Monday, 9 February 2026

Our Ref: A25.306-LRP-NVCP_0_FINAL

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Trico Resources Pty Ltd
Greg Kendall
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Oakford, WA 6121

ATTENTION: Greg

SUBJECT: 3650 TOODYAY ROAD, BAILUP - BLACK COCKATOO HABITAT ASSESSMENT

Western Environmental Approvals Pty Ltd (WEPL) presents this letter report to summarise and consolidate the information obtained during the site assessment undertaken for Lot 7 (3650) Toodyay Road, Balingup (the Site). Trico Resources Pty Ltd has been granted development approval by the Western Australian Planning Commission (WAPC) for the extraction of gravel on the Site (WAPC 27-50106-1).

Two extraction areas have been identified within the Site. The extraction of gravel within area 1 requires the clearing of native vegetation.

This report has been prepared to support the Native Vegetation Clearing Permit application for the extraction area 1 (hereafter referred to as the 'Disturbance Footprint'). The Disturbance Footprint is 30.31 ha in size and is shown in Figure 1.

Project Background

Trico Resources was granted a works approval for extractive industries in 2015. The works approval included a clearing permit for the clearing of 100 native trees. Due to delays with other required approvals, the works have not been able to be commenced, and the previously obtained works approval has now expired. Since 2015, the environmental approval system of the State has changed and clearing permits can no longer be granted under a works approval. The Department of Water and Environmental Regulation (DWER) has advised that Trico Resources will need to apply for a new clearing permit, separate from any works approvals.

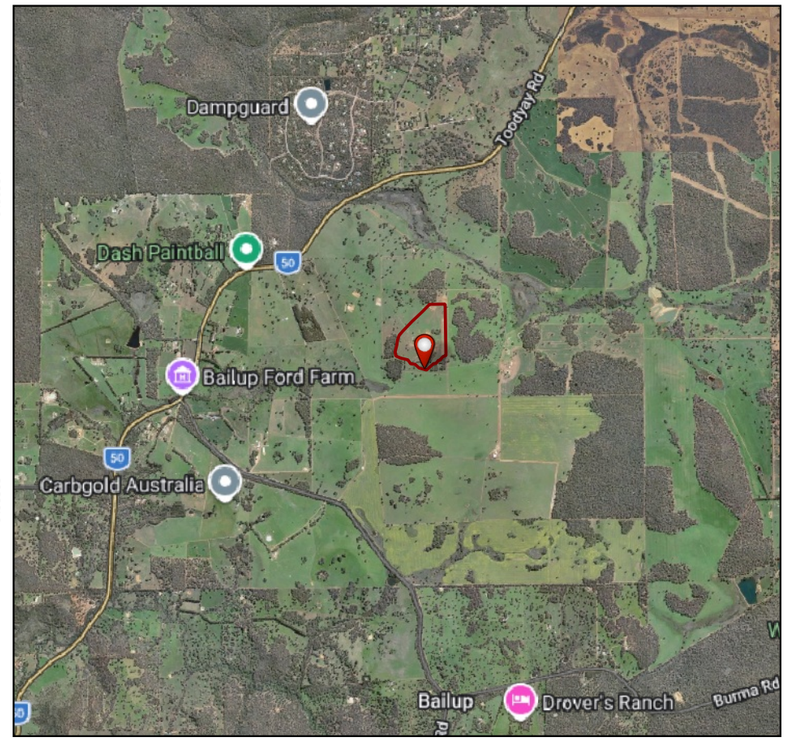
The previous works approval was supported by an Environmental Assessment Report prepared by Bioscience in 2015. The report provides information about the ecological values within the Site. Bioscience did not undertake a Targeted Black Cockatoo assessment or identify the exact number and species of trees to be cleared.

To obtain a complete and current understanding of the Site's ecological attributes, WEPL undertook the following scope of works to inform the Native Vegetation Clearing Permit application.

Scope of Work

The WEPL scope of works were as follows:

- Undertake a site walk-over to indicate vegetation condition.
- Provide a preliminary description of the vegetation types present.
- Undertake a Black Cockatoo Habitat Assessment in accordance with the Commonwealth *Referral Guideline for 3 WA Threatened Black Cockatoo Species* (Department of Agriculture, Water and the Environment [DAWE], 2022) comprising:
    - Ground-based assessment to identify significant habitat trees, foraging trees and potential breeding trees associated with the Carnaby's black cockatoo (*Zanda latirostris*) and the forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*).
    - Broad desktop assessment of foraging and roosting habitat values.
- Preparation of a letter report describing the results of the assessment.



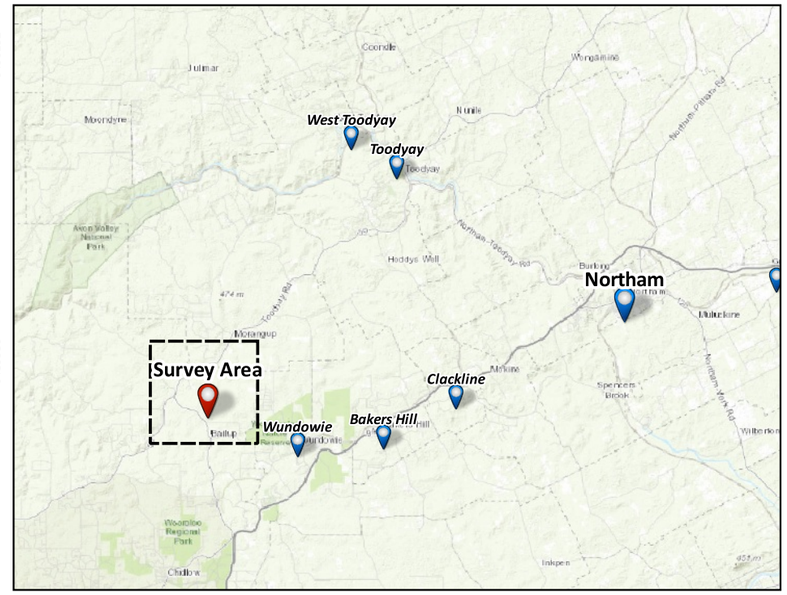


Figure 1: Disturbance Footprint

N

0 60 120 180 240 m

SCALE	1:4,330
SHEET SIZE	A3 COLOUR
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
DATA SOURCE	LANDGATE AERIAL IMAGERY NOW

PROJECT/REPORT NAME
Native Vegetation Clearing Permit
3650 Tooday Road, Bailup

CLIENT
Trico Resources Pty Ltd

PROJECT NUMBER	VERSION
A25.306	0

DRAWN BY / REVIEWED BY	DATE
SC/ZL	5/2/2026

Legend

- Disturbance Footprint
- Avoidance Area
- Cadastre (No Attributes) (LGATE-001)

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	5/2/2026

NOTES:

Cadastral boundary (LGATE-002). Base map ESRI Topo. Townsites (LGATE-248).

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Methodology

Vegetation Assessment Methodology

A site walkover was conducted by WEPL on 19 November 2025 to assess the existing vegetation across the Site. The assessment included identification of flora species present and evaluation of vegetation structure. This information was used to determine vegetation types and condition, and to inform and support the analysis of black cockatoo habitat presented in this report.

Black Cockatoo Assessment Methodology

A targeted black cockatoo assessment in accordance with the DAWE (2022) *Referral guideline for 3 WA threatened black cockatoo species*, including breeding, foraging and roosting habitat was undertaken by WEPL on 19 of November 2025.

The Site falls within the modelled distribution and breeding range of Carnaby's black cockatoo (*Zanda latirostris*) and forest red-tailed black cockatoo (*Calyptorhynchus banksii*) and outside the modelled distribution of the Baudin's black cockatoo (*Zanda baudinii*) (DAWE, 2022). As the Site falls outside of the modelled breeding and foraging distribution for the Baudin's black cockatoo, they have not been considered further within this assessment.

The Swan Coastal Plain is used by Carnaby's black cockatoos for foraging, with some patches of breeding habitat. Vegetation used by Carnaby's is dominated by Banksia spp. and tuart (*Eucalyptus gomphocephala*) woodlands, as well as marri (*Corymbia calophylla*), with jarrah (*E. marginata*) in the east (DAWE, 2022).

The November survey period occurred outside the primary foraging and nesting season for Carnaby's Black Cockatoo. Accordingly, if there is absence of observed individuals, targeted searches for foraging evidence are a reliable alternative, as such evidence particularly being *Corymbia calophylla* (marri) nut chews generally persist within the landscape (DAWE, 2022).

Breeding Habitat Assessment

DAWE (2022) defines breeding habitat as that which contains known, suitable or potential nesting trees, and which occurs within the range of the species. Terminology used in this report for breeding habitat trees follows that defined in glossary of DAWE (2022) as shown in Table 1.

Table 1: Breeding Habitat Terminology

Breeding Habitat Term	Definition (DAWE, 2022)
Known nesting trees	Trees (live or dead but still standing) which contains a hollow where black cockatoo breeding has been recorded or which demonstrates evidence of breeding (i.e. showing evidence of use through scratches, chew marks or feathers).
Suitable nesting trees	Trees with suitable nesting hollows present, although no evidence of use.
Suitable nesting hollows	Any hollow with dimensions suitable for use for nesting by black cockatoos.
Potential nesting trees	Trees that have a suitable Diameter at Brest Height (DBH) to develop a nest hollow, but do not currently have hollows. For most species of trees, suitable nest hollows are only found in live trees with a DBH of at least 500 mm.
Potential future nesting trees	Trees suitable to develop a nest hollow in the future are 300-500 mm DBH.

In addition to Commonwealth guidelines for assessing breeding trees, a scoring system developed by Dr Mike Bamford (referred to as Bamford Class) was applied to class potential breeding trees. This system and the Bamford class alignment with DAWE (2022) breeding habitat terminology are shown in Table 2.

Table 2: Black Cockatoo Breeding Habitat Trees- Bamford Class

Bamford Class	Description of Tree and Hollows/Activity	Alignment with DAWE (2022) Breeding Habitat Terminology
1	Active nest observed; adult (or immature) bird seen entering or emerging from hollow, eggs present.	Known nesting tree.
2	Hollow of suitable size and angle visible with chew marks attributed to black cockatoo nesting activity around entrance.	Known nesting tree.
3	Potentially suitable hollow visible but no chew marks present; or potentially suitable hollow present if from ground-based assessment only (as suggested by structure of tree, such as large, vertical trunk broken off at a height of >10 m with thin rim).	Suitable nesting tree.
4	Tree with hollows or broken branches that might or do contain hollows, but hollows or potential hollows are not of a suitable size, or are aligned or obstructed so as to prevent access.	Potential nesting tree.
5	Tree lacking large hollows or broken branches that might have large hollows; a tree with more or less intact branches and a spreading crown.	Potential nesting tree.
No Class	No description. Potential future nesting trees were not considered in the Bamford Class scale.	Potential future nesting trees.

All breeding habitat trees were recorded using a mobile GIS field data collector platform. The following was recorded for each tree:

- Species.
- DBH (approximately 1.3 m from the ground).
- Coordinates.
- Presence of hollows (as observable from the ground).
- Bamford Class (see below).

Trees identified as potentially having suitable hollows present were inspected using a pole camera to determine the hollows internal dimensions. Hollow information recorded included:

- Size of entry.
- Estimated depth.
- Hollow type (knot, fissure, spout, vertical/chimney.
- Suitability for use.
- Evidence of use.
- Presence of other birds or bees.

Roosting Habitat Assessment

Roosting habitat was assessed based on observation of roosting or roosting evidence recorded during survey and based on habitat suitability (generally tall trees in the landscape in proximity to a water source). During the field survey, searches were conducted for evidence of roosting (e.g. piles of scats, feeding debris or chewed trees).

Foraging Habitat Assessment

The commonwealth defines foraging habitat as areas including plants of species known to support foraging within the range of each black cockatoo species. Marri and jarrah woodlands are particularly important to the forest red-tailed black cockatoo while proteaceous heaths (shrublands dominated by banksia, hakea and grevillea species) are also utilised by Carnaby's black cockatoo (DAWE, 2022).

The potential of the habitat within the Survey Area was used in conjunction with the site assessment to determine the Foraging Habitat Scoring Tool (DAWE, 2022). The Foraging Habitat Tool is applied once only for an entire site. A secondary assessment was undertaken using the '*Habitat Scoring System for WA Black Cockatoo Foraging Habitat*' (the Habitat Quality Scoring Tool) provided by DCCEEW (n.d.). The Habitat Quality

Scoring Tool produces a score of 0-7 for site condition and may be applies to each identified fauna habitat type. An overall site context score of 0-3 is then added. Areas with a site condition of 2 or lower (foraging condition low, negligible or none) are "extremely unlikely to be considered as suitable habitat". These areas are therefore classified as not comprising suitable foraging habitat in this assessment.

Vegetation Assessment Results

Vegetation Types

The preliminary assessment identified three broad vegetation types. The majority of the Disturbance Footprint is comprised of cleared pasture paddock (93.7%), which is not considered to represent native vegetation due to the lack of native species present. A total area of 1.89 ha is comprised of native vegetation, representing 6.3% of the total Disturbance Footprint. Native vegetation types, including extents are summarised below in Table 3 and displayed in Figure 2. The column on the far right presents extents of native vegetation clearing for each vegetation type.

Table 3: Vegetation Type Descriptions and Extents

Vegetation Type	Area (ha)	% of Site	Clearing Impact (ha)
VT 01 – Jarrah-marri-banksia woodland Overstorey dominated by *Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri) and *Banksia* spp. over *Xanthorrhoea preissii* and *Persoonia elliptica* over *Hibbertia* sp. Good condition	1.44	4.8%	0.56
VT 02 – Isolated patches of jarrah and marri Isolated jarrah and marri trees over pasture grasses and cleared paddock. Completely Degraded condition	0.37	1.2%	0.33
VT 03 – Isolated *Grevillea* spp. Isolated patches of *Grevillea* spp. Completely Degraded condition	0.08	0.3%	0.08
Cleared paddock Pasture paddock and cleared areas, void of native species.	28.42	93.7%	N/A
Total	**30.31**	**100.0%**	**0.97**

Within the larger Disturbance Footprint an area of avoidance has been delineated, within which all native vegetation will be retained as shown in Figure 2. The total clearing impact is therefore 0.97 ha of native vegetation. This represents 51.3% of native vegetation present within the wider Disturbance Footprint.

Vegetation Condition

Native vegetation condition extents within the Disturbance Footprint are summarised below in Table 4 and shown in Figure 3. Cleared areas (28.42 ha, 93.7% of the Disturbance Footprint) have been excluded from the assessment of vegetation condition.

Table 4: Native Vegetation Condition Extent

Vegetation Condition	Extent (ha)	% of Vegetated Area	Clearing Impact (ha)
Good	1.44	76.2%	0.56
Completely Degraded	0.45	23.8%	0.41
Total	**1.89**	**100.0%**	**0.97**

The vegetation required to be cleared for the project is in Good and Completely Degraded condition. A total of 0.56 ha of vegetation in Good condition will be cleared, which represents 38.9% of the vegetation condition extent within the Disturbance Footprint. A total of 0.41 ha of Completely Degraded vegetation will be cleared, representing 91.1% of the condition extent within the Disturbance Footprint.

