DIVERSIFIED MINERALS

Big Island Mining Pty Ltd ABN 12 112 787 470

# Second Mining Operations Plan

for the

# Dargues Gold Mine

for the period

1 April 2017 to 31 March 2021

March 2017

*Prepared by:*

**R.W. CORKERY & CO. PTY. LIMITED**

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# Dargues Gold Mine

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**Prepared for:**

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Ref No. 752/46

March 2017

R.W. CORKERY & CO. PTY. LIMITED

# TITLE BLOCK

| | | | |
|---|---|---|---|
| **Name of mine** | Dargues Gold Mine | | |
| **Mining Titles/Leases** | ML 1675 | | |
| **MOP Commencement Date** | 01/04/2017 | **MOP Completion date (nominal)** | 31/03/2021 |
| **Name of leaseholder** | Big Island Mining Pty Ltd | | |
| **Name of mine operator (if different)** | | | |
| **Reporting Officer** | | | |
| **Title** | Second Mining Operations Plan for the Dargues Gold Mine | | |
| **Signature** | | | |
| **Date** | 16/03/2017 | | |

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## APPENDICES

## TABLES

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## PLANS

# LIST OF ACRONYMS

| | |
|---|---|
| AEMR | Annual Environmental Management Report |
| AHD | Australian Height Datum |
| BL | Bore Licence |
| CCC | Community Consultative Committee |
| DRE | Division of Resources and Energy |
| EL | Exploration Licence |
| EP&A Act | Environment Planning and Assessment Act 1979 |
| EPBC Act | Environment Protection and Biodiversity Conservation Act, 1999 |
| EPL | Environment Protection Licence |
| g/t | grams per tonne |
| m | metre |
| ML | Mining Lease |
| mm | millimetre |
| MOP | Mining Operations Plan |
| MP | Major Project |
| PA | Project Approval |
| POEO Act | Protection of the Environment Operations Act 1997 |
| ROM | Run-of-Mine |
| RWC | R.W. Corkery & Co. Pty Limited |
| SB | Sediment Basin |
| SWP | Sediment Water Pond |
| t | tonnes |
| TSC Act | Threatened Species Conservation Act 1995 |
| TSF | Tailings Storage Facility |
| V:H | vertical to horizontal ratio |
| WAL | Water Access Licence |
| WRESB | Waste Rock Emplacement Sediment Basin |

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# 1. INTRODUCTION

## 1.1 SCOPE AND FORMAT

### 1.1.1 Scope

This *Mining Operations Plan* (MOP) for activities at the Dargues Gold Mine (the Mine) within Mining Lease (ML) 1675 has been prepared by R.W. Corkery & Co. Pty Limited (RWC) on behalf of Big Island Mining Pty Ltd (the Company). The Mine is located approximately 13km south of Braidwood and immediately to the north of the village of Majors Creek on the western slopes of the Great Dividing Range (the Mine Site) (**Plan 1A**).

The operations described in this MOP comply with the conditional requirements of the third modification of Project Approval (PA) 10_0054 (**Appendix 1**) and the conditions of ML1675 and Environment Protection Licence (EPL) 20095 (**Appendix 2**).

This MOP is the second MOP for the Mine. The duration of this MOP (the MOP term) is four years, from 1 April 2017 to 31 March 2021.

### 1.1.2 Format

This MOP has been prepared in accordance with the guideline *ESG3: Mining Operations Plan (MOP) Guidelines, September 2013* ("the Guideline") and provides detailed information on mining, processing and rehabilitation operations within the Mine Site. The format generally complies with that provided under the heading '*Compiling a Mining Operations Plan'* in the Guideline.

This MOP also provides information to demonstrate the environmental risks associated with the operations within the Mine Site are being appropriately managed and mitigated.

**Table 1** provides a summary of all tables, figures and plans presented in this MOP. A rehabilitation security estimate dated 7 December 2016, prepared using the Department's security estimation tool (version 1.12) is also included with this MOP as **Appendix 3**.

## 1.2 HISTORY OF OPERATIONS

The Company and its associated predecessors have controlled exploration licences over the Project Site since 2002. At that time, an exploration program was commenced to identify additional hard rock gold resources associated with the historic Jembaicumbene, Majors Creek (also known as Elrington) and Araluen alluvial goldfields.

The Company's exploration licences encompass the Majors Creek, Jembaicumbene Goldfield and a portion of the Araluen alluvial goldfields. The Majors Creek and the Araluen Goldfields represent the largest alluvial goldfield in NSW. Alluvial gold was first discovered at Majors Creek on 5 October 1851. Historical records indicate that more than 40 tonnes of gold has been produced from alluvial deposits in the Braidwood-Araluen area, the vast majority being won in the mid to late 1800's. An estimated 98% of gold produced was from alluvial workings, with the remainder from lode gold workings.

### Table 1
### Summary of Required Tables, Figures and Plans

| MOP Section | Table/Plan Reference | Source |
|---|---|---|
| 13 | Plan 1A – Pre-Mining Environment – Project Locality. | Big Island Mining Pty Ltd |
| | Plan 1B – Pre-Mining Environment – Natural Environment. | |
| | Plan 1C – Pre-Mining Environment – Built Environment. | |
| | Plan 2 – Mine Domains at Commencement of MOP. | |
| 13 | Plan 3A – Mining and Rehabilitation – Year 1. | Big Island Mining Pty Ltd |
| | Plan 3B – Mining and Rehabilitation – Year 2. | |
| | Plan 3C – Mining and Rehabilitation – Year 3. | |
| | Plan 3D – Mining and Rehabilitation – Year 4. | |
| | Plan 4 – Final Rehabilitation and Post-Mining Land Use. | |
| | Plan 5 – Rehabilitation and Post-Mining Land Use Cross Sections. | |
| 1.1.2 | Table 1 – Summary of Required Tables, Figures and Plans. | |
| 1.3 | Table 2 – Dargues Gold Mine – Existing Consents, Licences and Approvals. | |
| 2.2 | Table 4 – Major Assets in each Domain. | |
| 2.3.10 | Table 6 – Material Production Schedule during the MOP Term. | |
| 4.1 | Table 7 – Regulatory Requirements for Rehabilitation. | |
| 4.2 | Table 8 – Final Land Use Strategy. | |
| 4.3 | Table 9 – Rehabilitation Objectives and Targets. | |
| 5.1.1 | Table 10 – Primary and Secondary MOP Domains. | |
| 5.2 | Table 11 – Rehabilitation Domain Objectives. | |
| 2.3 | Table 12 – Summary of Rehabilitation Phases Proposed for Completion at the end of the MOP Term. | |
| 6 | Table 13 – Rehabilitation Performance Indicators and Completion Criteria. | |
| 7.3 | Table 14 – Rehabilitation at Commencement and Completion of MOP. | |
| 9.1 | Table 19 – Analysis of Rehabilitation Threats. | |
| 9.2 | Table 20 – Trigger Action Response Plan. | |

The Dargues Reef ore body was discovered in the 1870’s by James Dargues, and a shaft was sunk on both sides of Spring Creek. Historic records indicate that 180 tons of ore yielded an average of 60oz of gold per week. Following initial mining activities, further shafts were excavated between 1870 and 1891 and then again between 1914 and 1916. The Dargues Reef shaft was sunk to 67m with 3 levels, 2 on Big Blow Lode and one on Main Lode. Historic production from Dargues Reef was minimal, constituting approximately 2 000t at a grade of approximately14g/t gold.

Modern exploration commenced in the 1980’s when Canyon Resources and Horizon Pacific explored the Dargues Reef area, drilling 8 surface and 12 underground drill holes. However, very few of these holes penetrated beneath the existing workings and results were mixed.

In 2002, Moly Mines Ltd applied for and was granted EL6003 over the Dargues Reef deposit. Around the same time, Moly Mines Ltd purchased ML103 from Mr. A.F. Jordan. In 2004, Moly Mines Ltd commenced a drilling program consisting of a number of deeper drill holes to test for depth extensions of the known mineralisation at Dargues Reef and to explore for additional lodes. That drilling program established that the lodes could occur up to 60m north of the contact with the ‘footwall’ diorite dyke. Since 2004, approximately 220 holes have been drilled at Dargues Reef, firstly by Moly Mines Ltd and later by the Company.

Construction of the Mine commenced on 11 February 2013 and the Mine was placed into care and maintenance in December of that year pending completion of optimisation studies and finalisation of funding arrangements. As a result of the optimisation studies that were undertaken, the existing Development Consent was modified.

## 1.3 CURRENT CONSENTS, AUTHORISATIONS AND LICENCES

The existing consents, licences and approvals for the Mine are presented in **Table 2**.

**Table 2**
**Dargues Gold Mine – Existing Consents, Licences and Approvals**

| Issuing / Responsible Authority | Approval Number | Date of Issue | Expiry | Comments |
|---|---|---|---|---|
| **Project Approval – NSW EP&A Act** | | | | |
| Land & Environment Court | PA10_0054 | 8 February 2012 | 31 August 2018 | |
| Department of Planning and Environment (under delegation) | MP10_0054 MOD1 | 12 July 2012 | 31 August 2018 | |
| | MP10_0054 MOD2 | 24 October 2013 | 31 August 2018 | |
| | MP10_0054 MOD3 | 10 August 2016 | 30 June 2025 | |
| **Controlled Action Approval – Commonwealth EPBC Act** | | | | |
| C’wlth Minister for the Environment | 2010/5770 | 27 September 2011 | 30 September 2020 | |
| **Environment Protection Licence** | | | | |
| EPA | EPL20095 | 18 May 2012 | - | |
| **Mineral Authorities** | | | | |
| Minister for Resources and Energy | ML1675 | 13 April 2012 | 12 April 2024 | |
| | EL6548 | 5 April 2006 | 4 April 2017 | |
| | EL8372 | 21 May 2015 | 20 May 2018 | |
| **Water Licences** | | | | |
| NSW Office of Water | TBA | 22 June 2012 | 21 June 2017 | Dargues Gold Mine |
| NSW Office of Water | TBA | 22 June 2012 | 21 June 2017 | Snobs |
| NSW Office of Water | TBA | 22 June 2012 | 21 June 2017 | United Miners |
| NSW Office of Water | TBA | 22 June 2012 | 21 June 2017 | Stewart and Mertons |
| **Other Approvals, Licences and Permits** | | | | |
| Dams Safety Committee | Design conforms to the Committee’s requirements. | Pending | - | - |
| Source: Big Island Mining Pty Ltd | | | | |

## 1.4 LAND OWNERSHIP AND LAND USE

### 1.4.1 Land Ownership

**Table 3** presents the land ownership surrounding the Project Site.

**Table 3**
**Surrounding Land Ownership**

Page 1 of 4

| Land Reference[1] | Residence Reference[2] | Section/Lot/DP | Landowner[3] |
|---|---|---|---|
| 1 | - | 1021/1127185, 102/755934, 1/986483, 2/986483, 3/986483, 4/986483, 5/986483, 104/1100849 | Cortona Resources Limited |
| 2 | - | 103/755934 | Exeter Farm Pty Ltd |
| 3 | R34 | 98/755934 | Ref not held |
| 4 | - | 2/1099172, 1/61600 | Glendaruel (Holdings) Pty Limited |
| 5 | - | 1/996501, 2/996501, 1/5/758636, 2/5/758636, 3/5/758636, 4/5/758636, 5/5/758636, 6/5/758636, 7/5/758636, 9/5/758636, 10/5/758636, 13/5/758636, 14/5/758636, 9/835597 | P. Callan, C McGrath, L Haggan |
| 6 |  | Reference not used. |  |
| 7 | R31 | 1/136801, 2/136801, 3/755934, 82/755934, 83/755934, 95/755934, 113/755934, 114/755934, 141/755934, 143/755934 | P. & L. Matthias |
| 8 | R24 | 1/199645, 2/199645 | S.J. Redden |
| 9 | - | 1/28/758636, 2/28/758636, 3/28/758636, 5/28/758636, 5A/28/758636, 6/28/758636, 7/28/758636, 10/28/758636, 11/28/758636, 13/28/758636, 14/28/758636 | Valerie Carpenter |
| 10 | - | 12/28/758636 | Certificate has not been issued |
| 11 | - | 18/27/758636 | D.P. Drew |
| 12 | - | 13/27/758636 | B.S. & S.F. Drew |
| 13 | R58 | 14/27/758636 | N.V. Harrington |
| 14 | - | 15/27/758636 | S. Lee |
| 15 | - | 16/27/758636 | Reference not held |
| 16 | R55 | 17/27/758636 | Reference not held |
| 17 | R54 | 9/31/758636 | A.D. & M.S. Phillips |
| 18 | R53 | 2/31/758636 | Mangold Investments (NSW) Pty Ltd |
| 19 | - | 2A/27/758636 | Reference not held |
|  |  |  |  |

### Table 3 (Cont'd)
### Surrounding Land Ownership

Page 2 of 4

| Land Reference[1] | Residence Reference[2] | Section/Lot/DP | Landowner[3] |
|---|---|---|---|
| 20 | - | 701/1054207, 701/1054979, 1/123143, 1/123393, 1/48260, 161/755934, 162/755934, 188/755934, 193/755934, 209/755934, 213/755934, 5/4/758636, 6/4/758636, 7/4/758636, 8/4/758636, 9/4/758636, 1/21/758636, 2/21/758636, 3/21/758636, 4/21/758636, 7/21/758636, 8/21/758636, 9/21/758636, 10/21/758636, 1/24/758636, 2/24/758636, 4/24/758636, 5/24/758636, 6/24/758636, 7/24/758636, 8/24/758636, 9/24/758636, 10/24/758636, 11/24/758636, 12/24/758636, 4/25/758636, 5/25/758636, 6/25/758636, 7/25/758636, 8/25/758636, 9/25/758636, 10/25/758636, 11/25/758636, 12/25/758636, 13/25/758636, 1/53/758636, 3/53/758636, 4/53/758636, 5/53/758636, 6/53/758636, 701/93977 | State of NSW |
| 21 | R59 | 20/27/758636 | L.G. Delamont |
| 22 | - | 19/27/758636 | Y.M. Chin |
| 23 | - | 7/27/758636 | Reference not held |
| 24 | - | 7A/27/758636 | Reference not held |
| 25 | R21, R71, R72 | 8/27/758636 | Reference not held |
| 26 | - | 9/27/758636 | Reference not held |
| 27 | - | 10/27/758636 | Reference not held |
| 28 | - | 21/27/758636, 22/27/758636 | 1/1112412 – Timothy James Rankin |
| 29 | R60 | 1/42/758636, 2/42/758636, 3/42/758636, 4/42/758636, 5/42/758636 | R.A. & J.A. South McKenzie |
| 30 | - | 7/15/758636 | The Right Reverend Mesac Thomas |
| 31 | - | 121/48413, 120/755934, 8/15/758636 | K.M. Stuart |
| 32 | | | Reference not used |
| 33 | R61 | 5/15/758636, 6/15/758636 | A. & C.W.Y.H. Brace & R. Mahncke |
| 34 | - | 1/4/758636, 2/4/758636 | W. Brickwood |
| 35 | - | 2A/4/758636, 3/4/758636, 4/4/758636 | Crown land |
| 36 | - | 8/5/758636 | A.J. & L.E.M.M. Astley |
| 37 | - | 1/14/758636, 2/14/758636, 2A/14/758636, 3/14/758636, 3A/14/758636, 4/14/758636, 4A/14/758636, 6/14/758636, 6A/14/758636, 7/14/758636, 7A/14/758636, 8/14/758636, 9/14/758636, 5/836923 | B.W. McCarron |
| 38 | - | 5/6/758636 | C.A. & M.T. Powell |
| 39 | R44 | 6/6/758636, 7/9/758636 | B.D. & G.B.L. Hayes |
| 40 | R45 | 8/6/758636 | A.A. Casey |
| 41 | R40 | A/336039 | N. Tetley & S.L. Buchanan |

### Table 3 (Cont'd)
### Surrounding Land Ownership

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| Land Reference[1] | Residence Reference[2] | Section/Lot/DP | Landowner[3] |
|---|---|---|---|
| 42 | R39 | 1/665110 | B. Sheridan & J. McIntyre |
| 43 | | 2/6/758636, 3/6/758636, 4/6/758636 | W.M. Nelson |
| 44 | R43 | 1/39/758636, 2/39/758636 | S.P. & K.A. Junor |
| 45 | | 240/775934 | Reference Not Held |
| 46 | R84 | 6/877483 | W.H. & J.F. Butcher |
| 47 | R85 | 5/877483 | L.J. Stinson |
| 48 | R86 | 4/877483 | R.M. Grant & M. Allatt |
| 49 | R87 | 3/877483 | S.L. Bennett |
| 50 | R88 | 1/877483, 2/877483 | B.R. Doherty & N.L. Watts |
| 51 | R91 | 23/1004205 | M.J. Franz |
| 52 | R64 | 5/13/758636, 5A/13/758636, 6/13/758636, 7/13/758636, 7A/13/758636 | A.H. & C.E. Struzina |
| 53 | R65 | 4/13/758636, 4A/13/758636 | K. Angel |
| 54 | R66 | 33/1012809 | R. & E.P. Blakely-Kidd |
| 55 | R67 | 2/13/758636 | N.L. Amey |
| 56 | R68 | 1/13/758636 | J.L. & C.A. Corcoran |
| 57 | R63 | 2/17/758636 | J.T. & C.M. Bowman |
| 58 | - | 3/17/758636, 4/17/758636 | R.E. McCarron |
| 59 | - | 1/17/758636 | J.W. Wiggins |
| 60 | - | 9/18/758636 | Reference Not Held |
| 61 | R94 | 1/18/758636, 2/18/758636, 3/18/758636, 7/18/758636 | M.A. Ross |
| 62 | R93 | 4/18/758636, 5/18/758636, 5A/18/758636, 1/26/758636 | Star Buttons Enterprises Pty Ltd |
| 63 | - | 6/18/758636 | Lachmere Pty Ltd |
| 64 | R70 | 1/40248, 11/15/758636, 1/16/758636, 2/16/758636 | S.M. McCarron |
| 65 | - | 9/1068558 | J.S. Weeks & J.B. McDonald |
| 66 | - | 10/1068558 | D.E. Jeffery & M.A. Stoyles |
| 67 | - | 11/1068558 | A. & M.J. McDonald |
| 68 | R19 | 8/1068558 | A.P. Dann |
| 69 | - | 7/1068558 | P.A. & V.L. Grindrod |
| 70 | - | 6/1068558 | R.C. Stone |
| 71 | R20 | 5/1068558 | A. & M.Z. Page |
| 72 | R6 | 1/797719 | B. Carruthers |
| 73 | R7 | 253/755934 | A.K. & N. Riley |
| 74 | R2 | 3/842928, 6/842928, 7/842928, 8/842928, 45/872802 | D.B.R. & B.A. Messum |
| 75 | R16 | 11/709905, 9/735425, 10/735425, 1/986527 | L.T. & P.S. Ruzicka |
| 76 | R17 | 1/831229, 2/831229 | B. McDonald |
| 77 | R18 | 14/842928, 1/859129 | G. Gibson |
| 78 | R23 | 4/1068558 | M.L. Cathro |
| 79 | R22 | 3/1068558 | P.J. & L.J. Cram |
| 80 | - | 2/1068558 | G. & J. Wheatley and K. & S. Jones |

## Table 3 (Cont'd)
## Surrounding Land Ownership

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| Land Reference[1] | Residence Reference[2] | Section/Lot/DP | Landowner[3] |
|---|---|---|---|
| 81 | - | 1/1068558 | D.J. & L.M. Avery |
| 82 | - | 4/755934 | Reference Not Held |
| 83 | - | 3/20/758636, 4/20/758636 | H.A. Gillespie |
| 84 | - | 11/574879, 12/574879, 13/574879 | The Council of the Shire of Tallaganda |
| 85 | - | 1/19/758636 | R. Allen & S.M. McIlveen |
| 86 | R9 | 247/755934, 15/22/758636, 16/22/758636, 17/22/758636, 18/22/758636 | William Edmund Waterhouse |
| 87 | R10 | 5/21/758636, 6/21/758636 | Sarah Elizabedth Vella |
| 88 | R11 | 2/53/758636, 9/53/758636 | G.E. & L.H. Ison |
| 89 | - | 21/720161 | L.A. & G.M. Baillie |
| 90 | R13 | 13/24/758636, 14/24/758636, 15/24/758636, 16/24/758636, 17/24/758636, 18/24/758636, 19/24/758636, 20/24/758636, 21/24/758636, 22/24/758636, 23/24/758636, 24/24/758636 | B. Vugec |
| 91 | - | 3/24/758636 | W.A. & K.T. O'Leary |
| 92 |  | 1/36/758636 | R.J. & C.H. Smith-Roberts |
| 93 | R14 | 65/755934, 67/755934, 191/755934, 216/755934 | D.K. & D.M. Wood |
| 94 | R12 | 163/755934, 164/755934 | S, P, P, W & J. Cootes |
| 95 | R15 | 125/755934, 212/755934 | M. Flakelar & J. Holmes |
| 96 | R32, R36 | 211/755934 | B. Crittenden |
| 97 | - | 202/755934 | V. Laurie |
| 98 | R29 | 1/194317, 66/755934, 210/755934 | B. & C. James |
| 99 | R1 | 93/755934, 166/755934 | M. Toner & R. Manderson |
| 100 | - | 5/1093136 | J. & K. Spring |
| 101 | - | ?/54/758636 | Reference Not Held |
| 102 | - | ?/1/758636 | Reference Not Held |
| 103 | - | 1/23/758636 | Reference Not Held |
| 104 | - | 165/755934 | Reference Not Held |
| 105 | R30 | 94/755934 | Reference Not Held |
| 106 | R26,R27, R28 | 104/755934 | Reference Not Held |
| 107 | - | 113/755934 | Folio Cancelled |
| 108 | - | 95/755934 | Reference Not Held |
| 109 | - | 101/755934 | Reference Not Held |
| 110 | - | 4/755934 | Reference Not Held |
| 111 | - | 9/18/758636 | Reference Not Held |
| 112 | - |  | Reference Not Held |
| 113 | - | 96/755934 | Reference Not Held |
| 114 | - | 104/1149075 | J. Stachow & R. Stachow |

Note 1: See Figure 4.6 of RWC (2010)

Note 2: See Figure 4.7 of RWC (2010)

Note 3: "reference not held" indicates that the owner of the land is not registered on the Land Titles Register, possibly as a result of the land being "Old Title"

Source: Land and Property Management Authority (March 2010)

### 1.4.2 Land Use

Land uses surrounding the Mine Site include the following (**Plans 1B** and **1C**).

- Agriculture – principally grazing of sheep and cattle, with some areas of cropping. Agricultural activities are principally undertaken in cleared areas on undulating hills.
- Nature conservation and forestry – these land uses are principally restricted to areas of steep slopes and areas unsuitable for other land uses.
- Residential and rural residential – Majors Creek and surrounding areas include areas of rural residential and residential land use.
- Mineral exploration.

## 1.5 STAKEHOLDER CONSULTATION

### 1.5.1 Community Consultation

Section 3.2.2 of RWC (2010) and Section 3.2 of RWC (2015) identify the community consultation undertaken during preparation of those documents. Community consultation is maintained through a Community Consultative Committee (CCC), regular community meetings and social media.

The CCC includes representatives for the Company, Queanbeyan – Palerang Regional Council, Eurobodalla Shire Council and community members.

### 1.5.2 Consultation with Aboriginal Groups

No specific consultation with local Aboriginal stakeholder groups, other than that with the CCC was undertaken for preparation of this MOP.

### 1.5.3 Government Agency Consultation

The Company has consulted with DRE during preparation of this MOP. A draft version of the MOP was provided to DRE on 9 December 2016 for initial assessment. Comments received on 23 December 2016 were addressed in the final version of the MOP.

# 2. PROPOSED MINING ACTIVITIES

## 2.1 PROJECT DESCRIPTION

The approved operations under PA10_0054 include the following.

- Extraction of waste rock and ore material from the Dargues Reef deposit, and the backfilling of completed stopes using waste rock or tailings mixed with cement.
- Construction and use of surface infrastructure required for the underground mine, including a portal and decline, magazines, fuel store, ventilation rise and power and water supply.

- Construction and use of a processing plant and office area which will include an integrated Run-of-Mine (ROM) pad/temporary waste rock emplacement, crushing and grinding, flotation and dewatering circuits, Company and mining contractor site offices, workshop, laydown area, ablutions facilities, stores, car parking, and associated infrastructure.
- Construction and use of a tailings storage facility.
- Construction and use of a water management system, including construction and use of eight dams and associated water reticulation system, to enable the harvesting and supply of water for environmental flows. It is noted that the proposed water harvesting operations will be consistent with the Company's rights under Section 53 of the *Water Management Act 2000*.
- Construction and use of a site access road and intersection to allow site access from Majors Creek Road.
- Construction and use of ancillary infrastructure, including soil stockpiles, core yards, internal roads and tracks, and sediment and erosion management structures.

## 2.2 ASSET REGISTER

**Table 4** and **Plan 2** detail the domains within the Mine Site, their size and the major assets contained within each domain. It should be noted that the areas detailed are based on maximum disturbance within the term of this MOP. A detailed description of each domain is provided in Section 5.1.

**Table 4**
**Major Assets in each Domain**

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| Domain (see Plan 2) | Area (approx. ha) | Assets | Use and Demolition Requirements |
|---|---|---|---|
| 1 – Infrastructure Area | 10.4<br>(with additional linear infrastructure) | Roads: including the Site Access Road, internal haul roads and the light vehicle road network.<br>Buildings: including offices, sheds, amenities, storage areas and carparks.<br>Processing plant: including the Processing Plant and associated infrastructure, including a crushing and grinding circuit, flotation tanks, a concentrator, a fold room, a substation and power lines, a sewerage treatment plant and reagent and consumable storages. | Roads provide access to the decline and Processing Plant. Access to the Mine Site would be retained in the landform. All remaining roads would be rehabilitated.<br>Buildings are used by the Company and contractors for administration, access and storage purposes. All buildings to be demolished would have all services disconnected before demolition and removal of rubble to a landfill facility. It is not anticipated that use of any retained buildings for agricultural activities would require development approval.<br>The Processing Plant and associated infrastructure are used to produce gold doré, a sulphide concentrate and tailings. All processing infrastructure would be demolished/salvaged or otherwise removed following closure of the Mine. |

**Table 4 (Cont'd)**
**Major Assets in each Domain**

Page 2 of 2

| **Domain (see Plan 2)** | **Area (approx. ha)** | **Assets** | **Use and Demolition Requirements** |
|---|---|---|---|
| 2 – Tailings Storage Facility | 11.1 | The Tailings Storage Facility, which will be constructed in years 1 to 4 of the MOP. | The Tailings Storage Facility will contain a maximum of approximately 900 000t of tailings material. All pipes and infrastructure would be removed and disposed at an appropriate landfill facility and the surface of the Tailings Storage Facility appropriately shaped and covered. |
| 3 – Water Management Area | 2.2 | Storage areas: including Sediment Basin 2 (SB2), Waste Rock Emplacement Sediment Basin 1 (WRESB1) and SWP1; and dam and water storages.<br>Harvestable Rights Dams A, B, C, D, G and H.<br>Drainage channels and pipelines. | SB2, WRESB1 and SWP1 water storages are used to contain dirty water from the Mine Site.<br>Harvestable Rights Dams A, B, C, D, G and H are used to capture surface water runoff for use in the compensatory flow program.<br>Drainage channels and pipelines are used to transport raw water to the Raw Water Pond and dirty or sediment-laden water to the Sediment Pond or the Dewatering Pond.<br>All potentially contaminated water storage structures will be removed from the final landform or decontaminated and rehabilitated for use a farm dam. |
| 4 – Material Emplacement Area | 7.7 | Includes the ROM Pad and the Eastern Waste Rock Emplacement. | The ROM Pad and the Eastern Waste Rock Emplacement are used to store waste rock from underground operations at the surface.<br>All infrastructure not to be retained for the final land use will be dismantled or demolished and removed from site. The ROM pad and remaining waste rock material would be removed from the domain. |
| 5 – Stockpile Area | 4.6 | Includes all stockpiles of topsoil and subsoil material preserved for rehabilitation activities. | Stockpiled subsoil and topsoil would be used in landform creation and establishment activities during rehabilitation. |
| 6 – Void (Box Cut and Decline) | 2.1 | Includes the box cut and decline underground mining infrastructure. | All access to underground workings would be removed or sealed. |

Source: Big Island Mining Pty Ltd

## 2.3 ACTIVITIES OVER THE MOP TERM

### 2.3.1 Exploration

Exploration activity will continue to involve geochemical sampling, geological mapping and geophysics, as well as diamond and percussion drilling activities. Separate approval would be obtained for proposed exploration activities.

### 2.3.2 Construction

The following construction activities will be undertaken during the MOP term.

- Construction and use of surface infrastructure required for the underground mine, including explosives magazines, fuel store, and power and water supply.
- Construction and use of a processing plant and office area which will include an integrated Run-of-Mine (ROM) pad, crushing and grinding, gravity separation, flotation and dewatering circuits, Company and mining contractor site offices, workshop, laydown area, ablutions facilities, stores, car parking, and associated infrastructure.
- Construction and use of a tailings storage facility.
- Construction and use of a water management system, including construction and use of eight dams and associated water reticulation system, to enable the harvesting and supply of water for environmental flows.
- Construction and use of ancillary infrastructure, including soil stockpiles, core yards, internal roads and tracks, and sediment and erosion management structures.

### 2.3.3 Mining Operations (Including Mining Purposes)

Mining operations are presented in detail in Section 2.4 of RWC (2010). In summary, underground development would commence with development of the decline. Underground mining of ore material would be undertaken using a sublevel open stoping mining method.

During mining operations, a number of development drives would be established at intervals within the ore zone. A series of holes would then be drilled from each drive and would then be sequentially loaded with explosives and the ore material blasted. The fragmented material would then be removed from the stope or open void using an underground loader, operated remotely where required, and loaded into haul trucks for transportation to the ROM pad. Between stopes, pillars (vertical) and sills (horizontal) unmined material is left to provide support and prevent ground collapse.

In order to ensure stability of sections of the proposed underground mine once mining operations have been completed in those sections, mined-out stopes would be backfilled using waste rock material sourced preferentially from concurrent underground development, with additional waste rock material transported from the surface, as required.

### 2.3.4 Waste Rock Emplacement

During underground development operations, material that has insufficient gold to justify processing would be extracted and either transported to the surface and placed within the Eastern Waste Rock Emplacement or, once underground mining has progressed sufficiently, used directly during stope backfilling operations.

### 2.3.5 Processing Operations and Tailings

#### 2.3.5.1 Processing Operations

Processing operations are described in detail in Section 2.6 of RWC (2016). In summary, ore material will be processed within the processing plant to produce a combination of gold dorè, a gold and silver bearing sulphide concentrate and tailings material.

Ore material will be fed into a ROM bin from where it will pass to a three-stage crushing and screening circuit. Product screen undersize material (nominal <12 mm) will be transferred to an enclosed fine ore bin. Material from the fine ore bin will be reclaimed using one or more feeders. Reclaimed material will be directed to a primary ball mill for grinding.

The ground ore will be directed to a rougher flotation circuit where rougher flotation concentrate and tail streams are separated by the addition of flotation reagents and low pressure air. The rougher concentrate will be directed to the re-grind circuit whilst the rougher tail will be dewatered via a thickener prior to transfer to the tailings storage facility.

Rougher concentrate will be ground within a re-grind ball milling circuit. Re-ground rougher concentrate will be transferred to the cleaner flotation circuit where further flotation will produce the final concentrate. The tail from the cleaner flotation circuit will be transferred back to the rougher circuit feed stream.

Concentrate will be dewatered prior to being stacked within an enclosed shed with a bunded concrete floor, prior to being trucked offsite for further processing.

#### 2.3.5.2 Tailings

At the completion of processing of the ground ore (from which the gold and associated sulphides have been removed) the remaining material, namely tailings, would be transferred to a thickener to recover process water for reuse within the processing plant. The thickened tailings slurry would be pumped to the Tailings Storage Facility (TSF) or mixed with cement and used as paste fill underground.

### 2.3.6 Waste Management

**Table 5** presents an estimate of the non-production wastes that will be generated during the MOP term and briefly describes how each class of waste will be stored and subsequently removed from the Mine Site.

**Table 5**
**Non-Production Waste Management**

| **Waste Type** | **Storage** | **Removal** |
|---|---|---|
| General waste (including food scraps) | Covered bins located within lunch rooms, offices and elsewhere as required. Where these bins would be located in open areas, they will be fitted with animal-proof lids. | Collected on a regular basis by licensed waste contractor and transported to a licensed waste disposal facility within the Queanbeyan – Palerang Regional Local Government Area. |
| Waste oils and greases | Placed within bunded tank(s) within the workshop area. | Collected on a regular basis by a licensed waste contractor and transported to an appropriately licensed facility for recycling or reuse. |
| Batteries and tyres | Batteries will be placed within a covered and marked used battery storage area until removed from site.<br>Tyres will be placed within a marked used tyre storage area until removed from site or used for another purpose. | Batteries will be collected on a regular basis by a licensed disposal contractor and recycled at an appropriate facility.<br>Tyres will be reused on site for construction of retaining walls, erosion protection, traffic control or would be removed from site for reuse elsewhere or recycling at an appropriate facility. |
| Scrap Steel/Metal | Stored in a specified areas within the workshop area or elsewhere as required. | Collected on a regular basis by a scrap metal recycler and recycled at an appropriate facility. |
| General Recyclables | Covered bins located within lunch rooms, offices and elsewhere as required. Where these bins are located outside a closed building they would be fitted with animal-proof lids. | Collected on a regular basis by a licensed recycling contractor and transported to an appropriate recycling facility within the Queanbeyan – Palerang Regional Local Government Area. |
| Used Reagent and Chemical Containers | All containers will be stored in a bunded area until cleaned or removed from site. Where appropriate, containers will be rinsed with water in accordance with the manufactures directions or industry best practice. Rinse water will be returned to the processing circuit. Clean containers will be recycled, where appropriate, or disposed of as general waste. Where onsite rinsing/cleaning is not appropriate, used containers will be removed from site for appropriate treatment off site or will be returned to the manufacturer for refilling and reuse. | |
| Waste water | Waste water from ablutions facilities will be treated within one or more ‘biocycle’ treatment facilities and the treated water used for irrigation of garden areas or areas undergoing rehabilitation within the Project Site. | |

## 2.3.7 Decommissioning and Demolition Activities

No significant areas or structures will be decommissioned and/or demolished during the term of the MOP.

## 2.3.8 Temporary Stabilisation

It is expected that only soil stockpiles will require temporary stabilisation during the term of this MOP. Where possible, soil is used for progressive rehabilitation rather than stockpiling. Temporary stabilisation and soil stockpile management includes the following practices.

- Minimising, as far as practicable, the operation of machinery on soil stockpiles to minimise compaction.

- Ensuring that soil stockpiles have a maximum depth of 2m and subsoil stockpiles have a maximum depth of 3m.
- Leaving the surface of the soil stockpile with an even but roughened surface to assist in erosion control and seed germination and emergence.

### 2.3.9 Progressive Rehabilitation and Completion

Due to the nature of operations at the Mine, there will be limited opportunities for progressive rehabilitation during the MOP term.

### 2.3.10 Material Production Schedule during MOP Term

**Table 6** presents the material production schedule for the term of this MOP. It is noted that as mining will occur underground, the annual progression of mining operations has been condensed in **Plan 3A** to areas that will be developed during the MOP term. Material produced during the MOP term will remain subject to the production scheduling of the Mine which includes consideration of the following factors.

- Processing capacity.
- The results of exploration and the success of underground mining activities.
- The market price of gold and other market externalities.
- The material production schedule provided in **Table 6** is therefore indicative.

**Table 6**
**Material Production Schedule during the MOP Term[1]**

| Material | Units | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|---|
| Waste Rock | t | 270 000 | 255 000 | 55 000 | 0 |
| Gold Ore[2] | t | 115 000 | 355 000 | 355 000 | 350 000 |

Note 1: Actual production rates may vary from the planned production rates. As a result, the actual timing of the milestones presented may also vary

Note 2: Total extraction of 1.6Mt over the life of the Mine

Source: Big Island Mining Pty Ltd

## 3. ENVIRONMENTAL ISSUES MANAGEMENT

### 3.1 INTRODUCTION

Management of environmental risks and environmental mitigation measures have previously been addressed during the development assessment process and are outlined within RWC (2010) and subsequent modifications. The following subsections provide a summary of applicable management measures with cross references to applicable management plans.

## 3.2 GEOLOGY, GEOCHEMISTRY AND CHARACTERISATION

Rehabilitation risks associated with the geochemical composition of tailings and waste rock during rehabilitation operations include the following.

- Short or long-term generation of leachate with low pH or elevated metal composition resulting in environmental damage and requiring active management.
- Contamination of surface materials resulting in environmental damage and requiring active management.
- Limitation of the success of revegetation programs as a result of adverse impact on growth media chemistry.

Acid generating test work indicates that the tailings material will not be acid generating. As a result, the composition of the tailings material is not likely to result in the release of any elements or leachate with the potential to cause environmental harm.

## 3.3 MATERIAL PRONE TO SPONTANEOUS COMBUSTIONS

As a gold mine, no mined material within the Mine Site is prone to spontaneous combustion no specific risks associated with this material have been considered.

One processing reagent, namely PAX, is classified as spontaneously combustible. This product will be transported and stored in accordance with the MSDS and manufacturer’s instructions for the material. As a result, no additional management measures are required.

## 3.4 MATERIAL PRONE TO GENERATING ACID MINE DRAINAGE

Acid generating test work indicates that tailings material and waste rock will not be acid generating. As a result, the risk of acid mine drainage is considered to be low.

## 3.5 MINE SUBSIDENCE

The underground mining methods will be modified to suit the grade and geometry character of the ore body, which will be determined over time as more data becomes available from drilling and development within the mineralisation.

Minor subsidence risk will remain for any underground mining operation however the backfilling of mined stopes will further reduce the risk of subsidence due to mining.

## 3.6 SOIL TYPES AND SUITABILITY

A *Soil and Land Capability Assessment* prepared in 2010 (SEEC, 2010) described soils within the Mine Site as:

- weakly pedal in their upper section, grading to strongly pedal in their lower sections;
- moderately to imperfectly drained; and
- potentially dispersive and prone to instability.

SEEC (2010) assessed that the Mine Site soils are suitable for stripping and use during rehabilitation operations, provided the implementation of management and mitigation measures.

Soil resources are preserved through stockpiling within the Mine Site (see stockpile locations on **Plans 2** and **3A** to **3D**). Stockpiles are preserved for future use in rehabilitation activities. As a result, any risks to rehabilitation associated with soil and its suitability are considered to be adequately managed.

## 3.7 SURFACE WATER AND EROSION AND SEDIMENT CONTROL

Erosion and sediment controls implemented at the Mine Site are described in detail in Section 4 of RWC (2010). There are moderate risks to erosion and sediment control associated with the development and operation of the Mine. SEEC (2010) conducted an assessment of the physical attributes of the soil within the Mine Site and therefore the erodibility of the various soil units. In summary, assessment of particle size, dispersion percentage and dispersibility concluded that any risks to rehabilitation would be adequately managed by the implementation of erosion and sediment controls. The Company has developed considerable expertise in managing sediment-laden water on site and, as a result, management of this issue is not considered to be a substantial rehabilitation risk.

## 3.8 FLORA AND FAUNA

Vegetation clearing within the Mine Site is approved under PA10_0054.

An ecology assessment was undertaken for the Mine by Gaia Research Pty Limited (Gaia, 2010). The key findings of that study are summarised as follows.

- A total of 10 vegetation communities are present within the Mine Site. No Endangered Ecological Communities are present within the Mine Site.
- Notably, the remnant native vegetation represented by Ribbon Gum Forest, Fragmented Ribbon Gum Forest, Regenerating Wattles and River Peppermint Open Forest, will remain undisturbed.
- A total of 100 species of native and 38 species exotic of plant were identified within the Mine Site. No threatened flora species listed under the *Threatened Species Conservation Act 1995* (TSC Act) or the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) were identified.
- A total of 151 fauna species were identified, of which four, namely the Little Eagle, Gang-gang Cockatoo, Scarlet Robin and Flame Robin, are listed under the TSC Act or EPBC Act. A detailed impact assessment determined that the Mine would not have a significant impact such that viable local populations of these or any other listed fauna species are likely to be placed at risk of extinction.

Indirect impacts to existing flora and fauna may result from weed invasion and feral animal intrusion. The *Biodiversity Management Plan,* 2016 will guide implementation of programs to limit and reduce impacts to native flora and fauna within the Mine Site.

As a result of the continued implementation of the *Biodiversity Management Plan*, the risks to rehabilitation from flora and fauna are considered to be low.

## 3.9 SLOPES AND SLOPE MANAGEMENT

It is acknowledged that minor risks exist for the progressive construction within the Waste Rock Emplacement and Tailing Storage Facility domains. Technical designs for these components require a final slope at a grade of 1:3 (V:H) to improve stability and general safety. A geotechnical assessment of the final landform would be undertaken prior to relinquishment to confirm the final stability of all terminal faces and domain slopes. As a result, slopes and slope management are considered to be a low risk to rehabilitation success at the Mine.

