ABEC ENVIRONMENTAL CONSULTING PTY LTD

EXTRACTIVE INDUSTRY LICENCE APPLICATION AND ENVIRONMENTAL MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226

PRAGMATIC SOLUTIONS

AIR | LAND | WATER

Prepared For:

Iron Horse Pastoral Pty Ltd

Report Number:

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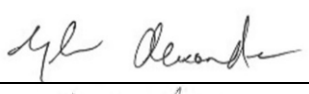
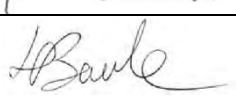
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		14/11/2025
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		14/11/2025

TABLE OF CONTENTS

TABLES

1. INTRODUCTION

Jim Cross of Iron Horse Pastoral Ltd (IHP) engaged ABEC Environmental Consulting Pty Ltd (ABEC) to prepare this Extractive Industries Licence (EIL) application for a portion of Lot 22 Edwards Road, Roelands, WA 6226 (Figure 1). The Site is located in the Shire of Harvey (Shire) and the application follows the Shire's Extractive Industries Local Law 2017 (Local Law).

The Site contains accessible Basic Raw Material (BRMs) at two discrete locations at the Site, with an estimated total volume of 7,230,000m^3. Approximately 1,735,845m^3 of the resource is located in the southern area of the Site, the 'Southern Resource Pit' (SRP), with an additional 5,585,148m^3 in the northern area of the Site, the 'Northern Resource Pit' (NRP). The Proponent intends to extract all resources in due course, with the anticipated lifespan of extraction activities ranging from 20 to 40 years. The Proponent understands that a licence (EIL) has a maximum 5-year duration and there will be a need to reapply at five-yearly intervals (or otherwise, as required).

The proposed activity meets the broad State planning definitions for extracting Basic Raw Materials (BRM). Extractive industry for BRMs on private land (and any associated development of land or building structures) requires approval under the Planning and Development Act 2005 (Development Approval) and the Local Government Act 1995 (Extractive Industry Licences).

Blasting, crushing or screening activities will be required to yield marketable BRMs from the Site and as a result, additional Regulatory Approvals that are required will be sought and obtained before commencing the extractive industry. The following approvals are required to support the EIL:

- Screening of greater than 50,000 tonnes per annum requires a Prescribed Premise Category 12 licence as per Schedule 1 of the Environment Protection. Regulations 1987 (WA) (EP Regulations).
    - *Category 12: Screening etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated; 50,000 tonnes or more per year*.

IHP will undertake the extraction activities and off-site transport, utilising subcontractors on an ad-hoc basis if required. The annual extraction will be <250,000 tonnes to not overload the local road network. The extraction activities will commence immediately after all necessary approvals are obtained.

The purpose of the EIL application (this document) is to describe:

- The current Site and environmental setting,
- The overall approach for the extraction of the known site BRM resources (long-term plan); and
- For the immediate time frame and duration, an initial 5-year duration EIL;
    - to describe the proposed extraction works, assess potential environmental impacts, propose appropriate management measures and describe proposed rehabilitation measures.

1.1. DOCUMENT LAYOUT

1. The EIL application also includes an application for Development Approval (DA) under the Shire of Harvey District Planning Scheme No. 1 and an application for Planning Approval under the Greater Bunbury Region Scheme. Application forms are provided in Appendix 1.

2. A copy of the Certificate of Title and details of rights associated with the Property are included as Appendix 2.

3. A Noise Environmental Impact Assessment is Appendix 3; and

4. Environmental Management Plans for weeds, dieback, stormwater, groundwater, wetlands, dust, noise and rehabilitation are provided as Appendix 4 - Appendix 9.

2. ENVIRONMENTAL SETTING

2.1. EIL SITE IDENTIFICATION

The following table provides Site identification details of the EIL land parcel.

TABLE 1: SITE IDENTIFICATION DETAILS

SITE DETAILS	DESCRIPTION
Site name or description	Lot 22 Edwards Road, Roelands WA 6226
Street address	Lot 22 Edwards Road, Roelands WA 6226
Legal property description for each parcel of land comprising the site	Lot 22 on Deposited Plan 40850 Certificate of Title Vol. 453, Fol. 98A Land ID: 1229838
Latitude and longitude	Approximate Site centre: -33.266131 m S / 115.943481 m E
Name of current owner(s)	Cross Verwijmeren Pty Ltd
Current land use(s)	General agriculture
Name of current occupier(s) (if known)	Vacant
Proposed ownership changes	None
Site area and dimensions (for each parcel of land)	121.3425 ha
Local government authority	Shire of Harvey
Current zoning as per Town Planning Scheme (TPS)	Zoned as Priority Agriculture in accordance with Local Planning Scheme No.2 (pers.comms.; C.Naidoo, 30 Nov, 2025)
Reason for assessment	Potential Extractive Industries Licence.
Locality Map	**Figure 1**

2.2. RESTRICTIONS TO SITE USES

The Certificate of Title (CoT) and associated documents relating to the property ownership and rights are in **Appendix 2**. In addition to the CoT, three additional documents are listed as limitations, interests, encumbrances and notifications on the CoT, there is also a mining tenement across the Site. A summary of the details is:

- Memorial (document G326310) under the *Soil and Conservation Act 1945*, an Agreement to Reserve (ATR) portions of the Lot as an area to be retained and protected as native vegetation (24.8ha).
    - Notably, under s30 of the *Soil and Land Conservation Act 1945* an Agreement to Reserve (ATR) is not expressed as irrevocable (https://www.agric.wa.gov.au/land-use-planning/covenants-protect-native-vegetation-western-australia; accessed 10 June 2024). These covenants may be in perpetuity or for a specified time and may be varied or discharged by the Commissioner. Landowners may ask the Commissioner to discharge the

ATR by applying to the Commissioner in writing, stating the reasons they would like to vary or discharge the ATR. If the Commissioner refuses to discharge the ATR, the landowner can appeal the decision by applying to the State Administrative Tribunal of Western Australia.

- A Taking Order and Easement (document I653596) an interest to protect a 330KV electricity transmission line and associated easement to Western Power Corporation (noting DP33391).
    - This document includes numerous restrictions to activities able to occur within the easement such as (but not limited to):
        - Limitations to heights of: structures; materials stacking or storage; vehicles, mobile plant or equipment brought within;
        - Prohibition of explosive, flammable or unstable substances being brought onto the easement;
        - Carry on or permit to be carried on, any activity or operation which endangers the safety of the transmission works, or the safe, efficient continuous operation of the works.
- A third document (P972068) listed on the COT relates to a mortgage.
- A mining tenement summary report pertaining to Mineral Lease S.A. 70/1 is also attached along with an email string to DMIRS in regard to the impact of the lease upon the Land Owner's right to extract BRMs. The advice notes it is unlikely that the Department would object to the proposal.

2.3. SITE DESCRIPTION

The Site is a blue gum plantation property situated on Edwards Road, off the Coalfields Highway in Roelands, WA, ~10km east of the Roeland townsite and sits at the border of the Shire of Harvey and Shire of Collie (east of the Site boundary). The entire site is fenced as appropriate to its rural and agricultural zoning, including a lockable site entry gates.

Assessment of Landgate aerial photography (https://map-viewer-plus.app.landgate.wa.gov.au/; accessed 28 May 2024) shows that the property appears to be a developed blue gum plantation property in a steeply to moderately undulating landscape incised by numerous associated drainage lines trending generally north. Site features comprise:

- Timber plantations over a significant portion of the property;
- Boundary fencing;
- Numerous internal access tracks and firebreaks,
- A network of dams,
- Shed-like structures (machinery sheds); and
- A high-voltage transmission lines that transect the southern portion of the property.

A review of Landgate's historical imagery indicates that in 1996 (the earliest available historic photo) the site appeared extensively developed for timber plantation use, with a northern blue gum plantation evident and the southern portion appearing cleared and bereft of mature vegetation. By 2001, the southern cleared areas appear to host extensive plantation growth, the northern plantation area shows significant access

tracks and a central zone of plantation growth is evident. In the ensuing years (to the present) the aerial photography evidences use of the site for ongoing plantation harvest and re-growth cycles.

2.4. SURROUNDING LANDUSES

The following surrounding land uses have been identified:

- The Site is generally surrounded by lots to the north, west and south that are presumed to be privately owned. However, the land adjoining the southeast corner is identified to be the Wellington National Park.
- The Site is zoned General Farming (TPS 1 Zone) and Place of landscape value (TPS 1 Special Area) as per the Shire of Harvey *Local Planning Scheme*;
- Brunswick Junction-Collie railway is located ~500m north of the Site boundary;
- No dwellings or structures are present within 300m or 500m 'buffer zones' surrounding the Property boundaries (**Figure 2**).

2.5. ZONING

The area subject to this Extractive Industry Licence is wholly within the Shire of Harvey. The Site is zoned Rural as per the Shire of Harvey *Local Planning Scheme No. 2* and shown in **Figure 3**. Additionally, the Shire of Harvey mapping (https://www.harvey.wa.gov.au/shire/about-us/district-and-local-mapping-(intramaps); accessed 13 November 2025) notes the Lot is :

- Zone Number 55, Agriculture Priority 1 Scott Coastal Plain (TPS 2); and
- Landscape Protection Area (TPS 2 Special Control Area).

2.6. TOPOGRAPHY AND SURFACE WATER FEATURES

A review of the Site's topography indicates uneven terrain with steeply sloping surfaces associated with local deeply incised dendritic drainage feeding higher-order offsite catchment features. The Site's highest elevation of ~243mAHD is located on the northeastern portion of the Site, as shown by the 5m contour topographic detail in Figure 4. Three dam-like surface water features appear present. Two dams in the central southern portion of the Site are connected by meandering ephemeral drainage lines that lead off-site to the east as part of the Sophia River catchment. The Sophia River ultimately discharges to the Luneburg River, which in turn feeds the Brunswick River. A third dam in the southwest portion of the Site is in a different sub-catchment and connected to a drainage feature leading west into the Brunswick River catchment.

The nearest significant surface water feature is the Lunenburgh River, located ~500m north of the Site boundary and no wetlands are mapped to be present within the Site or the immediate vicinity.

The Site lies within a proclaimed Surface Water Area and Irrigation District, the Collie River Irrigation District and Brunswick River and Tributaries (https://environmentonline.dwer.wa.gov.au/interactive-map/; accessed 10 June 2024).

2.7. CLIMATE

The closest weather recording station is Wokalup (Station 9642) (http://www.bom.gov.au/). The climate of the region is considered temperate, with warm, dry summers reaching mean temperatures of 31.0 degrees

and the majority of annual rainfall occurring during the winter months of May to September, reaching mean temperature lows of 7.9 degrees. The average annual rainfall for the region is approximately 928mm. The average monthly temperatures and rainfall are provided below in Table 2.

