably qualified in flora and landform assessment. It is expected that these sites will be used as a comparison to assist in determining whether the objectives relating to slope stability and vegetation coverage have been achieved. Progress towards identifying these sites will be reported in the annual review.

## 8.2 REHABILITATION ESTABLISHMENT MONITORING

This section summarises monitoring to be undertaken during the commencement of Ecosystem and Landuse Establishment phase of rehabilitation.

*Table 19. Rehabilitation Establishment Inspection Regime*

| Monitoring | Frequency | Records |
|---|---|---|
| **Topsoil/Subsoil suitability testing for key parameters.** | 6 monthly for the first 12 months.<br>Yearly for the next 2 years. | NATA laboratory results. |
| **Topsoil/Subsoil depth measurements to ensure sufficient depth emplaced and maintained.** | 6 monthly for the first 12 months.<br>Yearly for the next 2 years. | Photography and/or inspection checklist.<br>Soil sampling reports. |
| **Purchased seed viability certification.** | Prior to purchase. | Seed viability certificate or similar. |
| **Seed coverage on rehabilitated areas.** | Post spreading on topsoil. | Photography and/or inspection report. |
| **Soil moisture.** | Weekly for the first month after seeds are spread.<br>Monthly for the next 12 months whilst vegetation establishes.<br>3 monthly for the next 2 years. | Photography and/or inspection report. |
| **Weed numbers.** | 6 monthly. | Photography and/or inspection checklist.<br>Weed control contractor reports if spraying undertaken. |
| **Access restrictions/fencing of rehabilitation areas.** | 6 monthly. | Photography and/or inspection checklist. |
| **Evidence of Erosion.** | Monthly for the first 12 months whilst vegetation establishes.<br>3 monthly for the next 2 years. | Photography and/or inspection checklist. |
| **Surface water management structures.** | Monthly for the first 12 months.<br>3 monthly for the next 2 years. | Photography and/or inspection checklist. |
| **Surface water quality.** | Monthly for the first 12 months.<br>3 monthly for the next 2 years. | NATA laboratory results.<br>Trend data/graphs |
| **Vegetation coverage** | Monthly for the first 12 months whilst vegetation establishes.<br>3 monthly for the next 2 years. | Photography and/or inspection checklist. |

## 8.3 MEASURING PERFORMANCE AGAINST REHABILITATION OBJECTIVES AND REHABILITATION COMPLETION CRITERIA

The performance of the site rehabilitation will be measured against the rehabilitation objectives and completion criteria outlined in *Section 4.*

*Table 20. Rehabilitation Objectives and Completion Criteria Inspection Regime*

| Performance Indices | Monitoring | Frequency | Records | Assessment of Trends | Trigger Thresholds to Identify Emerging Risks to Achieving Final Land Use |
|---|---|---|---|---|---|
| **Decommissioning Phase** | | | | | |
| Retention of infrastructure:<br>All infrastructure that is to remain as part of the final land use is safe and does not pose any hazard to the community. | Inspection/s by suitably qualified engineer or similar. | At completion of decommissioning phase. | Site decommissioning inspection report.<br>Statement provided by suitably qualified engineer or similar.<br>Photography. | Not applicable. | Inspection indicates that not all hazards are isolated and secured. |
| Damage to access tracks has been repaired and stabilised. | Inspection/s by suitably qualified engineer or similar of repairs and stabilisation. | At completion of decommissioning phase. | Site decommissioning inspection report.<br>Statement provided by suitably qualified engineer or similar.<br>Photography. | Not applicable. | Inspection reveals that access track repairs have not been undertaken or have been ineffective. |
| Tracks suitable for private access or pedestrian usage. | Inspection/s by suitably qualified engineer or similar for grade of <10º, and suitable width of access track, cross drains /banks installed.<br>Inspect for presence of erosion gullies or rills.<br>Inspect for installation of suitable all-weather material on access tracks. | At completion of decommissioning phase. | Site decommissioning inspection report.<br>Statement provided by suitably qualified engineer or similar.<br>Photography.<br>Survey by registered surveyor. | Not applicable. | Inspection reveals that the access tracks are not suitable for light vehicle access or pedestrians |
| The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use. | The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. | At completion of decommissioning phase. | Site decommissioning inspection report.<br>Statement provided by suitably qualified engineer or similar.<br>Photography.<br>Survey by registered surveyor. | Not applicable. | Inspection by engineer finds the structural integrity of remaining infrastructure is not safe and suitable for the intended final land use. |
| Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use. | Obtain evidence of acceptance from landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement. | At completion of decommissioning phase | Site decommissioning inspection report.<br>Formal acceptance from landowner. | Not applicable. | No acceptance of landowner obtained. |
| Removal of Infrastructure:<br>Removal of all services (power, water, communications) that have been connected on the site as part of the operation. | Inspection of site to confirm removal of all services (power, water, communications) that have been connected on the site as part of the operation. | At completion of decommissioning phase | Site decommissioning inspection report.<br>Statement provided, utility service disconnection record / notification. | Not applicable. | Services to be removed are still connected. |

| Performance Indices | Monitoring | Frequency | Records | Assessment of Trends | Trigger Thresholds to Identify Emerging Risks to Achieving Final Land Use |
|---|---|---|---|---|---|
| Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, rail infrastructure and loading facilities, underground hydrocarbon storage tanks, office complex, portable offices, exploration core samples, camp facilities, storage racks, samples. | Inspection of the site to confirm all plant, equipment and associated infrastructure including, stockpile areas, loading facilities, office complex, portable offices, exploration core samples, camp facilities, storage racks, samples have been removed. | At completion of decommissioning phase | Site decommissioning inspection report.<br>Statement provided by suitably qualified engineer or similar.<br>Photography.<br>Survey by registered surveyor. | Not applicable. | Infrastructure not removed from the site. |
| Removal of all water management infrastructure (including pumps, pipes and power) not required for site rehabilitation works or retained in final landform. | Inspection of site confirms that water management infrastructure not required for site rehabilitation works or in the final landform is removed. | At completion of decommissioning phase | Site decommissioning inspection report.<br>Photography. | Not applicable. | Water management infrastructure not removed from the site. |
| No waste material and/or visible contamination areas on site surface. | There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site. | At completion of decommissioning phase | Site decommissioning inspection report.<br>Photography. | Not applicable. | Waste or potential contamination present on site. |
| Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type. | Site inspection and risk assessment of site to determine potential contamination issues.<br>If potential risks identified in risk assessment, then a contamination assessment is to be undertaken by suitably qualified person/s.<br>Remediation measures, if required, to be assessed by Land Contamination Consultant or EPA Accredited Auditor. | At commencement of decommissioning phase. | Contamination Remediation Report prepared by Land Contamination Consultant Site Contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required). | Not applicable. | Soil testing indicates that sites does not meet Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type. |

| Performance Indices | Monitoring | Frequency | Records | Assessment of Trends | Trigger Thresholds to Identify Emerging Risks to Achieving Final Land Use |
|---|---|---|---|---|---|
| **Landform Establishment Phase** | | | | | |
| Measured survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan. | Survey verifies final landform complies with final landform construction in accordance with Final Landform and Rehabilitation Plan. | On construction completion. | Survey data and plans.<br>Photography. | Not applicable. | Slopes are greater than 3 horizontal to 1 vertical.<br>Slope lengths exceed 80 metres before being broken by earth banks or similar. |
| | Verify high risk landforms (such as steep slopes) have been constructed in accordance with geotechnical design. | On construction completion. | Survey data and plans | Not applicable. | High risk landforms (such as steep slopes) have not been constructed in accordance with geotechnical design. |
| | Verify overburden material stored on site has been utilised to achieve the final landform. | On construction completion. | Survey data and plans.<br>Photography. | Not applicable. | Overburden stockpiles identified as remaining on the site. |
| | Verify material stockpiles have been removed from the site or utilised to achieve the final landform. | On construction completion. | Survey data and plans.<br>Photography. | Not applicable. | Material stockpiles identified as remaining on the site. |
| Significant surface water management structures (e.g. spillways, drop structures, and major drains) have been constructed in accordance with Managing Urban Stormwater 'Blue Book' DECC 2008 requirements. | Verify sediment dams are designed for 90th % 5-day storm event.<br>Monitor available capacity of sediment dams.<br>Verify drains are designed for 1 in 10-year design storm.<br>Verify spillways are designed for 1 in 100-year design storm.<br>Verify drains installed to direct dirty surface water to sediment dams.<br>Verify installation of silt fences around disturbed areas as appropriate. | On construction completion. | Assessment Report undertaken by a suitably qualified person.<br>Survey | Not applicable. | Sediment dams not designed for 90th % 5-day storm event.<br>Drains not designed for 1 in 10-year design storm.<br>Spillways not designed for 1 in 100-year design storm. |
| Measured survey/monitoring of rehabilitated landform to specifically monitor settlement and/or material loss via erosion. | Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. | 12 months after completion of construction. | Survey data and plans | Not applicable. | Settlement or material loss results in pooling of water, changes in surface water flow directions and velocities and function of water management structures. |

| Performance Indices | Monitoring | Frequency | Records | Assessment of Trends | Trigger Thresholds to Identify Emerging Risks to Achieving Final Land Use |
|---|---|---|---|---|---|
| **Growth Medium Development Phase** | | | | | |
| Track walk or lightly rip/scarify exposed surfaces to encourage infiltration of rainwater | Visual inspection to confirm the surface to which topsoil is to be applied is roughened. | Prior to topsoil application | Photography.<br>Site inspection reports/checklists. | No applicable. | Surface is noted to be compacted. |
| Growth medium/topsoil testing (bulked soil samples 0-10 cm) meets suitable criteria as determined by final landuse. | Routine Soil Test (bulked soil sample 0-10 cm).<br>Includes but no limited to: Total Carbon (TC), Total Nitrogen (TN), Organic Matter, TC/TN Ratio; Bray I and II Phosphorus; Colwell Phosphorus; Available cations (Calcium, Magnesium, Potassium, Ammonium, Nitrate, Phosphate, Sulphur); Available Micronutrients (Zinc, Manganese, Iron, Copper, Boron, Silicon); Exchangeable (Sodium, Potassium, Calcium, Magnesium, Hydrogen, Aluminium, Cation Exchange Capacity); pH and EC (1:5 water); Basic Colour, Basic Texture. | Topsoil to be tested prior to spreading. | Soil testing reports. | Not applicable. | Soil testing indicates soil not within recommended criteria as advised by Soil Specialist/Agronomist. |
| Ameliorants applied to topsoil material if required as identified by testing. | Visual observation of ameliorant application, including photography, to ensure even application at specified rate. | Post topsoil spreading | Photography.<br>Site inspection reports/checklists.<br>Contractor invoices. | Not applicable. | Ameliorants not applied or applied evenly or applied at below the specified rate. |
| Topsoil established of at least 100 millimetres thick and comprising clean soils, which can include compost to assist with vegetation establishment and growth. | Test pits dug to confirm depth of topsoil application.<br>Verify even application of topsoil and that no bare surfaces remain. | Post topsoil spreading | Photography.<br>Site inspection reports/checklists | Not applicable. | Average depth of topsoil less than 50mm.<br>Bare patches evident. |
| Imported topsoil or mulch (if required) conforms to consent conditions and is certified in accordance with EPA requirements. | Topsoil/mulch material is certified in accordance with any EPA waste exemption requirements. | Prior to receipt of topsoil/mulch | Topsoil/mulch certificate<br>Haulage records/tonnage received. | Not applicable | No topsoil/mulch certificate provided by supplier |

| Performance Indices | Monitoring | Frequency | Records | Assessment of Trends | Trigger Thresholds to Identify Emerging Risks to Achieving Final Land Use |
|---|---|---|---|---|---|
| **Ecosystem and Land Use Establishment Phase** | | | | | |
| Visual indicators of erosion and land instability. | Visual inspections for identification of erosion that would require moderate to significant ongoing management and maintenance works.<br>Visual inspection for signs of land instability such as mass movement.<br>Visual inspection for areas of active gully erosion.<br>Visual inspection for evidence of tunnel erosion. | Weekly for the first month after landform establishment and then monthly for the next five years. | Photography.<br>Erosion surveys- measurements of depths and numbers of rills, gullies, mass movements, tunnel erosion if present.<br>Site inspection reports/checklists.<br>Independent geotechnical reports (where required)<br>Surveys | Compare photography and measurements to identify if erosion impacts are increasing. | Rills/gullies greater than 10cm in depth.<br>Rills/gullies are showing an increasing trend in size for a period of at least 6 months.<br>Any evidence of mass movement/slumping.<br>Any evidence of tunnel erosion. |
| | Ground cover within plotted test quadrants.<br>Vegetation size, survival rates and variety of species within plotted quadrants. | Monthly for the year after ecosystem and landform establishment and then 6 monthly for the next five years. | Photography.<br>Reports on the estimates of ground coverage, vegetation size, survival rates and variety of species.<br>Site inspection reports/checklists. | Compare photography and measurements of groundcover to determine if it is trending towards or away from a coverage factor of 70% (Blue Book C -factor equivalent of 0.05).<br>Compare measurements of vegetation size, survival rates and variety of species to determine if on an increasing or decreasing trend and maturation rate. | Average loss of more than 20% of species within test quadrants.<br>Ground coverage remains the same or is decreasing with regards to the final target of 70% over any 6-month period. |
| | Validate seeds for use in rehabilitation are certified where possible. | Prior to purchase | Certificates and purchase records. | Not applicable | No seed certification available. |
| | Visual observation of soil moisture of the rehabilitated areas to determine if watering is required i.e. prolonged dry periods. | Weekly for the first month after seeding and then monthly for the next 12 months. | Site inspection reports/checklists.<br>Weather data | Review weather data and long-term outlooks for rainfall to determine if more frequent watering is required. | Failure of vegetation due to prolonged dry conditions. |
| | Visual – no evidence of active scour likely to compromise surface water management structures such as drains, spillways etc. | Monthly for the first 6 months after landform establishment and then 6 monthly for the next five years. | Photography.<br>Site inspection reports/checklists. | Compare photography and site inspection reports to determine if scouring is occurring and increasing in impact. | Surface water management structures are the source of sediment entrainment. |

| Performance Indices | Monitoring | Frequency | Records | Assessment of Trends | Trigger Thresholds to Identify Emerging Risks to Achieving Final Land Use |
|---|---|---|---|---|---|
| Soil testing (bulked soil samples 0-10 cm) meets suitable criteria as determined by final landuse. | Routine Soil Test (bulked soil samples 0-10 cm).<br>Includes but no limited to: Total Carbon (TC), Total Nitrogen (TN), Organic Matter, TC/TN Ratio; Bray I and II Phosphorus; Colwell Phosphorus; Available cations (Calcium, Magnesium, Potassium, Ammonium, Nitrate, Phosphate, Sulphur); Available Micronutrients (Zinc, Manganese, Iron, Copper, Boron, Silicon); Exchangeable (Sodium, Potassium, Calcium, Magnesium, Hydrogen, Aluminium, Cation Exchange Capacity); pH and EC (1:5 water); Basic Colour, Basic Texture. | 6 monthly after initial emplacement. | Soil testing reports. | Compare soil parameters to identify if soil fertility is decreasing or increasing. | Soil testing indicates soil fertility is decreasing according to criteria as advised by Soil Specialist/Agronomist. |
| **Ecosystem and Land Use Development Phase** | | | | | |
| Resilience demonstrated by the effects of drought and fire on composition, structure and other function attributes of pasture and cropping lands. | Ground cover within plotted test quadrants.<br>Vegetation size, survival rates and variety of species within plotted quadrants. | 6 monthly | Photography.<br>Reports on the estimates of ground coverage, vegetation size, survival rates and variety of species.<br>Site inspection reports/checklists. | Compare photography and measurements of groundcover to determine if it is trending towards or away from a coverage factor of 70% (Blue Book C -factor equivalent of 0.05).<br>Compare measurements of vegetation size, survival rates and variety of species to determine if on an increasing or decreasing trend and maturation rate. | Average loss of more than 20% of species within test quadrants.<br>Ground coverage remains the same or is decreasing with regards to the final target of 70% over any 6-month period. |
| **All Phases** | | | | | |
| No further active weed control required beyond that considered necessary at analogue sites. | Monitoring confirms the non-target species (weeds) represent less than 10% of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities. | 6 monthly | Site inspection reports/checklists<br>Weed contractor reports/invoices | Comparison of weed inspection reports overtime to determine if weed numbers are increasing. | Non-target species (weeds) represent greater than 10% of foliage cover. |
| Soil inventory to be maintained to assess requirements to achieve the final landform. | Topsoil and overburden inventory to be maintained, included volumes stripped, stored in stockpiles and spread over rehabilitation areas. | Annually | Annual report to RR. | Identify possible deficits in future rehabilitation requirements | Projected topsoil volumes available for rehabilitation indicate less than 100mm depth over the entire rehabilitation area can be achieved. |
| Appropriate bushfire hazard controls (where required) have been implemented on the advice from the NSW Rural Fire Service. | Bushfire controls implemented. | 12 monthly | Slashing records.<br>Liaison with NSW RFS.<br>Photography. | Not applicable | Vegetation during periods of high fire danger at risk of bushfire. |

## 8.4 MONITORING RESULTS AND REPORTING

To document the progress of the rehabilitation works towards the rehabilitation objectives for the site, the results of the rehabilitation monitoring program are to be presented within the ~~AEMR~~ Annual Rehabilitation Report (ARR) for the ~~project~~ site to the Regulator. The ~~AEMR~~ ARR will include detail of:

- Progressive rehabilitation works undertaken;
- Rehabilitation Monitoring results;
- How these works have progressively rehabilitated the site in accordance with the rehabilitation objectives;
- Prospective rehabilitation progress forecast for the next ~~AEMR~~ ARR reporting period; and

The completed ~~AEMR~~ ARR is to be used as a point of ongoing consultation, engagement and performance reporting with key stakeholders.

DPIE requires that an Annual Review is submitted which must include the following.

(a) describe the development (including any progressive rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;

(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:

- relevant statutory requirements, limits or performance measures/criteria;
- requirements of any plan or program required under this consent;
- monitoring results of previous years; and
- relevant predictions in the documents listed in condition 3 of Schedule 2;

(c) evaluate and report on:

- the effectiveness of the air quality and noise management systems; and
- compliance with the performance measures, criteria and operating conditions in this consent.

(d) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;

(e) identify any trends in the monitoring data over the life of the development;

(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

(g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 8 of Schedule 5) and any interested person upon request.

All annual reviews will be provided in the company website.

# 9 Rehabilitation Research, Modelling and Trials

## 9.1 CURRENT REHABILITATION RESEARCH, MODELLING AND TRIALS

There are no current rehabilitation trials.

Assessment of topsoil volume requirements for rehabilitation will be investigated.

Soil characterisation of topsoil stockpiles samples previously taken will also be investigated and incorporated into the rehabilitation risk assessment. This will be assessed in the next 12 months.

## 9.2 FUTURE REHABILITATION RESEARCH, MODELLING AND TRIALS

Future rehabilitation research will likely involve selection of suitable species and when final surfaces become available, trials may be undertaken to determine the best approach to establishing revegetation.

The results of any trial will be used to address any knowledge gaps in relation to:

- the control or management of risks identified in the rehabilitation risk assessment;
- the development and further refinement of rehabilitation completion criteria; and
- the achievement of rehabilitation objectives and rehabilitation completion criteria.

This report will be updated as the development of research, modelling and trials are investigated.

# 10 Intervention and Adaptive Management

*Table 21. Trigger Action Response Plan*

| Rehabilitation Threat | Trigger levels | Actions to be implemented | Evidence / Reference |
|---|---|---|---|
| **Infrastructure that is to remain as part of the final land use is not safe and poses a hazard to the community.** | Inspection indicates that not all hazards are isolated and secured. | Suitably qualified professional or utilities provider to be engaged to isolate/remove hazards and render safe. | Site decommissioning inspection report.<br>Statement provided by suitably qualified engineer or similar.<br>Photography.<br>Survey by registered surveyor.<br>Statement provided, utility service disconnection record / notification.<br>Formal acceptance from landowner. |
| | Inspection reveals that access track repairs have not been undertaken or have been ineffective. | Track repairs to be undertaken. | |
| | Inspection reveals that the access tracks are not suitable for light vehicle access or pedestrians | Tracks to be rendered suitable for light vehicle access or pedestrians. | |
| | Inspection by engineer finds the structural integrity of remaining infrastructure is not safe and suitable for the intended final land use. | Suitably qualified engineer or similar to be engaged to assess remaining infrastructure and advise on rectifying structural integrity. | |
| | Infrastructure not removed from the site. | Infrastructure to be removed from the site. | |
| | Water management infrastructure not removed from the site. | Water management infrastructure to be removed from the site. | |
| **Harm to rehabilitation areas due to presence of contaminants of concern.** | Soil testing indicates that sites does not meet Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type. | Engage a contamination professional to assess the site and advise on remediation measures. | Contamination Remediation Report prepared by Land Contamination Consultant.<br>Site Contamination Audit Report<br>Site Audit Statement prepared by EPA Accredited Auditor (where required). |
| **Waste material visible on-site surface.** | Waste present on site. | Waste to be removed from the site. | Site decommissioning inspection report.<br>Photography. |
| **Harm to rehabilitation works due to erosion impacts.** | Slopes outside are greater than 3 horizontal to 1 vertical<br>Slope lengths exceed 80 metres before being broken by earth banks or similar. | Suitably qualified professional to assess the landform to determine if erosion impacts evident and advise on mitigation measures, if required.<br>Mitigation may include reshaping the landform or installing additional erosion controls. | Managing Urban Stormwater ‘Blue Book’ DECC 2008.<br>Survey data and plans.<br>Photography.<br>Assessment Report undertaken by a suitably qualified person i.e. CPESC. |

| Rehabilitation Threat | Trigger levels | Actions to be implemented | Evidence / Reference |
|---|---|---|---|
| **Harm to rehabilitation works due to erosion impacts.**<br>**Limited biological resources available on site for rehabilitation.** | Overburden stockpiles identified as remaining on the site. | Overburden material is to be removed from the site or incorporated into the rehabilitation of the final landform. | Managing Urban Stormwater 'Blue Book' DECC 2008.<br>Survey data and plans.<br>Photography.<br>Assessment Report undertaken by a suitably qualified person i.e. CPESC.<br>Survey data and plans.<br>Photography.<br>Soil Inventory reported in AR. |
| | Material stockpiles identified as remaining on the site. | Stockpile material is to be removed from the site or incorporated into the rehabilitation of the final landform. | |
| | Sediment dams not designed for 90th % 5-day storm event.<br>Drains not designed for 1 in 10-year design storm.<br>Spillways not designed for 1 in 100-year design storm. | A suitably qualified professional in sediment and erosion control will be engaged to prepare and assessment report and recommendations to be implemented. | |
| | Settlement or material loss results in pooling of water, changes in surface water flow directions and velocities and function of water management structures. | A suitably qualified professional in sediment and erosion control will be engaged to prepare and assessment report and recommendations to be implemented. | |
| | Rills/gullies greater than 10cm in depth.<br>Rills/gullies are showing an increasing trend in size for a period of at least 6 months.<br>Any evidence of mass movement/slumping.<br>Any evidence of tunnel erosion. | A suitably qualified professional in sediment and erosion control will be engaged to prepare and assessment report and recommendations to be implemented.<br>Mitigation may include reshaping the landform or installing additional erosion controls. | |
| | Ground coverage remains the same or is decreasing with regards to the final target of 70% over any 6-month period. | A suitably qualified professional in sediment and erosion control and/or ecologist will be engaged to prepare and assessment report and recommendations to be implemented.<br>Mitigation may include reseeding exposed areas, applying mulch, applying soil binder, watering and fertilising etc | |
| | Evidence of erosion or bare patches in rehabilitated areas due to stock or feral animals. | Fencing to be inspected and repaired as required.<br>Removal of stock from rehabilitation areas.<br>Engagement of animal control professional to remove pests. | |
| | Evidence of rehabilitation areas impacted by wind erosion. | A suitably qualified professional in sediment and erosion control will be engaged to prepare and assessment report and recommendations to be implemented.<br>Mitigation may include installing additional erosion controls. | |
| | On-site topsoil/growth medium deficit projected in achieving desired coverage (100mm) on the final landform is noted in annual reporting. | Investigate the use of overburden material, if sufficient volumes available, to replace the topsoil deficit. This may include soil analysis and application of ameliorants to manufacture suitable topsoil material.<br>Investigate the importation of suitable topsoil material. | |
| **Domain landform is not safe, stable and fit for the purpose of the intended final land use.** | High risk landforms (such as steep slopes) have not been constructed in accordance with geotechnical design. | Suitably qualified geotechnical engineer to assess the landform to determine if the landform is stable or requires modification other structural repairs are required. | Survey data and plans.<br>Photography.<br>Geotechnical reports |

| Rehabilitation Threat | Trigger levels | Actions to be implemented | Evidence / Reference |
|---|---|---|---|
| **Domain landform is not safe, stable and fit for the purpose of the intended final land use.**<br><br>**Failure to establish soil/growing medium suitable for establishment of vegetation community.** | Slopes required by the final landform are not obtained due to material deficits. | Suitably qualified geotechnical engineer to assess the landform to determine if the landform is stable or requires modification other structural repairs are required. | Survey data and plans.<br><br>Photography.<br><br>Geotechnical reports<br><br>Photography.<br><br>Site inspection reports/checklists.<br><br>Contractor invoices.<br><br>Soil testing reports. |
| | Surface is noted to be compacted. | Surface to be ripped to promote surface water and air infiltration and reseeding undertaken if required. | |
| **Failure to establish soil/growing medium suitable for establishment of vegetation community.**<br><br>**Vegetation community establishment unsuccessful.** | Soil testing indicates soil not within recommended criteria as advised by Soil Specialist/Agronomist. | Ameliorants to be applied as advised by soil specialist/agronomist. | Photography.<br><br>Site inspection reports/checklists.<br><br>Contractor invoices.<br><br>Soil testing reports.<br><br>Reports on the estimates of ground coverage, vegetation size, survival rates and variety of species.<br><br>Site inspection reports/checklists.<br><br>Photography.<br><br>Seed certificates and purchase records.<br><br>Weather data<br><br>Soil testing reports. |
| | Ameliorants not applied or applied evenly or applied at below the specified rate. | Advice to be sought from soil specialist/agronomist to determine whether reapplication required or other methods to be employed to ensure the growth medium is suitable. | |
| | Average depth of topsoil less than 50mm.<br><br>Bare patches evident. | Advice to be sought from soil specialist/agronomist to determine whether reapplication required or if the topsoil depth is suitable for target species. This may include evidence from rehabilitation trials. | |
| | Average loss of more than 20% of species within vegetation test quadrants.<br><br>Ground coverage remains the same or is decreasing with regards to the final target of 70% over any 6-month period. | Advice to be sought from agronomist/ecologist to determine the causes of the vegetation losses and possible remediation measures.<br><br>Remediation measures may include reseeding, application of mulch, application of fertiliser or other ameliorants, watering etc. | |

| Rehabilitation Threat | Trigger levels | Actions to be implemented | Evidence / Reference |
|---|---|---|---|
| **Vegetation community establishment unsuccessful.**<br><br>**Decrease in downstream water quality.** | No seed certification available. | Alternative seed supplier to be sought.<br><br>If no other supplier available for target species, advice to be sought from agronomist/ecologist to determine suitability of the available seed or determine alternative species. | Reports on the estimates of ground coverage, vegetation size, survival rates and variety of species.<br><br>Site inspection reports/checklists.<br><br>Photography.<br><br>Seed certificates and purchase records.<br><br>Weather data<br><br>Soil testing reports.<br><br>Water Testing Reports<br><br>ANZECC Guidelines.<br><br>EPL |
| | Failure of vegetation due to prolonged dry conditions. | Review weather data and long-term outlooks for rainfall to determine if more frequent watering is required.<br><br>Investigate installing/upgrading irrigation systems.<br><br>If additional watering is not feasible, investigate alternative means of stabilising the soil i.e. binders until conditions improve.<br><br>Reseed bare areas once dry conditions have been alleviated. | |
| | Soil testing indicates soil fertility is decreasing according to criteria as advised by Soil Specialist/Agronomist. | Advice to be sought from agronomist/ecologist to determine why fertility is decreasing and determine remediation measures. | |
| | Non-target species (weeds) represent greater than 10% of foliage cover. | Weed control contractor to be engaged to spray or mechanically remove weeds. Selective herbicides will be used where possible to protect target species. | |
| | Continued exceedance of trigger values, over a 6-month period, for water quality, as defined in Section 120 of the Protection of the Environment Operations Act 1997.<br><br>In particular, 'downstream' water quality monitoring will record pH between 6.5 and 8.5, total suspended solids <50mg/L or within 10% of 'upstream' levels (whichever is the greater). | Source of the pollution to be investigated and remediated if the source of the pollution is on-site. This may include erosion and sediment controls in the case of elevated total suspended solids, spills and leaks of hydrocarbons to be investigated if detected etc.<br><br>Management procedures to be reviewed and amended as required in accordance with the results of any investigations.<br><br>Reports to be prepared and provided to EPA or DPIE as required in any consent or licence conditions. | |
| **Harm to rehabilitation areas due to bushfire.** | Excessive vegetation height during periods of high to extreme fire danger. | Fire breaks, where they exist, to be maintained by slashing.<br><br>Reduce fuel loads in vegetated areas by slashing or grazing where vegetation is sufficiently established to support such activities. | Site inspection reports/checklists.<br><br>Photography.<br><br>Weather data. |

