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Our Ref: 4166F_DPIE Response_NoiseBiodiversity_V1

24 June 2021

Matthew Sprott
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Department of Planning, Industry and Environment
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E|matthew.sprott@planning.nsw.gov.au

Dear Matthew

**Re: Glendell Continued Operations Project (SSD-9349)**
**– Request for Additional Information**

We are writing to you in response to your letter correspondence dated 27 May 2021 requesting additional information in regard to the Glendell Continued Operations Project (the Project). Our response below relates to the points raised in this correspondence relating to:

- Assessment of low frequency noise
- Staging of biodiversity offsets.

In addition to this request, as part of the Response to Submissions (RTS) for the Project, we committed to completing surveys for the striped legless lizard *(Delmar impar).* These surveys have now been completed and an overview is provided in **Section 2** of this correspondence.

## 1. Response to DPIE Request for Additional Information

> Assessment of low frequency noise – The analysis of low frequency noise impacts in the NIA details that the difference between C-weighted and A-weighted noise levels is greater than 15 dB at selected locations. The NIA explains that the predicted noise levels do not exceed the "reference curve" and therefore modifying factors for low frequency noise are not applicable in accordance with the NPfI. Please confirm what "refence curve" the NIA is referring to, and confirm that the predicted one-third octave levels are below the thresholds identified in Fact Sheet C of the NPfI.

The Noise Impact Assessment (NIA) includes the low-frequency noise analysis results within Appendix G of the report. The "reference curve" that is mentioned within the Low Frequency Noise Assessment section of Appendix G is referring to the "one-third octave low-frequency noise thresholds" that are presented in Table C2 of Factsheet C of the Noise Policy for Industry (NPfI). The reference to "NPfI Table C2 low frequency threshold" is noted as Note 1 under Tables G.1 – G.4 and also specifically shown on the associated Figures G.1-G.39.

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Staging of biodiversity offsets – The Department understands that Glencore is proposing to stage the delivery of biodiversity offsets for the Project. Please provide further information regarding the proposed staging of offsets, including the number and type of biodiversity credits required to be retired for each stage.

It is proposed to stage the delivery of biodiversity offsets to align with the staging of development within the Additional Disturbance Area. Three separate areas of the Additional Disturbance Area have been identified which broadly correspond to Years 0-6, Years 7-13 and Years 13-onwards of the Project. These stages are shown on **Figure 1**.

**Table 1** outlines the biodiversity credit requirements for the Project, including both ecosystem credits and species credits requiring offsetting in each stage of the development.

While the stages broadly align with the years identified, it is proposed that the offsetting requirements for each of these areas would be triggered by any surface disturbance associated with the Project in the respective area, unless otherwise approved by the Planning Secretary. An example of where the Planning Secretary may defer a requirement to provide biodiversity offsets for a stage is where the development within that stage occurs within a previously disturbed area, is of a minor and temporary nature only or is within an area that would not otherwise trigger an offsetting requirement (e.g. a Category 1 exempt area).

**Table 1 Biodiversity credit requirements for the Project**

| Credit Type | Stage 1 Credits Required | Stage 2 Credits Required | Stage 3 Credits Required | Total Credits Required |
|---|---|---|---|---|
| ***Ecosystem Credits*** | | | | |
| **PCT 485** - River Oak Riparian Grassy Tall Woodland of the Western Hunter Valley - **Moderate to Good Condition** | 43 | 0 | 0 | 43 |
| **PCT 1603** - Narrow-leaved Ironbark - Bull Oak - Grey Box Shrub - Grass Open Forest of the Central and Lower Hunter - **Moderate to Good Condition** | 65 | 149 | 288 | 502 |
| **PCT 1603** - Narrow-leaved Ironbark - Bull Oak - Grey Box Shrub - Grass Open Forest of the Central and Lower Hunter - **Regeneration** | 240 | 215 | 380 | 835 |
| **PCT 1603 -** Narrow-leaved Ironbark - Bull Oak - Grey Box Shrub - Grass Open Forest of the Central and Lower Hunter - **Derived Native Grassland** | 2354 | 666 | 508 | 3528 |
| **PCT 1603** - Narrow-leaved Ironbark - Bull Oak - Grey Box Shrub - Grass Open Forest of the Central and Lower Hunter - **Modified Derived Native Grassland** | 392 | 12 | 0 | 404 |
| **PCT 1603** - Narrow-leaved Ironbark - Bull Oak - Grey Box Shrub - Grass Open Forest of the Central and Lower Hunter - **Plantation** | 33 | 0 | 0 | 33 |
| **PCT 1604** - Narrow-Leaved Ironbark - Grey Box - Spotted Gum Shrub - Grass Woodland of the Central and Lower Hunter - **Woody Rehab** | 11 | 0 | 0 | 11 |