## 3.10 AIR QUALITY

Air quality impacts are likely during the progressive development of the Tailing Storage Facility and Eastern Waste Rock Emplacement, general operations and earthworks associated with rehabilitation activities. It is not anticipated that these would continue post-mining. A minor risk would remain in the final landform, associated with dust lift-off from areas that are revegetating in the rehabilitated landscape. However, these impacts would be consistent with the surrounding landscape.

## 3.11 SURFACE WATER QUALITY

Risks to surface water quality principally relate to pollution through failure of the Tailings Storage Facility, sediment-laden runoff or hydrocarbon spills and acid mine drainage. The surface water management system including the locations of sediment dams and a description of the surface water monitoring program is provided in the *Water Management Plan*. Subject to the continued implementation of this plan, residual risks to rehabilitation are considered to be minor.

The Tailings Storage Facility will be regularly monitored and has been designed to limit the risk of failure. As a result, the risk to surface water quality remains moderate (principally based on the potential consequences of these impacts), however the likelihood of an event occurring is limited as much as practically possible.

## 3.12 GROUNDWATER QUALITY

A Groundwater Assessment was undertaken Australasian Groundwater and Environmental Consultants Pty Ltd (AGE, 2010). That assessment determined that groundwater levels within and surrounding the Mine Site would largely recover within 2 years of the end of mining operations and would completely recover within 5 years, and that there would be no impact on existing water supplies at Araluen or Majors Creek. As a result, groundwater is considered to be a low risk to rehabilitation success at the Mine.

## 3.13 CONTAMINATED OR POLLUTED LAND

Risks to contaminated or polluted land principally relate to the potential for formation of acid sulphate soils or operational contamination relating to hydrocarbon management. The management of potentially acid forming materials is described in Section 3.4. In addition, any identified contamination would either be remediated or removed prior to site relinquishment. It is therefore not expected that contaminated land or pollution would present a risk to rehabilitation of the Mine.

## 3.14 WEED AND NON-NATIVE FAUNA CONTROL AND MANAGEMENT

Weeds are currently managed through the protocols contained within the *Biodiversity Management Plan*, 2016 and the *Weed Management Plan*, 2016. While weeds and non-native fauna are a risk to revegetation success, it is expected that they would continue to be managed until such time as the completion criteria are met and ML1675 relinquished. It is anticipated that weeds and non-native fauna would remain in the final landform, however the pervasiveness of species would be consistent or below that of the surrounding landscape. Therefore, the need for ongoing controls is considered to be a relatively minor risk for the successful rehabilitation of the Mine Site.

## 3.15 OPERATIONAL NOISE, VIBRATION AND AIR BLAST

While the risk of impacts relating to operational noise, road noise and blasting would occur during construction, operations and rehabilitation activities, it is not considered that these impacts would have a lasting effect on the landform or impact the rehabilitated land.

## 3.16 VISUAL AMENITY

Residual risks to visual amenity are considered to be minor due to the remote location of the Mine Site. Visual amenity impacts may result from views of the Waste Rock Emplacement and Tailings Storage Facility, however it is expected that revegetation of these domains would integrate the landforms with the surrounding landscape, as much as practically possible.

## 3.17 ABORIGINAL HERITAGE

The *Aboriginal Heritage Management Plan*, 2016 includes locations of six artefacts identified within the Mine Site. Of these six artefacts, two would be disturbed by mining and processing operations. Both artefacts have low archaeological significance due to the highly disturbed context in which they are located.

Aboriginal cultural heritage will continue to be managed under the existing *Aboriginal Heritage Management Plan*, 2013. Existing management measures relating to Aboriginal cultural heritage would be continued during the MOP term and until site relinquishment. Given the highly disturbed nature of the existing landscape it is not likely that any items of cultural significance remain to be located.

## 3.18 NON-ABORIGINAL HERITAGE

No significant items or locations of non-Aboriginal heritage significance have been identified within the Mine Site. It is not expected that rehabilitation of the Mine Site would present any risks to non-Aboriginal heritage.

## 3.19 BUSHFIRE

The high levels of previous disturbance at the Mine Site, combined with low vegetation cover, result in minimal bushfire risk.

## 3.20 HYDROCARBON CONTAMINATION

The risks associated with hydrocarbon contamination have been addressed in relation to surface water quality (Section 3.11), groundwater quality (Section 3.12), and contaminated or polluted land (Section 3.13).

In summary, due to existing management measures implemented for hydrocarbon transport, handling and storage, it is not expected that hydrocarbon contaminated areas would present a risk to rehabilitation of the Mine Site.

## 3.21 PUBLIC SAFETY

Access to the Mine Site is restricted by rural fencing. Fencing will be inspected on a regular basis and access of public to the Mine restricted. Considering the remote location of the Mine Site and restricted access there will be minimal risk to public safety.

# 4. POST MINING LAND USE

## 4.1 REGULATORY REQUIREMENTS

Regulatory requirements specifically affecting progress towards the post mining land use are detailed in **Table 7**.

**Table 7**
**Regulatory Requirements for Rehabilitation**

Page 1 of 2

| Source Document | Subject | Rehabilitation Requirement |
|---|---|---|
| Mining Tenements | Rehabilitation | Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General. |
| | Roads | Temporary access tracks must be rehabilitated and revegetated to the satisfaction of the Director-General as soon as reasonably practicable after they are no longer required under this lease. |

**Table 7 (Cont'd)**
**Regulatory Requirements for Rehabilitation**

Page 2 of 2

| Source Document | Subject | Rehabilitation Requirement |
|---|---|---|
| **Project Approval 19_0054** | **General Conditions** | The Applicant shall carry out the development generally in accordance with the following documents:<br>Project Approval 10_0054.<br>Environmental Assessment dated 2010, prepared by R W Corkery & Co Pty Limited.<br>Information accompanying modification application No. 10_0054MOD – 1, dated 2012.<br>Information accompanying modification application No. 10_0054MOD – 2, dated 2013.<br>**Information accompanying modification application No. 10_0054MOD – 3, dated 2016.** |
| Environmental Assessment (RWC, 2010)<br>Modification 1 Environmental Assessment (RWC, 2012)<br>Modification 2 Environmental Assessment (RWC, 2013)<br>Modification 3 Environmental Assessment (RWC, 2015) | Landform | As far as practicable blend the landform with the surrounding land fabric. |
| | | Provide a stable ground cover for erosion control. |
| | | To provide a low maintenance, stable and safe landform commensurate with a grazing land use capability. |
| | Vegetation | Revegetate with native trees and scrub species comparable with pre-existing vegetation communities. |
| | Underground Operations | All underground areas would be cleared of infrastructure and any contaminated materials placed within the Tailings Storage Facility. The mine portal would be sealed and secured, as nominated by regulatory authorities.<br>A final landform would be established in disturbed areas and revegetation allowed to occur naturally, or through seeding of appropriate species where this is not successful. |
| | Material Emplacement | Construct the landform so that the surface is free draining and suitable for revegetation with native groundcover, appropriate species. |
| | Tailings Storage Facility | Establish a stable, free draining landform.<br>Establish vegetative communities native to the local area and consistent with the surrounding landscape.<br>Provide for long term nature conservation use.<br>Apply rock armouring or topsoil on the embankments and revegetate with native grasses.<br>Remove all surface infrastructure, where it is safe to do so.<br>Minimise surface percolation of rainfall through a free draining upper surface and suitably applied capping.<br>Provide a substrate for sustainable native vegetation regeneration on the surface of the Tailings Storage Facility. |
| | Processing Plant and Infrastructure Areas | Remove all infrastructure not required for the final land use.<br>Remove all liners, sumps and excavation areas with contaminated material to be placed within the Tailings Storage Facility.<br>Disturbed areas that would not be used for the final land use will be ripped, covered with available topsoil or suitable growth medium and allowed to revegetate naturally. |

## 4.2 POST MINING LAND USE GOAL

Current land uses on properties surrounding the Mine Site include agriculture, nature conservation, forestry and residential land use. **Table 8** provides the final land use strategy for each domain within the Mine Site. The final Mine Site land use would be primarily of agricultural land use.

**Table 8**
**Final Land Use Strategy**

| **Domain** | **Final Land Use** |
|---|---|
| 1. Infrastructure | The domain would be rehabilitated to a land use consistent with the surrounding landscape.<br>All mine-related infrastructure and any structures not being retained in the final landform are to be removed. |
| 2. Tailings Storage Facility | The TSF would be shaped to form a free draining landform with appropriate surface water control structures, capped with suitable material, spread with soil and revegetated. |
| 3. Water Management Area | Storage areas and drainage channels would remain in the landscape as farm water infrastructure. |
| 4. Material Emplacement Area | Remaining waste rock material would be removed, and the ROM Pad and Waste Rock Emplacement would be re-profiled, spread with soil and revegetated. |
| 5. Stockpiled Material | Growth medium would be used for rehabilitation activities throughout the Mine Site. The remaining surface would be rehabilitated to rural land consistent with the surrounding landscape. |
| 6. Box Cut and Decline | The box cut and decline would be backfilled, and the surface would be graded, spread with soil and revegetated. Clean water diversions would be established to divert clean water from entering the box cut and decline. |

## 4.3 REHABILITATION OBJECTIVES

The Company’s rehabilitation objectives for the Mine Site can be defined in the short term and long term.

In the short term, the objective would be to stabilise all earthworks, drainage lines and disturbed areas no longer required for mine-related activities in order to minimise erosion and the generation of sediment-laden water. Erosion control would be achieved by the early establishment of a groundcover.

In order to achieve the nominated post mining land use goals, the long term objectives of rehabilitation activities are as presented in **Table 9**. In summary, the objectives are as follows.

- Provide for the removal of all mining-related infrastructure not required for the agreed final land use.
- Create a low maintenance, geotechnically stable and safe landform that is secure and non-polluting.
- Construct landforms which, as far as practicable, are commensurate with the surrounding landforms.

- Provide for a growth medium suitable for the establishment and retention of the nominated vegetation communities.
- Revegetate disturbed areas with native tree, shrub and grass species comparable with, and with maintenance requirements no greater than, the surrounding vegetation communities.

**Table 9**
**Rehabilitation Objectives and Targets**

| **Phase**[1] | **Objective** | **Target** |
|---|---|---|
| Site Decommissioning (Surface Infrastructure) | Decommission and remove all surface infrastructure (unless required for a lawful post-mining land use).<br>Assess and remove any contaminated material. | All surface infrastructure removed (unless required for a lawful post mining land use).<br>All contamination removed or treated. |
| Landform Establishment | Provide a low maintenance, geo-technically stable and safe landform that is suitable for the proposed final land use. | Geotechnical assessments indicate that the final landforms are stable. |
| | Provide a non-polluting landform. | Surface water and groundwater quality monitoring results indicate that the landform is non-polluting. Pollution will be considered against the definition provided by Section 120 of the Protection of the Environment Operations Act 1997. |
| Growth Medium Development (Soil Management) | Where available, provide a cover of growth medium over landforms that will enable the establishment of, and sustain, the nominated vegetation. | Growth medium depth and chemistry is to be consistent with comparable analogue sites. |
| Ecosystem Development (Biodiversity Management) | Revegetated areas provide a vegetation community with maintenance requirements no greater than adjoining vegetation / analogue sites not disturbed by mining activities. | Rehabilitation monitoring confirms that the established vegetation communities are self-sustaining (refer to **Table 13** for detailed criteria). |
| | Revegetated areas contain species consistent with surrounding vegetation communities. | Rehabilitation monitoring confirms species ratios are consistent with surrounding vegetation / analogue sites not disturbed by mining activities.<br>Rehabilitation monitoring confirms that non-native and non-target species (weeds) occur at similar abundance to surrounding vegetation / analogue sites not disturbed by mining activities. |
| Ecosystem Sustainability (Land Use) | Provide vegetation communities suitable for land use strategies provided in **Table 8**. | Rehabilitated landform is self-sustaining and suitable for the proposed final land use. |
| Land Relinquishment | Allow for the relinquishment of the mining tenements and the return of the security lodged over the Mining Lease within a reasonable time after the end of the mine life. | Within 10 years of final rehabilitation. |

Note 1: Further description and discussion on rehabilitation 'Phases' is provided in Section 5.3

Rehabilitation objectives, performance indicators, completion criteria, monitoring/ measurement methods and justification for each phase of rehabilitation are further developed in Section 6 (**Table 13**).

# 5. REHABILITATION PLANNING AND MANAGEMENT

## 5.1 DOMAIN SELECTION

### 5.1.1 Introduction

A domain is a land management unit within the Mine Site. For the purposes of this MOP, the domains comprise primary and secondary domains as follows.

1. Primary or operational domains – categorised on the basis of mine-related activities occurring within each domain.
2. Secondary or post-mining land use domains – categorised on the basis of similar post-mining land use objectives and rehabilitation outcomes.

**Table 10** identifies the domains listed in the MOP Guidelines and used to define the domains described in the following subsections. It is noted that only the bold and highlighted domains are present within the Mine Site.

**Table 10**
**Primary and Secondary MOP Domains**

| Code | Primary Domains (operational) | Code | Secondary Domains (Post Mining Land Use) |
|---|---|---|---|
| **1** | **Infrastructure** | **A** | **Infrastructure** |
| **2** | **Tailings Storage Facility** | **B** | **Water Management Area** |
| **3** | **Water Management Area** | **C** | **Rehabilitation Area – Grassland** |
| **4** | **Material Emplacement Area** | D | Rehabilitation Area – Pasture |
| **5** | **Stockpiled Material** | E | Rehabilitation Area – Woodland |
| **6** | **Box Cut and Decline** | **F** | **Rehabilitation Area – Forest** |
| 7 | Rehabilitation Area – Pasture | G | Rehabilitation Area – Rural Land Capability Classification I to VIII |
| 8 | Underground Mining Area (SMP) | H | Relinquished Lands |
| 9 | Conservation and Biodiversity Offset Area | I | Final Void |
| | | J | Conservation and Biodiversity Offset Area |

**Bold** and highlighted domains applicable to this MOP
Source: ESG3: Mining Operation Plan Guidelines, September 2013 – Table 4

### 5.1.2 Primary Domains

**Plan 2** presents the existing primary domains for the Mine Site. **Plans 3A, 3B, 3C** and **3D** present the primary domains that would be established throughout the MOP term. The following subsections provide a description of each primary domain.

#### Domain 1 – Infrastructure Area

This domain includes the:

- the Site Access Road, internal haul roads and the light vehicle road network;
- an electrical substation and associated power lines;
- offices, sheds, amenities, storage areas and carparks; and
- a processing plant areas and associated infrastructure, including:
  - a crushing and grinding circuit;
  - flotation tanks;
  - a concentrator;
  - a concentrate storage shed;
  - a gold room;
  - a reagent and chemical storage shed;
  - a drill core storage and processing facility;
  - an explosive storage facility;
  - a processing plant office;
  - various Company and contractor offices;
  - a sewerage treatment plant; and
  - ancillary structures.

#### Domain 2 – Tailings Storage Facility

This domain includes the Tailings Storage Facility.

#### Domain 3 – Water Management Area

This domain includes:

- storages areas, including:
  - SB2;
  - WRESB1;
  - SWP1;
  - Harvestable Rights Dams A, B, C, D, G and H; and
  - dam and water storages.
- drainage channels; and
- pumps and pipelines.

### Domain 4 – Material Emplacement Area

This domain includes the ROM Pad and the Eastern Waste Rock Emplacement.

### Domain 5 – Stockpiled Material

Includes soil and subsoil material stockpiles.

### Domain 6 – Void (Box Cut and Decline)

Includes the box cut and decline underground mining infrastructure.

## 5.1.3 Secondary Domains

**Plans 4** and **5** present the location of the secondary domains at the end of the life of the Mine, and cross-sections as relevant. The following subsections provide a description of each of the proposed secondary domains.

### Domain A – Infrastructure

This domain includes all infrastructure that is to be retained within the Mine Site.

### Domain B – Water Management Area

This domain includes the storage areas, pipelines and drainage lines that would be retained in the final landform for lawful purposes.

### Domain C – Rehabilitation Area – Grassland

This domain includes all areas that would be rehabilitated to grassland. This domain includes:

- infrastructure areas, including roads;
- the Tailings Storage Facility, Waste Rock Emplacement and ROM Pad;
- stockpile areas;
- water storage areas; and
- all areas not disturbed by mining and associated activities.

### Domain F – Rehabilitation Area – Forest

This domain includes all areas that would be rehabilitated to Ribbon Gum Forest for the purposes of nature conservation. This domain includes:

- the box cut and decline;
- part of the Tailings Storage Facility, the Waste Rock Emplacement and the ROM Pad;
- part of the infrastructure area;
- stockpile areas; and
- water storage areas.

## 5.2 DOMAIN REHABILITATION OBJECTIVES

**Table 9** presents the post-mining rehabilitation objectives and targets for the Mine Site, while **Table 11** presents the rehabilitation objectives for each of the primary and secondary domains. These objectives have been used to develop the performance indicators and completion/relinquishment criteria presented in Section 6.

## 5.3 REHABILITATION PHASES

The phases in the rehabilitation process commence following completion of active mining or use of a component area. The rehabilitation phases progress through logical steps ending where the land is able to meet its nominated end land use in a sustainable way and can be relinquished.

The rehabilitation hierarchy used in this MOP follows the guidance provided in Explanatory Note 2(h) of the Guideline, which references six separate phases as follows.

### Phase 1: Decommissioning

Decommissioning will include the cessation of infrastructure usage, disconnection of remaining services, demolition and removal from the Mine Site. Remediation of any contamination will also be undertaken during this phase.

### Phase 2: Landform Establishment

The landform establishment phase involves the earthworks required to construct and/or profile all or part of each domain to the approved final landform. The constructed landform should be suitable for the proposed final land use and blend, as far as practicable with the adjacent topography. This stage also includes the construction of any drainage structures needed for the area.

### Phase 3: Growth Medium Development

The growth medium development phase involves the placement of available growth medium on the final landform and preparation of the surface for revegetation. Preparation may include ripping or scarifying the surface.

## Table 11
## Rehabilitation Domain Objectives

Page 1 of 2

| Primary Domain | Secondary Domain | Rehabilitation Objectives | Reference[1] |
|---|---|---|---|
| 1 – Infrastructure Area | A – Infrastructure | • All infrastructure and services not suitable for a lawful final land use to be removed.<br>• All roads and hardstand areas to be retained for a lawful final land use reduced in width or size to that suitable for final land use.<br>• Domain free from hazardous materials and contaminants.<br>• Free draining, stable and permanent landform established. | EA<br>Section 2.14.5 |
|  | F – Rehabilitation Area – Forest<br>C – Rehabilitation Area – Grassland | • All infrastructure and services not suitable for a lawful final land use to be removed.<br>• All roads and hardstand areas to be retained for a lawful final land use reduced in width or size to that suitable for final land use.<br>• Domain free from hazardous materials and contaminants.<br>• Free draining, stable and permanent landform established.<br>• Establish soil / growing medium suitable for minor grazing use.<br>• Establish vegetation communities with a similar species composition to the surrounding native vegetation communities and consistent with the proposed final land use (see **Table 8**).<br>• Land capability similar to pre-mining capability (Class IV, V or Class VII). |  |
| 2 – Tailings Storage Facility | F – Rehabilitation Area – Forest<br>C – Rehabilitation Area – Grassland | • Infrastructure removed and domain made safe.<br>• Free draining, stable and permanent landform established.<br>• Limit opportunities for pollution of the surrounding landscape and ensure a non-polluting landform.<br>• Establish soil / growing medium suitable for grassland establishment.<br>• Establish pasture grass or other suitable groundcover.<br>• Soils, hydrology, and shallow-rooted grassland ecosystem is established with maintenance needs no greater than those of surrounding, non-mine disturbed land.<br>• Final landform non-polluting.<br>• Vegetation dominated by shallow rooted grassland species. | EA<br>Section 2.14.8 |
| 3 – Water Management Area | B – Water Management Area | • All infrastructure not suitable for lawful final land use will be removed.<br>• Domain stable and non-polluting.<br>• Retained water management structures are stable and permanent overflow drainage is constructed. | EA<br>Section 2.14.2 |

## Table 11 (Cont'd)
## Rehabilitation Domain Objectives

Page 2 of 2

| Primary Domain | Secondary Domain | Rehabilitation Objectives | Reference[1] |
|---|---|---|---|
| 3 – Water Management Area (Cont'd) | C – Rehabilitation Area – Grassland | • All infrastructure and services not suitable for a lawful final land use to be removed.<br>• Free draining, stable and permanent landform established.<br>• Establish soil / growing medium suitable for minor grazing use.<br>• Establish vegetation communities with a similar species composition to the surrounding native vegetation communities and consistent with the proposed final land use (see **Table 8**).<br>• Land capability similar to pre-mining capability (Class IV, V or Class VII). | EA Section 2.14.2 |
| 4 – Material Emplacement Area | F – Rehabilitation Area – Forest<br>C – Rehabilitation Area – Grassland | • All infrastructure and services not suitable for a lawful final land use to be removed.<br>• Domain free from hazardous materials and contaminants.<br>• Free draining, stable and permanent landform established.<br>• Establish soil / growing medium suitable for minor grazing use.<br>• Establish vegetation communities with a similar species composition to the surrounding native vegetation communities and consistent with the proposed final land use (see **Table 8**).<br>• Land capability similar to pre-mining capability (Class IV, V or Class VII). | EA Section 2.14.7 |
| 5 – Stockpiled Material | C – Rehabilitation Area – Grassland | • All infrastructure and services not suitable for a lawful final land use to be removed.<br>• Domain free from hazardous materials and contaminants.<br>• Free draining, stable and permanent landform established.<br>• Establish soil / growing medium suitable for minor grazing use.<br>• Establish vegetation communities with a similar species composition to the surrounding native vegetation communities and consistent with the proposed final land use (see **Table 8**).<br>• Land capability similar to pre-mining capability (Class IV, V or Class VII). | EA Section 2.14.10 |
| 6 – Box Cut and Decline | F – Rehabilitation Area – Forest | • All infrastructure and services not suitable for a lawful final land use to be removed.<br>• Domain free from hazardous materials and contaminants.<br>• Free draining, stable and permanent landform established.<br>• Establish soil / growing medium suitable for minor grazing use.<br>• Establish vegetation communities with a similar species composition to the surrounding native vegetation communities and consistent with the proposed final land use (see **Table 8**). | EA Section 2.14.6 |

### Phase 4: Ecosystem and Land Use Establishment

The ecosystem and land use establishment phase involves the establishment and maintenance of vegetation on the completed landform. Initial activities for ecosystem and land use establishment would focus on establishing a cover of suitable native groundcover (grasses) where practicable. The Mine Site would then be left to revegetate naturally. The criteria for completion of ecosystem and land use establishment in areas identified for agricultural use will depend on the type of agriculture to be undertaken and may include establishment of suitable pasture species.

### Phase 5: Ecosystem and Land Use Sustainability

The ecosystem and land use sustainability phase occurs once monitoring illustrates the achievement of relevant performance indicators with respect to ecosystem development and the stability and function of built structures such as the final open void or water management structures. Areas of the landform may remain within this phase for extended periods whilst progress is made towards achieving completion criteria.

### Phase 6: Land Relinquishment

On achievement of the nominated closure criteria for ML1675, the land will be relinquished and the rehabilitation security held by DRE released in full for that component of the final landform.

**Table 12** provides a summary of the completed phases for the primary and secondary domains at the end of this MOP period.

Further detail on the proposed rehabilitation to be completed during the term of this MOP is provided in Section 7.2. Section 7.3 provides further detail on the estimated areas (by rehabilitation phase) of each domain over the term of this MOP.

## 6. PERFORMANCE INDICATORS, AND COMPLETION/RELINQUISHMENT CRITERIA

Performance indicators and completion criteria provide a means by which the progress of rehabilitation can be measured to quantitatively demonstrate the successful achievement of a biophysical process, i.e. the standards that are to be met by successful rehabilitation.

Rehabilitation indicators and performance criteria are inter-related as a performance indicator is an attribute of the biophysical environment (e.g. percentage cover of native vegetation, pH, slope, soil depth etc.) that can be used to approximate the progression of the biophysical process against a defined end point, i.e. the completion/relinquishment criterion.

**Table 12**
**Summary of Rehabilitation Phases Proposed for Completion at the end of the MOP Term**

| | Domain | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rehabilitation Phase** | **Infrastructure –Infrastructure (1A)** | **Infrastructure – Rehabilitation Area (1F)** | **Infrastructure –Grassland (1C)** | **Tailings Storage Facility – Forest (2F)** | **Tailings Storage Facility - Grassland (2C)** | **Water Management Area - Water Management Area (3B)** | **Water Management Area - Grassland (3C)** | **Material Emplacement Area – Forest (4F)** | **Material Emplacement Area – Grassland (4C)** | **Stockpiled Material - Grassland (5C)** | **Box Cut and Decline to Forest (6F)** |
| Active Mining Area | × | × | × | × | × | × | × | × | × | × | × |
| Decommissioning | × | × | × | × | × | × | × | × | × | × | × |
| Landform Establishment | × | × | × | × | × | × | × | × | × | × | × |
| Growth Medium Development | × | × | × | × | × | × | × | × | × | × | × |
| Ecosystem and Land use Establishment | × | × | × | × | × | × | × | × | × | × | × |
| Ecosystem and land use Sustainability | × | × | × | × | × | × | × | × | × | × | × |
| Relinquished Lands | × | × | × | × | × | × | × | × | × | × | × |

Note: ✓ = rehabilitation phase completed at end of MOP term
P = rehabilitation phase partially completed at end of MOP term
× = rehabilitation phase not completed at end of MOP term
NA = not applicable

Source: Big Island Mining Pty Ltd

**Table 13** provides the performance indicators and completion criteria developed for the Mine to achieve the nominated post mining land use goals and rehabilitation objectives (refer to Sections 4.2 and 4.3).

It is noted that details of monitoring completed against completion criteria will be reported through the respective annual reporting and either a final report or separate relinquishment report.

**Table 13**
**Rehabilitation Performance Indicators and Completion Criteria**

Page 1 of 4

| Objective | Performance Indicator | Completion Criteria | Rehabilitation Monitoring Methodology | Monitoring Frequency | Justification/ Source[1] | Progress at start of MOP | Expected Completion | TARP Ref No.[2] |
|---|---|---|---|---|---|---|---|---|
| **Phase 1 – Decommissioning** | | | | | | | | |
| *Domain 1 – Infrastructure Area* | | | | | | | | |
| All infrastructure and services not suitable for a lawful final land use will be removed. | Services not required for final land use disconnected. | All relevant services disconnected. | Relinquishment inspection and report, including photographs. | Single occurrence following decommissioning (unless follow up actions are identified). | EA – Section 2.14.5 | Not Commenced | Post MOP | |
| | Infrastructure not required for final land use removed. | All relevant infrastructures removed. | | | | Not Commenced | Post MOP | |
| Those sections of roads/tracks to be retained for a lawful final land use reduced in width / size to that suitable for final land use. | Roads not required for final land use are removed. | Roads removed unless specified to be retained (see **Plan 4**). | | | | Not Commenced | Post MOP | |
| | Roads required for final land use are reduced in width (if required). | Road reduced in width to that suitable for final land use. | | | | Not Commenced | Post MOP | |
| Domain is free from hazardous materials and contaminants. | Contaminated land identified and remediated. | Contaminated land assessment indicates contamination acceptable for final land use. | Contamination report prepared by qualified person. | Following decommissioning with follow up validation testing, as required. | | Not Commenced | Post MOP | 7 |
| | No hazardous materials remain. | Contaminated land assessment indicates contamination acceptable for final land use. | Contamination report prepared by qualified person. | Following decommissioning with follow up inspection if required. | | Not Commenced | Post MOP | 7 |
| *Domain 2 – Tailings Storage Facility*<br>*Domain 3 – Water Management Area*<br>*Domain 4 – Material Emplacement Area*<br>*Domain 5 – Stockpiled Material*<br>*Domain 6 – Box Cut and Decline* | | | | | | | | |
| All infrastructure not suitable for lawful final land use will be removed. | Infrastructure not required for final land use removed. | All relevant infrastructure removed. | Relinquishment inspection and report, including photographs. | Single occurrence following decommissioning (unless follow up actions are identified). | EA – Section 2.14.5 | Not Commenced | Post MOP | |
| Domain is free from contaminants. | Contaminated land identified and contaminated material placed within Tailings Storage Facility. | Contaminated land assessment indicates any contamination is acceptable for final land use. | Contamination report prepared by qualified person. | Following decommissioning with follow up validation testing as required. | | Not Commenced | Post MOP | 7 |
| **Phase 2 – Landform Establishment** | | | | | | | | |
| *Domain 1 – Infrastructure Area* | | | | | | | | |
| Free draining, stable and permanent landform established. | Presence of erosion / sedimentation controls and monitored water quality. | Water quality meets the objective of Section 120 of the *Protection of the Environment Operations Act 1997*.<br>‘Downstream’ water quality monitoring records total suspended solids <50mg/L or within 10% of ‘upstream’ levels (whichever is the greater). | Water quality testing.<br>Monitoring reported annually through annual reporting. | Quarterly during and immediately following operations with frequency to be reduced progressively post-closure, based on performance. | EA – Section 2.14.3 | Not Commenced | Post MOP | 1 and 7 |
| | | No ’active’ erosion or sedimentation visible. | Monitoring reports, including photographs. | Visual inspections undertaken quarterly during operations and post-closure until site relinquishment. | | Not Commenced | Post MOP | |
| *Domain 2 – Tailings Storage Facility* | | | | | | | | |
| Infrastructure removed and domain made safe. | Infrastructure removed. | All exposed pipeworks and infrastructure removed, where it is safe to do so. | Relinquishment inspection and report, including photographs. | Single occurrence following decommissioning (unless follow up actions identified). | EIS – Section 2.13.5 | Not Commenced | Post MOP | 2 |

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### Table 13 (Cont'd)
### Rehabilitation Performance Indicators and Completion Criteria

Page 2 of 4

| Objective | Performance Indicator | Completion Criteria | Rehabilitation Monitoring Methodology | Monitoring Frequency | Justification/ Source[1] | Progress at start of MOP | Expected Completion | TARP Ref No.[2] |
|---|---|---|---|---|---|---|---|---|
| **Phase 2 – Landform Establishment (Cont'd)** | | | | | | | | |
| *Domain 2 – Tailings Storage Facility (Cont'd)* | | | | | | | | |
| Retained water management structures are stable and permanent overflow drainage is constructed. | Sediment basins and dams are stable and contain a suitably designed spill way for overflow of water to surrounding drainage lines. | Walls and spillways do not show signs of active erosion and are assessed to be stable. | Relinquishment inspection and report, including photographs, prepared by a qualified person. | Single occurrence following completion of final landform (unless follow up actions identified). | EA – Section 2.14.3 | Not Commenced | Post MOP | 7 |
| Free draining, stable and permanent landform established. | Landform suitable for growth media establishment. | Decommissioned dams have been backfilled and landform constructed to blend with surrounding topography. | Relinquishment inspection and report, including photographs, prepared by a qualified person. | Single occurrence following decommissioning (unless follow up actions identified). | | Not Commenced | Post MOP | 1 and 2 |
| Domain is non-polluting. | Landform and retained water management structures are non-polluting. | Water monitoring indicates that water quality complies with the trigger values determined in accordance with ANZECC (2000) or is consistent with ambient water quality and satisfies Section 120 of the POEO Act 1997. | Water quality testing. | Monthly during and immediately following operations with frequency to be reduced progressively post-closure, based on performance. | EA – Section 2.14.3 | Not Commenced | Post MOP | 7 |
| *Domain 3 – Water Management Area* | | | | | | | | |
| No landform establishment activities applicable to this domain. | | | | | | | | |
| *Domain 4 – Material Emplacement Area*<br>*Domain 5 – Stockpiled Material* | | | | | | | | |
| Free draining, stable and non-polluting landform established. | All material used in rehabilitation activities and surface appropriately profiled.<br>Landform suitable for growth medium development. | No pooling of water observed within landform.<br>Landform established to integrate with the surrounding topography / cropping land. | Relinquishment inspection and report, including photographs, prepared by a qualified person. | Single occurrence following completion of final landform establishment (unless further earthworks required). | EA – Section 2.14.7 | Not commenced | Post-MOP | 1 |
| *Domain 6 – Box Cut and Decline* | | | | | | | | |
| Safe landform established. | Access to box cut blocked. | Access to box cut blocked, removed or covered. | Relinquishment inspection and report, including photographs, prepared by a qualified person. | Single occurrence following completion of final landform establishment (unless further earthworks required). | EA – Section 2.14.6 | Not Commenced | Post-MOP | 3 |
| | Construction of safety bunds around box cut perimeter. | Safety bunds constructed. | Visual inspection completed by site personnel.<br>Relinquishment inspection and report, including photographs, prepared by a qualified person. | Visual inspections to occur a part of regular site operation.<br>Single occurrence following completion of final landform establishment (unless further earthworks required). | | Not Commenced | Post-MOP | 3 |
| | Box cut backfilled from WRE where sufficient material exists. | | | | | | | |
| **Phase 3 – Growth Medium Development** | | | | | | | | |
| *Domain A – Infrastructure Area* | | | | | | | | |
| No growth medium development activities applicable to this domain. | | | | | | | | |
| *Domain B – Water Management Area* | | | | | | | | |
| No growth medium development activities applicable to this domain. | | | | | | | | |

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**Table 13 (Cont'd)**
**Rehabilitation Performance Indicators and Completion Criteria**

Page 3 of 4

| Objective | Performance Indicator | Completion Criteria | Rehabilitation Monitoring Methodology | Monitoring Frequency | Justification/ Source[1] | Progress at start of MOP | Expected Completion | TARP Ref No.[2] |
|---|---|---|---|---|---|---|---|---|
| **Phase 3 – Growth Medium Development (Cont'd)** | | | | | | | | |
| *Domain C – Rehabilitation Area – Grassland*<br>*Domain F – Rehabilitation Area – Forest* | | | | | | | | |
| Establish soil / growing medium suitable for pasture use. | Compacted surfaces deep ripped along contour. | Photographs of ripped areas. | Photographs included in a relinquishment report. | Following deep ripping. | EA – Section 2.14.10 | Not Commenced | Post MOP | |
| | Minimum growth medium depth of 300mm spread over domain. | Photographs of covered areas. | Photographs included in a relinquishment report, soil test pits used to determine depth. | Following growth medium spreading. | | | | 4, 5 and 6 |
| **Phase 4 – Ecosystem and Land Use Establishment** | | | | | | | | |
| *Domain A – Infrastructure Area*<br>*Domain B – Water Management Area* | | | | | | | | |
| No ecosystem and land use establishment activities apply to these domains. | | | | | | | | |
| *Domain C – Rehabilitation Area – Grassland*<br>*Domain F – Rehabilitation Area – Forest* | | | | | | | | |
| Establishment of vegetation communities with a similar species composition to the surrounding vegetation communities. | Weeds are not competing or impacting on rehabilitated area. | Rehabilitation monitoring confirms the foliage cover of non-native and non-target species (weeds) is equivalent to surrounding vegetation / analogue sites not disturbed by mining activities. | Photographs included in a relinquishment report. | Following deep ripping. | EA – Section 2.14.10 | Not Commenced | Post MOP | 9 |
| | Grazing by native, domestic and feral fauna not adversely impacting on ecosystem development. | Domestic grazing animals are excluded from the rehabilitation area except when controlled grazing is required for ecosystem development.<br>Feral and native animal control programs implemented.<br>Revegetation monitoring reports confirm appropriate level of grazing / equivalence with analogue sites not disturbed by mining. | Photographs included in a relinquishment report. | Following growth medium spreading. | | | | 8 and 11 |
| **Phase 5 – Ecosystem and Land Use Sustainability** | | | | | | | | |
| *Domain A – Infrastructure Area*<br>*Domain B – Water Management Area* | | | | | | | | |
| No ecosystem and land use sustainability activities apply to this domain. | | | | | | | | |
| *Domain C – Rehabilitation Area – Grassland*<br>*Domain F – Rehabilitation Area – Forest* | | | | | | | | |
| Land capability similar to pre-mining capability. | Land capability. | Land capability, assessed in accordance with OEH, 2012. | Assessment report prepared by suitably qualified person. | Assessment by suitably qualified consultant (included in relinquishment report). | EA – Section 2.14.10 | Not commenced | Post-MOP | 8 and 10 |
| | Agricultural productivity. | Agricultural productivity trending towards analogue sites and consistent with Land Capability Class VI established in OEH, 2012. | Production report prepared a suitable independent person. | Single occurrence post-closure (unless further activities required). | | Not commenced | Post-MOP | |
| | Landform left to revegetate naturally or as required for final land use. | Revegetation monitoring reports confirm that vegetation diversity is consistent with analogue sites. | Assessment report prepared by suitably qualified person. | Quarterly visual inspections by site personnel.<br>Reporting on rehabilitation condition every three years, increased to annually post-mine closure for a minimum of 5 years or otherwise until site relinquishment. | | Not commenced | Post-MOP | |

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### Table 13 (Cont'd)
### Rehabilitation Performance Indicators and Completion Criteria

Page 4 of 4

| Objective | Performance Indicator | Completion Criteria | Rehabilitation Monitoring Methodology | Monitoring Frequency | Justification/ Source[1] | Progress at start of MOP | Expected Completion | TARP Ref No.[2] |
|---|---|---|---|---|---|---|---|---|
| **Phase 5 – Ecosystem and Land Use Sustainability (Cont'd)** | | | | | | | | |
| *Domain C – Rehabilitation Area – Grassland*<br>*Domain F – Rehabilitation Area – Forest (Cont'd)* | | | | | | | | |
| Land capability similar to pre-mining capability (Cont'd) | Coverage, Biomass and Landscape Function Analysis. | Average landscape coverage, estimates of biomass and analysis of stability, infiltration/runoff and nutrient cycling indices trending towards analogue site. | | | | Not commenced | Post-MOP | |
| | Weed species and abundance. | Revegetation monitoring confirms the foliage cover of non-native and non-target species (weeds) is equivalent to surrounding vegetation / analogue sites not disturbed by mining activities. | Weed inspection report (and subsequent control program, if required). | Biannually. | | Not commenced | Post-MOP | 9 |
| | Pest species and abundance. | Monitoring confirms that pest species and abundance is consistent with analogue sites. | Pest species inspection report (and subsequent control program, if required). | Annually. | EA – Section 2.14.10 | Not commenced | Post-MOP | 9 |
| **Phase 6 – Land Relinquishment** | | | | | | | | |
| *All domains* | | | | | | | | |
| Demonstrated compliance with all performance indicators for Phases 1 to 5. | Demonstrated compliance with all completion criteria for Phases 1 to 5. | Demonstrated compliance with all completion criteria for Phases 1 to 5. | Relinquishment report prepared by suitably qualified or experienced person(s). | Prior to relinquishment. | EIS – Section 2.12.3 | Not Commenced | Post MOP | |

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# 7. REHABILITATION IMPLEMENTATION

## 7.1 STATUS AT MOP COMMENCEMENT

**Table 14** presents the status of rehabilitation at the commencement of this MOP. As the Mine has yet to commence full operation, all domains remain active mining areas, or active areas of mining-related infrastructure or disturbance (**Plan 2**).

**Table 14**
**Rehabilitation at Commencement and Completion of MOP**

| **Primary Domain** | **Secondary Domain** | **Rehabilitation Phase** | **Area – Start of MOP (ha)** | **Area – End of MOP (ha)** |
|---|---|---|---|---|
| 1 - Infrastructure | A - Infrastructure | Active | 7.6 | 10.4 |
| | F – Rehabilitation Area – Forest | Active | | |
| | C - Rehabilitation Area – Grassland | Active | | |
| 2 - Tailings Storage Facility | F – Rehabilitation Area – Forest | Active | 0 | 11.1 |
| | C - Rehabilitation Area – Grassland | Active | | |
| 3 - Water Management Area | B - Water Management Area | Active | 4.1 | 4.1 |
| | C - Rehabilitation Area – Grassland | Active | | |
| 4 - Material Emplacement Area | F – Rehabilitation Area – Forest | Active | 2.3 | 7.7 |
| | C - Rehabilitation Area – Grassland | Active | | |
| 5 - Stockpiled Material | C - Rehabilitation Area – Grassland | Active | 3.6 | 4.6 |
| 6 - Box Cut and Decline | F – Rehabilitation Area – Forest | Active | 3.2 | 2.1 |
| | | **Grand Total** | **20.8** | **40** |
| Source: Big Island Mining Pty Ltd | | | | |

## 7.2 PROPOSED REHABILITATION ACTIVITIES DURING THE MOP TERM

### 7.2.1 Introduction

This section provides an overview of the rehabilitation activities proposed to be implemented during this MOP term on a domain by domain basis, and revegetation procedures for the site generally. The actual timing of rehabilitation activities will vary as a result of changes to the 'Life of Mine' plan.