TABLE 2: MEAN CLIMATE DATA FOR WOKALUP (STATION 9642) BETWEEN 1935 TO 2023 (BOM, 2023)

Mean	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Max Temp (C°)	31.0	30.8	28.3	24.2	20.2	17.5	16.7	17.1	18.7	21.1	24.0	28.1	25.1
Min Temp (C°)	15.5	16.1	14.8	12.7	10.6	9.0	8.0	7.9	8.5	9.4	11.4	13.7	11.5
Rainfall (mm)	13.9	15.4	21.2	52.0	131.3	178.1	182.6	131.3	95.1	57.1	35.4	14.5	928.0

2.7.1. PREVAILING WINDS

Data extracted from available wind roses (http://www.bom.gov.au/; accessed 14/03/2024) reported from the Wokalup weather station (9642, approximately 18km away) indicates that prevailing morning winds (9am) tend to vary in direction, but most commonly between 0-20km/hr from the east (~23%) or south-east (~18%). No mid-afternoon (3 pm) wind data is available.

2.8. GEOLOGY AND SOILS

A review of 1:500 000 State Interpreted Bedrock Geology mapping (DMIRS-016) indicates the Site is mapped as Yilgarn Craton granites (A-mgn-Y) described as granitic gneiss, locally migmatitic; includes local mafic bands and enclaves.

At the Site, in particular the SRP and NRP areas, the observable soils and local outcrop lead to the conclusion that the underlying profile will comprise a range of materials broadly described as a mixture of clay and rock. It is anticipated that these materials will occur within a deeply weathered (lateritic and saprolitic) clay profile that is presumed to overlie (with varying thickness), and ultimately grade into, fresh basement rock materials. With the exception of the thin topsoil horizon, it is considered that the materials forming the onsite profile are all able to be utilised as BRMs, pending market needs.

2.1. WATER ABSTRACTION LICENCES

A review of DWER's water abstraction register indicates one Surface Water Licence exists within the site premise. No other abstraction licences are present within 1km radius of the Site. The details of the licence are outlined below:

TABLE 3: SURFACE WATER ABSTRACTION LICENCE

LICENCE NO.	EXPIRY DATE	ALLOCATION	OWNER	SOURCE
61024	12/01/2023	450,000 KL	Alcoa of Australia Limited	Samson Brook

2.1.1. ACID SULFATE SOILS

A review of the Acid Sulphate Soil (ASS) Risk mapping of the Swan Coastal Plain (DWER-055) indicates the Site is not at risk of ASS.

2.2. VEGETATION

Portions of the Site are mapped to comprise remnant vegetation (https://environmentonline.dwer.wa.gov.au/interactive-map/; accessed 10 June 2024).

Three Vegetation complexes of the South West Forest Region (DBCA-047) are present within the Site, as shown in **Figure 5**. A summary of the vegetation complexes follows.

TABLE 4: VEGETATION COMPLEXES OF THE SOUTH WEST FOREST (DBCA-047)

VEGETATION COMPLEX & CODE	LOCATION	DESCRIPTION
Murray 1 (My1)	The central portion of the Site	Open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla-Eucalyptus patens* on valley slopes to woodland of *Eucalyptus rudis Melaleuca rhaphiophylla* on the valley floors in humid and subhumid zones.
Dwellingup (D1)	Northern and southern portions	Open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones
Yarragil 1 (Yg1)	A small portion of at the southern boundary	Open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla* on slopes with mixtures of *Eucalyptus patens* and *Eucalyptus megacarpa* on the valley floors in humid and subhumid zones

2.3. BUSHFIRE PRONE AREAS

The Site is mapped within a Bush Fire Prone Area (OBRM-001). Development on this site may require additional planning and building requirements.

2.4. HERITAGE

No Aboriginal Cultural Heritage sites or heritage areas are registered within the Site boundaries. The nearest registered Aboriginal Cultural Heritage Site (DPLH-099) is the Lunenburgh River (ID 39,529), located approximately 500m north of the Site boundary.

2.5. FAUNA

Portions of the Site are mapped as Carnaby's Black Cockatoo Areas requiring investigation as feeding habitat in the Jarrah Forest IBRA Region (DBCA-056). Other fauna species are likely to be present within vegetated areas of the Site including Conservation Significant Species.

3. PROPOSED DEVELOPMENT

While there is sufficient BRM at the Site to potentially extract and supply market needs for 20-40 years EIL's are only granted for up to 5-years under the Shire local law. As such, this description of the proposed development outlines the plan for long-extraction of BRMs and details the development and activities planned to be conducted during the immediate 5-year EIL duration and the

3.1. LONG-TERM PLAN

This section summarises the current understanding of the location and amount of available BRM resources and the planned long-term development approach for the Site (pit boundaries, haul routes, operational areas). However, *these details are not being put forward for approval under the EIL that is being applied for.*

Figures 6a (a map) & Figure 6b (a collage of imagery and cadastral details) show the key details of the known BRM resources that includes details of the planned 'long-term staging approach' to extract the known available resources from the two discrete locations. Commencing at the Southern Resource Pit (SRP) three notional areas (stages) will be opened up, and the resource extracted (mined), before opening up the sequential stage, as follows:

- The Southern Resource Pit (SRP), is planned to be extracted using three sequential phases, labelled SRP Phase 1, SPR Phase 2 and SRP Phase 3; and
- The Northern Resource Pit (NRP), to be commenced at completion of mining of the SRP will also be opened up and mined in three sequential phases, NRP Phase 1, NPR Phase 2 and NRP Phase 3.

The Figure shows the following details of each extraction phase area:

- maximum depth of resource extraction (for all phase), detailed as the Floor Level (in mAHD);
- Batter and bench details
- *in situ* BRM resource volume; and
- Footprint area;

The Figure also shows the following features of the Site and proposed development

- Alternative ROM pad (for storage or crushing);
- Haul routes.
- Natural drainage and existing dams;
- Protected areas that are the subject of an 'Agreement to Reserve' as a Memorial on the Site Certificate of Title.

3.1.1. EXCAVATION SITE PLAN

An Excavation Site Plan meeting the general requirements of the *Shire of Harvey Extractive Industry – Application Checklist* is provided as Figure 6a and shows the following details:

- Location and final finish level (depth) of the SRP and NRP;
- Minimum setback distance from the pit disturbance footprint to the nearest site boundaries (which meet or exceed the Shire LPS No.2 Setback requirements for Priority Agriculture).

- Locations of the following site features, existing sheds, dams and drainage features, tracks, roads, easements, power pylons and the proposed EIL pits and 'Alternative ROM Pad'.
- No clearing is required to construct the proposed features (SRP, NRP, Alternative ROM and haul roads) as all of the disturbances will occur on pasture or blue gum plantation areas.

ABEC notes that although significant resources were dedicated to accurately survey the site-wide 5m contours, the property's size and steep, variable topography made it impractical to map 1m contours across the entire site or display the full development at a scale of 1:2000 (on A1 paper), as specified by the Shire of Harvey EIL checklist. Nonetheless, ABEC recommends that the scale and contour intervals used in the excavation site plan (Figure 6a) provide a reasonable level of detail and resolution for the intended purpose, given the site conditions.

3.2. EIL DEVELOPMENT AND EXTRACTION PLAN

The information in this section is put forward for approval under the EIL that is being applied for herein. The EIL is sought for BRMs contained at the resource body referred to as the Southern Resource Pit (SRP). The initial extraction, and the subject of this application, will occur from the SRP Phase 1 area as shown in Figure 7a, with development of the Alternative ROM (to be potentially used for crushing activities) shown on the related and adjoining Figure 7b.

The proposed BRM extraction activities are:

1. To generate and export up to 250,000 tonnes of BRM per annum from the area of the Site known as SRP Phase 1.
2. The extraction activity will result in a maximum extraction area footprint is 3.617ha (i.e., the SRP Phase 1 area).
3. The development footprint areas affect pasture and harvested blue gum plantation areas, therefore no clearing is required.
4. The extraction pit will be constructed with 10m batters at 70° with 3m benches.
5. The maximum topographic elevation of the extraction area is ~178mAHD, with minimum depth (floor level) 153mAHD.
6. No shallow groundwater resources are mapped in the vicinity of the Site, therefore the separation between the pit floor level and groundwater resources exceeds the 2m minimum requirement typically required for BRM extraction.
7. No groundwater dewatering is proposed. That is, lowering of the groundwater table by dewatering is *not required* to achieve the BRM extraction.
8. The extraction footprint (SRP Phase 1 area) maintains a 10m setback from onsite natural drainage lines, and the Alternative ROM is 10m from the property's side boundary (setback distances for all features are shown on Figure 6a).
9. Develop haul roads leading from the southern Site entrance to the SRP and NRP areas.
10. Develop and construct the alternative ROM area (2.6051ha) and an access haul road from the Site connecting to the SRP/NRP haul road.

3.3. ACTIVITIES AND SEQUENCING

During the 5-year duration of the EIL (applied for herein), the planned extraction activities and sequencing of work will generally follow the outline below, but may be varied depending on operational needs:

- Prior to commencement of earth disturbance, harvest blue gums within the footprint; ensure appropriate site hazard signage and security (fencing) is in place.
- Remove and stockpile the thin (if any) topsoil material, litter, from the SRP Phase 1 and Alternative ROM areas.
- Grade and establish the alternative ROM.
- Remove (extract) clay BRMs from SRP Phase 1 areas and stockpile in-pit, or at the Alternative ROM, for sale or future blending with hard-rock BRMs to produce engineered fill products as needed by the market.
- Commence and continue hard rock resource extraction in stages, by use of material-appropriate methods, including drill and blast, (in accordance with Staging of Extraction Works, Section 3.2.1.).
- Crush and screen hard rock resources.
- Load trucks and transport BRM resources off-site.
- Progressively, as resource extraction is completed, make pit walls safe and floor areas safe;
- At completion of extraction activities (unlikely to occur within the 5-year initial-EIL duration, rehabilitate the quarry void and any redundant access tracks to a safe and stable form.

3.3.1. EXTRACTION APPROACH AND METHOD

The approach and method for extraction of the BRM resource will be the same as any hard rock quarry, and be undertaken in the following general manner.

1. Strip (<100mm) topsoil from the SRP Phase 1 area and store for future rehabilitation uses in stockpiles less than 2m high. This activity will be planned to be conducted during dry soil conditions (if possible) to prevent uncontrolled movement of materials via mobile plant.
2. The BRM resources exist immediately beneath the thin topsoil, with the upper materials likely to comprise a significant proportion of clay based materials. The upper resources (clay and or rock material) are planned to be utilised on an as-needed basis for the development of the approved site features, including forming the pit working area (for storage and processing of excavated materials), 1m high pit perimeter bunding for safety and water management, or for haul road construction.
3. Commence BRM extraction, using material-appropriate methods and machinery. Extraction will use typical mining approaches, commencing extraction from the high areas working downwards to bench level, with material progressively removed from the face to the work area (for processing and storage pending offsite transport).
    a. As each bench is opened, rehabilitation of the batter slopes will commence apart from areas required for active or future works.
    b. The SRP Phase 1 area will commence by mining the central hillock area and then moving progressively outwards and down to develop the extraction pit.