# 11 Review, Revision and Implementation

## 11.1 REVIEW OF THE PLAN

*Table 22. Triggers for Review of the Rehabilitation Management Plan*

| Triggers | Process | Timing | Responsibility | Implementation/ Records |
|---|---|---|---|---|
| **Mining Regulation- Clause 11 of Schedule 8A**<br>The holder of a mining lease must amend the rehabilitation management plan for the mining lease as follows— | | | | |
| (a) to substitute the proposed version of a rehabilitation outcome document with the version approved by the Secretary—within 30 days after the document is approved, | The approved rehabilitation outcome document i.e. Rehabilitation Objective Statement, Rehabilitation Completion Criteria Statement or the Final Landform and Rehabilitation Plan (spatial data) will replace any proposed (and unapproved) documents.<br>The Rehabilitation Management Plan (RMP) will be reviewed and amended to ensure it is consistent with the approved rehabilitation outcome document. | Within 30 days after the document is approved. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |
| (b) as a consequence of an amendment made under clause 14 to a rehabilitation outcome document—within 30 days after the amendment is made, | The RMP will be reviewed and amended within 30 days if a rehabilitation outcome document is amended to ensure it is consistent with the approved rehabilitation outcome document. | Within 30 days after the amendment is made. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |

| Triggers | Process | Timing | Responsibility | Implementation/ Records |
|---|---|---|---|---|
| (c) to reflect any changes to the risk control measures in the prepared plan that are identified in a rehabilitation risk assessment—as soon as practicable after the rehabilitation risk assessment is conducted, | The RMP will be reviewed and amended as soon as practicable if a rehabilitation risk assessment determines that risk control measures must be changed.<br>Where this review leads to revisions in the RMP, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary (DPIE). | Within 6 weeks of the review of the RMP. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |
| (d) whenever given a written direction to do so by the Secretary—in accordance with the direction. | The RMP will be reviewed and amended as soon as practicable if directed by the Secretary.<br>Where this review leads to revisions in the RMP, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary (DPIE). | Within 6 weeks of the review of the RMP. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |
| **Mining Regulation- Clause 13 of Schedule 8A-**<br>**Schedule 5 condition 12 of Consent 10_0014.**<br>**Forward Program and Annual Reporting**<br>**Annual Review** | The RMP will be reviewed and amended as soon as practicable if the Annual Review identifies changes to the processes, risks, mining progress etc that are inconsistent with the current RMP.<br>Where this review leads to revisions in the RMP, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary (DPIE). | Within 3 months of the submission of the Annual Review | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |

| Triggers | Process | Timing | Responsibility | Implementation/ Records |
|---|---|---|---|---|
| **Modification to Development Consent DA No. 10_0014** | The RMP will be reviewed and amended as soon as practicable after the approval of any modification to the development consent and be consistent with and requirements under the amended consent.<br>Where this review leads to revisions in the RMP, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary (DPIE). | Within 6 weeks of the review of the RMP. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |
| **Amendment to the Rehabilitation Management Plan** | The amended RMP will be provided to staff and relevant contractors and acknowledgement of the changes from staff will be recorded. | As soon as practicable after document is amended. | Environmental Manager/<br>Site staff and contractors. | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.<br>Records of staff training and inductions are to be updated to include the amended RMP. |
| **Submission of an incident report under Schedule 5 condition 10 of Consent 10_0014.** | The RMP will be reviewed and amended as soon as practicable after the incident in accordance with the findings of the incident report.<br>Where this review leads to revisions in the RMP, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary (DPIE). | Within 3 months of the submission of the incident report. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |

| Triggers | Process | Timing | Responsibility | Implementation/ Records |
|---|---|---|---|---|
| **Submission of an Independent Environmental Audit under Schedule 5 condition 14 of Consent 10_0014.** | The RMP will be reviewed and amended as soon as practicable after the Independent Environmental Audit in accordance with the findings of the audit report.<br><br>Where this review leads to revisions in the RMP, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary (DPIE). | Within 3 months of the submission of the audit report. | Mine Manager/ Environmental Manager | The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments. |

# 12 Relinquishment

This plan aims to work towards achieving the rehabilitation objectives of the project site in preparation for the ultimate relinquishment of the mining lease and end of extraction activities. Once operations at the project site are scheduled to cease, the process to relinquish the mining lease would be implemented. based on DITR *Best Practice Guidelines* (DITR, 2006).

1. Establish formal closure, sign-off and relinquishment mechanisms (Rehabilitation Management Plan, subsequent AEMR/Progress Reports Mine Closure Plan, forms to be completed).

2. Demonstrate that the site has achieved the agreed rehabilitation/closure criteria through the sign-off on a completion criteria verification report by DT&I the Regulator in discussion with Boral PGH;

3. Send letter of written request to the Minister for the cancellation of Authority on the Mining Lease (once issued). This letter request will be:

- lodged with the Director-General; and
- accompanied by a survey plan defining the areas rehabilitated and to be relinquished.

4. Establish a process to manage areas that do not meet the performance criteria.

5. Establish a financial instrument to provide for any on-going maintenance of the rehabilitated areas.

6.1 RELINQUISHMENT DOCUMENTATION

The DT&I Guidelines require the preparation of documentation to support relinquishment. Features and information required to be included within this documentation are:

□ Natural features including swamps, rivers, creeks, streams or watercourses;

□ Areas affected by mining or mining purposes by nature of disturbance during the mine life;

□ Soil covered rehabilitated areas identified according to slopes; 10 degrees to 18 degrees, >18 degrees;

□ Remaining voids/pits;

□ Vegetation type, fauna habitat, land use, and rural land capability classification;

□ Boundaries and status of all disturbed and undisturbed areas;

□ Re-created areas containing threatened species and fauna habitat;

□ Integrated landscape features, which show how or whether rehabilitated areas of native vegetation link with undisturbed native vegetation to provide larger areas and wildlife corridors;

□ Rural land capability classification (RCC), or agricultural capability;

□ Constructed drainage lines, water control structures, and water supply dams;

□ Infrastructure to remain on site after mine closure;

□ Features pertinent to other agency licences, approvals of other government agencies or their relinquishment;

□ Fences, bunds and other public, fauna/ and stock safety features.

The NSW *Mining Regulation 2003* prescribes the format of the plans to accompany the relinquishment request. A survey plan will be commissioned for the site at the commencement (following approval of this plan) and end of rehabilitation works which will support this documentation requirement.

6.2 CONSULTATION REQUIREMENTS

The following consultation requirements have been identified for the relinquishment process:

□ Boral to notify DT&I to inform them that the relinquishment process is to be commenced and to determine if DT&I have any specific requirements for the project site;

- Boral should notify surrounding landowners when the relinquishment process has commenced, detail of the process; and
- Notify NSW OEH and NOW of the proposed relinquishment.

## 6.3 COMPLETION CRITERIA ACHIEVEMENT

In order to obtain sign off for achievement of rehabilitation of the site, the rehabilitation criteria identified in Table 2, will need to be demonstrated, where appropriate. Sign-off will be agreed by DT&I and Boral.

In addition, the following information should be confirmed at the commencement of the relinquishment process:

Table 5 Relinquishment Actions

| **Proposed Actions** | **Timing** | **Rehabilitation Aspect** |
|---|---|---|
| Preparation of survey plan and application for relinquishment | TBC | Mining lease relinquishment<br>All |
| Target date for rehabilitation and relinquishment of lease | TBC | |

# 13 Interactions With Other Management Plans

The management plans required as part of the Project Approval would work in conjunction with this plan to maintain the operation at the project site and work to progressively rehabilitate the site to a final end land use and ultimate relinquishment. This section provides a summary of the purpose and goals of each of the required plans and states the rehabilitation aspects that the works proposed within each plan align.

## 13.1 ENVIRONMENTAL MANAGEMENT STRATEGY

The EMS outlines the environmental management system and processes relevant to the delivery of the Project in accordance with the regulatory, contractual and other requirements. The main body of the EMS also provides the overall objectives, roles and responsibilities, legal and other requirements, training, monitoring, auditing and reporting requirements for the Project.

The EMS includes a series of 17 environmental management plans as outlined below:

A: Conditions of ~~Approval~~ Consent (Cof~~A~~C)

B: Environmental Protection Licence (EPL)

C: Mining Lease (ML)

D: Water Approval and Licence (WL)

E: Enforceable Undertaking (EU)

F: Noise Management Plan (NMP)

G: Air Quality Management Plan (AQMP)

H: Soil and Water Management Plan (SWMP)

I: Groundwater Management Plan (GWMP)

J: Traffic Management Plan (TMP)

K: Aboriginal Heritage Management Plan (AHMP)

L: Rehabilitation Management Plan (RMP)

M: Waste Management Plan (WMP)

N: Community and Stakeholder Consultation Plan (CCP)

O: Mining Operations Plan (MOP)

P: Emergency Management Response Plan (EMRP)

Q: Visual Impact Management Plan (VIMP)

R: ~~VENM~~ Fill Management Plan (~~V~~FMP)

S: De-watering Infrastructure Plan (DWIP)

T: De-watering Management Plan (DWMP)

U: Fauna Relocation Management Plan (FRMP)

V: Evacuation plan (EP)

W: Environmental Risk Register (ERR)

The sub plans form appendices to the EMS and these documents provide detailed strategies for the planning, implementation, operation, inspection and monitoring requirements for a range of specific environmental issues. The management plans and their relationship to the EMS are shown below.

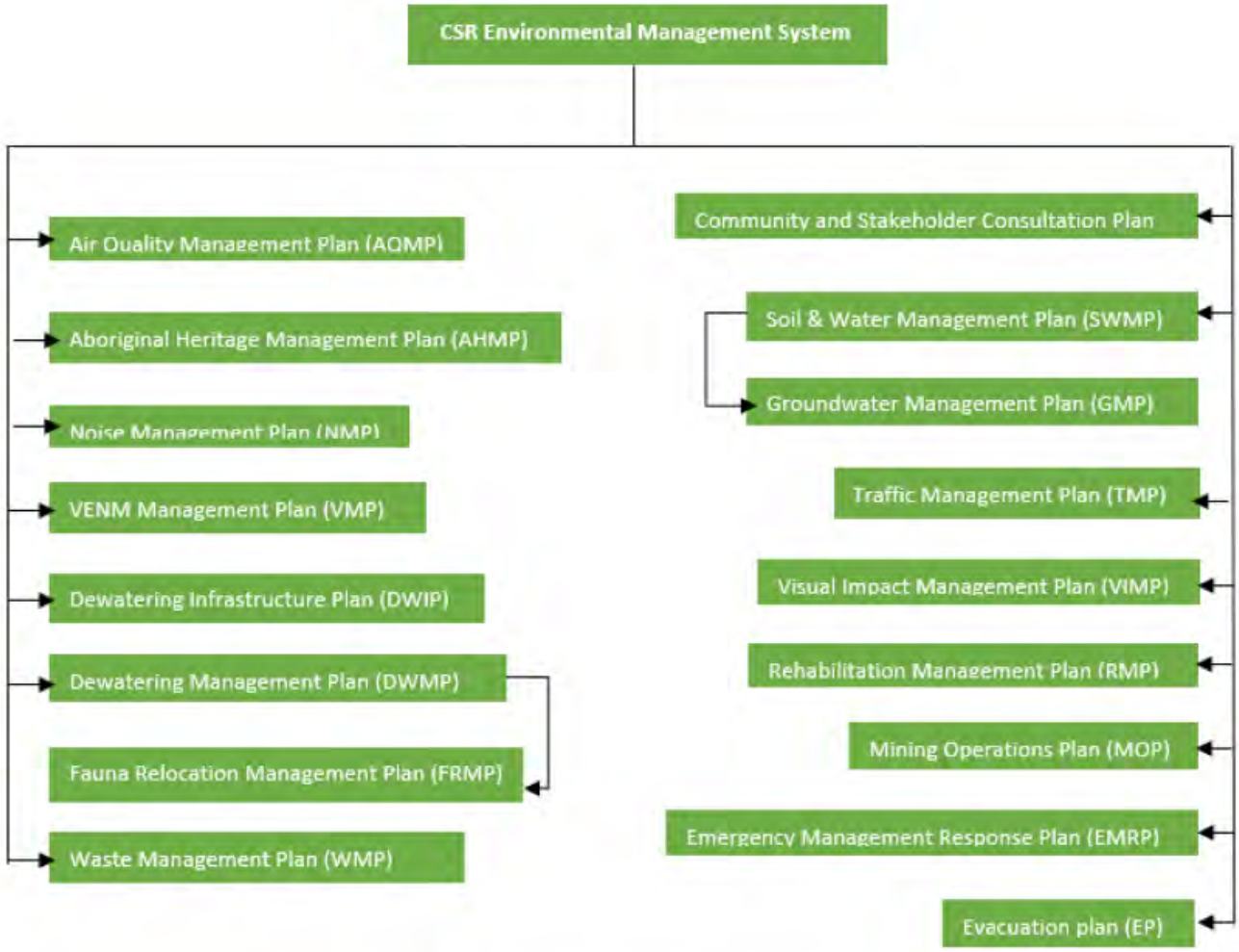



**Diagram 1**: Environmental Management Plans, Strategies, Programs and Protocols

## 13.2 NOISE MANAGEMENT PLAN

The purpose of the noise management plan for the site is to:

- Present noise mitigation measures implemented across the project site;
- Describe how commitments on noise mitigation are being met;
- Detail the noise bund construction plan and the noise monitoring program; and
- Provide detail of consultation undertaken regarding noise.

The noise management plan (see *Appendix K*) would work towards meeting the progressive rehabilitation objectives for the site of:

- Safety;
- Land function; and
- Preparation of a landform that is comparable with the surrounds.

Progressive rehabilitation activities can be used to complement the noise mitigation actions on site. An example includes the use of excavated topsoil to provide a growing medium over noise bunds.

## 13.3 AIR QUALITY ~~AND GREENHOUSE GAS~~ MANAGEMENT PLAN

The purpose of the Air Quality ~~and greenhouse gas management~~ Plan for the site is to:

- Present measures that would be implemented across the project site to comply with conditions of approval;
- Monitor how commitments made within the EA are being met;
- Include a program to minimise surface disturbance as a result of quarrying; and
- Provide an air quality monitoring program.

The Air Quality ~~and greenhouse gas management~~ Plan (see *Appendix L*) would work towards meeting the progressive rehabilitation objectives for the site of:

- Safety;
- Land function; and
- Preparation of a landform that is comparable with the surrounds.

Implementation of this rehabilitation plan is complementary to achieving the objectives of the Air Quality ~~and Greenhouse Gas Management~~ Plan as progressive implementation of the strategies in this plan will reduce the total surface area of exposed soils at any one time and provide a vegetation growth medium to further reduce the potential for dust migration from site.

## 13.4 SOIL AND WATER MANAGEMENT PLAN

The purpose of the Soil and Water Management plan for the site is to:

- Provide a reliable water supply that meets the needs of mining operations in terms of both quality and quantity;
- Protect the mining operations from excess water;
- Protect environmental values offsite; and
- Comply with environmental guidelines set by government regulations.

The Soil and Water Management Plan (see *Appendix J*) would work towards meeting the progressive rehabilitation objectives for the site of:

- Water quality,
- Land function; and
- Preparation of a landform that is comparable with the surrounds.

The Soil and Water Management Plan and Rehabilitation Management Plan complement each other as the effective management of surface waters across the site can reduce the risk of landform erosion or failure and can facilitate growth of cover vegetation.

## 13.5 ABORIGINAL-HERITAGE MANAGEMENT PLAN

The purpose of the Aboriginal Heritage Management Plan is to:

- Avoid impacts upon Aboriginal items adjacent to the project site;
- Minimise impacts upon Aboriginal items within the project site, implementing a procedure to maintain and/or salvage where applicable;
- Develop a procedure to be implemented in the event that skeletal remains are encountered during the project; and
- Consult and involve the Aboriginal community in the conservation and management of Aboriginal heritage objects/sites.

The Aboriginal Heritage Management Plan (see *Appendix E*) would work towards meeting the progressive rehabilitation objectives for the site of:

- Land function; and
- Maintenance of a landform that is comparable with the surrounds.

The Aboriginal Heritage Management Plan and Rehabilitation Management Plan complement each through early completion of structural rehabilitation elements such as berms, fencing and screening around sensitive heritage values that are not intended or permitted to be disturbed, thereby decreasing the risk of unintentional disturbance.

## 13.6 ~~TRANSPORT~~ TRAFFIC MANAGEMENT PLAN

The purpose of the ~~transport~~ Traffic Management Plan is to:

- Confirm safety of project-related transport on local roads;
- Minimise impacts of project-related transport upon local residents; and
- Implement measures to conduct safe operations that minimise environmental impacts upon the surrounds.

The ~~transport~~ Traffic Management Plan would work towards meeting the progressive rehabilitation objectives for the site of:

- Safety;
- Landform stability;
- Land function; and
- Preparation of a landform that is comparable with the surrounds.

The ~~Transport~~ Traffic Management Plan complements the Rehabilitation Management Plan by reducing the potential disturbance impact of vehicle movements by controlling driving speeds on site and on local roads and designating vehicle haul roads or hardstand/parking and refuelling areas. Implementing these controls enables clear definition of rehabilitation expectations on and off-site and potentially reduces medium to long term maintenance costs as well as final site and road re-establishment costs.

All management plans prepared for the site will contribute to meeting the rehabilitation objectives for the site and the preparation of the land for the relinquishment of the lease and future land use.

# 14 Summary

This rehabilitation management plan provides guidance for the progressive works and documentation of the Rehabilitation of the Boral Badgerys Creek Quarry and Brickworks site.

The document presents:

- Relevant guidelines and strategic planning documentation to consider in rehabilitating the site;
- A summary of the rehabilitation objectives and rehabilitation criteria for the site;
- Proposed progressive rehabilitation works to be undertaken ~~during 2012/2013~~ to work towards the rehabilitation objectives of the site;
- A monitoring program and documentation process to present and record rehabilitation undertaken;
- Detail of the Mining Lease relinquishment process; and
- Interactions of other management plans completed for the site and how these plans work towards the achievement of rehabilitation objectives for the project site.

This document is to be periodically reviewed to provide an applicable process to rehabilitate the ~~Boral~~ Badgerys Creek Quarry and ~~Brickworks~~ Brick Making site. Whilst this document provides a specific rehabilitation plan for the site ~~for 2012/2013~~, performance of these works does not limit flexibility in the progressive development and extraction for the site, or result in resource sterilisation, and accommodates a range of end land uses that have yet to be defined as the agreed final end land use.

# 15 References


Ref 1 AECOM Australia (AECOM), (2010). *Environmental Assessment – Appendix D: Rehabilitation Plan. AECOM Australia, NSW, May 2010*.

Ref 2 ANZMECC and Minerals Council of Australia, (2000). *Strategic Framework for Mine Closure.*

Ref 3 DECC (2008) *Managing Urban Stormwater Soils and Construction V1*

Ref 4 DECC (2009) *Managing Urban Stormwater Soils and Construction V2E Mines and Quarries*

Ref 5 Department of Industry, Tourism and Resources (DITR), (1996). *Mine Rehabilitation: Leading* Practice *Sustainable Development Program for the Mining Industry. Australian Government, Canberra, October 1996.*

Ref 6 Department of Industry, Tourism and Resources (DITR), (2006). *Mine Closure and Completion: Leading Practice Sustainable Development Program for the Mining Industry. Australian Government, Canberra, 2006*.