The MOP presents a strategy for progressive rehabilitation that is considered feasible to be completed or commenced during the MOP term. Rehabilitation will not commence in areas that may be used for mining activities. The majority of the Mine Site would remain active mining areas or ancillary to mining activities during the MOP term. Therefore, opportunities for progressive rehabilitation during the MOP term will be limited. Rehabilitation will not be delayed once the decision is made to close any of the Mine components.

It is anticipated that exploration areas developed during the MOP term would be progressively rehabilitated following completion of activities. The location of these exploration areas is dependent on progressive planning and it is not possible to mark these on site plans.

Should the timing for rehabilitation be modified as a result of operational requirements, the Company will consult with DRE and, where necessary, apply to vary the MOP with respect to the revised production and rehabilitation schedule.

### 7.2.2 Domain 1 – Infrastructure Area

Domain 1 – Infrastructure Area would remain as an active mining area throughout the term of this MOP and no rehabilitation is proposed.

### 7.2.3 Domain 2 – Tailings Storage Facility

Domain 2 – Tailings Storage Facility would remain as an active mining area throughout the term of this MOP and no rehabilitation is proposed.

### 7.2.4 Domain 3 – Water Management Area

Domain 3 – Water Management Area would remain as an active mining area throughout the term of this MOP and no rehabilitation is proposed.

### 7.2.5 Domain 4 – Material Emplacement Area

Domain 4 – Material Emplacement Area would remain as an active mining area throughout the term of this MOP and no rehabilitation is proposed.

### 7.2.6 Domain 5 – Stockpiled Material

Domain 5 – Stockpiled Material would remain as an active mining area throughout the term of this MOP and no rehabilitation is proposed.

### 7.2.7 Domain 6 – Box Cut and Decline

Domain 6 – Box Cut and Decline would remain as an active mining area throughout the term of this MOP and no rehabilitation is proposed.

### 7.3 SUMMARY OF REHABILITATION AREAS DURING THE MOP TERM

**Table 14** and **Plans 3A** to **3D** present a summary of the rehabilitation that would be implemented during the term of this MOP.

### 7.4 RELINQUISHMENT PHASE ACHIEVED DURING MOP PERIOD

The Company does not anticipate that the relinquishment phase will be achieved for any land within the Mine Site during the term of this MOP.

## 8. REHABILITATION MONITORING AND RESEARCH

### 8.1 REHABILITATION MONITORING

Rehabilitation monitoring will focus upon determining whether progress towards achieving the relevant performance indicators and completion and relinquishment criteria presented in Section 6 and **Table 13** is being achieved. **Table 13** also presents the proposed rehabilitation monitoring methodology and frequency for each indicator and criteria identified.

### 8.2 RESEARCH AND REHABILITATION TRIALS

The Company will undertake a range of rehabilitation trials during the MOP term to identify the preferred methodology for implementation during rehabilitation operations. These trials would rely on the growth medium stockpiles that would be established during initial site preparation activities.

In summary, the trial rehabilitation program would divide the available growth medium stockpile into eight plots. Each plot would be revegetated as shown in **Table 15**. The rehabilitation trial plots will be fenced to include stock.

**Table 15**
**Rehabilitation Trials**

| | Fertiliser spread[1] | Seed of native pasture/grasses spread[2] | Tube stock of tree species planted[3] |
|---|---|---|---|
| **Plot 1 (control)** | | | |
| **Plot 2** | ✓ | | |
| **Plot 3** | ✓ | ✓ | |
| **Plot 4** | ✓ | ✓ | ✓ |
| **Plot 5** | ✓ | | ✓ |
| **Plot 6** | | ✓ | |
| **Plot 7** | | ✓ | ✓ |
| **Plot 8** | | | ✓ |

Note 1: Fertiliser to be used to be determined in consultation with an agronomist based on a soil analysis undertaken at the time

Note 2: Species to be consistent with groundcover species associated with Natural Temperate Grasslands of the Southern Tablelands

Note 3: Species to be consistent with mid and upper story species associated with Ribbon Gum Forest

Following establishment of the trial, the results would be monitored by a suitably qualified ecologist, botanist or agronomist, initially quarterly then semi-annually and annually, for the establishment rates, species composition and weed abundance.

Analogue sites are identified in **Plan 4**. In summary, an analogue site will be maintained for each ecotype present within the Mine Site as follows.

- Native grassland.
- Ribbon gum forest.

The analogue sites will be used to assess the success of the rehabilitation objectives and targets presented in Section 4.3, the ecosystem and land use establishment completion criteria presented in **Table 13** and the implementation of the Trigger Action Response Management Plan presented in Section 9.2.

# 9. INTERVENTION AND ADAPTIVE MANAGEMENT

## 9.1 THREATS TO REHABILITATION

This subsection presents an analysis of the specific risks or threats to rehabilitation within the Mine Site. This analysis of threats to rehabilitation has been prepared broadly in accordance with the requirements of *AS/NZS ISO31000:2009 Risk Management – Principles and Guidelines.*

In summary, threats to rehabilitation were identified based on the performance indicators and relinquishment criteria identified in **Table 13**. For each threat, potential adverse outcomes were identified and allocated a risk based on the potential consequences and likelihood of occurrence. Risks were determined based on implementation of industry standard mitigation measures and the Company's rehabilitation commitments (summarised in Section 4 and **Table 7**). Where risks were determined to be unacceptable, namely those risks classified as "moderate" or above, a Trigger Action Response Plan has been developed and is presented in Section 9.2.

**Tables 16**, **17** and **18** present the consequence, likelihood and risk rating used during this analysis. **Table 19** presents the results of the risk analysis.

## 9.2 TRIGGER ACTION RESPONSE PLAN

**Table 20** presents the Trigger Action Response Plan for each of the rehabilitation threats and potential adverse outcomes identified in **Table 19** as having a risk rating of moderate or above. **Table 20** also provides individual reference numbers for each Trigger Action Response.

## Table 16
## Qualitative Consequence Rating

| Level | Descriptor | Description |
|---|---|---|
| 1 | Negligible | No detrimental impact on the environment is measurable or envisaged. |
| 2 | Minor | An event which could have temporary and minor effects on the environment, such as a non-reportable environment incident. |
| 3 | Moderate | An event which would create substantial temporary or minor permanent damage to the environment, such as a reportable incident not likely to result in prosecution. |
| 4 | Major | An event which could have a substantial and permanent consequence to the environment such as an environmental incident which would result in prosecution, adverse local publicity and community complaints. |
| 5 | Severe | A major event which could cause severe damage to the environment with actual or potential loss of credibility with key stakeholders, environmental liability, regulatory intervention, national publicity/complaints, or could close the operation prematurely. |
| Note: | Rating modified after AS/NZS ISO31000:2009 Risk Management - Principles and Guidelines | |

## Table 17
## Qualitative Likelihood Rating

| Level | Descriptor | Description |
|---|---|---|
| A | Certain | Is an ongoing occurrence or will occur under all conditions. |
| B | Almost Certain | Is expected to occur in most circumstances. |
| C | Likely | Will probably occur in most circumstances. |
| D | Possible | Might occur at some time. |
| E | Unlikely | Could occur at some time. |
| F | Rare | May occur only in exceptional circumstances. |
| G | Very Rare | Theoretically possible but not expected to occur. |
| Source: | Rating modified after HB 89:2012 – Figure B7 | |

## Table 18
## Qualitative Risk Rating

| **Likelihood** | **Consequences** | | | | |
|---|---|---|---|---|---|
| | **Negligible 1** | **Minor 2** | **Moderate 3** | **Major 4** | **Severe 5** |
| A (Certain) | M | H | H | VH | VH |
| B (Almost Certain) | M | H | H | VH | VH |
| C (Likely) | M | M | H | H | VH |
| D (Possible) | L | M | M | H | H |
| E (Unlikely) | L | L | M | M | H |
| F (Rare) | L | L | L | M | M |
| G (Very Rare) | L | L | L | L | M |
| Note: Rating modified after HB 89:2012 – Figure B8 | | | | | |

### Table 19
### Analysis of Rehabilitation Threats

| **Rehabilitation Threat** | **Potential Adverse Outcome** | **Consequence of Occurrence** | **Likelihood of Occurrence** | **Risk Rating** |
|---|---|---|---|---|
| Failure to remove infrastructure. | Unable to complete rehabilitation or establish the identified final land use. | 2 | F | L |
| Failure to remove hazardous materials. | Unable to complete rehabilitation or establish the identified final land use. | 3 | F | L |
| Failure to address contamination. | Contaminated land present. | 3 | F | L |
| | Contaminated groundwater present. | 3 | F | L |
| | Contaminated surface water present. | 3 | F | L |
| Final landform does not conform to the approved final landform. | Failure to remove roads not required for the final land use. | 2 | F | L |
| | Slopes too steep to be revegetated as planned. | 3 | F | L |
| | Landform is not free-draining / water is pooling. | 3 | E | M |
| Final landform not safe, stable and secure. | Geotechnical instability of final landform. | 3 | E | M |
| | Public access to Box Cut and Decline. | 4 | F | M |
| Respread soil does not conform to completion criteria. | Insufficient soil available for rehabilitation. | 3 | E | M |
| | Inadequate soil thickness applied to final landform. | 3 | E | M |
| | Soil not capable of sustaining vegetation. | 3 | E | M |
| Sediment and erosion control structures inadequate or fail. | Final landform is a source of pollution. | 4 | E | M |
| Inappropriate species established during revegetation operations. | Species mix on final landform does not conform to applied species mix or analogue site. | 3 | F | L |
| Failure of vegetation establishment operations. | Vegetation does not become established on final landform. | 3 | D | M |
| Weed or pest management fails. | Weeds and pests become established and require significant resources to manage. | 2 | D | M |
| Vegetation community is not self-sustaining. | Final landform requires significantly more management than analogue sites. | 3 | D | M |
| Final agricultural productivity is inadequate. | Agricultural productivity significantly less than analogue sites. | 3 | E | M |

## Table 20
## Trigger Action Response Plan

Page 1 of 2

| Rehabilitation Threat | Potential Adverse Outcome | Trigger | Action/ Response | TARP Ref No |
|---|---|---|---|---|
| Final landform does not conform to approved final landform. | Landform is not free-draining / water is pooling. | Visual inspections identify pooling water / poorly drained areas. | • Re-profile slopes or install drainage to provide a stable free-draining landform. | 1 |
| Final landform not safe, stable and secure. | Geotechnical instability of final landform. | Monitoring or final closure geotechnical assessment identifies instability / unacceptable movement (actual or potential) in final landform. | • Suitably qualified geotechnical engineer engaged to assess the instability and provide a range of recommendations to remediate the instability.<br>• Recommendations to be implemented in consultation with DRE. | 2 |
| | Public access to final Box Cut and Decline. | Rehabilitation monitoring identifies potential for public access to Box Cut and Decline. | • If necessary, additional security measures to be installed including fencing and suitable signage. | 3 |
| Respread soil does not conform to completion criteria. | Insufficient soil available for rehabilitation. | Soil inventory indicates a deficit of soil material. | • Suitable source of additional soil material / growth medium to be identified, including the need for importation of material from off site.<br>• Investigation into measures that may be implemented to ameliorate other materials to make them suitable for use as a growth medium. | 4 |
| | Inadequate soil thickness applied to final landform. | Test pitting following placement of soil material identifies placed soil thickness not consistent with final approved soil thickness. | • Additional soil material spread on the final landform. | 5 |
| | Soil not capable of sustaining vegetation community. | Soil parameters not consistent with analogue sites. | • Suitably qualified agronomist or soil scientist engaged to prepare a report including a range of recommendation to ensure that the identified criteria are achieved / soil is suitable for sustaining the vegetation community. | 6 |

## Table 20 (Cont'd)
## Trigger Action Response Plan

Page 2 of 2

| **Rehabilitation Threat** | **Potential Adverse Outcome** | **Trigger** | **Action/ Response** | **TARP Ref No** |
|---|---|---|---|---|
| Sediment and erosion control structures inadequate or fail. | Final landform is a source of pollution. | Surface water monitoring or visual inspection indicates that final landform is eroding or is a source of unacceptable levels of sedimentation. | • Remediate eroding area through additional earthworks, soil works, revegetation or other stabilisation works.<br>• If the above is unsuccessful, engage a suitably qualified professional in sediment and erosion control to prepare an assessment report and recommendations.<br>• Implement recommendations of the assessment report in consultation with DRE. | 7 |
| Failure of vegetation establishment operations. | Vegetation does not become established on final landform. | Rehabilitation monitoring identifies failure or partial failure of vegetation establishment on final landform. | • Suitably qualified ecologist or revegetation expert engaged to assess reasons for failure of revegetation and recommend actions to ensure that the final vegetation community corresponds as closely as possible to analogue sites.<br>• Implement above recommendations in consultation with DRE. | 8 |
| Weed or pest management fails. | Weeds and pests become established and require significant resources to manage. | Rehabilitation monitoring identifies that weed species represent greater than 10% of revegetated species in the final landform.<br>Rehabilitation monitoring identifies significant numbers of exotic fauna, such that vegetation establishment or ecosystem sustainability is threatened. | • Undertake an immediate program of weed or pest control consistent with current management practices.<br>• Review success of control program within 6 months. If weed or pest management is not successful engage a suitably qualified ecologist to assess reasons for failure of management measures and develop a *Weed and/or Pest Species Management Plan*.<br>• Implement management plan in consultation with DRE. | 9 |
| Vegetation community is not self-sustaining. | Final landform requires significantly more management than analogue sites. | Visual assessment of groundcover, biomass or Landscape Function Analysis identify that relevant indices are not trending towards the analogue sites. | • Suitably qualified ecologist or revegetation expert engaged to assess reasons for additional management requirements and recommend actions to align management required with that of the analogue sites.<br>• Implement above recommendations in consultation with DRE. | 10 |
| Final agricultural productivity is inadequate. | Agricultural productivity significantly less than analogue sites. | Measured agricultural productivity of the final landform is significantly less than that of an analogue sites. | • Suitably qualified agronomist engaged to assess reasons for lower productivity and recommend actions to sustainably improve productivity.<br>• Implement above recommendations in consultation with DRE. | |

# 10. REPORTING

The Company will prepare an *Annual Environmental Management Report* (AEMR) for each reporting period. The AEMR will include a summary of all environmental monitoring relevant to the reporting period. This will include details of rehabilitation monitoring trials compared against the performance measures and criteria established in this MOP.

# 11. REVIEW AND IMPLEMENTATION OF THE MOP

## 11.1 REVIEW OF THE MOP

This MOP will be reviewed following the receipt of any approvals under the *Environmental Planning and Assessment Act 1979* and/or at least 2 months prior to expiry. Either a new MOP will be prepared or any adjustments that may arise will be tracked in accordance with the colour coding outlined in the ESG3 guidelines and submitted to the Department for approval.

## 11.2 IMPLEMENTATION

**Table 21** outlines the roles and responsibilities of personnel who have responsibility for monitoring, review and implementation for this MOP.

**Table 21**
**Roles and Responsibilities for MOP Implementation**

| Role | Responsibilities |
|---|---|
| Mine Manager | Accountable for the overall environmental performance of the operations, including the outcomes of this MOP.<br>Ensure that mine planning is compliant with the requirements of the MOP and applicable approvals.<br>Provide necessary resources required to implement the rehabilitation process outlined within the MOP. Ensure employees are competent through training and awareness programs. |
| Health, Safety, Environment and Community Superintendent | Ensure the implementation of this MOP, including reporting of non-compliances with the trigger values, and subsequent implementation of the relevant action plan.<br>Ensure that monitoring, report review and preparation are undertaken as outlined within this MOP and associated management plans.<br>Report the progress of rehabilitation and monitoring in the relevant annual reporting. |
| All employees | Follow direction provided by the Mine Manager and Environmental Manager.<br>Ensure operations are consistent with the plans and objectives detailed in this MOP. |

# 12. REFERENCES

**Australian and New Zealand Environment and Conservation Council (ANZECC) 2000**. *Australian and New Zealand Environment and Conservation Council guidelines*.

**Australasian Groundwater and Environmental Consultants (AGE) 2010**. *Dargues Reef Gold Project Groundwater Assessment*, Presented as Part 3 of the *Specialist Consultant Studies Compendium*. Prepared by Australian Groundwater and Environmental Consultants on behalf of Big Island Mining Pty Ltd.

**Gaia Research Pty Ltd (Gaia) 2010**. *Dargues Reef Gold Project Ecology Assessment,* Presented as Part 2 of the *Specialist Consultant Studies Compendium*. Prepared by Gaia Research Pty Ltd on behalf of Big Island Pty Ltd.

**Land and Property Management Authority 2010**. Search dated March 2010.

**Office of Environment and Heritage (OEH) 2012**. *The Land and Soil Capability Assessment Scheme, Second Approximation, A General Rural Land Evaluation System for New South Wales,* October 2012.

**RW Corkery & Co Pty Limited (RWC) 2010**. *Environmental Assessment*, September 2010.

**RW Corkery & Co Pty Limited (RWC) 2012**. *Environmental Assessment for the Dargues Reef Gold Project, Modification 1*, 2012.

**RW Corkery & Co Pty Limited (RWC) 2013**. *Environmental Assessment for the Dargues Reef Gold Project, Modification 2*, 2013.

**RW Corkery & Co Pty Limited (RWC) 2015**. *Environmental Assessment for the Dargues Reef Gold Project, Modification 3*, 2015.

**RW Corkery & Co Pty Limited (RWC) 2016**. *Preliminary Documentation Assessment – Modification 3,* June 2016.

**Strategic Environmental and Engineering Consultants (SEEC) 2010**. *Dargues Reef Gold Project Soils Assessment*, Presented as Part 8 of the *Specialist Consultant Studies Compendium*. Prepared by Strategic Environmental and Engineering Consultants on behalf of Big Island Mining Pty Ltd.

# 13. PLANS

Plan 1A – Pre-Mining Environment – Project Locality.

Plan 1B – Pre-Mining Environment – Natural Environment.

Plan 1C – Pre-Mining Environment – Built Environment.

Plan 2 – Mine Domains at Commencement of MOP.

Plan 3A – Mining and Rehabilitation – Year 1.

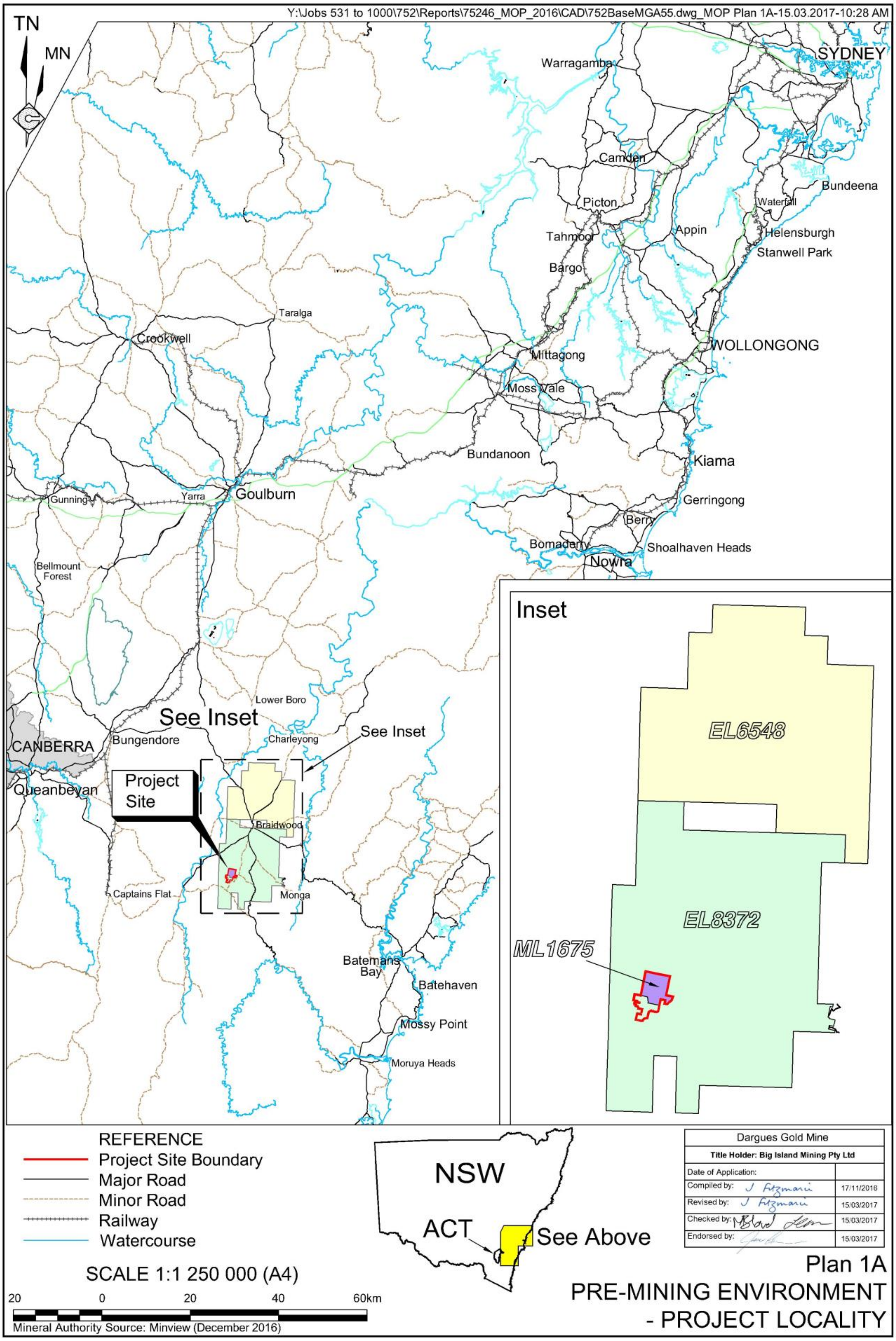
Plan 3B – Mining and Rehabilitation – Year 2.

Plan 3C – Mining and Rehabilitation – Year 3.

Plan 3D – Mining and Rehabilitation – Year 4.

Plan 4 – Final Rehabilitation and Post-Mining Land Use.

Plan 5 – Rehabilitation and Post-Mining Land Use Cross Sections.



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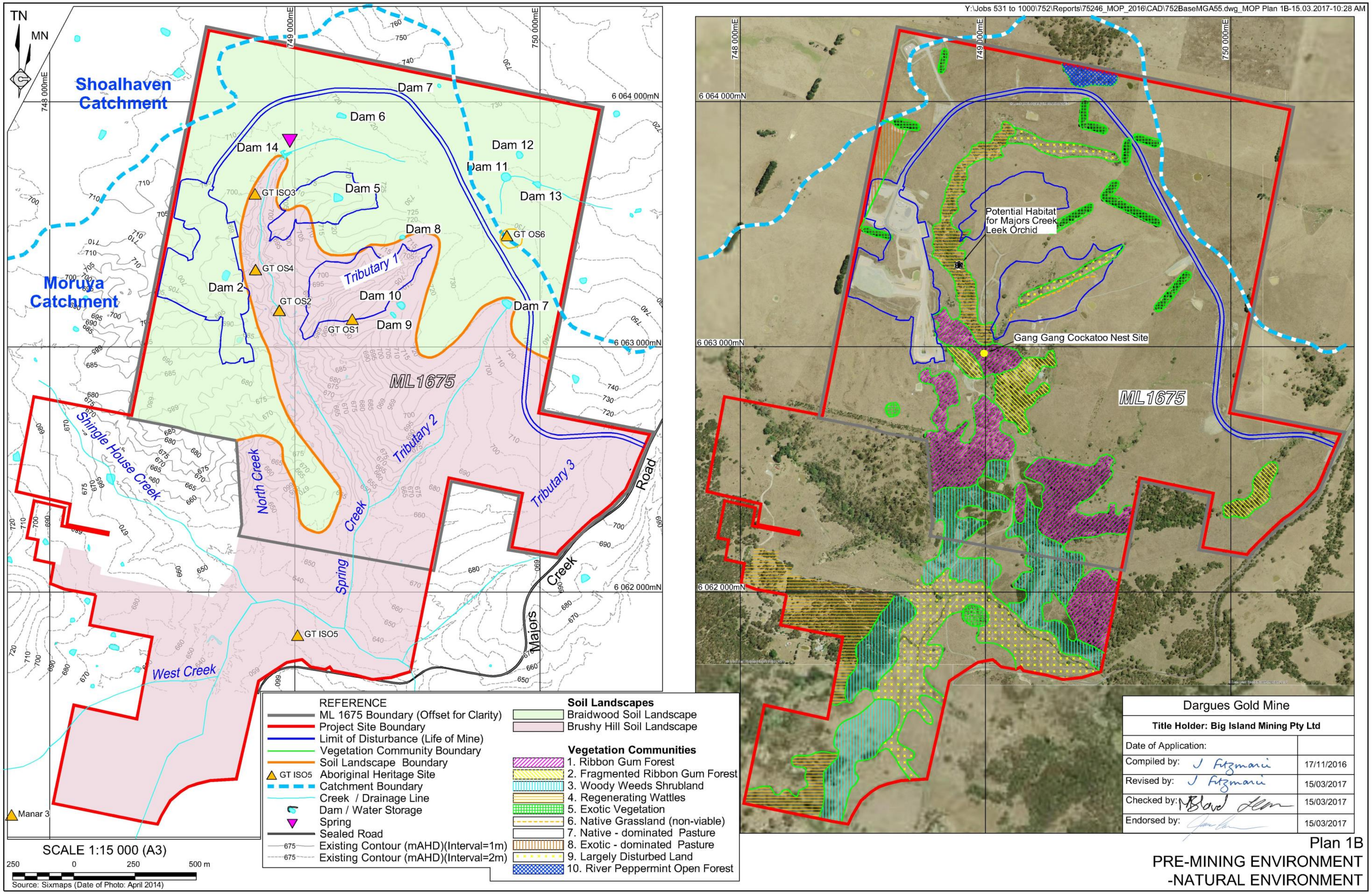
|---|---|---|
| Title Holder: Big Island Mining Pty Ltd | | |
| Date of Application: | | |
| Compiled by: | J Fitzmaurice | 17/11/2016 |
| Revised by: | J Fitzmaurice | 15/03/2017 |
| Checked by: | | 15/03/2017 |
| Endorsed by: | | 15/03/2017 |

Plan 1A
PRE-MINING ENVIRONMENT
- PROJECT LOCALITY



Plan 1B
PRE-MINING ENVIRONMENT
-NATURAL ENVIRONMENT

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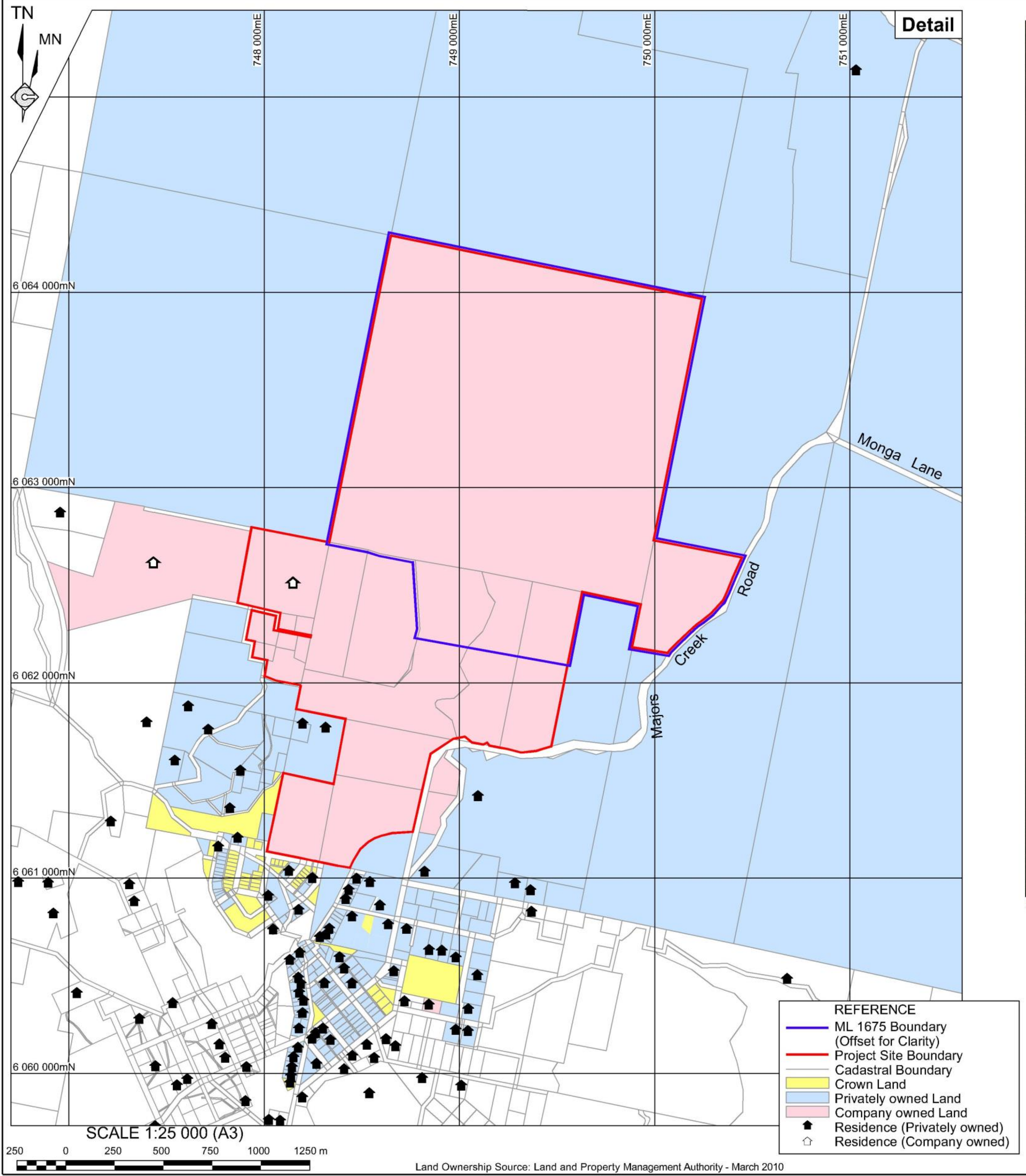

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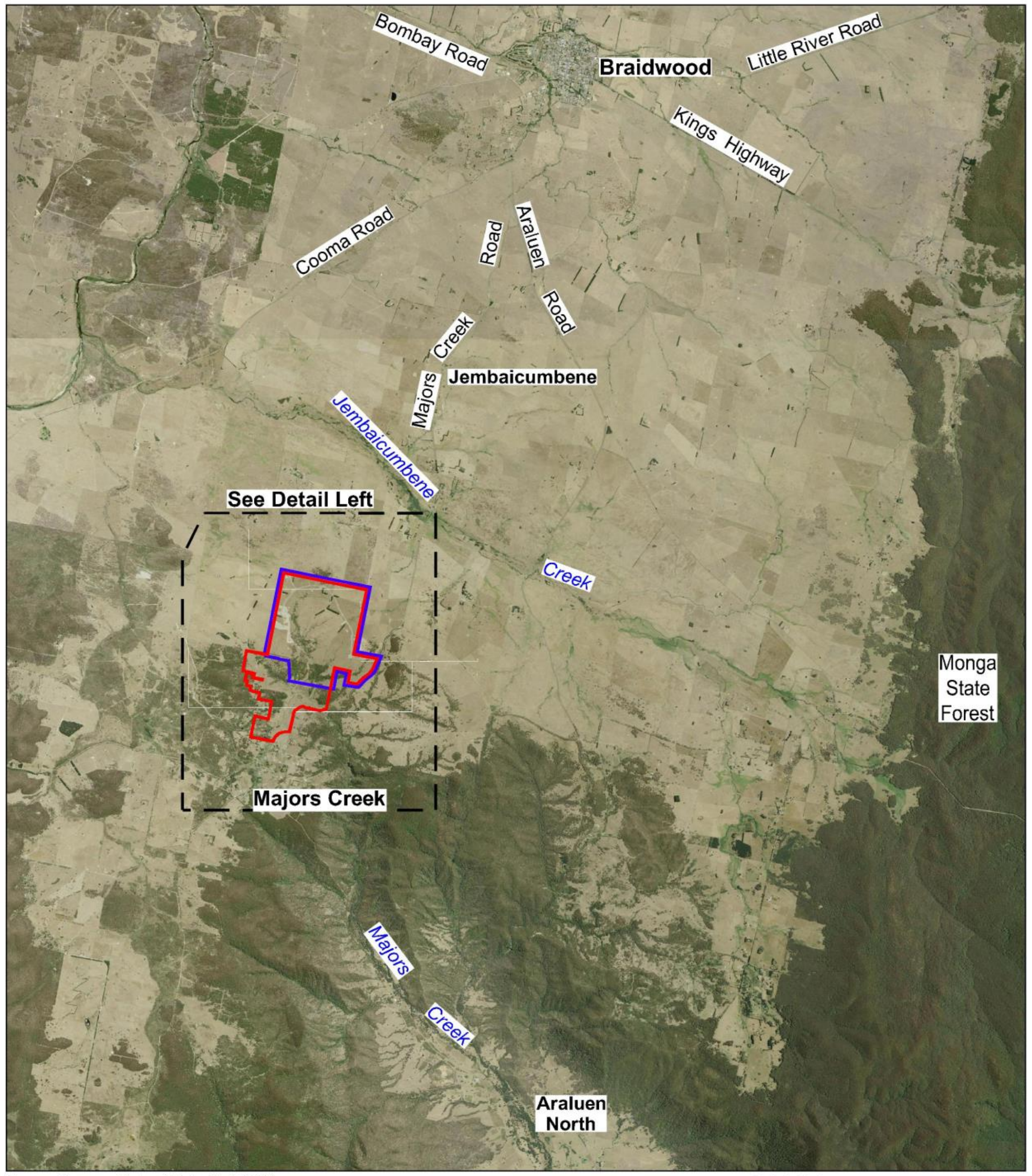

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| Dargues Gold Mine | |
|---|---|
| **Title Holder: Big Island Mining Pty Ltd** | |
| Date of Application: | |
| Compiled by: J Fitzmaurice | 17/11/2016 |
| Revised by: J Fitzmaurice | 15/03/2017 |
| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

Plan 1C
PRE-MINING ENVIRONMENT - BUILT ENVIRONMENT

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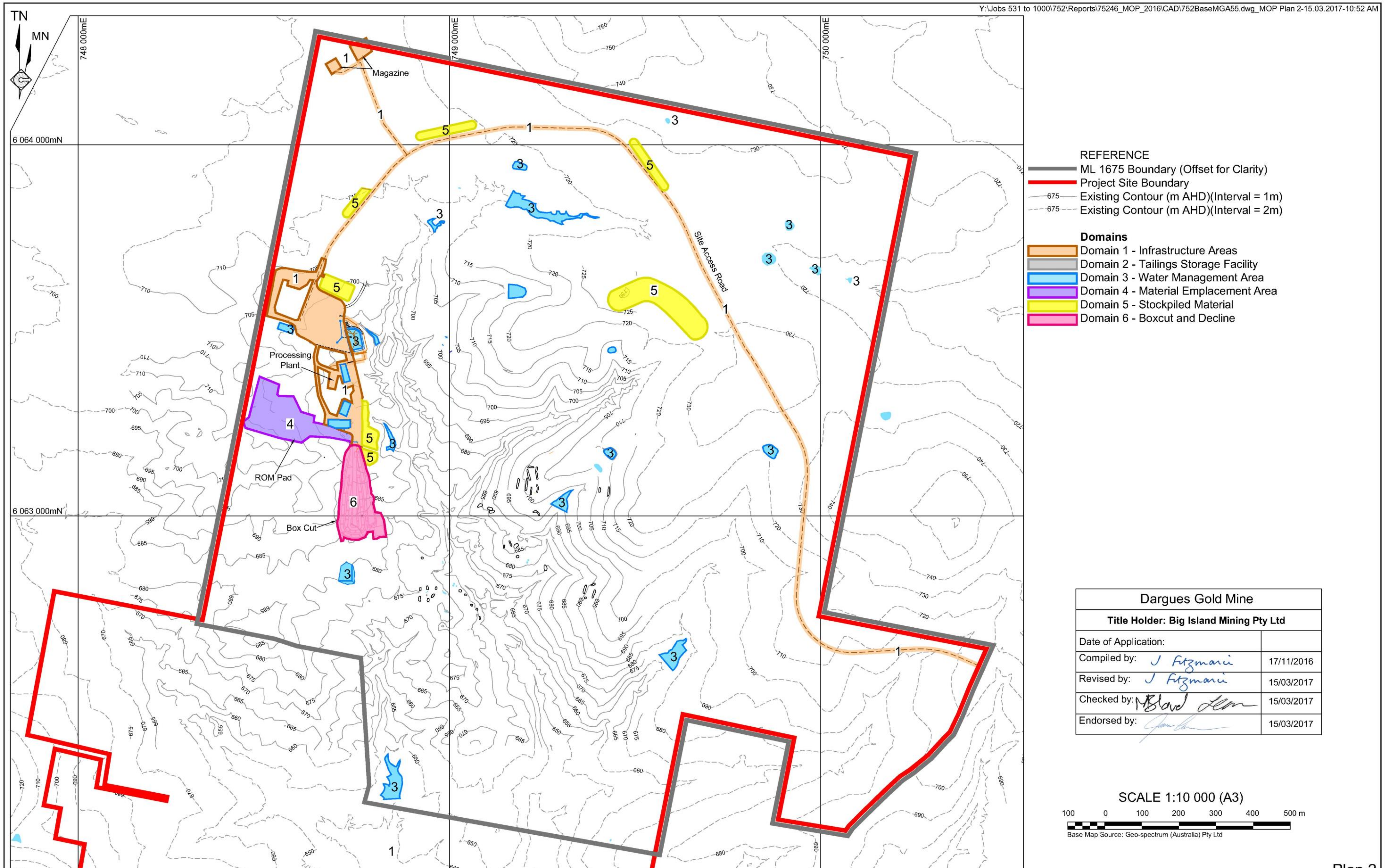

REFERENCE

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| ▬ | Project Site Boundary |
| —675— | Existing Contour (m AHD)(Interval = 1m) |
| --675-- | Existing Contour (m AHD)(Interval = 2m) |

**Domains**

| | |
|---|---|
| 🟧 | Domain 1 - Infrastructure Areas |
| ⬜ | Domain 2 - Tailings Storage Facility |
| 🟦 | Domain 3 - Water Management Area |
| 🟪 | Domain 4 - Material Emplacement Area |
| 🟨 | Domain 5 - Stockpiled Material |
| 🟥 | Domain 6 - Boxcut and Decline |

| Dargues Gold Mine | |
|---|---|
| **Title Holder: Big Island Mining Pty Ltd** | |
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| Revised by: J Fitzmaurice | 15/03/2017 |
| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

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Base Map Source: Geo-spectrum (Australia) Pty Ltd

Plan 2
MINE DOMAINS AT COMMENCEMENT OF MOP

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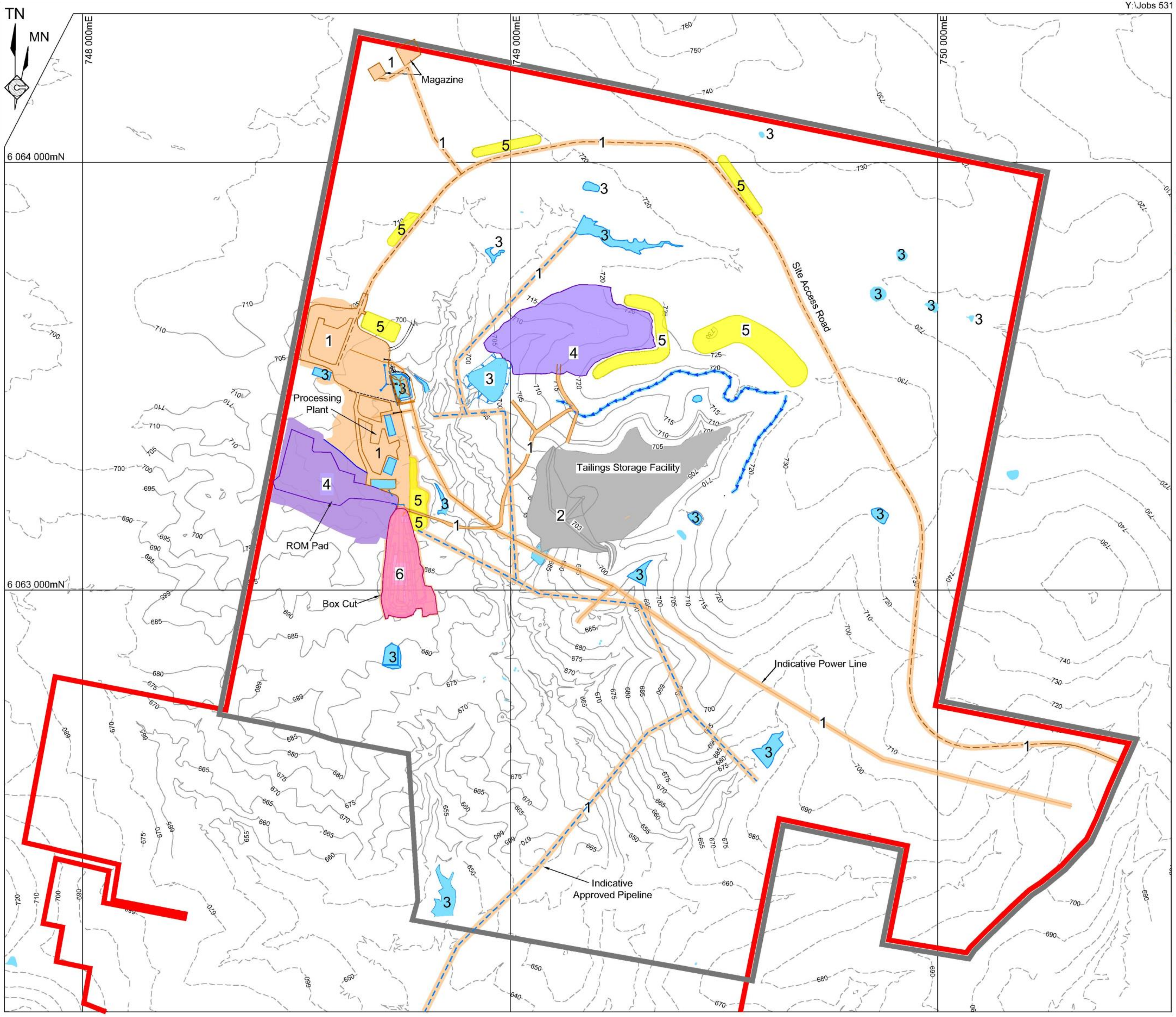