| Credit Type | Stage 1 Credits Required | Stage 2 Credits Required | Stage 3 Credits Required | Total Credits Required |
|---|---|---|---|---|
| **PCT 1692** - Bull Oak Grassy Woodland of the Central Hunter Valley - **Moderate to Good Condition** | 125 | 62 | 20 | 207 |
| **PCT 1692** - Bull Oak Grassy Woodland of the Central Hunter Valley - **Regeneration** | 10 | 0 | 105 | 115 |
| **PCT 1731** - Swamp Oak - Weeping Grass Grassy Riparian Forest of the Hunter Valley - **Moderate to Good Condition** | 390 | 73 | 216 | 679 |
| **PCT 1731** - Swamp Oak - Weeping Grass Grassy Riparian Forest of the Hunter Valley - **Plantation** | 28 | 0 | 0 | 28 |
| **Total** | **3691** | **1176** | **1517** | **6385** |
| ***Species Credits*** | | | | |
| **Tiger orchid (*Cymbidium canaliculatum* - endangered population)** | 2 | 0 | 0 | 2 |
| **Southern Myotis (*Myotis Macropus*)** | 356 | 149 | 227 | 732 |
| **Brush-tailed Phascogale (*Phascogale tapoatafa*)** | 1209 | 500 | 850 | 2559 |
| **Eastern Cave Bat (*Vespadelus troughtoni*)** | 17 | 0 | 0 | 17 |

## 2. Overview of the Striped Legless Lizard (*Delmar impar*) Surveys

As identified in the letter dated 7 August 2020 responding to BCD's comments on Part A of the Response to Submissions, Umwelt commenced additional reptile surveys targeting *Delmar impar*. These survey methods were undertaken using an artificial shelter site survey technique as recommended by the *Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for the vulnerable striped legless lizard, Delma impar* (DSEWPAC, 2011a) and *Survey guidelines for Australia's threatened reptiles* (DSEWPAC, 2011b).

Striped legless lizard (*Delma impar*) typically prefers natural temperate grassland dominated by tussock- forming grasses such as kangaroo grass (*Themeda triandra*), spear grasses (*Austrostipa* sp.) and tussock grasses (*Poa* sp.) (DPIE - OEH 2020). It is also occasionally found in open Box-Gum woodland and has also been captured in grasslands that have a high exotic component, however, these are typically those that are close to native grassland or have been left undisturbed for many years (DSEWPAC 2011). In the Hunter Valley it has been recorded in derived native grasslands, open woodlands and in ecotones between grasslands and woodlands.

Surface rocks are used for shelter and it goes below ground or under rocks or logs in winter (DPIE - OEH 2020). The Biodiversity Assessment Method (BAM) survey period for this species is September to December (DPIE 2020), however the Commonwealth guidelines (DAWE, 2021) suggest a survey period of September to May. There are records of the species between Jerry's Plains and Muswellbrook (DPIE – OEH 2020).