The delineated avoidance area provides for the retention of 0.88 ha vegetation in Good condition and 0.04 ha in Completely Degraded condition within the Disturbance Footprint. Further details are provided under *Impact Avoidance and Mitigation.*

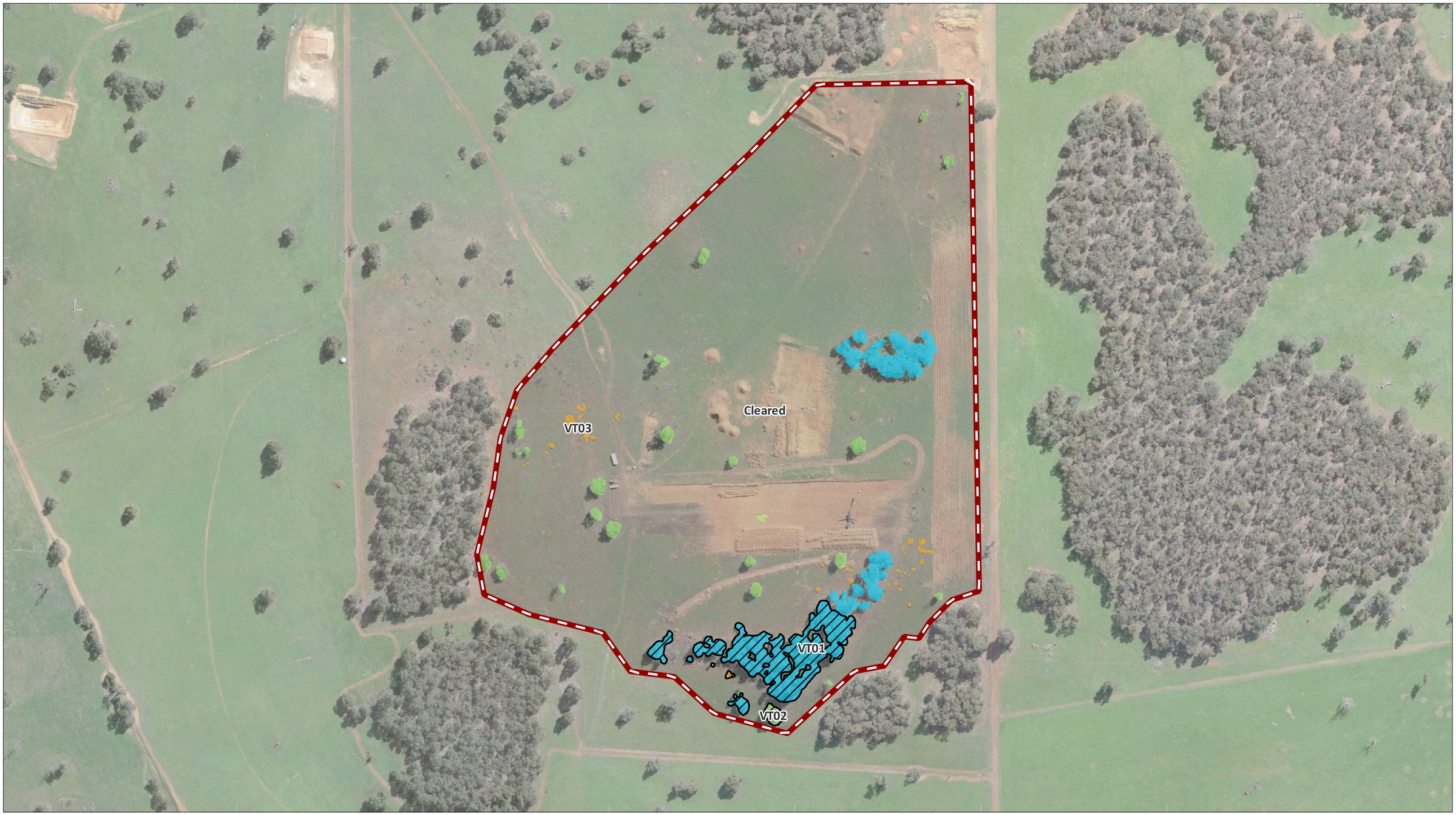

Figure 2: Vegetation Type

N

0 60 120 180 240 m

PROJECT/REPORT NAME	Native Vegetation Clearing Permit 3650 Tooday Road, Bailup
SCALE	1:4,300
SHEET SIZE	A3 COLOUR
CLIENT	Trico Resources Pty Ltd
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
PROJECT NUMBER	A25.306
VERSION	0
DATA SOURCE	LANDGATE AERIAL IMAGERY NOW
DRAWN BY / REVIEWED BY	SC/ZL
DATE	5/2/2026

Legend

- Disturbance Footprint
- Avoidance Area

Vegetation Type

- VT01 - Jarrah Marri Banksia Woodland over Xanthorrhoea preissii, Persoonia elliptica over Hibbertia sp.
- VT02 - Jarrah Marri over cleared paddock
- VT03 - Individual grevillea shrubs
- VT04 - Cleared Paddock

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	5/2/2026

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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Figure 3: Vegetation Condition

0 60 120 180 240 m

N

SCALE: 1:4,300	SHEET SIZE: A3 COLOUR
PROJECT/REPORT NAME: Native Vegetation Clearing Permit 3650 Tooday Road, Bailup	CLIENT: Trico Resources Pty Ltd
COORDINATE REFERENCE SYSTEM: GDA2020 / MGA zone 50	PROJECT NUMBER: A25.306 / VERSION: 0
DATA SOURCE: LANDGATE AERIAL IMAGERY NOW	DRAWN BY / REVIEWED BY: SC/ZL / DATE: 5/2/2026

Legend

- Disturbance Footprint
- Avoidance Area

Vegetation Condition

- Cleared
- Completely degraded
- Good

No	Description	Drawn	Approved	Date
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Black Cockatoo Habitat Assessment Results

No black cockatoos were observed during the survey, nor was any evidence of black cockatoo utilisation.

Breeding Habitat

Breeding habitat is defined as that which contains known, suitable or potential nesting trees (DAWE, 2022). Breeding typically occurs in native eucalypt species particularly marri, jarrah, wandoo and tuart, however many species of eucalypt including non-endemic species may develop suitable hollows for breeding (DAWE, 2022). Any tree with a DBH ≥ 500 mm are classified as potential breeding trees and have been assessed in this survey.

The survey identified a total of 115 trees with a DBH ≥ 500 mm (potential future breeding trees) within the Disturbance Footprint as shown in According to the publicly available datasets defining known black cockatoo roosting sites (*DBCA-064* and *DBCA-050*), the Disturbance Footprint is located approximately 9.3 km from the north-western buffer of a confirmed Carnaby's black cockatoo roost site. In addition, 10 black cockatoo roosting sites occur within a 12 km radius of the Disturbance Footprint, all of which are illustrated in Figure 5.

Figure 4. Species and Bamford classifications are shown in Table 5.

Table 5: Summary of Breeding Trees

Bamford Class	Class 1	Class 2	Class 3	Class 4 or 5	Totals (Trees)
DCCEEW, 2022 Terminology	Known Nesting Tree		Suitable Nesting Tree	Potential Nesting Tree	
TREE SPECIES					
Dead (*Eucalyptus* sp.)	-	-	-	2	2
Jarrah (*Eucalyptus marginata*)	-	-	-	59	59
Marri (*Corymbia calophylla*)	-	-	-	54	54
Total	-	-	-	115	115

All identified breeding habitat trees (115 trees) either did not show signs of potential nesting hollow development (Class 5 trees - 105 trees), or contained small, or inaccessible hollows (Class 4 trees – 10 trees).

According to the publicly available datasets defining known black cockatoo breeding sites and breeding areas, (*DBCA-063* and *DBCA-054*), the Disturbance Footprint is located in proximity to three confirmed Carnaby's breeding areas and one black cockatoo breeding area. These are described below and illustrated in Figure 5.

- 2.2 km from the south-western buffer of a confirmed Carnaby's Black-Cockatoo breeding area.
- 9.6 km from the southern buffer of a confirmed Carnaby's Black-Cockatoo breeding area.
- 10 km from the north-eastern buffer of a confirmed Carnaby's Black-Cockatoo breeding area.
- 9.7 km from the western buffer of a black cockatoo breeding area.

Out of the potential nesting present within the wider Disturbance Footprint, 53 trees (29 marri, 24 jarrah) are located within the avoidance area and will not be impacted.

Consequently, the project requires the clearing of 62 potential nesting trees, comprised of:

- 35 jarrah.
- 25 marri.
- 2 dead.

None of the trees contain suitable breeding hollows.

Roosting Habitat

Night roosting locations are typically in proximity to foraging habitat (black cockatoos mainly forage within 20 km of night roosts) and with access to water points <2 km from roosting location (DAWE, 2022). Any groups of tall trees, particularly large native eucalypts in proximity to water sources may provide night roosting habitat (DAWE, 2022).

No evidence of roosting behaviour was recorded during the assessment.

There are individual tall tress scattered thought the Disturbance Footprint with a small grove of large, mature trees in the east. The Disturbance Footprint does not contain any surface water sources; however, it is located approximately 13 km from the perennial Avon River. The Disturbance Footprint is therefore considered to provide moderate value roosting habitat.

According to the publicly available datasets defining known black cockatoo roosting sites (*DBCA-064* and *DBCA-050*), the Disturbance Footprint is located approximately 9.3 km from the north-western buffer of a confirmed Carnaby's black cockatoo roost site. In addition, 10 black cockatoo roosting sites occur within a 12 km radius of the Disturbance Footprint, all of which are illustrated in Figure 5.

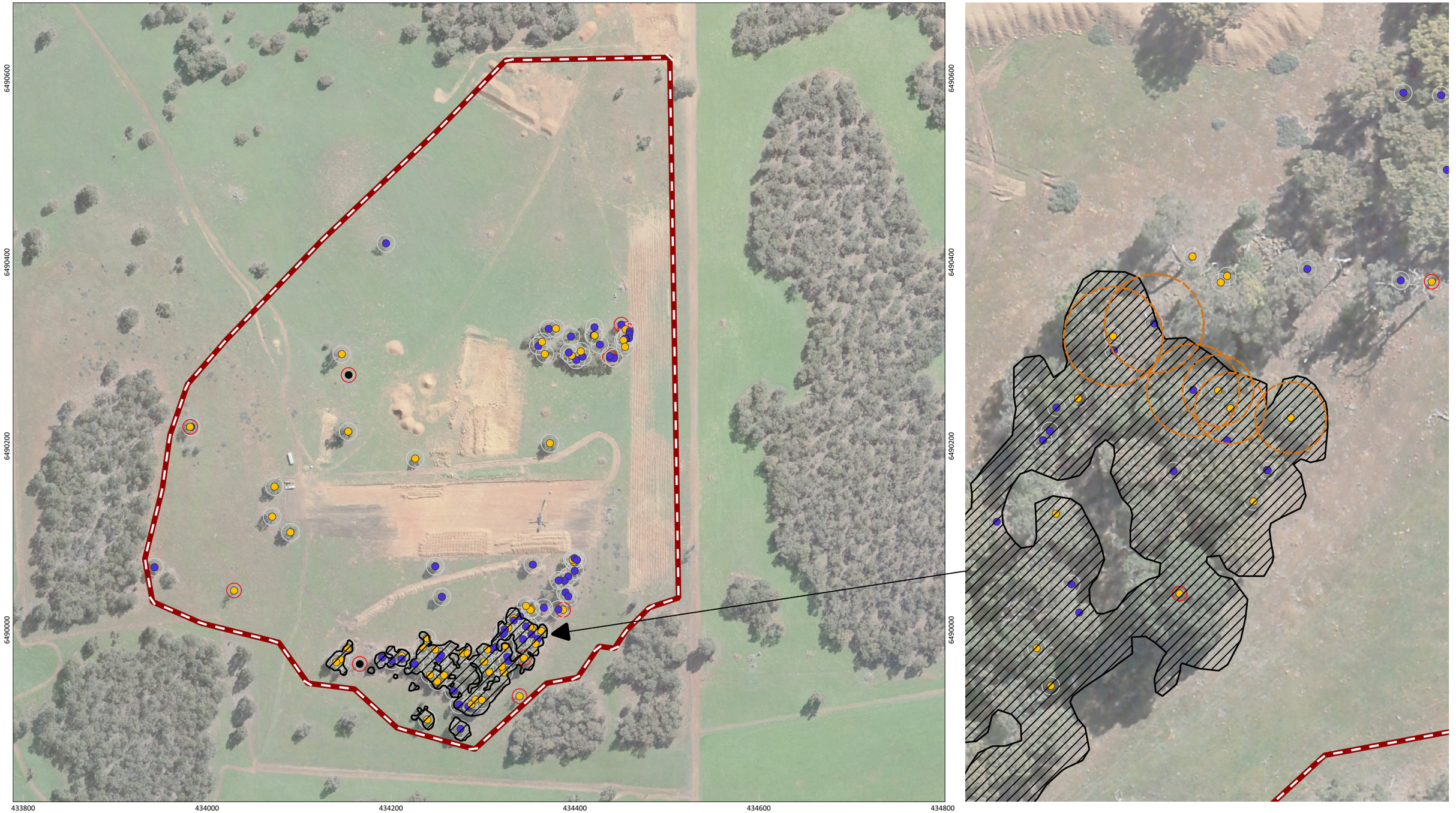

Figure 4: Black Cockatoo Potential Breeding Habitat

N

0 60 120 180 240 m

SCALE: 1:4,000	SHEET SIZE: A3 COLOUR
COORDINATE REFERENCE SYSTEM: GDA2020 / MGA zone 50	
DATA SOURCE: LANDGATE AERIAL IMAGERY NOW	

PROJECT/REPORT NAME: Native Vegetation Clearing Permit
3650 Tooday Road, Bailup

CLIENT: Trico Resources Pty Ltd

PROJECT NUMBER	VERSION
A25.306	0
DRAWN BY / REVIEWED BY	DATE
SC/ZL	5/2/2026

Legend

- Disturbance Footprint
- Avoidance Area
- TPZ

Tree Species

- Dead
- Jarrah
- Marri

Bamford Tree Class

- 4
- 5

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	5/2/2026

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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Foraging Habitat

Three different types of foraging habitat have been identified as shown in Figure 2. These are:

- **VT 01 – Jarrah-marri-banksia woodland** (1.44 ha): Overstorey dominated by *Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri) and Banksia spp. over *Xanthorrhoea preissii* and *Persoonia elliptica* over *Hibbertia* sp.

- **VT 02 – Isolated patches of jarrah and marri** (0.37 ha): Isolated jarrah and marri trees over pasture grasses and cleared paddock.

- **VT 03 – Isolated Grevillea** (0.08 ha): Isolated patches of *Grevillea* spp.

The Commonwealth referral guidelines provide a foraging quality scoring tool to guide referral information (DAWE, 2022). The tool advises that if the survey area contains native vegetation used for foraging at any time by a black cockatoo species and is >1 ha in size, that it is considered at face value to be of very high quality and assigned a starting score of 10. The tool then allows for subtractions if attributes are present which reduce the functionality of the foraging habitat. The Commonwealth referral guidelines specify that the tool is to be applied once to the entire impact area even if there is more than one type of foraging habitat present. The calculated foraging habitat quality score is shown below in Table 6.

Table 6: Foraging Quality Scoring Tool (DCCEEW, 2022)

Attribute	Carnaby's Black Cockatoo	Forest Red-tailed Black Cockatoo
Starting score	10- Jarrah/Marri woodland and scattered Banksia.	10- Jarrah/Marri woodland and scattered Banksia.
Foraging potential (-2 if no foraging evidence)	No change, foraging evidence recorded.	No change, foraging evidence recorded.
Connectivity (-2 if no other foraging habitat in 12km)	No change, other foraging habitat <12 km away.	No change, other foraging habitat <12 km away.
Proximity to breeding habitat (-2 if no breeding habitat in 12km)	-2, No recorded breeding habitat within 12 km.	-2, No recorded breeding habitat within 12 km.
Proximity to roosting (-1 if >20km from known night roost)	No change, known roosting site <20 km distant.	No change, known roosting site <20 km distant.
Impact from significant plant disease (-1 if >50% impact)	No change, impact from plant disease affecting <50 % of foraging plants.	No change, impact from plant disease affecting <50 % of foraging plants.
Total score	8	8

The Commonwealth referral guidance allows for the inclusion of additional information for foraging habitat which may be considered during an assessment, such as the extent and density of recognised foraging plants within a survey area. As an additional source of information, WEPL provides an assessment of foraging habitat quality using a more detailed scoring tool developed by DCCEEW (n.d.) referred to as the Habitat Quality Scoring Tool to produce a numerical foraging habitat score. The Habitat Quality Scoring Tool allows for a

score of 0 (none) to 7 (very high) for Site Condition. This is assessed based on density of known foraging species and health of vegetation. The 0-7 Site Condition score is applied to each mapped polygon of fauna habitat. The Habitat Quality Scoring Tool then applies a Site Context score out of three, this is applied only once to the whole Disturbance Footprint.

The Site Condition habitat quality score for each cockatoo species, as well as the total area per score present within the Disturbance Footprint are listed in Table 7.

Table 7: Habitat Quality Scoring Tool - Site Condition Extent

Site Condition	Carnaby's Black Cockatoo (ha)	Forest Red-tailed Black Cockatoo (ha)
7- Very High	0.19	0.37
6- High	1.44	1.44
5-Moderate-High	-	-
4-Moderate	0.08	0.08
3-Low-Moderate	0.01	-
2-Low*	*0.16*	*-*
1-Negligable to Low*	*28.42*	*28.42*
0-None*	*-*	*-*
Total (excludes 0-2)	**1.72**	**1.89**

**Shaded cells are classified as not comprising suitable foraging habitat*

The Habitat Quality Scoring Tool then requires the application of a Site Context score (out of 3) (see Table 8) which is added to the Site Condition score for a final score (out of 10).

Table 9 provides the final Habitat Quality Scoring Tool score. It should be noted that habitat with a Site Condition score of 2 or less is extremely unlikely to be suitable habitat, and do not have a Site Context score added.

Table 8: Habitat Quality Scoring Tool - Site Context

Site Context					
Proximity of the site in relation to other habitat	3	Site is within 6 km of known breeding site.	or	Site is within 12 km of other foraging resources with site condition of at least 3.	3
	2	Site is within 12 km of known breeding site.		Site is within 15 km of other foraging resources with site condition of at least 4.	
	1	Site is within 15 km of known breeding site.		Site is between 15 km and 20 km of other foraging resources with site condition of at least 5.	
	0	Site is further than 15 km from known breeding site.		Site is further than 20 km from other foraging resources.	
Total					**3**

Table 9: Final Habitat Scoring Tool Score

Survey Area Condition	Carnaby's Black-Cockatoo (ha)	Forest Red-tail Black-Cockatoo (ha)
10 (Very High)	0.19	0.37
9 (High)	1.44	1.44
8 (Moderate to High)	-	-
7 (Moderate)	0.08	0.08
6 (Low to Moderate)	0.01	-
2	*0.16*	*-*
1	*28.42*	*28.42*
0	*-*	*-*
Total (excludes 0-2)	**1.72**	**1.89**

**Shaded cells are classified as not comprising suitable foraging habitat*

As per the Habitat Quality Scoring Tool areas with a site condition score of 2 or lower (shaded cells) are "extremely unlikely to be considered as suitable habitat". These areas are therefore classified as not comprising suitable foraging habitat in this assessment. Consequently, the Disturbance Footprint contains a total of 1.72 ha of foraging habitat for Carnaby's black cockatoo with the weighted average habitat quality being high (9/10). A total of 1.89 ha of foraging habitat is present for Forest red-tailed black cockatoo with the weighted average quality being high (9/10).

The delineated avoidance area provides for the retention of 0.88 ha of foraging habitat for Carnaby's black cockatoo with a weighted average habitat quality score of high (9/10) and 0.92 ha of foraging habitat for Forest red-tailed black cockatoo with a weighted average quality score of high (9/10). The avoidance of foraging habitat is shown in Figure 6 and Figure 7.