Ref 7 NSW Department of Planning and Infrastructure (DoPI), (2011). *Project Approval No 10_0014. NSW Government, Sydney, September 2011.*

Ref 8 NSW Department of Trade and Investment (DT&I). (2006). *EDG03 – Guidelines to the Mining, Rehabilitation and Environmental Management Process.* Accessed from: http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0016/427021/EDG03-Mining,-Rehabilitation-and-Environmental-Management-Process-Guide.pdf Accessed on: 12/3/12

Ref 9 NSW DPE (2022) *Land Zoning WMS*

Ref 10 NSW Resource Regulator (2021) *Form and Way: Rehabilitation Management Plan for Large Mines*

Ref 11 NSW Resource Regulator (2021) *Guideline: Rehabilitation Risk Assessment*

Ref 12 VGT Environmental Compliance Solutions Pty Ltd (2021) *Mine Operations Plan for Badgerys Clay Mine*

Ref 13 VGT Environmental Compliance Solutions Pty Ltd (2021) *Annual Rehabilitation Report for Badgerys Clay Mine*

# Appendix A
# SSD 10_0014

**CONSOLIDATED CONSENT**

# Project Approval

## Section 75J of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning and Infrastructure, I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Richard Pearson
**Deputy Director-General, Development Assessment and Systems Performance**

Sydney 2011

**SCHEDULE 1**

| | |
|---|---|
| **Application Number:** | 10_0014 |
| **Applicant:** | CSR Building Products Limited |
| **Approval Authority:** | Minister for Planning and Infrastructure |
| **Land:** | See Appendix 1 |
| **Development:** | Badgerys Creek Quarry and Brick Making Project |

Navy text shows Modification 2 May 2018
Green Type shows Modification 3 and 4 August 2020
Red Type shows Modification 5 January 2022

FOR INFORMATION

## TABLE OF CONTENTS



FOR INFORMATION

## DEFINITIONS

| | |
|---|---|
| Aboriginal object or place | Have the same meaning as the definitions of the terms in section 5 of the NP&W Act |
| Annual Review | The review required by condition 12 of Schedule 5 |
| Applicant | CSR Building Products Limited (or its successors) or any person carrying out any development to which this consent applies |
| BCA | Building Code of Australia |
| BCD | Biodiversity and Conservation Division within the Department |
| Brickmaking Activities | The manufacturing, storage and sale of brick products, and associated operation of the innovation centre and laboratory described in EA (Mod 3 and 4) |
| Calendar year | A period of 12 months from 1 January to 31 December |
| CCC | Community Consultative Committee |
| Conditions of this consent | Conditions contained in Schedules 2 to 5 (inclusive) of this document |
| Construction Activities | All physical works to enable mining operations to be carried out, including demolition and removal of buildings or works, and erection of buildings and other infrastructure permitted by this consent |
| Council | Liverpool City Council |
| Day | The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays |
| Department | NSW Department of Planning and Environment |
| Demolition | The deconstruction and removal of buildings, sheds and other structures on the site |
| Development | The development described in the documents listed in condition 3 of Schedule 2 and includes Quarrying Operations, Brickmaking Activities and rehabilitation activities |
| Development layout | The plans in Appendix 3 of this consent |
| Dewatering | Removal of accumulated water from Pits 2 and 3 into Pit 1, and removal of water accumulated in Pit 1 |
| DPIE Water | Water Group within the Department |
| EA | Environmental Assessment titled *Boral Badgerys Creek Continued Operation of Quarry and Brick Making Facility* (Volumes 1 – 3), prepared by AECOM and dated November 2010, and associated Response to Submissions titled *Boral Badgerys Creek Continued Operation of Quarry and Brick Making Facility – Submissions* Report, prepared by AECOM and dated June 2011 |
| EA (Mod 1) | Environmental Assessment titled *Boral Badgerys Creek Quarry and Brick Making Project, Application Number: 10_0014*, prepared by Boral Property Group and dated 5 November 2012 |
| EA (Mod 2) | Environmental Assessment titled *Badgerys Creek Brick Making Facility Modification 2 Environmental Assessment* prepared by Element Environment and dated November 2017, the associated the Response to Submissions prepared by Element Environment and dated February 2018, and additional information provided by Element Environment dated 8 March 2018 |
| EA (Mod 3 and 4) | Environmental Assessment titled *CSR Advanced manufacturing hub – Modification 3 Environmental Assessment* prepared by Element Environment and dated March 2019, Environmental Assessment titled *CSR Advanced manufacturing hub – Modification 4 Environmental Assessment* prepared by Element Environment and dated March 2019, the associated Response to Submissions Reports prepared by Element Environment and dated October 2019, and additional information provided by CSR Limited and dated 5 May 2020 |
| Eastern Airport Ring Road | Transport corridor associated with development of the WSA and depicted in the *draft Western Sydney Aerotropolis Plan* (or later version) |
| ENM | Excavated Natural Material, as defined in the EPA's resource recovery orders (ENM Order) and exemptions (ENM Exemption) under clauses 91, 92, and 93 of the Waste Regulation |
| ENM Exemption | 'The excavated natural material exemption 2014' under clauses 91 and 92 of Waste Regulation |
| ENM Order | 'The excavated natural material order 2014' under clause 93 of the Waste Regulation |
| EPA | NSW Environment Protection Authority |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| EP&A Regulation | *Environmental Planning and Assessment Regulation 2000* |
| EPL | Environment Protection Licence under the POEO Act |
| Evening | The period from 6 pm to 10 pm |
| Fill | VENM and/or ENM |
| Finished Building Products | Building products prepared or manufactured on site and off site, as described in EA (Mod 3 and 4) and EA (Mod 2), respectively. |

FOR INFORMATION

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|---|---|
| Heritage NSW | Heritage NSW within the Department of Premier and Cabinet |
| Incident | An occurrence or set of circumstances that:<br>• causes or threatens to cause material harm to the environment; and/or<br>• breaches or exceeds the limits or performance measures/criteria in this consent |
| Laden trucks | Trucks transporting bricks, quarry products or finished building products to or from the site |
| Land | Has the same meaning as the definition of the term in section 4 of the EP&A Act, except where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this consent, where it is defined as the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent |
| m | Metres |
| Martin Road – Elizabeth Road Intersection Upgrade | The upgrade of the Martin Road – Elizabeth Drive Intersection to a standard required by Condition 25A of Schedule 3 |
| Material harm | Is unauthorised harm that:<br>• involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or<br>• results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment) |
| MEG | Regional NSW – Mining, Exploration & Geoscience |
| Minimise | Implement all reasonable and feasible mitigation measures to reduce the impacts of the development |
| Minister | Minister for Planning, or delegate |
| Mitigation | Activities associated with reducing the impacts of the development prior to or during those impacts occurring |
| Modification 3 and 4 | The modifications to the development, as described in EA (Mod 3 and 4) |
| Modification Report (Mod 5) | The Modification Report titled *Badgerys Creek Quarry and Brick Making Project \| Modification 5* prepared by Element Environment dated October 2021 and further response prepared by CSR Building Products Limited dated December 2021 |
| Morning Shoulder Period | The period from 5 am to 7 am Monday to Saturday |
| Night | The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays |
| NP&W Act | *National Parks and Wildlife Act 1974* |
| NRAR | NSW Natural Resources Access Regulator |
| Phase 1 | The initial phase of development associated with Modification 3 and 4, that comprises:<br>• construction activities;<br>• brickmaking activities;<br>• dewatering of Pits 1, 2 and 3;<br>• quarrying activities in Pit 3.<br>• Fill import for quarry rehabilitation activities and preferential backfilling of Pits 1, 2 and 3. |
| Phase 2 | The phase of the development associated with Modification 3 and 4 that commences from the date of completion of backfilling of Pits 1 and 2 and comprises:<br>• construction activities;<br>• brickmaking activities;<br>• quarrying activities in Pit 3;<br>• Fill import for quarry rehabilitation activities and progressive backfilling of Pit 3. |
| Phase 3 | The phase of the development associated with Modification 3 and 4 that commences from the date of completion of extraction activities in Pit 3 and comprises:<br>• brickmaking activities;<br>• Fill import for quarry rehabilitation activities and backfilling of Pit 3. |
| Phase 4 | The phase of development associated with Modification 3 and 4 that commences from the date of completion Fill import to site and the backfilling of Pit 3, and comprises:<br>• brickmaking activities; and<br>• residual rehabilitation activities (excluding Fill import). |
| PMF | Probable Maximum Flood event |
| POEO Act | *Protection of the Environment Operations Act 1997* |
| Privately-owned land | Land that is not owned by a public agency or a mining, petroleum or extractive industry company (or its subsidiary) |

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|---|---|
| Public infrastructure | Linear and other infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc. |
| Quarrying operations | The extraction, processing, stockpiling and transportation of extractive materials carried out on the site and the associated removal and/or emplacement of vegetation, topsoil and overburden |
| Quarry products | Includes all saleable quarry products, including raw materials, but excludes bricks, tailings, other wastes and rehabilitation material for use on the site |
| Quarry water | Water that accumulates within active quarrying areas, overburden emplacement areas and infrastructure areas, synonymous with dirty water |
| Raw materials | Extractive materials used in making brick, tiles, clay pipes or similar |
| Registered Aboriginal Parties | As described in the *National Parks and Wildlife Regulation 2009* |
| Rehabilitation | The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting |
| Reasonable | Means applying judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements |
| Resources Regulator | NSW Resources Regulator within the Department of Regional NSW |
| Secretary | Planning Secretary under the EP&A Act, or nominee |
| Site | The land defined in Appendix 1 |
| Statement of Commitments | The Applicant's commitments in Appendix 6 |
| TfNSW | Transport for New South Wales |
| VENM | Virgin Excavated Natural Material, as defined in clause 50 of Schedule 1 of the POEO Act |
| Waste | Has the same meaning as defined in the Dictionary to the POEO Act |
| Waste Regulation | *Protection of the Environment (Waste) Regulation 2014* |
| WSA | Western Sydney Airport |

FOR INFORMATION

## SCHEDULE 2
## ADMINISTRATIVE CONDITIONS

### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

### TERMS OF CONSENT

2. The Applicant, in acting on this consent, must carry out the development:
   (a) in compliance with the conditions of this consent;
   (b) in accordance with all written directions of the Secretary; and
   (c) in accordance with the development layout.

3. The Applicant, in acting on this consent, must carry out the development:
   (a) generally in accordance with the EA;
   (b) generally in accordance with EA (Mod 1);
   (c) generally in accordance with EA (Mod 2);
   (d) generally in accordance with EA (Mod 3 and 4);
   (e) generally in accordance with Modification Report (Mod 5); and
   (f) generally in accordance with the Statement of Commitments.

4. The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document referenced in condition 3 of this Schedule. In the event of an inconsistency, ambiguity or conflict between any of the documents referenced in condition 3 of this Schedule, the most recent document prevails.

   *Note: For the purposes of this condition, there will be an inconsistency between documents if it is not possible to comply with both documents, or in the case of a condition of consent or direction of the Secretary, and a document, if it is not possible to comply with both the condition or direction, and the document.*

5. Consistent with the requirements of this consent, the Secretary may make written directions to the Applicant in relation to:
   (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and
   (b) the implementation of any actions or measures contained in any such document referred to in (a) above.

   *Note: For the purposes of this condition, there will be an inconsistency between documents if it is not possible to comply with both documents, or in the case of a condition of consent or direction of the Secretary, and a document, if it is not possible to comply with both the condition or direction, and the document.*

### STAGED DEVELOPMENT

5A. The development as modified by EA Mod 3 and 4, must be undertaken sequentially in the following stages:
   (a) Phase 1;
   (b) Phase 2;
   (c) Phase 3; and
   (d) Phase 4.

   *Note: Each of these phases is listed in the definitions and shown in Appendix 3.*

5B. The Applicant must notify the Department in writing, at least two weeks before the date of:
   (a) the commencement of each Phase of the development;
   (b) the completion of extraction in Pit 3;
   (c) cessation of Brickmaking Activities; and
   (d) decommissioning.

### COMPLIANCE

6. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

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## APPLICABILITY OF GUIDELINES

7. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, standards or policies in the form they are in as at the date of this consent.

However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, standard or policy, or a replacement of them.

## LIMITS OF CONSENT

8. The Applicant may carry out quarrying operations on the site until 27 September 2031.

*Note: Under this consent, the Applicant is required to decommission and rehabilitate the site and carry out additional requirements. Consequently, this consent will continue to apply in all respects other than to permit the carrying the development, until the rehabilitation of the site and those requirements and undertakings have been carried out to the required standard.*

9. (*Deleted*).

9A. The Applicant may receive, store, and dispatch finished building products at the site until brick making at the site commences.

10. The Applicant must not exceed the limits in Table 1 during any calendar year.

*Table 1: Limits on extraction, production, receival and dispatch volumes per calendar year*

| Activity | Development Phase | Total Volume (tonnes per calendar year) |
|---|---|---|
| Extraction from Pit 3 | Phase 1 and 2 | 420,000 |
| Receive raw materials for brickmaking | Phase 1 and 2 | 215,000 |
| | Phase 3 onwards | 360,000 |
| Dispatch raw materials | Phase 1,2 and 3 | 275,000 |
| Brick production | All Phases | 300,000 |
| Dispatch finished building products | All Phases | 330,000 |

*Note: The Total Volume limits in Table 1 do not apply to the import of Fill for the purpose of backfilling voids. The import of Fill is separately managed under the restrictions on truck movements contained in Conditions 12, of this Schedule.*

11. The Applicant must not transport bricks or quarry products to or from the site, other than by road.

12. The Applicant must not exceed the total truck movements detailed in Table 2.

*Table 2: Total Truck Movements*

| Transport Route Stage | Development Phases | Day | Total truck movements[a] |
|---|---|---|---|
| Prior to the upgrade of the Martin Road-Elizabeth Drive Intersection | 1,2 and 3 | Monday to Friday | 120 |
| | | Saturday | 40 |
| | | Sundays | 40 |
| Following completion of the Martin Road-Elizabeth Drive Intersection upgrade | 1,2 and 3 | Monday to Friday | 800 |
| | | Saturday | 358 |
| | | Sundays | 200 |
| | 4 | Monday to Friday | 366 |
| | | Saturday | 98 |
| | | Sunday | 0 |

[a] *Note: each truck entering or exiting the site is counted as a separate movement.*

FOR INFORMATION

12A. Truck movements entering or exiting the site on Sundays are restricted to the importation of Fill for the purpose of backfilling quarry pits and rehabilitation activities.

*Note: Truck movements are also controlled, further restricted by the limits in condition 10 of this Schedule and operating hours in condition 1 of Schedule 3.*

**STRUCTURAL ADEQUACY**

13. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the BCA.

*Notes:*

- *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any proposed building works;*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development*
- *A detailed stormwater drainage design, prepared by a qualified practicing civil engineer, is to be submitted to Council prior to the issue of a construction certificate.*

**BRICK KILN STACKS**

13A. The brick kiln stacks must not exceed 41 m above natural ground level.

**DEMOLITION**

14. All demolition work must be carried out in accordance with the *Australian Standard AS 2601-2001: The Demolition of Structures* (Standards Australia, 2001).

**PROTECTION OF PUBLIC INFRASTRUCTURE**

15. Unless the Applicant and the applicable authority agree otherwise the Applicant must:
    (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
    (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

*Note: This condition does not apply to damage to roads caused as a result of general road usage or otherwise addressed by contributions required by condition 25 of Schedule 3.*

**OPERATION OF PLANT AND EQUIPMENT**

16. All plant and equipment used on the site, or to monitor the performance of the development, must be:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

16A. The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the BCA. Before the issue of a Construction Certificate and an Occupation Certificate, the Applicant must provide the Certifying Authority with documented evidence that the products and systems proposed for use or used in the construction of external walls, including finishes and claddings such as synthetic or aluminium composite panels, comply with the requirements of the BCA. The Applicant must provide a copy of the documentation given to the Certifying Authority to the Secretary within seven days after the Certifying Authority accepts it.

**PRODUCTION DATA**

17. The Applicant must:
    (a) provide calendar year annual quarry production data to MEG using the standard form for that purpose; and
    (b) include a copy of this data in the Annual Review.

**LIMITS OF EXTRACTION**

**Identification of Approved Extraction Limits**

18. Within 3 months of the determination of Modification 3 and 4, the Applicant must:
    (a) engage a registered surveyor to mark out the boundary of the approved area of extraction within Pit 3; and
    (b) provide the Secretary with a survey plan of the boundary.

The boundary of the approved area of extraction within Pit 3 must be clearly marked in a manner that allows them to be easily identified at all times during the carrying out of quarrying operations.

FOR INFORMATION

**Maximum Extraction Depth**

19. The Applicant must not extract any extractive materials or carry out any work in the extraction area below 35 m below the pre-existing natural surface of the ground, other than construction of bores approved by DPIE Water or in-pit sumps approved by the Secretary.

FOR INFORMATION

## SCHEDULE 3
## ENVIRONMENTAL PERFORMANCE CONDITIONS

### NOISE

#### Hours of Operation

1. The Applicant must comply with the operating hours set out in Table 1.

*Table 1: Operating hours*

| *Activity* | *Permissible Hours* |
|---|---|
| Quarrying operations (excluding truck arrival, loading and dispatch) | 7.00 am to 6.00 pm Monday to Saturday |
| | At no time on Sundays or public holidays |
| Brickmaking Activities | 24 hours per day, 7 days per week |
| Truck arrival and dispatch (raw materials only) | 6.00 am to 10.00 pm Monday to Friday |
| | 6.00 am to 6.00 pm Saturday |
| | At no time on Sundays or public holidays |
| Truck arrival and dispatch (finished building products only) | 5.00 am to 10.00 pm Monday to Friday |
| | 6.00 am to 6.00 pm Saturday |
| | At no time on Sundays or public holidays |
| Truck arrival and dispatch (Fill import only) | 7.00 am to 6.00 pm Monday to Saturday |
| | 9.00 am to 6.00 pm Sunday |
| | At no time on public holidays |
| Cash sales | 6.00 am to 6.00 pm Monday to Saturday |
| | At no time on Sundays or public holidays |
| Sales selection/Customer Display Centre | 8.00 am to 5.00 pm Monday to Sunday |
| Maintenance | At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations |

1A. With the written agreement of the Secretary, the Applicant may undertake limited campaign trucking (within the limits imposed under conditions 10 and 12 of Schedule 2) for the import of Fill outside of the operating hours prescribed in condition 1 of this Schedule.

2. The following activities may be carried out outside the hours specified in condition 1 of this Schedule:
   (a) activities that are inaudible at residences on privately-owned land;
   (b) the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; or
   (c) emergency work to avoid the loss of life, property or to prevent material harm to the environment.

   In such circumstances, the Applicant must notify the Department and affected residents prior to undertaking the activities, or as soon as is practical thereafter.

#### Construction Noise

3. Approved construction works must only be undertaken during standard construction hours (7 am to 6 pm, Monday to Friday and 8 am to 1 pm on Saturdays), unless the Secretary agrees otherwise.

4. *(Deleted).*

FOR INFORMATION

**Operational Noise Criteria**

5. The Applicant must ensure that operational noise generated by the development (including construction activities) does not exceed the criteria in Table 2 at any residence on privately-owned land.

*Table 2: Operational noise criteria dB(A)*

| Receiver ID | Morning Shoulder | Day | Evening | Night | |
|---|---|---|---|---|---|
| | $L_{Aeq\ (15\ min)}$ | $L_{Aeq\ (15\ min)}$ | $L_{Aeq\ (15\ min)}$ | $L_{Aeq\ (15\ min)}$ | $L_{AFmax}$ |
| R9, R25, R35 | 43 | 45 | 40 | 38 | 52 |
| R5, R26, R27, R28, R29, R30, R31, R32, R34, R42, R43, R44, R45, R46 | 42 | 42 | 41 | 38 | 52 |
| R11, R12, R13, R14, R15 | 43 | 43 | 43 | 38 | 52 |
| All other residences | - | 40 | 35 | 35 | 52 |

Noise generated by the development must be monitored and measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the *NSW Noise Policy for Industry (NSW EPA 2017)*.

However, the noise criteria in Table 2 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

*Note: Should an agreement with a landowner be terminated for any reason, the Applicant must comply with the noise criteria in Table 2.*

**Road Traffic Noise Criteria**

6. The Applicant must ensure that the road traffic noise generated by the development does not exceed the criteria in Table 3 at any privately-owned residence.

*Table 3: Road traffic noise criteria dB(A)*

| Road Noise Receiver ID | Day / Evening $L_{Aeq\ (1\ hour)}$ | Night $L_{Aeq\ (1\ hour)}$ |
|---|---|---|
| **Prior to Martin Road – Elizabeth Road Intersection Upgrade** | | |
| Residents on Martin Road | 60 | 55 |
| **Following Martin Road – Elizabeth Road Intersection Upgrade** | | |
| RN5 | 61 | 55 |
| RN9, RN21 | 62 | 55 |
| RN14, RN22 | 63 | 55 |
| RN16 | 64 | 55 |
| All other residences on Martin Road | 60 | 55 |

Traffic noise generated by the development is to be measured in accordance with the relevant procedures in the NSW Road Noise Policy (Department of Environment, Climate Change and Water NSW).

However, the noise criteria in Table 3 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

6A. Upon receiving a written request from the owner of residences RN5, RN9, RN14, RN16, RN21 or RN22, the Applicant must implement noise mitigation treatment packages as described in the EA (Mod 3 and 4) and as set out in the *RMS Draft At-Receiver Treatment Packages*.

FOR INFORMATION

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

**Noise Operating Conditions**

7. The Applicant must:
   (a) take all reasonable steps to minimise the construction, operational, low frequency and road transportation noise of the development;
   (b) take all reasonable steps to minimise the noise impacts of the development during noise enhancing meteorological conditions;
   (c) operate a noise management system to guide the day to day planning of quarrying operations and the implementation of noise mitigation measures to ensure compliance with the relevant conditions of this consent;
   (d) carry out regular noise monitoring to determine whether the development is complying with the relevant conditions of this consent; and
   (e) modify or stop operations on the site to comply with the relevant conditions of this consent.

*Note: Monitoring under this consent is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.*

**Noise Management Plan**

8. The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
   (a) be submitted to the Secretary for approval prior to commencing Modification 3 and 4, unless otherwise agreed by the Secretary;
   (b) describe the measures to be implemented to ensure:
      - compliance with the noise criteria and operating conditions of this consent;
      - best practice management is being employed;
      - residences listed in condition 6A of this Schedule are notified of their rights to request road noise mitigation measures;
      - vibration impacts are minimised; and
      - the construction and operational noise impacts of the development are minimised during noise enhancing meteorological conditions;
   (c) describe measures to ensure that all the commitments in the EA (Mod 3 and 4) in relation to noise are implemented;
   (d) include a consultation plan detailing:
      - procedures for notifying and consulting nearby residents prior to the recommencement of quarrying and brick making activities;
      - procedures for notifying and consulting nearby residents prior to the commencement of construction activities;
      - details of a telephone complaints line (operated at all hours) and relevant site persons responsible for following up complaints;
      - procedures for handling and monitoring all complaints received; and
      - contingency measures that would be implemented where complaints are received;
   (e) describe the proposed noise management system; and
   (f) include a noise monitoring program that:
      - is capable of evaluating the performance of the development;
      - includes a protocol for determining any exceedances of the relevant conditions of this consent; and
      - effectively supports the noise management system.

The Applicant must implement the Noise Management Plan as approved by the Secretary.

**AIR QUALITY**

**Air Quality Impact Assessment Criteria**

9. The Applicant must ensure that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 4 at any residence on privately-owned land.

FOR INFORMATION

*Table 4: Air quality criteria*

| Pollutant | Averaging Period | Criterion | |
|---|---|---|---|
| Particulate matter < 2.5 µm ($PM_{10}$) | Annual | [a,d] 8 µg/m³ | |
| Particulate matter < 2.5 µm ($PM_{10}$) | 24 hour | [b] 25 µg/m³ | |
| Particulate matter < 10 µm ($PM_{10}$) | Annual | [a,d] 25 µg/m³ | |
| Particulate matter < 10 µm ($PM_{10}$) | 24 hour | [b] 50 µg/m³ | |
| Total suspended particulates (TSP) | Annual | [a,d] 90 µg/m³ | |
| [c] Deposited dust | Annual | [b] 2 g/m²/month | [a,d] 4 g/m²/month |

*Notes to Table 4:*
*a Total impact (ie increase in concentrations due to the development plus background concentrations due to all other sources).*
*b Incremental impact (ie increase in concentrations due to the development alone, with zero allowable exceedances of the criteria over the life of the development.*
*c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.*
*d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.*

**Operating Conditions**

10. The Applicant must:
    (a) implement best practice management to minimise the dust emissions of the development;
    (b) implement all air quality management and mitigation measures that were committed to in the EA (Mod 3 and 4);
    (c) implement real-time monitoring of 24-hour average $PM_{10}$ and meteorological conditions;
    (d) regularly assess meteorological and air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this consent;
    (e) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d under Table 4);
    (f) monitor and report on compliance with the relevant air quality conditions in this consent; and
    (g) minimise the area of surface disturbance and undertake progressive rehabilitation of the site,
    to the satisfaction of the Secretary.

10A. During Phase 4, the Applicant may request the Secretary's agreement to reduce or waive certain air quality monitoring requirements if the Applicant can demonstrate that they are no longer necessary.

11. The Applicant must ensure compliance with stack emission limits and gaseous pollutant load limits included in any EPL applicable to the site.

12. Within 14 months of commencement of increased production of bricks to 300,000 tonnes per year, or as otherwise required by the EPA, the Applicant must submit an Air Quality Verification Assessment to the EPA, and must provide a copy of this assessment to the Secretary. The Air Quality Verification Assessment must be completed in accordance with the requirements of the EPL for the premises.

**Air Quality Management Plan**

13. The Applicant must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with relevant WSA authorities;
    (b) be submitted to the Secretary for approval prior to commencing Phase 1, unless otherwise agreed by the Secretary;
    (c) describe the proposed air quality management system;
    (d) describe the measures to be implemented to ensure:
        - compliance with the air quality criteria and operating conditions of this consent;
        - best practice management is being employed; and
        - the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events;
    (e) describe measures to ensure that all the commitments in the EA (Mod 3 and 4) in relation to air quality are implemented;
    (f) include a program to ensure surface disturbance associated with quarrying operations is minimised;

FOR INFORMATION

(g) include an air quality monitoring program that:
- is capable of evaluating the performance of the development and informing day to day operational decisions;
- includes a protocol for determining any exceedances of the relevant conditions of this consent; and
- effectively supports the air quality management system; and

(h) include a program to:
- notify affected landowners of the potential health-related impacts associated with dust;
- respond effectively to enquiries or complaints.

The Applicant must implement the Air Quality Management Plan as approved by the Secretary.

**Meteorological Monitoring**

14. For the life of the development, the Applicant must ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* guideline and is capable of measuring meteorological conditions in accordance with the *NSW Noise Policy for Industry* (EPA, 2017).

**Odour**

15. The Applicant must ensure that no offensive odours, as defined by the POEO Act, are emitted from the site.

**Greenhouse Gas Emissions**

16. The Applicant must implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.

**SOIL AND WATER**

*Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain all necessary approvals and/or water licences for the development.*

**Water Supply**

17. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations under the consent to match its available water supply, to the satisfaction of the Secretary.

17A. The Applicant must report on water extracted from the site each year (direct and indirect) in the Annual Review, including water taken under each water licence.

**Water Discharges**

18. The Applicant must ensure that all quarry water from the site is contained wholly within the site except where discharges are otherwise authorised by condition 19 and 19A of this Schedule.

19. The Applicant must ensure that all surface water discharges from the site comply with the limits (both volume and quality) set in any EPL applicable to the site.

**Dewatering of Pits 1, 2 and 3**

19A. All water that is dewatered from Pit 1 (including any water transferred into Pit 1 from Pit 2 and Pit 3) must be transferred from the site in accordance with the Dewatering Management Plan required under Condition 23A of this Schedule.

19B. All dewatering activities from Pit 1 must be completed within Phase 1 unless otherwise agreed by the Secretary.

**Riparian Buffer Distance**

20. The Applicant must maintain a minimum setback width of 60 metres (measured from the top of bank) between extraction areas and both Badgerys Creek and Badgerys Creek tributary.

*Note: This condition does not prohibit overburden emplacement or rehabilitation works in accordance with the Development Layout Plan.*

FOR INFORMATION

**Alluvial Aquifers**

21. The Applicant must ensure that the development has no impact on alluvial aquifers associated with South Creek, Badgerys Creek or their tributaries.

22. *(Deleted)*

**Soil and Water Management Plan**

23. The Applicant must prepare a Soil and Water Management Plan for the development to the satisfaction of the Secretary. This plan must:
    (a) be prepared by a suitably qualified and experienced person/s approved by the Secretary;
    (b) be prepared in consultation with Council and DPIE-Water;
    (c) be submitted to the Secretary for approval prior to commencing Phase 1, unless otherwise agreed by the Secretary; and
    (d) include a:
    (i) Site Water Balance that includes:
    - details of:
        - sources and security of water supply;
        - water use and management on site;
        - adequacy of water storage facilities to contain all surface water runoff;
        - all existing Water Access Licences and potential Water Access Licences, including information on the relevant Water Sharing Plan and Water Sources;
        - any off-site water transfers, including those described in condition 23A of this Schedule; and
        - reporting procedures; and
    - measures to be implemented to minimise clean water use on site;

    (ii) Surface Water Management Plan, that includes:
    - a program for obtaining detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the development;
    - a detailed description of the surface water management system on site including the:
        - clean water diversion system;
        - erosion and sediment controls;
        - dirty water management system; and
        - water storages, including the area, depth and capacity of any in-pit sumps;
    - detailed plans, including design objectives and performance criteria, for:
        - reinstatement of drainage lines on the rehabilitated areas of the site; and
        - control of any potential water pollution from rehabilitated areas of the site;
    - performance criteria for the following, including trigger levels for investigating any potentially adverse impacts on:
        - the water management system;
        - surface water quality in creeks and other water bodies that could potentially affected by the development (including Badgerys Creek and Badgerys Creek tributary); and
        - the stream health, vegetation health and channel stability of water bodies that could potentially affected by the development;
    - a program to monitor and report on:
        - any surface water discharges;
        - the effectiveness of the water management system;
        - the quality of water discharged from the site to the environment;
        - surface water flows and quality in local watercourses; and
        - the stream health, riparian vegetation health and channel stability of creeks and other water bodies that could potentially be affected by the development; and
    - a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the development; and

    (iii) Groundwater Management Plan that includes:
    - measures to ensure that the maximum extraction depth is not exceeded (see condition 19 of Schedule 2);
    - a protocol to obtain appropriate water licence(s) to cover the volume of any unforeseen groundwater inflows into the quarry from the quarry face or floor;
    - groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; and

FOR INFORMATION

- a monitoring program to manage potential impacts, if any, on any alluvium and associated surface water source near the proposed extraction area that includes:
  - monitoring of boreholes within the alluvial sediments adjacent to Badgerys and South Creeks and their tributaries, and in the Bringelly Shale bedrock aquifer;
  - monitoring of groundwater inflows into the quarry from the quarry face or floor, or into any in-pit sumps;
  - monitoring the impacts of the development on baseflows to Badgerys and South Creeks and their tributaries;
  - identification of a methodology for determining exceedances of the assessment criteria;
  - a plan to respond to any exceedances of the performance criteria; and
  - a program to regularly report on monitoring.