This species was aligned to PCTs 1692, 1603 and 1604 within the Project's Development Footprint based on review of the BAM Threatened Species Data Collection which nominates the PCTs that are associated with threatened species. However, given that all survey guidelines specify that *Delma impar* persists almost exclusively in grasslands, the woodland forms of these PCTs have been discounted as potential habitat. Similarly, mine rehabilitation and regeneration forms of these PCTs are highly unlikely to support this species, due to their general absence of tussock grasses and their history of excessive ground disturbance. As PCT 1603 is the only community with any derived grassland, survey focussed on this PCT (1603 DNG (386 ha)).

While the NSW Threatened Species Survey and Assessment Guidelines (DEC 2004) recommend a mixture of habitat searches, pitfall trapping and spotlighting for detection of threatened reptiles, these methods have all been largely discounted as being suitable for *Delmar impar* (DAWE, 2021) and the use of artificial shelter sites (roof tiles) is the preferred method in NSW for surveying for this species. The Commonwealth guidelines (DSEWPAC 2011a and DSEWPAC 2011b)) have been applied as they outline the suitable methods for *Delmar impar* specifically. These and other guidelines (ACT and Victoria state guidelines) recommend the use of artificial shelter above all other methods.

Survey methods recommended by the Commonwealth (DAWE, 2021) and adhered to during the surveys included:

- Shelter sites installed at least three months prior to the initial survey/checks (preferably by June).
- Tile grids consist of 50 tiles, at 5 metre spacing between tiles, arranged in a grid of 10 tiles by 5.
- As a minimum, two tile grids for sites less than 2 hectares (ha) in size. One grid per 3 ha for sites up to 30 ha. 10 grids for sites greater than 30 ha in size.
- Grid orientation is important: grids should preferably be positioned on a northerly aspect.
- Artificial shelter sites should be checked at least twice a month, and ideally once a week during spring to early summer (i.e. between early September to December). Shelter sites should not be checked more than once per week as this may lead to striped legless lizards abandoning the artificial shelters.
- Shelter sites should be checked when ambient temperatures do not exceed 28$^{o}$C. Grids may be checked during summer/autumn for the presence of shed skin.

For the Project survey, 10 artificial shelter sites (500 tiles in total) were set up across PCT 1603 DNG and modified DNG in early July 2020. The locations of these shelter sites are shown on **Figure 2**. The sites were checked weekly for 12 weeks from mid-September to early January 2021. To maximise the possibility of detection, a small amount of hand searches were also conducted at each survey location if tussock grasses were present. All artificial sites were marked using a handheld GPS.

*Delma impar* was not found within the Project's Development Footprint during any of the surveys conducted. Therefore, the Project does not trigger any offsetting requirements for *Delmar impar*.

We trust this information meets your requirements. Please do not hesitate to contact the undersigned on 0400 500 277 should you require clarification or further information.