4. Although the maximum resource available to be taken from SRP Phase 1 is 1,736,238 tonnes (620,085m^3), this approval seeks transport no more than 250,000 tonnes per annum, or 1,250,000 tonnes for the EIL duration, prior to seeking an EIL renewal to complete the SRP Phase 1 resource extraction.

3.3.2. INTERNAL ROADS AND HAUL ROUTES

The existing network of internal tracks will be used to access the BRM extraction areas and remove the resources from the Site. If and as required, internal road improvements will use material removed from the approved EIL pit only. No clearing is required to develop the roads for use by the vehicles and plant necessary for the proposed works.

3.3.3. PLANT AND EQUIPMENT MAINTENANCE

Plant and equipment required for the proposed activities comprises:

- Excavator;
- Dozer;
- Articulated dump truck;
- Water cart;
- Grader;
- Drill rig (percussion);
- Jaw crusher;
- Cone crusher;
- Vertical Shaft Impactor (VSI);
- Screen and scalping screen

The crushing activities and plant will be located and operated the following locations, depending on operational needs;

- Within the SRP footprint area (on the mined pit floor or otherwise within the SRP area); or
- The Alternative ROM area

Routine required maintenance of plant and equipment is to be undertaken using a mobile refuelling and service truck, which will be used for any plant or equipment that requires fuel, oil, coolants, or lubricants.

- All wastes will be removed from Site;
- The service process and vehicle will be controlled appropriately to prevent environmental spillage and carry hydrocarbon cleanup equipment.

The following activities will *not* occur onsite:

- No hydrocarbons (>100L) will be stored onsite, and a
- No major maintenance will be conducted onsite, any plant, equipment or vehicles requiring major maintenance will be removed from the Site.

3.3.4. WATER SUPPLY

Water requirements for the BRM activities (extraction and haulage dust suppression) will be taken from the existing network of onsite dams, or if additional supplies are required, they will be procured from offsite sources.

3.3.5. HOURS OF OPERATION

On-site extraction activities (heavy vehicle or equipment operations) are proposed to be limited to 7am to 5pm Monday to Friday, 7am to 12pm Saturdays, and no activities on Public Holidays.

3.4. SITE ACCESS

Access to the Site will be via Edwards Road, which is listed as an 'access road' that stems from the nearby Coalfields Highway, a 'primary distributor' (https://mainroads.maps.arcgis.com/; accessed 15/05/24). Under the State Road hierarchy, for an 'access road' heavy vehicle use is permitted to service properties, with an indicative Annual Average Daily Traffic (AADT) volume of 75 vehicles per day in a Non-Built-Up Area.

Edwards Road is understood to be a Shire Road located on the boundary of the Shire of Harvey and Shire of Collie. Neither Shire maintains the road.

To ensure that Edwards Road is fit for the purpose of the extractive industry the proponent plans to:

- Undertake a pre-start condition survey of the road conditions (photograph log); and if necessary
- Upgrade, maintain, and condition the Edwards Road to be suitable for safe trucking movements before commencing extraction activities and to ensure that, upon completion of off-site trucking campaigns or completion of the Site extraction activities, the road is returned to the pre-extraction condition.
- This approach may be varied if it becomes apparent that other users of Edwards Road are contributing significantly (notionally greater than 50%) of heavy vehicle traffic movements.

3.5. ESTIMATED TRAFFIC TO BE GENERATED

The following estimates are provided:

- Total maximum annual resource extraction and removal 250,000 tonnes.
- Number of working days per month 20 days
- Vehicle Payloads (GVA's) Double Road Train (45 tonne)

The above estimates suggest an average of 22 cycles per week day (44 total truck movements of 22 outbound and 22 inbound) for 50 weeks of the year (which allows for 11 public holidays per year.

The number of trips will be dependent on demand. Operational hours will typically be Monday to Friday, 7am to 5pm Monday to Friday, (noting operations may also occur between 7am and 12pm Saturdays). No trucking will occur on Sundays or Public Holidays.

4. POTENTIAL ENVIRONMENTAL IMPACTS

4.1. FLORA AND FAUNA

No clearing of native vegetation is required as part of the BRM extraction activities, as extraction areas are currently under plantation trees (blue gums) that will be harvested prior to BRM activities. As no native vegetation will be cleared, there are no anticipated impacts upon the native flora. Similarly, there is no anticipated impact to fauna reliant upon native vegetation.

Closure of the BRM quarry is not anticipated at this stage, however, at completion, the site will be rehabilitated to a landscape and land uses similar to present-day conditions and uses that are consistent with the site zoning (presently General Farming).

4.2. WEEDS

No declared weeds or weeds of local or regional significance are currently known to be present at the Site.

4.3. DIEBACK

No evidence of Phytophthora Dieback was present in suspectable species at the Site during a field visit by an Environmental Scientists in 2024. As such no impact associated with Phytophthora Dieback are anticipated.

4.4. ALTERATION OF THE LAND SURFACE

Alteration of the land surface is unavoidable during extractive industries, however use battering to ensure no steep slopes remain after the extraction is completed.

4.5. VISUAL IMPACTS

No visual impact from the extraction will result. No receptors will be able to see the affected areas due to the distance, the generally undulating landscape, the surrounding native and blue gum vegetation, and the below-ground level nature of the extraction.

4.6. ACID SULFATE SOIL

The Site does not show up on the DWER ASS risk mapping data sets, ASS are therefore unlikely to pose an environmental impact risk.

4.7. GROUNDWATER

Due to the topography and underlying basement rock, limited shallow groundwater is likely to exist beneath the Site or be intersected during the BRM extraction. Groundwater Resources Mapping by DWER (https://public-services.slip.wa.gov.au/public/rest/services/SLIP_Public_Services/Water/MapServer/49; accessed 16/04/25) indicates groundwater resources may be hosted by fractured rock or paleochannels.

The base of the extraction pit will be maintained greater than 2m from the maximum seasonal permanent groundwater table (excluding consideration of perched groundwater bodies).

4.8. SURFACE WATER

Existing onsite dams are connected by unnamed ephemeral drainage lines that lead offsite and ultimately to the Sophia River, a tributary to the Luneburg River. Stormwater runoff from areas affected by the BRM extraction will be managed to prevent unavoidable runoff into the ephemeral surface water bodies.

4.9. STORMWATER

Stormwater from undisturbed areas will be diverted away from the disturbance catchment to reduce stormwater management requirements. No stormwater runoff will occur from any active or open SRP Phase 1 area due to the pit-mining method. In-pit stormwater will be directed into a pit floor sump where it may be recycled for onsite uses (eg. dust suppression) or until it evaporates or infiltrates.

4.10. DUST

The following BRM extraction activities have potential to cause dust:

- Topsoil removal (a short duration occurrence) is only likely to occur on several occasions per 5-year licence duration, as required to prepare the extraction footprint by remove the shallow topsoil horizon from the top of the BRM resource body.
- Quarrying (ripping, digging or blasting and in-pit raw material handling).
- Raw material crushing, screening and stockpiling (in-pit).
- Processing (crushing and screening), loading out and transport material offsite.

Dust generation can create a nuisance to landowners in the vicinity of the extraction areas. The risk of significant off-site impacts is, however, considered low due to the absence of sensitive receptors (i.e. residents) within the recommended separation distance of 300-500m for Extractive Industries as detailed in Separation distances between industrial and sensitive land uses (EPA, 2015).

Existing on-site water supply dams are anticipated to contain sufficient annual rainfall catchment to provide the quarry-life dust suppression needs.

4.11. NOISE

Noise (and vibration) is not anticipated to cause any issues due to the proposed activities, due to the isolated nature of the Site. An Environmental Noise Impact Assessment (ENIA) commissioned to determine whether or not the noise emissions from the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations) found that full compliance was achieved for the proposed quarry. The ENIA, completed by Acoustic Engineering Solutions (AES) ((AES, 2025) is provided as Appendix 3.

4.12. HERITAGE

No Heritage issues are known at the Property; therefore, no impacts will occur due to the BRM extraction activities.

4.13. ENVIRONMENTAL MANAGEMENT PLANS

Environmental Management Plans for the following impacts are provided as Appendices:

- Weeds;
- Dieback;
- Management of groundwater, surface water or stormwater;
- Dust;
- Noise; and

- Rehabilitation.

5. REFERENCES

AES. (2025). *Environmental Noise Impact Assessment of Granite Quarry at Edwards Road Roelands, 1 September 2025; Acoustic Engineering Solutions (AES).*

FIGURE 1: SITE LOCATION

ABEC ENVIRONMENTAL CONSULTING

LOT 22 EDWARDS ROAD ROELANDS

SITE LOCATION

Figure 1

Legend

Project Area

Lot 22 Edwards Road
Roelands WA 6226

BRUNSWICK JUNCTION

RODGERS RD, LEITCH RD, HOPE AV, DIXON AV, HOCART RD, MORTON ST, IETTO WY, FLEAY RD, LOGUE RD, WELLESLEY CREEK, SUNNYVALE RD, BERNIES RD, MITCHELL RD, MORNINGTON RIVER, SWAMP RD, WEST L, SANDALWOOD RD, MARTIN RD, OLDHAM RD, WOKALUP CREEK, MORNINGTON RD, MYLES AV (F), TREES RD (F), BIG BROOK, HARVEY RIVER, HANSON RD, LANCASTER RD (F), ERNEST RIVER, BRUNSWICK RIVER, AUGUSTUS RIVER, FREDERIC RIVER, BIG TREE RD (F), SOUTH WESTERN HWY, NORAH BROOK, ROBINSON RD, PARTRIDGE RD, MARRIOTT RD, FLYNN RD, ALCOCK RD, LUNENBURGH RIVER, MELVILLE RD, BEELA RD, EDWARDS RD, OTHO RIVER, GASTALDO RD, ELVIRA GULLY, FLAHERTY BROOK, COLTON ST, COALFIELDS RD, VICTOR RD WORSLEY BACK RD, SEVENHILLS RD, SHENTON RD, COLLIE RIVER RD, WORSLEY RIVER, HAMILTON RIVER, HENTY BROOK, HENTY RD, LENNARD RD, WATERFALL CREEK, Lennard Rd (F), SAILORS GULLY, STONES BROOK, GERVASE RIVER, GIUMELLI RD, PARADISE CREEK, GARDINCOURT DR, MILL BROOK, COLLIE RIVER, CONNELL RD (F), RICHES GULLY, FALCON RD (F), KELLY RD (F), WIGHT RD (F), FERGUSON RIVER, TYRELL RD, HOUGH BROOK, RICHARDS RD, PILE RD

390000, 395000, 400000, 405000, 410000

6335000, 6330000, 6325000, 6320000, 6315000, 6310000, 6305000, 6300000

N

0 1 2 3

Kilometers

1:100,000

Datum & Projection

GDA2020 MGA Zone 50

Date:	31/05/2024
Status:	Draft
Figure:	1
Sheet Size:	A3
Internal Reference:	Lot 22 Loc.
Drawn by:	GSM
Requested by:	ABEC Env