The Applicant must implement the Soil and Water Management Plan as approved by the Secretary.

**Dewatering Infrastructure Plan**

23A. Prior to carrying out any construction activities associated with the dewatering activities on the site, the Applicant must prepare a Dewatering Infrastructure Plan for the development to the satisfaction of the Secretary. This plan must include:

(a) detailed designs for:
- any pipeline infrastructure used for dewatering activities; and
- the method to be used to cross Badgerys Creek;

(b) a flooding assessment which:
- considers the impacts of any structures (including overland pipelines) to flood flow within the floodplain up to the PMF; and
- describes the measures that will be implemented to minimise those impacts; and

(c) a description of the measures to be implemented for:
- managing construction and operation of minor surface infrastructure;
- avoiding significant impacts and minimisation of impacts generally;
- controlling any potential water pollution from construction;
- minimising and managing erosion and sedimentation;
- decommissioning of pipeline infrastructure; and
- rehabilitating disturbed areas.

The Applicant must implement the Dewatering Management Plan as approved by the Secretary.

**Dewatering Management Plan**

23B. The Applicant must prepare a Dewatering Management Plan for the development to the satisfaction of the Secretary. This plan must:

(a) be prepared in consultation with DPIE-Water and NRAR;

(b) be submitted to the Secretary for approval prior to dewatering activities from Pit 1, unless otherwise agreed by the Secretary; and

(c) include:
- details of:
  - off-site water transfer or discharge arrangements; and
  - procedures for monitoring on volumes transferred off-site and reporting on this as part of Annual Review;
- a Fauna Relocation Plan regarding the transfer of aquatic fauna from Pits 1, 2 and 3 prepared by a suitably qualified ecologist which includes details on:
  - native fauna species known to inhabit and/or use the pits which require transfer from the pits;
  - methodology proposed to transfer the fauna;
  - location and suitability of the proposed relocation sites;
  - any potential impacts of relocating the fauna top the relocation sites and proposed mitigation measures; and
  - details of ecologists to monitor dewatering activities;
- a Geotechnical Monitoring Program, prepared by a suitably qualified and experience geotechnical engineer, to examine and monitor the faces and high walls of the quarry pits to determine potential geotechnical hazards areas and evaluate risks of potential failures;
- a program to monitor and report on dewatering that involves any discharge from the site, including:
  - the quality of any water discharged from the site;

FOI INFORMATION

- surface water flows and quality in local watercourses; and
- the stream health, riparian vegetation health and channel stability of creeks and other water bodies that could potentially be affected by the discharges; and

- a plan to respond to any exceedances of the performance criteria and mitigate and/or offset any adverse surface water impacts of the discharges.

The Applicant must implement the Dewatering Management Plan as approved by the Secretary.

**Flooding**

23C. The Applicant must prepare and implement an Evacuation Plan for the site. This Evacuation Plan must be prepared in consultation with the State Emergency Services and include details of the site evacuation and sheltering procedures during flood events.

**TRANSPORT**

**Road Haulage**

24. Prior to commencing Phase 1, the Applicant must:
(a) erect signage on Elizabeth Drive advising of "trucks turning";
(b) install a wheel wash on the quarry access road and Fill haul road to prevent material being deposited on Martin Road; and
(c) ensure the access driveway from Martin Road is capable of catering for all heavy vehicles associated with the development in accordance with AS2890.2,
to the satisfaction of Council.

**Road Upgrade and Maintenance Contribution**

25. Prior to the recommencement of quarrying operations, the Applicant must enter into a formal agreement with Council for:
(a) the repair of historical impacts of trucking from the development on Martin Road; and
(b) annual road maintenance contributions to be paid to Council, based on the weight of all laden truck movements to and from the site, for the duration that Martin Road is vested in the Council as the roads authority.

The Applicant must provide evidence to the Secretary that the agreement has been executed and implemented to the satisfaction of Council.

If there is any dispute between the Applicant and Council, then either of the parties may refer the matter to the Secretary for resolution.

25A. Prior to increasing truck movement limits as specified in condition 12 of Schedule 2, the Applicant must complete an interim upgrade of the Martin Road and Elizabeth Drive Intersection. The final design of intersection must be to the satisfaction of the relevant roads authority/s and must:
(a) be designed and constructed in accordance with Austroads Guidelines, Australian Standards and any requirements of the relevant road authority/s;
(b) include, at a minimum, a three phase signal operation including a right turn green light and pedestrian crossings on one Martin Road and one Elizabeth Drive approach;
(c) be subject to a Works Authorisation Deed (WAD) with TfNSW; and
(d) be funded by the Applicant, unless otherwise agreed with TfNSW.

25B. With the written agreement of the Secretary, the requirements of condition 25A of this Schedule may be waived if the Applicant can demonstrate that the Martin Road-Elizabeth Drive Intersection has been upgraded to achieve service, capacity and safety standards equivalent to or greater than those required under condition 25A of this Schedule.

25C. The Applicant must provide an area for a potential transport corridor associated with an extension of Martin Road through the site (as conceptually shown in Appendix 3). The final design and location of the transport corridor and any associated commercial arrangements must be determined in consultation with TfNSW.

The Applicant must advise the Secretary in writing of the final design and location of the transport corridor as agreed with TfNSW, and update relevant management plans, strategies or programs for the development to reflect the transport corridor.

FOR INFORMATION

**Monitoring of Product Transport**

26. The Applicant must keep accurate records of:
    (a) all truck movements to and from the site (including time of arrival and dispatch and nature of material transported);
    (b) the weight of all bricks, Fill and quarry products transported to and from the site; and
    (c) publish a summary of these records on its website every 6 months.

**Operating Conditions**

27. The Applicant must:
    (a) ensure that all laden trucks carrying quarry products, raw materials or Fill have their loads covered when arriving at or leaving the site;
    (b) ensure that all trucks are cleaned of material that may fall from vehicles, before leaving the site;
    (c) use its best endeavours to ensure that appropriate signage is displayed on trucks used to transport finished building materials, quarry products or raw materials to or from the development so they can be easily identified by road users; and
    (d) continue to engage with TfNSW regarding the detailed planning and design for the Eastern Airport Ring Road.

**Traffic Management Plan**

28. The Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with TfNSW, WSA and Council;
    (b) be submitted to the Secretary for approval prior to commencing Phase 1 operations, unless otherwise agreed by the Secretary;
    (c) describe the processes in place to control the arrival and dispatch of trucks;
    (d) include a Drivers' Code of Conduct that details the safe and quiet driving practices that must be used by drivers travelling to and from the site;
    (e) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct; and
    (f) propose measures to minimise the transmission of dust and tracking of material onto the surface of the public road from vehicles leaving the quarry; and
    (g) describe the measures to manage construction and cumulative traffic impacts on the surrounding road network;
    (h) be updated as necessary to reflect the operational phases and truck movement limits specified in condition 12 of Schedule 2 and prior to the commencement of any construction works for the upgrade of the Martin Road – Elizabeth Drive Intersection or the Eastern Airport Ring Road.

    The Applicant must implement the Traffic Management Plan as approved by the Secretary.

**ABORIGINAL HERITAGE**

29. The Applicant must ensure that:
    (a) archaeological salvage of site BC-01-09 is undertaken in accordance with Recommendation 1, Section 6.0 of the *Aboriginal Heritage Assessment – Addendum* in the EA; and
    (b) regeneration works, dewatering activities and water discharges in the area of the archaeological deposit identified adjacent to Badgerys Creek (see Appendix 5) are either avoided, or else undertaken in a manner that will minimise harm to Aboriginal objects, to the satisfaction of the Secretary; and
    (c) measures are implemented prior to the commencement of Phase 1, to conserve and protect the hearth feature within site BCBW18 AS 02 02 (AHIMS ID 45-5-5164).

30. The Applicant must prepare an Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. The plan must:
    (a) be prepared by suitably qualified and experienced persons;
    (b) be prepared in consultation with Registered Aboriginal Parties and Heritage NSW;
    (c) be submitted to the Secretary for approval within 6 months of the determination of Modification 3 and 4, unless otherwise agreed by the Secretary;
    (d) include a description of the measures that would be implemented to:
        (i) protect, monitor and manage identified Aboriginal objects and Aboriginal places on the site (including any proposed archaeological investigations and salvage measures), including specific measures to ensure that the archaeological deposit adjacent to Badgerys Creek (see Appendix 5) is not impacted during regeneration operations;

FOR INFORMATION

(ii) conserve the entire extent of the hearth feature within site BCBW18 AS 02 (AHIMS ID 45-5-5164);
(iii) manage the discovery of previously unidentified Aboriginal objects or Aboriginal places on the site; and
(iv) facilitate ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site; and

(e) include a protocol to be implemented in the event that skeletal remains are discovered during the development.

The Applicant must implement the Aboriginal Heritage Management Plan as approved by the Secretary.

31. If human remains are discovered on the site, then all work in the area surrounding the discovery must cease, and the area must be secured. The Applicant must immediately notify NSW Police Force and Heritage NSW, and work must not recommence in the area until authorised by NSW Police Force and Heritage NSW.

32. If any potential Aboriginal object or Aboriginal place is identified on the site, or suspected to be on the site:
(a) all work in the immediate vicinity of the object or place must cease immediately;
(b) a 10 m buffer area around the object or place must be cordoned off; and
(c) Heritage NSW must be contacted immediately.

33. Work in the immediate vicinity of a site identified in condition 32 of this Schedule may only recommence if:
(a) the object or place is confirmed by Heritage NSW upon consultation with the Registered Aboriginal Parties not to be an Aboriginal object or Aboriginal Place;
(b) the Aboriginal Cultural Heritage Management Plan is revised to include the object or place and appropriate measures in respect of it; or
(c) the Secretary is satisfied with the measures to be implemented in respect of the object or place and makes a written direction in that regard.

## REHABILITATION

### Rehabilitation Objectives

34. The Applicant must rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the *Mining Act 1992*. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (Mod 3 and 4) and shown in Appendix 4, and must comply with the objectives in Table 5.

*Table 5: Rehabilitation Objectives*

| Feature | Objective |
|---|---|
| *All areas of the site affected by the development* | • Safe<br>• Hydraulically and geotechnically stable<br>• Non-polluting<br>• Fit for the intended final land use(s)<br>• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land |
| *Surface infrastructure* | • Decommissioned and removed, unless otherwise agreed by the Secretary |
| *Landscaping bunds* | • Hydraulically and geotechnically stable<br>• Vegetated |
| *Pits 1, 2 and 3* | • Backfilled to a landform that is consistent with natural ground level and is geotechnically stable<br>• Free draining |

### Progressive Rehabilitation

35. The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.

*Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to future re-disturbance.*

35A. The Applicant must complete the backfilling of Pits 1 and 2 within 6 years of commencement of Phase 1, or as otherwise agreed by the Secretary.



FOR INFORMATION

35B. The Applicant must complete the backfilling of Pit 3 within 2 years of the date of completion of extraction activities in Pit 3, or as otherwise agreed by the Secretary.

**Rehabilitation Management Plan**

36. The Applicant must prepare a Rehabilitation Management Plan for the development, in accordance with the conditions imposed on the mining lease(s) associated with the development under the *Mining Act 1992*. This plan must:

(a) be prepared in consultation with the Department, DPIE Water, BCD, TfNSW and relevant WSA authorities and Council;

(b) build upon the Rehabilitation Objectives in Table 5 and the proposed rehabilitation strategy described in the EA (Mod 3 and 4) and shown in Appendix 4;

(c) investigate options for the future use of disturbed areas following the completion of backfilling operations, having regards to the strategic planning associated with the draft Western Sydney Aerotropolis Plan (or subsequently adopted NSW Government strategic plans);

(d) describe and justify the proposed rehabilitation strategy for the site, including the landform and use of the site following the completion of quarry operations;

(e) include details of the planting of replacement trees in riparian areas consistent with the Statement of Commitments and with vegetation requirements for WSA to minimise wildlife impacts;

(f) describe how the rehabilitation of the site would achieve the objectives identified in Table 5 and the requirements of conditions 35A and 35B of this Schedule;

(g) include detailed Rehabilitation Objectives, Rehabilitation Completion Criteria and the Final Landform and Rehabilitation Plan for evaluating the performance of the rehabilitation of the site;

(h) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation;

(i) to the maximum extent practicable, build on and integrate with the other management plans required under this consent;

(j) include a life of mine rehabilitation and mining schedule and a protocol for progressive reviews of key progressive rehabilitation milestones from the commencement of operations through to decommissioning and mine closure;

(k) an overview of the identified risks to achieving successful rehabilitation and strategies to be implemented to address these risks;

(l) include a program to monitor, audit and report on the progress against the Rehabilitation Objectives and Rehabilitation Completion Criteria and the Final Landform and Rehabilitation Plan; and

(m) describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, including intervention and adaptive management techniques that may be required to ensure rehabilitation remains on a trajectory of achieving the Rehabilitation Objectives, Rehabilitation Completion Criteria and the Final Landform and Rehabilitation Plan as soon as reasonably practical.

***Note**: The Rehabilitation Management Plan may be combined with a Mining Operations Plan, or similar plan, required under the mining lease granted for the development.*

**VISUAL**

37. The Applicant must implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development to the satisfaction of the Secretary.

37A. Within 3 months of commencing quarrying operations in Pit 3, the Applicant must construct landscaped earthen bunds and plant vegetation screens (as shown conceptually in Appendix 3), to minimise the visual impacts of the development. The landscaped earthen bunds and plant vegetation screens must be maintained until Pit 3 area has been fully rehabilitated.

37B. Within 6 months of the Secretary being advised of the confirmed Eastern Ring Road alignment, as required under condition 25C of this Schedule, the Applicant must construct landscaped earthen bunds and plant vegetation screens around the brickmaking facility and raw material stockpile (as shown conceptually in Appendix 3), to minimise the visual impacts of the development. The landscaped earthen bunds and plant vegetation screens and must be maintained for the life of the development.

FOR INFORMATION

37C. The Applicant must ensure that all outdoor and external lighting at the site:
(a) complies with *AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting;* and
(b) is designed in accordance with any Civil Aviation Safety Authority requirements for the WSA and is mounted, screened and directed in such a manner that it does not cause distraction or confusion to pilots due to light spill above the horizontal plane.

**Visual Impact Management Plan**

37D. Within 6 months of approval of Modification 3 and 4, the Applicant must prepare a Visual Impact Management Plan for the development to the satisfaction of the Secretary. This plan must:
(a) be prepared by a suitably qualified and experienced person/s;
(b) be prepared in consultation with Council, TfNSW and relevant WSA authorities;
(c) describe the measures to be implemented to minimise the visual, landscaping and off-site lighting impacts of the development to the WSA and surrounding community;
(d) include a landscaping strategy to shield public views of the development (including views from the Eastern Airport Ring Road) that includes:
- the measures identified in the EA (Mod 3 and 4);
- a vegetation strategy utilising a diversity of local provenance tree species from the native vegetation community (or communities) that occur, or once occurred on the site, and would minimise wildlife attraction;
- a bund vegetation and maintenance schedule; and
- procedures to notify, consult with and implement site-specific mitigation measures at affected privately-owned residences; and

(e) include a program to monitor and report on the implementation and effectiveness of the mitigation measures; and
(f) include a protocol to update the plan to include the requirements of condition 37A and 37B of this Schedule, once the Secretary has been advised of the confirmed Eastern Ring Road alignment, as required under condition 25C of this Schedule.

The Applicant must implement the Visual Impact Management Plan as approved by the Secretary.

**WASTE**

38. The Applicant must:
(a) manage on-site sewage treatment and disposal to the satisfaction of Council;
(b) minimise the waste generated by the development;
(c) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and
(d) report on waste management and minimisation, including management of non-recyclable materials in the Annual Review,
to the satisfaction of the Secretary.

*Note: Approval pursuant to Section 68 of the Local Government Act 1993 is required from Council for onsite sewage management systems.*

39. Except as expressly permitted in an EPL and/or the conditions of this consent, the Applicant must not receive waste on the site for storage, treatment, processing, reprocessing or disposal.

**Fill Management Plan**

39A. Prior to the import of Fill to the site, the Applicant must prepare a Fill Management Plan for the development to the satisfaction of the Secretary. This plan must:
(a) identify the quantities of Fill to be imported to site;
(b) describe:
- the procedures for monitoring Fill imported to the site to ensure that it meets relevant quality specifications for VENM or ENM;
- a protocol to prevent materials that fail to meet the requirements of the ENM Exemption and ENM Order from being accepted;
- the management of reject materials;
- management measures for the emplacement and temporary stockpiling of Fill;
- the process for handling Fill for use in rehabilitation;
- measures for the on-site use of water captured in sediment basins to ensure that the water does not present a contamination risk; and
- processes for assessing, recording, handling and managing any contamination found on the site; and

FOR INFORMATION

(c) provide an indicative schedule of Fill material to be imported to the site for each Phase of the development, in order to achieve the conceptual final landform.

The Applicant must implement the Fill Management Plan as approved by the Secretary.

**LIQUID STORAGE**

40. The Applicant must ensure that all tanks and similar storage facilities (other than for water) are protected by appropriate bunding or other containment, in accordance with the relevant Australian Standards.

**DANGEROUS GOODS**

41. The Applicant must ensure that the storage, handling, and transport of dangerous goods is done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the *Dangerous Goods Code*.

**FIRE SAFETY**

42. The Applicant must:
    (a) ensure that the development is suitably equipped to respond to any fires on site;
    (b) assist the emergency services to the extent practicable if there is a fire in the vicinity of the site; and
    (c) ensure that the development provides for asset protection in accordance with the relevant requirements in *Planning for Bushfire Protection 2019* (NSW RFS 2019).

FOR INFORMATION

## SCHEDULE 4
## ADDITIONAL PROCEDURES

### NOTIFICATION OF LANDOWNERS

1. As soon as practicable, and no longer than 7 days, after obtaining monitoring results showing:
   (a) an exceedance of any criteria in Schedule 3, the Applicant must notify the affected landowners in writing of the exceedance, and provide regular monitoring results, at least every 3 months, to each affected landowner until the development is again complying with the relevant criteria; and
   (b) an exceedance of any air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned).

### INDEPENDENT REVIEW

2. If a landowner considers the development to be exceeding the relevant criteria in Schedule 3, they may ask the Secretary in writing for an independent review of the impacts of the development on their land.

   If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.

   If the Secretary is satisfied that an independent review is warranted, within 3 months, or as otherwise agreed by the Secretary and the landowner, of the Secretary's decision, the Applicant must:
   (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
      - consult with the landowner to determine his/her concerns;
      - conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and
      - if the development is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria;
   (b) give the Secretary and landowner a copy of the independent review; and
   (c) comply with any written requests made by the Secretary to implement any findings of the review.

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FOR INFORMATION

## SCHEDULE 5
## ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

### ENVIRONMENTAL MANAGEMENT

#### Environmental Management Strategy

1. The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
   (a) be submitted to the Secretary for approval within 6 months of the determination of Modification 3 and 4, unless otherwise agreed by the Secretary;
   (b) provide the strategic framework for environmental management of the development;
   (c) identify the statutory approvals that apply to the development;
   (d) set out the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
   (e) set out the procedures to be implemented to:
   - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
   - receive, record, handle and respond to complaints;
   - resolve any disputes that may arise during the course of the development;
   - respond to any non-compliance and any incident; and
   - respond to emergencies; and

   (f) include:
   - references to any strategies, plans and programs approved under the conditions of this consent; and
   - a clear plan depicting all the monitoring to be carried out under the conditions of this consent.

   The Applicant must implement any Environmental Management Strategy as approved by the Secretary.

#### Evidence of Consultation

2. Where the conditions of this consent require consultation with an identified party, the Applicant must:
   (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and
   (b) provide details of the consultation undertaken, including:
   - the outcome of that consultation, matters resolved and unresolved; and
   - details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed any unresolved matters.

   However, if the Secretary agrees, a strategy, plan or program may be prepared without consultation being undertaken with an identified party required under a condition of this consent.

#### Management Plan Requirements

3. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:
   (a) a summary of relevant background or baseline data;
   (b) a description of:
   - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
   - any relevant limits or performance measures/criteria; and
   - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;

   (c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
   (d) a program to monitor and report on the:
   - impacts and environmental performance of the development; and
   - effectiveness of any management measures (see (c) above);

   (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
   (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
   (g) a protocol for managing and reporting any:

FOR INFORMATION

- incidents;
- complaints; and
- non-compliances with statutory requirements;

(h) a protocol for periodic review of the plan; and

(i) a document control table that includes version numbers, dates when the management plan was prepared and reviewed, names and positions of the person/s who prepared and reviewed the management plan, a description of any revisions made and the date of the Secretary's approval.

*Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*

**Application of Existing Strategies, Plans and Programs**

4. The Applicant must continue to apply existing management plans, strategies or monitoring programs approved prior to the approval of Modification 3 and 4, until the approval of a similar plan, strategy or program following the approval of Modification 3 and 4.

**Revision of Strategies, Plans & Programs**

5. Within 3 months of:

(a) the submission of an incident report under condition 10 below;

(b) the submission of an Annual Review under condition 12 below;

(c) the submission of an Independent Environmental Audit report under condition 14 below; and

(d) the approval any modifications to this consent,

the Applicant must review the suitability of all strategies, plans and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.

*Notes:*

- *The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.*
- *In the event of an inconsistency between condition 5(d) above and any condition in Schedule 3 of this consent, the latter prevails.*

**Updating and Staging of Strategies, Plans or Programs**

6. With the approval of the Secretary, the Applicant may:

(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);

(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and

(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).

**Adaptive Management**

7. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must as soon as becoming aware of any exceedance:

(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;

(b) consider all reasonable and feasible options for remediation (where relevant);

(c) within 14 days of the exceedance occurring, submit a report to the Secretary describing these remediation options and any preferred remediation measures or other course of action; and

(d) implement remediation measures as directed by the Secretary;

to the satisfaction of the Secretary.

FOR INFORMATION

## COMMUNITY CONSULTATIVE COMMITTEE

8. The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be established prior to recommencing quarrying operations and be operated in general accordance with the Department's *Community Consultative Committee Guidelines, November 2016* (or later version).

*Notes:*
- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.*
- *In accordance with the guidelines, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community.*
- *The Applicant may, with the approval of the Secretary, combine the function of this CCC with the functions of other CCCs in the area.*

## REPORTING AND AUDITING

### Incident Notification

9. The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be made in writing through the Department's Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.

### Non-Compliance Notification

10. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be made in writing through the Department's Major Projects website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

*Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*

### Regular Reporting

11. The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

### Annual Review

12. Prior to recommencing quarrying operations or Fill import, and annually thereafter, the Applicant must submit a review to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:
    (a) describe the development (including any progressive rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
    (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:
        - relevant statutory requirements, limits or performance measures/criteria;
        - requirements of any plan or program required under this consent;
        - monitoring results of previous years; and
        - relevant predictions in the documents listed in condition 3 of Schedule 2;
    (c) evaluate and report on:
        - the effectiveness of the air quality and noise management systems; and
        - compliance with the performance measures, criteria and operating conditions in this consent.
    (d) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
    (e) identify any trends in the monitoring data over the life of the development;
    (f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

FOR INFORMATION

(g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 8 of Schedule 5) and any interested person upon request.

**INDEPENDENT ENVIRONMENTAL AUDIT**

13. Within 12 months of the commencement of Phase 1, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must:
    (a) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
    (b) include consultation with the relevant agencies and the CCC;
    (c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL or necessary water licences for the development (including any assessment, strategy, plan or program required under these approvals);
    (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals;
    (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, strategy, plan or program required under the abovementioned approvals; and
    (f) be conducted and reported to the satisfaction of the Secretary.

14. Within 12 weeks of commencing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of these recommendations as required. The Applicant must implement these recommendations, to the satisfaction of the Secretary.