REFERENCE

| | |
|---|---|
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| ▬ | Project Site Boundary |
| 675 | Existing Contour (m AHD)(Interval = 1m) |
| 675 | Existing Contour (m AHD)(Interval = 2m) |
| ◄◄◄◄ | Clean Water Diversion |
| - - - | Approved Water Pipeline (Indicative) |

**Primary Domains**

| | |
|---|---|
| 🟧 | Domain 1 - Infrastructure Areas |
| ⬜ | Domain 2 - Tailings Storage Facility |
| 🟦 | Domain 3 - Water Management Area |
| 🟪 | Domain 4 - Material Emplacement Area |
| 🟨 | Domain 5 - Stockpiled Material |
| 🟥 | Domain 6 - Boxcut and Decline |

| Dargues Gold Mine | |
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| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

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Base Map Source: Geo-spectrum (Australia) Pty Ltd

Plan 3A
MINING AND REHABILITATION
- YEAR 1

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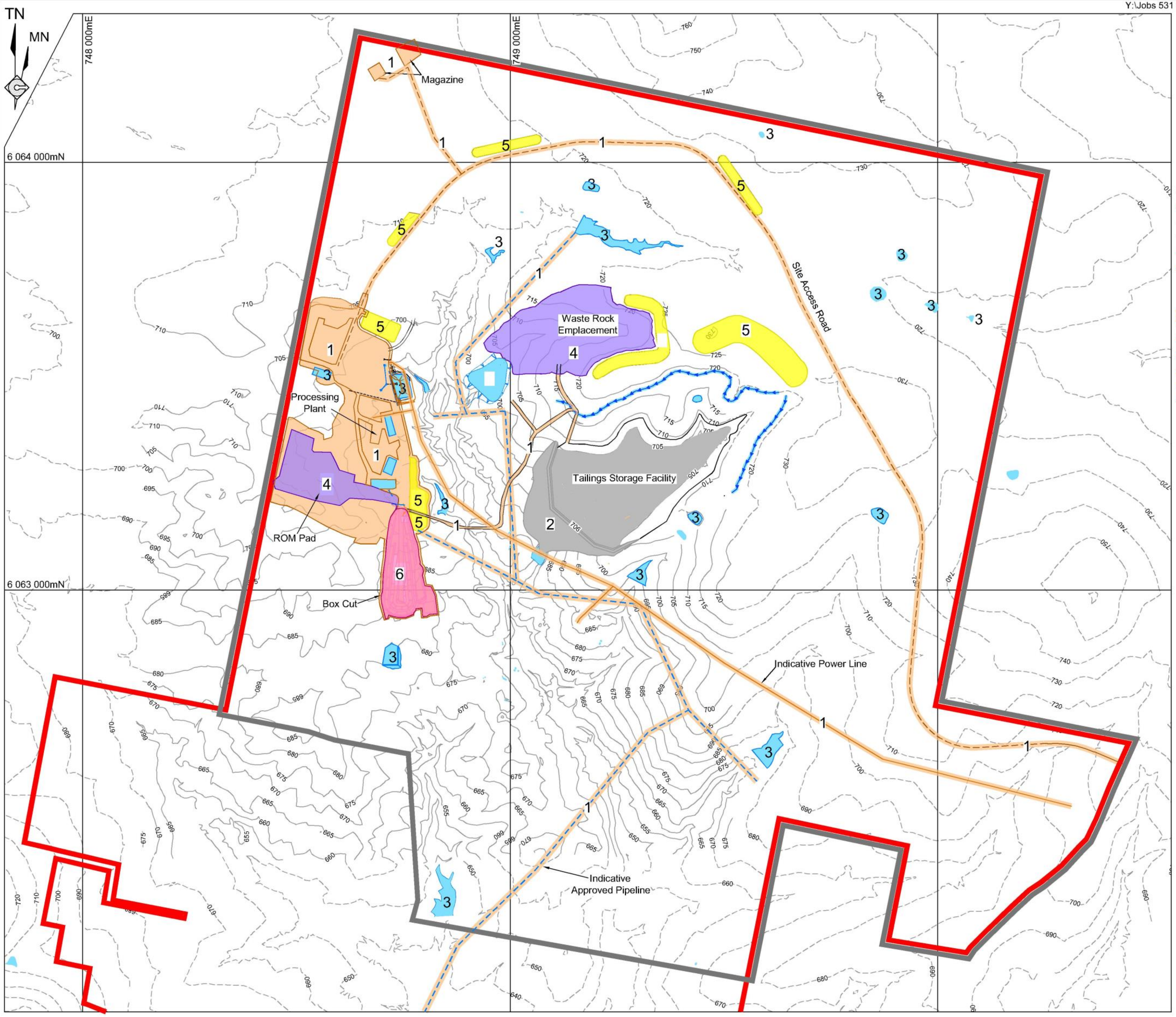

REFERENCE
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▬ Project Site Boundary
675 Existing Contour (m AHD)(Interval = 1m)
675 Existing Contour (m AHD)(Interval = 2m)
Clean Water Diversion
Approved Water Pipeline (Indicative)

**Primary Domains**
🟧 Domain 1 - Infrastructure Areas
⬜ Domain 2 - Tailings Storage Facility
🟦 Domain 3 - Water Management Area
🟪 Domain 4 - Material Emplacement Area
🟨 Domain 5 - Stockpiled Material
🟥 Domain 6 - Boxcut and Decline

| Dargues Gold Mine | |
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| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

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Base Map Source: Geo-spectrum (Australia) Pty Ltd

Plan 3B
MINING AND REHABILITATION
- YEAR 2

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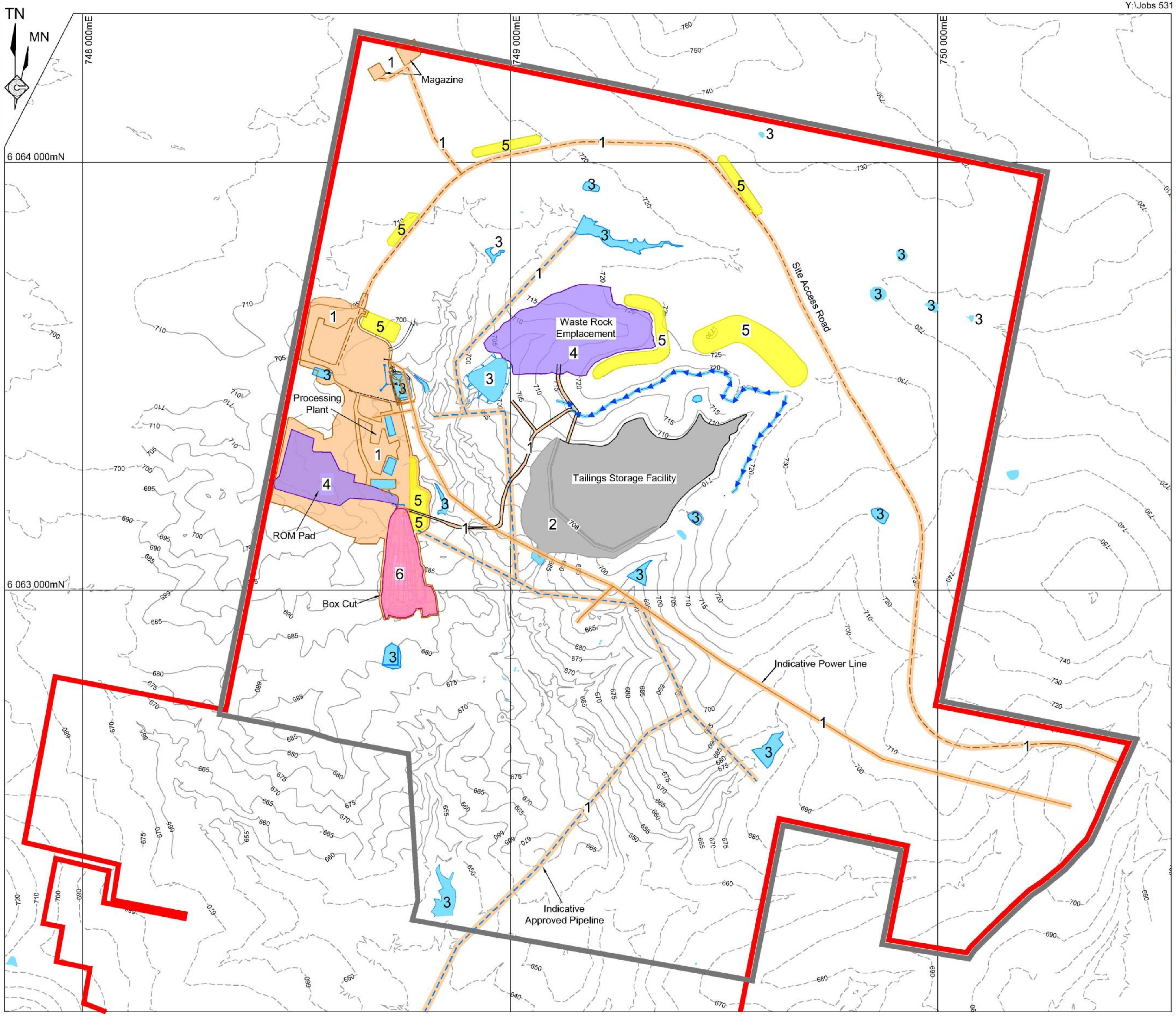

REFERENCE
- ▬ ML 1675 Boundary (Offset for Clarity)
- ▬ Project Site Boundary
- 675 Existing Contour (m AHD)(Interval = 1m)
- 675 Existing Contour (m AHD)(Interval = 2m)
- ◄◄◄ Clean Water Diversion
- - - - Approved Water Pipeline (Indicative)

**Primary Domains**
- 🟧 Domain 1 - Infrastructure Areas
- ⬜ Domain 2 - Tailings Storage Facility
- 🟦 Domain 3 - Water Management Area
- 🟪 Domain 4 - Material Emplacement Area
- 🟨 Domain 5 - Stockpiled Material
- 🟥 Domain 6 - Boxcut and Decline

| Dargues Gold Mine | |
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| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

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Base Map Source: Geo-spectrum (Australia) Pty Ltd

Plan 3C
MINING AND REHABILITATION
- YEAR 3

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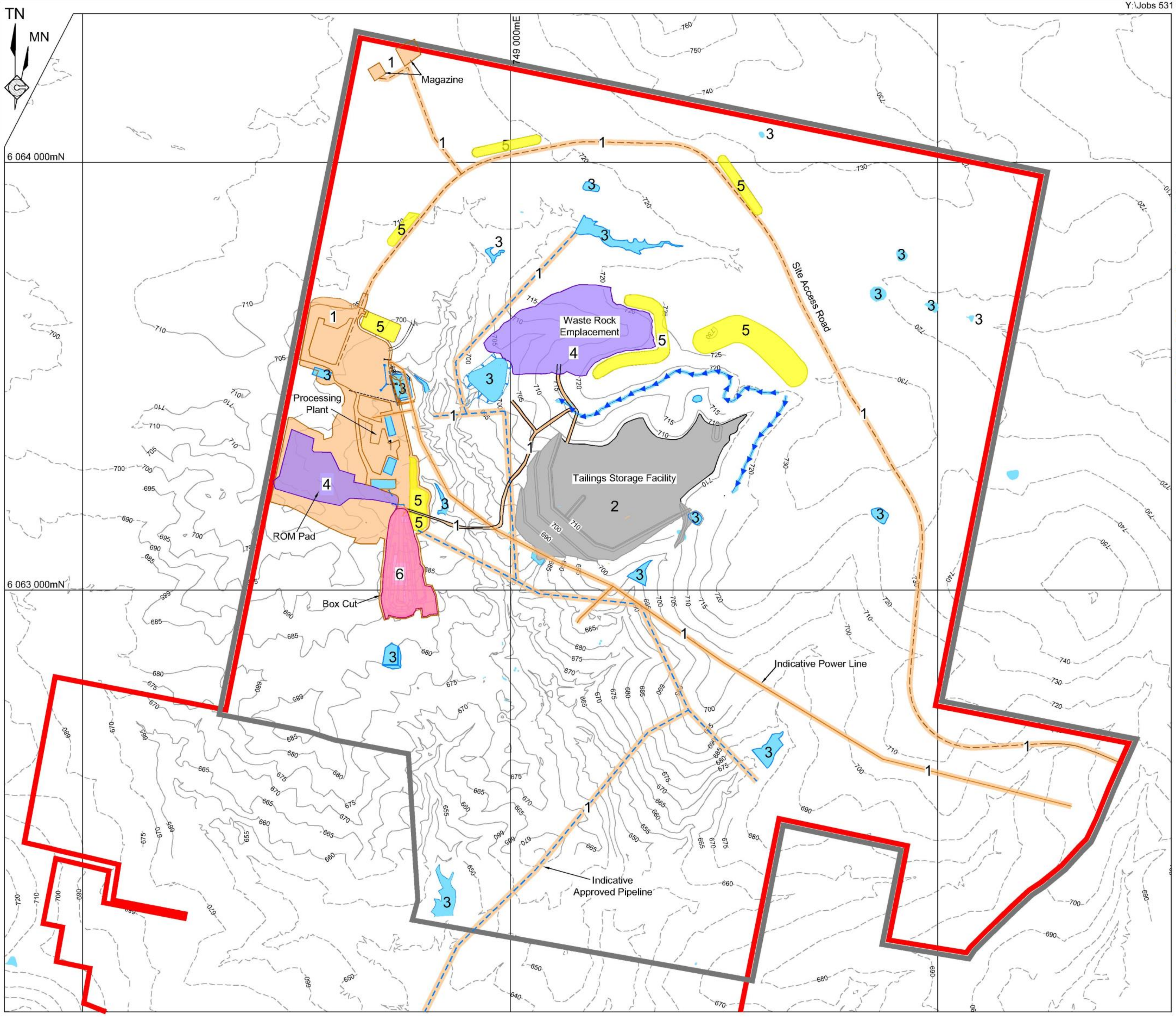

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▬ Project Site Boundary
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675 Existing Contour (m AHD)(Interval = 2m)
◄◄◄◄ Clean Water Diversion
- - - - Approved Water Pipeline (Indicative)

**Primary Domains**
▭ Domain 1 - Infrastructure Areas
▭ Domain 2 - Tailings Storage Facility
▭ Domain 3 - Water Management Area
▭ Domain 4 - Material Emplacement Area
▭ Domain 5 - Stockpiled Material
▭ Domain 6 - Boxcut and Decline

| Dargues Gold Mine | |
|---|---|
| **Title Holder: Big Island Mining Pty Ltd** | |
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| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

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Base Map Source: Geo-spectrum (Australia) Pty Ltd

Plan 3D
MINING AND REHABILITATION
- YEAR 4

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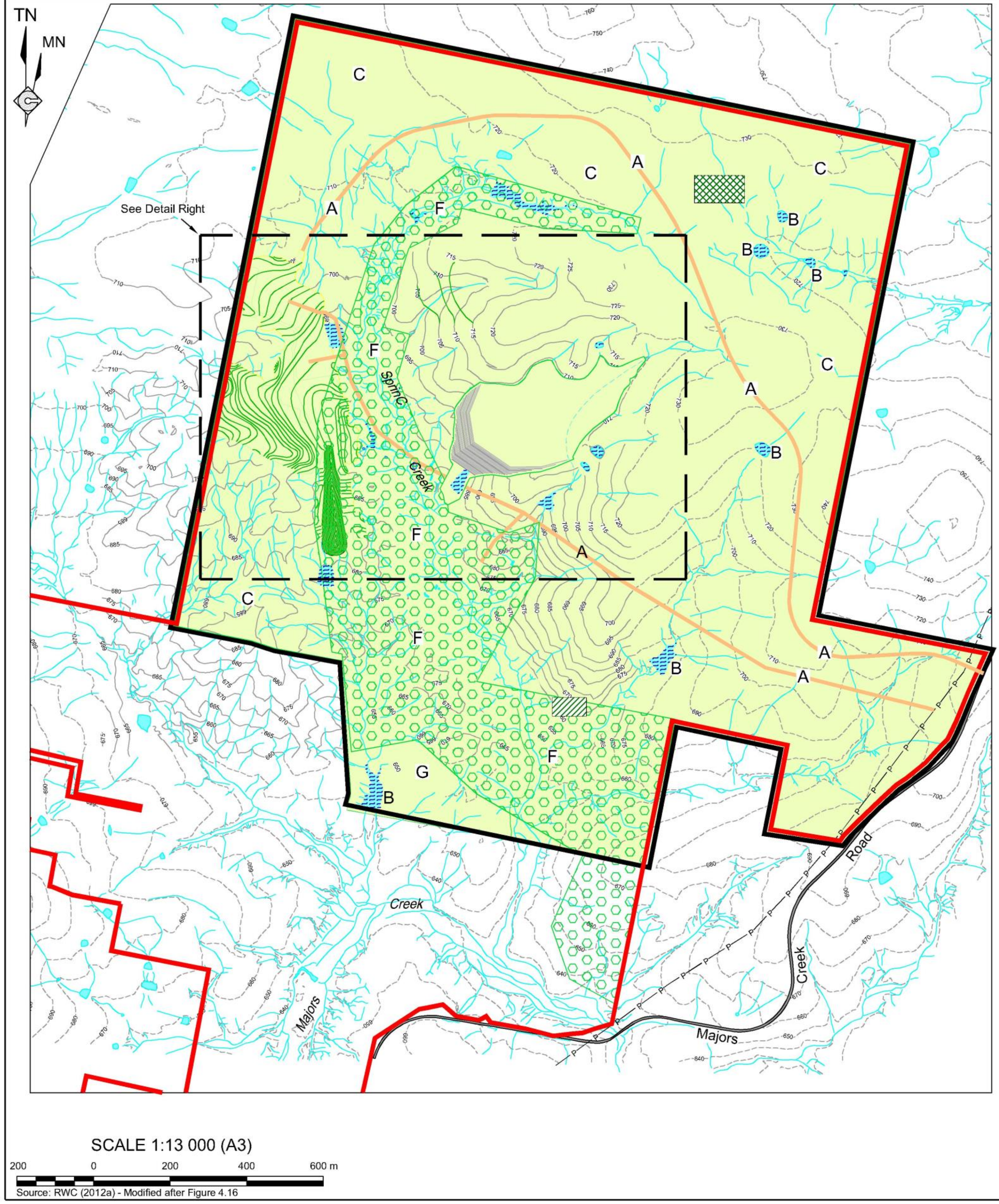

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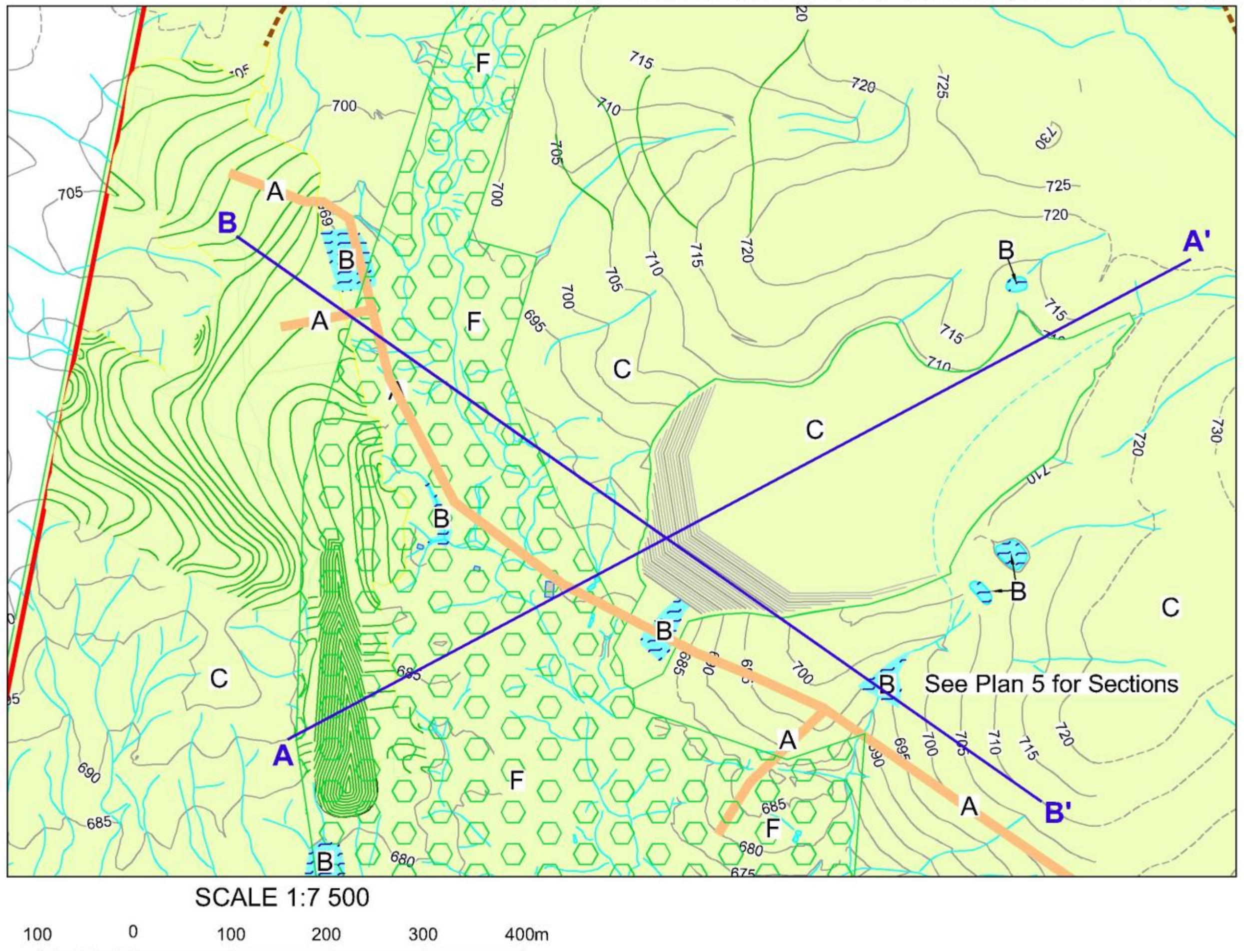

REFERENCE
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- ML 1675 Boundary (Offset for Clarity)
- Existing Contour (m AHD)(Interval = 5m)
- Existing Contour (m AHD)(Interval = 10m)
- Final Landform Contour (m AHD)(Interval = 5m)
- Watercourse / Drainage Line
- Sealed Road
- Existing Dam / Water Storage

**Secondary Domains**
- Domain A - Infrastructure
- Domain B - Water Management Area
- Domain C - Rehabilitation Area: Grassland
- Domain F - Rehabilitation Area: Forest

- Analogue Site - Native Grassland
- Analogue Site - Ribbon Gum Forest

| Dargues Gold Mine | |
|---|---|
| **Title Holder: Big Island Mining Pty Ltd** | |
| Date of Application: | |
| Compiled by: J Fitzmaurice | 17/11/2016 |
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| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

Plan 4
FINAL REHABILITATION AND POST-MINING LAND USE

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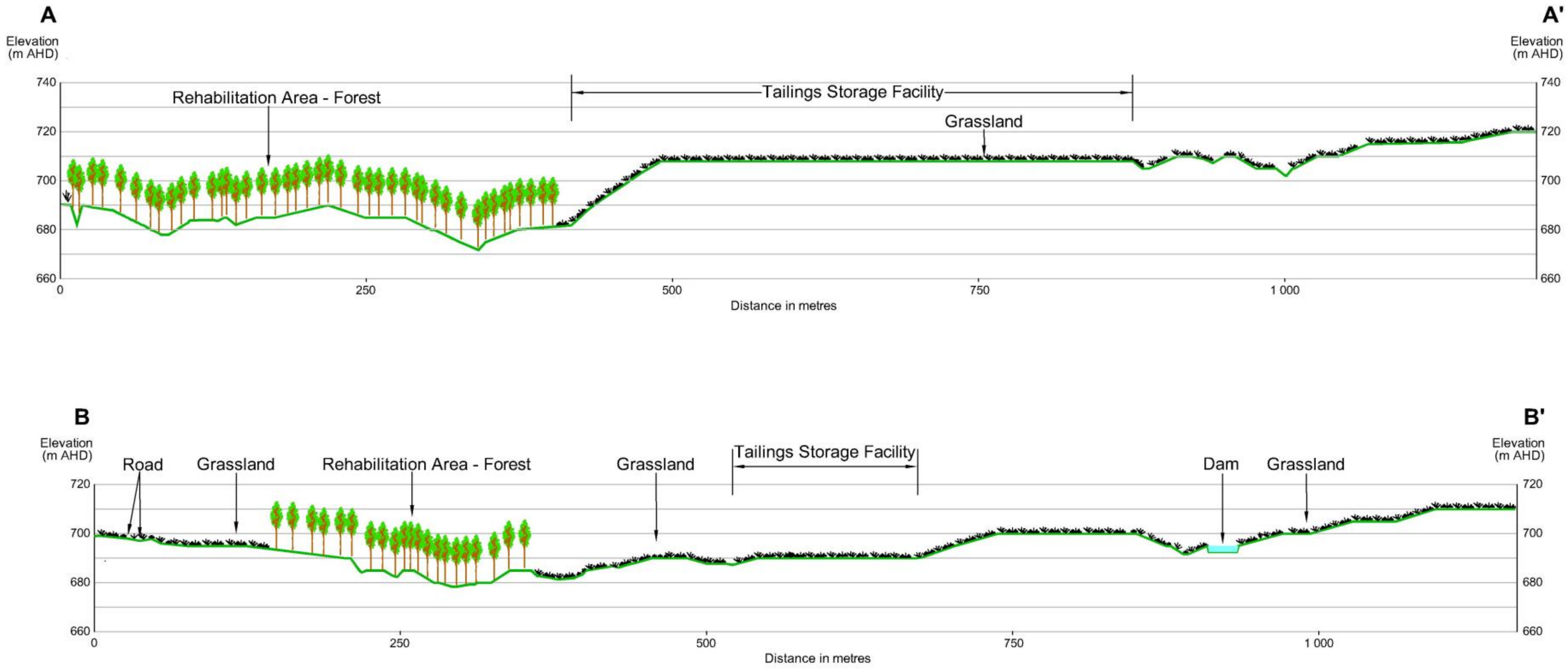

See Plan 4 for Section Locations

| Dargues Gold Mine | |
|---|---|
| **Title Holder: Big Island Mining Pty Ltd** | |
| Date of Application: | |
| Compiled by: J Fitzmaurice | 17/11/2016 |
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| Checked by: | 15/03/2017 |
| Endorsed by: | 15/03/2017 |

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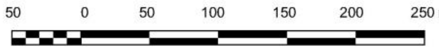

## Plan 5
## REHABILITATION AND POST-MINING LAND USE CROSS SECTIONS

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# Appendices

(Total No. of pages including blank pages = 94)

| | |
|---|---|
| Appendix 1 | Project Approval (PA) 10_0054* (52 pages) |
| Appendix 2 | Environment Protection Licence (EPL) 20095* (24 pages) |
| Appendix 3 | Rehabilitation Security Estimate dated March 2017* (16 pages) |

* A colour version of this Appendix is available on the digital version of this document

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# Appendix 1

## Project Approval (PA) 10_0054

(Total No. of pages including blank pages = 52)

Note: A colour version of this Appendix is available on the digital version of this document

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Annexure A

# Project Approval

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

The Land and Environment Court of New South Wales approves 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.

**Joe Woodward PSM (Chair)**
**Member of the Commission**

**Prof. Zada Lipman**
**Member of the Commission**

**Alan Coutts**
**Member of the Commission**

Sydney 10 August 2016

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Blue type represents July 2012 modification
Red type represents October 2013 modification
Green type represents August 2016 modification

## SCHEDULE 1

| | |
|---|---|
| **Application Number:** | 10_0054 |
| **Proponent:** | Big Island Mining Pty Limited |
| **Land:** | See Appendix 1 |
| **Project:** | Dargues Reef Gold Project |

## TABLE OF CONTENTS

## DEFINITIONS

| | |
|---|---|
| Annual review | The review required by Condition 3 of Schedule 5 |
| BCA | Building Code of Australia |
| CCC | Community Consultative Committee |
| CEEC | Critically Endangered Ecological Community are defined under the *Environment Protection and Biodiversity Conservation Act, 1999* |
| Clean water | Water that accumulates from areas of the site that have not been disturbed under this project approval. |
| Conditions of this approval | Conditions contained in Schedules 2 to 5 inclusive |
| Council | Palerang Council |
| Day | The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays |
| Department | Department of Planning and Environment |
| DPI Water | Department of Primary Industries - Water |
| DRE | Division of Resources and Energy (within the Department of Industry) |
| EA | Environmental assessment titled *Environmental Assessment for the Dargues Reef Gold Project,* and *Specialist Consultant Studies Compendium Volume 1 and 2,* dated September 2010, prepared by R. W. Corkery and Co Pty Limited, including the Response to Submissions, and additional information from Gaia Research Pty Ltd dated 5 May 2011; Environmental Assessment titled *Environmental Assessment for the Dargues Reef Gold Project, Modification 1,* dated April 2012, prepared by R. W. Corkery and Co Pty Limited, including the Response to Submissions; Environmental Assessment titled *Environmental Assessment for the Dargues Gold Mine, Modification 2,* dated July 2013, prepared by R.W. Corkery and Co Pty Limited, including the Response to Submissions; and Environmental Assessment titled *Environmental Assessment for the Dargues Gold Mine, Modification 3, dated July 2015,* prepared by R.W. Corkery and Co Pty Limited, including the Response to Submissions |
| EEC | Endangered Ecological Community as defined by the *Threatened Species Conservation Act, 1995* |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| EP&A Regulation | *Environmental Planning and Assessment Regulation 2000* |
| EPA | Environment Protection Authority |
| EPL | Environment Protection Licence issued under *POEO Act* |
| ESC | Eurobodalla Shire Council |
| Evening | The period between 6pm to 10pm on any day |
| Feasible | Feasible relates to engineering considerations and what is practical to build or carry out |
| Fisheries NSW | Fisheries NSW, within Department of Primary Industries |
| Incident | A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval |
| Land | In general, the definition of land is consistent with the definition in the EP&A Act. However, in relation to the noise and air quality conditions in Schedules 3 and 4 it means 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 approval |
| Life of the project | The period from the grant of project approval until completion of rehabilitation and any ongoing monitoring to the satisfaction of both the Secretary and the Secretary Industry, as appropriate |
| Material harm to the environment | Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial |
| Mine-related infrastructure | Comprises the processing plant and permanent built infrastructure, not including site earthworks or installation of temporary offices or structures ancillary to those earthworks. |
| Mining operations | Includes the removal of waste rock and the extraction, processing, handling, storage and transportation of ore material |
| Minister | Minister for Planning, or delegate |
| Minor | Small in quantity, size and degree |
| Mitigation | Activities associated with reducing the impacts of the project |
| Negligible | Small and unimportant, such as to be not worth considering |
| Night | The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays |
| OEH | Office of Environment and Heritage |
| POEO Act | *Protection of the Environment Operations Act 1997* |
| Privately-owned land | Land that is not owned by a public agency or a mining company (or its subsidiary) |
| Project | The development described in the EA |

| | |
|---|---|
| Proponent | Big Island Mining Pty Limited, or any person who seeks to carry out the development approved under this approval |
| Reasonable | Reasonable relates to the application of 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 |
| Rehabilitation | The treatment or management of land disturbed by the project for the purpose of establishing a safe, stable and non-polluting environment, and includes remediation |
| Response to Submissions | The proponent's responses to issues raised in submissions, including those titled *Response to Government Agency and Public Submissions for the Dargues Reef Gold Project,* dated December 2010, *Response to NSW Office of Water Submission Dated 16 December 2010 for the Dargues Reef Gold Project*, dated December 2010, *Response to DECCW Issues*, dated 2 March 2011, and *Response to Submission Received 15 April 2011,* dated 20 April 2011, and letter from Cortona Resources Limited, dated 15 December 2010, and *Response to Submissions*, dated November 2015. |
| ROM | Run-of-mine |
| RMS | Roads and Maritime Services |
| Secretary | The Secretary of the Department, or nominee and/or delegate |
| Secretary Industry | The Secretary of NSW Department of Industry, or equivalent position |
| Site | The land to which the project application applies, as listed in Appendix 1 |
| Statement of commitments | The Proponent's commitments in Appendix 5 |

## SCHEDULE 2
## ADMINISTRATIVE CONDITIONS

### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the project.

### TERMS OF APPROVAL

2. The Proponent shall carry out the project:
   (a) generally in accordance with the EA and statement of commitments; and
   (b) in accordance with the conditions of this approval.

   *Notes:*
   - *The general layout of the project is shown in Appendix 2; and*
   - *The statement of commitments is reproduced in Appendix 5.*

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
   (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this approval;
   (b) any reports, reviews or audits commissioned by the Department regarding compliance with this approval; and
   (c) the implementation of any actions or measures contained in these documents.

### LIMITS ON APPROVAL

5. The Proponent may carry out mining operations on the site until 30 June 2025.

   *Note: Under this approval, the Proponent is required to rehabilitate the site and carry out additional undertakings to the satisfaction of both the Secretary and the Secretary Industry. Consequently, this approval will continue to apply in all other respects - other than the right to conduct mining operations - until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.*

6. The Proponent shall not:
   (a) process more than 355 000 tonnes of ore at the site in a calendar year;
   (b) process more than 1.6 million tonnes of ore at the site over the life of the project;
   (c) use any cyanide or mercury on site to process or extract gold from the project; or
   (d) process or smelt any ore other than that extracted from the site.

6A. The Proponent shall only store ore concentrate on the site within a covered, concreted-sealed and bunded area within the processing plant.

### STRUCTURAL ADEQUACY

7. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

   *Notes:*
   - *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works;*
   - *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project; and*
   - *Under the Dams Safety Act 1978, the Proponent will require a further approval for the project's tailings dam.*

### DEMOLITION

8. The Proponent shall ensure that demolition of all built structures is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

### OPERATION OF PLANT AND EQUIPMENT

9. The Proponent shall ensure that all the plant and equipment used on site, or to transport concentrate from the site, is:
   (a) maintained in a proper and efficient condition; and
   (b) operated in a proper and efficient manner.

## UPDATING & STAGING OF STRATEGIES, PLANS OR PROGRAMS

10. With the approval of the Secretary, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis.

To ensure these strategies, plans or programs are updated on a regular basis, the Proponent may at any time submit revised strategies, plans or programs to the Secretary for approval.

With the agreement of the Secretary, the Proponent may prepare any revised strategy, plan or program without undertaking consultation with all the parties referred to under the relevant condition of this approval.

*Notes:*
- *While any strategy, plan or program may be submitted on a progressive basis, the Proponent must ensure that all development being carried out on site is covered by suitable strategies, plans or programs at all times.*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

## PLANNING AGREEMENT

11. Within 12 months of the date of this approval, unless otherwise agreed by the Secretary, the Proponent shall enter into a planning agreement with Council in accordance with Division 6 of Part 4 of the EP&A Act, that provide for contributions to Council for:
- upgrades of Council's road infrastructure affected by the project; and
- general community enhancement to address social amenity and community infrastructure requirements arising from the project.

The contributions shall be consistent with the terms of the offer made in the Proponent's letter dated 24 September 2010, and summarised in Appendix 6.

## SCHEDULE 3
## ENVIRONMENTAL PERFORMANCE CONDITIONS

### NOISE

### Noise Criteria

1. The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

*Table 1: Noise Criteria dB(A) $L_{Aeq\ (15min)}$*

| **Location** | **Day** $L_{Aeq\ (15min)}$ | **Evening** $L_{Aeq\ (15min)}$ | **Night** | |
|---|---|---|---|---|
| | | | $L_{Aeq\ (15min)}$ | $L_{A1\ (1\ min)}$ |
| All privately owned land | 35 | 35 | 35 | 45 |

*Note: Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.*

However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

### Traffic Noise Impact Assessment Criteria

2. The Proponent shall take all reasonable and feasible measures to ensure that the traffic noise generated by the project does not exceed the traffic noise impact assessment criteria in Table 2.

*Table 2: Traffic noise impact assessment criteria dB(A)*

| **Road** | **Day** $L_{Aeq1\ hour}$ | **Evening** $L_{Aeq1\ hour}$ |
|---|---|---|
| Majors Creek Road, Araluen Road, Captains Flat Road, Coghill Street and Wallace Street | 55 | 50 |

*Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the NSW Road Noise Policy.*

### Operating Hours

3. The Proponent shall comply with the operating hours in Table 3.

*Table 3: Operating hours*

| **Activity** | **Operating Hours** |
|---|---|
| Vegetation clearing, topsoil stripping, construction of the box cut and rehabilitation | Day |
| Remainder of construction operations | Day / evening / night |
| Mining, paste filling, maintenance and processing operations | Day / evening / night |
| Crushing operations (including operation of front-end-loader) | 7am-7pm, 7 days per week |
| Transportation | Day / evening |

*Note:*
- *Crushing operations may be undertaken outside of these hours on a maximum of 20 days per year.*
- *Condition 41 includes additional restrictions on transportation times.*
- *Conditions 6 and 7 include restrictions on blasting times.*

### Operating Conditions

4. The Proponent shall:
   (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the operational and road traffic noise generated by the project;
   (b) investigate ways to minimise the noise generated by the project, including any reversing alarms on machinery or vehicles;
   (c) minimise noise impacts during temperature inversions; and
   (d) report on these investigations and the implementation and effectiveness of these measures in the Annual Review,

### Noise Management Plan

5. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:
   (a) be prepared in consultation with EPA and Council, and submitted to the Secretary for approval prior to the commencement of construction;
   (b) describe the noise mitigation measures that would be implemented to ensure compliance with conditions 1-4 of this schedule; and
   (c) include a noise monitoring program that:
   - uses a combination of unattended and attended monitoring to evaluate the performance of the project; and
   - includes a protocol for determining exceedances of the relevant conditions of this approval.

## BLASTING

### Blasting Criteria

6. The Proponent shall ensure that the blasting on site does not cause exceedances of the criteria in Table 4.

*Table 4: Blast impact criteria*

| ***Location*** | ***Time of Blasting*** | ***Airblast overpressure (dB(Lin Peak))*** | ***Ground vibration (mm/s)*** | ***Allowable exceedance*** |
|---|---|---|---|---|
| Residence on privately-owned land | Any time | 120 | 10 | 0% |
| | Day | 115 | 5 | 5% of the total number of blasts over a period of 12 months |
| | Evening | - | 2 | |
| | Night, and all day on Sundays and public holidays | - | 1 | 0% |

*Note: All blasts are to be designed by a suitably qualified and experienced blasting engineer.*

### Blasting Hours

7. The Proponent shall comply with the blasting hours in Table 5.

*Table 5: Blasting hours*

| ***Activity*** | ***Blasting Hours*** |
|---|---|
| Surface blasting | 9am – 5pm Monday – Friday, excluding public holidays |
| Underground blasting | Anytime |

### Property Inspections

8. If the Proponent receives a written request from the owner of any privately-owned land within 2 kilometres of blasting operations for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection report updated, then within 2 months of receiving this request the Proponent shall:
   (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary to:
   - establish the baseline condition of the buildings and/or structures on the land or update the previous property inspection report; and
   - identify any measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and

   (b) give the landowner a copy of the new or updated property inspection report.

### Property Investigations

9. If any landowner of privately-owned land within 2 kilometres of blasting operations, or any other landowner nominated by the Secretary, claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request:
   (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to investigate the claim; and
   (b) give the landowner a copy of the property investigation report.

   If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damages to the satisfaction of the Secretary.

If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.