GSM GRIFFIN SPATIAL & MAPPING

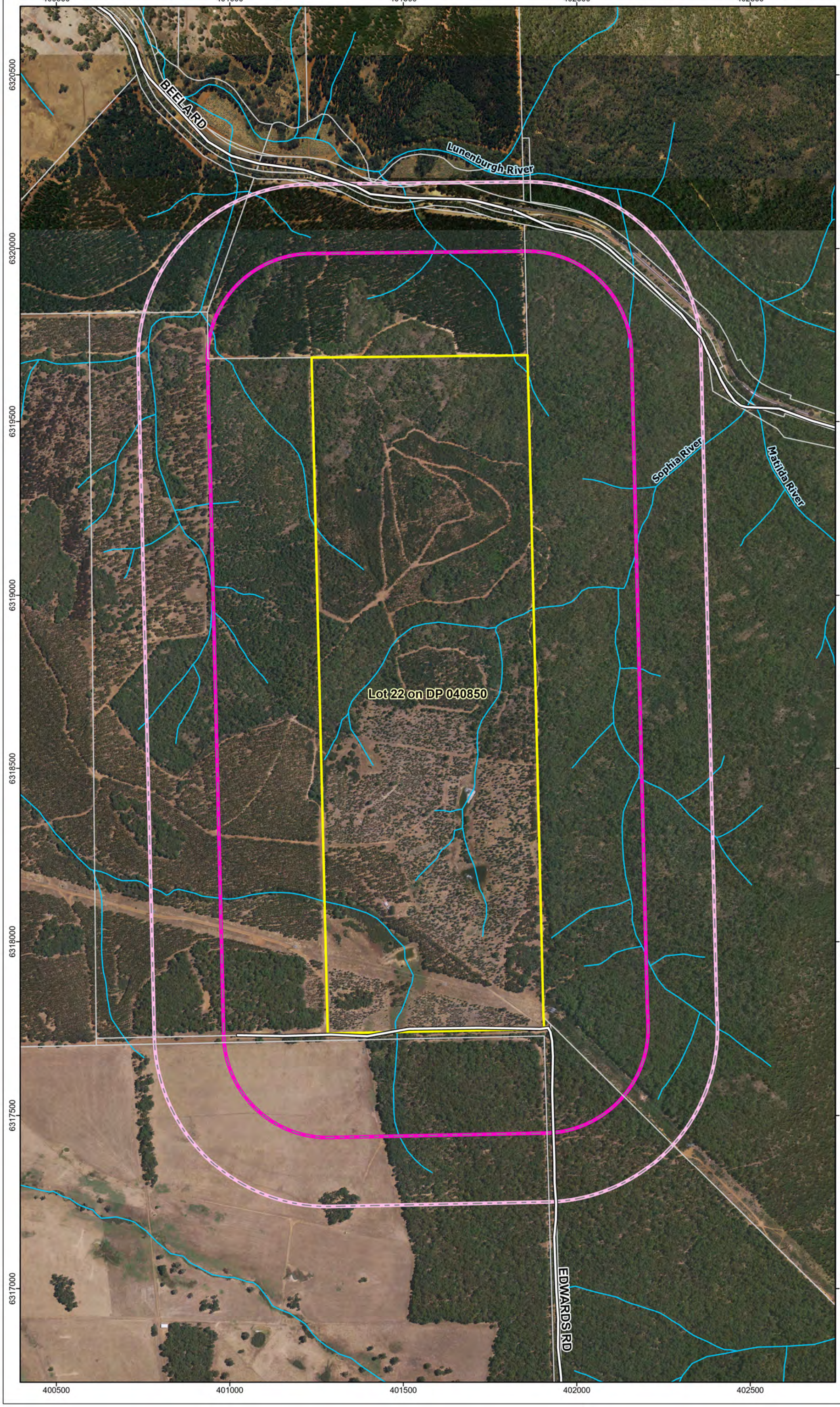
FIGURE 2: PROJECT AREA BUFFER DISTANCES

ABEC ENVIRONMENTAL CONSULTING

LOT 22 EDWARDS ROAD ROELANDS

DISTANCE BUFFERS AROUND PROJECT AREA

Figure 2



Legend

- Project Area

Site Boundary (Buffers)

- 300m
- 500m

Road Network

- Local Road

Boundaries

- Cadastral

N

0 100 200 300 400

Meters

1:10,000

Datum & Projection

GDA2020 MGA Zone 50

Date:	31/05/2024
Status:	Draft
Figure:	4
Sheet Size:	A3
Internal Reference:	Lot 22 Buff
Drawn by:	GSM
Requested by:	ABEC Env

GSM GRIFFIN SPATIAL & MAPPING

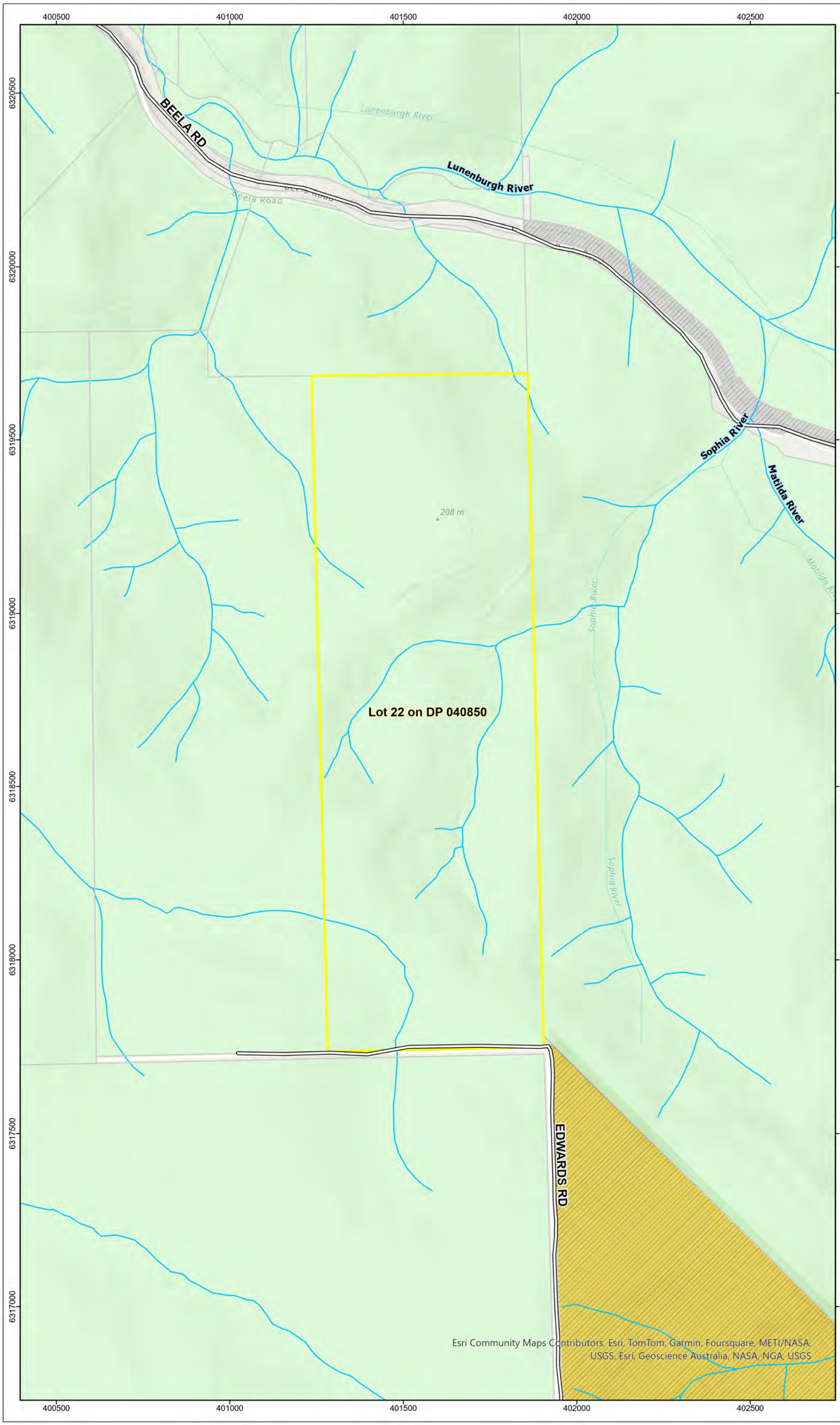
FIGURE 3: ZONING AND TOWN PLANNING SCHEME

ABEC ENVIRONMENTAL CONSULTING

LOT 22 EDWARDS ROAD ROELANDS

TOWN PLANNING SCHEME

Figure 3



Legend

- Project Area

Local Planning Scheme - Zones and Reserves (DPLH-071)

- Railways
- Rural
- State Forest

Road Network

- Local Road

Boundaries

- Cadastral

N

0 100 200 300 400

Meters

1:10,000

Datum & Projection

GDA2020 MGA Zone 50

Date:	31/05/2024
Status:	Draft
Figure:	4
Sheet Size:	A3
Internal Reference:	Lot 22 Topo
Drawn by:	GSM
Requested by:	ABEC Env