14A. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

***Note:*** *For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

**ACCESS TO INFORMATION**

15. Within 3 months of the determination of Modification 3 and 4, until the completion of all works, including rehabilitation and remediation the Applicant must:
    (a) make the following information publicly available on its website:
        - the documents listed in condition 3 of Schedule 2;
        - current statutory approvals for the development;
        - all approved strategies, plans and programs required under the conditions of this consent;
        - regular reporting on the environmental performance of the development in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent;
        - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
        - summary of the current stage and progress of the development;
        - contact details to enquire about the development or to make a complaint;
        - a complaints register, updated at least monthly;
        - the Annual Reviews of the development;
        - any Independent Environmental Audit as described in condition 13 above, and the Applicant's response to the recommendations in any audit; and
        - any other matter required by the Secretary; and
    (b) keep this information up-to-date,

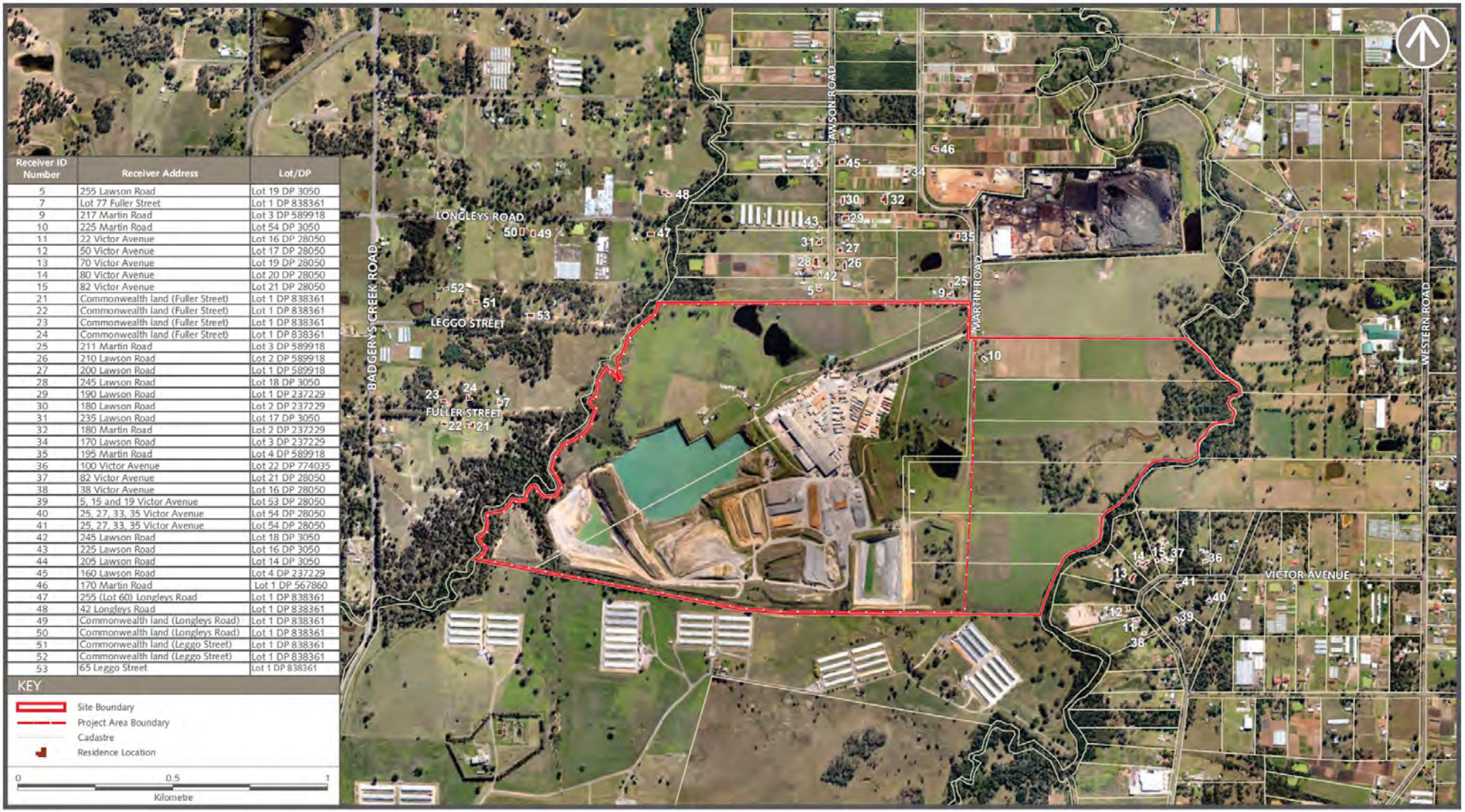
    to the satisfaction of the Secretary.

FOR INFORMATION

## APPENDIX 1
## SCHEDULE OF LAND


| Schedule of Land | |
|---|---|
| Lot | Deposited Plan |
| 1 | 1035249 |
| 2 | 1035249 |
| 1 | 373863 |
| 54 | 3050 |
| 55 | 3050 |
| 56 | 3050 |
| 57 | 3050 |
| 58 | 3050 |
| 59 | 3050 |
| 1 | 981161 |

## APPENDIX 2
## LAND OWNERSHIP SURROUNDING THE DEVELOPMENT




| Receiver ID Number | Receiver Address | Lot/DP |
|---|---|---|
| 5 | 255 Lawson Road | Lot 19 DP 3050 |
| 7 | Lot 77 Fuller Street | Lot 1 DP 838361 |
| 9 | 217 Martin Road | Lot 3 DP 589918 |
| 10 | 225 Martin Road | Lot 54 DP 3050 |
| 11 | 22 Victor Avenue | Lot 16 DP 28050 |
| 12 | 50 Victor Avenue | Lot 17 DP 28050 |
| 13 | 70 Victor Avenue | Lot 19 DP 28050 |
| 14 | 80 Victor Avenue | Lot 20 DP 28050 |
| 15 | 82 Victor Avenue | Lot 21 DP 28050 |
| 21 | Commonwealth land (Fuller Street) | Lot 1 DP 838361 |
| 22 | Commonwealth land (Fuller Street) | Lot 1 DP 838361 |
| 23 | Commonwealth land (Fuller Street) | Lot 1 DP 838361 |
| 24 | Commonwealth land (Fuller Street) | Lot 1 DP 838361 |
| 25 | 211 Martin Road | Lot 3 DP 589918 |
| 26 | 210 Lawson Road | Lot 2 DP 589918 |
| 27 | 200 Lawson Road | Lot 1 DP 589918 |
| 28 | 245 Lawson Road | Lot 18 DP 3050 |
| 29 | 190 Lawson Road | Lot 1 DP 237229 |
| 30 | 180 Lawson Road | Lot 2 DP 237229 |
| 31 | 235 Lawson Road | Lot 17 DP 3050 |
| 32 | 180 Martin Road | Lot 2 DP 237229 |
| 34 | 170 Lawson Road | Lot 3 DP 237229 |
| 35 | 195 Martin Road | Lot 4 DP 589918 |
| 36 | 100 Victor Avenue | Lot 22 DP 774035 |
| 37 | 82 Victor Avenue | Lot 21 DP 28050 |
| 38 | 38 Victor Avenue | Lot 16 DP 28050 |
| 39 | 5, 15 and 19 Victor Avenue | Lot 53 DP 28050 |
| 40 | 25, 27, 33, 35 Victor Avenue | Lot 54 DP 28050 |
| 41 | 25, 27, 33, 35 Victor Avenue | Lot 54 DP 28050 |
| 42 | 245 Lawson Road | Lot 18 DP 3050 |
| 43 | 225 Lawson Road | Lot 16 DP 3050 |
| 44 | 205 Lawson Road | Lot 14 DP 3050 |
| 45 | 160 Lawson Road | Lot 4 DP 237229 |
| 46 | 170 Martin Road | Lot 1 DP 567860 |
| 47 | 255 (Lot 60) Longleys Road | Lot 1 DP 838361 |
| 48 | 42 Longleys Road | Lot 1 DP 838361 |
| 49 | Commonwealth land (Longleys Road) | Lot 1 DP 838361 |
| 50 | Commonwealth land (Longleys Road) | Lot 1 DP 838361 |
| 51 | Commonwealth land (Leggo Street) | Lot 1 DP 838361 |
| 52 | Commonwealth land (Leggo Street) | Lot 1 DP 838361 |
| 53 | 65 Leggo Street | Lot 1 DP 838361 |

**Figure 1: Receiver ID**

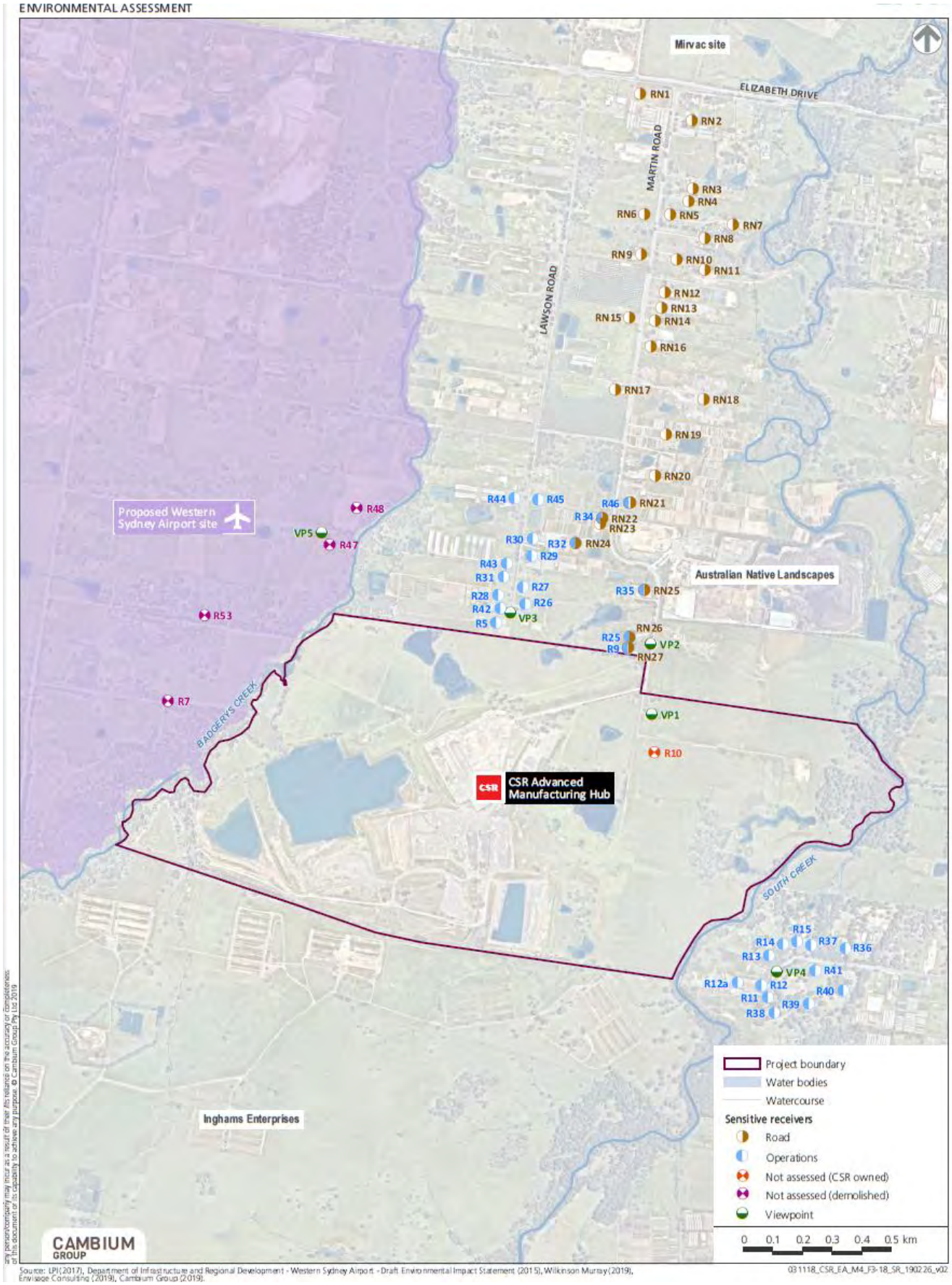



**Figure 2: Road Noise Receiver ID**

## APENDIX 3
## DEVELOPMENT LAYOUT PLANS


**Figure 1: Development Layout Overview**

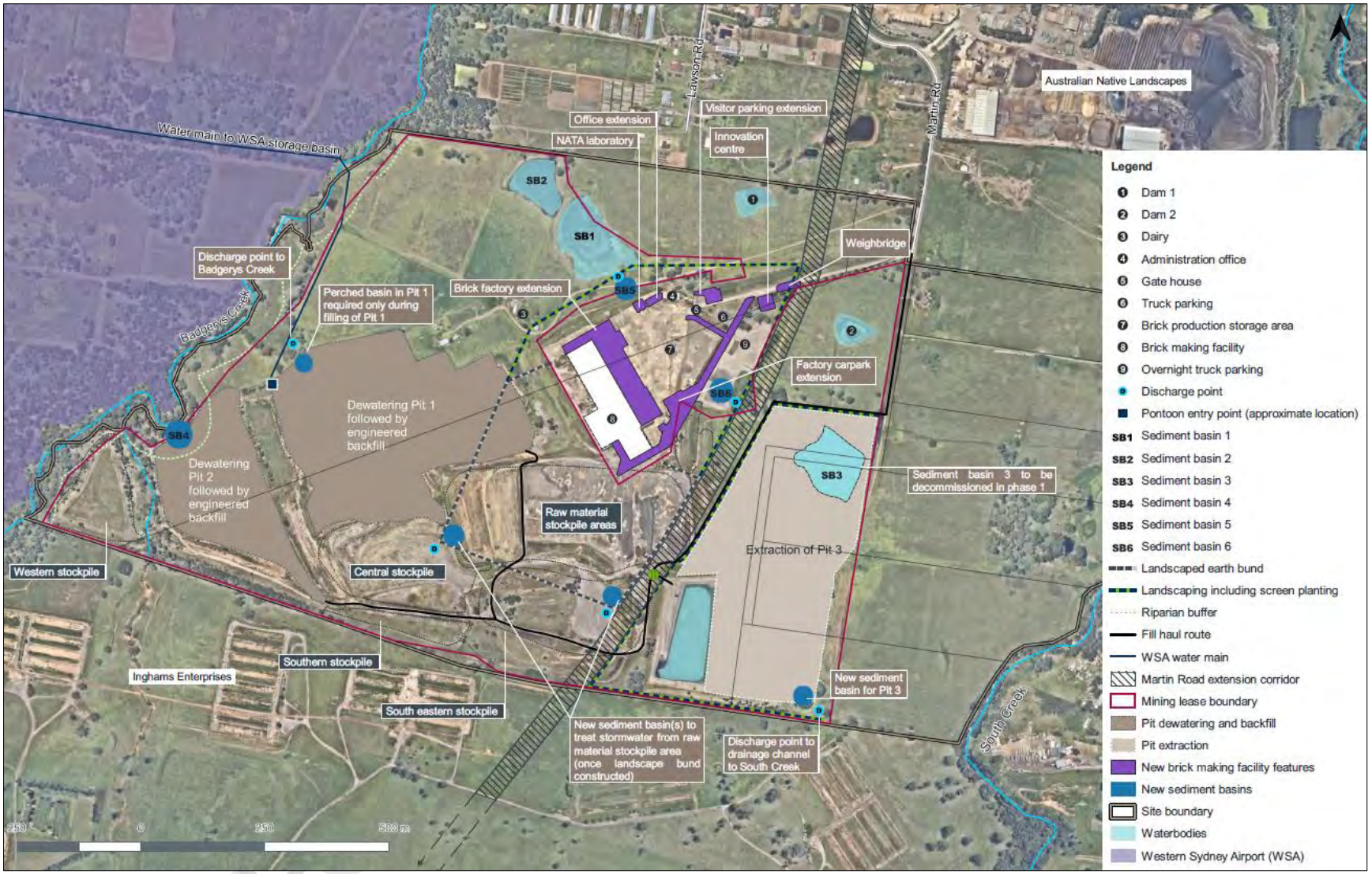



**Figure 2: Phase 1 Development Layout**


**Figure 3: Phase 2 Development Layout**


**Figure 4: Phase 3 Development Layout**


**Figure 5: Phase 4 Development Layout**

## APPENDIX 4
## REHABILITATION PLAN

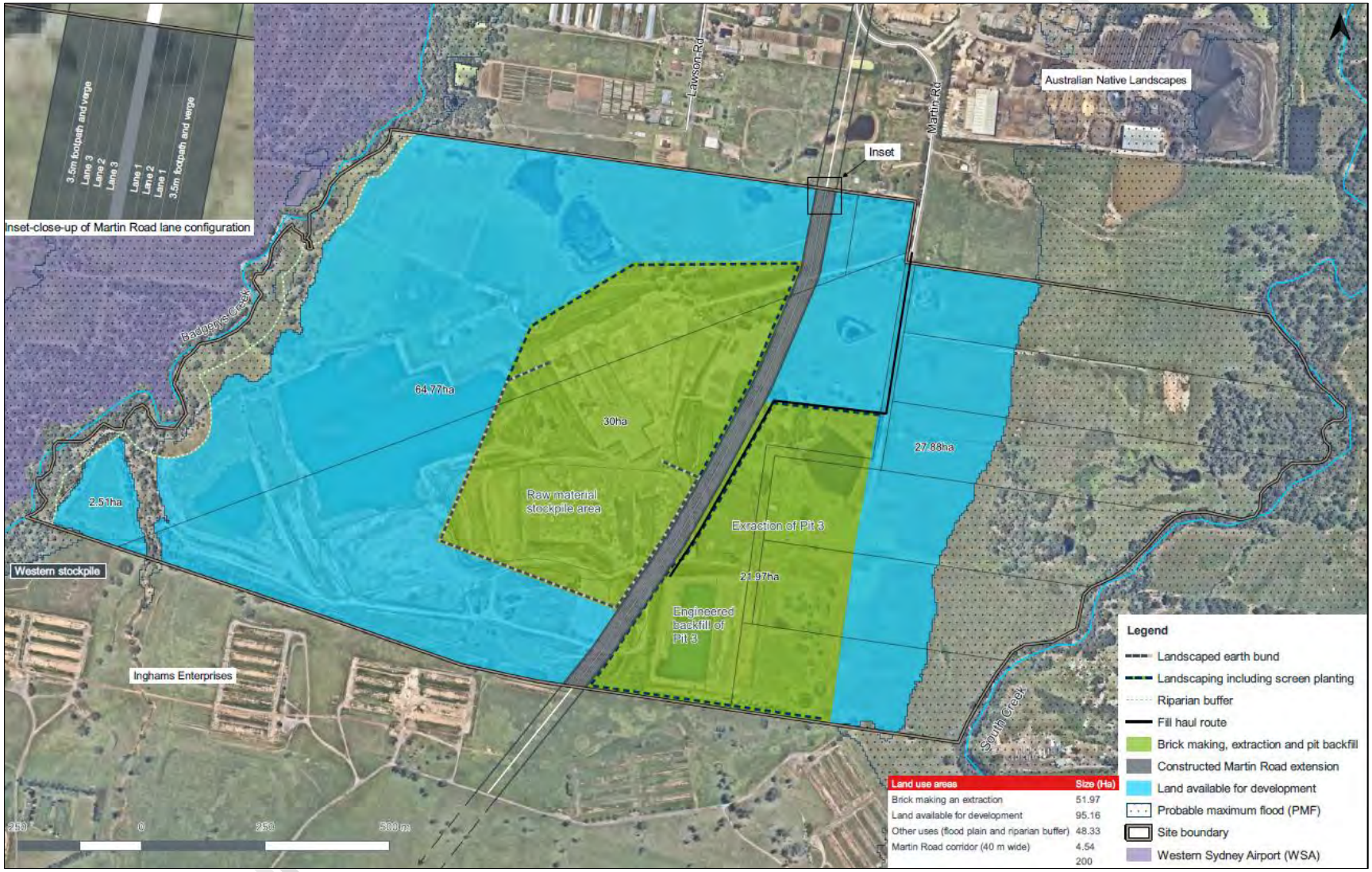



**Figure 1: Phase 2 Rehabilitation**

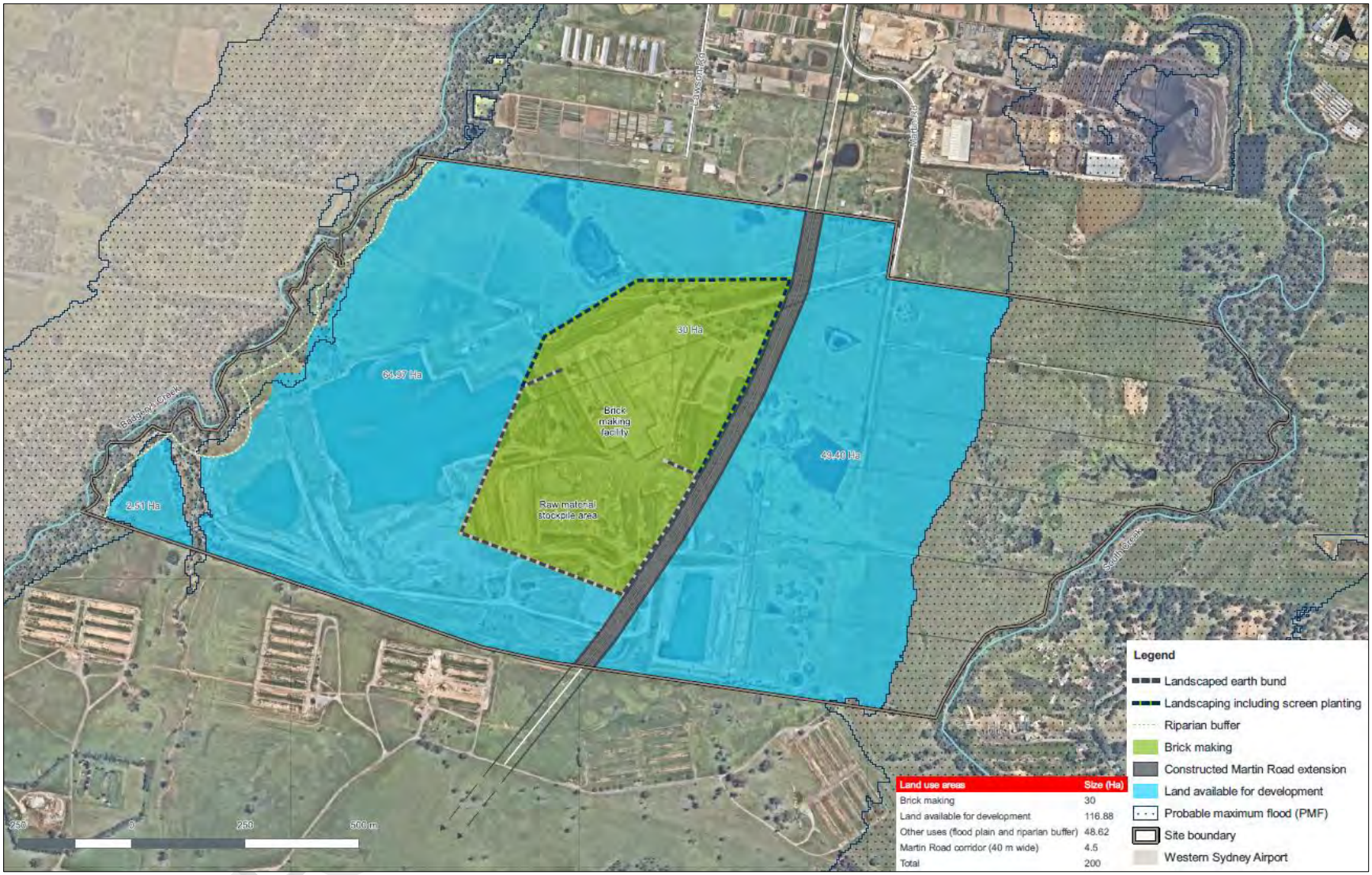



**Figure 2: Phase 4 Rehabilitation**

## APPENDIX 5
## ARCHAEOLOGICAL DEPOSIT AVOIDANCE ZONE

## APPENDIX 6
## STATEMENT OF COMMITMENTS

| Issue | Commitment |
|---|---|
| **General** | 1. The Applicant shall implement all practicable measures to prevent or minimise harm to the environment that may result from the construction, operation or rehabilitation of the development.<br>2. CSR will apply to amend EPL 684 to reflect the development.<br>3. The environmental management strategy and sub plans will be amended to reflect the development. |
| **Air Quality** | 4. The Applicant will prepare an Air Quality and Green House Gas Management Plan (AQGHGMP) for the development to the satisfaction of the Secretary. The AQGHGMP will outline the purpose, methodology and expected outcomes of the dust monitoring, and will include the following content:<br>▪ Dust fraction to be measured, i.e. TSP, $PM_{10}$, $PM_{2.5}$ etc.;<br>▪ Equipment to be used to measure selected dust fraction;<br>▪ Frequency of the monitoring, i.e. sample collection schedule;<br>▪ Duration of the monitoring program;<br>▪ Location of the monitoring station/s;<br>▪ Standards/guidelines that are to be followed for location/construction of the monitoring station, equipment calibration, collection of samples and analysis of samples;<br>▪ Calibration methodology and schedule;<br>▪ Reporting procedure;<br>▪ Regulatory guidelines and compliance criteria;<br>▪ Action levels and contingency measures in the event that pollutant concentrations approach or are likely to exceed the relevant compliance criteria; and<br>▪ A consultation program that involves nearby agricultural producers and residents, in order to determine if the dust mitigation measures are being affective.<br>5. The AQGHGMP will detail measures to control dust and emissions from the Project Site including the following measures:<br>▪ Haul roads should be watered using water carts such that the road surface has sufficient moisture to minimise visible on-road dust generation but not so much as to cause pooling and mud/dirt track out to occur<br>▪ Unloading of trucks containing raw or unusable extracted material to be controlled using water sprays/dust suppression when generating excessive visible dust.<br>▪ Dust from existing stockpiles of unusable material and open pits to be controlled using water sprays with chemical additives (surfactants);<br>▪ Completed pits to be revegetated as soon as practicable after completion of quarrying activities.<br>▪ Disturbed soil surfaces to be revegetated in accordance with the RMP for the Project Site.<br>▪ Operational practices to be reviewed to ensure 'best practice' techniques are being employed and that operational equipment is working efficiently.<br>6. The existing HVAS will be moved to as close to the northern boundary of the property and the closest sensitive receiver as possible.<br>7. The existing deposited dust gauges will be relocated to appropriate positions as close to the property boundaries and nearest sensitive receivers as possible.<br>8. If HVAS and deposited dust air quality monitoring identifies ongoing exceedances of the relevant air quality criteria then the reactive dust management program may need to be reinstated at the site. |
| **Noise** | 9. The Applicant will implement all practicable measures to undertake the development in a way that minimises the noise generated. The Applicant has made the following commitments in relation to operation noise management:<br>10. The Applicant will conduct quarrying activities at the Project Site only between the following hours:<br>▪ 7.00 am to 6.00 pm Monday to Saturday.<br>11. The Applicant will remove overburden only between the following hours:<br>▪ 7.00 am to 6.00 pm Monday to Saturday.<br>12. The Applicant will operate the Brick making facility and storage yard at the Project Site 24 hours a day, Monday to Sunday.<br>13. The Applicant will receive and dispatch finished building products only between the following hours:<br>▪ 5.00 am to 10.00 pm Monday to Friday.<br>▪ 6.00 am to 6.00pm Saturday.<br>14. The Applicant will receive and dispatch raw material only between the following hours:<br>▪ 6.00 am to 10.00 pm Monday to Friday.<br>▪ 6.00 am to 6.00pm Saturday.<br>15. The Applicant will conduct cash sales only between the following hours:<br>▪ 6.00 am to 6.00 pm Monday to Saturday. |