The resulting impacts of the project are therefore:

- Loss of 0.84 ha of foraging habitat to Carnaby's black cockatoo with the weighted average quality being rated as 'high', of which
    - 0.19 ha is of Very High quality.
    - 0.56 ha is of High quality.
    - 0.08 ha is of Moderate quality.
    - 0.01 ha is of Low to Moderate quality.
- Loss of 0.97 ha of foraging habitat for Forest red-tailed black cockatoo with the weighted average quality being rated as 'high', of which
    - 0.33 ha is of Very High quality.
    - 0.56 ha is of High quality.

- 0.08 ha is of Moderate quality.

Regional Foraging Habitat Assessment

Analysis of the estimated extent of black cockatoo foraging habitat within the local area was undertaken to provide additional context for the Disturbance Footprint. The estimated extent of foraging habitat was calculated using a 12 km buffer surrounding and including the Disturbance Footprint**,** consistent with the Commonwealth referral guidelines, which note that black cockatoos predominantly forage within 12 km of their nest sites during the breeding season and rely on the availability of nearby foraging resources to successfully raise chicks (DAWE, 2022).

The analysis considers the DWER dataset *Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024* (*DWER-141*) as well as mapping of *Vegetation Complexes - South West forest region of Western Australia* (*DBCA-047*). A summary of regional vegetation complexes and extents within 12 km of the Disturbance Footprint is provided in Table 10 and shown in Figure 8.

The analysis indicates that 23,229.33 ha of remnant native vegetation is present within a 12 km buffer of the Disturbance Footprint. It is expected that the majority of this vegetation contains suitable foraging species at an equal or greater rate than that present within the Disturbance Footprint.

Consequently, the total foraging habitat extent of 1.89 ha present within the Disturbance Footprint represents 0.008% of the estimated regional habitat extent. The clearing impact of 0.97 ha represents 0.004% respectively.

Table 10: Regional Foraging Habitat Extent within 12 km of the Survey Area

Vegetation Complex	Dominant Foraging Species	Remnant Extent (ha)
Dwellingup	*Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah)	7,652.40
Yalanbee	*Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah)	5,443.88
Murray 2	*Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah)	4,256.73
Pindalup	*Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah)	3,563.02
Helena 2	*Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri)	740.79
Cooke	*Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri)	607.64
Coolakin	*Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri)	585.92
Michibin	*Eucalyptus wandoo* (wandoo)	152.66
Swamp	*Banksia littoralis*	132.26
Yarragil 1	*Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah)	94.03
Total		**23,229.33**

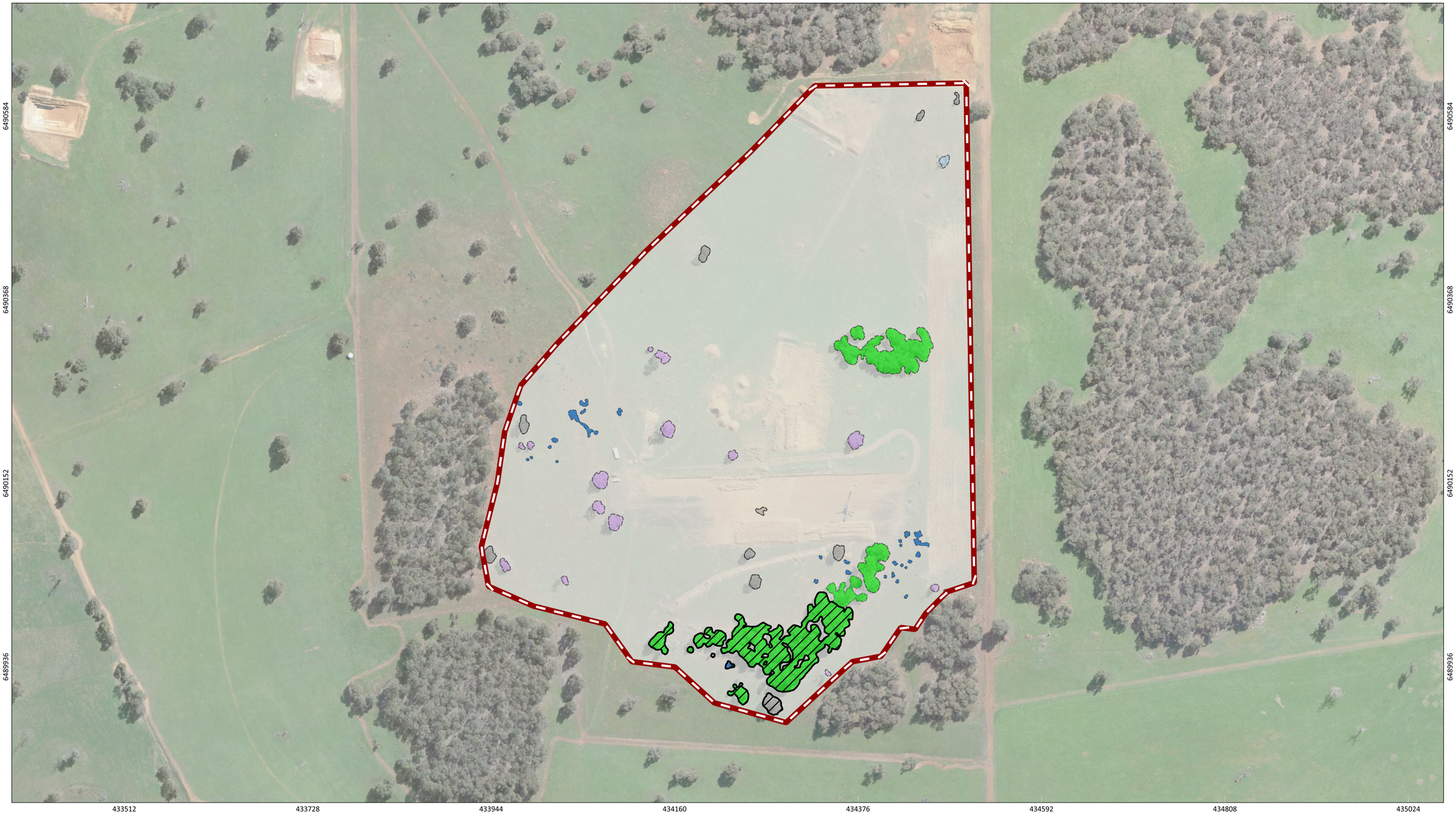

Figure 5: Carnaby's Black Cockatoo Foraging Habitat within Proposed Clearing

N

0 60 120 180 240 m

PROJECT/REPORT NAME	Native Vegetation Clearing Permit 3650 Tooday Road, Bailup
SCALE	1:4,330
SHEET SIZE	A3 COLOUR
CLIENT	Trico Resources Pty Ltd
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
PROJECT NUMBER	A25.306
VERSION	0
DATA SOURCE	LANDGATE AERIAL IMAGERY NOW
DRAWN BY / REVIEWED BY	SC/ZL
DATE	5/2/2026

Legend

- Disturbance Footprint
- Avoidance Area

Site Condition Score (Habitat Quality Score Tool)

- 1-Negligible
- 2-Low
- 3-Low to Moderate
- 4-Moderate
- 6 - High
- 7 - Very High

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	5/2/2026

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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Figure 6: Forest Red-tailed Black Cockatoo Foraging Habitat within Proposed Clearing

N

0 50 100 150 200 m

SCALE	1:4,000
SHEET SIZE	A3 COLOUR
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
DATA SOURCE	LANDGATE AERIAL IMAGERY NOW

PROJECT/REPORT NAME	Native Vegetation Clearing Permit 3650 Tooday Road, Bailup	
CLIENT	Trico Resources Pty Ltd	
PROJECT NUMBER	A25.306	VERSION 0
DRAWN BY / REVIEWED BY	SC/ZL	DATE 5/2/2026

Legend

- Disturbance Footprint
- Avoidance Area

Site Condition Score (Habitat Quality Score Tool)

- 1-Negligible
- 4-Moderate
- 6 - High
- 7 - Very High

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	5/2/2026

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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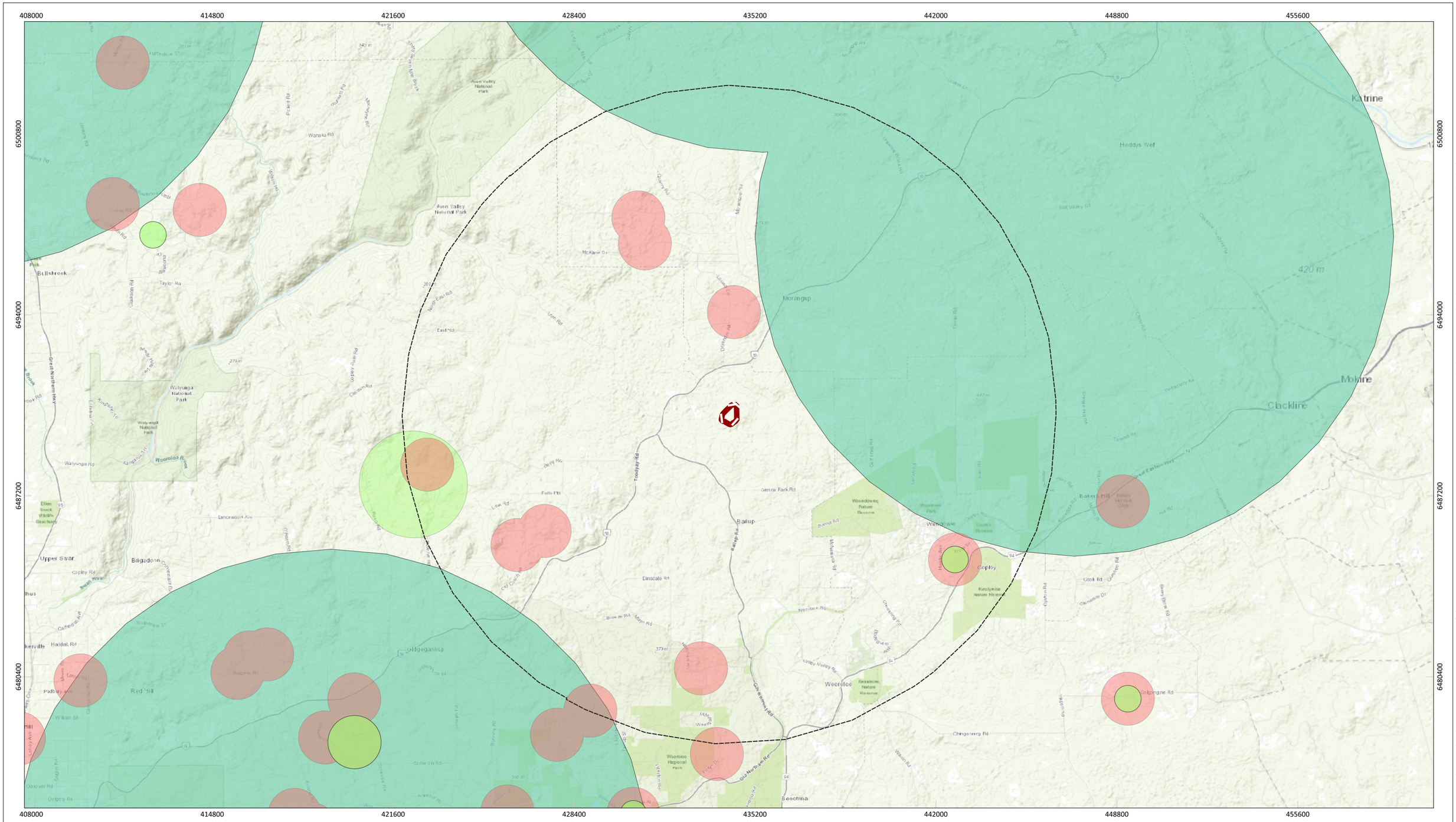

Figure 7: Known Black Cockatoo Roosting and Breeding Sites within 12 km Buffer

N

0 2 4 6 km

PROJECT/REPORT NAME: Native Vegetation Clearing Permit 3650 Tooday Road, Bailup			
SCALE: 1:136,000	SHEET SIZE: A3 COLOUR	CLIENT: Trico Resources Pty Ltd	
COORDINATE REFERENCE SYSTEM: GDA2020 / MGA zone 50		PROJECT NUMBER: A25.306	VERSION: 0
DATA SOURCE: ESRI Topographic Map		DRAWN BY / REVIEWED BY: SC/ZL	DATE: 29/1/2026

Legend

- Disturbance Footprint
- 12km Buffer
- Carnabys Cockatoo Confirmed Roost Sites (DBCA-050)
- Black Cockatoo Breeding Sites - Buffered (DBCA-063)
- Black Cockatoo Roosting Sites - Buffered (DBCA-064)
- Carnabys Cockatoo Confirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA Regions (DBCA-054)

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	29/1/2026

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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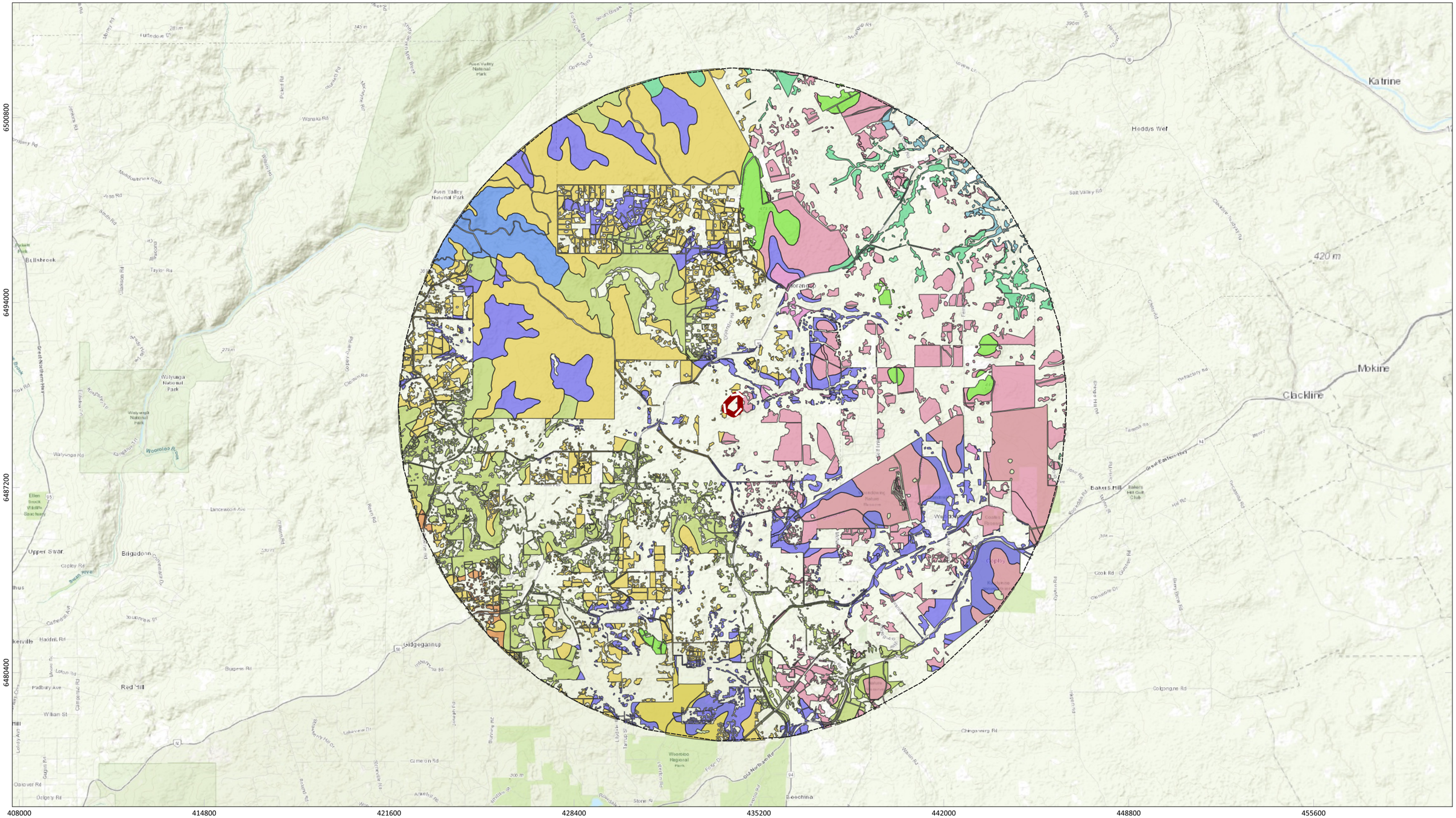

Figure 8: Black Cockatoo Foraging Habitat Extent 12 km Buffer

N

0 2 4 6 km

PROJECT/REPORT NAME	Native Vegetation Clearing Permit 3650 Tooday Road, Bailup
SCALE	1:136,000
SHEET SIZE	A3 COLOUR
CLIENT	Trico Resources Pty Ltd
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
PROJECT NUMBER	A25.306
VERSION	0
DATA SOURCE	ESRI Topographic Map
DRAWN BY / REVIEWED BY	SC/ZL
DATE	29/1/2026

Legend

- Disturbance Footprint
- 12km Buffer

Remnant Vegetation Complexes (DWER-141, DPIRD-005 & DBCA-047)

- Cooke
- Coolakin
- Pindalup
- Dwellingup
- Helena 2
- Michibin
- Murray 2
- Swamp
- Yalanbee
- Yarragil 1

No	Description	Drawn	Approved	Date
A	Original issue	SC	ZL	29/1/2026

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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Impact Avoidance and Mitigation

Avoidance

The gravel extraction areas were located in areas where most native vegetation had been historically cleared and been maintained as pasture paddock. This avoids impacts to several larger patches of intact remnant native vegetation within the Site, located north and south-west of Extraction Area 1 (now called Disturbance Footprint) as well as in the north-eastern corner of the Site, as shown in Plate 1.