GSM GRIFFIN SPATIAL & MAPPING

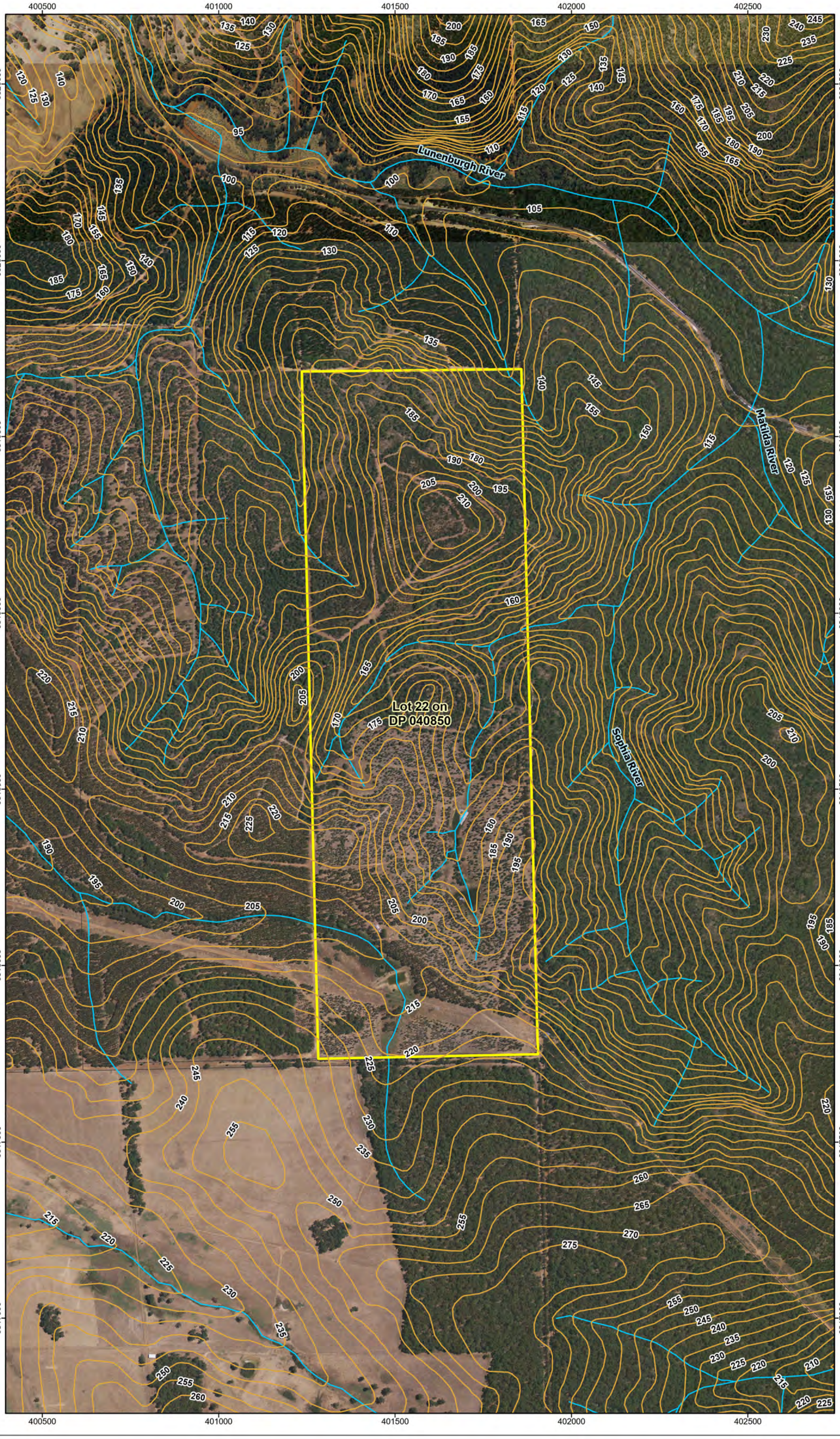
FIGURE 4: TOPOGRAPHY AND SURFACE WATERS

ABEC ENVIRONMENTAL CONSULTING

LOT 22 EDWARDS ROAD ROELANDS

TOPOGRAPHY

Figure 4



Legend

- Project Area
- Contour (5m)

Boundaries

- Cadastral

N

0 100 200 300 400

Meters

1:10,000

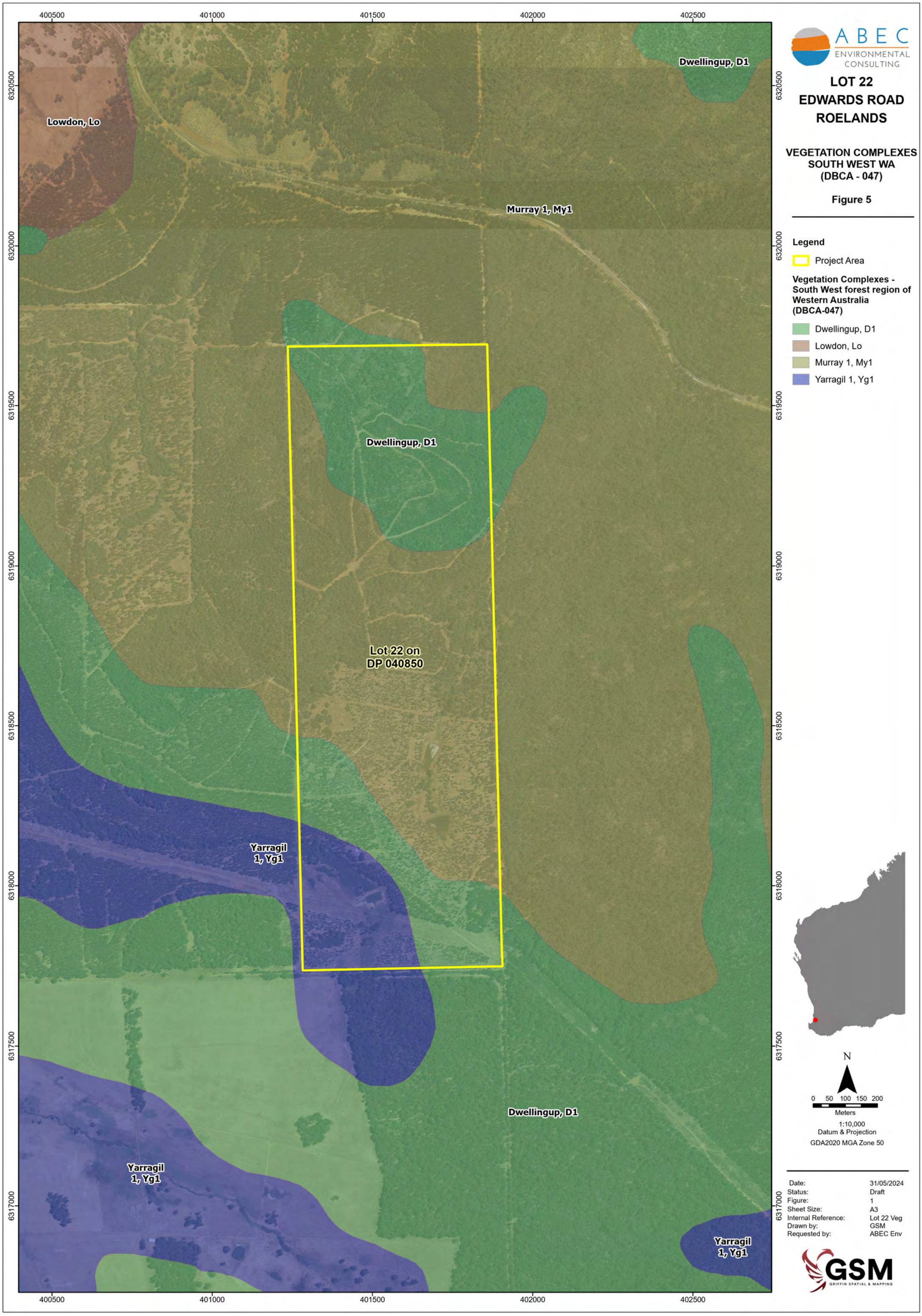
Datum & Projection

GDA2020 MGA Zone 50

Date:	31/05/2024
Status:	Draft
Figure:	1
Sheet Size:	A3
Internal Reference:	Lot 22 Topo
Drawn by:	GSM
Requested by:	ABEC Env

GSM GRIFFIN SPATIAL & MAPPING

FIGURE 5: VEGETATION COMPLEXES



ABEC ENVIRONMENTAL CONSULTING

LOT 22 EDWARDS ROAD ROELANDS

VEGETATION COMPLEXES SOUTH WEST WA (DBCA - 047)

Figure 5

Legend

- Project Area

Vegetation Complexes - South West forest region of Western Australia (DBCA-047)

- Dwellingup, D1
- Lowdon, Lo
- Murray 1, My1
- Yarragil 1, Yg1

N

0 50 100 150 200

Meters

1:10,000

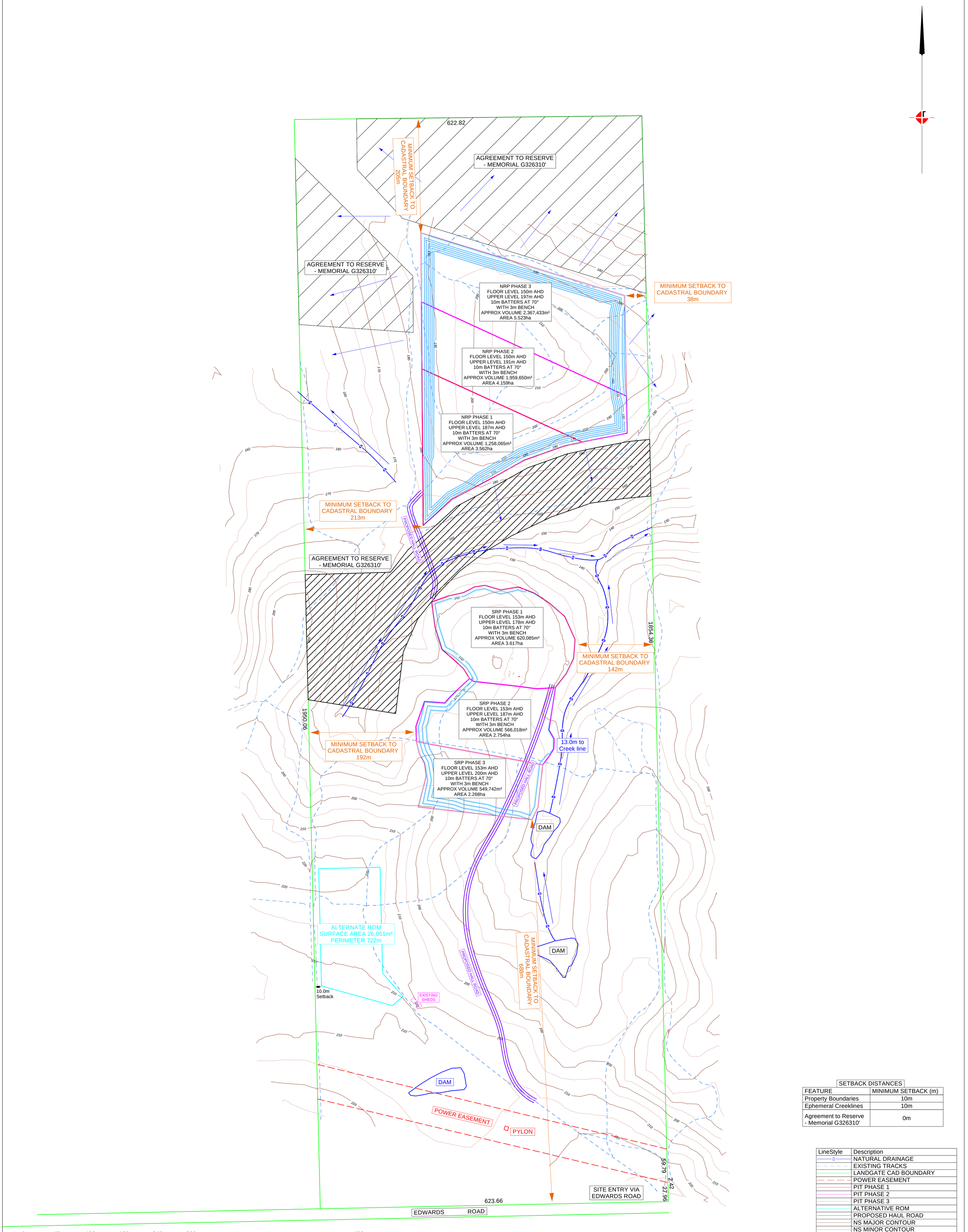
Datum & Projection

GDA2020 MGA Zone 50

Date:	31/05/2024
Status:	Draft
Figure:	1
Sheet Size:	A3
Internal Reference:	Lot 22 Veg
Drawn by:	GSM
Requested by:	ABEC Env

GSM GRIFFIN SPATIAL & MAPPING

FIGURE 6A: MAP SHOWING LONG-TERM BRM EXTRACTION AND SITE DEVELOPMENT PLAN



SETBACK DISTANCES	
FEATURE	MINIMUM SETBACK (m)
Property Boundaries	10m
Ephemeral Creeklines	10m
Agreement to Reserve - Memorial G326310'	0m