FOR INFORMATION

| Issue | Commitment |
|---|---|
| | 16. The Applicant will operate the sales selection/customer display centre only between the following hours:<br>▪ 8.00 am to 5.00 pm Monday to Sunday.<br>17. Construction works shall be limited to 7am to 6pm Monday to Friday and 8am to 1pm on Saturdays.<br>18. A CNVMP will be prepared and implemented during development construction.<br>19. The construction noise mitigation measures described in Chapter 5.5 of the preferred development noise impact assessment report (appended to the RTS) shall be implemented.<br>20. Vibration during construction will be managed through the CNVMP to ensure that vibration impacts comply with the limits prescribed in British Standard BS 7385 for structural damage and in Assessing Vibration: a technical guide (DECCW, 2006) for human response.<br>21. The Applicant and/or its appointed contractors will select and maintain bulk earthwork machinery as specified in the preferred development noise impact assessment report (appended to the RTS).<br>22. Broadband reversing alarms or other non-tonal vehicle movement and warning alarms shall be fitted to all machinery on site. The potential noise impact associated with reversing alarms shall be managed and minimised via a combination of proactive driver/operator training and operational procedures.<br>23. The Applicant shall implement a noise monitoring programme which would involve quarterly attended noise monitoring at a number of nearby identified receiver locations for 12 months after all Modification 3 and 4 activities are in full operation. If there are no exceedances of the project noise trigger levels during quarterly noise monitoring during the first year of monitoring then noise monitoring will cease. Additional noise monitoring would be undertaken in response to any noise complaints.<br>23. The Applicant shall undertake consultation with identified Martin Road residential receivers predicted to exceed the RNP criteria and conduct further investigation of their residences (as detailed in Section 2.3.3 and 4.1 of the RTS) to determine whether they qualify for and require the 'Type 1' treatment package from RMS's (2015) *At-receiver Treatment Guideline*.<br>24. Further investigations of the six residences potentially affected by road noise will be undertaken prior to increasing heavy vehicle movements along Martin Road above the approved heavy vehicle numbers and no greater than 180 truck movements in the daytime period. The investigation will determine whether the residences require the 'Type 1' treatment package from RMS's (2015) At-receiver Treatment Guideline.<br>25. Prior to construction of the Martin Road-Elizabeth Drive intersection, existing road noise levels would be qualified to determine if architectural treatment should be offered to receivers along Elizabeth Drive raising complaints about increased road noise levels.<br>26. The Applicant will maintain a noise complaint register. |
| **Surface Water** | **Stormwater management**<br>27. The Applicant shall manage surface water on the Project Site in accordance with the WMP prepared for the Project Site and revised for the development, including surface water management measures include in the Modification 3 and 4 EA and the RTS.<br>28. If during the operational phase of the quarry or on completion of the quarry operations, the Applicant wishes to make use of the water from the pits/dams in the brick making process or for reuse at other premises offsite etc, a licence will be obtained from DPIE.<br>29. Sediment basins 4, 5 and 6 and the new basins at the raw material stockpile area and Pit 3 will be sized and operated in accordance with Landcom's (2004) Managing Urban Stormwater: Soils & Construction. If any of these basins are to be modified to perform additional stormwater treatment functions in future (other than sediment capture), then appropriate modelling and design of the basins will be required at that time. In this case monitoring of discharges from the basin at Pit 3 to South Creek will be required.<br>30. The site WMP will be revised prior to commencement of the modification to include the revised surface water management approach, and monitoring of any water discharged from the site.<br>**Monitoring**<br>31. Electrical conductivity, pH, total nitrogen, total suspended solids, turbidity, total alkalinity, arsenic and copper will be monitored at the discharge points to Badgerys Creek and South Creek. Discharges will be monitored daily during the first month of continuous discharge, then weekly if the first month of data does not exceed concentration limits. Monitoring will revert to daily if any limits are exceeded and/or concentrations are reduced below limits. |

FOR INFORMATION

| Issue | Commitment |
|---|---|
| | 32. Total dissolved solids, total phosphorus, arsenic, cadmium, chromium, lead, nickel, zinc and mercury will be sampled weekly during the first two months, which will reduce to monthly if there are no exceedances.<br>33. The analytes previously sampled in Pit 1 will be monitored at three depth levels from the surface to 6 m at two locations near the discharge point to Badgerys Creek. Water will be monitored weekly for three weeks prior to discharge, then monthly. This monitoring will continue for the life of the development, and in the perched treatment basin described above.<br>34. Similar sampling is also required for the new basin at Pit 3 if the basin is being used to treat Pit 3 water (other than sediment capture). The list of analytes may be able to be reduced according to the future quality of stormwater collected in Pit 3.<br>**Licensing and approvals**<br>35. CSR will apply to the EPA to amend the EPL to incorporate the discharge rates and concentration limits for relevant physical and chemical stressors, and toxicants, at the discharge point to Badgerys Creek.<br>36. CSR will apply to the EPA to amend the EPL, if and when required, to incorporate appropriate discharge rates and concentration limits for discharges from the basin at Pit 3, for which time the basin provides additional water treatment other than sediment capture.<br>37. CSR will consult DPIE Water on the need for water licenses associated with the modification.<br>38. The EPA will be engaged, post approval, to determine whether the pit water must be classified in terms of the Protection of the Environment Operations Act 1997 (POEO Act) and to include the discharge point in the EPL.<br>**Erosion and sediment control**<br>39. Erosion and sediment controls will be implemented at the pit areas once they are filled with Fill and rehabilitation has commenced. These measures will remain in place until surfaces are fully stabilised.<br>40. Erosion and sediment controls will be implemented along the unsealed Fill haul road, which will direct runoff to the pits or local sediment traps. |
| **Groundwater** | 41. The Applicant shall prepare and implement a Groundwater Monitoring Program for the Project Site generally in accordance with the methodology provided in Chapter 11 of the 2011 EA, subject to consultation with the DPIE (water, lands and primary industry) and the satisfaction of the Director-General of the DP&I.<br>42. The WMP will be updated to include the groundwater monitoring network and a TARP for exceedances of groundwater criteria, which will be developed based on the baseline groundwater data.<br>43. The Applicant shall report the results of the Groundwater Monitoring Program to the Secretary of the DPIE on an annual basis.<br>44. The Applicant shall implement appropriate management measures in relation to groundwater as indicated by the Monitoring Program and agreed with the Secretary.<br>45. A licence to authorise any groundwater monitoring installation, required as part of this development, shall be obtained from the DPIE Water prior to any drilling commencing.<br>46. The Applicant shall implement an alluvial aquifer mapping and assessment program to inform:<br>▪ The definition of the boundaries of the alluvial system.<br>▪ Adjustment to the extent of proposed pits to avoid impacts to the alluvial aquifer.<br>▪ The establishment of further mitigation measures (if required) to minimise potential impacts upon the alluvial aquifer.<br>▪ This program will commence within 12 months of recommencing quarrying operations and the results will be reported to the Secretary of the DPIE. |
| **Rehabilitation** | 47. The site will be progressively rehabilitated in accordance with the approved rehabilitation strategy and rehabilitation management plan.<br>48. The rehabilitation strategy and rehabilitation management plan will be revised to incorporate the development, and any additional management strategies to ensure temporary stabilisation of exposed surfaces, permanent stabilisation strategies and progressive rehabilitation with groundcover vegetation.<br>49. The rehabilitation management plan will be revised to exclude plant species that are known to attract wildlife and grow to a size which will penetrate the OLS.<br>50. The Applicant shall carry out rehabilitation works at the Project Site in accordance with the RMP prepared for the Project Site.<br>51. The Applicant will prepare a Final Landform Rehabilitation Plan in consultation with the DPIE two years prior to the completion of all approved quarrying activities. |
| **Traffic and Transport** | 52. The Applicant shall manage traffic movements to and from the Project Site generally in accordance with the following: |

FOR INFORMATION

| Issue | Commitment |
|---|---|
| | ▪ Personnel operating trucks and vehicles to and from the Project Site would be required to undertake a site-specific health and safety induction, specifying operating hours and vehicle speed limits on Martin Road.<br>▪ A heavy vehicle protocol would be developed for the Project Site and distributed to relevant staff and contractors during induction procedures. The protocol would deal with such issues as timing of vehicle movements, idling of vehicles, speed limits and parking.<br>▪ Unnecessary vehicle movements would be minimised where possible.<br>▪ Deliveries would be scheduled on larger capacity 'Truck and Trailer' vehicles rather than 'Truck Only' vehicles where possible to minimise truck movements.<br>▪ A construction traffic management plan will be prepared and implemented to manage impacts on the road network, including the intersection, from construction vehicles.<br>▪ Traffic signals and road upgrades will be constructed at the Martin Road-Elizabeth Drive intersection prior to increasing heavy vehicle movements from the development above the approved heavy vehicle numbers.<br>▪ CSR will contribute to the upgrade and ongoing maintenance of Martin Road in accordance with the deed of agreement with LCC. |
| **Cultural Heritage** | 53. The Applicant shall adopt the following measures in relation to the management of cultural heritage on the Project Site:<br>▪ The heat retainer hearth will continue to be protected by a fenced 10m exclusion zone.<br>▪ All Aboriginal heritage items collected during survey and test excavations will be reburied with the hearth in consultation with the RAPs.<br>▪ Should Aboriginal heritage items be uncovered during the course of the approved works, works shall cease. In cases where historical items have been uncovered, Heritage NSW is to be advised or should indigenous items be uncovered the National Parks and Wildlife Service shall be advised.<br>▪ Workers/contractors shall be informed of their obligations under the NPW Act 1974, namely that it is illegal to disturb, damage or destroy an Aboriginal object without the prior approval of the Secretary of DPC.<br>▪ Should human remains be found in, on, or under the land during construction, the responsible party shall:<br>- Contact the local police.<br>- Not disturb or excavate the remains.<br>- Immediately cease all work at the particular location.<br>- Notify the Heritage NSW (DPC) office as soon as practicable and provide any available details of the remains and their location.<br>- Not recommence any work at the particular location until authorised in writing by the Heritage NSW.<br>54. The AHMP will be updated with the findings of the Modification 4 ACHA. |
| **Ecology** | 55. The Applicant shall adopt the following measures in relation to the removal of any trees on the Project Site:<br>▪ The canopy of the trees to be visually inspected prior to clearing to assess for the presence of fauna. Where bird species are detected the tree is to be nudged prior to felling to encourage the fauna to vacate the tree prior to felling. Trees to be left in situ until the birds leave the canopy.<br>▪ Felled trees are to be left in-situ for at least 24 hours to allow fauna species to relocate. Qualified personnel are to be on hand to check for wildlife and relocate them.<br>▪ Felled wood is to be relocated to the remnant woodland (and not placed in piles) or chipped and used in rehabilitation areas.<br>▪ Should any wildlife be inadvertently injured during the proposed works, WIRES or an accredited veterinarian shall be contacted.<br>▪ A 60 m buffer area shall be provided along Badgerys Creek and the Badgerys Creek tributary, except where Pit 2 extends into these buffers. Rehabilitation works are to be undertaken in this area in accordance with the RMP.<br>▪ Five local native trees shall be planted for each mature native tree that is removed. The replacement trees shall consist of a diversity of local provenance tree species from the native vegetation community (or communities) that occur, or once occurred on the site. The plantings shall be located adjacent to the riparian vegetation along South Creek, Badgerys Creek and its tributary. |
| **Aquatic biodiversity** | 56. A 40 m vegetated riparian zone will be maintained around the wetland adjacent to South Creek and 20 m zone will be maintained around the tributary to Badgerys Creek (except over Pit 2).<br>57. As the hydraulic modelling for the surface water assessment was indicative, geomorphology will be assessed in greater detail to validate the bed and bank materials of Badgerys Creek prior to finalisation of the pit dewatering strategy. This |

FOR INFORMATION

| Issue | Commitment |
|---|---|
| | will include quantification of bed and bank material and particle size and calculation of critical shear stress for the bed and bank to determine its sensitivity to erosion.<br>58. If the bed and bank materials are demonstrated to be sensitive to erosion, the optimum flow rate that can be achieved without impacting the creek bed and banks will be determined in a sediment transport model.<br>59. It will be necessary to gain further water quality and flow data to determine the impact of discharges on Badgerys Creek. Water quality will be monitored every month at the four Badgerys Creek and South Creek monitoring locations as described in Section 6.3.2 of the EA. This will include nitrogen speciation to determine which portion of nitrogen is bioavailable and could impact aquatic ecosystems.<br>60. A biological monitoring program will be developed to detect if the macroinvertebrate community is changed by exposure to discharge water. An in-stream vegetation monitoring program will be prepared and implemented to detect if the discharge is impacting vegetation community composition and mortality.<br>61. Monitoring for changes to instream vegetation and macroinvertebrates will be incorporated into a pit dewatering plan as a sub-plan to the existing water management plan.<br>62. CSR will compile a fauna relocation plan. This plan will develop strategies for aspects such as transferring aquatic fauna, acclimatising aquatic fauna to different water conditions and managing pest species. DPIE will be consulted during the development of this strategy. |
| **Contamination** | 63. The potential presence of asbestos in the eastern edge of Pit 1 will be added to the site Asbestos Register.<br>64. A materials management plan will be prepared to ensure that surface water, backfilled material and imported soils are handled appropriately, do not pose a risk to human health or the environment and will be suitable for the proposed land use. The plan will provide procedures to appropriately quantify, classify, dispose of and report on potential contaminants.<br>65. A UFP will be prepared, providing guidance in the event that future below ground excavations identify contaminated materials (e.g. asbestos, staining, odours). The UFP will outline procedures for handling, assessing and managing any contamination that may be identified as part of Modification 4 works. If previously unidentified contaminated materials are encountered during construction and operation of the proposed modification, relevant statutory requirements, including potential soil testing and waste classification, will need to be complied with, and the material managed and disposed of appropriately.<br>66. Stored/stockpiled materials within the proposed disturbance footprints will be inspected and they will be recycled or disposed at facilities which can legally receive such materials.<br>67. Soil materials within the vicinity of the Modification 3 works will be assessed in accordance with NSW EPA (2014) *Waste Classification Guidelines* and either re-use them on site where suitable or dispose of them offsite to a landfill which can legally receive such materials.<br>68. Conduct a hazardous material survey on existing site structures prior to demolition/alteration activities. |
| **Waste** | 69. The Applicant shall manage waste in relation to the development in accordance with the existing WMP for the Project Site.<br>68. (*Deleted*).<br>70. All waste generated on site will be managed in accordance with the site's waste management plan that will follow the waste hierarchy of avoid, reduce, re-use, recycle and will be updated to include development works. |
| **Visual amenity** | 71. Proposed lighting at the site will still comply with Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting. |
| **Mineral Resources** | 72. The Applicant will provide annual production data to the water, lands and primary industries division of the Department of Planning, Industry and Environment, as and when requested. |
| **Environmental Management** | 73. The Applicant shall prepare an EMS for the Project Site to provide environmental management practices and procedures to be followed during the operation of the development. The EMS shall include, but not necessarily be limited to:<br>▪ identification of statutory and other obligations that the Applicant is required to fulfil in relation to operation of the development;<br>▪ a description of the roles and responsibilities for all key personnel involved in environmental management of the development;<br>▪ the environmental policies and principles to be applied to the operation of the development; and<br>▪ describe in general terms how the environmental performance of the development would be monitored and managed. |

FOR INFORMATION

# Appendix B
# Mine Lease Conditions

# Instrument of Variation

## *Mining Lease 1771 (1992)*

I, **JAMIE TRIPODI, Executive Director Assessments & Systems**, Mining Exploration and Geoscience in the Department of Regional NSW, with the delegated authority of the Minister under section 261B and clause 12 of Schedule 1B of the *Mining Act 1992* (the Act), **vary** the conditions of mining lease **ML 1771 (1992)** as described in Schedule A.

The conditions of **ML 1771 (1992)**, as varied, are set out in Schedule B.

The variation takes effect on 17 October 2022.

**JAMIE TRIPODI**
**Executive Director Assessments & Systems**
**As delegate for the Minister administering the *Mining Act 1992***
**Delegation date: 14 May 2018**

Dated: 14 August 2022

# Schedule A

| Condition | | Variation | New Condition |
|---|---|---|---|
| | Definitions | Definitions of 'Department', 'Environment' 'Environmental incident notifications and reports' and 'Harm to the environment' omitted as no longer used. | N/A |
| 1 | Notice to Landholders | Wording amended to modernise the condition | 1. Notice to Landholders – see Schedule B |
| 2 | Rehabilitation | Condition omitted | N/A |
| 3 | Mining Operations Plan and Annual Rehabilitation Report | Condition omitted | N/A |
| 4 | Non-Compliance Reporting | Condition omitted | N/A |
| 5 | Environmental Incident Report | Condition omitted | N/A |
| 7 | Resource Recovery | Condition omitted | N/A |
| 8 | Security | Condition amended to modernise the wording. Condition has been re-numbered due to omission of other conditions. | 2. Security– see Schedule B |
| 9 | Cooperation Agreement | Condition amended to modernise the wording. Condition has been re-numbered due to omission of other conditions. | 3. Cooperation Agreement – see Schedule B |
| N/A | | New condition attached | 4. Assessable Prospecting Operations– see Schedule B |
| **SPECIAL CONDITIONS** | | | |
| **Nil** | | | |

# Schedule B

## Mining Lease Conditions

**(Version as at February 2022)**

## Definitions

Words used in this mining lease have the same meaning as defined in the *Mining Act 1992* except where otherwise defined below:

| Term | Definition |
|---|---|
| **Act** | means the *Mining Act 1992.* |
| **Landholder** | for the purposes of these conditions:<br>• does not include a secondary landholder<br>• includes, in the case of exempted areas, the controlling body for the exempted area. |
| **Minister** | means the Minister administering the Act. |

**Note:**

1. The rights and duties of the Lease Holder(s) are those prescribed by the *Mining Act 1992* and the Mining Regulation 2016, subject to the terms and conditions of this mining lease.
2. This mining lease does not override any obligation on the lease holder(s) to comply with the requirements of other legislation and regulatory instruments which may apply (including all relevant development approvals) unless specifically provided under the *Mining Act 1992* or other legislation or regulatory instruments.

# MINING LEASE CONDITIONS

## Standard conditions

See Mining Regulation 2016, Schedule 8A, Part 2.

**NOTE TO HOLDERS:** The prescribed standard conditions in the Mining Regulation 2016, Schedule 8A, Part 2 apply in addition to the conditions in this Schedule 2 (but have not been replicated in this mining lease). The conditions imposed by the Mining Regulation 2016 prevail to the extent of any inconsistency with the conditions in this Schedule 2.

## General conditions

### 1. Notice to Landholders

(a) Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing:

(i) that this mining lease has been granted or renewed; and

(ii) whether the lease includes the surface.

The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area.

(b) If there are ten or more landholders to which notice must be given, the lease holder will be taken to have complied with condition 1(a) if a notice complying with condition 1(a) is published in a newspaper circulating in the region where the lease area is situated.

### 2. Security

The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations under the mining lease, including obligations under the mining lease that may arise in the future.

The amount of the security deposit to be provided has been assessed at **$2,258,000**.

### 3. Cooperation Agreement

The lease holder must make every reasonable attempt, and be able to demonstrate its attempts to the satisfaction of the Secretary, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations issued under the *Mining Act 1992* and petroleum titles issued under the *Petroleum (Onshore) Act 1991*. The cooperation agreement should address but not be limited to:

- access arrangements
- operational interaction procedures
- dispute resolution
- information exchange
- well location
- timing of drilling

- potential resource extraction conflicts; and
- rehabilitation issues.

### 4. Assessable Prospecting Operations

(a) The lease holder must not carry out any assessable prospecting operation on land over which this lease has been granted unless:

(i) it is carried out in accordance with any necessary development consent; or

(ii) if development consent is not required, the prior written approval of the Minister has been obtained.

(b) The Minister may require the lease holder to provide such information as required to assist the Minister to consider an application for approval.

(c) An approval granted by the Minister under this condition may be granted subject to terms.

(d) The lease holder must comply with the approval granted to the holder under this condition.

## Special conditions

**Nil**

### Exploration Reporting

*Note:* *Exploration Reports (Geological and Geophysical)*

*The lease holder must lodge reports in accordance with the requirements in section 163C of the Mining Act 1992 and clauses 59, 60 and 61 of the Mining Regulation 2016 as well as any further requirements issued by the Secretary under clause 62 of the Mining Regulation.*

*Guidelines for the structure, content and data format requirements for reports are set out in the Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales.*

# Appendix C
# EPA Licence

# Environment Protection Licence

Licence - 684

| Licence Details | |
|---|---|
| Number: | 684 |
| Anniversary Date: | 18-November |

**Licensee**

PGH BRICKS & PAVERS PTY LIMITED

LOCKED BAG 1345

NORTH RYDE NSW 1670

**Premises**

BADGERYS CREEK

235 MARTIN ROAD

BADGERYS CREEK NSW 2171

**Scheduled Activity**

Ceramic works

Extractive activities

Mining for minerals

| Fee Based Activity | Scale |
|---|---|
| Ceramics production | 0-15000 T annual production capacity |
| Land-based extractive activity | 0-30000 T annual capacity to extract, process or store |
| Mining for minerals | 0-30000 T annual production capacity |

**Region**

Metropolitan West - Sydney

4 Parramatta Square, 12 Darcy Street

PARRAMATTA NSW 2150

Phone: (02) 9995 5000

Fax: (02) 9995 6900

Locked Bag 5022

PARRAMATTA NSW 2124

# Environment Protection Licence

Licence - 684

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## Information about this licence

### Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

### Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

### Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

### Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

### Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

### Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

# Environment Protection Licence



The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

**Transfer of licence**

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

**Public register and access to monitoring data**

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

## This licence is issued to:

| |
|---|
| **PGH BRICKS & PAVERS PTY LIMITED** |
| **LOCKED BAG 1345** |
| **NORTH RYDE NSW 1670** |

subject to the conditions which follow.

# Environment Protection Licence

Licence - 684

## 1 Administrative Conditions

### A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

| Scheduled Activity | Fee Based Activity | Scale |
|---|---|---|
| Ceramic works | Ceramics production | 0 - 15000 T annual production capacity |
| Extractive activities | Land-based extractive activity | 0 - 30000 T annual capacity to extract, process or store |
| Mining for minerals | Mining for minerals | 0 - 30000 T annual production capacity |

### A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

| Premises Details |
|---|
| **BADGERYS CREEK** |
| **235 MARTIN ROAD** |
| **BADGERYS CREEK** |
| **NSW 2171** |
| **LOT 54 DP 3050, LOT 55 DP 3050, LOT 56 DP 3050, LOT 57 DP 3050, LOT 58 DP 3050, LOT 59 DP 3050, LOT 1 DP 373863, PART LOT 1 DP 981161, LOT 1 DP 1035249, LOT 2 DP 1035249** |

### A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

# Environment Protection Licence

Licence - 684

## 2 Discharges to Air and Water and Applications to Land

### P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

***Air***

| EPA identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description |
|---|---|---|---|
| 1 | Discharge to air; Air emissions monitoring | Discharge to air; Air emissions monitoring | The stack serving the kiln shown as Point 1 - Kiln Exhaust Stack on drawing titled "Boral Badgerys Creek Air Emission Points" Dated 4/03/2009 Rev: 1 submitted to DECC on 4/03/09 |
| 2 | Discharge to air; Air emission monitoring | Discharge to air; Air emission monitoring | The stack serving the dryer shown as Point 2 - Dryer Exhaust Stack on drawing titled "Boral Badgerys Creek Air Emission Points" Dated 4/03/2009 Rev: 1 submitted to EPA on 4/03/09 |

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

***Water and land***

| EPA Identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description |
|---|---|---|---|
| 3 | Discharge to waters and water quality monitoring | Discharge to waters and water quality monitoring | Outlet from Sediment Basin B as described in 'Water Pollution Impact Assessment for Discharge of Stormwater Runoff from Disturbed Areas at PGH Badgerys Creek (Version 2)', PGH Bricks, 04/02/2021 |

## 3 Limit Conditions

### L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

# Environment Protection Licence

Licence - 684

## L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Air Concentration Limits

**POINT 1**

| Pollutant | Units of measure | 100 percentile concentration limit | Reference conditions | Oxygen correction | Averaging period |
|---|---|---|---|---|---|
| Total Solid Particles | milligrams per cubic metre | 100 | | | |
| Hydrogen fluoride | milligrams per cubic metre | 50 | | | |
| Nitrogen Oxides | milligrams per cubic metre | 2000 | | | |

L2.5 Water and/or Land Concentration Limits

**POINT 3**

| Pollutant | Units of Measure | 50 Percentile concentration limit | 90 Percentile concentration limit | 3DGM concentration limit | 100 percentile concentration limit |
|---|---|---|---|---|---|
| pH | pH | | | | 6.5-8.5 |
| Turbidity | nephelometric turbidity units | | | | 50 |

## L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste

in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

| Code | Waste | Description | Activity | Other Limits |
|---|---|---|---|---|
| NA | Waste | Any waste received on site that is below licensing thresh holds in Schedule 1 of the POEO Act, as in from time to time. | | N/A |
| NA | General or Specific exempted waste | Waste that meets all the conditions of a recourse recovery exemption Clause 92 of the Protection of the Environment Operations (Waste) Regulation 2014 | As specified in each particular resource recovery exemption | N/A |

## L4 Noise limits

L4.1 Noise from the premises (excluding mobile plant) must not exceed:
a) An LA10(15 minute) noise emission criterion of 55 dB(A)(0700 to 2200) Monday to Saturday and 0800 to 2200 Sundays and Public Holidays; and
b) An LA10(15 minute) noise emission criterion of 40 dB(A) at all other times,
except as expressly provided by this licence.

L4.2 Noise from the operation of the mobile plant must not exceed:
a) An LA10(15 minute) noise emission criterion of 50 dB(A)>(0700 to 2200) Monday to Saturday and (0800 to 2200) Sundays and Public Holidays; and
b) An LA10[15 minute) noise emission criterion of 40 dB(A) at all other times,
except as expressly provided by this licence.