Initially the Disturbance Footprint (Extraction Area 1) extended slightly further to the north, with a potential impact to a patch of remnant native vegetation. The extraction boundaries have been adjusted to avoid impacts to surrounding patches of native vegetation.

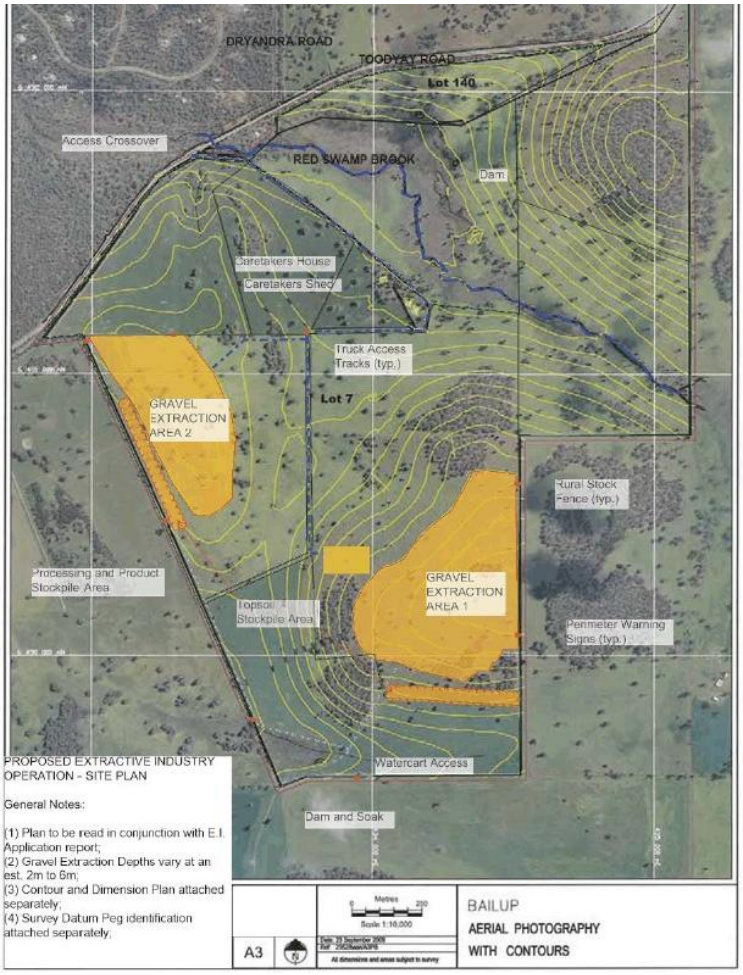

Plate 1: Initial Location and Extent of Gravel Extraction Area 1, Surrounded by Patches of Native Vegetation

After a review of impact extents in January 2026 Trico Resources decided to refine the design and extent of the Disturbance Footprint further and implemented an additional avoidance area in the southern portion of the Disturbance Footprint. This avoidance area provides for the retention of:

- 0.92 ha of native vegetation with 0.88 ha in Good condition and 0.04 ha in Completely Degraded condition.
- 0.88 ha of foraging habitat for Carnaby's black cockatoo with a weighted average quality score of 'high' (9/10).
- 0.92 ha of foraging habitat for Forest red-tailed black cockatoo with a weighted average quality score of 'high' (9/10).
- The avoided foraging habitat includes 53 potential nesting trees with a DBH ≥ 500 mm, none of which contain suitable hollows. These are comprised of:
    - 29 marri.
    - 24 jarrah.

Tree Protection Zones (TPZ) will be implemented in accordance with Australian Standard *AS 4970:2025 Protection of trees on development sites* around trees located adjacent to areas, where vegetation clearing will occur as shown in Figure 4. This will ensure that root damage is prevented to trees, which have been identified to be retained. While cutting and pruning of vegetation is considered as to occur within TPZ intersecting the impact area, no excavations or other root disturbing activities will be undertaken within the mapped TPZs. In accordance with AS 4970:2025 the following activities are excluded from TPZs:

- Excavation, cultivation or disturbance of the soil, including scraping of the surface.
- Equipment and material storage.
- Preparation of chemicals, including preparation of cement products.
- Movement or parking of vehicles and plant.
- Dumping of waste.
- Spreading of stockpiling of fill.
- Refuelling.
- Washing down and cleaning of equipment or hard surfaces.
- Fires.
- Physical damage to the tree.

Protective fencing will be installed prior to clearing works commencing on site to restrict access to TPZs in accordance with AS 4970:2025 where possible. Where tree cutting or pruning is required to occur where clearing footprint and TPZs intersect, the fence will be installed once cutting of adjacent trees has been

undertaken as outlined in AS 4970:2025. Trees identified for retention will be marked either with flagging tape or spray chalk in a way that is clearly visible.

Mitigation

The following mitigation measures will be implemented to minimise environmental impacts:

- Clearing will be undertaken directional to give fauna a chance to flee into surrounding remnant vegetation.
- Trees identified for retention will be clearly marked prior to any clearing works commencing. Where possible, protective fencing will be installed to implement TPZs.
- Trico Resources has developed a Rehabilitation & Decommissioning Program, which will be implemented across all extraction areas. More details are provided in section 4 of the attached Extractive Industry – Master Management Plan (MMP) (ATA Construction, 2010) in Appendix A. The program includes:
    - Rehabilitation and revegetation will be undertaken in three stages, within 60 days after each stage of excavation has ceased.
    - Topsoil will be stockpiled and respread immediately after excavations are completed for each excavation stage.
    - Grades resulting from excavation activities will be blended to create slopes as shallow as possible to prevent stormwater runoff, topsoil erosion and to support seed germination and regrowth.
    - Revegetation will occur in clumps in a valley-to-valley approach with three clumps per stage.
    - A total area of 4.52 ha is proposed to be revegetated at a density of one tree per 15 m^2. This will result in a total of 3,013 trees being planted. Densities of mid- and understorey species are provided in Appendix A.

Summary of Residual Impacts

Following avoidance and mitigation measures, the disturbance footprint covers an area of 30.31 ha, within which 0.97 ha of native vegetation is required to be cleared.

This includes the following impacts to black cockatoo habitat values:

- Loss of 0.84 ha of foraging habitat to Carnaby's black cockatoo with the weighted average quality being rated as 'high', of which
    - 0.19 ha is of Very High quality.
    - 0.56 ha is of High quality.
    - 0.08 ha is of Moderate quality.
    - 0.01 ha is of Low to Moderate quality.
- Loss of 0.97 ha of foraging habitat for Forest red-tailed black cockatoo with the weighted average quality being rated as 'high', of which
    - 0.33 ha is of Very High quality.
    - 0.56 ha is of High quality.
    - 0.08 ha is of Moderate quality.
- The impacted foraging habitat contains 62 potential black cockatoo nesting trees comprised of:
    - 35 jarrah *(Eucalyptus marginata).*
    - 25 marri *(Corymbia calophylla).*
    - 2 dead.

Assessment Against the 10 Clearing Principles

An assessment of the 0.97 ha of native vegetation clearing against the Ten Clearing Principles contained in Schedule 5 of the EP Act is provided in Table 11: Assessment Against Ten Clearing PrinciplesTable 11.

Table 11: Assessment Against Ten Clearing Principles

Principle (Schedule 5 of the EP Act)	Assessment	Outcome
(a) Native vegetation should not be cleared if it comprises a high level of biological diversity	The majority of land within the Disturbance Footprint has been historically cleared (93.7%) and consists of pasture paddock and cleared areas which are void of native species. The existing native vegetation condition varies between Good and Completely Degraded condition: • VT01 – Jarrah-marri-banksia woodland (1.4 ha) in Good condition. • VT02 – Isolated patches of jarrah and marri (0.37 ha) in Completely Degraded condition. • VT03 – Isolated Grevillea (0.08 ha) in Completely Degraded condition. The project will require the clearing of 0.97 ha of native vegetation, comprised of: • 0.56 ha of VT01 – jarrah-marri-banksia woodland in Good condition. • 0.33 ha of VT02 – Isolated patches of jarrah and marri in Completely Degraded condition. • 0.08 ha of VT03 – Isolated patches of Grevillea spp. in Completely Degraded condition. Based on the fragmented nature of native vegetation patches within the Site and within the Disturbance Footprint, species composition and richness, the vegetation to be cleared is not considered to represent a high level of biological biodiversity, thus the proposed clearing is unlikely to be at variance.	Proposed clearing is not at variance to this Principle.
(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	The proposed development necessitates the removal of 65 potential black cockatoo habitat trees with a DBH ≥ 500 mm. As a result of the removal of 62 trees, the Disturbance Footprint will include impacts to 0.84 ha of high-quality foraging habitat for Carnaby's black cockatoo (CBC) and 0.92 ha of high-quality foraging habitat for Forest red-tailed black cockatoo (FRTBC) respectively. These extents are comprised of: • 0.19 ha of suitable foraging habitat for the CBC and the 0.33 ha for the FRTBC that is of Very High quality (final habitat quality score of 10/10).	Proposed clearing is unlikely to be at variance to this Principle.

Principle (Schedule 5 of the EP Act)	Assessment	Outcome
	• 0.56 ha of suitable foraging habitat for the CBC and the FRTBC that is of High quality (final habitat quality score of 9/10). • 0.08 ha of suitable foraging habitat for the CBC and the FRTBC that is of Moderate quality (final habitat quality score of 7/10). • 0.01 ha of suitable foraging habitat for the CBC that is of Low-Moderate quality (final habitat quality score 6/10). No suitable breeding hollows were observed from the ground. No foraging evidence was observed within the Disturbance Footprint. Given the extent of the site is a previously cleared area (93.7%) and the high likelihood of disturbance and the high percentage of remnant native vegetation in the surrounding area, the proposal is not expected to significantly impact the overall foraging or breeding habitat value of the area.	
(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	No Threatened or rare flora pursuant the Commonwealth EPBC Act or the State BC Act were recorded. Therefore, no rare or threatened flora will be affected by the clearing.	Proposed clearing is unlikely to be at variance to this Principle.
(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	No threatened ecological communities occur within the Disturbance Footprint or in the adjacent area. Therefore, no threatened ecological communities will be affected by the clearing.	Proposed clearing is not at variance to this Principle.
(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	The vegetation complexes within the Disturbance Footprint are the Dwellingup D4 and Yalanbee Y5 complexes. The National Objectives and Targets for Biodiversity Conservation 2001-2005 (Commonwealth of Australia, 2001) recognises that the retention of 30% or more of the pre-clearing extent of each	Proposed clearing is highly unlikely to be at variance to this Principle.

Principle (Schedule 5 of the EP Act)	Assessment	Outcome
	ecological community is necessary if Australia's biodiversity is to be protected. Below this level, species loss appears to accelerate exponentially (EPA, 2000). *State Planning Policy 2.8: Bushland Policy* for the Perth Metropolitan Region recognises a target of at least 10% of the original extent of each vegetation complex (as representative of ecological communities at the regional scale) for the Swan Coastal Plain portion of the Perth Metropolitan Region, which is recognised as a constrained area. The EPA Position Statement No.9 identifies vegetation with a 30% or less or their pre-clearing extent remaining in the SCP bioregion, or 10% or less of their pre-clearing extent remaining in constrained areas on the SCP to be critical assets. Clearing of critical assets would generally be at variance to this principle. The Dwellingup complex has 87.35% remaining and the Yalanbee 66.21% respectively. Considering the vegetation to be cleared is of good or completely degraded condition, it is not very representative of either vegetation complex, and the proposed clearing will not drastically reduce the remaining extent of either vegetation complex. Based on the above, the proposed clearing is unlikely to be at variance to this principle.	
(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	No watercourses or wetlands occur within or interest the Disturbance Footprint. Therefore, no watercourses or wetlands will be affected by the clearing.	Proposed clearing is not at variance to this Principle.
(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The disturbance of native vegetation is considered unlikely to cause appreciable land degradation given: • Stable soil type. • Relatively flat topography.	Proposed clearing is not at variance to this Principle.

Principle (Schedule 5 of the EP Act)	Assessment	Outcome
(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area	There are no conservation areas within the Disturbance Footprint or in close proximity. The proposed clearing activity does not impact any conservation areas.	Proposed clearing is not at variance to this Principle.
(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	The proposed clearing will not change the hydrology of the area, as no surface water will be taken or impacted for this project. It is therefore considered unlikely that there will be a significant impact to the surface or underground water quality of this area.	Proposed clearing is not at variance to this Principle.
(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	The proposed clearing activities will have no significant impact on the natural surface and groundwater processes. The clearing proposal is therefore not likely to cause, or exacerbate, the incidence or intensity of flooding.	Proposed clearing is unlikely to be a variance to this Principle

Conclusions and Recommendations

The findings of this flora, vegetation and black cockatoo survey suggest that the proposal requires a Native Vegetation Clearing Permit under Part V of the EP Act for the clearing of 0.97 ha of native vegetation in Good (0.56 ha) and Completely Degraded (0.41 ha) condition within a larger Disturbance Footprint of 30.31 ha.

This includes residual impacts to the following black cockatoo habitat values:

- 0.97 ha of foraging habitat for Forest red-tailed black cockatoo with the weighted average quality being rated as 'high'.
- 0.84 ha of foraging habitat to Carnaby's black cockatoo with the weighted average quality being rated as 'high'.
- 62 potential black cockatoo nesting trees (none of which contain suitable hollows), which form part of the foraging habitat values listed above.

The project avoids impacts to the following values by implementing an avoidance area, within which all native vegetation will be retained:

- 0.92 ha of native vegetation with 0.88 ha in Good condition and 0.04 ha in Completely Degraded condition.
- 0.88 ha of foraging habitat for Carnaby's black cockatoo with a weighted average quality score of 'high' (9/10).
- 0.92 ha of foraging habitat for Forest red-tailed black cockatoo with a weighted average quality score of 'high' (9/10).
- The avoided foraging habitat includes 53 potential nesting trees with a DBH ≥ 500 mm, none of which contain suitable hollows. These are comprised of:
    - 29 marri.
    - 24 jarrah.
    - TPZs will be implemented to avoid impacts to root zones of retained trees, where clearing in adjacent areas occurs.

Trico Resources is further implementing a rehabilitation and revegetation management plan. A total area of 4.52 ha is proposed to be revegetated at a density of one tree per 15 m^2. This will result in a total of 3,013 trees being planted.

Black cockatoos are listed as Matters of National Environmental Significance (MNES) and are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In accordance with the Commonwealth referral guidelines for black cockatoo (DAWE, 2022), the referral threshold for impacts to

high-quality foraging habitat is 1.0 ha. The proposed clearing impacts 0.97 ha of foraging habitat and is therefore below the referral threshold.

The decision whether or not to refer a project under the EPBC Act lies with the proponent.

This report should be read in conjunction with the Schedule - Statement of Limitations. Should you have any queries regarding the above, please contact the undersigned on (08) 6162 8980.

Yours sincerely,
Western Environmental Pty Ltd

Dale Newsome
Director

References

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Statement of Limitations

Copyright Statement

Scope of Services

This environmental report ("this report") has been prepared for the sole benefit and exclusive use of the Client for the purpose for which it was prepared in accordance with the agreement between the Client and WEPL ("the Agreement"). However, in addressing the requirements of the Contaminated Sites Act 2003, an Accredited Contaminated Sites Auditor may be engaged by the Client to undertake review of this report, prior to its submission to the DWER. The report shall be made available and can be relied upon for the purposes of the Contaminated Sites Act.

WEPL disclaims any and all liability with respect to any use of or reliance upon this report for any other purpose whatsoever.

In particular, it should be noted that this report is based on a scope of services defined by the Client, and is limited by budgetary and time constraints, the information supplied by the Client (and its agents) and, in some circumstances, access and/or site disturbance constraints.

The scope of services did not include any assessment of the title to or ownership of the properties, buildings and structures referred to in this report, or the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

Reliance on Data

In preparing this report, WEPL has relied on data, surveys, analyses, designs, plans and other information provided by the Client (or its agents), other individuals and organisations ("the data").

Except as otherwise stated in this report, WEPL has not verified the accuracy or completeness of the data. WEPL does not represent or warrant that the data is true or accurate, and disclaims any and all responsibility or liability with respect to the use of the data.

To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data.

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The conclusions must also be considered in light of the agreed scope of services (including any constraints or limitation therein) and the methods used to carry out those services, both of which are as stated or referred to in this report.

Environmental Conclusions

In accordance with the scope of services, WEPL has conducted environmental field monitoring and/or testing in the preparation of this report. The nature and extent of monitoring and/or testing conducted is described in this report.

On all sites, varying degrees of non-uniformity of vertical and horizontal conditions in media (soil, water, air, waste or other media as described in the report) are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of media conditions encountered. The conclusions are based on the data and the environmental field monitoring and/or testing actually undertaken, and are therefore merely indicative of the environmental condition of the site at the time of preparing this report, including the presence or otherwise of contaminants or emissions. It should be recognised that site conditions, including the extent and concentration of contaminants, can change.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. To the maximum extent permitted by law, no other warranty, express or implied, is made.

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Other Limitations

This report is intended to be read in its entirety, and sections or parts of this report should therefore not be read and relied on out of context.

WEPL will not be liable to update or revise this report to take into account any events or circumstances or facts becoming apparent after the date of this report.