LineStyle	Description
	NATURAL DRAINAGE
	EXISTING TRACKS
	LANDGATE CAD BOUNDARY
	POWER EASEMENT
	PIT PHASE 1
	PIT PHASE 2
	PIT PHASE 3
	ALTERNATIVE ROM
	PROPOSED HAUL ROAD
	NS MAJOR CONTOUR
	NS MINOR CONTOUR
	PIT MAJOR CONTOUR
	PIT MINOR CONTOUR

Thompson surveying consultants

Innovators in Surveying Since 1952

A.C.N. 008 938 903 ABN 78 008 938 903
6/18 Casuarina Drive, Bunbury
PO Box 1719 BUNBURY WA 6231
Ph (08) 9721 4000
eMail info@thompsonsurveying.com.au

CLIENT:	CROSS VERWIJMEREN	Date: 13/11/2025	Drawn: GC	Surveyor: EJ	CHKd: HF
PROJECT:	LOT 22 EDWARDS ROAD ROELANDS	File: 22671 EIL Application Proposal SR and NR - DWG004 R4			
		Scale (@A1)	1:3000		
TITLE:	SITE FEATURES and SETBACKS				
DATUM	HOR: M.G.A. 94	VERT: A.H.D.			
A.H.D. HEIGHTS DERIVED FROM :	N/A				

ISO 9001: ISO14001 ISO 45001 Global-Mark.com.au®

REVISION SCHEDULE — Sheet 1 of 1

No.	Date	Description
1	22-7-2025	NR PIT ADDED
2	23-7-2025	GRADES ADDED PIT VOLUMES & AREAS ADDED
3	5-8-2025	LABELS
4	13-11-2025	DIMENSIONS

Z:\+ HF\22671\MAGNET FILES\22671 EIL Application Proposal SR and NR.mjo - DWG004 R4

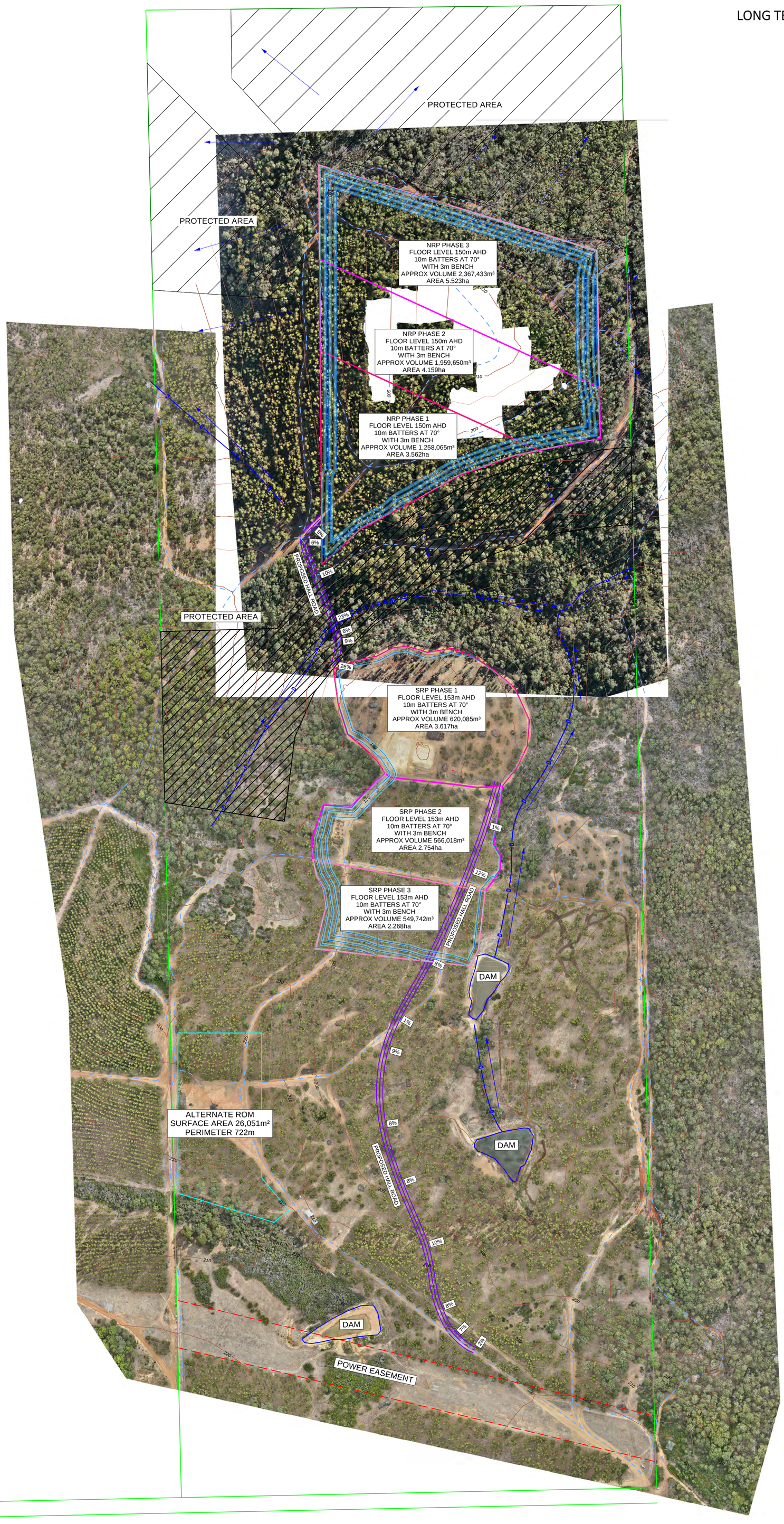
FIGURE 6B: COLLAGE OF IMAGERY SHOWING LONG-TERM BRM EXTRACTION AND SITE DEVELOPMENT PLAN

ABEC ENVIRONMENTAL CONSULTING

LOT 22 EDWARDS RD
ROELANDS

LONG TERM BRM EXTRACTION AND SITE DEVELOPMENT PLAN

FIGURE 6



LineStyle	Description
D	NATURAL DRAINAGE
	EXISTING TRACKS
	LANDGATE CAD BOUNDARY
	POWER EASEMENT
	PIT PHASE 1
	PIT PHASE 2
	PIT PHASE 3
	ALTERNATIVE ROM
	PROPOSED HAUL ROAD
	NS MAJOR CONTOUR
	NS MINOR CONTOUR
	PIT MAJOR CONTOUR
	PIT MINOR CONTOUR

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PO Box 1719 BUNBURY WA 6231
Ph (08) 9721 4000
eMail info@thompsonsurveying.com.au

CLIENT:	CROSS VERWIJMEREN
PROJECT:	LOT 22 EDWARDS ROAD ROELANDS
TITLE:	AERIAL PHOTOGRAPH
DATUM	HOR: M.G.A. 94 VERT: A.H.D.
A.H.D. HEIGHTS DERIVED FROM :	N/A

Date: 05/08/2025	Drawn: GC	Surveyor: EJ	CHKd: HF	
File: 22671 EIL Application Proposal SR and NR - DWG004 R3				
Scale (@A1)	1:3000			

ISO 9001: ISO14001: ISO 45001 Global-Mark.com.au®

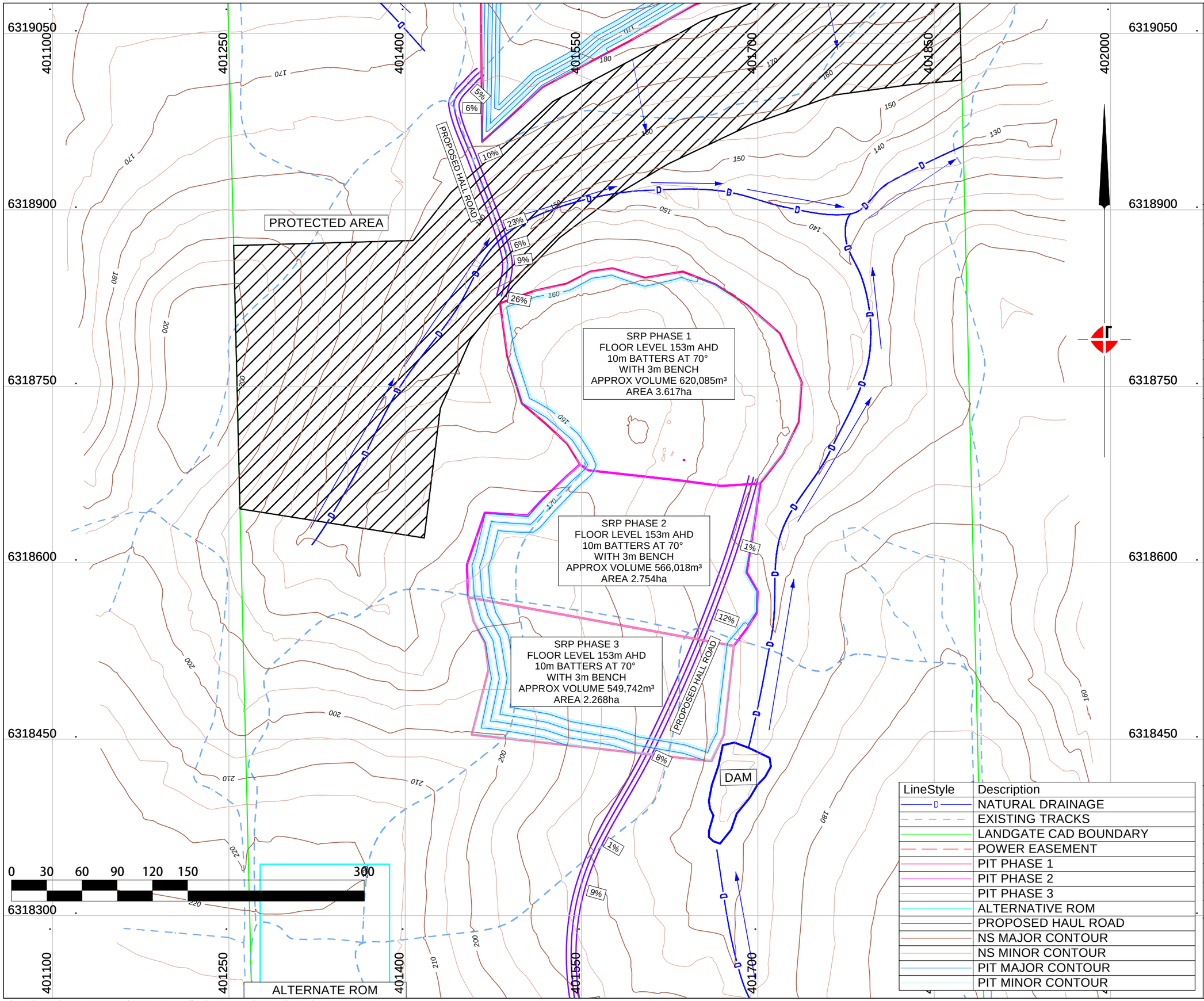
ABEC ENVIRONMENTAL CONSULTING

REVISION SCHEDULE — Sheet 1 of 1

No.	Date	Description
1	22-7-2025	NR PIT ADDED
2	23-7-2025	GRADES ADDED PIT VOLUMES & AREAS ADDED
3	5-8-2025	LABELS