### Operating Conditions

10. During mining operations on site, the Proponent shall implement best blasting practice to:
    (a) protect the safety of people, property, public infrastructure, and livestock;
    (b) protect items of Aboriginal and non-indigenous cultural heritage significance;
    (c) minimise the dust and fume emissions from blasting at the project; and
    (d) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site,

    to the satisfaction of the Secretary.

### Blast Management Plan

11. The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with EPA and Council, and submitted to the Secretary for approval prior to undertaking any blasting on-site;
    (b) describe the blast mitigation measures that would be implemented to ensure compliance conditions 6-10 of this schedule;
    (c) describe the measures that would be implemented to ensure the public can get up-to-date information on the proposed blasting schedule on site; and
    (d) include a blast monitoring program to evaluate the performance of the project.

## AIR QUALITY & GREENHOUSE GAS

### Odour

12. The Proponent shall ensure that no offensive odours are emitted from the site, as defined under the POEO Act.

### Greenhouse Gas Emissions

13. The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Secretary.

### Air Quality Criteria

14. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the particulate emissions generated by the project do not exceed the criteria listed in Tables 6, 7 and 8 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

*Table 6: Long term criteria for particulate matter*

| ***Pollutant*** | ***Averaging period*** | ***[d]Criterion*** |
|---|---|---|
| Total suspended particulate (TSP) matter | Annual | [a]90 µg/m$^3$ |
| Particulate matter < 10 µm ($PM_{10}$) | Annual | [a]30 µg/m$^3$ |

*Table 7: Short term criterion for particulate matter*

| ***Pollutant*** | ***Averaging period*** | ***[d] Criterion*** |
|---|---|---|
| Particulate matter < 10 µm ($PM_{10}$) | 24 hour | [a] 50 µg/m$^3$ |

*Table 8: Long term criteria for deposited dust*

| ***Pollutant*** | ***Averaging period*** | ***Maximum increase in deposited dust level*** | ***Maximum total[1] deposited dust level*** |
|---|---|---|---|
| [c]Deposited dust | Annual | [b]2 g/m$^2$/month | [a]4 g/m$^2$/month |

*Notes for Tables 6-8:*

- *[a]Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to other sources);*
- *[b] Incremental impact (i.e. incremental increase in concentrations due to the project on its own);*
- *[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; and*

- *[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agree to by the Secretary in consultation with EPA.*

15. The Proponent shall ensure compliance with any pollutant limits in the EPL set after further assessment of the potential air quality impacts associated with the gold smelting process (refer to Condition 17 below).

### Operating Conditions

16. The Proponent shall:
    (a) implement best practice air quality management on site, including all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions generated by the project;
    (b) minimise any visible air pollution generated by the project;
    (c) regularly assess the air quality monitoring and meteorological forecasting data, and relocate, modify and/or stop operations on site to ensure compliance with the relevant conditions of this approval; and
    (d) take all practical measures to minimise dust emissions from the tailings dam,

    to the satisfaction of the Secretary.

### Air Quality & Greenhouse Gas Management Plan

17. The Proponent shall prepare and implement a detailed Air Quality & Greenhouse Gas Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with EPA and Council, and submitted to the Secretary for approval prior to construction;
    (b) include an assessment of the potential air quality impacts of the project associated with the gold smelting process;
    (c) describe the measures that would need to be implemented to ensure compliance with conditions 12-16 of this schedule;
    (d) include a program for the implementation of the measures referred to in (c) above; and
    (e) include an air quality monitoring program, that uses a combination high volume samplers and dust deposition gauges to evaluate the performance of the project, and includes a protocol for determining exceedances with the relevant conditions of this approval.

## METEOROLOGICAL MONITORING

18. During the life of the project, the Proponent shall 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 of Air Pollutants in New South Wales* guideline.

## SOIL & WATER

### Water Licences

19. The Proponent shall obtain all necessary water licences for the project under the *Water Act 1912* or the *Water Management Act 2000.*

### Water Supply

20. The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations to match supply of water, to the satisfaction of the Secretary.

### Water Discharges

21. The Proponent shall ensure that all surface water discharges from the site comply with section 120 of the POEO Act, unless an EPL authorises otherwise.

### Baseflow Offsets

22. The Proponent shall offset the combined loss of any baseflow to Majors and Spring Creeks caused by the project to the satisfaction of the Secretary. This condition does not apply if the Secretary subsequently determines that the loss of baseflow is negligible.

    *Note: The proposed discharge point for the baseflow offset shall be as identified in the Water Management Plan.*

**Compensatory Water Supply**

23. The Proponent shall provide a compensatory water supply to any owner of privately-owned land whose water entitlements are adversely impacted (other than an impact that is negligible) as a result of the project, in consultation with DPI Water, and to the satisfaction of the Secretary.

The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply must be provided (at least on an interim basis) within 24 hours of the loss being identified.

If the Proponent and the landowner 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.

If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.

**Tailings Storage Facility**

24. The Proponent shall ensure that:
(a) the permeability of the tailings storage facility is designed to meet the requirements of the *Environmental Guidelines – Management of Tailings Storage Facilities* (VIC DPI, 2004) and that the permeability of the walls, floor and final capping of the tailings storage facility is designed to be equivalent to 600mm clay of permeability $<1 \times 10^{-8}$m/s;
(b) the design of the tailings storage facility conforms to:
  - DSC3A – Consequence Categories for Dams (Dams Safety Committee of New South Wales); and
  - DSC3F – Tailings Dams (Dams Safety Committee of New South Wales); and

(c) the latest meteorological data from both the Majors Creek and Braidwood weather stations is used during the design of the tailings storage facility and that the design is adjusted, as required to meet the requirements of the Dams Safety Committee of New South Wales, based on whichever dataset provides the worst case scenario.

*Note: An alternative permeability standard may be acceptable following completion of an appropriate risk assessment undertaken in accordance with the Environmental Guidelines – Management of Tailings Storage Facilities (VIC DPI, 2004) to the satisfaction of EPA and the Secretary.*

25. The Proponent shall ensure that the Mine Water Settlement Dam and Tailings Storage Facility Seepage Collection Pond are suitably lined to be equivalent to 1000mm clay of permeability $< 1 \times 10^{-9}$ m/s.

25A. The clean water diversion around the northern side of the tailings storage facility shall be designed, constructed and maintained to prevent the probable maximum flood from the catchment upstream of the facility from entering the facility.

*Note: The general layout of the project is shown in Appendix 2.*

**Water Management Plan**

26. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:
(a) be prepared in consultation with ESC, Council, EPA, DPI Water and DPI Fisheries by suitably qualified and experienced persons whose appointment has been approved by the Secretary;
(b) be submitted to the Secretary for approval prior to the commencement of construction; and
(c) include:
  - a Site Water Balance;
  - an Erosion and Sediment Control Plan;
  - a Surface Water Monitoring Program;
  - a Groundwater Monitoring Program; and
  - a Surface and Ground Water Response Plan;

(d) include detailed design of the Spring Creek heavy vehicle crossing;
(e) be targeted to deal with the particular stages of the project that are being implemented; and
(f) remain in place for the life of the project, from the commencement of construction until the rehabilitation of the site is complete.

*Note: the effectiveness of the Water Management Plan is to be reviewed and audited in accordance with the requirements in Schedule 5. Following this review and audit, the plan is to be revised to ensure it remains up to date (see Condition 4 of Schedule 5).*

26A. The Proponent shall revise and submit to the Secretary for approval the Water Management Plan, prior to constructing any of the following project components: eastern waste rock emplacement, tailings dam, waste rock haulage roads or the Spring Creek heavy vehicle crossing.

27. The Site Water Balance must:
    - (a) include details of:
        - sources and security of water supply;
        - water use on site;
        - water management on site, including transfers between all water storage infrastructure (including clean water dams, sediment dams, mine process water storages, underground workings and the tailings storage facility) and relevant design criteria;
        - off-site water discharges (including uncontrolled discharges from sediment dams), including volume, timing and release point infrastructure requirements;
        - reporting procedures;
    - (b) use the latest meteorological data from both the Majors Creek and Braidwood weather stations; and
    - (c) describe what measures would be implemented to minimise potable water use on site.

28. The Erosion and Sediment Control Plan must:
    - (a) be consistent with the requirements of the *Managing Urban Stormwater: Soils and Construction Manual* (Landcom 2004, or its latest version);
    - (b) identify the size and management of sediment dams for construction and operational stages to satisfy the requirements of Condition 21 of Schedule 3, including an assessment of discharges against NSW water quality objectives for the receiving waters;
    - (c) include a program for undertaking regular auditing of the performance of the erosion and sediment control measures on the site (including audits following major construction milestones and/or rainfall events);
    - (d) identify activities that could cause soil erosion and generate sediment;
    - (e) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
    - (f) describe the location, function, and capacity of erosion and sediment control structures; and
    - (g) describe what measures would be implemented to maintain the structures over time.

28A. The auditing program referred to in 28(c) above must:
- (a) be prepared and undertaken by a suitably qualified and experienced independent expert in surface water management approved by the Secretary;
- (b) assess the performance of the erosion and sediment control system, including whether it is complying with the Water Management Plan, the EPL or Mining Lease; and
- (c) include provisions for reporting the outcomes of the audit findings to the Department, EPA and DPI and implementing any recommendations made by the independent expert.

The auditing program shall be undertaken during the construction of the eastern waste rock emplacement, tailings dam, waste rock haulage roads and the Spring Creek heavy vehicle crossing and until such time as the expert is satisfied that the erosion and sediment control system is performing effectively and can be maintained during operations, or as otherwise agreed by the Secretary.

29. The Surface Water Monitoring Program must include:
    - (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project (including Majors and Spring Creeks);
    - (b) stream health assessment criteria that includes representative baseline survey of aquatic life in Majors Creek, upstream and downstream (to the confluence with Araluen Creek) of the mine site prior to commencement of construction and annually thereafter until all mining and rehabilitation activities are completed (Note: The design of the survey must be in consultation with Fisheries NSW and the results must be included in the Annual Review. The frequency of future annual surveys may be amended by the Secretary);
    - (c) surface water quality criteria for a range of parameters, including salinity, heavy metals, suspended sediment, pH, hardness and biological oxygen demand;
    - (d) a program to undertake monthly monitoring of:
        - surface water flows, quality, and impacts on water users;
        - potential acid rock drainage, including suitable monitoring both within and downstream of the tailings storage facility;
        - potential leakage or spillage from tailings, mineral concentrate or effluent pipelines;
        - potential seepage / leachate from waste rock material on the surface, including the monitoring of pH levels;
    - (e) a program to undertake bi-annual monitoring of stream health and channel stability in Spring and Majors Creeks using replicated AUSRIVAS or equivalent methodology;
    - (f) a program for the ongoing verification and refinement of the surface water model; and
    - (g) reporting procedures for the results of the monitoring program and model verification.

30. The Groundwater Monitoring Program must include:
    - (a) detailed baseline data of groundwater levels, yield and quality in the region, and particularly any groundwater bores, springs and seeps that may be affected by the project;
    - (b) test bores downstream of the site, including test bores located down-gradient of the tailings storage facility to monitor seepage;
    - (c) groundwater assessment criteria for both groundwater levels and quality including privately-owned bores;

(d) a program to monitor:
- impacts on the groundwater supply of potentially affected landowners;
- impacts on springs or groundwater dependent ecosystems (including stygofauna);
- the volume of groundwater inflow into the underground mine workings;
- regional groundwater levels and quality in all potentially affected aquifers;
- potential groundwater quality impacts from paste fill operations;
- potential acid rock drainage;
- the seepage/leachate from tailings dams;

(e) a program for the ongoing verification and refinement of the groundwater model; and
(f) reporting procedures for the results of the monitoring program and model verification.

31. The Surface and Ground Water Response Plan must include:
(a) trigger levels for investigating any potential adverse surface water, stream health and groundwater impacts of the project, and taking action to avoid exceedances of the relevant criteria in the surface water and groundwater monitoring program;
(b) a protocol for the investigation, notification and mitigation of any exceedances of the surface water, stream health, and groundwater assessment criteria;
(c) a protocol for investigating, evaluating and providing the baseflow offsets required under condition 22 above;
(d) measures to mitigate and/or compensate potentially affected landowners in accordance with the compensatory water supply requirements in condition 23 above;
(e) a protocol for providing advance warning and water supply measures for landowners of privately-owned land that are predicted to exceed the surface and groundwater impact assessment criteria at some stage during the project life; and
(f) the procedures that would be followed to determine any appropriate action to be taken to mitigate or offset any surface or groundwater impacts caused by the project that constitute material harm to the environment.

**BIODIVERSITY**

**Biodiversity Offset**

32. The Proponent shall implement the offset strategy outlined in Table 9, described in the EA, and shown in Appendix 4 to the satisfaction of the Secretary.

*Table 9: Biodiversity Offset*

| Community Type | Area (ha) |
|---|---|
| Ribbon Gum Forest* | 8.7 |
| Fragmented Ribbon Gum Forest* | 7.1 |
| Regenerating wattles | 7.6 |
| Exotic vegetation | 5.1 |
| Natural Temperate Grassland** | 0.2 |
| Native – dominated pasture | 265.7 |
| Exotic pasture | 2.5 |
| Largely disturbed land | 3.9 |
| River Peppermint Open Forest | 1.3 |
| TOTAL | 302.1 |

* Listed as an EEC under the Threatened Species Conservation Act, 1995
** Listed as a CEEC under the Environment Protection and Biodiversity Conservation Act, 1999

33. The Proponent shall ensure that the offset area is managed in a manner that would ensure the regeneration of native grassland, which is consistent with the Natural Temperate Grassland EEC.

34. The Proponent shall make suitable arrangements to provide appropriate long-term security for the offset area in the strategy to the satisfaction of the Secretary.

**Biodiversity Management Plan**

35. The Proponent shall prepare a Biodiversity Management Plan for the project to the satisfaction of the Secretary. This plan must:
(a) be prepared in consultation with OEH, and submitted to the Secretary for approval prior to construction;
(b) include:
- an assessment of the potential impacts of groundwater drawdown on groundwater dependent (phreatophytic) vegetation, including the Tableland Basalt Forest EEC and Araluen Scarp Grassy Forest EEC in the Majors Creek State Conservation Area using suitable methodology;
- detailed baseline data on the health status of the Tableland Basalt Forest EEC within the project site;

- mitigation and/or offsetting measures if adverse impacts on phreatophytic vegetation are predicted;
- timing for the implementation of mitigation and/or offsetting measures;
- scheduling for the implementation of the biodiversity offset;
- detailed performance and completion criteria for the implementation of the biodiversity offset;
- a detailed description of the measures that would be implemented to manage the remnant vegetation and habitat within the offset area, and ensure the biodiversity offset is suitably implemented, including the procedures for:
  - revegetating or regenerating parts of the offset area, if required;
  - managing or improving the quality of existing vegetation in the offset area;
  - controlling weeds, feral pests and access;
  - managing bushfires; and
- details of who would be responsible for monitoring, reviewing and implementing the plan.

### Conservation Bond

36. Within 3 months of the approval of the Biodiversity Management Plan, the Proponent shall lodge a conservation bond with the Department to ensure that the biodiversity offset is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall cover the full cost of implementing the Biodiversity Offset Strategy and be verified by a suitably qualified rehabilitation expert or quantity surveyor.

    If the biodiversity offset is implemented to the satisfaction of the Secretary, the Secretary will release the conservation bond.

    If the offset strategy is not implemented to the satisfaction of the Secretary, the Secretary will call in all or part of the conservation bond, and arrange for the satisfactory implementation of the biodiversity offset.

## HERITAGE

### Aboriginal Heritage Management Plan

37. The Proponent shall prepare and implement an Aboriginal Heritage Management Plan for the project to the satisfaction of the Secretary. The Plan must:
    (a) be prepared in consultation with OEH and the Aboriginal community;
    (b) be submitted to the Secretary for approval prior to construction; and
    (c) include a:
    - program for fencing identified Aboriginal sites;
    - program for the recording, salvage and surface collection of any Aboriginal objects/sites that may be encountered within the project area, including a program for the recording, salvage and surface collection of sites GT OS1 and GT OS2 prior to disturbance;
    - description of the measures that would be implemented if any Aboriginal skeletal remains are discovered during the project; and
    - protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of the Aboriginal heritage of the objects/sites.

## TRANSPORT

### Access Road Construction

38. The Proponent shall construct the site access road and the intersection of the access road and Majors Creek Road prior to the commencement of construction of the mine-related infrastructure.

39. The intersection of the site access road and Majors Creek Road shall be constructed to a BAR/BAL treatment for rural turn lanes in accordance with the RTA *Road Design Guide* and to the satisfaction of Council.

39A Prior to the commencement of transportation of ore from the site, the left hand road shoulder on Majors Creek Road between the entrance of the mine site and the top of the hill shall be strengthened to the satisfaction of Council.

### Monitoring of Concentrate Transport

40. The Proponent shall:
    (a) keep accurate records of the:
    - amount of concentrate transported from the site (on a monthly basis); and
    - the date and time of loaded truck movements from the site; and

    (b) provide the Secretary with a summary of these truck movements on a quarterly basis.

### Operating Conditions

41. The Proponent shall ensure that:
    (a) a maximum of 4 concentrate trucks exit the site per hour;
    (b) the dispatch of concentrate from the site is limited to between the hours of 7am to 10pm Monday to Saturday and 8am-10pm Sundays and Public Holidays;
    (c) all heavy vehicle movements to or from the site are prohibited between the hours of 7am - 8.30am and 3pm-5pm on school days;
    (d) a bus is operated from Braidwood to offer mine workers transport to and from the site each day; and
    (e) all reasonable and feasible measures are implemented to minimise the project's contribution to the traffic on Majors Creek Road, Araluen Flat Road, Captains Flat Road, Coghill Street and Wallace Street.

### Transport Route

42. Once the site access road and its intersection with Majors Creek Road are complete, the Proponent shall ensure that, except in emergency situations, no project-related heavy vehicles access the site from the south or via Monga Lane.

### Traffic Management Plan

43. The Proponent shall prepare and implement a Traffic Management Plan to the satisfaction of the Secretary. The plan shall focus on traffic management along Majors Creek Road to minimise potential conflicts between road users and to ensure that the intersection of the site access road and Majors Creek Road is operating effectively. The plan must be developed in consultation with the Council and the CCC, and must be submitted for the approval of the Secretary prior to the commencement of construction of any mine-related infrastructure.

## VISUAL

### Visual Amenity and Lighting

44. The Proponent shall:
    (a) minimise the visual impacts, and particularly the off-site lighting impacts, of the project;
    (b) take all practicable measures to further mitigate off-site lighting impacts from the project; and
    (c) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting,*

    to the satisfaction of the Secretary.

### Additional Visual Mitigation Measures

45. The Proponent shall construct an amenity bund on the southern and western crest of the ROM pad as described in the EA and rehabilitate the bund in accordance with Condition 51 below.

46. Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct views of the mining operations on site, the Proponent shall implement visual mitigation measures (such as landscaping treatments or vegetation screens) on the land in consultation with the landowner. These measures must be reasonable and feasible, and directed toward minimising the visibility of the mining operations from the residence.

    If within 3 months of receiving this request from the owner, the Proponent 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.

## WASTE

### Performance Measures – Paste Fill

47A. The Proponent shall ensure that any paste fill used to fill mine voids on site:
    (a) complies with the leachable concentration (TCLP) criteria and specific contaminant concentration (SCC) criteria for general solid waste (non-putrescible); and
    (b) is not classified as a liquid waste,

    under the *Waste Classification Guidelines* (EPA, 2009), or its latest version.

### Paste Fill Trials and Testing

47B. Prior to the commencement of paste fill operations on site, the Proponent shall commission a suitably qualified expert, whose appointment has been endorsed by the Director General, to:
    (a) carry out further trials and testing to clarify the physical characteristics of the paste fill;
    (b) undertake further bench tests of the paste fill to determine the leaching characteristics;
    (c) prepare a program for the ongoing testing of the paste fill to ensure it meets the performance measures in condition 47B; and
    (d) compare the results of the additional trials and testing against the results presented in *Dargues Reef*

to the satisfaction of the Director General.

### Operating Conditions

47. The Proponent shall:
    (a) minimise the waste generated by the project;
    (b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and
    (c) manage on-site sewage treatment and disposal in accordance with the requirements of Council,

    to the satisfaction of the Secretary.

48. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Secretary. This plan must be submitted to the Secretary prior to construction.

### BUSHFIRE MANAGEMENT

49. The Proponent shall:
    (a) ensure that the project is suitably equipped to respond to any fires on-site; and
    (b) assist the emergency services as much as possible if there is a fire on-site during the project.

50. Prior to construction, the Proponent shall prepare and implement a Bushfire Management Plan for the site to the satisfaction of the Secretary. The plan must be prepared in consultation with the local Rural Fire Service.

### REHABILITATION

#### Rehabilitation Objectives

51. The Proponent shall rehabilitate the site to the satisfaction of the Secretary Industry. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA, however the:
    (a) area to be returned to native woodland vegetation must be increased further to the west of the existing Spring Creek vegetation corridor as shown in Appendix 4;
    (b) box cut must be rehabilitated to result in an outcome that is consistent with the final landform (Appendix 3); and
    (c) upper surface of the tailings storage facility must be capped with a suitable material to prevent surface water infiltration into the post-mining landform.

#### Progressive Rehabilitation

52. The Proponent shall carry out the rehabilitation of the site progressively, that is, as soon as reasonably practicable following disturbance.

#### Rehabilitation Management Plan

53. The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Secretary Industry. This plan must:
    (a) be prepared in consultation with the Department, EPA, DPI Water and the CCC;
    (b) be prepared in accordance with any relevant DRE guideline;
    (c) build, to the maximum extent practicable, on the other management plans required under this approval; and
    (d) be submitted to the Secretary Industry for approval prior to construction.

## SCHEDULE 4
## ADDITIONAL PROCEDURES

### NOTIFICATION OF LANDOWNERS

1. At least 2 months prior to carrying out any blasting on site, the Proponent shall notify in writing the owners of any privately-owned land within 2 kilometres of the approved blasting on site that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated.

2. As soon as practicable after obtaining monitoring results showing:
   (a) exceedances of the relevant criteria in Schedule 3, the Proponent shall notify the affected landowners and/or tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the project is complying with the relevant criteria again; and
   (b) exceedances of the relevant air quality criteria in Schedule 3, the Proponent shall send the affected landowners and tenants (including the tenants of any mine-owned land) a copy of the NSW Health fact sheet entitled *"Mine Dust and You"* (as may be updated from time to time).

### INDEPENDENT REVIEW

3. If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.

   If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision the Proponent shall:
   (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 project is complying with the relevant criteria in Schedule 3; and
      - if the project is not complying with these criteria then:
         - determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine towards the impact on the land; and
         - identify the measures that could be implemented to ensure compliance with the relevant criteria; and

   (b) give the Secretary and landowner a copy of the independent review.

4. If the independent review determines that the project is complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.

   If the independent review determines that the project is not complying with the relevant impact assessment criteria in Schedule 3, then the Proponent shall:
   (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until the project complies with the relevant criteria; or
   (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria,

   to the satisfaction of the Secretary.

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

### ENVIRONMENTAL MANAGEMENT

### Environmental Management Strategy

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:
   (a) be submitted to the Secretary for approval prior to construction;
   (b) provide the strategic framework for environmental management of the project;
   (c) identify the statutory approvals that apply to the project;
   (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
   (e) describe the procedures that would be implemented to:
   - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
   - receive, handle, respond to, and record complaints;
   - resolve any disputes that may arise during the course of the project;
   - respond to any non-compliance;
   - respond to emergencies; and

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

### Management Plan Requirements

2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
   (a) detailed 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;
   - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;

   (c) a description of the measures that would 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 project;
   - effectiveness of any management measures (see c above);

   (e) a contingency plan to manage any unpredicted impacts and their consequences;
   (f) a program to investigate and implement ways to improve the environmental performance of the project over time;
   (g) a protocol for managing and reporting any:
   - incidents;
   - complaints;
   - non-compliances with statutory requirements; and
   - exceedances of the impact assessment criteria and/or performance criteria; and

   (h) a protocol for periodic review of the plan.

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

### Annual Review

3. By the end of each year following the commencement of construction, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:
   (a) describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;
   (b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the
   - the relevant statutory requirements, limits or performance measures/criteria;
   - the monitoring results of previous years; and
   - the relevant predictions in the EA;

   (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;
   (d) identify any trends in the monitoring data over the life of the project;

(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

**Revision of Strategies, Plans and Programs**

4. Within 3 months of:
   (a) the submission of an annual review under Condition 3 above;
   (b) the submission of an incident report under Condition 6 below;
   (c) the submission of an audit report under Condition 8 below; and
   (d) any modification to the conditions of this approval, (unless the conditions require otherwise),

   the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.

   Where this review leads to revisions in any such document, then within 4 weeks of the review, the revised document must be submitted to the Secretary for approval.

   *Note: This condition ensures that strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.*

**Community Consultative Committee**

5. The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Secretary and in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version). This CCC must be operating at least 3 months prior to the commencement of construction on site.

   *Notes:*
   - *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and*
   - *The Committee should be comprised of an independent chair and appropriate representation from the Proponent, Council, one representative from ESC, recognised environmental groups and the local community.*

**REPORTING**

**Incident Reporting**

6. The Proponent shall notify the Secretary and any other relevant State and local government authorities of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.

**Regular Reporting**

7. The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

**INDEPENDENT ENVIRONMENTAL AUDIT**

8. Within 3 months of re-commencing construction on the site, and every 2 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be 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;
   (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
   (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
   (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals.

   *Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary, including (at least) an independent expert in surface water management.*

9. Within 6 weeks of the completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

### ACCESS TO INFORMATION

10. Prior to the commencement of construction on site, the Proponent shall:

(a) make copies of the following publicly available on its website:
  - the documents referred to in Condition 2 of Schedule 2;
  - all current statutory approvals for the project;
  - all approved strategies, plans and programs required under the conditions of this approval;
  - the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;
  - a complaints register, updated on a monthly basis;
  - minutes of CCC meetings;
  - the annual reviews of the project;
  - any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit;
  - any other matter required by the Secretary;
  - any incident report referred to in Condition 6 of Schedule 5;
  - a certificate of currency of public liability insurance held by the Proponent as in force from time to time; and

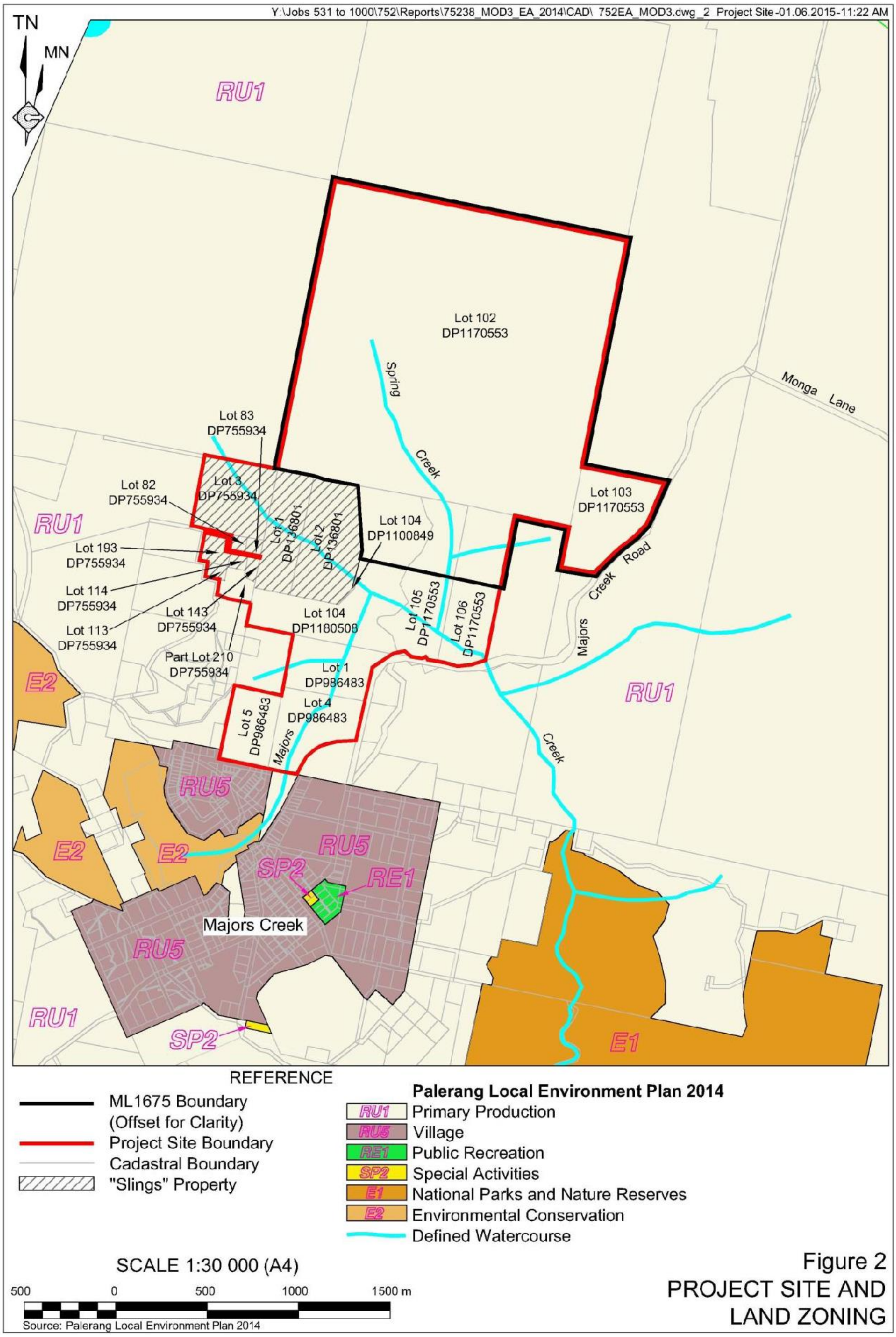
(b) keep this information up-to-date, within a reasonable period, and in any event no later than 28 days after the above information becomes available,

to the satisfaction of the Secretary.

## APPENDIX 1
## SCHEDULE OF LAND

| RWC (2010a) Folio Number | | Revised/Additional Folio Number | | Ownership |
|---|---|---|---|---|
| **Lot** | **DP** | **Lot** | **DP** | |
| 102 | 755934 | 102 | 1170553 | Dargues Gold Mine Limited |
| 1021 | 1127185 | 103 | 1170553 | |
| 2 | 986483 | 105 | 1170553 | |
| 3 | 986483 | 106 | 1170553 | |
| 104 | 1100849 | 104 | 1180508 | |
| 1 | 986483 | 1 | 986483 | |
| 4 | 986483 | 4 | 986483 | |
| 5 | 986483 | 5 | 986483 | |
| Part 210 | 755934 | Part 210 | 755934 | B&C James |
| | | 104 | 1100849 | Dargues Gold Mine Limited |
| | | 1 | 136801 | |
| | | 2 | 136801 | |
| | | 3 | 755934 | |
| | | 82 | 755934 | |
| | | 83 | 755934 | |
| | | 113 | 755934 | |
| | | 114 | 755934 | |
| | | 143 | 755934 | |
| | | 193 | 755934 | Crown Land |

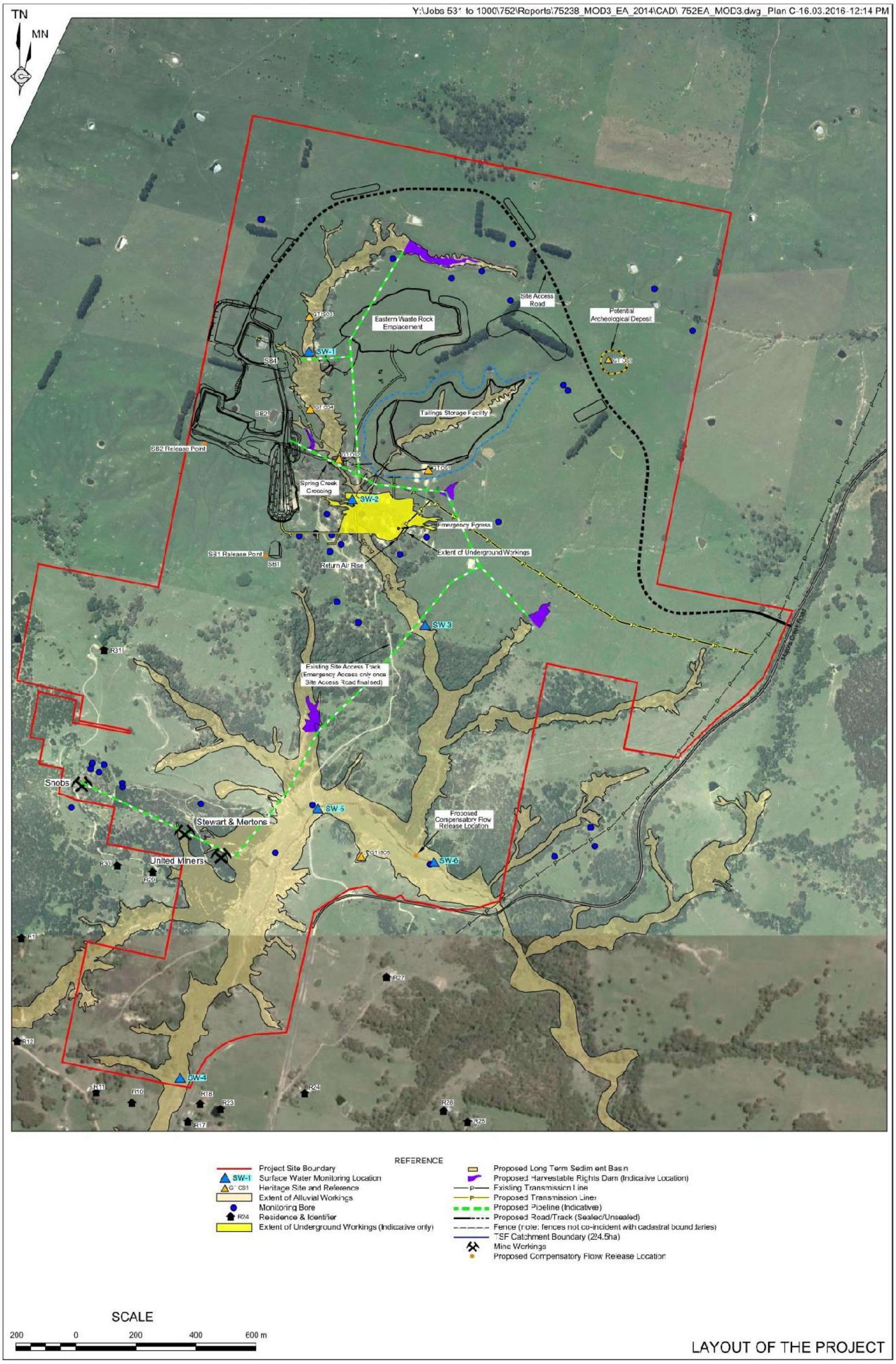
Source: Big Island Mining Pty Ltd (2015)



Source: Palerang Local Environment Plan 2014

Figure 2
PROJECT SITE AND LAND ZONING

# APPENDIX 2
# PROJECT LAYOUT PLANS



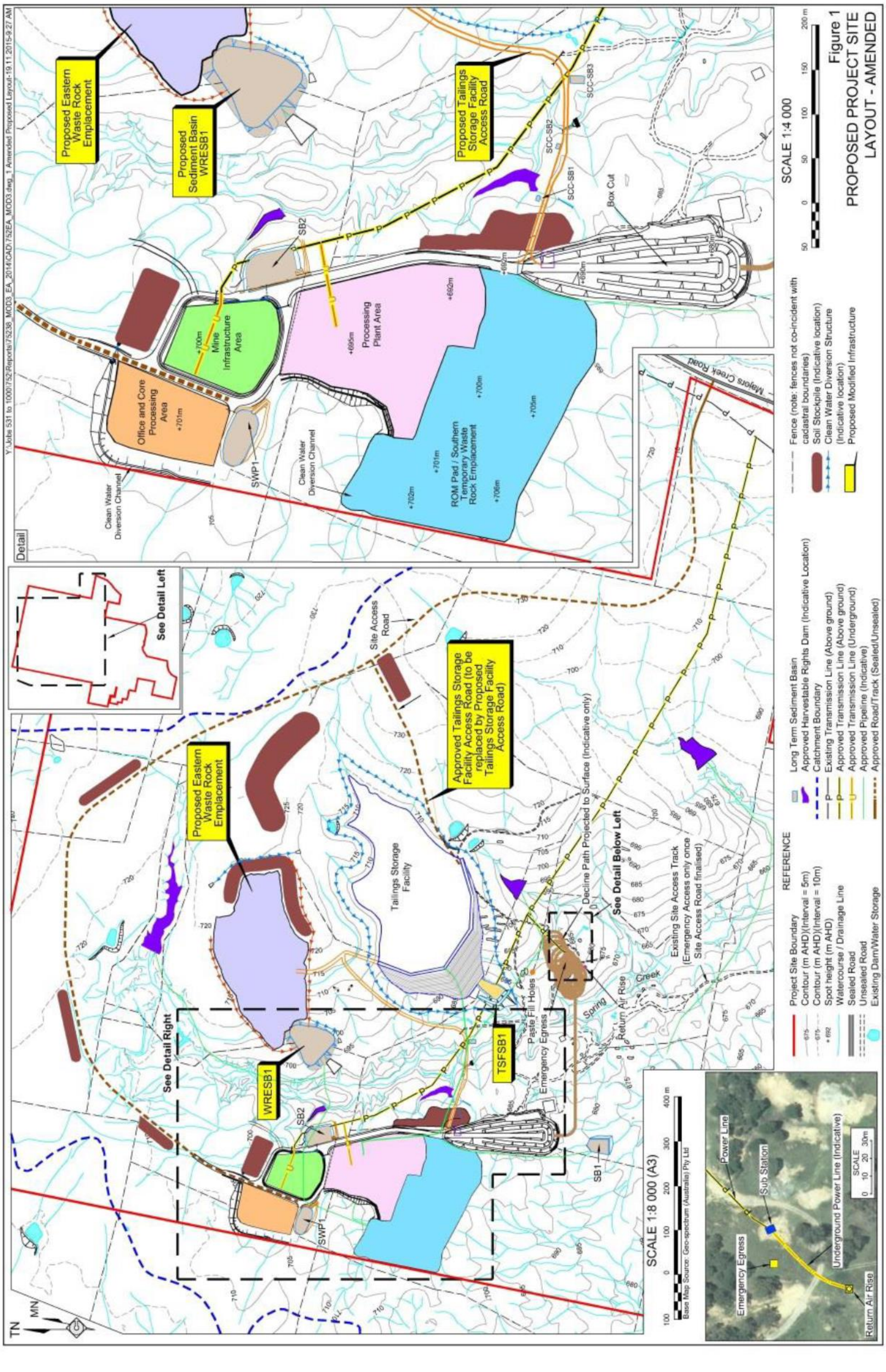


Figure 1
PROPOSED PROJECT SITE LAYOUT - AMENDED

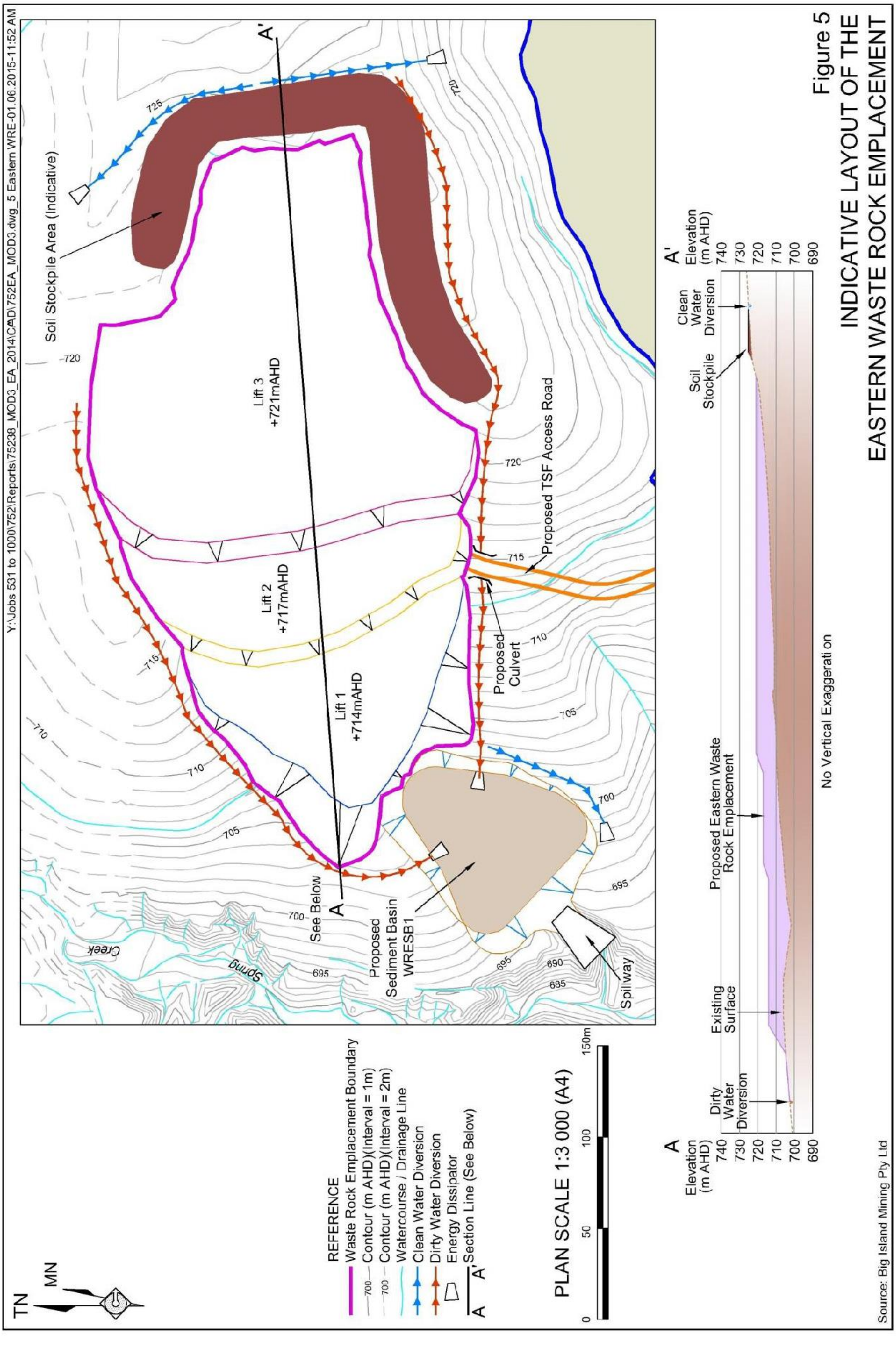
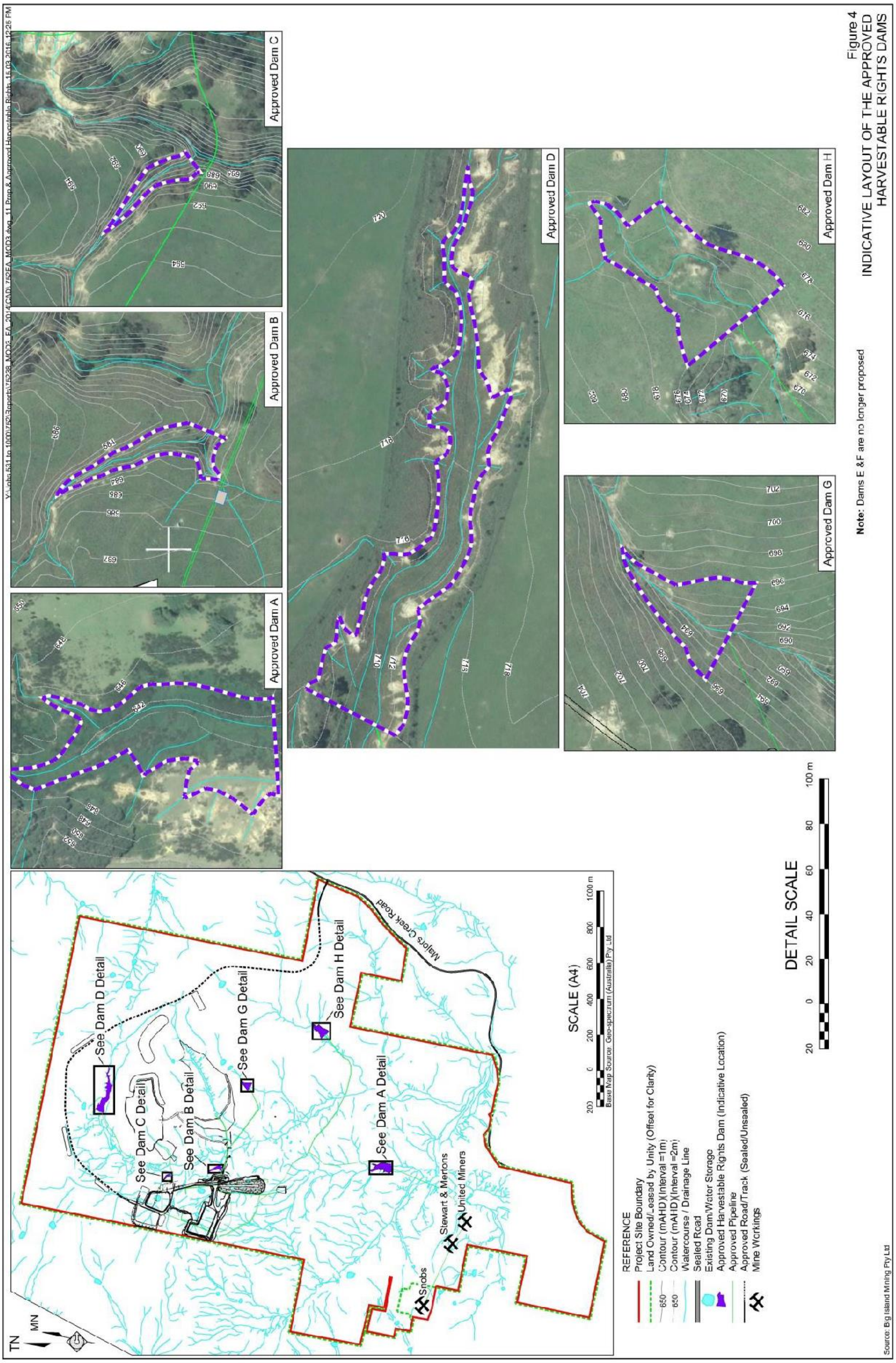