L4.3 Noise from the premises is to be measured or computed at the most affected point on or within the residential property boundary or, if that is more than 30 metres from the residence, at the most affected point within 30 metres of the residence to determine compliance with condition L4.1. 5dB(A) must be added if the noise is tonal or impulsive in character.

L4.4 Noise from the operation of the mobile plant is to be measured or computed at the most affected point on or within the residential property boundary or, if that is more than 30 metres from the residence, at the most affected point within 30 metres of the residence to determine compliance with condition L4.2. 5dB(A) must be added if the noise is tonal or impulsive in character.

## L5 Potentially offensive odour

L5.1 No condition in this licence identifies a potentially offensive odour for the purposes of section 129 of the

Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997 provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

### L6 Other limit conditions

L6.1 **Asbestos**

Note: The licensee must comply with all conditions as specified in this licence or where no specific condition are outlined in this licence, the licencee must comply with the Protection of the Environment Operations (Waste) Regulation 2005.

## 4 Operating Conditions

### O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

### O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

### O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

### O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non-liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA Waste Classification Guidelines as in force from time to time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

# Environment Protection Licence



### O5 Other operating conditions

O5.1 Water from pits 1, 2 or 3 must not be transferred to Sediment Basin A or Sediment Basin B, or discharged to waterways.

## 5 Monitoring and Recording Conditions

### M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

### M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

**POINT 1**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Chlorine | milligrams per cubic metre | Special Frequency 1 | TM-7 |
| Dry gas density | kilograms per cubic metre | Special Frequency 1 | TM-23 |
| Hydrogen fluoride | milligrams per cubic metre | Special Frequency 1 | TM-9 |
| Moisture content | percent | Special Frequency 1 | TM-22 |
| Molecular weight of stack gases | grams per gram mole | Special Frequency 1 | TM-23 |
| Nitrogen Oxides | milligrams per cubic metre | Special Frequency 1 | TM-11 |

# Environment Protection Licence



| | | | |
|---|---|---|---|
| Odour | odour units | Special Frequency 1 | OM-8 |
| Temperature | degrees Celsius | Special Frequency 1 | TM-2 |
| Total Solid Particles | milligrams per cubic metre | Special Frequency 1 | TM-15 |
| Type 1 substance | milligrams per cubic metre | Special Frequency 1 | TM-12 |
| Type 2 substance | milligrams per cubic metre | Special Frequency 1 | TM-13 |
| Velocity | metres per second | Special Frequency 1 | TM-2 |
| Volatile organic compounds | milligrams per cubic metre | Special Frequency 1 | TM-34 |
| Volumetric flowrate | cubic metres per second | Special Frequency 1 | TM-2 |

**POINT 2**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Chlorine | milligrams per cubic metre | Special Frequency 1 | TM-7 |
| Dry gas density | kilograms per cubic metre | Special Frequency 1 | TM-23 |
| Hydrogen fluoride | milligrams per cubic metre | Special Frequency 1 | TM-9 |
| Moisture content | percent | Special Frequency 1 | TM-22 |
| Molecular weight of stack gases | grams per gram mole | Special Frequency 1 | TM-23 |
| Nitrogen Oxides | milligrams per cubic metre | Special Frequency 1 | TM-11 |
| Odour | odour units | Special Frequency 1 | OM-8 |
| Temperature | degrees Celsius | Special Frequency 1 | TM-2 |
| Total Solid Particles | milligrams per cubic metre | Special Frequency 1 | TM-15 |
| Type 1 substance | milligrams per cubic metre | Special Frequency 1 | TM-12 |
| Type 2 substance | milligrams per cubic metre | Special Frequency 1 | TM-13 |
| Velocity | metres per second | Special Frequency 1 | TM-2 |
| Volatile organic compounds | milligrams per cubic metre | Special Frequency 1 | TM-34 |
| Volumetric flowrate | cubic metres per second | Special Frequency 1 | TM-2 |

M2.3 For the purpose of the above tables Special Frequency 1 means that when the plant is in operation the pollutants listed in the tables above for licence Discharge Poins 1 and 2 must be monitored at least once every six months.

M2.4 Water and/ or Land Monitoring Requirements

**POINT 3**

# Environment Protection Licence



| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Aluminium (dissolved) | milligrams per litre | Monthly during discharge | Grab sample |
| Electrical conductivity | microsiemens per centimetre | Continuous during discharge | In line instrumentation |
| pH | pH | Continuous during discharge | In line instrumentation |
| Turbidity | nephelometric turbidity units | Continuous during discharge | In line instrumentation |

M2.5 For the purpose of the above table, if monitoring results for aluminium (dissolved) exceed ANZG (2018) default guideline values (55µg/L for fresh water, pH >6.5), the licensee must notify the EPA within 7 days.

## M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

## M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the

complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

### M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

## 6 Reporting Conditions

### R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and

ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

## R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

## R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

# 7 General Conditions

## G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

## G2 Other general conditions

G2.1 **Completed Programs**

| Program | Description | Completed Date |
|---|---|---|
| Stormwater management plan | Prepare stormwater management plan for site that includes fuel storage; sewage irrigation. | 22-October-2002 |
| Trial Use of Recycled Wastewater | Trial use of recycled wastewater in brick manufacturing. Reduce use of water by using recycled wastewater. | 01-December-2008 |

# Environment Protection Licence

Licence - 684

## Dictionary

### General Dictionary

| | |
|---|---|
| **3DGM [in relation to a concentration limit]** | Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples |
| **Act** | Means the Protection of the Environment Operations Act 1997 |
| **activity** | Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997 |
| **actual load** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **AM** | Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **AMG** | Australian Map Grid |
| **anniversary date** | The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **annual return** | Is defined in R1.1 |
| **Approved Methods Publication** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **assessable pollutants** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **BOD** | Means biochemical oxygen demand |
| **CEM** | Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |
| **COD** | Means chemical oxygen demand |
| **composite sample** | Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume. |
| **cond.** | Means conductivity |
| **environment** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **environment protection legislation** | Has the same meaning as in the Protection of the Environment Administration Act 1991 |
| **EPA** | Means Environment Protection Authority of New South Wales. |
| **fee-based activity classification** | Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009. |
| **general solid waste (non-putrescible)** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |

# Environment Protection Licence

Licence - 684

| | |
|---|---|
| **flow weighted composite sample** | Means a sample whose composites are sized in proportion to the flow at each composites time of collection. |
| **general solid waste (putrescible)** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997 |
| **grab sample** | Means a single sample taken at a point at a single time |
| **hazardous waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **licensee** | Means the licence holder described at the front of this licence |
| **load calculation protocol** | Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009 |
| **local authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **material harm** | Has the same meaning as in section 147 Protection of the Environment Operations Act 1997 |
| **MBAS** | Means methylene blue active substances |
| **Minister** | Means the Minister administering the Protection of the Environment Operations Act 1997 |
| **mobile plant** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **motor vehicle** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **O&G** | Means oil and grease |
| **percentile [in relation to a concentration limit of a sample]** | Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence. |
| **plant** | Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles. |
| **pollution of waters [or water pollution]** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **premises** | Means the premises described in condition A2.1 |
| **public authority** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **regional office** | Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence |
| **reporting period** | For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. |
| **restricted solid waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **scheduled activity** | Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **special waste** | Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997 |
| **TM** | Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*. |

# Environment Protection Licence

Licence - 684

| | |
|---|---|
| **TSP** | Means total suspended particles |
| **TSS** | Means total suspended solids |
| **Type 1 substance** | Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements |
| **Type 2 substance** | Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements |
| **utilisation area** | Means any area shown as a utilisation area on a map submitted with the application for this licence |
| **waste** | Has the same meaning as in the Protection of the Environment Operations Act 1997 |
| **waste type** | Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste |

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 01-March-2000

# Environment Protection Licence

Licence - 684

## End Notes

| | |
|---|---|
| 1 | Licence varied by notice 1009191, issued on 27-Jun-2002, which came into effect on 22-Jul-2002. |
| 2 | Licence varied by change to legislation, issued on 05-Jul-2007, which came into effect on 05-Jul-2007. |
| 3 | Licence varied by notice 1076261, issued on 19-Sep-2007, which came into effect on 19-Sep-2007. |
| 4 | Licence varied by notice 1079904, issued on 28-Nov-2007, which came into effect on 28-Nov-2007. |
| 5 | Licence varied by notice 1082805, issued on 06-Mar-2008, which came into effect on 06-Mar-2008. |
| 6 | Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date> |
| 7 | Licence varied by notice 1093859, issued on 18-Nov-2008, which came into effect on 18-Nov-2008. |
| 8 | Licence varied by change to FBA for summer pollutants, issued on 16-Jan-2009, which came into effect on 16-Jan-2009. |
| 9 | Licence varied by notice 1097146, issued on 20-Apr-2009, which came into effect on 20-Apr-2009. |
| 10 | Licence varied by notice 1524840 issued on 08-Sep-2014 |
| 11 | Licence varied by notice 1528953 issued on 19-Mar-2015 |
| 12 | Licence transferred through application 1530237 approved on 04-May-2015 , which came into effect on 04-May-2015 |
| 13 | Licence varied by notice 1601711 issued on 23-Mar-2021 |

# Appendix D
## Environmental Management Strategy Plan

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix E Heritage Management Plan

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix F
## Fill Management Plan (including Unexpected Finds Protocol)

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix G Dewatering Infrastructure Plan

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix H Dewatering Management Plan

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix I
## Visual Management Plan

**See**
**https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix J
## Soil and Water Management Plan

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix K
# Noise Management Plan

**See**
**https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix L
## Air Quality Management Plan

**See https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix M
# Traffic Management Plan

**See**
**https://www.pghbrick.com.au/-nsw-environmental-reporting**

# Appendix N Enforceable Undertaking

# Enforceable Undertaking to the Natural Resources Access Regulator

—

PGH Pavers & Bricks Pty Limited ACN 168 794 821—

# Enforceable Undertaking to the Natural Resources Access Regulator

## PGH Pavers & Bricks Pty Limited ACN 168 794 821

# Details

## Date

## Parties

| | |
|---|---|
| Name | **Natural Resources Access Regulator** |
| Short form name | **NRAR** |
| Notice details | Level 11, 2-10 Valentine Avenue Parramatta NSW 2150<br>Email: kirsty.ruddock@nrar.nsw.gov.au<br>Attention: Grant Barnes, Chief Regulatory Officer |

| | |
|---|---|
| Name | **PGH Pavers & Bricks Pty Limited** ACN 168 794 821 |
| Short form name | **PGH** |
| Notice details | Triniti 3, Level 5, 39 Delhi Road, North Ryde NSW 2113<br>Email: sventris@csr.com.au<br>Attention: Sean Ventris |

## Background

A The Natural Resources Access Regulator (**NRAR**), created by the *Natural Resources Access Regulator Act 2017* (NSW) (**NRAR Act**), is the regulator responsible for compliance and enforcement measures for natural resources management legislation in New South Wales. It has responsibility for compliance and enforcement of the specified functions of the Minister administering the *Water Management Act 2000* (**WM Act**) as specified in Schedule 2 of the NRAR Act.

B Section 336E of the WM Act (read with section 11 of the NRAR Act) empowers the NRAR to accept enforceable undertakings from parties alleged to have breached the WM Act.

C In 2015 PGH Pavers & Bricks Pty Limited (ACN 168 794 821) **(PGH)** acquired the mothballed brick plant on Lot 1 DP 373863 and Lots 1-2 DP 1035249, Lot 1 DP 981161 and Lots 54-59 DP 3050 in the suburb of Badgerys Creek within the Liverpool Local Government Area (**LGA**), (**Badgerys Creek Site**). The Badgerys Creek Site was established in accordance with the development consent granted on 30 September 1979 and modified by DA 764/2009 granted by Liverpool City Council, which commenced on 31 March 2009 (**Consent**).

D The Badgerys Creek Site covers an area of approximately 200 hectares and has previously been used for quarrying of local claystone for brick production, which ceased in March 2012. Existing features of the Badgerys Creek Site include a number of quarry pits that capture surface water around the brick plant and contain stored water.

E Existing features of the Badgerys Creek Site include two completed quarry pits (known as Pits 1 and 2), and an active quarry pit (known as Pit 3), all of which contain stored water as described in D above.

F PGH has entered into an agreement with Western Sydney Airport Corporation, being a proposal for the supply to and transfer of stored water by Western Sydney Airport Corporation from the Badgerys Creek Site to be utilised by Western Sydney Airport Corporation off site.

G Boral Bricks Pty Limited holds an aquifer water access license authorising the take of groundwater at the Badgerys Creek Site (WAL 24346). There are currently no surface water licences held by any person or entity in relation to the Badgerys Creek Site. As such, PGH has not accounted for rainfall runoff captured in quarry pits at any stage in relation to its obligations under the WM Act since it acquired the Badgerys Creek Site.

H The NRAR alleges that PGH does not hold sufficient surface water access licences and further alleges that PGH is not exempt under the WM Act from taking surface water at the Badgerys Creek Site. As such, the NRAR alleges PGH took water in contravention of s 60A of the WM Act by capturing water in the quarry pits between 2015 and the present time.

I PGH acknowledges the NRAR's allegations in relation to the above matter, including that the allegations concern a contravention of s 60A of the WM Act over an extended period, and undertakes to carry out the commitments and preventative measures set out in this undertaking.

J PGH has offered the commitments set out in this undertaking.

K In the absence of published guidelines for an undertaking under the WM Act, this undertaking has been prepared in consideration of the requirements for an undertaking contained in the EPA's Guidelines on Enforceable Undertakings (2017).

# Undertakings

## 1.1 Undertakings

Under section 336E of the WM Act (read with section 11 of the NRAR Act), PGH has offered and the NRAR has accepted the following undertakings.

## 1.2 Surface Water Management and Monitoring

PGH acknowledges:

(a) PGH acknowledges that the alleged non-compliance relates to surface water at the Badgerys Creek Site only, and that the allegations do not extend to (or include) alleged non-compliance relating to groundwater take or use;

(b) Any other water take not contemplated by clause 1.2 must be licenced under the *Water Management Act 2000.*

PGH undertakes to:

(c) implement permanent measures to prevent, to the maximum extent which is practically possible using reasonable and feasible engineering methods, surface water in the form of rainfall runoff entering Pits 1-3 within 6 months of this undertaking being accepted by the NRAR (**Rectification Period**);

(d) provide a written report to the NRAR relating to all measures implemented, including the success of, or the need to modify, the measures, to prevent, using reasonable and feasible engineering methods, surface water entering Pits 1-3 within 7 months of this undertaking being accepted by the NRAR;

(e) ensure adequate monitoring equipment, including water flow meters that comply with the metering equipment standards set out in Part 10 Division 3 of the *Water Management (General) Regulation 2018*, is installed and maintained (or otherwise available to PGH) to measure the daily volume of water transferred out of Pit 1, and any other pit, prior to any water being transferred offsite from Pit 1;

(f) record, or be provided, in an electronic format the daily volumes of water so transferred in accordance with 1.2(e);

(g) provide a copy of water monitoring data collected under clause 1.2(f):

  (i) every 3 months from the date when water is first transferred, until the date that the transfer of water ceases (comprising a total transfer from the Badgerys Creek Site of a water volume not greater than 1200 megalitres (ML) (being the combined volume of water agreed to be stored in Pits 1-3 as at 26 March 2020 for a period of 36 months after acceptance of this undertaking by the NRAR, unless otherwise agreed);

  (ii) within 7 business days if requested in writing by the NRAR (from time to time).

(h) obtain all necessary Water Access Licences to account for transfer or removal of surface water at the Badgerys Creek Site in excess of the volume of referred to in 1.2(g) should this occur.

(i) timeframes within this clause 1.2 may be varied with the written agreement of the NRAR.

## 1.3 Supply of water to external premises

PGH undertakes to:

(a) only supply water stored in Pit 1 on the Badgerys Creek Site to the Western Sydney Airport Corporation without charge in accordance with this undertaking and its written agreement with that entity (as may be varied from time to time);

(b) not to supply the water stored on the Badgerys Creek Site in Pit 1 or any other pit to any other person or entity other than as identified at clause 1.3(a).

## 1.4 Charge for past water taken at the Badgerys Creek Site

(a) PGH agrees that the NRAR will charge PGH for water taken from a surface water source in contravention of Part 2 Division 1A of the WM Act under section 60G of the WM Act and clause 20 of the *Water Management (General) Regulation 2018* (**Regulation**) (when read with section 11 of the NRAR Act).

(b) PGH undertakes to pay a charge imposed by the NRAR under s 60G of the WM Act for water taken in contravention of Part 2 Division 1A of the WM Act prior to the date that the NRAR accepts this undertaking in the amount of two times the value of water taken calculated in accordance with the Regulation.

(c) PGH undertakes to pay a charge imposed by the NRAR under s 60G of the WM Act for water taken in contravention of Part 2 Division 1A of the WM Act between the date that the NRAR accepts this undertaking and the date that the measures described at clause 1.2(c) have been implemented and surface water in the form of runoff has ceased entering into Pits 1-3 in the amount of two times the value of water taken calculated in accordance with the Regulation.

(d) PGH undertakes to pay the NRAR the amounts due under clause 1.4 within 4 weeks of receipt of the NRAR's invoices for these charges.

## 1.5 Reporting of compliance

(a) PGH will issue the NRAR a written report confirming that the groundwater inflow into the quarry pits on the Badgerys Creek Site is negligible, or that groundwater is otherwise being taken in compliance with the aquifer licence, 1 month after the date of acceptance of this undertaking by the NRAR. This report will be updated and provided to the NRAR every 6 months for a further 36 months after the date of acceptance of this undertaking by the NRAR, unless otherwise agreed in writing by the NRAR.

(b) PGH will issue the NRAR with a written report confirming that (using reasonable and feasible engineering methods to prevent surface water entering into Pits 1-3 in accordance with clause 1.2(c)) surface water in the form of runoff has ceased entering into Pits 1-3 at the quarry pits on the Badgerys Creek Site at the end of the Rectification Period. This report will be updated and provided to the NRAR every 6 months for a further 36 months after acceptance of this undertaking by the NRAR, unless otherwise agreed in writing by the NRAR.

(c) PGH will issue the NRAR with an annual written report on its compliance with the undertakings offered in this document within 12 months after acceptance of this undertaking by the NRAR, and every 12 months for a further 36 months after acceptance of this undertaking by the NRAR, unless otherwise agreed in writing by the NRAR.

## 1.6 Payment of costs

(a) PGH undertakes to pay the following:

(i) the NRAR's legal costs incurred in the preparation of this undertaking of $10,000.00 (including GST);

(ii) the NRAR's investigation costs of the allegation of $10,000.00 (including GST); and

(b) PGH undertakes to pay the NRAR the amounts due under this clause 1.6 within 4 weeks of receipt of the NRAR's invoices.

## 1.7 Acknowledgements

(a) PGH makes the following acknowledgments:

(i) PGH is making a genuine commitment to address the alleged contravention;

(ii) the NRAR may make this undertaking public by placing a copy of the executed undertaking on the NRAR's public register about enforcement action maintained under the NRAR Act (with personal details redacted);

(iii) this undertaking does not affect the NRAR's power to investigate a contravention arising from future conduct or to pursue a criminal prosecution in respect of future conduct, or to lay charges or exercise other civil or regulatory powers under the NRAR Act or WM Act;

(iv) this undertaking does not affect the rights or remedies available to any other person or entity, nor does it affect any statutory obligation under the WM Act;

(v) in the absence of published guidelines for an undertaking under the WM Act, this undertaking has been prepared in consideration of the requirements for an undertaking contained in the EPA's *Guidelines on Enforceable Undertakings (2017)*;

(vi) no expenditure commitments made by PGH in this undertaking may be claimed as tax deductions;

(vii) this undertaking has no operative force until formally accepted by the NRAR and written notice of the decision (including reasons for the decision) are provided to PGH in accordance with section 336F of the WM Act;

(viii) this undertaking may only be withdrawn or varied with the written consent of the NRAR in accordance with the WM Act;

(ix) this undertaking, as it may be varied from time to time, will remain in force until completed or withdrawn in accordance with the WM Act; and

(x) the NRAR may take this undertaking into account in regulatory matters under the WM Act.

(b) PGH further acknowledges that the NRAR requires undertakings to contain new commitments only, and not expenditure commitments previously made or budgeted for prior to the undertaking being entered into. In light of this, PGH has disclosed to the NRAR that:

(i) while expenditure has not yet been committed to the implementation of the charge for past water take (as outlined in clause 1.4 of this undertaking), these commitments are in the process of development at the time that this undertaking was entered into; and

(ii) nevertheless, because these commitments are relevant to the agreement between PGH and the Western Sydney Airport Corporation more generally, as well as in relation to the allegations more particularly, they have been included as part of PGH's undertakings pursuant to this agreement.

## 1.8 Limits of action

(a) The NRAR acknowledges that the alleged non-compliance relates to surface water at the Badgerys Creek Site only, and that the allegations do not extend to (or include) alleged

non-compliance with groundwater take or use, subject to PGH complying with clause 1.5(a), 1.5(b) and 1.5(c).

(b) The NRAR and PGH have mutually agreed that, in light of PGH having entered into this undertaking and the commitments contained herein, the NRAR will take no further enforcement action in relation to the allegations outlined above.

(c) PGH nevertheless acknowledges that, under s 336E(6) of the WM Act, the NRAR is not barred from bringing proceedings for the contravention or alleged contravention of the WM Act to which this undertaking relates.

(d) PGH also acknowledges that the NRAR is not barred from future enforcement or other actions arising as a result of any future contraventions or incidents, including with respect to the enforcement of this undertaking.

# Signing page

**EXECUTED** as an undertaking.

Signed, sealed and delivered by **PGH Pavers & Bricks Pty Limited ACN 168 794 821** in accordance with section 127(1) of the *Corporations Act 2001* (Cth) by authority of its directors:

Signature of Director

Signature of Company Secretary

Sara-Ann Lom

Name of Director (print)

Jillian Irene Hardiman

Name of Company Secretary (print)

Signature of Director

Signature of Company Secretary

Name of Director (print)

Name of Company Secretary (print)

Accepted by the Natural Resources Access Regulator or its delegate pursuant to section 336E of the WM Act.

Date: 3 June 2020

Signature of Chief Regulatory Officer

Grant Barnes

Name of Chief Regulatory Officer (print)

# Schedule 1– Letter from Western Sydney Airport Corporation


OFFICIAL

Reference No: WSA-Letter-0220-CSR

31 March 2020

Kirsty Ruddock
Director – Regulatory Investigations and Compliance
Natural Resources Access Regulator
Department of Industry NSW

Email: Kirsty.Ruddock@nrar.nsw.gov.au

Dear Ms Ruddock

**Proposal for water extraction for Western Sydney International Airport construction activities – Lot 1 on DP1035249 and Lot 1 on DP373863**

WSA Co Limited (**WSA**) is a government business enterprise established to develop and operate Western Sydney International (Nancy-Bird Walton) Airport (**Western Sydney International**) in accordance with a contract with the Commonwealth of Australia, located at Badgerys Creek, New South Wales.

WSA is currently developing the Western Sydney International site and its contractors require water for construction activities.

The property comprising Lot 1 on DP1035249 and Lot 1 on DP373863 contains an old quarry filled with water. The property is owned by PGH Bricks & Pavers Pty Limited (**PGH**).

WSA and PGH are proposing to enter into an agreement to enable WSA to have a right of access over PGH's property for its contractors to extract the water within the old quarry on terms and conditions to be set out in the agreement. The parties' completion of the agreement is subject to PGH being able to lawfully provide the water to WSA's contractor for its construction activities.

The WSA site is Commonwealth owned land.

If you have any queries regarding the proposed activities of WSA or the proposed agreement with PGH, please do not hesitate to contact me.

Yours sincerely,

**Nancy Prochilo**
WSA Co's Representative

# Appendix P
# DPIE Approval of Plans and Consultant

**Planning Services**
**Resource Assessments**
Contact: Jack Murphy
Phone: 8217 2016
Email: jack.murphy@planning.nsw.gov.au

Mr Rich Mason
National Environmental Manager
PGH Bricks and Pavers TM
Locked Bag 1345
North Ryde BC NSW 1670

Email: rmason@pghbricks.com.au

Dear Mr Mason,

**Badgerys Creek Quarry and Brick Making Project (MP 10_0014)**
**Appointment of a Suitably Qualified and Experienced Person**

I refer to your email dated 8 April 2019 requesting the Secretary's endorsement of a suitably qualified and experienced person to prepare the Rehabilitation Management Plan for Badgerys Creek Quarry and Brick Making Project (MP 10_0014).

The Department has reviewed the credentials of Mr Greg Thomson of VGT Environmental Compliance Solutions Pty Ltd and agrees he is a suitably qualified person. In accordance with condition 36(a) of Schedule 3 of MP 10_0014, the Secretary endorses Mr Greg Thomson to prepare the above document.

Should you have any enquiries in relation to this matter, please contact Jack Murphy.

Yours sincerely,

Howard Reed 10·4·19
**Director**
**Resource Assessments**
As nominee of the Secretary

| | |
|---|---|
| **From:** | Kane Winwood |
| **To:** | McKittrick, Judy |
| **Cc:** | clair.baxter@aap.com.au; Elle Donnelley |
| **Subject:** | Badgerys Creek Management Plans |
| **Date:** | Wednesday, 16 October 2013 2:49:42 PM |
| **Attachments:** | ATT00001.png |

Judy,

The Department has reviewed the following Management Plans for the Badgerys Creek Quarry Project, prepared in accordance with project approval 10_0014, and considers them to be adequate:

- **Nosie Management Plan** (September 2013) - condition 7 of schedule 3;
- **Air Quality Management Plan** (September 2013) - condition 14 of schedule 3;
- **Water Management Plan** (September 2013) - condition 21 of schedule 3;
- **Aboriginal Heritage Management Plan** (September 2013) - condition 23 of schedule 3;
- **Transport Management Plan** (September 2013) - condition 25 of schedule 3;
- **Waste Management Plan** (September 2013) - condition 31 of schedule 3;
- **Rehabilitation Management Plan** (September 2013) - condition 36 of schedule 3; and
- **Environmental Management Strategy** (September 2013) - condition 1 of schedule 5.

Accordingly the Director-General has approved the above plans.