Z:\+ HF\22671\MAGNET FILES\22671 EIL Application Proposal SR and NR.mjo - DWG004 R3

FIGURE 7B: ALTERNATIVE ROM DEVELOPMENT DETAILS



LineStyle	Description
D	NATURAL DRAINAGE
	EXISTING TRACKS
	LANDGATE CAD BOUNDARY
	POWER EASEMENT
	PIT PHASE 1
	PIT PHASE 2
	PIT PHASE 3
	ALTERNATIVE ROM
	PROPOSED HAUL ROAD
	NS MAJOR CONTOUR
	NS MINOR CONTOUR
	PIT MAJOR CONTOUR
	PIT MINOR CONTOUR

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PO Box 1719 BUNBURY WA 6231
Ph (08) 9721 4000
eMail info@thompsonsurveying.com.au

CLIENT:	CROSS VERWIJMEREN
PROJECT:	LOT 22 EDWARDS RD ROELANDS
TITLE:	EIL APPLICATION PROPOSAL
DATUM	HOR: M.G.A. 94 VERT: A.H.D.
A.H.D. HEIGHTS DERIVED FROM:	N/A
Drawn: GC	Surveyor: GC Checked:
File:	22671 EIL Application Proposal SR and NR - DWG002 R3
Date: 05/08/2025	Scale (@A3) 1:3000

LOT 22 EDWARDS rD ROELANDS

SOUTHERN RESOURCE PIT (SRP) EXTRACTION AND DEVELOPMENT DETAILS

FIGURE 7A

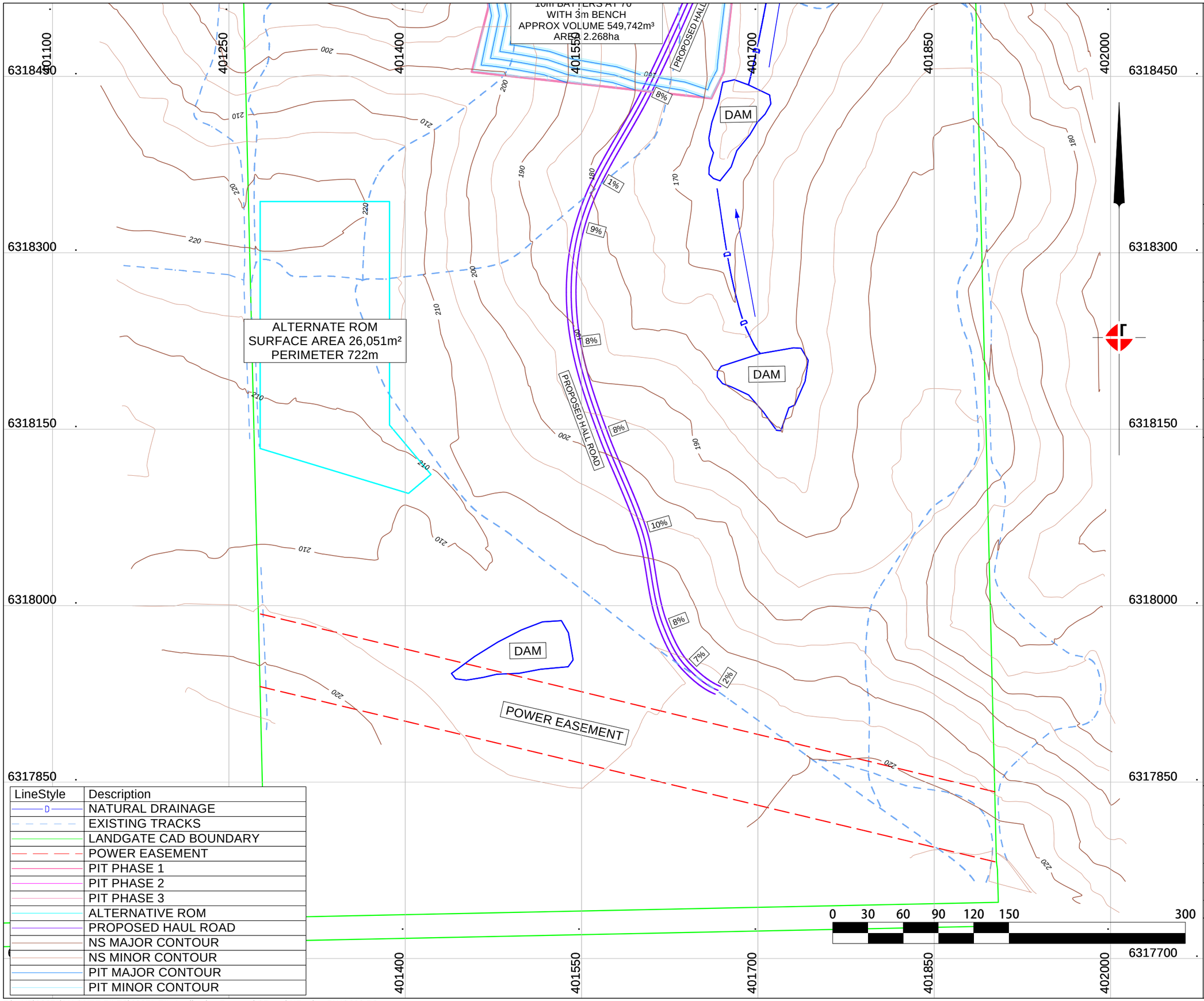
ABEC ENVIRONMENTAL CONSULTING

REVISION SCHEDULE — Sheet 1 of 1

No.	Date	Description
1	22-7-2025	NR PIT ADDED
2	23-7-2025	GRADES ADDED PIT VOLUMES & AREAS ADDED
3	5-8-2025	LABELS

Z:\+ HF\22671\MAGNET FILES\22671 EIL Application Proposal SR and NR.mjo - DWG002 R3

FIGURE 7A: SOUTHERN RESOURCE PIT EXTRACTION AND DEVELOPMENT DETAILS



LineStyle	Description
D	NATURAL DRAINAGE
	EXISTING TRACKS
	LANDGATE CAD BOUNDARY
	POWER EASEMENT
	PIT PHASE 1
	PIT PHASE 2
	PIT PHASE 3
	ALTERNATIVE ROM
	PROPOSED HAUL ROAD
	NS MAJOR CONTOUR
	NS MINOR CONTOUR
	PIT MAJOR CONTOUR
	PIT MINOR CONTOUR

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A.C.N. 008 938 903 ABN 78 008 938 903
6/18 Casuarina Drive, Bunbury
PO Box 1719 BUNBURY WA 6231
Ph (08) 9721 4000
eMail info@thompsonsurveying.com.au

CLIENT: CROSS VERWIJMEREN

PROJECT: LOT 22 EDWARDS RD ROELANDS

TITLE: EIL APPLICATION PROPOSAL

DATUM	HOR: M.G.A. 94	VERT: A.H.D.

A.H.D. HEIGHTS DERIVED FROM: N/A

Drawn: GC	Surveyor: GC	Checked:

File: 22671 EIL Application Proposal SR and NR - DWG003 R3

Date: 05/08/2025	Scale (@A3)	1:3000

LOT 22 EDWARDS RD ROELANDS

ALTERNATIVE ROM DEVELOPMENT DETAILS

FIGURE 7B

ABEC ENVIRONMENTAL CONSULTING

REVISION SCHEDULE — Sheet 1 of 1

No.	Date	Description
1	22-7-2025	NR PIT ADDED
2	23-7-2025	GRADES ADDED PIT VOLUMES & AREAS ADDED
3	5-8-2025	LABELS

Z:\+ HF\22671\MAGNET FILES\22671 EIL Application Proposal SR and NR.mjo - DWG003 R3

APPENDIX 1: DEVELOPMENT APPLICATION FORMS (EIL, DA & GBRS APPLICATIONS)

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
453	**98A**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 22 ON DIAGRAM 40850

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

IRON HORSE PASTORAL PTY LTD OF LOT 22 EDWARDS ROAD ROELANDS WA 6226
(T P972067) REGISTERED 30/4/2024

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. G326310 MEMORIAL. SOIL AND LAND CONSERVATION ACT 1945. AS TO PORTION ONLY. REGISTERED 13/11/1996.
2. I653596 TAKING ORDER. THE DESIGNATED PURPOSE OF THE INTEREST TAKEN FOR AN EASEMENT IS THE PROTECTION OF A 330KV ELECTRICITY TRANSMISSION LINE. REGISTERED 8/10/2003.
3. I653596 EASEMENT TO WESTERN POWER CORPORATION - SEE DP33391. REGISTERED 8/10/2003.
4. P972068 MORTGAGE TO JUDO BANK PTY LTD OF LEVEL 3 40 CITY ROAD SOUTHBANK VIC 3006 REGISTERED 30/4/2024.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

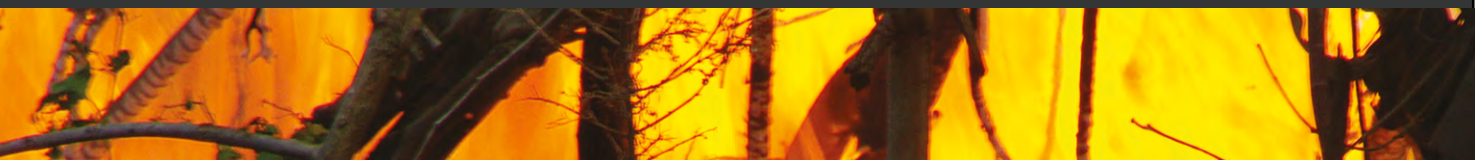
The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	453-98A (22/D40850)
PREVIOUS TITLE:	407-158A
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF HARVEY

Department of Planning

Western Australian Planning Commission

PLANNING IN BUSHFIRE PRONE AREAS
BAL ASSESSMENT (BASIC) REPORT



A BAL REPORT FOR A PROPOSED BUILDING ON A SITE THAT IS NOT WITHIN 100 METRES OF BUSHFIRE PRONE VEGETATION

Please read the BAL Assessment (Basic) fact sheet before completing this report.

Note: said fact sheet has been repealed as at 08/10/25)

1. Fire Danger Index (FDI)

Determine the FDI for your site. The FDI for all of Western Australia is 80.

80

2. Bushfire prone vegetation

Determine if there is bushfire prone vegetation within 100 metres of the proposed building. Insert NIL where there is no bushfire prone vegetation within 100 metres of the proposed building.

NIL

3. Distance between the proposed building and bushfire prone vegetation

Determine the horizontal distance between the proposed building and the nearest bushfire prone vegetation in the area surrounding the proposed building. Insert YES where the horizontal distance is greater than 100 metres on flat land and 110 metres on sloping land.