Figure 5
INDICATIVE LAYOUT OF THE EASTERN WASTE ROCK EMPLACEMENT

Source: Big Island Mining Pty Ltd



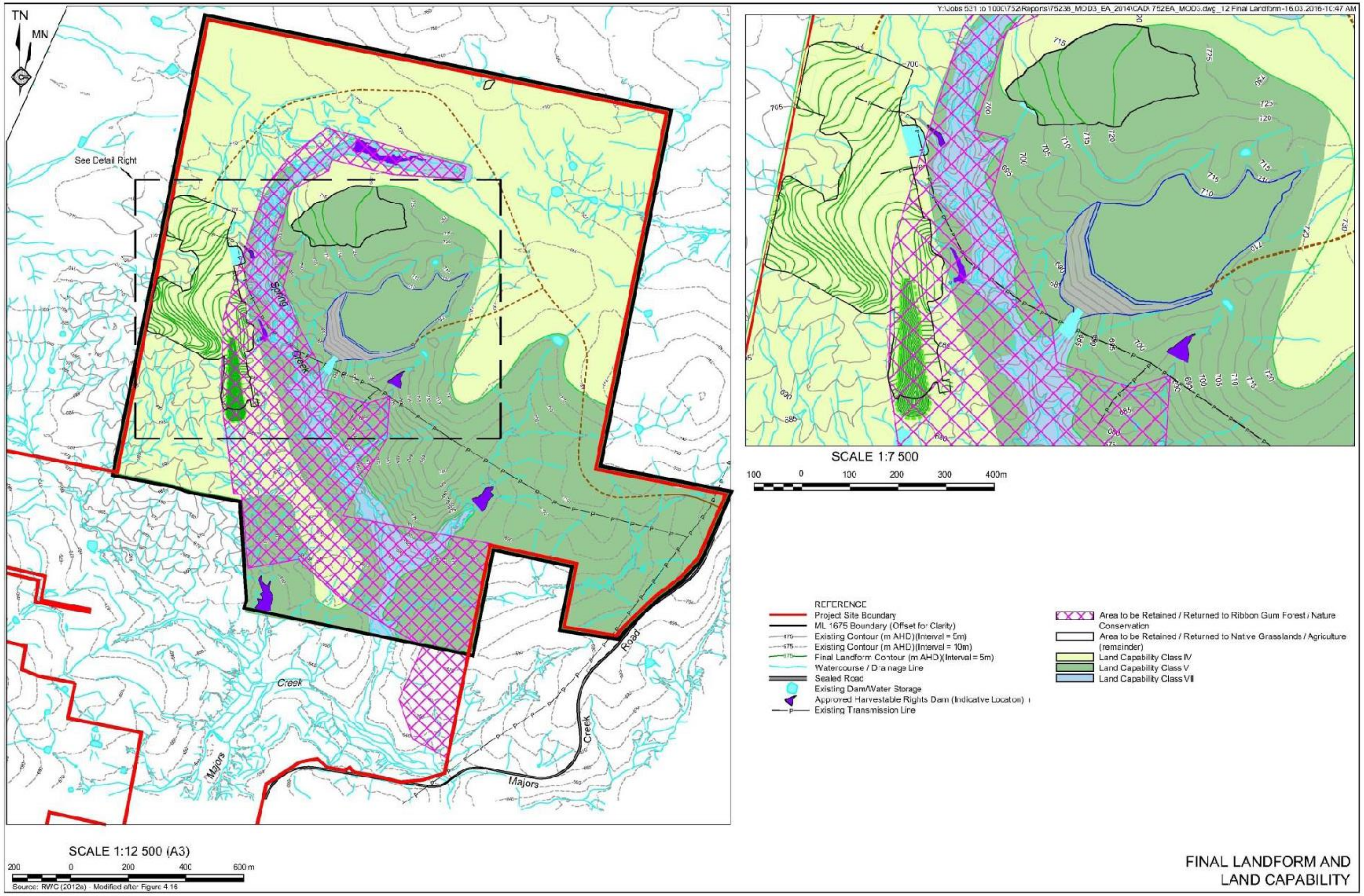
Base Map Source: Geo-spectrum (Australia) Pty Ltd

**Note**: Dams E &F are no longer proposed

Source: Big Island Mining Pty Ltd

Figure 4
INDICATIVE LAYOUT OF THE APPROVED HARVESTABLE RIGHTS DAMS

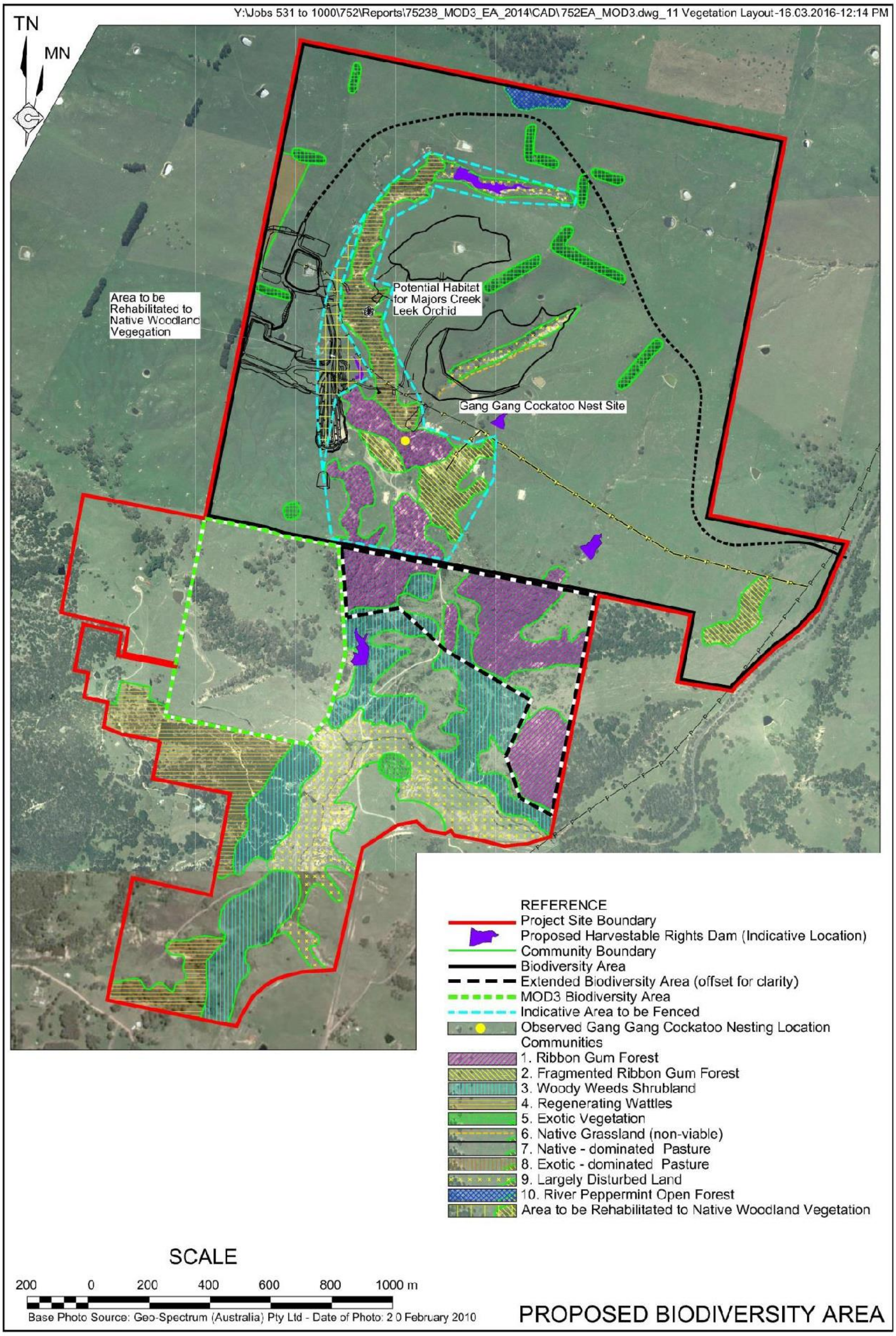
# APPENDIX 3
# INDICATIVE FINAL LANDFORM



FINAL LANDFORM AND
LAND CAPABILITY

Source: RWC (2012a) – Modified after Figure 4.16

## APPENDIX 4
## BIODIVERSITY OFFSET STRATEGY



Base Photo Source: Geo-Spectrum (Australia) Pty Ltd - Date of Photo: 2 0 February 2010

PROPOSED BIODIVERSITY AREA

# APPENDIX 5
# STATEMENT OF COMMITMENTS

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **2 AREA OF ACTIVITIES** | | |
| All approved activities are undertaken generally in the location(s) nominated on the figures shown in Sections 2 and 4. | 2.1 Mark, and where appropriate, survey the boundaries of the areas of proposed disturbance. | Prior to the commencement of the relevant activity. |
| **4 NOISE AND BLASTING** | | |
| Noise generated by operational activities does not exceed EPA nominated criteria nor significantly impacts on neighbouring landowners and/or residents. | **Site Establishment Noise Controls** | Continuous during site establishment operations. |
| | 4.2 Maintain the on-site road network to limit body noise from empty trucks travelling on internal roads. | |
| | 4.3 Maintain an open dialogue with the surrounding community and neighbours to ensure any concerns over noise or vibration are addressed. | |
| | **Operational Noise Controls** | Prior to and continuous during mining operations. |
| | 4.4 Place and operate the crusher within an enclosure engineered to achieve a noise reduction of at least 12dB. | |
| | 4.5 Ensure that the grinding circuit is rubber lined. | |
| | 4.6 Place and operate the ventilation fan at least 10m below ground level rather than at the surface. The interim ventilation fan would be placed within the deepest section of the box cut until the final fan is commissioned. The interim fan may be retained as a backup ventilation system in the event of failure of the final fan. | |
| | 4.9a Ensure that Frequency Modulated Reversing Alarms are fitted to all mobile equipment that require such alarms. | Continuous during the life of the Project |
| All activities are undertaken in such a manner as to reduce the noise level generated and minimise impacts on surrounding landholders and/or residents. | 4.11 Ensure, where practicable, that all Project employees and contractors enter and exit the Project Site in a courteous manner and without causing undue traffic noise. | Continuous during transportation operations. |

<table>
<tr><th>Desired Outcome</th><th>Commitment</th><th>Timing</th></tr>
<tr><td colspan="3"><b>4 NOISE AND BLASTING (Cont'd)</b></td></tr>
<tr><td rowspan="5">All activities are undertaken in such a manner as to reduce the noise level generated and minimise impacts on surrounding landholders and/or residents.</td><td><b>Other Noise and Vibration Controls</b><br>4.14 Ensure that equipment with lower sound power levels is used in preference to more noisy equipment.</td><td rowspan="5">Continuous during mining operations.</td></tr>
<tr><td>4.15 Maintain an open dialogue with the surrounding community and neighbours to ensure any concerns over noise or vibration are addressed.</td></tr>
<tr><td>4.16 Ensure that the noise generated by the project does not exceed the criteria below on more than 25% of land within the Majors Creek State Conservation Area.
<table>
<tr><th rowspan="2"><i>Day</i><br><i>LAeq</i> (15min)</th><th rowspan="2"><i>Evening</i><br><i>LAeq</i> (15min)</th><th colspan="2"><i>Night</i></th></tr>
<tr><th><i>LAeq</i> (15min)</th><th><i>LA1</i> (1 min)</th></tr>
<tr><td>35</td><td>35</td><td>35</td><td>45</td></tr>
</table>
Note: Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy</td></tr>
<tr><td>4.17 Ensure that the blasting on site does not cause exceedances of the criteria in the table below.
<table>
<tr><th><i>Airblast overpressure (dB(Lin Peak))</i></th><th><i>Ground vibration (mm/s)</i></th><th><i>Allowable exceedance</i></th></tr>
<tr><td>120</td><td>10</td><td>0%</td></tr>
</table>
Note: All blasts are to be designed by a suitably qualified and experienced blasting engineer.</td></tr>
<tr><td colspan="3"><b>5 ECOLOGY</b></td></tr>
<tr><td rowspan="3">Management of disturbance within the Project Site to minimise impact on fauna of conservation value.</td><td>5.1 Ensure that, with the exception of the Return Air Rise, Fresh Air Rise and associated infrastructure, no ground disturbing activities are undertaken within areas of identified Ribbon Gum Forest and Fragmented Ribbon Gum Forest.</td><td rowspan="3">Continuous during the life of the project.</td></tr>
<tr><td>5.1a Implement reasonable and feasible measures to ensure that fauna, including birds, do not enter the Tailings Storage Facility and monitor the facility for such use.</td></tr>
<tr><td>5.1b Conduct annual late winter surveys for the presence of active Little Eagle nests within the project site for the life of the Project. In the event that one or more nests are identified, prepare and implement an appropriate management plan in consultation with OEH.</td></tr>
</table>

| **Desired Outcome** | **Commitment** | **Timing** |
|---|---|---|
| **5 ECOLOGY (Cont'd)** | | |
| Maintenance and improvement of the biodiversity value of the Project Site and surrounding areas. | 5.2 Avoid the use of phosphate-based fertiliser in pasture areas to encourage the regeneration of native grasses. | Continuous during the life of the Biodiversity Strategy. |
| | 5.3 Manage grazing operations, including stocking rates and fencing, in a manner to sustain and facilitate the spread of native grass species. | |
| | 5.4 Fence all areas of Ribbon Gum Forest and Fragmented Ribbon Gum Forest to exclude stock. | |
| | 5.4a Manage all areas of Ribbon Gum Forest and Fragmented Ribbon Gum Forest to maintain to improve biodiversity values. | |
| | 5.5 Ensure that areas of habitat suitable for the Majors Creek Leek Orchid are appropriately identified and fenced with a 20m buffer and access restricted. Ensure no disturbance occurs within the fenced areas. | |
| | 5.6 Prepare a management plan to ensure that Common Wombat are not harmed during establishment of the tailings storage facility. This plan may include the following.<br>– Mark all wombat burrows prior to the commencement of ground disturbing activities.<br>– Commence ground disturbing activities on the upper slopes of creek banks a few days before disturbing the identified hollows to allow individual wombats time to vacate their burrows at night when equipment is not operating.<br>– Inspect all burrows to ensure that common wombats have vacated the proposed area of disturbance.<br>– Any remaining wombats would be relocated in consultation with a suitably qualified and experienced wildlife carer, fauna ecologist and/or local wombat expert. | |
| | 5.8 Ensure that dead fallen and standing timber are not removed or disturbed to preserve fauna habitat. | |

| **Desired Outcome** | | **Commitment** | **Timing** |
|---|---|---|---|
| **5 ECOLOGY (Cont'd)** | | | |
| Maintenance and improvement of the biodiversity value of the Project Site and surrounding areas. (Cont'd) | 5.9a | Identify and implement an offsite biodiversity strategy that would:<br>– ensure the protection and enhancement of a minimum of 35.5ha of Tableland Basalt Forest in similar condition to that community within the project site;<br>– include a Biodiversity Offset Area within the vicinity of the project site but outside the area of predicted groundwater drawdown;<br>– be implemented in perpetuity; and<br>– be described in the Biodiversity Management Plan for the project, as amended.<br>Alternatively, ensure that funding to an equivalent amount that would have been required under the abovementioned offsite Biodiversity Offset Strategy is made available in perpetuity for the management of Tableland Basalt Forest matters in the vicinity of the project site. | Within 12 months of the commencement of construction. |
| | 5.9b | Extend the offset strategy to be implemented under conditions 32 and 33 in schedule 3 of the Project Approval as follows:<br>– the extended biodiversity offset area will be as described in the following table and as shown in Appendix 4;<br>– those portions of the approved Biodiversity Areas identified in Appendix 4 (**Combined Biodiversity Offset Area**) as either Ribbon Gum Forest or Fragmented Ribbon Gum Forest, or any area within the Combined Biodiversity Offset Area where it is appropriate to re-establish the Endangered Ecological Community Tableland Basalt Forest, will be managed in a manner that would ensure the regeneration of that community; and<br>– the remainder of the Combined Biodiversity Area, where appropriate, will be managed in a manner that would ensure the regeneration of native grassland which is consistent with the Natural Temperate Grassland EEC. | Continuous during the life of the Project. |

<table>
<tr><th>Desired Outcome</th><th>Commitment</th><th>Timing</th></tr>
<tr><td colspan="3"><b>5 ECOLOGY (Cont’d)</b></td></tr>
<tr><td rowspan="2">Maintenance and improvement of the biodiversity value of the Project Site and surrounding areas. (Cont’d)</td><td><i>Table: Extended Biodiversity Offset Area</i><table><tr><th>Community Type</th><th>Area (ha)</th></tr><tr><td>Ribbon Gum Forest*</td><td>17.8 ha</td></tr><tr><td>Woody Weeds Shrubland</td><td>2.3 ha</td></tr><tr><td>Native – dominated pasture</td><td>8 ha</td></tr><tr><td><b>TOTAL</b></td><td><b>28.1</b></td></tr><tr><td colspan="2">* Listed as an EEC under the Threatened Species Conservation Act, 1995</td></tr></table></td><td>Continuous during the life of the Project.</td></tr>
<tr><td>5.10 Prepare a Biodiversity Management Plan in consultation with the relevant government agencies and the community consultative committee. That plan would:<br>– specify biodiversity-related actions to be undertaken during the life of the Project and for several years after the site has been decommissioned;<br>– incorporate the above commitments;<br>– include a program to determine the condition of Araluen Scarp Grassy Forest EEC adjacent to Majors Creek within the Majors Creek State Conservation Area, including ongoing monitoring:<br>– include a program to identify any groundwater dependent (phreatophytic) vegetation within and outside the zone of groundwater drawdown, including an assessment of soil moisture;<br>– specify that the required monitoring of phreatophytic vegetation should include pre-dawn measurement of water potential and transpiration by means of porometry at a series of measurement sites across the drawdown cone (not limited to the project site, but at 2 metres at the outermost). Monitoring to include monitoring of bore depth and rainfall, at least 4 times a year in August, November, January and March;<br>– include a program to identify and monitor stygofauna within and surrounding the project site, including a program to collate onsite baseline data utilising the existing groundwater monitoring network;</td><td>Within 12 months of the commencement of construction.</td></tr>
</table>

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **5 ECOLOGY (Cont'd)** | | |
| Maintenance and improvement of the biodiversity value of the Project Site and surrounding areas. (Cont'd) | – describe management of the proposed biodiversity area(s);<br>– require the collection, appropriate storage and recording of native seed within the project site to supply amelioration and rehabilitation activities;<br>– describe the proposed revegetation and amelioration program, including identification of areas to be revegetated/ameliorated and the species to be used; and<br>– involve, where practicable, local community groups in management of biodiversity with in the Project Site. | Within 12 months of the commencement of construction. |
| | 5.11 Construct the proposed water pipelines in a manner that would not disturb any Ribbon Gum Forest nor any vegetation over 3m height. | During pipeline construction. |
| | 5.13 Ensure that all in-ground infrastructure in the vicinity of living native trees that comprise a component of the Ribbon Gum Forest or Fragmented Ribbon Gum Forest are installed in accordance with AS4970-2009 – Protection of Trees on Development Sites. In particular, ensure that such infrastructure is installed outside any Tree Protection Zone established by the standard. | During construction of in-ground infrastructure. |
| **6 GROUNDWATER** | | |
| Compensate for anticipated reduced groundwater discharges to surface water. | 6.3 Release water sourced primarily from the harvestable rights dams at the rates identified in **Table 4.20** of the *Environmental Assessment* into Majors Creek at the confluence of Majors and Spring Creeks. These environmental discharges are to continue from the commencement of mining operations until the loss of baseflow is negligible, as determined under condition 22 in schedule 3 of the Project Approval. | From commencement of mining operations until the loss of baseflow is negligible, as determined under condition 22 in schedule 3 of the Project Approval. |
| | 6.4a Ensure that water extracted from the historic workings is used for mining-related and compensatory release purposes only. Any release of water from the historic workings for the purpose of compensatory release will comply with the trigger levels identified in the protocol referred to in condition 31(a) in schedule 3 of the Project Approval that is required to be contained in the Surface and Ground Water Response Plan. | Continuous during the Life of the Project. |

| Desired Outcome | Commitment | | Timing |
|---|---|---|---|
| **6 GROUNDWATER (Cont'd)** | | | |
| Confirm the accuracy of the groundwater model and anticipated impacts. | 6.4d | Undertake, in consultation with NOW, a pump test to confirm the assumed hydrological parameters used in the groundwater model. The pump test should be in the vicinity of the mine where the fracture density and hydraulic conductivity is likely to be high. | As soon as practicable and during the life of the Project. |
| | 6.4e | Undertake a review of the numerical groundwater model, including:<br>– further detailed baseline data inputs, as required by the conditions of the approval;<br>– a statistical comparison of the Braidwood and Majors Creek rainfall data to determine the significance of choice of input;<br>– rain fall data from the weather station within the project site (if determined to be relevant):<br>– pumping tests of relevant bores;<br>– a comprehensive sensitivity and uncertainty analysis of groundwater model outputs;<br>– measurement of baseflow in Majors and Spring Creeks; and<br>– investigation of the water quality arising from the mine backfilling including modelling of dissolution associated with changes in hydrology, groundwater flow and the nature of the aquifer matrix.<br>In the event that the actual impacts are significantly greater than those presented in AGE (2010), then the Proponent would consult with NOW in relation the revised modelling results and would develop appropriate management and mitigation measures to address those impacts | Prior to commencement of mining operations and every two years following commencement of those operations. |
| Minimisation of groundwater contamination. | 6.5 | Store all hydrocarbon and chemical products within a bunded area complying with the relevant Australian Standard. | Continuous during the life of the Project. |
| | 6.6 | Refuel all equipment within designated, sealed areas of the Project Site, where practicable. | |

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **6 GROUNDWATER (Cont'd)** | | |
| Minimisation of groundwater contamination. (Cont'd) | 6.7 Undertake all maintenance works involving hydrocarbons, where practicable, within designated areas of the Project Site such as the maintenance workshop. | Continuous during the life of the Project. |
| | 6.8 Direct all water from wash-down areas and workshops to oil/water separators and containment systems. | |
| | 6.11 Ensure that the upper surface of the proposed Tailings Storage Facility is capped with a suitable clay or artificial liner in consultation with the relevant government agency. | During rehabilitation operations. |
| | 6.12 Cap the tailings storage facility during final shaping and rehabilitation to minimise the potential for infiltration of surface water into the facility. The nature of the cap is to be determined in consultation with the relevant government agencies during preparation of the *Rehabilitation Management Plan*. | During final rehabilitation. |
| Ensure that the properties of the paste are appropriately understood and managed. | 6.13 Undertake further testing of the tailings material to confirm the results of test work undertaken prior to the commencement of mining operations and the proposed paste fill operational, management and mitigation measures. | Following commencement of processing operations and prior to the commencement of paste fill operations. |
| **7 SURFACE WATER** | | |
| Minimise the volume of water required to be used for mining-related purposes. | 7.2 Ensure that the site access road is treated using chemical dust suppressants or similar to ensure that regular watering is not required. | Continuous during the life of the Project. |
| Prevention of contamination of surface waters. | **Water Quality Measures**<br>7.19 Ensure that no low grade ore material is used to construct the ROM Pad or is stored in areas where potentially low-pH leachate may flow to natural drainage. | Continuous during the life of the Project. |
| | 7.20 Ensure waste rock material to be used during site establishment operations is tested for acid generation potential and any potentially acid generating material is appropriately managed. | |

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **7 SURFACE WATER (Cont'd)** | | |
| Prevention of contamination of surface waters. | 7.21 Ensure that all water with the potential to contain processing reagents, hydrocarbons, other chemicals or lowered pH is contained within a bunded Contaminated Water Management Area and that all surface waters within the that area retained and pumped to the Process Water Tank for use within the processing plant. | Continuous during the life of the Project. |
| **8 ABORIGINAL HERITAGE** | | |
| Site activities are undertaken without impacting upon any Aboriginal heritage items. | 8.3 If items of suspected Aboriginal heritage significance are identified throughout the life of the Project, the following procedures would be implemented.<br>– **Step 1 –** No further earth disturbing works would be undertaken in the vicinity of the suspected item of Aboriginal heritage significance.<br>– **Step 2 –** A buffer of 20m x 20m would be established around the suspected item of Aboriginal heritage significance. No unauthorised entry or earth disturbance would be allowed with this buffer zone until the area has been assessed.<br>– **Step 3 –** A qualified archaeologist or the OEH would be contacted to make an assessment of the discovery and prepare an assessment report, including recommended mitigation measures. The draft report would then be provided to representatives of the local Aboriginal community (including registered Aboriginal stakeholders identified during the preparation of the EA and subsequently) by way of consultation in accordance with the requirements of Stage 4 of *Aboriginal cultural heritage consultation requirements for proponents – April 2010* (or subsequent versions). | Continuous during the life of the Project. |
| | 8.4a Consult with the local Aboriginal community representatives in relation to sites or items of actual or suspected Aboriginal heritage significance and ways in which the Proponent and community can work co-operatively for the benefit of both. | |

| **Desired Outcome** | **Commitment** | **Timing** |
|---|---|---|
| **10 TRAFFIC AND TRANSPORTATION** | | |
| Achieve safe and efficient transport operations. | 10.6 Establish a speed limit of 40km/hr on the site access road for heavy vehicles, 60km/hr for light vehicles and 20km/hr for all vehicles in the operational sections of the Project Site. | During site establishment operations. |
| | 10.8 Develop and enforce a Code of Conduct for all drivers for all heavy vehicles that travel to and from the Project Site regularly. The Code of Conduct would stipulate safe driving practices must be maintained at all times. The code would also include specific requirements for practices to be adopted during periods of fog, such use of headlights / fog lights and adopting vehicle speeds appropriate to the conditions as required, as well as limiting noisy driving practices in the vicinity of residences. | |
| **12 VISUAL AMENITY** | | |
| Limit the visibility of operational areas from nearby residences and Majors Creek Road. | 12.3 Continuation of the existing tree planting program to limit views of the Project Site from areas to the southwest, south and southeast of the Project Site. | During progressive rehabilitation operations. |
| | 12.4 Construction of the processing plant and other infrastructure within the Project Site from non-reflective, neutral-coloured material. | During site establishment operations. |
| | 12.6 Consider any reasonable request by a potentially affected resident for assistance to create a visual screen adjacent to their residence through planting of fast growing vegetation and/or landscaping where such a screen would effectively reduce the visual impact of the Proponent's activities during the life of the Project. | Continuous during the life of the Project. |
| **13 SOILS AND LAND CAPABILITY** | | |
| Maintenance of soil value for rehabilitation and minimisation of soil loss through erosion. | 13.1 Strip soil materials to the depths identified in Table 2.2 of the *Environmental Assessment*. | During site establishment operations. |
| | 13.2 Strip soil materials only when they are moderately moist to preserve soil structure. | |
| | 13.3 Stockpile topsoil and subsoil materials separately. | |
| | 13.4 Construct soil stockpiles as low, flat, elongated mounds on slopes of less than 1:10 (V:H). Topsoil stockpiles would be less than 2m high and subsoil stockpiles would be less than 3m high. | |

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **13 SOILS AND LAND CAPABILITY (Cont'd)** | | |
| Maintenance of soil value for rehabilitation and minimisation of soil loss through erosion. (Cont'd) | 13.5 Ensure that soil stockpiles and rehabilitated areas achieve a 70% vegetative cover within 10 days of formation. This may be achieved through use of recycled organic material. | During site establishment operations. |
| Maximising the potential for successful rehabilitation of disturbed sections of the Project Site. | 13.6 Place soil material in areas to be rehabilitated in the same stratigraphic order in which they were removed. Topsoils of one soil landscape unit may be mixed with topsoils soils of the other landscape unit. Similarly, subsoils of one soil landscape unit may be mixed with subsoils soils of the other landscape unit. | During rehabilitation operations. |
| **14 SOCIO-ECONOMIC** | | |
| Maximise the positive impacts and minimise any actual or perceived adverse impacts on the social fabric or facilities available to the community surrounding the Project Site. | 14.1 Engage each of the communities surrounding the Project Site in regular dialogue in relation to the proposed and ongoing operation of the Project and maintain an "open door" policy for any member of those communities who wishes to discuss any aspect of the Project. | Prior to, during and following the life of the Project. |
| | 14.2 Proactively and regularly consult with those residents most likely to be adversely impacted by the Project, particularly those within the Majors Creek and Araluen Communities. | |
| | 14.3 Continue to support community organisations, groups and events, as appropriate, and review any request by a community organisation for support or assistance throughout the life of the Project. Particular emphasis would be placed on providing support to those organisations, groups or events that service the communities in Majors Creek, Araluen or Braidwood. | |
| | 14.4 Form and maintain a Community Consultative Committee (CCC), including representative members of the community, Palerang Council and one representative from Eurobodalla Shire Council. It is noted that the Proponent has previously consulted with the Majors Creek Community Liaison Committee. The Proponent would continue to do so, either as part of the CCC or separately | |

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **14 SOCIO-ECONOMIC (Cont'd)** | | |
| Maximise the positive impacts and minimise any actual or perceived adverse impacts on the social fabric or facilities available to the community surrounding the Project Site. (Cont'd) | 14.6 Advertise and maintain a community Information line 1800 732 002. | Prior to, during and following the life of the Project. |
| | 14.7 Give preference when engaging new employees, where practicable, to candidates who are part of the Majors Creek, Araluen or Braidwood communities over candidates with equivalent experience and qualifications based elsewhere and ensure that the mining and other contractors do so as well. | |
| | 14.8 Encourage the involvement of the local Aboriginal community in the workforce. | |
| | 14.9 Encourage and support participation of locally based employees and contractors in appropriate training or education programs that would provide skills and qualifications that may be of use to encourage and further develop economic activity within the surrounding communities following completion of the Project. | |
| | 14.10 Give preference, where practicable, to suppliers of equipment, services or consumables located within the Palerang LGA. | |
| | 14.11 Assist community members and others, as appropriate, to establish complimentary businesses within the Palerang LGA where those businesses would provide a benefit to the community through increased economic activity or development. | |
| | 14.12 Assist Palerang Council to promote and encourage economic development that would continue beyond the life of the Project. | |
| | 14.13 Ensure that infrastructure and services installed for the Project, including the electricity transmission facilities, road improvements and water supply bores, remain available for alternative uses during and/or following completion of the Project. | |
| | 14.14 Encourage and support, in consultation with the local community, the provision of services to the community. These may include health, education, transportation and other services. | |
| | 14.16 Ensure that the land capability of those sections of the final landform to be used for agricultural purposes is similar to the current land capability. | |

| **Desired Outcome** | **Commitment** | **Timing** |
|---|---|---|
| **15 ENVIRONMENTAL MONITORING** | | |
| Ongoing monitoring and reporting of Project-related environmental impacts. | 15.7 Monthly monitoring in the laboratory of groundwater in the bores, exploration holes and workings identified in **Table 4.21** of the *Environmental Assessment* for the following parameters.<br>– Alkalinity.<br>– Major cations and anions.<br>– Nutrients – (ammonia, nitrate, nitrite).<br>– Metals – (iron, lead, chromium, cadmium, zinc, arsenic, copper and nickel).<br>Collection of those samples for laboratory analysis will reasonably coincide with the surface monitoring as described in commitment 15.12. | Prior to, during and following the life of the Project until relevant government agencies agree that further monitoring is not required. |
| | 15.11A The monitoring program to be prepared as part of the Groundwater Monitoring Program pursuant to condition 30(d) in schedule 3 of the approval is to be a monitoring program during the life of the project and until the conclusion of rehabilitation, where appropriate. | During the life of the project and until the conclusion of rehabilitation, where appropriate. |
| | **Surface Water**<br>15.12 Undertake monthly surface water monitoring at the following locations (**Figure 4.3** of the EA).<br>– Location 1 – Majors Creek upstream of the confluence of Spring & Major's Creek.<br>– Location 2 – Majors Creek downstream of the confluence of Spring & Major's Creek.<br>– Location 3 – downstream of the tailings storage facility. It is noted that this sampling location would be incorporated into the Tailings Management Plan.<br>– Location 4 – Spring Creek downstream of main Project infrastructure and sediment basin outlets.<br>– At a range of locations downstream of the Majors Creek State Conservation Area.<br>– Discharge point for the compensatory flows (sampling to be undertaken initially daily for the first three months of the program, with the frequency to be increased in consultation with the relevant government agency after that period). | Prior to, during and following the life of the Project. |

| **Desired Outcome** | **Commitment** | **Timing** |
|---|---|---|
| **15 ENVIRONMENTAL MONITORING (Cont'd)** | | |
| Ongoing monitoring and reporting of Project-related environmental impacts. (Cont'd) | 15.12A The monitoring program to be prepared as part of the Surface Water Monitoring Program pursuant to condition 29(d) in schedule 3 of the approval is to include a program to monitor pH and electrical conductivity, in real time, from at least three locations, including locations within and downstream of the tailings storage facility. | Prior to, during and following the life of the Project. |
| | 15.12B Install two gauging stations on Majors Creek, one upstream and one downstream of the confluence with Spring Creek, capable of continuous measurement of stream flow. | |
| | 15.12C The Water Management Plan should include provision for:<br>– the installation of a V-notch weir on Spring Creek downstream of the mine and below the confluence with a major gully coming in from the east (approximate coordinates 749275E, 6064175N (MGA, Zone 56));<br>– the investigation of the hydrogeology of the tailings storage facility and the installation of monitoring bores around the tailings storage facility;<br>– the installation of a monitoring bore to the south-east where the sensitivity analysis indicates a possible extension of the 1m drawdown contour (approximate coordinates: depending on landholder approval – 750900E, 6064100N (MGA, Zone 56), or alternative location within the project site – 750350E, 6064550N (MGA, Zone 56));<br>– the installation of monitoring bores DRWB 09 and DRWB 10;<br>– the installation of a pair of bores adjacent to Spring Creek at the mapped intersection of the dominant lineament (fault) trending south east towards and along Majors Creek (approximate coordinates 749350E, 6064175N (MGA, Zone 56)). | Within 12 months of the commencement of construction. |

| **Desired Outcome** | **Commitment** | **Timing** |
|---|---|---|
| **15 ENVIRONMENTAL MONITORING (Cont'd)** | | |
| Ongoing monitoring and reporting of Project-related environmental impacts. (Cont'd) | 15.13A The monitoring program to be prepared as part of the Surface Water Monitoring Program pursuant to condition 29(d) in schedule 3 of the approval is to be a monitoring program during the life of the project and until the conclusion of rehabilitation, where appropriate. | During the life of the project and until the conclusion of rehabilitation, where appropriate. |
| | **Notification**<br>15.13B The protocol for the investigation, notification and mitigation of any exceedances of the surface water, stream health and groundwater assessment criteria, which is to be included in the Surface and Ground Water Response Plan (condition 31(b) in schedule 3 of the approval), is to include provision for the notification of ESC of any such exceedances within 7 days of the exceedance being detected, and subsequently, once an appropriate response has been identified with the relevant government agencies, any other water user downstream of the Project Site who registers their interest to be notified.<br>**Water Management Plan (incorporating Surface Water Monitoring Program, Groundwater Monitoring Program and Surface and Ground Water Response Plan)** | |
| | 15.13C The objectives of the abovementioned programs and plans which are required under the approval, are to generally include, but are not limited to:<br>• ensuring that the disposal of material in the tailings storage facility, and management of that facility, does not cause material harm to the environment;<br>• taking all necessary measures to protect the quality of the water, as drinking water, for existing downstream users, including the water supply for the Eurobodalla Shire; and<br>• implementing appropriate monitoring and response measures to ensure that action is taken to promptly mitigate any adverse impacts of the project on surface water and groundwater so that drinking water of acceptable quality continues to be available to downstream users, including Eurobodalla Shire. | Prior to, during and following the life of the Project. |

| Desired Outcome | Commitment | Timing |
|---|---|---|
| **15 ENVIRONMENTAL MONITORING (Cont'd)** | | |
| Ongoing monitoring and reporting of Project-related environmental impacts. (Cont'd) | **Eurobodalla Shire Council**<br>15.14A The Proponent shall pay Eurobodalla Shire Council the following contribution each calendar year:<br>• the reasonable costs, up to a maximum of $10,000, of Eurobodalla Shire Council engaging its own expert to:<br>– undertake a review of the Water Management Plan required under the approval; and<br>– undertake a peer review of the Annual Review carried out by the Proponent pursuant to condition 3 in Schedule 5 of the approval.<br>As part of these reviews undertaken by Eurobodalla Shire Council's expert, the Proponent will provide that expert with reasonable access to the tailings storage facility.<br>A copy of the draft report produced by Eurobodalla Shire Council's expert pursuant to each of the abovementioned reviews must be made available to the Proponent for its review and comment prior to the report being finalised by Eurobodalla Shire Council's expert.<br>This contribution must be indexed according to the CPI at the time of each payment. | During active mining operations and until the completion of rehabilitation operations. |
| | 15.14B The surface water quality criteria to be included in the Surface Water Monitoring Program pursuant to condition 29(c) in schedule 3 of the approval is to take into account, among other things, that the surface water sources are located within the drinking water catchment for the Eurobodalla Shire. | |
| **17 OTHER** | | |
| Insurance. | 17.1 The Proponent shall effect and maintain a public liability insurance policy to the amount of $60,000,000.<br>The policy maintained under this commitment must name Eurobodalla Shire Council as an interested party and a beneficiary to the policy to the extent of the acts or omissions of the Proponent, for the purposes of s48 of the Insurance Contracts Act 1984 (Cth). | During active processing operations until the completion of rehabilitation operations. |