Regards,

**Kane Winwood**
**Team Leader, Mining Projects**
as Delegate of the Director-General

**NSW Department of Planning & Infrastructure | GPO Box 39 | Sydney NSW 2001**
**T 02 9228 6298 E kane.winwood@planning.nsw.gov.au**

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---

Planning and Assessment
Energy and Resource Assessments
Contact: Jack Murphy
Phone: (02) 8217 2016
Email: jack.murphy@planning.nsw.gov.au

Mr Rich Mason
National Environmental Manager
PGH Bricks and Pavers TM
Locked Bag 1345
North Ryde BC NSW 1670

Dear Mr Mason,

**Badgerys Creek Quarry and Brick Making Project (MP 10_0014)**
**Post Approval**

I refer to your email dated 9 August 2019 submitting the revised documents for the Badgerys Creek Quarry and Brick Making Project. The Department has reviewed the following documents:

- Noise Management Plan dated February 2019 (condition 8, Schedule 3);
- Air Quality Management Plan dated February 2019 (condition 13, Schedule 3);
- Soil and Water Management Plan dated August 2019 (condition 23, Schedule 3);
- Aboriginal Heritage Management Plan dated February 2019 (condition 30, Schedule 3);
- Rehabilitation Management Plan dated May 2019 (condition 36, Schedule 3); and
- Environmental Management Strategy dated February 2019 (condition 1, Schedule 5).

I can advise that the Secretary has approved the Aboriginal Heritage Management Plan. Please ensure a finalised copy of this document is made available on the company's website.

The Department considers that the remaining documents have not adequately addressed the relevant requirements of the development consent. The Department's comments on these documents are enclosed in **Attachment A**.

The Department requests that these documents are updated and re-submitted no later than **9 September 2019**.

Should you have any enquiries in relation to this matter, please contact Jack Murphy.

Yours sincerely,

Howard Reed 12.8.19.

Howard Reed
**Director**
**Resource Assessments**
as the Secretary's nominee

**Attachment A**
**Badgerys Creek Post Approval**

**February 2019 updates in RED**
**August 2019 updates in BLUE**

| ***Environmental Management Strategy – MP 10_0014 – condition 1, Schedule 5*** | **Satisfactory (Yes/No)** | **Comment** | **Action Required** |
|---|---|---|---|
| The Proponent must prepare an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must: | | | |
| (a) be submitted to the Secretary for approval within 6 months of the determination of Modification 2, unless otherwise agreed by the Secretary; | - | - | - |
| (b) provide the strategic framework for environmental management of the project; | Yes | Satisfied – See Section 2. | - |
| (c) identify the statutory approvals that apply to the project; | Yes | See Section 4 – Please ensure the most up to date legislation, planning instruments, codes, standards and guidelines are referenced in the document. Not satisfied – Please include the Biodiversity Conservation Act 2016, etc. See http://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines/key-guidance for details on policies and guidelines. Satisfied. | - |
| (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; | Yes | Satisfied – Section 5, Section 6 and Section 7. | - |
| (e) describe the procedures to be implemented to:<br>• keep the local community and relevant agencies informed about the operation and environmental performance of the project;<br>• receive, record, handle and respond to complaints;<br>• resolve any disputes that may arise during the course of the project;<br>• respond to any non-compliance; and<br>• respond to emergencies; and | Partial | • Please include the details of or alternatively append/provide a hyper link to the Community and Stakeholder Consultation Plan (CCP). Not satisfied. Satisfied.<br>• Please include the details of or alternatively append/provide a hyper link to the CCP. Not satisfied. Not satisfied – No complaints management procedure.<br>• Please include the details of or alternatively append/provide a hyper link to the CCP. Not satisfied. Not satisfied – No dispute resolution procedure.<br>• See Section 9.2 – Please ensure any incident or non-compliance is reported in accordance with condition 9 and condition 10 of Schedule 5. Satisfied.<br>• Please include the details of or alternatively append/provide a hyperlink to the Emergency | Note the comments and amend the plan accordingly |

**February 2019 updates in RED**
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| | | Management Response plan. Not satisfied. Not satisfied. | |
| (f) include:<br>• references to any strategies, plans and programs approved under the conditions of this approval; and<br>• a clear plan depicting all the monitoring to be carried out under the conditions of this approval. | Yes | • Satisfied – See Section 1.3.<br>• Satisfied – See Figure 3 and Section 7. | - |
| ***Other Comments*** | | | |
| • Please hyperlink the "13 environmental management sub-plans". So that the EMS may be read as a standalone document. Not satisfied. Satisfied.<br>• Where appropriate please remove references to the word "should", "possible", "practicable" and "may" and replace with "will" etc. The Department is seeking clear commitments on what management measures will be implemented. | | | |
| ***Air Quality Management Plan – MP 10_0014 – condition 13, Schedule 3*** | **Satisfactory (Yes/No)** | **Comment** | **Action Required** |
| The Proponent must prepare an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must: | | | |
| (a) be prepared in consultation with the EPA; | Yes | Satisfied – Appendix B. | - |
| (b) be submitted to the Secretary for approval prior to commencing quarrying operations under Modification 2, unless otherwise agreed by the Secretary; | - | - | - |
| (c) describe the proposed air quality management system; | Partial | See Section 6 – Please include the details of or alternatively append/provide a hyper link to the *Community and Stakeholder Consultation Procedure*. Not satisfied – No complaints management procedure. | Note the comments and amend the plan accordingly. |
| (d) describe the measures to be implemented to ensure:<br>• compliance with the air quality criteria and operating conditions of this approval;<br>• best practice management is being employed; and<br>• the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events; | Partial | • See Section 6.1 – Ensure mitigation measures are in line with those outlined in section 8.4 of the EA. Partial – Please explain the use of HVAS as an alternative to TEOM.<br>• Satisfied – Section 8.<br>• See Section 6.2 – haul roads should continue to be watered during adverse meteorological conditions. Satisfied. | Note the comments and amend the plan accordingly. |
| (e) describe measures to ensure that all the commitments in the EA in relation to air quality are implemented; | Partial | See Section 6.1 – Ensure mitigation measures are in line with those outlined in section 8.4 of the EA. Partial – Please explain the use of HVAS as an alternative to TEOM. | Note the comments and amend the plan accordingly. |
| (f) include a program to ensure surface disturbance associated with quarrying operations is minimised; | Partial | See Section 6.2 – Please include further details of progressive rehabilitation or alternatively append/provide a hyper link to the Rehabilitation | Note the comments and amend the plan accordingly. |

**February 2019 updates in RED**
**August 2019 updates in BLUE**

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| | | Management Plan. Partial – Proposed levels of revegetation insufficient. | |
| (g) include an air quality monitoring program that:<br>• uses a combination of real-time monitors, high volume samplers and dust deposition gauges, to evaluate the performance of the project at potential receivers and on-site;<br>• is capable of evaluating the performance of the project and informing day to day operational decisions;<br>• includes a protocol for determining any exceedances of the relevant conditions of this approval; and<br>• effectively supports the air quality management system; and | Partial | • Satisfied – Section 7.2.<br>• See Section 7.2 – Please ensure correct table references are made. Satisfied.<br>• See Section 7 – Further details for determining any exceedance required. Not satisfied<br>• Satisfied – Section 7. | Note the comments and amend the plan accordingly. |
| (h) include a program to:<br>• notify affected landowners of the potential health-related impacts associated with dust; and<br>• respond effectively to enquiries or complaints. | Partial | • See Section 9.2 – Please ensure any incident or non-compliance is reported in accordance with condition 9 and condition 10 of Schedule 5. Not satisfied.<br>• See Section 9.2 – Please provide details of how enquires or complaints will be responded to. Not satisfied. | Note the comments and amend the plan accordingly. |
| ***Other Comments*** | | | |
| • Incorrect table references throughout the document please amend. Satisfied.<br>• Please hyperlink any referenced documents so that the AQMP may be read as a standalone document. Satisfied.<br>• Where appropriate please remove references to the word "should", "possible", "practicable" and "may" and replace with "will" etc. The Department is seeking clear commitments on what management measures will be implemented. | | | |
| ***Soil and Water Management Plan – MP 10_0014 – condition 23, Schedule 3*** | **Satisfactory (Yes/No)** | **Comment** | **Action Required** |
| (a) be prepared by a suitably qualified and experienced person/s approved by the Secretary; | No | Append evidence of approval. | Note the comments and amend the plan accordingly. |
| (b) be prepared in consultation with the EPA and DoI Water; | Partial | Further consultation required. | Note the comments and amend the plan accordingly. |
| (c) be submitted to the Secretary for approval prior to commencing quarrying operations under Modification 2, unless otherwise agreed by the Secretary; and | Yes | - | - |
| (i) Site Water Balance that includes: | | | |
| • details of:<br>o sources and security of water supply;<br><br><br>o water use and management on site; | Partial | o See Table 5 – Please include the volumes of inflows and out flows of each source presented per annum and the total balance of inflows and outflows per annum.<br>o Satisfied – Section 3 and Section 4. | Note the comments and amend the plan accordingly. |

**Attachment A**
**Badgerys Creek Post Approval**

**February 2019 updates in RED**
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| o adequacy of water storage facilities to contain all surface water runoff;<br><br>o any off-site water transfers; | | o See Section 3.2, Figure 3 and Section 5.2.3 – The Department notes the SWMP indicates there will be environmental discharges without an EPL which allows for this. The Department requests PGH consult with the EPA about this matter. Furthermore, surface water monitoring will be required at any locations were discharges are proposed, therefore current surface water monitoring locations are inadequate.<br>o See above. | |
| • measures to be implemented to minimise clean water use on site; | Yes | Satisfied – Section 4.3. | - |
| (ii) Surface Water Management Plan, that includes: | | | |
| • a program for obtaining detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the project; | Partial | See Figure 4 – It appears water will be discharged downstream of the current monitoring points for Badgerys Creek. It also appears the site will discharge to an unnamed creek to the West of the project. As such current baseline data and proposed surface water monitoring is inadequate. | Note the comments and amend the plan accordingly. |
| • a detailed description of the surface water management system on site including the:<br>o clean water diversion system;<br>o erosion and sediment controls;<br>o dirty water management system; and<br>o water storages, including the area, depth and capacity of any in-pit sumps; | Partial | Discussions with EPA and DPIE - Water to determine the controlled discharge program need to be finalised. | Note the comments and amend the plan accordingly. |
| • detailed plans, including design objectives and performance criteria, for:<br>o reinstatement of drainage lines on the rehabilitated areas of the site; and<br>o control of any potential water pollution from rehabilitated areas of the site; | Partial | o See Section 5.3 – Please consult with the EPA to finalise the EPL.<br>o Satisfied – Section 5.3. | Note the comments and amend the plan accordingly. |
| • performance criteria for the following, including trigger levels for investigating any potentially adverse impacts on:<br>o the water management system;<br><br>o surface water quality in creeks and other water bodies that could potentially affected by the project (including Badgerys Creek and Badgerys Creek tributary); and<br>o the stream health, vegetation health and channel stability of water bodies that could potentially affected by the project; | Partial | o See Section 5.4 – Finalise the industrial process water and EPL criteria.<br>o See Section 5.4 – Further monitoring needs to be undertaken to establish the baseline health of Badgerys creek.<br>o See Section 5.4 – The proposed monitoring locations for stream health are inadequate as | Note the comments and amend the plan accordingly. |

**February 2019 updates in RED**
**August 2019 updates in BLUE**

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| | | Figure 4 indicates discharges will occur beyond the proposed downstream monitoring location. | |
| • a program to monitor and report on:<br>o any surface water discharges;<br>o the effectiveness of the water management system;<br>o the quality of water discharged from the site to the environment;<br>o surface water flows and quality in local watercourses; and<br>o the stream health, riparian vegetation health and channel stability of creeks and other water bodies that could potentially be affected by the project; and | | o See Section 5.5 – Any discharges including those from Sediment Dam 3 must be monitored.<br>o See Section 5.5.2 – The proposed monitoring locations are inadequate as Figure 4 indicates discharges will occur beyond the proposed downstream monitoring location.<br>o See Section 5.5.2 – Liaise with EPA regarding EPL requirements.<br>o See Section 5.5.2 – See above regarding monitoring locations.<br>o See Section 5.5.2 – See above regarding monitoring locations. | |
| • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project; and | No | See Section 5.5.3 – Please include a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project. | Note the comments and amend the plan accordingly. |
| (iii) Groundwater Management Plan that includes: | | | |
| • measures to ensure that the maximum extraction depth is not exceeded (see condition 19 of Schedule 2); | Yes | Satisfied – Section 5.3. | - |
| • a protocol to obtain appropriate water licence(s) to cover the volume of any unforeseen groundwater inflows into the quarry from the quarry face or floor; | Yes | Satisfied – Section 8.3. | - |
| • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; and | No | Not Satisfied – Please provide Groundwater Assessment Criteria. Not Satisfied | Note the comments and amend the plan accordingly. |
| • a monitoring program to manage potential impacts, if any, on any alluvium and associated surface water source near the proposed extraction area that includes:<br>o monitoring of groundwater inflows into the quarry from the quarry face or floor, or into any in-pit sumps;<br>o monitoring the impacts of the project on baseflows to Badgerys and South Creeks and their tributaries;<br>o identification of a methodology for determining exceedances of the assessment criteria; | Partial | o Satisfied – Section 6.2.<br>o Satisfied – Section 8.4.<br>o See Sections 6 to 9 – Further details of the proposed monitoring program required. The Department recommends a greater frequency of monitoring then annually. Not Satisfied<br>o Satisfied – Section 8.1. | Note the comments and amend the plan accordingly. |

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| o a plan to respond to any exceedances of the performance criteria; and<br>o a program to regularly report on monitoring. | | o Satisfied – Section 8. | |
| ***Other Comments*** | | | |
| • Please hyperlink any referenced documents so that the SWMP may be read as a standalone document. Not Satisfied.<br>• Please append consultation with the EPA and DoI Water. Not satisfied further consultation required.<br>• Please update table of contents. | | | |
| ***Noise Management Plan – MP 10_0014 – condition 8, Schedule 3*** | **Satisfactory (Yes/No)** | **Comment** | **Action Required** |
| The Proponent must prepare a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must: | | | |
| (a) be prepared in consultation with the EPA; | No | Not Satisfied – Please append consultation with the EPA. Not Satisfied. | Note the comments and amend the plan accordingly. |
| (b) be submitted to the Secretary for approval prior to commencing quarrying operations under Modification 2, unless otherwise agreed by the Secretary; | - | - | - |
| (c) describe the measures to be implemented to ensure:<br>• compliance with the noise criteria and operating conditions of this approval;<br>• best practice management is being employed; and<br>• the noise impacts of the project are minimised during meteorological conditions under which the noise criteria in this approval do not apply (see Appendix 8); | Partial | • Satisfied – See Section 3 and Section 5.1.<br>• Satisfied – See Section 4.<br>• See Section 4.4 – Please provide further details of how impacts will be minimised during times the conditions do not apply e.g. ceasing or modifying operations. Not Satisfied. | Note the comments and amend the plan accordingly. |
| (d) describe measures to ensure that all the commitments in the EA in relation to noise are implemented; | Partial | See Section 4.5 – Please include the details of these commitments within the NMP. Not Satisfied. | Note the comments and amend the plan accordingly. |
| (e) include a consultation plan detailing:<br>• procedures for notifying and consulting nearby residents prior to the commencement of the construction of the noise bunds and during quarrying and brick making operations;<br>• details of a telephone complaints line (all hours) and relevant site persons responsible for following up complaints;<br>• procedures for handling and monitoring all complaints received; and<br>• contingency measures that would be implemented where complaints are received; | Partial | • See Section 5.2 – Please include a clear commitment to undertake the required notification and consultation prior to the commencement of operations. Not Satisfied.<br>• See Section 5.2 – Please include the complaints line number and note that it will be all hours. Not Satisfied.<br>• Satisfied – Section 5.2.<br>• Satisfied – Section 5.2. | Note the comments and amend the plan accordingly. |
| (f) describe the proposed noise management system; and | Yes | Satisfied – Section 4 and Section 5. | - |
| (g) include a noise monitoring program that:<br>• is capable of evaluating the performance of the project; | Partial | • See Section 5.1 – Further details of how the monitoring will evaluate the performance of the project (i.e. how often will campaign periods | Note the comments and amend the plan accordingly. |

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| • includes a protocol for determining any exceedances of the relevant conditions of this approval; and<br><br>• effectively supports the noise management system | | occur and how were the chosen noise monitoring locations determined). Not Satisfied.<br>• See Section 5.1. – Please ensure any incident or non-compliance is reported in accordance with condition 9 and condition 10 of Schedule 5. Not Satisfied.<br>• See Section 5.1 – As above. Not Satisfied. | |
| ***Other Comments*** | | | |
| • Please hyperlink any referenced documents so that the NMP may be read as a standalone document. Satisfied.<br>• Please append consultation with the EPA. Not Satisfied.<br>• The plans should provide clear commitments, and avoid ambiguous or hypothetical language. For example, words such as 'would' or 'should' are to be avoided. Not Satisfied. | | | |
| ***Rehabilitation Management Plan – MP 10_0014 – condition 36, Schedule 3*** | **Satisfactory (Yes/No)** | **Comment** | **Action Required** |
| The Proponent must prepare a Rehabilitation Management Plan for the project to the satisfaction of DRG. This plan must: | | | |
| (a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; | Yes | Satisfied – Appendix B | - |
| (b) be prepared in consultation with the Department, DoI Water, OEH and Council; | Partial | Update Appendix A following consultation. Not Satisfied. | To note the comments and amend the plan accordingly |
| (c) be submitted to DRG within 12 months of the determination of Modification 2; | - | - | - |
| (d) be prepared in accordance with any relevant DRG Guideline; | Yes | Satisfied – Section 1. | - |
| (e) build upon the Rehabilitation Objectives in Table 6 and the proposed rehabilitation strategy described in the EA and shown in Appendix 4; | Yes | Satisfied – Section 4.3 and Section 6. | - |
| (f) investigate options for the future use of disturbed areas (including voids) following the completion of quarrying operations; | Yes | Satisfied – Section 4 and Section 11. | - |
| (g) describe and justify the proposed rehabilitation strategy for the site, including post-operations landform and use; | Partial | See Section 4 and Section 5 – Please include a clear justification for the proposed rehabilitation strategy. Not Satisfied.<br><br>See Section 2.3.5 – RMP indicates the site would be rehabilitated to as close as possible to natural ground level. Please update to natural ground level. | To note the comments and amend the plan accordingly |
| (h) describe and justify the proposed rehabilitation strategy for the site in the event that quarrying and brick making operations do not recommence following the shutdown period; | Partial | See Section 7.2 – Please include further details regarding the event that quarrying and brick making operations do not recommence following the shutdown period. Not Satisfied. | To note the comments and amend the plan accordingly |

**February 2019 updates in RED**
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| (i) | describe how the rehabilitation of the site would achieve the objectives identified in Table 6; | Partial | See Table 17 – Please include completion metrics where appropriate. Not Satisfied. | To note the comments and amend the plan accordingly |
| (j) | include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and for triggering remedial action (if necessary); | Partial | See Table 17 – Please include completion metrics where appropriate. Not Satisfied. | To note the comments and amend the plan accordingly |
| (k) | describe the measures to be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform (including final voids) and final land use/s; | Yes | Satisfied – Section 7. | - |
| (l) | include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation; | Yes | Satisfied – Section 2. | - |
| (m) | include a program to monitor, independently audit and report on the effectiveness of the measures in paragraph (k) above, and progress against the detailed performance and completion criteria in paragraph (j) above; | Partial | See Table 17 – Please include completion metrics where appropriate. Not Satisfied. | To note the comments and amend the plan accordingly |
| (n) | to the maximum extent practicable, build on and integrate with the other management plans required under this consent; and | Yes | Satisfied – Section 3. | - |
| (o) | include detailed scheduling for progressive rehabilitation to be initiated, undertaken and/or completed over the next three years (see condition 35 of this Schedule). | Partial | See Section 2 – Please include a table which clearly outlines rehabilitation to be completed. Not Satisfied. | To note the comments and amend the plan accordingly |
| **Other Comments** | | | | |
| • | Please hyperlink any referenced documents e.g. the NMP. So that the RMP may be read as a standalone document. Satisfied. | | | |
| • | Please remove references to the word “should” or “may” and replace with “will”. The Department is seeking clear commitments on what management measures will be implemented. Where appropriate please remove references to the word “should”, “possible”, “practicable” and “may” and replace with “will” etc. The Department is seeking clear commitments on what management measures will be implemented. | | | |

# Appendix P
# Evidence of Consultation

## Tara O'Brien

**From:** no-reply@majorprojects.planning.nsw.gov.au
**Sent:** Tuesday, 17 August 2021 9:57 AM
**To:** Arancibia, Nelma
**Subject:** Badgerys Creek Quarry & Brickworks Rehabilitation Management Plan - Response from Biodiversity and Conservation Division

Biodiversity and Conservation Division has responded to your request for advice in relation to the Badgerys Creek Quarry & Brickworks Rehabilitation Management Plan . The response is below and/or attached. Record of this consultation has been automatically saved to the portal.

When you are ready, login to your profile to submit the final document to the Department.

**Public Authority Response**
Thank you for your consultation request. Please be advised however that EES will not be reviewing the plan and providing comments.

To sign in to your account click here or visit the Major Projects Website.
Please do not reply to this email.

Kind regards

The Department of Planning, Industry and Environment

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If you are not the intended recipient, please notify the sender and then delete it immediately.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

Natural Resources Access Regulator

Contact: Natural Resources Access Regulator
Phone: 1800 633 362
Email: nrar.enquiries@nrar.nsw.gov.au

Our ref: DOC22/66933, V15/3875-5#44

31 March 2022

Attention: Nelma Arancibia

Uploaded to the Major Projects Portal

Dear Nelma,

**Re: Badgerys Creek Quarry & Brickworks Rehabilitation Management Plan (MP10_0014-PA-21)**

Thank you for giving the Natural Resources Access Regulator (NRAR) the opportunity to review Badgerys Creek Quarry & Brickworks Rehabilitation Management Plan (MP10_0014-PA-21).

Natural Resources Access Regulator (NRAR) recommends the following:

- Condition 36 e) states include details of the planting of replacement trees in riparian areas consistent with the Statement of Commitments and with vegetation requirements for WSA to minimise wildlife impacts. While Pit 3 is acknowledged in the Rehabilitation Plan, there is no mention of the area near Pit 2 which is in the riparian area of Badgerys Creek. Further detail is requested in the Plan on how this area will be managed.

Should you have any further queries in relation to this submission please do not hesitate to contact the Licensing and Approvals team at waterlicensing.servicedesk@dpie.nsw.gov.au

Yours Sincerely

**Tim Baker**
**Senior Water Regulation Officer**
**Water Regulatory Operations**
**Natural Resources Access Regulator**

LIVERPOOL CITY COUNCIL

Our Ref: 242861.2021
Contact: Nelson Mu
Ph: 8711 7556
Date: 7 October 2021

Attn: Nelma Arancibia

Department of Planning, Industry and Environment
Industry Assessments
GPO Box 39
**SYDNEY**

narancibia@csr.com.au.

**Re: The Badgerys Creek Quarry & Brickworks – Rehabilitation Management**

Dear Ms Arancibia

Thank you for the opportunity to comment on the Response to Submissions for the proposed

Biodiversity considerations associated with the Plan are minimal given the current site conditions and proposed final landform (ie unvegetated developable land). From my review consider that biodiversity related matters have been suitably addressed.

Should you wish to discuss this matter further, please contact Nelson Mu, Acting Coordinator Development Assessment on (02) 8711 7556.

Yours sincerely

**Nelson Mu**
**Acting Coordinator**
**Development Assessment**

## Tara O'Brien

**From:** Tim Smith <tsmith@wsaco.com.au>
**Sent:** Thursday, 26 August 2021 1:17 PM
**To:** Arancibia, Nelma
**Cc:** Kirk Osborne; SMITH Mike
**Subject:** RE: [SEC=OFFICIAL] FW: Badgerys Creek consultation - Rehabilitation Management Plan

Hi Nelma,

Thanks for the opportunity to review the Rehabilitation Management Plan.

Our comments are provided below:

- Page 11: In accordance with Condition 36, note that the federal Department of Infrastructure, Transport, Regional Development and Communications is also a relevant authority, and should be provided the opportunity to comment on this document (if it hasn't been already).
- Page 16: Time estimates regarding years for the following Phases (2-4) could be detailed here, which would assist in WSA reviewing the works against construction / operation of the airport.
- Page 17: WSA supports the statement that landscaping will be selected to 'minimise wildlife attraction'.
- Page 27, Section 4.2.1: Measures regarding how water quality would be controlled in relation to water being pumped out to WSA should be detailed here.
- Page 29, Section 4.2.2: Erosion and Sediment Controls may include measures relevant to the common boundary with WSA, which should be specified here if relevant.
- Page 30: Section 4.2.7 notes that *"The vegetation will form communities endemic to the Badgerys Creek region and will not attract wildlife or otherwise impact on the Western Sydney Aerotropolis"* – Suggest that this should reference Western Sydney Airport – if this is intended to refer to the Aerotropolis, an additional point should be included which specifically references Western Sydney Airport.
- Page 32, Section 5.1: Minor changes to reflect regulatory framework:
    - Replace "*Western Sydney Aerotropolis – Land Use and Infrastructure Implementation Plan"* with *"Western Sydney Aerotropolis Plan"*.
    - Add *"State Environmental Planning Policy (Western Sydney Aerotropolis) 2020"*
    - Add *"Western Sydney Aerotropolis Draft Precinct Plans"*
- Page 32, Section 5.2: The Enterprise zone is prescribed under the *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020*. Also relevant to mention here is that the final land use development would be required to comply with the aviation safeguarding provisions under the policy.
- Page 32, Section 5.2: In relation to the strategic outcomes for the site, then the Draft Precinct Plan would provide for the most aligned vision for this portion of the Western Sydney Aerotropolis. Note that this document will likely be finalised in the short to medium term.
- Page 32, Table 15: Additional objective "minimise aviation safeguarding risks to WSA"
- Page 42: Under "Vegetation cover is suitable for final land use", additional completion criteria that *"vegetation does not result in adverse wildlife attraction risk to WSA"*.

Should you have any question – please do not hesitate to get in touch.

Kind regards,

**Tim Smith**
Planning Manager
Airport Planning and Design

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vgt environmental compliance solutions and laboratories

*Beyond Compliance*

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