Yours sincerely

**Shane Scott**
Project Manager
Glendell Continued Operations Project

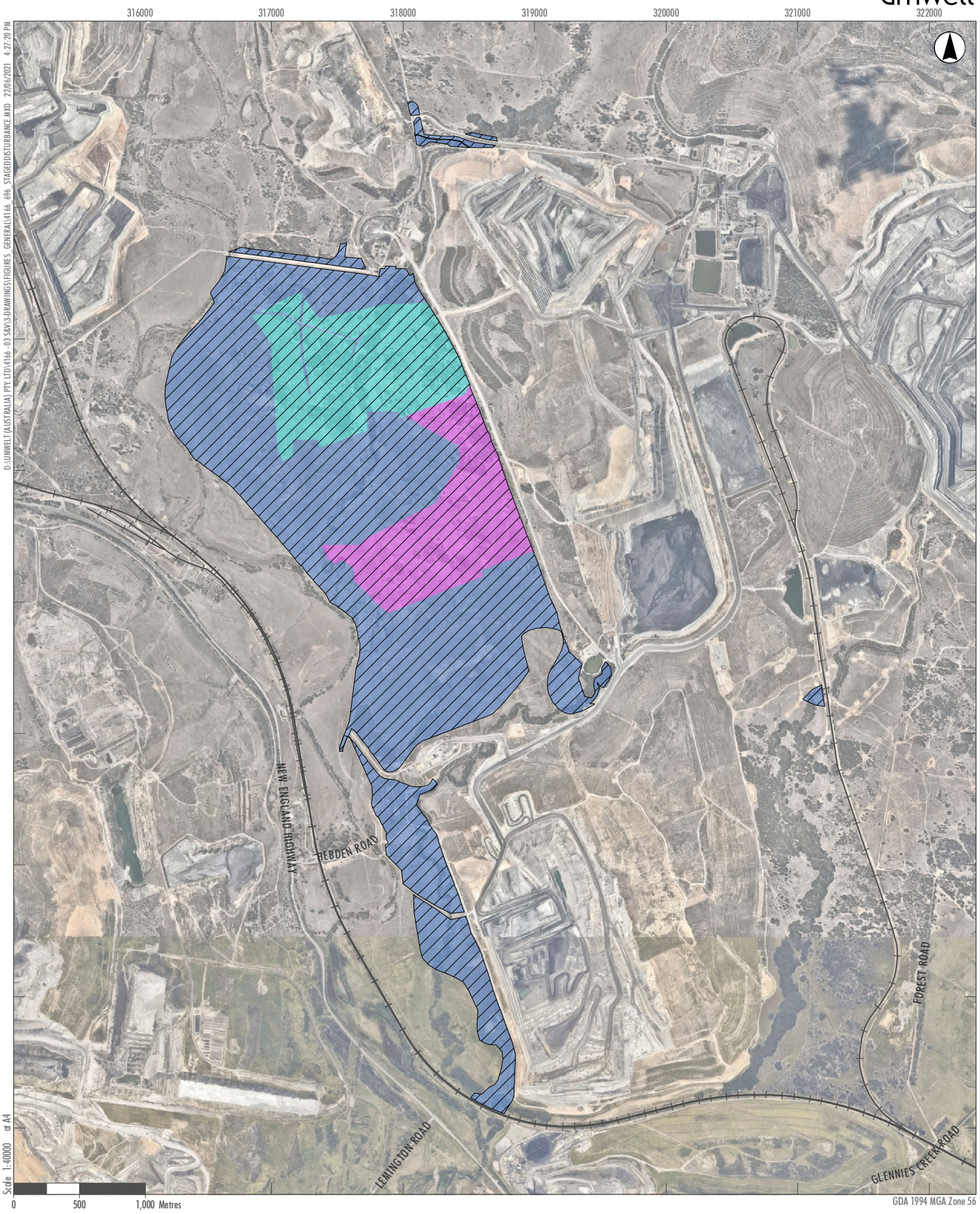
**References**

Department of Planning, Industry and Environment, Office of Environment and Heritage (DPIE-OEH) (2020), Striped Legless Lizard – profile, https://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10211 (. Last updated 11 June 2020 - accessed 18 June 2021)

Department of Sustainability Environment, Water, Population and Communities (DSEWPAC), (2011a) *Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for the vulnerable striped legless lizard, Delma impar*

Department of Sustainability Environment, Water, Population and Communities (DSEWPAC), (2011b) *Survey guidelines for Australia's threatened reptiles* (DSEWPAC, 2011b).

Department of Agriculture, Water and the Environment (DAWE), (2021) *Delma impar — Striped Legless Lizard, Striped Snake-lizard SPRAT Profile.* (Accessed 18 June 2021)




Legend

Additional Disturbance Area

**Disturbance Stages**

- Stage 1
- Stage 2
- Stage 3

FIGURE 1

## Disturbance Staging

Image Source: Nearmap (Sep 2020) Data source: DFSI (2020); Glencore (2021)