# APPENDIX 6
# GENERAL TERMS FOR THE PLANNING AGREEMENT

| **A. Payment towards roads at time of approval of Construction Certificate** | **Amount (as at March 2010)** |
|---|---|
| 1. For road upgrading works along the haulage route to/from the mine, including widening of seal over crests and around curves and line marking of Majors Creek Road. | $559,000 Pavement widening<br>$15,000 Line marking |
| 2. For pavement upkeep during mine construction | $78,000 |
| **Subtotal** | **$652,000** |
| | |
| **B. Annual payment towards ongoing pavement upkeep along haulage route and towards improvements to intersections if possible within the limit of funds.** | **$78,000** |
| | |
| **C. Community benefit payment at time of approval of Construction Certificate towards upgrade of Braidwood Recreation Ground.** | **$375,000** |
| | |
| **D. Payment for disposal of putrescibles waste at Braidwood landfill (strictly no waste to be taken to other Council landfills)** | **$120 per tonne** |

*Note: Rates are as per March 2010 and are to be CPI indexed each year.*

## APPENDIX 7
## RECEIVER LOCATION PLANS

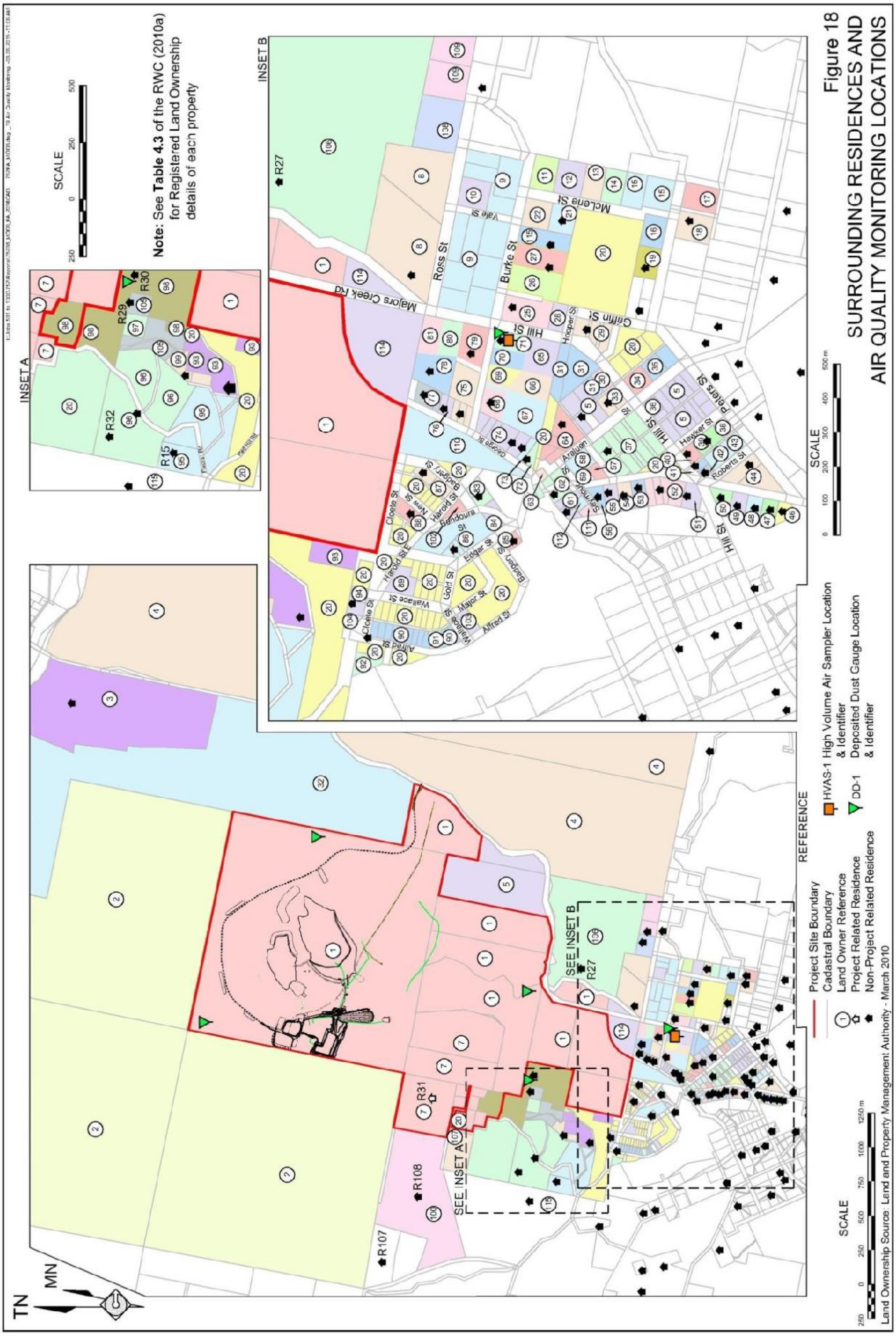
| Land Reference[1] | Residence Reference | Section/Lot/DP | Landowner[2] |
|---|---|---|---|
| 1 | - | 1021/1127185, 102/755934, 1/986483, 2/986483, 3/986483, 4/986483, 5/986483, 104/1100849. | Cortona Resources Limited |
| 2 | - | 103/755934 | Exeter Farm Pty Ltd |
| 3 | R34 | 98/755934 | Ref not held |
| 4 | - | 2/1099172, 1/61600 | Glendaruel (Holdings) Pty Limited |
| 5 | - | 1/996501, 2/996501, 1/5/758636, 2/5/758636, 3/5/758636, 4/5/758636, 5/5/758636, 6/5/758636, 7/5/758636, 9/5/758636, 10/5/758636, 13/5/758636, 14/5/758636, 9/835597, | P. Callan, C McGrath, L Haggan |
| 6 | | Reference not used | |
| 7 | R31 | 1/136801, 2/136801, 3/755934, 82/755934, 83/755934, 95/755934, 113/755934, 114/755934, 141/755934, 143/755934 | P. & L. Matthias |
| 8 | R24 | 1/199645, 2/199645 | S.J. Redden |
| 9 | - | 1/28/758636, 2/28/758636, 3/28/758636, 5/28/758636, 5A/28/758636, 6/28/758636, 7/28/758636, 10/28/758636, 11/28/758636, 13/28/758636, 14/28/758636 | Valerie Carpenter |
| 10 | - | 12/28/758636 | Certificate has not been issued |
| 11 | - | 18/27/758636 | D.P. Drew |
| 12 | - | 13/27/758636 | B.S. & S.F. Drew |
| 13 | R58 | 14/27/758636 | N.V. Harrington |
| 14 | - | 15/27/758636 | S. Lee |
| 15 | - | 16/27/758636 | Reference not held |
| 16 | R55 | 17/27/758636 | Reference not held |
| 17 | R54 | 9/31/758636 | A.D. & M.S. Phillips |
| 18 | R53 | 2/31/758636 | Mangold Investments (NSW) Pty Ltd |
| 19 | - | 2A/27/758636 | Reference not held |
| 20 | - | 701/1054207, 701/1054979, 1/123143, 1/123393, 1/48260, 161/755934, 162/755934, 188/755934, 193/755934, 209/755934, 213/755934, 5/4/758636, 6/4/758636, 7/4/758636, 8/4/758636, 9/4/758636, 1/21/758636, 2/21/758636, 3/21/758636, 4/21/758636, 7/21/758636, 8/21/758636, 9/21/758636, 10/21/758636, 1/24/758636, 2/24/758636, 4/24/758636, 5/24/758636, 6/24/758636, 7/24/758636, 8/24/758636, 9/24/758636, 10/24/758636, 11/24/758636, 12/24/758636, 4/25/758636, 5/25/758636, 6/25/758636, 7/25/758636, 8/25/758636, 9/25/758636, 10/25/758636, 11/25/758636, 12/25/758636, 13/25/758636, 1/53/758636, 3/53/758636, 4/53/758636, 5/53/758636, 6/53/758636, 701/93977 | State of NSW |
| 21 | R59 | 20/27/758636 | L.G. Delamont |
| 22 | - | 19/27/758636 | Y.M. Chin |
| 23 | - | 7/27/758636 | Reference not held |
| 24 | - | 7A/27/758636 | Reference not held |
| 25 | R21, R71, R72 | 8/27/758636 | Reference not held |
| 26 | - | 9/27/758636 | Reference not held |
| 27 | - | 10/27/758636 | Reference not held |
| 28 | - | 21/27/758636, 22/27/758636 | 1/1112412 – Timothy James Rankin |
| 29 | R60 | 1/42/758636, 2/42/758636, 3/42/758636, 4/42/758636, 5/42/758636, | R.A. & J.A. South McKenzie |
| 30 | - | 7/15/758636 | The Right Reverend Mesac Thomas |
| 31 | - | 121/48413, 120/755934, 8/15/758636 | K.M. Stuart |
| 32 | | | Reference not used |
| 33 | R61 | 5/15/758636, 6/15/758636 | A. & C.W.Y.H. Brace & R. Mahncke |
| 34 | - | 1/4/758636, 2/4/758636 | W. Brickwood |
| 35 | - | 2A/4/758636, 3/4/758636, 4/4/758636 | Crown land |
| 36 | - | 8/5/758636 | A.J. & L.E.M.M. Astley |
| 37 | - | 1/14/758636, 2/14/758636, 2A/14/758636, 3/14/758636, 3A/14/758636, 4/14/758636, 4A/14/758636, 6/14/758636, 6A/14/758636, 7/14/758636, 7A/14/758636, 8/14/758636, 9/14/758636, 5/836923 | B.W. McCarron |
| 38 | - | 5/6/758636 | C.A. & M.T. Powell |
| 39 | R44 | 6/6/758636, 7/9/758636 | B.D. & G.B.L. Hayes |
| 40 | R45 | 8/6/758636 | A.A. Casey |
| 41 | R40 | A/336039 | N. Tetley & S.L. Buchanan |
| 42 | R39 | 1/665110 | B. Sheridan & J. McIntyre |

| Land Reference[1] | Residence Reference | Section/Lot/DP | Landowner[2] |
|---|---|---|---|
| 43 | | 2/6/758636, 3/6/758636, 4/6/758636 | W.M. Nelson |
| 44 | R43 | 1/39/758636, 2/39/758636 | S.P. & K.A. Junor |
| 45 | | 240/775934 | Reference Not Held |
| 46 | R84 | 6/877483 | W.H. & J.F. Butcher |
| 47 | R85 | 5/877483 | L.J. Stinson |
| 48 | R86 | 4/877483 | R.M. Grant & M. Allatt |
| 49 | R87 | 3/877483 | S.L. Bennett |
| 50 | R88 | 1/877483, 2/877483 | B.R. Doherty & N.L. Watts |
| 51 | R91 | 23/1004205 | M.J. Franz |
| 52 | R64 | 5/13/758636, 5A/13/758636, 6/13/758636, 7/13/758636, 7A/13/758636, | A.H. & C.E. Struzina |
| 53 | R65 | 4/13/758636, 4A/13/758636 | K. Angel |
| 54 | R66 | 33/1012809 | R. & E.P. Blakely-Kidd |
| 55 | R67 | 2/13/758636 | N.L. Amey |
| 56 | R68 | 1/13/758636 | J.L. & C.A. Corcoran |
| 57 | R63 | 2/17/758636 | J.T. & C.M. Bowman |
| 58 | - | 3/17/758636, 4/17/758636 | R.E. McCarron |
| 59 | - | 1/17/758636 | J.W. Wiggins |
| 60 | - | 9/18/758636 | Reference Not Held |
| 61 | R94 | 1/18/758636, 2/18/758636, 3/18/758636, 7/18/758636 | M.A. Ross |
| 62 | R93 | 4/18/758636, 5/18/758636, 5A/18/758636, 1/26/758636 | Star Buttons Enterprises Pty Ltd |
| 63 | - | 6/18/758636 | Lachmere Pty Ltd |
| 64 | R70 | 1/40248, 11/15/758636, 1/16/758636, 2/16/758636, | S.M. McCarron |
| 65 | - | 9/1068558 | J.S. Weeks & J.B. McDonald |
| 66 | - | 10/1068558 | D.E. Jeffery & M.A. Stoyles |
| 67 | - | 11/1068558 | A. & M.J. McDonald |
| 68 | R19 | 8/1068558 | A.P. Dann |
| 69 | - | 7/1068558 | P.A. & V.L. Grindrod |
| 70 | - | 6/1068558 | R.C. Stone |
| 71 | R20 | 5/1068558 | A. & M.Z. Page |
| 72 | R6 | 1/797719 | B. Carruthers |
| 73 | R7 | 253/755934 | A.K. & N. Riley |
| 74 | R2 | 3/842928, 6/842928, 7/842928, 8/842928, 45/872802 | D.B.R. & B.A. Messum |
| 75 | R16 | 11/709905, 9/735425, 10/735425, 1/986527 | L.T. & P.S. Ruzicka |
| 76 | R17 | 1/831229, 2/831229 | B. McDonald |
| 77 | R18 | 14/842928, 1/859129 | G. Gibson |
| 78 | R23 | 4/1068558 | M.L. Cathro |
| 79 | R22 | 3/1068558 | P.J. & L.J. Cram |
| 80 | - | 2/1068558 | G. & J. Wheatley and K. & S. Jones |
| 81 | - | 1/1068558 | D.J. & L.M. Avery |
| 82 | - | 4/755934 | Reference Not Held |
| 83 | - | 3/20/758636, 4/20/758636 | H.A. Gillespie |
| 84 | - | 11/574879, 12/574879, 13/574879 | The Council of the Shire of Tallaganda |
| 85 | - | 1/19/758636 | R. Allen & S.M. McIlveen |
| 86 | R9 | 247/755934, 15/22/758636, 16/22/758636, 17/22/758636, 18/22/758636 | William Edmund Waterhouse |
| 87 | R10 | 5/21/758636, 6/21/758636 | Sarah Elizabedth Vella |
| 88 | R11 | 2/53/758636, 9/53/758636 | G.E. & L.H. Ison |
| 89 | - | 21/720161 | L.A. & G.M. Baillie |
| 90 | R13 | 13/24/758636, 14/24/758636, 15/24/758636, 16/24/758636, 17/24/758636, 18/24/758636, 19/24/758636, 20/24/758636, 21/24/758636, 22/24/758636, 23/24/758636, 24/24/758636 | B. Vugec |
| 91 | - | 3/24/758636 | W.A. & K.T. O'Leary |
| 92 | | 1/36/758636 | R.J. & C.H. Smith-Roberts |
| 93 | R14 | 65/755934, 67/755934, 191/755934, 216/755934 | D.K. & D.M. Wood |
| 94 | R12 | 163/755934, 164/755934 | S, P, P, W & J. Cootes |
| 95 | R15 | 125/755934, 212/755934 | M. Flakelar & J. Holmes |
| 96 | R32, R36 | 211/755934 | B. Crittenden |
| 97 | - | 202/755934 | V. Laurie |
| 98 | R29 | 1/194317, 66/755934, 210/755934 | B. & C. James |
| 99 | R1 | 93/755934, 166/755934 | M. Toner & R. Manderson |
| 100 | R108 | 5/1093136 | J. & K. Spring |
| 101 | - | ?/54/758636 | Reference Not Held |
| 102 | - | ?/1/758636 | Reference Not Held |
| 103 | - | 1/23/758636 | Reference Not Held |
| 104 | - | 165/755934 | Reference Not Held |
| 105 | R30 | 94/755934 | Reference Not Held |

| Land Reference[1] | Residence Reference | Section/Lot/DP | Landowner[2] |
|---|---|---|---|
| 106 | R26,R27, R28 | 104/755934 | Reference Not Held |
| 107 | - | 113/755934 | Folio Cancelled |
| 108 | - | 95/755934 | Reference Not Held |
| 109 | - | 101/755934 | Reference Not Held |
| 110 | - | 4/755934 | Reference Not Held |
| 111 | - | 9/18/758636 | Reference Not Held |
| 112 | - | | Reference Not Held |
| 113 | - | 96/755934 | Reference Not Held |
| 114 | - | 104/1149075 | J. Stachow & R. Stachow |
| 115 | R33 | 1/1093136 | Brian and Karis Sanderson |

Note 1: See **Figure 4.6**
Note 2: “reference not held” indicates that the owner of the land is not registered on the Land Titles Register, possibly as a result of the land being “Old Title.”

Source: Land and Property Management Authority (March 2010)



Note: See **Table 4.3** of the RWC (2010a) for Registered Land Ownership details of each property

Land Ownership Source: Land and Property Management Authority - March 2010

Figure 18
SURROUNDING RESIDENCES AND AIR QUALITY MONITORING LOCATIONS

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# Appendix 2

## Environment Protection Licence (EPL) 20095

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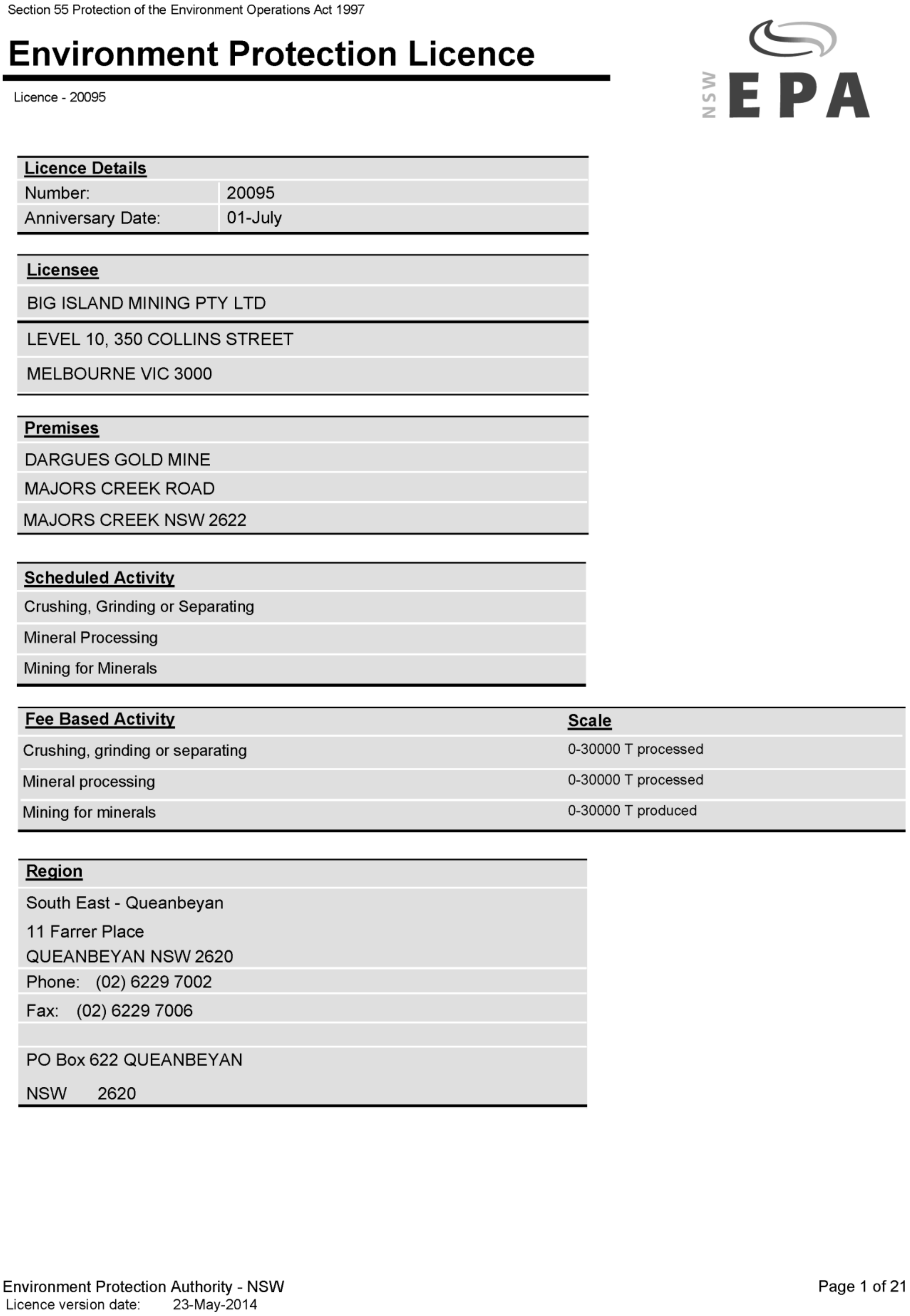

Section 55 Protection of the Environment Operations Act 1997

# Environment Protection Licence

Licence - 20095

| **Licence Details** | |
|---|---|
| Number: | 20095 |
| Anniversary Date: | 01-July |

**Licensee**

BIG ISLAND MINING PTY LTD

LEVEL 10, 350 COLLINS STREET
MELBOURNE VIC 3000

**Premises**

DARGUES GOLD MINE
MAJORS CREEK ROAD
MAJORS CREEK NSW 2622

**Scheduled Activity**

Crushing, Grinding or Separating
Mineral Processing
Mining for Minerals

| **Fee Based Activity** | **Scale** |
|---|---|
| Crushing, grinding or separating | 0-30000 T processed |
| Mineral processing | 0-30000 T processed |
| Mining for minerals | 0-30000 T produced |

**Region**

South East - Queanbeyan
11 Farrer Place
QUEANBEYAN NSW 2620
Phone: (02) 6229 7002
Fax: (02) 6229 7006

PO Box 622 QUEANBEYAN
NSW 2620

# Environment Protection Licence

## 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).

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:

**BIG ISLAND MINING PTY LTD**
**LEVEL 10, 350 COLLINS STREET**
**MELBOURNE VIC 3000**

subject to the conditions which follow.

# Environment Protection Licence

## 1 Administrative Conditions

### A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2.

There are a number stages to the scheduled development works of which the following stages are authorised by this licence:

:.

Note: From May 2014, this licence authorises the maintenance of the scheduled works that have already been developed at the premises listed in A2, but does not authorise further development of these works without variation of this licence. These maintenance activities will be consistent with the rural nature of the wider area and will include:

1. Agriculture related activities
2. Maintenance of existing earthworks
3. Environmental monitoring

A1.2 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 |
|---|---|---|
| Crushing, Grinding or Separating | Crushing, grinding or separating | 0 - 30000 T processed |
| Mineral Processing | Mineral processing | 0 - 30000 T processed |
| Mining for Minerals | Mining for minerals | 0 - 30000 T produced |

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

A2.1 The licence applies to the following premises:

| Premises Details |
|---|
| DARGUES GOLD MINE |
| MAJORS CREEK ROAD |
| MAJORS CREEK |
| NSW 2622 |
| PART LOT 210 DP 755934, LOT 1 DP 986483, LOT 4 DP 986483, LOT 5 DP 986483, LOT 104 DP 1100849, LOT 1021 DP 1127185 |

### A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

| **Ancillary Activity** |
|---|
| 26 Metallurgical Activities - metal processing |
| 9 Chemical Storage - general chemical storage |

### A4 Information supplied to the EPA

A4.1 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.

## 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 identi-fication no.** | **Type of Monitoring Point** | **Type of Discharge Point** | **Location Description** |
|---|---|---|---|
| 38 | Dust Deposition Guage | | At the location marked as "DD-1" on the map labelled "Figure 1 ENVIRONMENTAL MONITORING LOCATIONS" of the Environmental Management Strategy for the premises dated 3 April 2012 (EPA reference DOC12/14651). |
| 39 | Dust Deposition Guage | | At the location marked as "DD-2" on the map labelled "Figure 1 ENVIRONMENTAL MONITORING LOCATIONS" of the Environmental Management Strategy for the premises dated 3 April 2012 (EPA reference DOC12/14651). |

| | | |
|---|---|---|
| 40 | Dust Deposition Guage | At the location marked as "DD-3" on the map labelled "Figure 1 ENVIRONMENTAL MONITORING LOCATIONS" of the Environmental Management Strategy for the premises dated 3 April 2012 (EPA reference DOC12/14651). |
| 41 | Dust Deposition Guage | At the location marked as "DD-4" on the map labelled "Figure 1 ENVIRONMENTAL MONITORING LOCATIONS" of the Environmental Management Strategy for the premises dated 3 April 2012 (EPA reference DOC12/14651). |
| 42 | Dust Deposition Guage | At the location marked as "DD-5" on the map labelled "Figure 1 ENVIRONMENTAL MONITORING LOCATIONS" of the Environmental Management Strategy for the premises dated 3 April 2012 (EPA reference DOC12/14651). |

P1.2 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or setting of limits for the emission of noise from the point.

***Noise***

| EPA identi-fication no. | Type of monitoring point | Location description |
|---|---|---|
| 43 | Noise monitoring | Any residential premises |
| 44 | Noise monitoring | Majors Creek State Conservation Area (when in use by any person) |

# 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.

## L2 Noise limits

L2.1 Noise from the premises must not exceed the sound pressure level (noise) limits presented in the Table below. Note that the limits apply to the operation of the project and represent the sound pressure level (noise) contribution, at the nominated receiver locations in the table.

**Sound Pressure Level (Noise) Limits (dB(A))**

| Location | Day LAeq(15 minute) | Evening LAeq(15 minute) | Night LAeq(15 minute) | Night LA1(1 minute) |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Any residential premises | 35 | 35 | 35 | 45 |
| Majors Creek State Conservation Area (when in use by any person) | 35 | 35 | 35 | 45 |

L2.2 For the purpose of Noise Limit Conditions above:

'Day' is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays;

'Evening' is defined as the period from 6pm to 10pm on any day; and

'Night' is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

L2.3 The noise emission limits identified in the table above apply under meteorological conditions of:

a) Wind speeds up to 3 m/s at 10m above ground level; or
b) temperature inversion conditions of up to 3 °C/100m and wind speeds up to 2 m/s at 10m above ground level

L2.4 For the purpose of the Condition L4.3:
a) The meteorological data to be used for determining meteorological conditions is the data recorded by the meteorological weather station established at the premises for the purposes of this Environment Protection Licence (“Point 59” as outlined in Weather Monitoring conditions below)
b) Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the *New South Wales Industrial Noise Policy* (EPA 2000).

L2.5 **Determining Compliance**

To determine compliance:
a) with the Leq(15 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located:
i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
iii) within approximately 50 metres of the boundary of a National Park, Nature Reserve or State Conservation Area.
b) with the LA1(1 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located within 1 metre of a dwelling façade.
c) with the noise limits in the Noise Limits table, the noise measurement equipment must be located:
i) at the most affected point at a location where there is no dwelling at the location; or
ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.

L2.6 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

L2.7 A breach of this licence will still occur where noise generated from the premises in excess of the appropriate limit is measured:
i) at a location other than an area prescribed in part (a) and part (b) of Condition L4.5; and/or
ii) at a point other than the most affected point at a location.

## L3 Blasting

L3.1 Surface blasting operations at the premises may only take place between 9.00am and 5.00pm Monday to Friday, excluding public holidays.

(Where compelling safety reasons exist, the Authority may permit a blast to occur outside the abovementioned hours. Prior written (or facsimile) request for any such blast must be made to the Authority).

L3.2 The overpressure level from blasting operations at the premises must not exceed 120 dB (Lin Peak) at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L3.3 The overpressure level from blasting operations at the premises must not exceed 115 dB (Lin Peak) for more than 5% of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L3.4 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10 mm/s at any time or 1 mm/s during the Night or at anytime on Sundays or Public Holidays. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L3.5 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5 mm/s during the Day or 2 mm/s during the Evening for more than 5% of the total number of blasts over for each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L3.6 To determine compliance with condition(s) L5.2 to L5.5:

a) airblast overpressure and ground vibration must be measured and electronically recorded at the locations marked as "R27", "R29" and "R108" on the map labelled "Figure 1 ENVIRONMENTAL MONITORING LOCATIONS" of the Environmental Management Strategy for the premises dated 3 April 2012 (EPA reference DOC12/14651) for all blasts carried out in or on the premises; and
b) Instrumentation used to measure the airblast overpressure and ground vibration must meet the requirements of Australian Standard AS 2187.2-2006.

L3.7 For the purpose of Blasting Limit Conditions above:

'Day' is defined as the period from 7am to 6pm Monday to Saturday;

'Evening' is defined as the period from 6pm to 10pm on any day; and

'Night' is defined as the period from 10pm to 7am Monday to Saturday.

## 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 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

### O4 Emergency response

O4.1 By 31 July 2012, the licensee must develop, or update, an emergency response plan which documents the procedures to deal with all types of incidents (e.g. spill, explosions or fire) that may occur at the premises or outside of the premises (e.g. during transfer) which are likely to cause harm to the environment.

### O5 Waste management

O5.1 The tailings storage facility must have a basal barrier or impermeable liner with an equivalent permeability of 600mm clay of permeability $1x10^{-8}$metres per second.

O5.2 The seepage collection pond, leachate collection ponds, processing collection ponds and any other ponds holding contaminated water must have a basal barrier or impermeable liner with an equivalent permeability of 900mm clay of permeability $1x10^{-9}$ metres per second.

## 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** **38,39,40,41,42**

| Pollutant | Units of measure | Frequency | Sampling Method |
|---|---|---|---|
| Particulates - Deposited Matter | grams per square metre per month | Monthly | AM-19 |

## 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".

### M4 Weather monitoring

M4.1 The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in this section.

M4.2 For each monitoring point specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency opposite in the other columns.

Point 58 - Automated Weather Station

| Parameter | Units of Measure | Frequency | Averaging Period | Sampling Method |
|---|---|---|---|---|
| Air temperature at 2m | °C | Continuous | 15 minute | AM-4 |
| Wind direction | ° | Continuous | 15 minute | AM-2 & AM-4 |
| Wind speed | m/s | Continuous | 15 minute | AM-2 & AM-4 |
| Sigma theta | ° | Continuous | 15 minute | AM-2 & AM-4 |
| Rainfall | mm | Continuous | 15 minute | AM-4 |
| Relative humidity | % | Continuous | 15 minute | AM-4 |
| Air temperature at 10m | °C | Continuous | 15 minute | AM-2 & AM-4 |

### M5 Recording of pollution complaints

M5.1 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.

M5.2 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.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

## M6 Telephone complaints line

M6.1 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.

M6.2 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.

M6.3 The preceding two conditions do not apply until either:
a) the date of the issue of this licence or
b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

## M7 Other monitoring and recording conditions

### Noise Compliance Monitoring

M7.1 A noise compliance assessment must be submitted to the EPA within three months of commencement of operations at the premises. The assessment shall be prepared by a suitably qualified and experienced acoustic consultant and must assess compliance with noise limits in 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:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

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

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.

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.

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

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 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 Statement 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.

R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

## R2 Notification of environmental harm

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

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.

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.

## 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 Contact number for incidents and responsible employees

G2.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
a) respond at all times to incidents relating to the premises; and
b) contact the licensee’s senior employees or agents authorised at all times to:
i) speak on behalf of the licensee; and
ii) provide any information or document required under this licence.

G2.2 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person’s contact details as soon as practicable and in any event within fourteen days of the appointment or change.

### G3 Signage

G3.1 The location of EPA point number(s) 4, 5, 6, 28, 29, 30, 31, 38, 39, 40, 41, 42, 43 and 59 must be clearly marked by signs that indicate the point identification number used in this licence and be located as close as practical to the point.

## 8 Pollution Studies and Reduction Programs

### U1 Ambient Water Quality Assessment for the Receiving Waters of the Compensatory Flow Discharge Point

U1.1 Part 1 - The licensee must prepare an “Ambient Water Quality Assessment for the Receiving Waters of the Compensatory Flow Discharge Point” prior to commissioning of the compensatory flow discharge. The intent of the EPA is to utilise the assessment to develop appropriate water quality performance criteria for compensatory flow discharges to Majors Creek that will achieve environmental objectives and environmental values of Majors Creek.

U1.2 Part 2 - The assessment must include but not be limited to the following matters:

- Identify the Water Quality Objectives (WQO) for the receiving waters of Majors Creek in accordance with the guideline (http://www.environment.nsw.gov.au/ieo/index.htm) and describe the state of Majors Creek and relate this to the relevant WQO to determine whether the WQO are being achieved. Issues to include in the description of the receiving waters may include: specific human uses such as drinking water off-takes; sensitive ecosystems or species conservation values; historic river flow data where available for the receiving waters and monitoring data collected by the licensee.
- Undertake water quality monitoring of the receiving waters of Majors Creek across a range of flow variability, seasonal variation and weather conditions to determine ambient concentrations of potential pollutants including total suspended solids and electrical conductivity.
- Provide details of the compensatory flow that are essential for predicting and assessing impacts to Majors Creek, including the quantity and physio-chemical properties of potential water pollutants and the risks they pose to the environment and human health, including the risks they pose to WQO in the ambient waters (as defined at www.environment.nsw.gov.au/ieo), and using technical criteria derived from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZECC 2000 (ANZECC Guidelines).
- Identify the indicators and associated trigger values or criteria for the identified environmental values (sourced from the ANZECC Guidelines).
- Outline the nature and degree of impact that any proposed discharges will have on the receiving environment. Impacts should be assessed against the relevant ambient water quality outcomes and there should be a demonstration of how the proposal will be designed and operated to: protect the WQO of Majors Creek where the WQO are currently being achieved; and contribute towards achievement of the WQO over time where they are not currently being achieved.
- Demonstrate how (procedures, controls etc.) water discharged to Majors Creek will ensure the ANZECC Guidelines water quality criteria for relevant chemical and non-chemical parameters (particularly electrical conductivity and total suspended solids) are met at the edge of the initial mixing zone of the discharge.
- The EPA acknowledges all previous ambient water quality data collection and assessment work that has been undertaken by the licensee and considers that the previous work should be utilised in the assessment.
- Recommend discharge limits based on the findings of the assessment.

U1.3 Part 3 - Submit the Ambient Water Quality Assessment to the “Manager, South East Region of the EPA” at PO BOX 622 Queanbeyan 2620 OR Queanbeyan@environment.nsw.gov.au prior to commissioning of the Compensatory Flow Discharge.

# 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 |

| | |
|---|---|
| **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 Environment 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 months. 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*. |

| | |
|---|---|
| **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 Julian Thompson

Environment Protection Authority

(By Delegation)
Date of this edition: 18-May-2012

## End Notes

| | |
|---|---|
| 2 | Licence varied by notice 1506973 issued on 25-Jun-2012 |
| 3 | Licence fee period changed by notice 1506998 on 27-Jun-2012 |
| 4 | Licence varied by notice 1515231 issued on 18-Jul-2013 |
| 5 | Licence varied by notice 1517039 issued on 13-Sep-2013 |
| 6 | Licence varied by notice 1521947 issued on 23-May-2014 |

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# Appendix 3

# Rehabilitation Security Estimate dated March 2017

(Total No. of pages including blank pages = 16)

Note: A colour version of this Appendix is available on the digital version of this document

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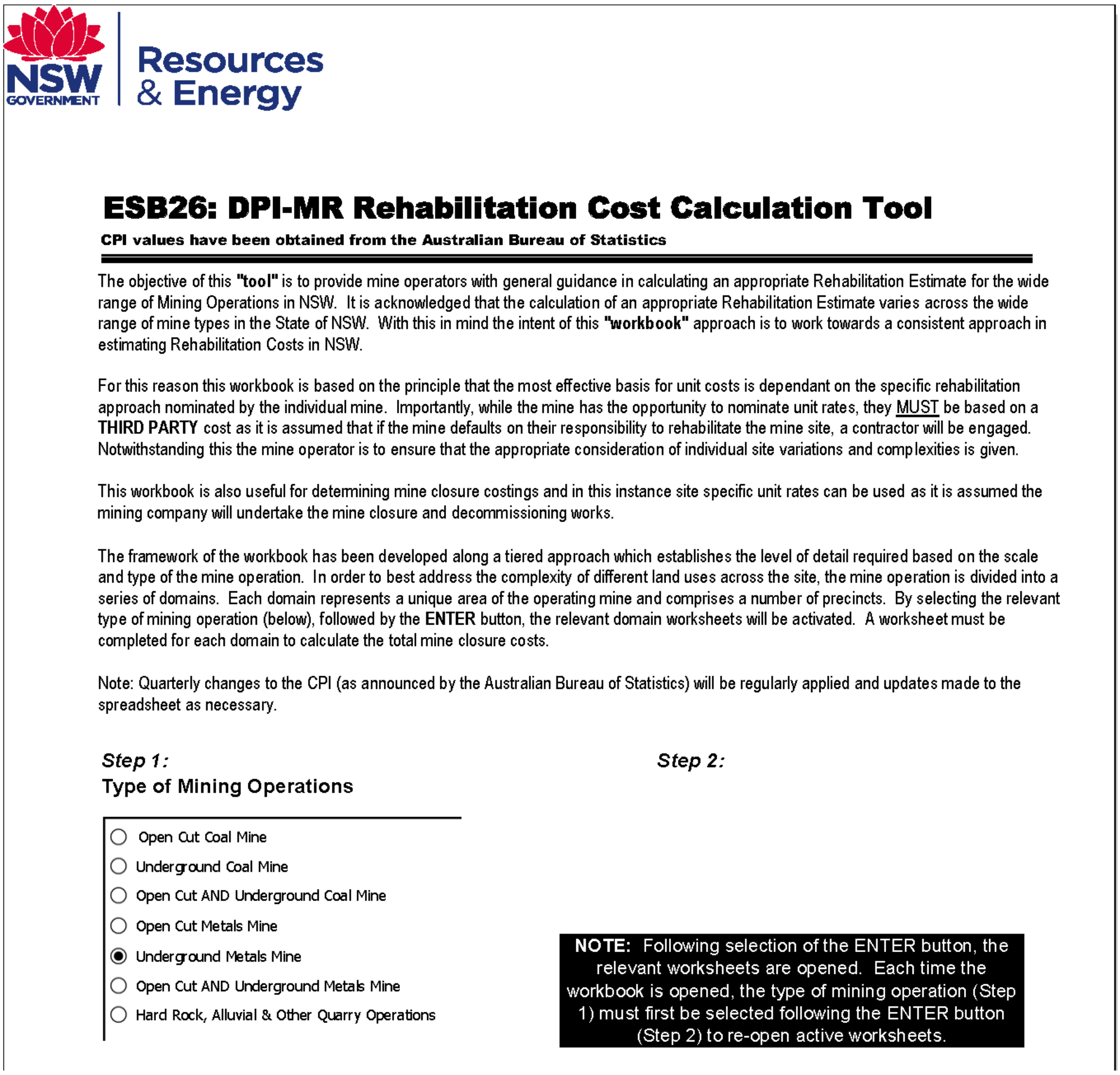


NSW GOVERNMENT | Resources & Energy

## ESB26: DPI-MR Rehabilitation Cost Calculation Tool

**CPI values have been obtained from the Australian Bureau of Statistics**

The objective of this **"tool"** is to provide mine operators with general guidance in calculating an appropriate Rehabilitation Estimate for the wide range of Mining Operations in NSW. It is acknowledged that the calculation of an appropriate Rehabilitation Estimate varies across the wide range of mine types in the State of NSW. With this in mind the intent of this **"workbook"** approach is to work towards a consistent approach in estimating Rehabilitation Costs in NSW.