Appendix A
Extract from Extractive Industry Application Annexure 2 – Master Management Plan – Rehabilitation and Vegetation Management Plan

4 REHABILITATION & VEGETATION MANAGEMENT PLAN

4.1 BACKGROUND

Proposed Extractive Industry activities are of an earthworks nature, which is recognised as a ground-disturbing operation that impacts the in-situ soil and vegetation. Therefore, an appropriate management plan for the rehabilitation and revegetation of The Site is necessary to minimise the long-term environmental impact of the proposed activity.

The existing nature of The Site is thoroughly addressed in the proponents Extractive Industry application, however a synopsis of pre-existing conditions that are relevant to this Revegetation Management Plan are:

- The majority of The Site has been historically cleared for general farm use. Some large clusters of natural vegetation, in the form of mature trees and shrubs, are found in various locations. Other isolated trees are located sporadically elsewhere. The location of the proposed extractive industry is defined to deliberately avoid nearby remnant clumps of dense vegetation and area of environmental significance (refer to Site Plan found at Appendix 3A).

- The topography is generally gentle with relativity flat to moderate grades which elevate the land from approximately RL 265 AHD to RL 338 AHD. The land form rises in the south, west and east and is divided by Red Swamp Brook running southeast to northwest through the northern central portion of the property. The Site is not considered at risk of flooding. Red Swamp Brook is recognised as a constrained area and this feature is therefore protected by the prescriptions of the development application. The areas of proposed extractive industry are no closer than 700m from Red Swamp Brook and are unlikely to be of any impact.

- The Site has been soil mapped and is generally described as being in the Wundowie Soil System which is recognized in the Avon Sub Regional Strategy as having a low capability for agricultural use. Specific locations of gravel extraction undertaken with the granting of an Extractive Industry Licence are restricted to those areas of cleared land comprising of suitable gravel soils.

4.2 PURPOSE

The proponent's application for an Extractive Industry Licence has investigated The Site conditions and constraints, the staged nature of the works and needs for site revegetation. Including:

- Existing vegetation and land use;
- Topography;
- Topsoil, both as salvage and reuse;
- Contouring;
- Revegetation;
- Staged rehabilitation;

This Revegetation Management Plan discussed those aspects and documents implementation plans to be adhered to.

4.3 AUTHORITY REQUIREMENTS (*Visual Landscape Planning in Western Australia* manual)

The Shire of Mundaring Planning Officer has request the Revegetation Management Plan to reference the authority of *Visual Landscape Planning in Western Australia* manual.

That manual briefly refers to the scope of works found within this application under its *Part 3 Rural Uses, w*hich states:

> *"The term 'rural' is used in the guideline to refer to non-urban landscapes that have been substantially modified, generally by clearing."*

The Site has been historically cleared and perpetually used for agricultural use (cropping and grazing). Pockets of remnant vegetation are present. The proposed area for extractive industry are primarily cleared with either a small pocket or isolated trees to be felled to complete an area.

It continues:

> *"The rural land uses addressed in this guideline were chosen on the basis that their landscape impacts are currently of concern to the community. For this reason, some important rural uses, such as grain crops or grazing, are not discussed. Discussion focuses broadly on generic principles that address protection of rural character, remnant vegetation and /or clearing, revegetation and rural roads. In more detail this guideline addresses rural residential issues and plantations."*

The proposed development is therefore not specifically covered in the guideline. This is because:

a) important rural uses have pre-developed The Site, including mass clearing of vegetation;

b) the rural character is only temporarily affected and predominantly blocked from view of dwellings and nearby roads;

c) very little clearing is required while significant pockets of remnant vegetation and the majority of The Site are left undisturbed;

d) internal roadways are already constructed and used for current rural pursuits;

e) the revegetation plan *increases* the quantum of native vegetation by planting endemic species where there were none pre-development;

The Planning document also states:

> *"Visual impact assessments should be undertaken for proposals with potential to affect rural landscapes such as:*
> - *rural residential subdivisions;*
> - *remnant vegetation clearing, revegetation, and farm forestry, including plantations;*
> - *major tourism developments*
> - *new roads or major changes to character of existing roads with scenic value, and*
> - *windfarms and other utilities"*

None of the above criteria are applicable while proposed clearing is of a very minor amount of vegetation.

As detailed in the rehabilitation and revegetation points of this management plan, post-development rehabilitation will markedly increase the quantum and area of native vegetation than exists pre-development; which is almost none.

4.4 STAGED EXTRACTIVE INDUSTRY AND PROGRESSIVE REHABILITATION

The proposed extractive industry is undertaken in a 'staged' methodology. That being, progressive portions of the gravel pit are worked with commissioning, activity and subsequent rehabilitation limited to smaller parcels of land. In this way a number of important criteria are achieved, including:

- Limit the footprint of the extraction operation to mitigate any nuisance, environmental, safety or amenity impact;
- Maintain general site appearance;
- Reduce the demands for dust-control, safety, or other site management factors which increase proportionally with the size of the works area;
- Progressively rehabilitate land as soon as possible to promote reintroduction of fauna and flora;

4.4.1 PROGRESSIVE PROCESSES

A summary of the on-site processes detailed in the proponents extractive industry application are as follows. These steps apply to every stage as the extractive industry commence and closes on each progressive stage:

(1) Identification – survey undertaken to identify the limit of works, boundaries, reference levels and vegetation to be protected.

(2) Clearing – Vegetation to be removed is felled and stockpiled for removal.

(3) Stripping Topsoil – topsoil of varying thickness, but an average of less than 50mm, is collected from the surface and stockpiled nearby to an average height of 1-1.5m and in a manner that permits efficient dust control.

(4) Gravel extraction – selective excavation, processing and stockpiling of gravel resource.

(5) Rehabilitation and Topsoil replacement – contouring final levels to suit revegetation needs and spreading of topsoil over extractive footprint.

(6) Revegetation – Seeding and planting of native grasses, trees and shrubs.

4.4.2 STAGING AREAS

The proposed extractive industry is located in two areas most suited for gravel. Area 1 is located on the hilltop towards the south of The Site. Area 2 is located on the hilltop on The Sites west side. Each has an approximate area of 20 hectares.

Each area is proposed to be mined in 3 stages. The stages movement is to allow for rehabilitation of previous stages to better conceal works from Toodyay Road and semi-rural residences north of the property (approx 1 to 1.5 kilometres away).

Stage 1A is approximately 8 hectares, needs the removal of 6 mature trees and will yield approximately 3,000 cubic metres of topsoil. Refer to Staging plans found at Appendix 3A for diagrammatic images.

4.5 REHABILITATION AND REVEGETATION

4.5.1 OBJECTIVE

Post extractive industry rehabilitation is important to the proponent who houses a 'better-than-found' philosophy for their projects - whether in primary production, organic farming or land development. Through commitment to a rehabilitation program and responsible environmental management, The Site is preserved after below-ground resources are extracted so that the future development potential of The Site is not compromised.

Recognised as an existing natural resource and an agricultural resource, The Site needs to continue to compliment both when rehabilitation occurs to areas disturbed by extractive operation. This primarily applies to the surface of The Site (landform and topsoil) and vegetation thereon.

Rehabilitation and revegetation is beneficial. Its goal is to create as close to a pre-existing state as possible with an effort to *improve* environmental causes, including:

- Encouraging the expansion of native fauna and flora to rehabilitated areas;

- Establishing greater vegetation replacement to benefit environmental concerns, aesthetic views, soil improvement, erosion protection, salinity control, and many other such benefits;

The rehabilitation methodology demonstrates that these goals are practical and likely to be achieved.

The intensity of rehabilitation and revegetation is a product of how The Site exists pre-development. Site descriptions above identify the works area as having undulating topography and being already historically cleared. Therefore, the demands on rehabilitation and revegetation are not onerous.

A summary of Rehabilitation and Revegetation processes is provided at Appendix 3Cwhich details activity versus time. That *Rehabilitation Planner* also identifies the *Species List* of suitable and approved trees and shrubs.

4.5.2 REHABILITATION METHODOLOGY

As detailed above, rehabilitation shall be undertaken in a progressive manner. This shall minimise the physical works area at any one time. A reduction of working area will mitigate visual impact, environmental impact, dust lift-off, stormwater runoff and sediment stripping, use of watercarts and other whole-of-site management. Further, staged rehabilitation introduces fauna and flora faster, allowing establishment to take place sooner.

Gravel extraction will start at the northern part of Area 1 and move south at a depth determined by the suitability of gravel encountered. To permit staging of works and as-soon-as-possible rehabilitation, economical-sized areas are defined for staged activity. Area 2 will be mined only after completion of Area 1.

4.5.3 REHABILITATION AND REVEGETATION PROCESSES

In a step-by-step process, the following shall be implemented to perform the objectives of the Revegetation Management Plan:

4.5.3.1 Batters and Landform

The Site will be rehabilitated as gravel excavation progresses through each phase. As gravel has been extracted from The Site, the landscape will be on a lower level than it was previously. Raw gravel extraction may create steep slopes which can be both unsafe and unsuitable to effectively rehabilitate.

The perimeter of completed extractive operations areas will be battered to best match the surrounding natural landform. Grading and flattening batters to blend natural and artificial levels will be undertaken site specific - considering the impact of expanding ground disturbing activity outside of the gravel pit footprint. A 1:4 batter is sought as a rule-of-thumb, but existing vegetation and undulating contours will determine final grades.

Topsoil and vegetation can establish easier on flatter surfaces. Steeper grades can be both unsafe and prone to stormwater scouring, particularly when rehabilitated with loose topsoil. Scouring then carries away or destroys seeds and seedlings. Therefore, as reasonable as possible, and without increasing the environmental impact, grades shall be blended as shallowly as possible prior to respreading topsoil or revegetation. Assisting the regrowth of flora in this way will, in turn, stabilise banks and batters more efficiently.

Refer to Revegetation Cross-Section Plans found at Appendix 3B for diagrammatic representation of the above.

4.5.3.2 Topsoil

As discussed above in the works methodology, topsoil shall be conserved. Prior to excavation of staged extractive industry areas, topsoil is scraped off the surface to a depth which can be identified as soil suitable for rehabilitation. That thickness varies but is non-existent where rock is on the surface and elsewhere is nominally less then 100mm thick. Topsoil is stockpiled adjacent the works area where any seeds are kept in the soil and grasses are able to naturally break down and increase the soil health.

Topsoil bunds are not to exceed 1.5m in height which will mitigate the potential of wind-borne dust lift off. They shall also be shaped to allow for trafficking by watercarts to apply water should manual dust control methods be necessary.

After gravel extraction and reforming The Site to blend into the surrounding area, topsoil is evenly respread over the surface and lightly compacted. Seasonally adjusted, water is applied to assist in crusting the surface to prevent wind-borne dust lift-off.

Revegetation shall occur as soon as possible after topsoil respreading to encourage stabilisation of topsoil. Direct seeding will be undertaken over-and-above revegetation to stabilise topsoil quickly, particularity on batters subject to erosion.

As works are progressive, The Site is easier to manage for rehabilitation success. Topsoil affected by scouring can be restored with other operations occurring on site as they are encountered.

4.5.3.3 Revegetation

Revegetation of each stage will take place when it is most practical and will enhance the chances of success of plant re-colonisation. Landform rehabilitation will occur before revegetation commences. This includes placing topsoil over disturbed areas to generate a suitable medium for plant regrowth. Only plant species endemic to the area will be planted.

Grasses and Seeding

Where insufficient natural grasses regrowth is expected from respread topsoil, select grass species suitable for low ground cover shall be seeded. Applied by direct seeding (preferred) or hydromulching, seed shall be sown in winter-early spring to permit germination and root development with natural seasonal rainfall.

All species of vegetation shall be presented to Shire of Mundaring Environmental Officer for acceptance and compliance with current species list for the area where The Site resides.

Trees and Shrubs

Guidelines for tree and shrub revegetation shall apply to recreate an environment better suited to native flora and to encourage re-introduction of native fauna. Those 'criteria' include:

a) Planting to occur winter through mid spring to improve percentage of new plant establishment.

b) Planting to be native endemic species of a random and mixed variety. All species of vegetation shall be presented to Shire of Mundaring Environmental Officer for acceptance and compliance with current species list for the area where The Site resides.

c) Planting to be in clumps of mixed species to represent pre-clearing and adjacent uncleared vegetation areas.

d) Planting to be concentrated on the perimeter of works area to promote reintroduction of native fauna as well as the rehabilitation and stabilisation of batters formed by earthworks.

e) Planting to be secondarily concentrated in clumps within the rehabilitation areas to avoid excessively large open and bare areas, or sparse, formal type revegetation layouts.

f) Guidelines for planting tree farms adopt a 'valley to valley' approach rather than 'ridge to ridge'. Therefore, planting at the perimeter of the rehabilitation shall be in a 'valley-to-valley' method.

g) Staging of extraction and rehabilitation will permit revegetation of completed areas as soon as practical to promote early regrowth while subsequent states are under operation.

Diagrammatic cross-sections illustrating the above criteria are found at Appendix 3B.

As the pre-existing vegetation quantities are almost non-existent, the quantity of planted trees and shrubs will be vastly greater than what is removed. Even applying a 10 to 1 replacement, plus 20% for possible fall-over, the number of trees is few. For example, Stage 1A would see less than 100 trees to replace the 6 trees removed.

Alternatively, the above-mentioned revegetation guidelines lead to quantities based on identifying favourable locations for clumps of trees each planted with dozens of trees and shrubs. The illustrative example for Stage 1A found at Appendix 3A identifies 3 large, informal clumps to be planted, each spread over approximately 1 hectare and containing up to 1000 trees (a rule-of-thumb for density being one plant per five square meters).

Ripping and mounding is not required because the surface shall already be loosed from the contouring and topsoil earth working of the area.

Where possible, planting shall occur in the first autumn/winter season following landform, rehabilitation to increase the survival success rate. It is important not to delay seeding and replanting for longer than one year after topsoil has been added as the soil can become compacted which makes it harder for seeds and plants to survive. It is also important to start seeding and replanting after the first rains of winter season to allow the soil to become moist. This places less stress on plants and ultimately leads to greater survival rate and greater revegetation success.

Preferably, seeding and planting will occur progressively as each stage of The Site is rehabilitated after gravel excavation. However, due to the nature of mining activities, there might be some deviation from this timeline. As the next stage of mining will occur very close to rehabilitation and revegetated area, this might cause some disturbance and hinder the success of plant regrowth. Therefore, some degree of discretion will be required when determining when to commence revegetation in order to help increase survival rates.

Weeds (plant species that are not endemic to the area) can have a significant impact on revegetation of endemic species if inappropriately managed. The presence of weeds should be identified through monitoring efforts and will be controlled through selective herbicides such as Roundup or controlled manually if possible. It is also important to ensure that the plants and soil bought into The Site are not infected with *Phytophthora cinnamomi,* commonly called 'jarrah dieback'.

4.5.3.4 Monitoring and Maintenance

The purpose of monitoring is to assist the success of rehabilitation and revegetation efforts and to determine whether certain objectives have been achieved. It can also indicate whether the revegetation plan requires modification to help reach this goal more efficiently. In this case, the ultimate goal of rehabilitation and revegetation is to return the vegetation of The Site to a self sustaining, pre-mining state (i.e. to a similar species composition and greater density). It is important to note that this state differs from the pre-clearing or pre-farming state. Monitoring the species composition and density of the vegetation on The Site will help indicate whether this goal has been reached.

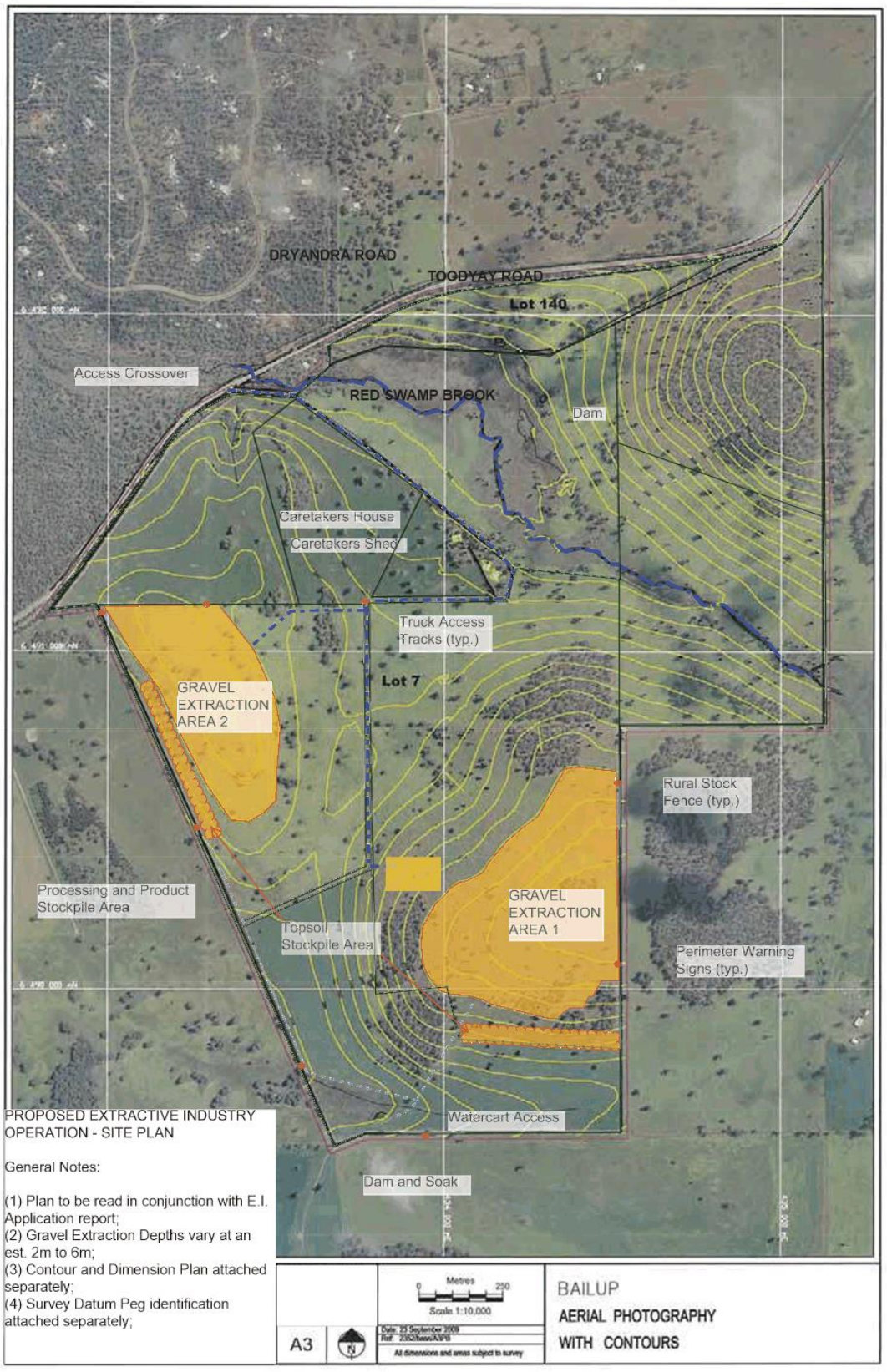
In general, monitoring involves measures specific quantities and qualities of vegetation. In this case, the species composition and density will be monitored. Monitoring will be conducted at regular intervals (approximately every six months) over three years in order to obtain appropriate amounts of information. This will help detect any negative changes or issues, which can be attended to and rectified as soon as possible.