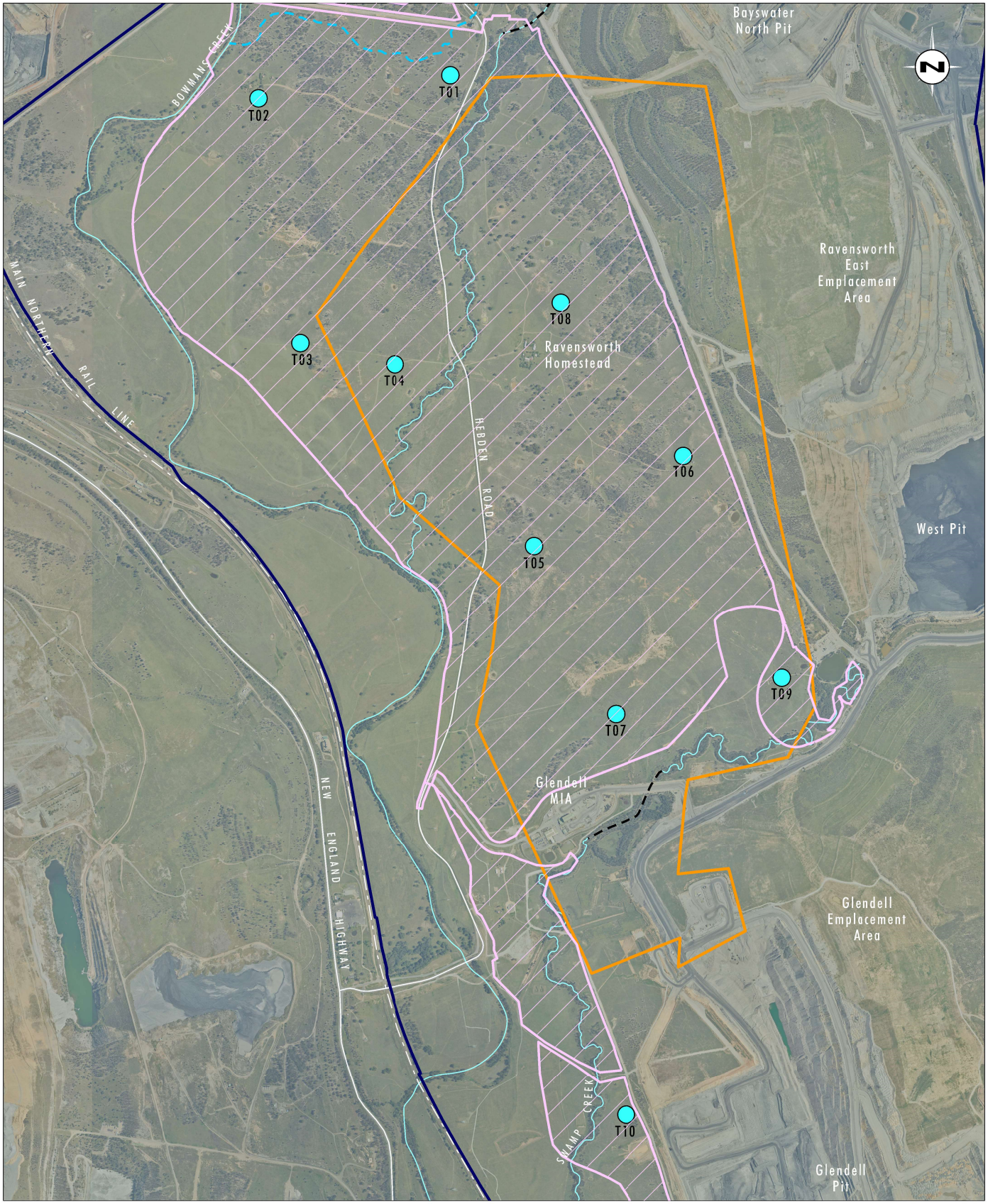



Image Source: Glencore (Dec 2018)
Data Source: Glencore (2019)

0 0.25 0.5 1.0km
1:25 000

## Legend

- Project Area
- Glendell Pit Extension
- Existing Creek Diversion
- Additional Disturbance Area
- Legless Lizard Survey Tile Location

FIGURE 2

## Legless Lizard Survey Tile Locations

File Name (A4): 4166_695.dgn
20210224 16.42