For this reason this workbook is based on the principle that the most effective basis for unit costs is dependant on the specific rehabilitation approach nominated by the individual mine. Importantly, while the mine has the opportunity to nominate unit rates, they MUST be based on a **THIRD PARTY** cost as it is assumed that if the mine defaults on their responsibility to rehabilitate the mine site, a contractor will be engaged. Notwithstanding this the mine operator is to ensure that the appropriate consideration of individual site variations and complexities is given.

This workbook is also useful for determining mine closure costings and in this instance site specific unit rates can be used as it is assumed the mining company will undertake the mine closure and decommissioning works.

The framework of the workbook has been developed along a tiered approach which establishes the level of detail required based on the scale and type of the mine operation. In order to best address the complexity of different land uses across the site, the mine operation is divided into a series of domains. Each domain represents a unique area of the operating mine and comprises a number of precincts. By selecting the relevant type of mining operation (below), followed by the **ENTER** button, the relevant domain worksheets will be activated. A worksheet must be completed for each domain to calculate the total mine closure costs.

Note: Quarterly changes to the CPI (as announced by the Australian Bureau of Statistics) will be regularly applied and updates made to the spreadsheet as necessary.

***Step 1:***
**Type of Mining Operations**

○ Open Cut Coal Mine
○ Underground Coal Mine
○ Open Cut AND Underground Coal Mine
○ Open Cut Metals Mine
● Underground Metals Mine
○ Open Cut AND Underground Metals Mine
○ Hard Rock, Alluvial & Other Quarry Operations

***Step 2:***

**NOTE:** Following selection of the ENTER button, the relevant worksheets are opened. Each time the workbook is opened, the type of mining operation (Step 1) must first be selected following the ENTER button (Step 2) to re-open active worksheets.

## Site Registration

Complete the following fields prior to calculating the security bond.

**Mine Name:** Dargues Gold Mine

**Lease(s)** ML 1675

**Mine Owner** Big Island Mining Pty Ltd

**Mine Operator** Dargues Gold Mine Pty Ltd

**Expiry of MOP** 31/3/2021

**Current Security** $730,000 **Date of last Security Bond review** 14/09/2015

**Mine Contact** Mr James Dornan

**Position** Project Development Manager

**Address**
Level 10
56 Pitt Street
Sydney NSW 2000

**Phone** 02 8272 4106 **e-mail** James.Dornan@divminerals.com.au

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct:____________________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls Registration

## Site Description

The following site specific information is requested to provide tion in the context of calculating the security bond.

### Summary of Mine Activities

| | |
|---|---|
| **Total annual production (tonnes):** | 355,000 |
| **Mine lease area (ha):** | 321.33ha |
| **Area of extraction (ha):** | 2.94ha |
| **Area of disturbance (ha):** | |
| **Rehabilitation in progress (ha):** | nil |
| **Rehabilitation complete (ha):** | nil |
| **Estimate based on Plan(s):** include version and date | Plan 3A - RCE Area |
| | |
| **Plan(s) outlining Domain Areas** include version and date | Plan 3A - RCE Area |

☑ Plan(s) attached

**NOTE:**
**Ensure rehabilitation cost calculation reflects all environmental issues affecting the lease. Contingencies should be allocated where costs have not been incorportated elsewhere in the estimation.**

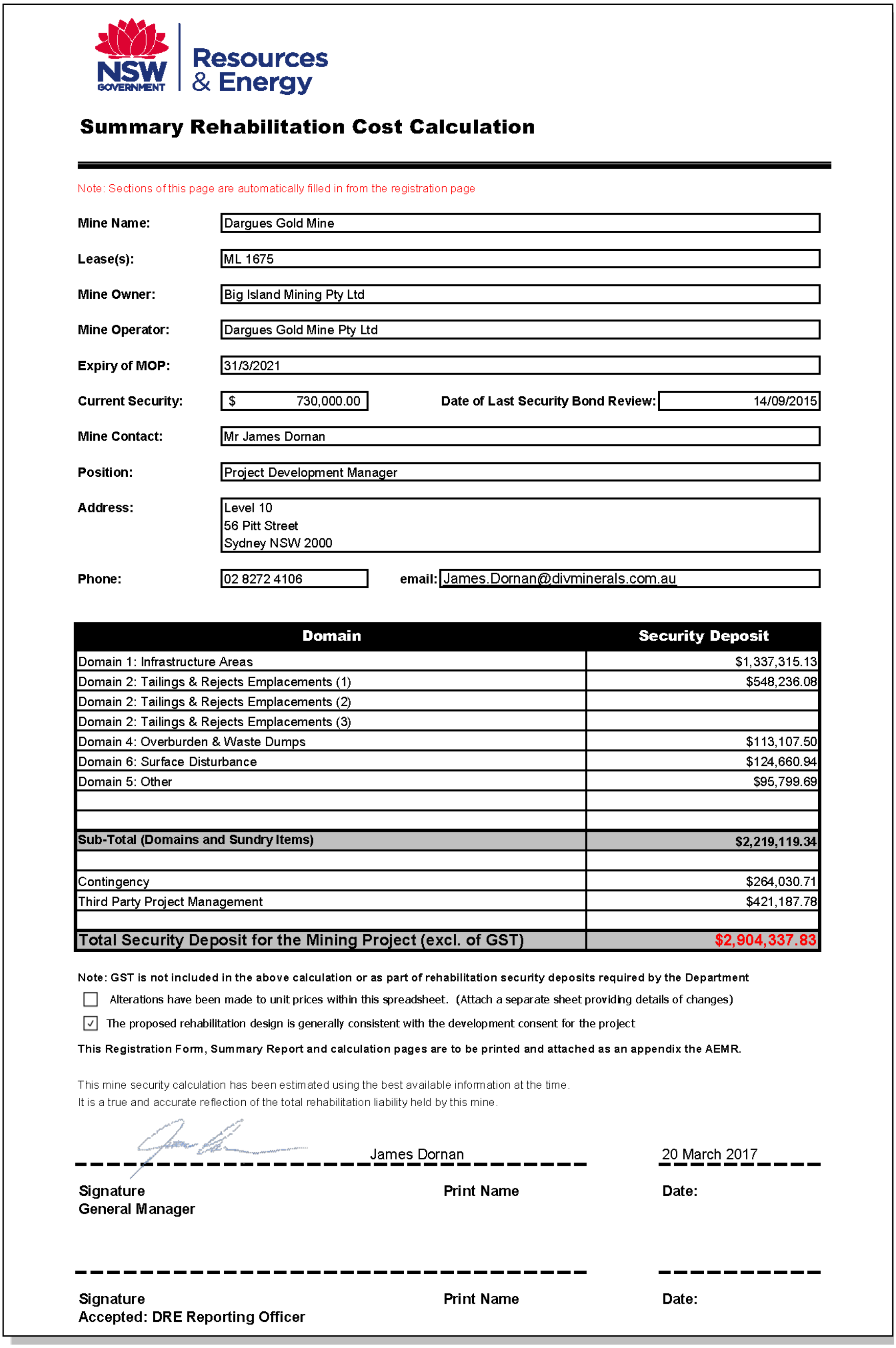
**Surrounding land use (tick all that apply):**

- ☐ Cropping
- ☑ Pasture
- ☐ Forest
- ☐ Undisturbed habitat
- ☐ Urban

### l Sensitivities

**ting site (tick all that apply)**

- ☐ Threatened flora
- ☑ Threatened fauna
- ☐ Cultural heritage items
- ☐ Natural heritage
- ☐ Mine subsidence
- ☐ Surface water pollution
- ☐ Ground water pollution
- ☐ Hydrocarbon contamination
- ☐ Methane drainage/venting
- ☐ Spontaneous combustion
- ☐ Acid Mine Drainage
- ☑ Within drinking water
- ☐ Other (describe below)



NSW GOVERNMENT | Resources & Energy

## Summary Rehabilitation Cost Calculation

Note: Sections of this page are automatically filled in from the registration page

**Mine Name:** Dargues Gold Mine

**Lease(s):** ML 1675

**Mine Owner:** Big Island Mining Pty Ltd

**Mine Operator:** Dargues Gold Mine Pty Ltd

**Expiry of MOP:** 31/3/2021

**Current Security:** $ 730,000.00 **Date of Last Security Bond Review:** 14/09/2015

**Mine Contact:** Mr James Dornan

**Position:** Project Development Manager

**Address:**
Level 10
56 Pitt Street
Sydney NSW 2000

**Phone:** 02 8272 4106 **email:** James.Dornan@divminerals.com.au

| Domain | Security Deposit |
|---|---|
| Domain 1: Infrastructure Areas | $1,337,315.13 |
| Domain 2: Tailings & Rejects Emplacements (1) | $548,236.08 |
| Domain 2: Tailings & Rejects Emplacements (2) | |
| Domain 2: Tailings & Rejects Emplacements (3) | |
| Domain 4: Overburden & Waste Dumps | $113,107.50 |
| Domain 6: Surface Disturbance | $124,660.94 |
| Domain 5: Other | $95,799.69 |
| | |
| | |
| **Sub-Total (Domains and Sundry Items)** | **$2,219,119.34** |
| | |
| Contingency | $264,030.71 |
| Third Party Project Management | $421,187.78 |
| | |
| **Total Security Deposit for the Mining Project (excl. of GST)** | **$2,904,337.83** |

Note: GST is not included in the above calculation or as part of rehabilitation security deposits required by the Department

☐ Alterations have been made to unit prices within this spreadsheet. (Attach a separate sheet providing details of changes)

☑ The proposed rehabilitation design is generally consistent with the development consent for the project

This Registration Form, Summary Report and calculation pages are to be printed and attached as an appendix the AEMR.

This mine security calculation has been estimated using the best available information at the time.
It is a true and accurate reflection of the total rehabilitation liability held by this mine.

James Dornan 20 March 2017

**Signature** **Print Name** **Date:**
**General Manager**

**Signature** **Print Name** **Date:**
**Accepted: DRE Reporting Officer**

Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls

## Domain 1: Infrastructure Areas

**Detail of person filling out the Worksheet:**

**Name** Mitchell Bland
**Position** Principal Environmental Consultant
**Department** RW Corkery & Co Pty Limited
**Date** 17/03/2017

**Legend:**

🟦 Item fixed no entry required
🟨 Input from site optional (if information available)
🟩 Input mandatory

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Mill Area** | Disconnect and terminate services | 1 | @ | $31,933.23 | **$31,933.23** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Disconnect and terminate powerlines | 1.8 | km | $14,050.62 | **$25,291.12** | This item includes the cost to terminate and remove powerlines, and is based on the average cost to construct. |
| | Demolish and remove small buildings | 3020 | $m^2$ | $89.41 | **$270,027.39** | Enter the total area of small buildings and offices in the CHPP area. It should not include demountables which can be removed from site. It does not include workshops. |
| | Demolish and remove industrial buildings | 0 | $m^2$ | $204.37 | **$0.00** | Enter the total area of workshop facilities in the CHPP area. |
| | Demolish and remove CHPP | 1710 | $m^2$ | $204.37 | **$349,477.27** | Enter the total surface area of the CHPP. If the CHPP is multi-story the entry should be the sum of the surface area for all floors. |
| | Demolish and remove conveyors & gantries (includes overland conveyors) | 380 | m | $70.25 | **$26,696.18** | Enter the sum of the total length of conveyor and gantries. This includes conveyor to rail load out areas of conveyor from hoppers feeding back to the CHPP. |
| | Demolish / relocate crushers | 1 | @ | $12,773.29 | **$12,773.29** | This includes the cost to dismantle the crusher and relocate from the site. |
| | Remove Concrete pads and Footings | 4730 | $m^2$ | $12.77 | **$60,417.67** | Enter the total area the CHPP, workshops and buildings. |
| | Deconstruct Large Tanks (e.g. Leach) | 0 | @ | $191,599.38 | **$0.00** | Enter the number of tanks to be removed from the site. |
| | Deconstruct Small Tanks (e.g. Leach) | 0 | @ | $60,883.94 | **$0.00** | Enter the number of tanks to be removed from the site. |
| | Remove carbonaceous material (spillage or otherwise) from footprint of the CHPP, ROM & Product stockpiles, conveyors and workshops | 0 | $m^3$ | $3.32 | **$0.00** | Enter the total volume (ie. area x depth of material) to be scalped off for disposal.<br>**UNIT RATE:** Depends on the haulage distance to the point where the material is to be disposed. |
| | Final trim, rock rake & deep rip | 10.4 | Ha | $638.66 | **$6,642.11** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | 52000 | $m^3$ | $1.53 | **$79,705.34** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 10.4 | Ha | $4,726.12 | **$49,151.63** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | **Precinct Security Deposit** | | | **$912,115.23** | |
| **Rail Line and Loop** | Remove Rail Loop and spur | 0 | m | $7.66 | **$0.00** | This item includes the pulling up and removal from site of railway line and sleepers. Calculated as a lineal metre |
| | Reshape rail spur and loadout area | 0 | Ha | $6,386.65 | **$0.00** | Enter the total area of the road footprint requiring to be covered with fertiliser (and/or lime & gypsum) prior to seeding<br>**UNIT RATE:** Depends the required rehabilitation commitment (ie. Trees will be more expensive than grass) |
| | Final trim, rock rake & deep rip | 0 | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Spoil amelioration and supply and spread pasture seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | **Precinct Security Deposit** | | | **$0.00** | |
| **Main Workshop Area** | Disconnect and terminate services | 0 | @ | $6,386.65 | **$0.00** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Demolish and remove small buildings | 2545 | $m^2$ | $89.41 | **$227,556.20** | Enter the total area of small buildings and offices in the workshop area. It should not include demountables which can be removed from site. It does not include workshops. |
| | Demolish and remove industrial buildings | 0 | $m^2$ | $204.37 | **$0.00** | Enter the total area of workshop facilities in the area. Include all remote or field based workshop areas. |
| | Remove Concrete pads, Footings and bitumen (carpark) for dumping in a void on the site | 2545 | $m^2$ | $12.77 | **$32,508.03** | Enter the total area the workshops and buildings. Include the area of any bitumen carparks (or similar). It would also include vehicle washdown pads, bulk fuel bunding area and refueling areas (i.e all concrete areas in the workshop precinct) |
| | Remove contaminated material from workshop and hardstand areas for disposal in the decline void<br>**AND/OR** | 0 | $m^3$ | $2.55 | **$0.00** | i) Enter the total volume (ie. area x depth of material) to be scalped off for disposal.<br>**UNIT RATE:** Depends on the haulage distance to the point where the material is to be disposed. |
| | Reshaping, capping, sealing of material presenting environmental difficulties (AMD, Hydrocarbon material, etc) | 0 | Ha | $57,479.81 | **$0.00** | Enter the total area of material requiring capping or sealing.<br>Where assessments have already been made and the presence/absence of contaminated material is know (and quantified) an alternative rate can be used. If this work has not been undertaken, a de |
| | Removal of UG tank (including pipes, bunds, etc). Include all facilities on site. | 0 | @ | $95,799.69 | **$0.00** | A default rate per UGT is to be utilised. |
| | On site remediation of contaminated soil (<1000$m^3$) | 200 | $m^3$ | $63.87 | **$12,773.29** | where an assessment of the volume of contaminated soil has been made this volume is to be included. Where the volume in not known or has not been quantified a default volume of 3000$m^3$ per fuel storage facility is to be used in cell C:37. |
| | On site remediation of contaminated soil (1000-10,000$m^3$) | 0 | $m^3$ | $51.09 | **$0.00** | where an assessment of the volume of contaminated material has been made this volume is to be included. Where the volume in not know or has not been quantified a default volume of 3000$m^3$ per fuel storage facility is to be used |
| | On site remediation of contaminated soil (>10,000$m^3$) | 0 | $m^3$ | $38.32 | **$0.00** | where an assessment of the volume of contaminated soil has been made this volume is to be included. Where the volume in not known or has not been quantified a default volume of 3000$m^3$ per fuel storage facility is to be used in cell C:37 |
| | Final trim, rock rake & deep rip | 0 | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | 0 | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement.<br>ALLOW 500MM OF TOPSOIL/SUBSOIL ACROSS ENTIRE SUBDOMAIN |
| | Spoil amelioration and supply and spread seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | | **Precinct Security Deposit** | | | **$272,837.52** | |
| **Admin Buildings** | Disconnect and terminate services | 0 | @ | $6,386.65 | **$0.00** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Demolish and remove small buildings | 800 | $m^2$ | $89.41 | **$71,530.44** | Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops. |
| | Demolish and remove industrial buildings | 0 | $m^2$ | $204.37 | **$0.00** | Enter the total area of workshop facilities in the admin area. |
| | Remove Concrete pads, Footings and bitumen (car park) | 800 | $m^2$ | $12.77 | **$10,218.63** | Enter the total area the workshops and buildings. Include the area of any bitumen car parks (or similar) |
| | Final trim, rock rake & deep rip | 0 | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | 0 | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread pasture seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | Enter the total area of the admin, etc footprint requiring to be covered with fertiliser (and/or lime & gypsum) prior to seeding<br>**UNIT RATE:** Depends the required rehabilitation commitment (ie. Trees will be more expensive than grass) |

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct:________________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls UG_Metal Infrastructure

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Precinct Security Deposit** | | | | $81,749.07 | |
| **Access Roads & Haul Roads** | Remove carbonaceous material from roadways (coal / rejects spillage) | 0 | $m^3$ | $3.32 | **$0.00** | Enter the total volume (ie. area x depth of material) to be scalped off for disposal.<br>**UNIT RATE:** Depends on the haulage distance to the point where the material is to be disposed. |
| | Reshape deep rip and ameliorate sealed / unsealed roads | 1.98 | Ha | $6,386.65 | **$12,645.56** | Enter the total area of the road footprint requiring to be covered with fertiliser (and/or lime & gypsum) prior to seeding<br>**UNIT RATE:** Depends the required rehabilitation commitment (ie. Trees will be more expensive than grass) |
| | Source, cart and spread topsoil. | 1980 | $m^3$ | $1.53 | **$3,034.93** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 1.98 | Ha | $4,726.12 | **$9,357.71** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | **Precinct Security Deposit** | | | | $25,038.21 | |
| **Sewerage / Water Treatment Plant** | Disconnect and terminate services | 0 | @ | $3,193.32 | **$0.00** | This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost |
| | Demolish and remove small buildings / tanks | 50 | $m^2$ | $89.41 | **$4,470.65** | Enter the total area of small buildings and tanks. |
| | Remove contaminated material from areas for disposal (ie. chemical spillage in / around storage sheds). | 10 | $m^3$ | $2.55 | **$25.55** | Enter the total volume (ie. area x depth of material) to be scalped off for disposal.<br>**UNIT RATE:** Depends on the haulage distance to the point where the material is to be disposed. |
| | Final trim, rock rake & deep rip | 0 | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil. | 0 | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | **Precinct Security Deposit** | | | | $4,496.20 | |
| **Hardstand /Laydown Areas** (across the entire site) | Remove contaminated material from areas for disposal (ie. chemical/hydrocarbon spillage in the hard stand area). | 200 | $m^3$ | $2.55 | **$510.93** | Enter the total volume (ie. area x depth of material) to be scalped off for disposal.<br>**UNIT RATE:** Depends on the haulage distance to the point where the material is to be disposed. |
| | Deep rip hard stand / laydown areas | 0 | Ha | $638.66 | **$0.00** | This item includes ripping hard stand and lay down areas to enhance the rehabilitation program. |
| | Source, cart and spread topsoil. | 0 | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | 10.4 | Ha | $830.26 | **$8,634.75** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | **Precinct Security Deposit** | | | | $9,145.68 | |
| **Underground Infrastructure** | Seal Portal / Decline Entry | 0 | @ | $28,101.24 | **$0.00** | This includes sealing the portal to make safe and ensure access can not be obtained. The number of portals for the whole mine is to be included |
| | Seal & rehabilitate of ventilation fans. | 1 | @ | $31,933.23 | **$31,933.23** | This includes sealing & rehabilitation of the ventilation fans to make safe. The number of ventilation fans for the whole mine is to be included. |
| | Shaft filling | 0 | $m^3$ | $24.35 | **$0.00** | This includes filling of shafts using onsite material. |
| | Shaft capping/sealing | 0 | @ | $12,176.79 | **$0.00** | Simple capping/sealing to DPI standards |
| | De-watering Bores | 0 | @ | $3,831.99 | **$0.00** | This includes sealing & rehabilitation of the dewatering bores to make safe. The total number of dewatering bores for the whole mine is to be included. |
| | Cap exploration holes | 0 | @ | $319.33 | **$0.00** | This includes capping & rehabilitation of all old Cap exploration holes around the site. |
| | Minor earthworks and maintenance of mine subsidence areas | 0 | Ha | $1,277.33 | **$0.00** | This includes undertaking surface drainage works, etc as required to remediate areas affected by Mine subsidence (outside the jurisdiction of the mine subsidence board) |
| | **Precinct Security Deposit** | | | | $31,933.23 | |
| **Other** | Other 1 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | **Precinct Security Deposit** | | | | $0.00 | |

**Total Security Deposit for the "Domain"** **$1,337,315.13**

## Domain 2: Tailings & Rejects Emplacements (1)

**Complete a separate sheet for each tailings dam/impoundment on the site.**

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Mitchell Bland |
| **Position** | Principal Environmental Consultant |
| **Department** | RW Corkery & Co Pty Limited |
| **Date** | 17/03/2017 |

**Legend:**

| | |
|---|---|
| 🟦 | Item fixed no entry required |
| 🟨 | Input from site optional (if information available) |
| 🟩 | Input mandatory |

**Tailings Dam / Impoundment (Key Information):**

| | |
|---|---|
| **Materials Stored (ie. coarse or co-disposed)** | Tailings - non-ARD |
| **Volume Stored (m3)** | 245 000t or 181 500m3 |
| **Maximum Embankment Height (m)** | 25m |
| **Maximum Embankment Length (m)** | Approx 330m |
| **Year Dam / Emplacement Commissioned** | 2017 |
| **Storage area (ha)** | 7.6ha |
| **Catchment Area of Tailings Dam / Emplacement (ha)** | 13.4ha |
| **Briefly describe embankment construction.**<br>**(earthen, clay /rejects core, etc)** | Below costs based on Stage 1 of 4. Structural zone - waste rock material (tested for ARD potential prior to placement.<br>Low permiability zone - clay and HDPE liner |

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Tailings Dams / Emplacements** | Source, cart and spread suitable material to cap the tailings emplacement (cap thickness determined by MOP) | 66600 | $m^3$ | $2.55 | **$170,140.25** | This includes sourcing, carting and spreading of a suitable volume material to cap the tailings emplacement. The material must have appropriate chemical & physical properties. |
| | Apply engineered treatment as required (i.e. capping, capillary breaks, etc) - design in accordance with the MOP commitments. | 5.3 | Ha | $57,479.81 | **$304,643.01** | This includes the area that requires engineering treatment is required to satisfy conditions of the MOP, This may include compaction or addition of multiple layers and / or capillary breaks. |
| | Reshape walls / buttress around the dam / emplacement - *earthworks only* | 0 | Ha | $6,386.65 | **$0.00** | This includes the area that requires stabilisation and reshaping works around the walls of the emplacement (i.e. removal of rills and pipes that may present long term stability issues) |
| | Final trim, rock rake & deep rip | 5.3 | Ha | $638.66 | **$3,384.92** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Structural works, banks waterways | 0 | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the cap. |
| | Source, cart and spread topsoil. | 26500 | $m^3$ | $1.53 | **$40,619.07** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 5.3 | Ha | $4,726.12 | **$25,048.43** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | 5.3 | Ha | $830.26 | **$4,400.40** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | **Precinct Security Deposit** | | | $548,236.08 | |
| **Other** | Other 1 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | **Precinct Security Deposit** | | | $0.00 | |

**Total Security Deposit for the "Domain"** **$548,236.08**

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct:________________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls UG_Metal Tailings & Rejects (1)

## Domain 4: Overburden & Waste Dumps

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Mitchell Bland |
| **Position** | Principal Environmental Consultant |
| **Department** | RW Corkery & Co Pty Limited |
| **Date** | 17/03/2017 |

**Legend:**

🟦 Item fixed no entry required
🟨 Input from site optional (if information available)
🟩 Input mandatory

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Successful Rehabilitation** | Maintenance of **Established** Revegetated Area | 0 | Ha | $830.26 | **$0.00** | This item includes the total area of rehabilitation that have been established and require subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | Maintenance of Shaped Topsoiled and Seeded | 0 | Ha | $830.26 | **$0.00** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice in the first five (5) years after establishment |
| | | **Precinct Security Deposit** | | | $0.00 | |
| **Shaped Overburden Dumps** | Final trim, rock rake & deep rip | 0 | Ha | $638.66 | **$0.00** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Structural works, banks, rock lined waterways | 0 | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the reshaped area. |
| | Source, cart and spread topsoil. | 0 | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | 0 | Ha | $830.26 | **$0.00** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice in the first five (5) years after establishment |
| | | **Precinct Security Deposit** | | | $0.00 | |
| **Unshaped Overburden Dumps**<br>(minor reshaping required) | Minor pushing, final trim, rock rake & deep rip | 7.7 | Ha | $638.66 | **$4,917.72** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Structural works, banks, rock lined waterways | 0 | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the cap. |
| | Source, cart and spread topsoil. | 38500 | $m^3$ | $1.53 | **$59,012.61** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 7.7 | Ha | $4,726.12 | **$36,391.11** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | 7.7 | Ha | $830.26 | **$6,393.03** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | **Precinct Security Deposit** | | | $106,714.47 | |
| **Unshaped Overburden Dumps**<br>(major earthworks required) | Major bulk pushing to achieve grades nominated in the MOP (i.e < 18°) | 0 | $m^3$ | $1.41 | **$0.00** | This item includes the volume requiring **major** reshaping, rock raking and deep ripping (only as required) to enhance revegetation program<br>ROM PAD/TEMPORARY WASTE ROCK EMPLACEMENT TO BE REMOVED TO BOX CUT. ACCOUNTED FOR IN DOMAIN 4 |
| | Structural works, banks, rock lined waterways | 0 | Ha | $1,788.26 | **$0.00** | This item includes the area requiring earthworks (banks, & drains, etc) to manage all surface water on the top of the emplacement to ensure that it is shed off the cap. |
| | Source, cart and spread topsoil. | 0 | $m^3$ | $1.53 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement.<br>500MM TOPSOIL/SUBSOIL GROWTH MEDIA. |
| | Spoil amelioration and supply and spread seed and fertiliser. | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Maintenance of rehabilitated areas (up to 5 years) | 7.7 | Ha | $830.26 | **$6,393.03** | This item includes the total area of that have been shaped, topsoiled and seeded and requires subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment |
| | | **Precinct Security Deposit** | | | $6,393.03 | |
| **Other** | Other 1 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | **Precinct Security Deposit** | | | $0.00 | |

**Total Security Deposit for the "Domain"** **$113,107.50**

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct:__________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls UG_Metal Overburden Dumps

## Domain 6: Surface Disturbance

**Detail of person filling out the Worksheet:**

**Name** Mitchell Bland
**Position** Principal Environmental Consultant
**Department** RW Corkery & Co Pty Limited
**Date** 17/03/2017

**Legend:**

| | |
|---|---|
| 🟦 | Item fixed no entry required |
| 🟨 | Input from site optional (if information available) |
| 🟩 | Input mandatory |

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Initial Boxcuts & Other Voids** | Drill & Blast Highwall | 0 | $m^3$ | $0.89 | **$0.00** | This item includes the total area of rehabilitation that have been established and require subsequent fertiliser application. It assumes application twice on the first five (5) years after establishment **UNIT RATE:** drill & blast + dozer push |
| | Major bulk pushing of the high wall are to achieve grades nominated in the MOP (i.e < 18°) | 69250 | $m^3$ | $1.41 | **$97,300.55** | This item includes the volume requiring **major** reshaping, rock raking and deep ripping (only as required) to enhance revegetation program **UNIT RATE:** dozer push rate |
| | Final trim, rock rake & deep rip | 2.1 | Ha | $638.66 | **$1,341.20** | This item includes the area requiring minor reshaping, rock raking and deep ripping (only as required) to enhance revegetation program |
| | Source, cart and spread topsoil (at 20cm) | 10500 | $m^3$ | $1.53 | **$16,094.35** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Spoil amelioration and supply and spread pasture seed and fertiliser. | 2.1 | Ha | $4,726.12 | **$9,924.85** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass seed and fertiliser |
| | Security Fence around steep section highwall | 0 | m | $63.87 | **$0.00** | This item includes the erection of a 2m security fence (linier metre) around the void and other dangerous areas. |
| | High wall treatment - (trench + safety berm) | 0 | m | $73.45 | **$0.00** | This item includes the construction of a safety berm and rill (linier metre) around the highwall to stop all vehicles, ect accidentally driving over haul road (engineered control). |
| | | | | **Precinct Security Deposit** | $124,660.94 | |
| **Disturbance ahead of Mining + water management structures** | Areas cleared on the surface - re-establish vegetation commensurate with surrounding vegetation | 0 | Ha | $2,682.39 | **$0.00** | This includes the direct application of seed to restore the vegetation that was disturbed as part of clearing operations ahead of the mine. |
| | Areas topsoil stripped on the surface - source cart and respread topsoil | 0 | $m^3$ | $2.55 | **$0.00** | This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the tailings dam / emplacement. |
| | Reshape, deep rip, ameliorate and seed highwall / internal access roads and tracks | 0 | Ha | $6,386.65 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass / tree seed and fertiliser |
| | Reshape, deep rip, ameliorate and seed exploration lines / areas | 0 | Ha | $4,726.12 | **$0.00** | This item includes the area requiring the addition of ameliorates such as lime or gypsum prior to the application of grass / tree seed and fertiliser |
| | | | | **Precinct Security Deposit** | $0.00 | |
| **Dams & Water Holding Structures** | Clean water dams to be retained after mine closure -make safe and minor earthworks. | 0 | @ | $2,554.66 | **$0.00** | This item includes making the dam spillway, and walls stable and ensuring the integrity of the dam wall, etc. |
| | Dirty Water Dams (Drain and remove sediments to make dam water clean) | 0 | $m^3$ | $4.09 | **$0.00** | This item includes draining the dam and removing 500mm of potentially contaminated (saline) sediments to be buried in the pit. **UNIT RATE:** must consider the distance from the dam to the disposal area. |
| | | | | **Precinct Security Deposit** | $0.00 | |
| **River & Creek Diversions** | Creek diversion - Channel maintenance through spoil / backfill (20% of estimated diversion construction costs due to unknown in landform stability) | 0 | m | $383.20 | **$0.00** | This item includes the length (m) for ongoing maintenance of diversions constructed through unconsolidated overburden. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion. |
| | Creek diversion - Channel maintenance insitu (10% of estimated construction cost for diversion) | 0 | m | $191.60 | **$0.00** | This item includes the length (m) for ongoing maintenance of diversions constructed through unnatural ground. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion. |
| | Creek diversion - Vegetation maintenance | 0 | $m^2$ | $0.38 | **$0.00** | This item includes the ongoing maintenance of vegetation within the diversion channel & batters. |
| | | | | **Precinct Security Deposit** | $0.00 | |
| **Other** | Other 1 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 2 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 3 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | | | **Precinct Security Deposit** | $0.00 | |

**Total Security Deposit for the "Domain"** **$124,660.94**

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct:____________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls UG_Metal Surface Disturbance

## Domain 5: Other

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Mitchell Bland |
| **Position** | Principal Environmental Consultant |
| **Department** | RW Corkery & Co Pty Limited |
| **Date** | 17/03/2017 |

**Legend:**

| | |
|---|---|
| 🟦 | Item fixed no entry required |
| 🟨 | Input from site optional (if information available) |
| 🟩 | Input mandatory |

| Management Precinct | Activity / Description | Quantity | Unit | Unit Price | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| **Other (eg. site contamination, closure plan preparation, etc)** | The restoration and care and maintenance of items that have historical significance and are to be retained after the cessation of mining. | 0 | @ | $25,546.58 | **$0.00** | This item includes ensuring that sufficient resources are made available to restore items of heritage significance and also provide money to enable the ongoing care and maintenance of the structure (if not the responsibility of any another stakeholder i.e. council, historical society). |
| | Cap exploration holes | 300 | @ | $319.33 | **$95,799.69** | This includes capping & rehabilitation of all old Cap exploration holes around the site |
| | Construction / Deconstruction of Bridges and crossings | 0 | @ | $0.00 | **$0.00** | Value to be provided by company |
| | Construction of Fencing - general | 0 | @ | $63.87 | **$0.00** | Includes general fencing around site or site works |
| | Other 5 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 6 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 7 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 8 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 9 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | Other 10 <insert> | | | | **$0.00** | This item includes **<<to be added by the operator>>** |
| | | **Precinct Security Deposit** | | | $95,799.69 | |

**Total Security Deposit for the "Domain"** **$95,799.69**

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct:________________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls UG_Metal Other

## Third Party Project Management & Contingencies

**Detail of person filling out the Worksheet:**

| | |
|---|---|
| **Name** | Mitchell Bland |
| **Position** | Principal Environmental Consultant |
| **Department** | RW Corkery & Co Pty Limited |
| **Date** | 17/03/2017 |

**Legend:**

| | |
|---|---|
| 🟦 | Item fixed no entry required |
| 🟨 | Input from site optional (if information available) |
| 🟩 | Input mandatory |

| Item | Activity / Description | Quantity | Unit | Cost | Total Cost | Description / Notes: |
|---|---|---|---|---|---|---|
| | | | | **Sub-Total (Domains)** | **$2,219,119.34** | |
| **Third Party Project Management** | Mobilisation & Demobilisation (third party contractor rates apply). | 1 | @ | $50,000.00 | **$50,000.00** | Cost would have to be determined (justified) on the basis of the equipment required and the distance of the mine from the likely contractor to be used. |
| | DRE Tender Preparation and Assessment | 1 | @ | $6,386.65 | **$6,386.65** | Values provided in this cell are provided as a minimum, and should be assessed based on the size of the site, and works required. |
| | Development of Unplanned Closure Plan | 1 | @ | $31,933.23 | **$31,933.23** | Values provided in this cell are provided as a minimum, and should be assessed based on the size of the site, and works required. |
| | Post closure environmental monitoring | 5% | % | $110,955.97 | **$110,955.97** | % of the subtotal for all domains |
| | Project Management & Surveying | 10% | % | $221,911.93 | **$221,911.93** | % of the subtotal for all domains |
| | Indexation | | @ | | **$0.00** | |
| | Other <insert> | | @ | | **$0.00** | |
| | Other <insert> | | @ | | **$0.00** | |
| | | | | **Sub-Total (Sundry Items)** | **$421,187.78** | |
| | **Sub-Total (Domain and Sundry Items)** | | | | **$2,640,307.12** | |
| **Contingency** | Contingency | 10% | % | $2,640,307.12 | **$264,030.71** | |
| | | **Precinct Security Deposit** | | | **$2,904,337.83** | **exclusive of GST** |

| | |
|---|---|
| **Sub-Total Rehabilitation Estimate for "Domains"** | $2,219,119.34 |
| **Total Rehabilitation Estimate for "Sundry Items"** | $421,187.78 |
| **Contingency (based on Sundry and Domains)** | $264,030.71 |

Department of Primary Industries Mineral Resources - Environment Branch
Rehabilitation Cost Calculation Spreadsheet

Certified Correct: ____________(initial)
Appendix 3.1_2016-2017 Rehabilitation-Cost-Calculation-Tool_200117.xls Management & Contingencies

Resources & Energy

## Justification for Change of Rates in Resources & Energy Rehabilitation Cost Calculation Tool

| Domain | Activity | DRE unit/rate | Adopted Rates | Justification |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
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| | | | | |

***In completing the R&E Rehabilitation Cost Calculation, we are seeking an adjustment to the rates currently utilised in the R&E Rehabilitation Cost Calculation Tool. A justification for the rate change by a third party has been included and I confirm that only the rates identified in the above table have been altered in the Rehabilitation Cost Calculation Tool.***

| | | |
|---|---|---|
| **General Manager** | **Signature** | **Date** |
| **DRE Reporting Officer** | **Signature** | **Date** |

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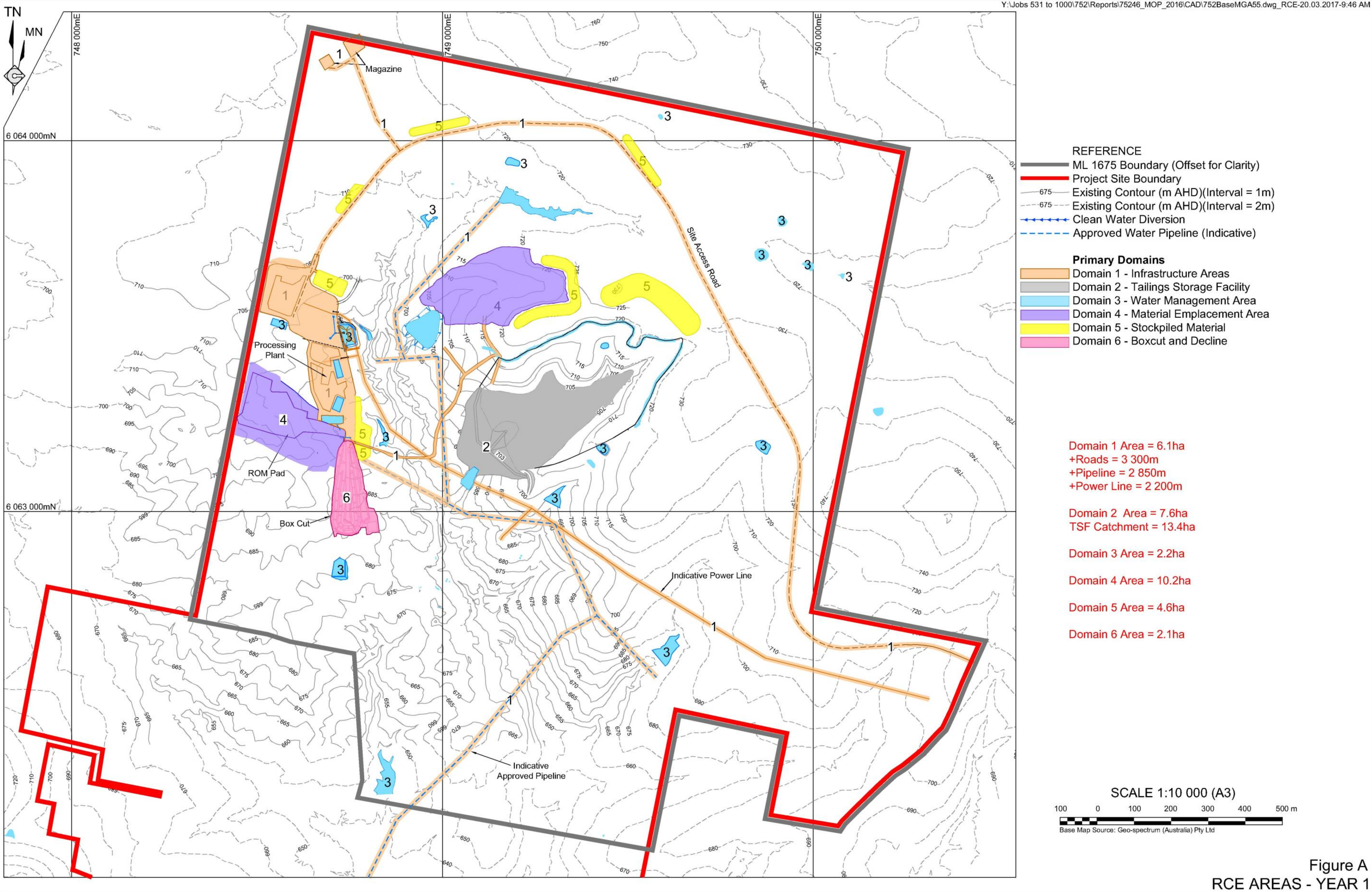

REFERENCE
- ▬ ML 1675 Boundary (Offset for Clarity)
- ▬ Project Site Boundary
- —675— Existing Contour (m AHD)(Interval = 1m)
- - -675- - - Existing Contour (m AHD)(Interval = 2m)
- ◆◆◆◆ Clean Water Diversion
- - - - Approved Water Pipeline (Indicative)

**Primary Domains**
- 🟧 Domain 1 - Infrastructure Areas
- ▨ Domain 2 - Tailings Storage Facility
- 🟦 Domain 3 - Water Management Area
- 🟪 Domain 4 - Material Emplacement Area
- 🟨 Domain 5 - Stockpiled Material
- 🟥 Domain 6 - Boxcut and Decline

Domain 1 Area = 6.1ha
+Roads = 3 300m
+Pipeline = 2 850m
+Power Line = 2 200m

Domain 2 Area = 7.6ha
TSF Catchment = 13.4ha

Domain 3 Area = 2.2ha

Domain 4 Area = 10.2ha

Domain 5 Area = 4.6ha

Domain 6 Area = 2.1ha

Figure A
RCE AREAS - YEAR 1

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