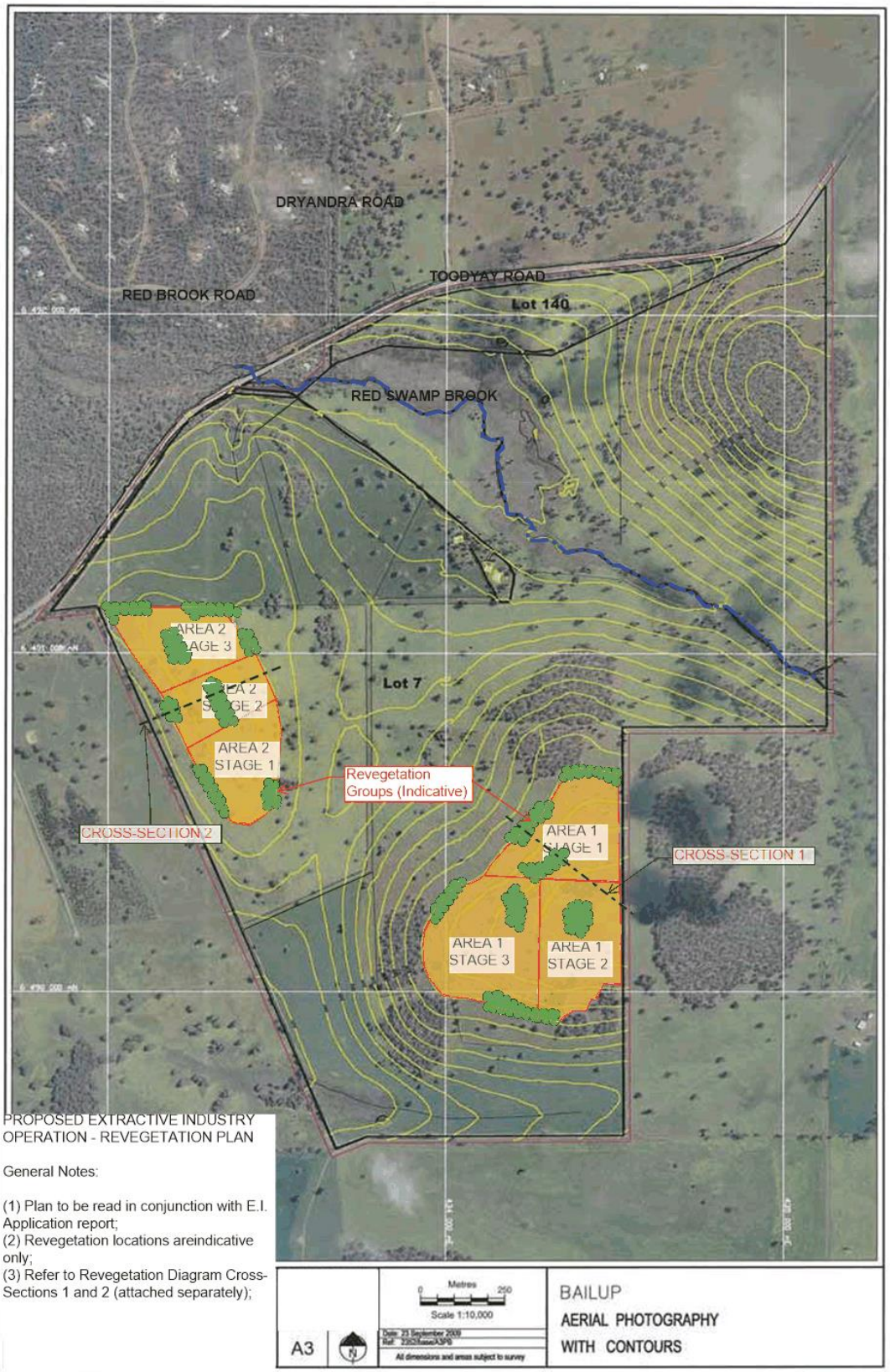
Weed monitoring involves assessing the amount of exotic species present in an area. Depending on the results found, eradication measures will be employed in order to remove as many weeds as possible to increase the success of native vegetation regrowth. Weed monitoring is more important when the ultimate goal of revegetation is to return The Site to a natural state. Therefore, it is impractical to attempt to destroy all weeds on site. However, due to the extremely destructive nature of certain weeds and their tendency to spread fast and efficiently, it is important to monitor whether potent weeds are present and spreading so appropriate action can take place to hinder their growth. In this situation, native and exotic species will be monitored simultaneously to improve efficiency.

A simple monitoring exercise will be performed to determine the species composition and density. This involves setting up approximately ten ‘quadrants’ measuring 5m by 5m in randomly selected locations around The Site. The different species in each quadrant will be identified and the number of plants of each species should be recorded. The density of each species can be analysed over time in order to determine the growth or death rate. Relevant actions such as replanting or weed eradication will be undertaken if the information obtained is unfavourable. Monitoring will take place approximately every six months to obtain information for comparison.

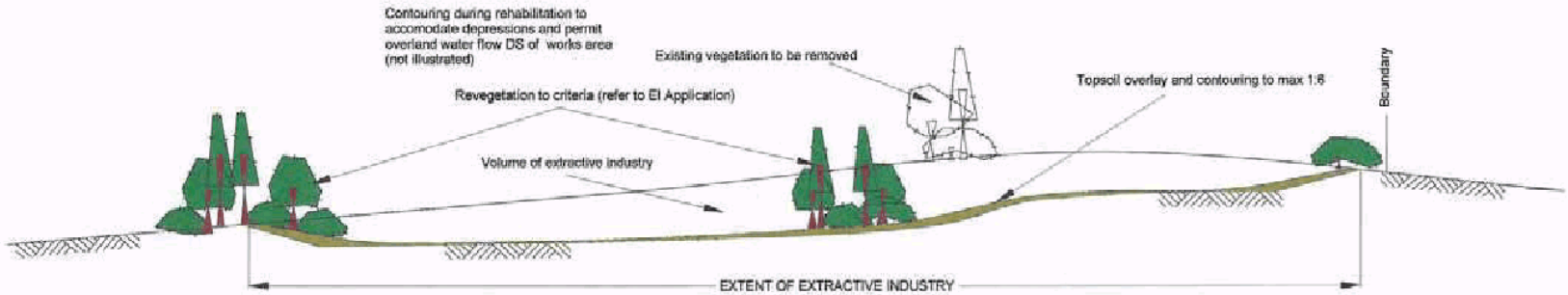
It can take a few years for native species to re-establish in an area after rehabilitation has commenced. Therefore, monitoring will be conducted for three years following the rehabilitation and revegetation of each stage. This should be sufficient time to indicate whether the rehabilitation goals have been met.

The results of the revegetation monitoring shall be made available to the local authority Environmental Officer as part of a project close-out report.


DRYANDRA ROAD
TOODYAY ROAD
Lot 140
Access Crossover
RED SWAMP BROOK
Dam
Caretakers House
Caretakers Shed
Truck Access Tracks (typ.)
Lot 7
GRAVEL EXTRACTION AREA 2
Rural Stock Fence (typ.)
Processing and Product Stockpile Area
Topsoil Stockpile Area
GRAVEL EXTRACTION AREA 1
Perimeter Warning Signs (typ.)
Watercart Access
Dam and Soak
PROPOSED EXTRACTIVE INDUSTRY OPERATION - SITE PLAN
General Notes:
(1) Plan to be read in conjunction with E.I. Application report;
(2) Gravel Extraction Depths vary at an est. 2m to 6m;
(3) Contour and Dimension Plan attached separately;
(4) Survey Datum Peg identification attached separately;
Metres
0
250
Scale 1:10,000
A3
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS

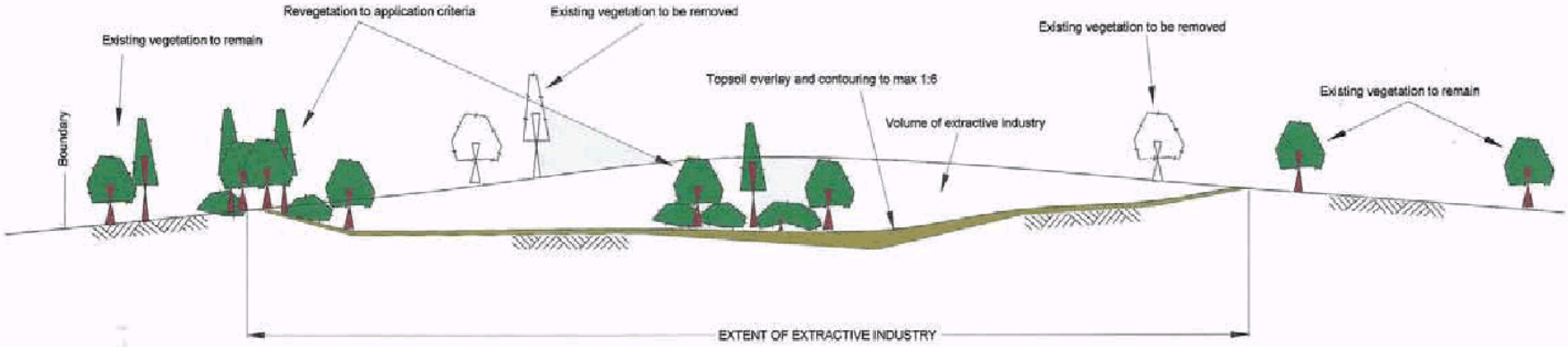

DRYANDRA ROAD
TOODYAY ROAD
RED BROOK ROAD
Lot 140
RED SWAMP BROOK
Lot 7
AREA 2 STAGE 3
AREA 2 STAGE 2
AREA 2 STAGE 1
Revegetation Groups (Indicative)
CROSS-SECTION 2
AREA 1 STAGE 1
CROSS-SECTION 1
AREA 1 STAGE 3
AREA 1 STAGE 2
PROPOSED EXTRACTIVE INDUSTRY OPERATION - REVEGETATION PLAN
General Notes:
(1) Plan to be read in conjunction with E.I. Application report;
(2) Revegetation locations areindicative only;
(3) Refer to Revegetation Diagram Cross-Sections 1 and 2 (attached separately);
Metres
0
250
Scale 1:10,000
A3
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS

BAILUP PROPOSED EXTRACTIVE INDUSTRY - REVEGETATION DIAGRAM 1 & 2

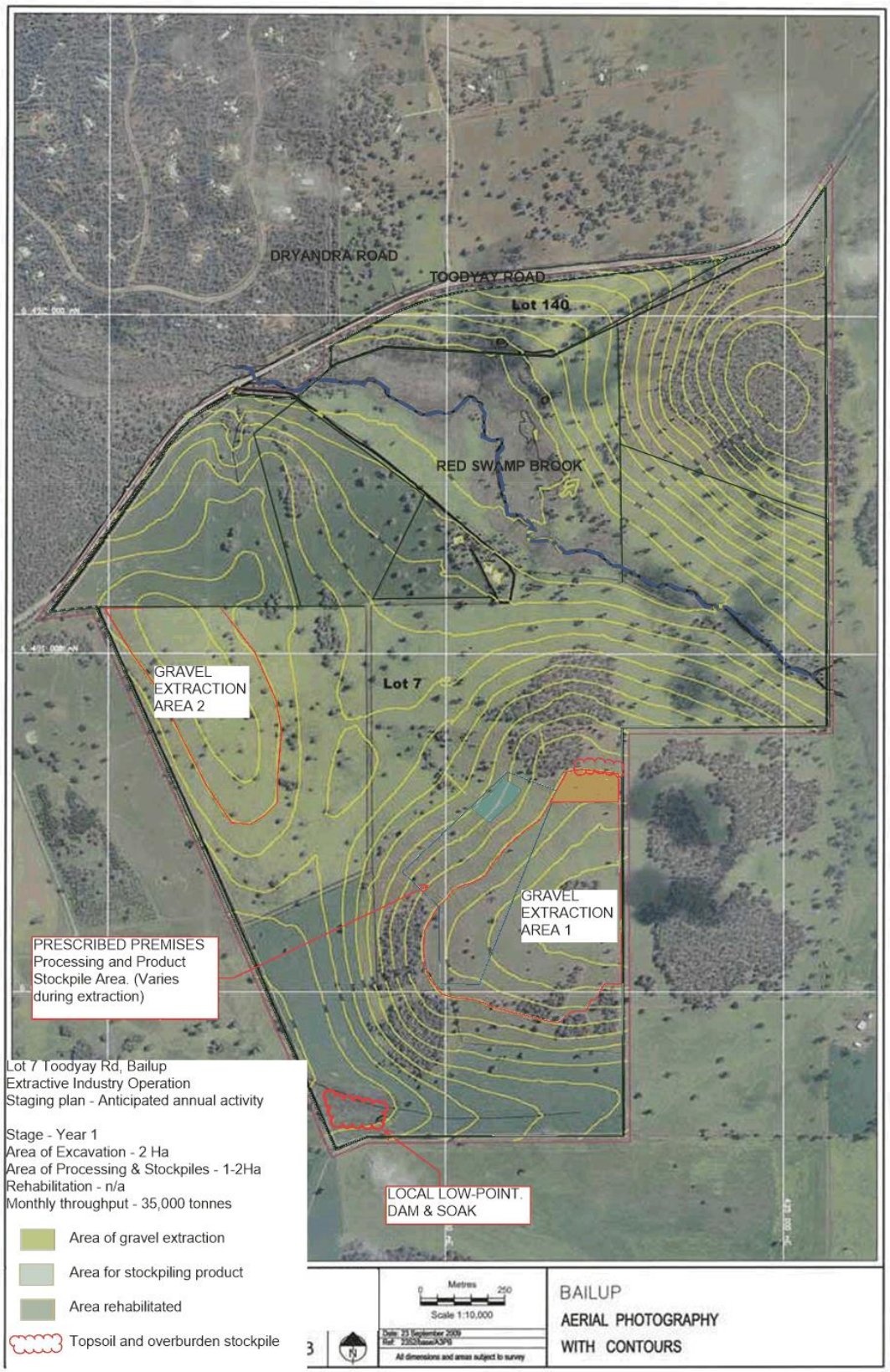


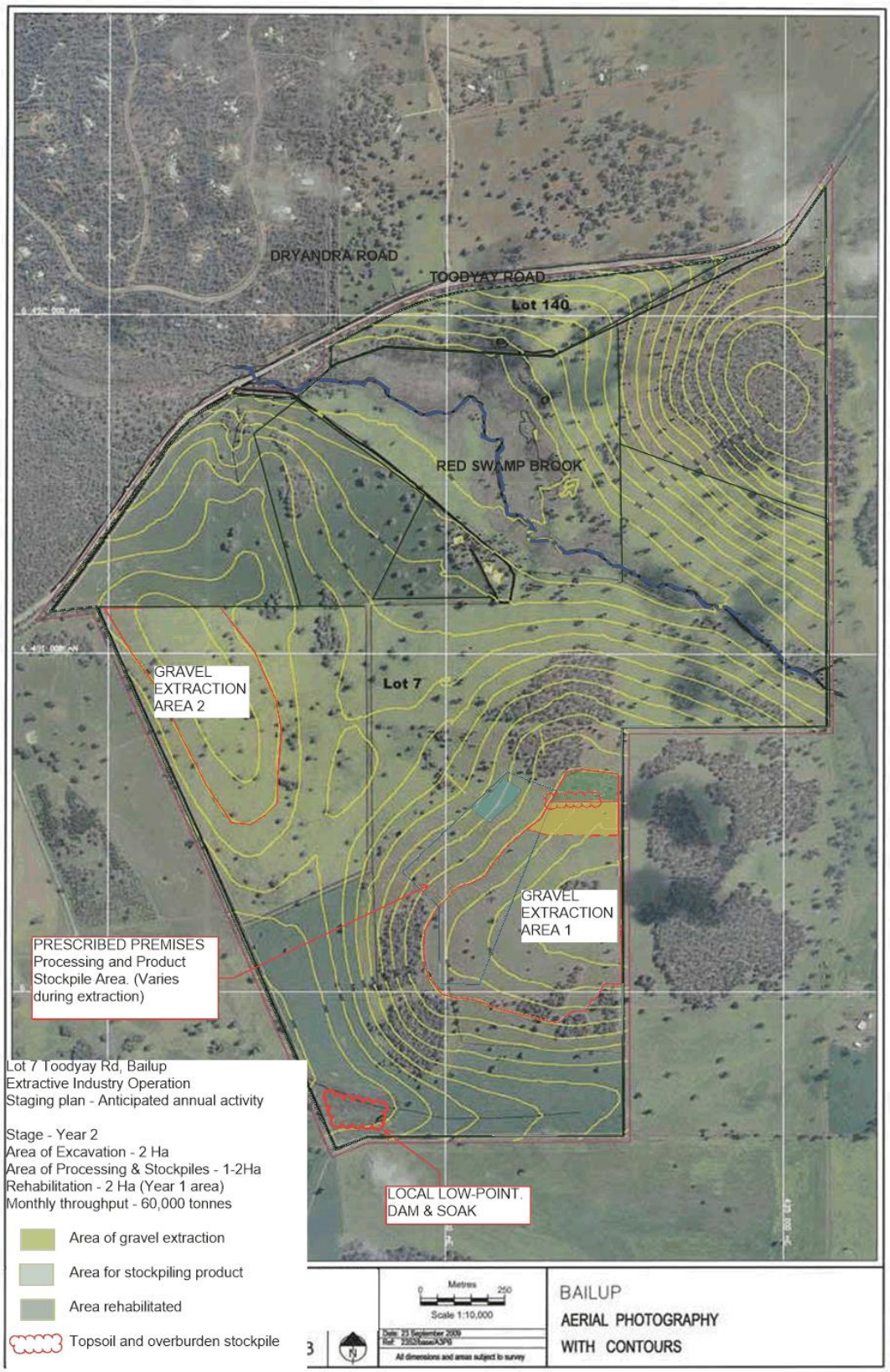
DIAGRAMATIC CROSS-SECTION THROUGH EXTRACTION AREA 1

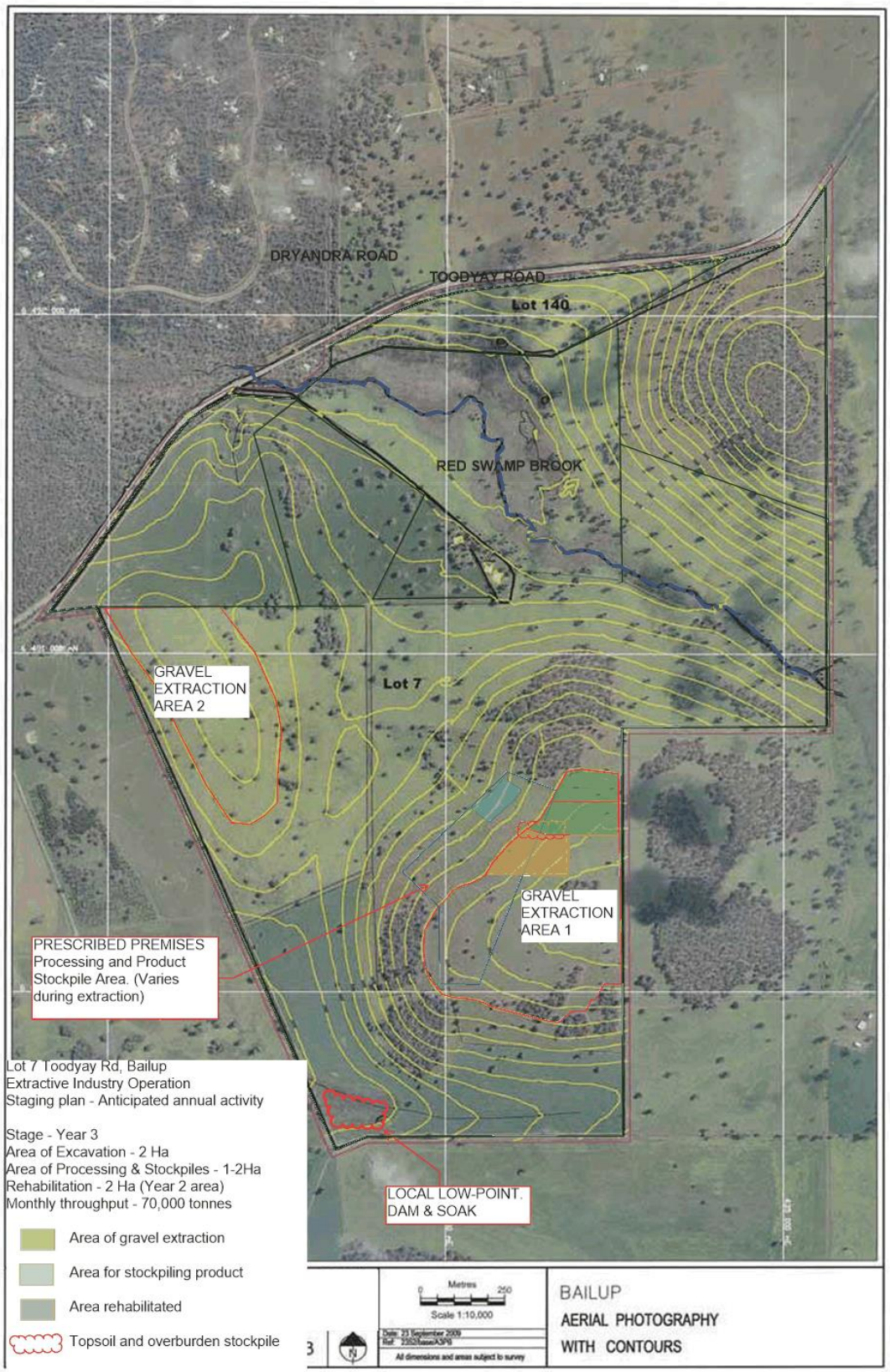
General Note - Contouring during rehabilitation to accomodate depressions and permit overland water flow DS of works area (not illustrated)

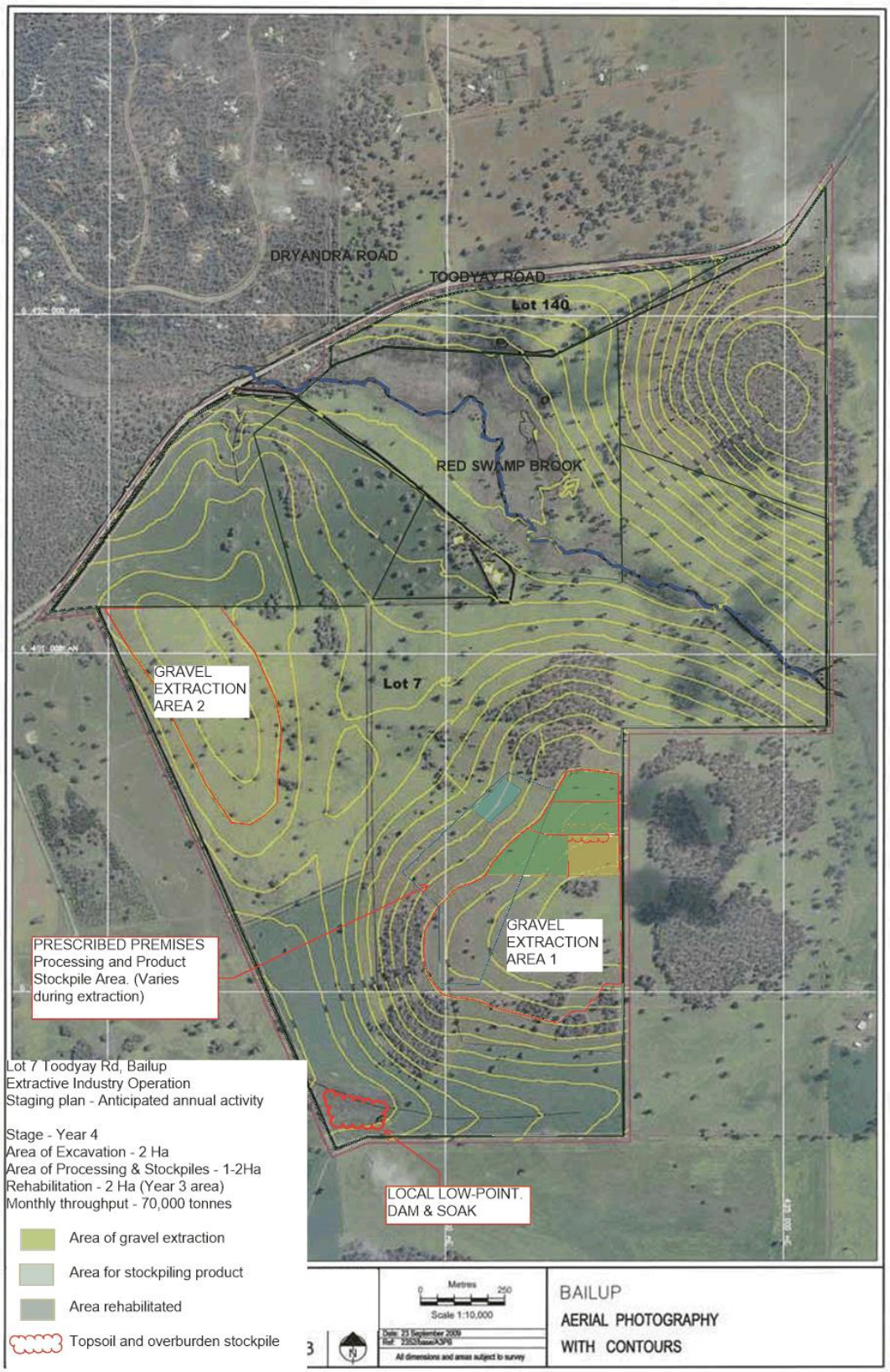


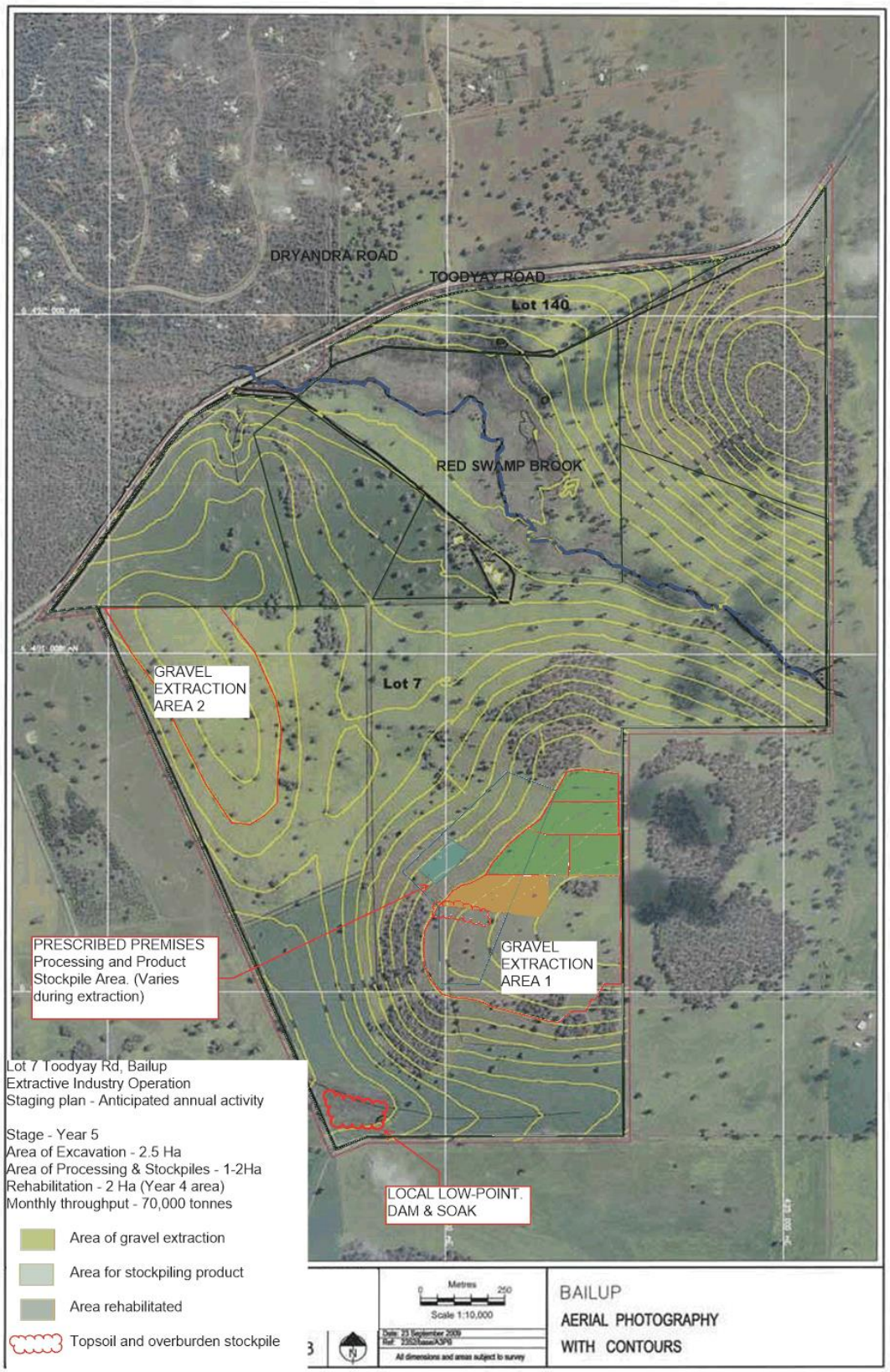
DIAGRAMATIC CROSS-SECTION THROUGH EXTRACTION AREA 2

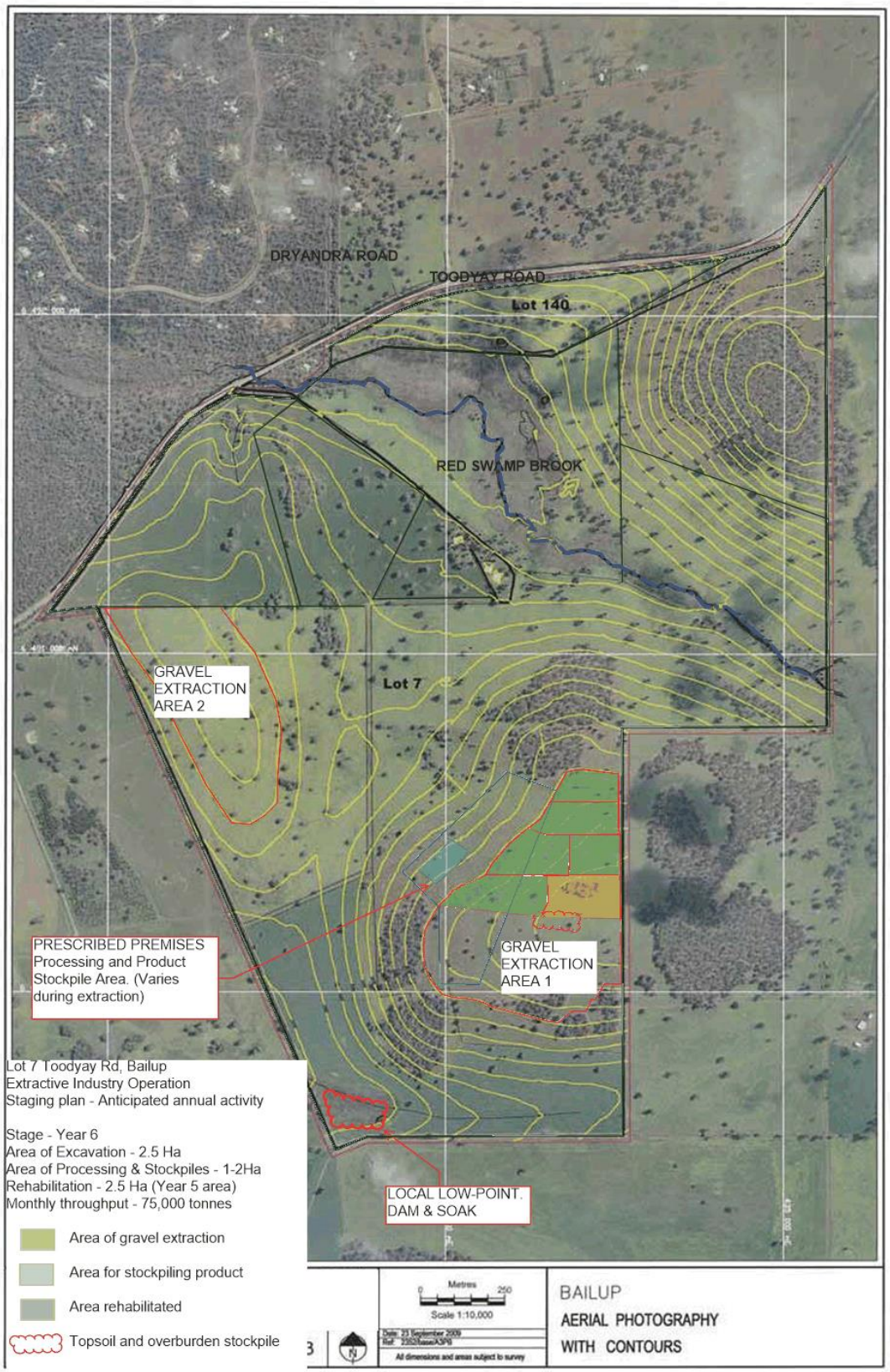

DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 1
Area of Excavation - 2 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - n/a
Monthly throughput - 35,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS

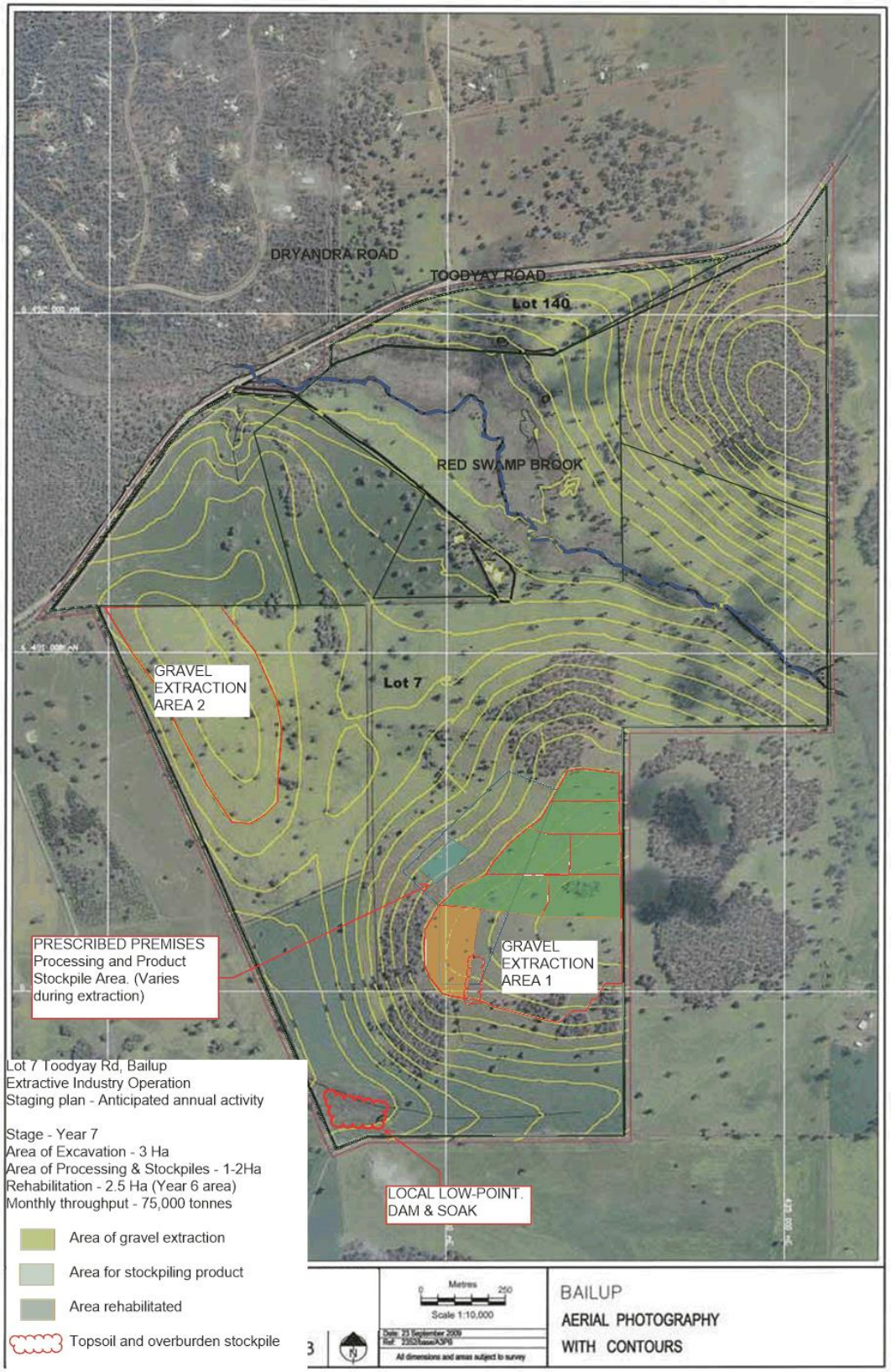

DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 2
Area of Excavation - 2 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 2 Ha (Year 1 area)
Monthly throughput - 60,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS

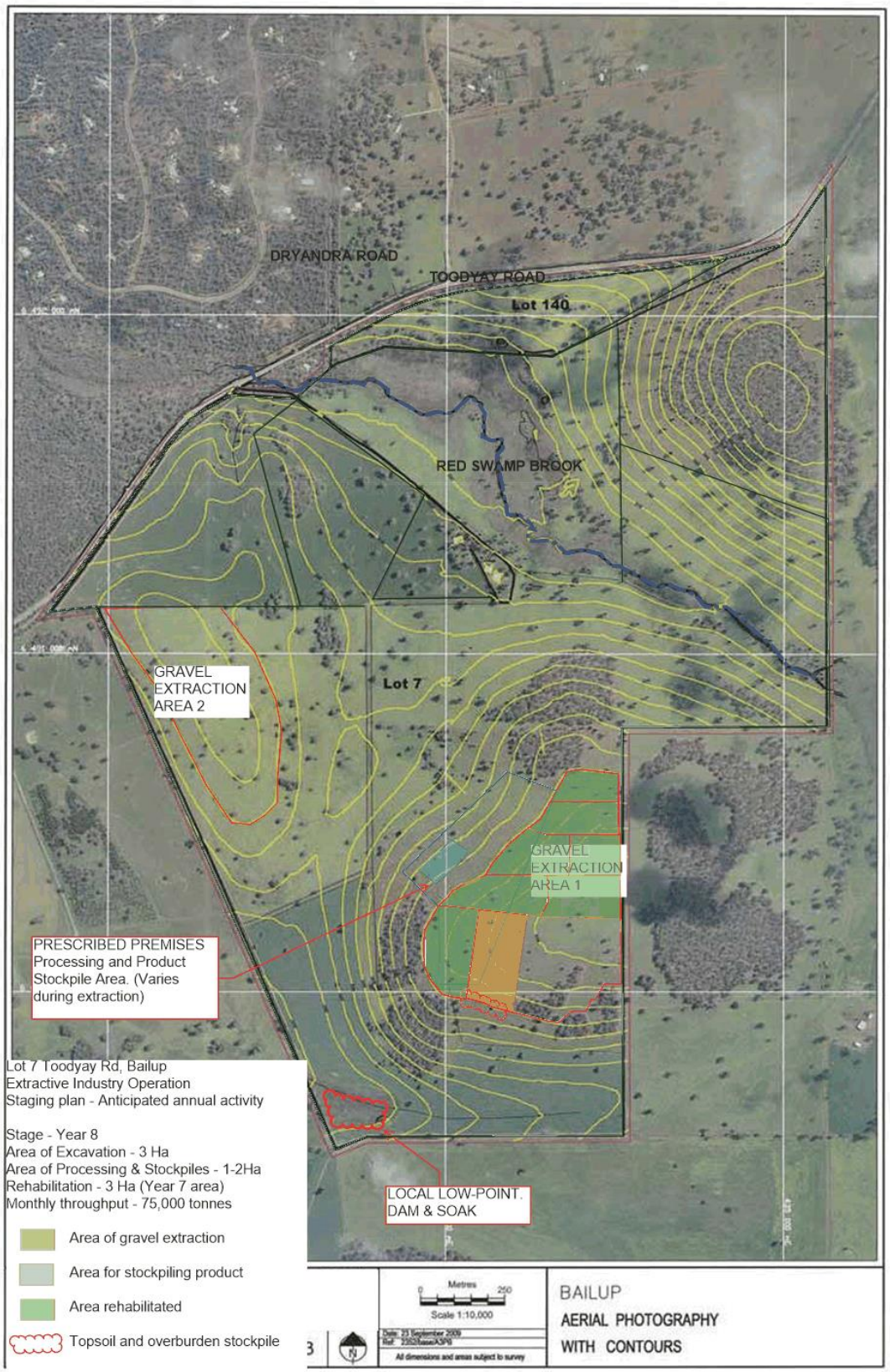

DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 3
Area of Excavation - 2 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 2 Ha (Year 2 area)
Monthly throughput - 70,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS

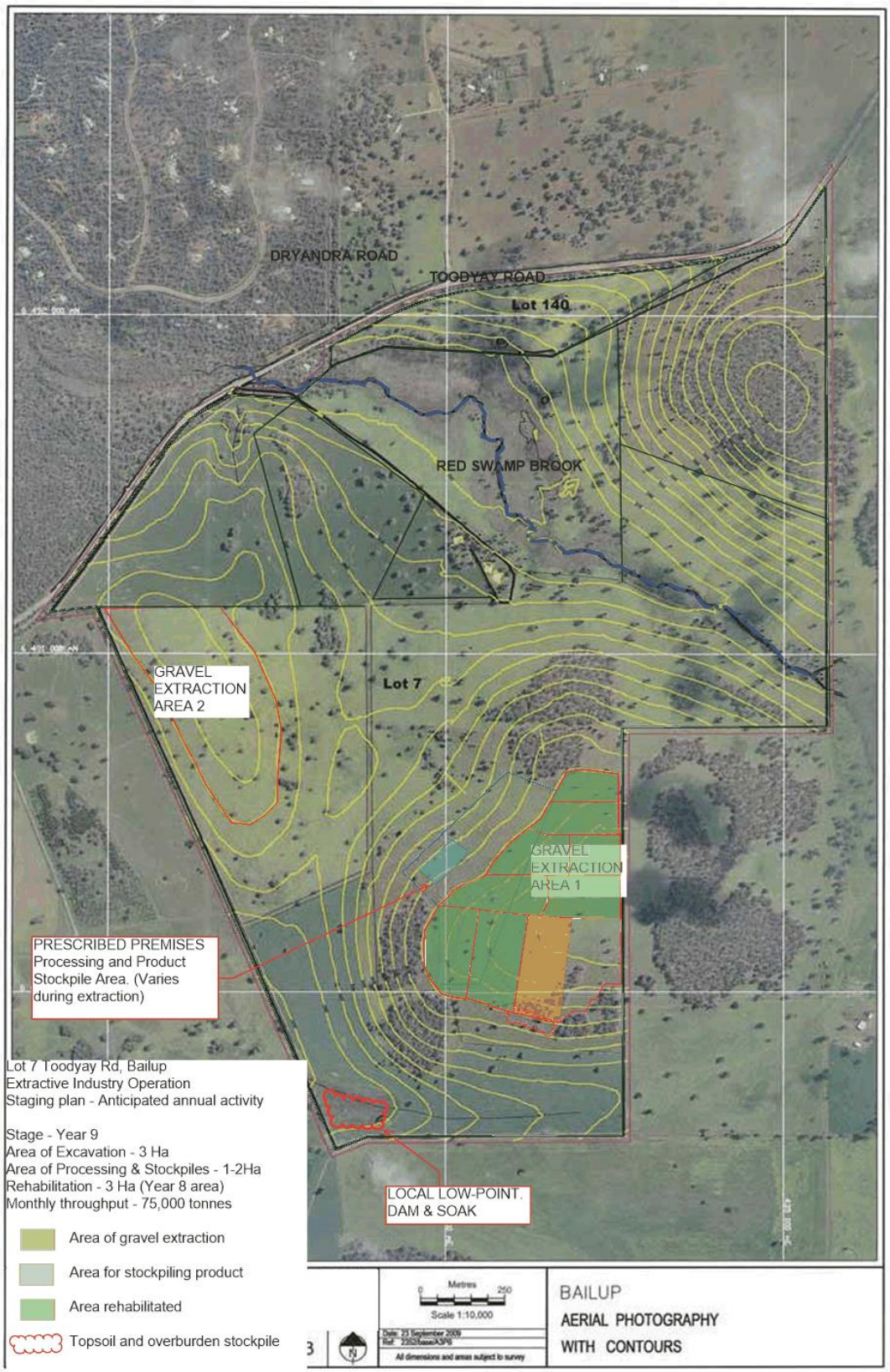

DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 4
Area of Excavation - 2 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 2 Ha (Year 3 area)
Monthly throughput - 70,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS

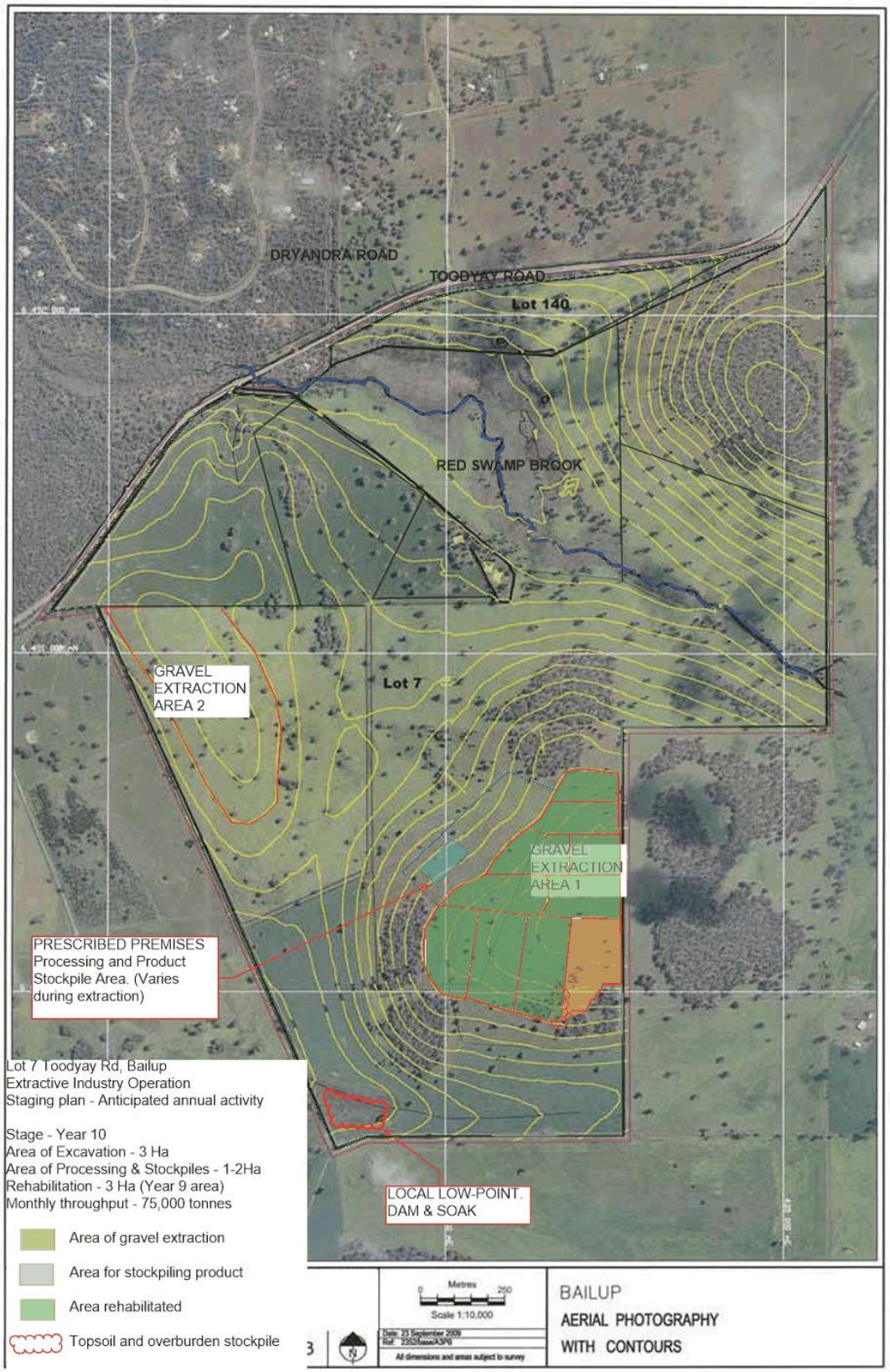

DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
GRAVEL EXTRACTION AREA 1
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 5
Area of Excavation - 2.5 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 2 Ha (Year 4 area)
Monthly throughput - 70,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS


DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
GRAVEL EXTRACTION AREA 1
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 6
Area of Excavation - 2.5 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 2.5 Ha (Year 5 area)
Monthly throughput - 75,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS


DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 7
Area of Excavation - 3 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 2.5 Ha (Year 6 area)
Monthly throughput - 75,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
0
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS


DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 8
Area of Excavation - 3 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 3 Ha (Year 7 area)
Monthly throughput - 75,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
250
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS


DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 9
Area of Excavation - 3 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 3 Ha (Year 8 area)
Monthly throughput - 75,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
Scale 1:10,000
All dimensions and areas subject to survey
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS


DRYANDRA ROAD
TOODYAY ROAD
Lot 140
RED SWAMP BROOK
Lot 7
GRAVEL EXTRACTION AREA 2
GRAVEL EXTRACTION AREA 1
PRESCRIBED PREMISES Processing and Product Stockpile Area. (Varies during extraction)
LOCAL LOW-POINT. DAM & SOAK
Lot 7 Toodyay Rd, Bailup
Extractive Industry Operation
Staging plan - Anticipated annual activity
Stage - Year 10
Area of Excavation - 3 Ha
Area of Processing & Stockpiles - 1-2Ha
Rehabilitation - 3 Ha (Year 9 area)
Monthly throughput - 75,000 tonnes
Area of gravel extraction
Area for stockpiling product
Area rehabilitated
Topsoil and overburden stockpile
Metres
Scale 1:10,000
BAILUP
AERIAL PHOTOGRAPHY
WITH CONTOURS