YES

4. Slope of the land under bushfire prone vegetation

Determine the horizontal distance between the proposed building and the nearest bushfire prone vegetation. Insert N/A where the horizontal distance is greater than 100 metres on flat land and 110 metres on sloping land.

N/A

Step 5: Bushfire Attack Level (BAL)

Determine the BAL for the proposed building or development. Insert the BAL.

LOW

If the BAL is BAL–LOW, then this report may be used to support a relevant application for the proposed building or development. If the BAL is **not** BAL–LOW, this report should not be used.

Attach any supporting information (i.e. site plans, photos, aerial photography and other design documents and specifications) as evidence that your site is not within 100 metres of bushfire prone vegetation.

Notes:
1. No habitable buildings are present or proposed.
2. No buildings are proposed within the areas affected by the EIL therefore it is assumed that there is a greater than 100m distance to any buildings.

I certify that the inputs into this BAL assessment (basic) report are a true and accurate representation of the conditions of the proposed building and site on the date of this assessment for the site located at:

Glen Alexander (ABEC Principal Environmental Consultant)

And being the whole of the land described in Certificate of Title: Lot 22 Diag Plan 40850, CoT Vol No.453, I

The BAL ra LOW Date of assessment: 8/10/25

Signed: Glen Alexander

Postal address: 2/17 Inverness Ave, Dunsborough 6281

Phone: 0418 929 390 Email: jim@crossv.com.au

GOVERNMENT OF WESTERN AUSTRALIA

WAPC Western Australian Planning Commission

GBRS

Form 1
Application for Planning Approval

Version: 9 (December 2024)

Owner/s details

Registered proprietor/s (landowner/s) or the authorised agent's details **must** be provided in this section. If there are more than two landowners please provide all relevant information on a separate page. Signature/s must be provided by all registered proprietors or by an authorised agent. **Alternatively**, a letter of consent, which is signed by all registered proprietors or by the authorised agent, can be provided.

Full name			
Company/agency (if applicable)	Iron Horse Pastoral Pty Ltd		
ACN/ABN (if applicable)			
Postal address	70 Stockley Road		
Town/suburb	Bunbury	Postcode	6230
PLEASE SIGN HERE Signature	The landowner/s or authorised agent consets to the applicant submitting this application	Date	22/09/2025
Print name and position		(if signing on behalf of a company or agency)	

Applicant details

Name/company	as above		
Contact person			
Postal address			
Town/suburb		Postcode	
Fax		Email	jim@crossv.com.au
Applicant signature		Date	22/09/2025
Print name and position		(if signing on behalf of a company or agency)	

Property details

Certificate of title description of land:		Lot No	22	Location No	
Plan or Diagram	40850	Vol	453	Folio	98A
Certificate of title description of land:		Lot No		Location No	
Plan or Diagram		Vol		Folio	

Title encumbrances (e.g. easements, restrictive covenants)	1.G326310; 2.I656596; 3.I653596; 4.P972068 - see attached CoT
Locality of development (house no., street name, suburb, etc)	Lot 22 Edwards rd
Nearest street intersection	Coalfield Highway
Existing building/land use	blue gum plantation, machinery sheds, access tracks, dams
Description of proposed development and/or use	extraction of basic raw materials (BRMs) via EIL
Nature of any existing buildings and/or use	plantation machinery sheds, tracks, water supply
Approximate cost of proposed development (excl. gst) $	nil - no infrastructure
Estimated time of completion	20-40 life of extraction activities

Is the development within a designated bushfire prone area? **Y/N**

If yes, please identify and address the bushfire risk (e.g. by including a BAL assessment(s) or BAL Contour Map and a Bushfire Management Plan with the application). Alternatively a short statement justifying why SPP 3.7 does not apply should be included with the application.

Office use only

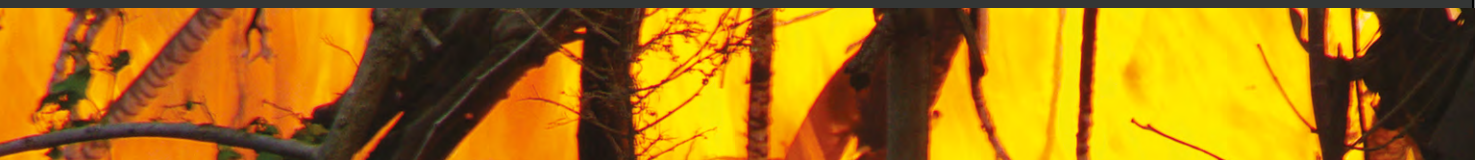
Acceptance Officer's Initials		Date Received	
Local government reference No.		Commission reference No.	

The information and plans provided with this application may be made available by the WAPC for public viewing in connection with the application.

Department of Planning

Western Australian Planning Commission

PLANNING IN BUSHFIRE PRONE AREAS
BAL ASSESSMENT (BASIC) REPORT



A BAL REPORT FOR A PROPOSED BUILDING ON A SITE THAT IS NOT WITHIN 100 METRES OF BUSHFIRE PRONE VEGETATION

Please read the BAL Assessment (Basic) fact sheet before completing this report.

Note: said fact sheet has been repealed as at 08/10/25)

1. Fire Danger Index (FDI)

Determine the FDI for your site. The FDI for all of Western Australia is 80.

80

2. Bushfire prone vegetation

Determine if there is bushfire prone vegetation within 100 metres of the proposed building. Insert NIL where there is no bushfire prone vegetation within 100 metres of the proposed building.

NIL

3. Distance between the proposed building and bushfire prone vegetation

Determine the horizontal distance between the proposed building and the nearest bushfire prone vegetation in the area surrounding the proposed building. Insert YES where the horizontal distance is greater than 100 metres on flat land and 110 metres on sloping land.

YES

4. Slope of the land under bushfire prone vegetation

Determine the horizontal distance between the proposed building and the nearest bushfire prone vegetation. Insert N/A where the horizontal distance is greater than 100 metres on flat land and 110 metres on sloping land.

N/A

Step 5: Bushfire Attack Level (BAL)

Determine the BAL for the proposed building or development. Insert the BAL.

LOW

If the BAL is BAL–LOW, then this report may be used to support a relevant application for the proposed building or development. If the BAL is **not** BAL–LOW, this report should not be used.

Attach any supporting information (i.e. site plans, photos, aerial photography and other design documents and specifications) as evidence that your site is not within 100 metres of bushfire prone vegetation.

Notes:
1. No habitable buildings are present or proposed.
2. No buildings are proposed within the areas affected by the EIL therefore it is assumed that there is a greater than 100m distance to any buildings.

I certify that the inputs into this BAL assessment (basic) report are a true and accurate representation of the conditions of the proposed building and site on the date of this assessment for the site located at:

Glen Alexander (ABEC Principal Environmental Consultant)

And being the whole of the land described in Certificate of Title: Lot 22 Diag Plan 40850, CoT Vol No.453, I

The BAL ra LOW Date of assessment: 8/10/25

Signed: Glen Alexander

Postal address: 2/17 Inverness Ave, Dunsborough 6281

Phone: 0418 929 390 Email: jim@crossv.com.au

APPENDIX 2: CERTIFICATE OF TITLE AND MINING TENEMENT DETAILS

Government of Western Australia
Department of Mines, Industry Regulation and Safety

eMITS MINERAL TITLES ONLINE

MINING TENEMENT SUMMARY REPORT

DISCLAIMER: This is not the official Register referred to in Reg. 84C of the Mining Regulations 1981.

MINERAL LEASE S.A. 70/1

Status: Live

TENEMENT SUMMARY

Area: 702,261.00000 HA
Death Reason :
Mark Out : N/A
Death Date :
Received : 25/09/1961 08:30:00
Commence : 25/09/1961
Term Granted :

CURRENT HOLDER DETAILS

Name and Address
ALCOA OF AUSTRALIA LIMITED
C/- HETHERINGTON EXPLORATION & MINING TITLE SERVICES PTY LTD, SUITE 404, GROUND FLOOR, 50 ST GEORGES TERRACE, PERTH, WA, 6000, xxxxx@hemts.com.au, xxxxxxx977

DESCRIPTION

Locality: Toodyay-Collie
Datum:
Boundary: The Crown Land within the land coloured red on plan marked "C" attached to the Alumina Refinery Agreement. (Copy/Plan at P91 of File 777/61). For a copy please contact DMIRS.

Area :

Type	Dealing No	Start Date	Area
Special Act adjustment		10/06/2011	702,261.00000 HA
Vol. Part. Surrender		15/07/1994	712,895.49000 HA
Special Act adjustment		16/01/1989	1,266,910.00000 HA
Special Act adjustment		31/12/1986	1,166,418.00000 HA
Vol. Part. Surrender		09/07/1980	1,086,128.00000 HA
Special Act adjustment		20/12/1967	1,088,830.00000 HA
Special Act adjustment		17/11/1966	1,269,612.00000 HA
Granted		25/09/1961	724,937.00000 HA
Applied For		25/09/1961	712,895.49000 HA

SHIRE DETAILS

Shire	Shire No	Start	End	Area
ARMADALE CITY	210	25/09/1961		44,033.76420 HA
BEVERLEY SHIRE	560	25/09/1961		23,174.12700 HA
BODDINGTON SHIRE	630	25/09/1961		90,547.74440 HA
BOYUP BROOK SHIRE	770	25/09/1961		5.63590 HA
COLLIE SHIRE	1890	25/09/1961		113,872.68280 HA
DARDANUP SHIRE	2660	25/09/1961		605.05890 HA
DONNYBROOK-BALINGUP SHIRE	2870	25/09/1961		1,085.90060 HA
GOSNELLS CITY	3780	25/09/1961		598.27600 HA
HARVEY SHIRE	3990	25/09/1961		72,935.50290 HA
KALAMUNDA SHIRE	4200	25/09/1961		22,004.98120 HA
MUNDARING SHIRE	6090	25/09/1961		40,591.18160 HA
MURRAY SHIRE	6230	25/09/1961		95,447.79420 HA
NORTHAM SHIRE	6720	25/09/1961		6,458.34450 HA
SERPENTINE-JARRAHDALE SHIRE	7700	25/09/1961		51,830.94950 HA
SWAN CITY	8050	25/09/1961		999.16750 HA
TOODYAY SHIRE	8330	25/09/1961		7,602.13350 HA
WANDERING SHIRE	8680	25/09/1961		49,544.33970 HA
WAROONA SHIRE	8820	25/09/1961		37,989.53710 HA
WEST ARTHUR SHIRE	8890	25/09/1961		13,122.49480 HA
WILLIAMS SHIRE	9170	25/09/1961		17,803.56970 HA
YORK SHIRE	9730	25/09/1961		12,008.71660 HA

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

OF

GRANITE QUARRY

AT

EDWARDS ROAD ROELANDS

1 September 2025

AES-890410-R01-A-01092025

Acoustic Engineering Solutions
www.acousticengsolutions.com.au

DOCUMENT CONTROL

Prepared for: **ABEC Environmental Consulting**
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Revision: A
Date: 1 September 2025
Doc NO: AES-890410-R01-A-01092025

Acoustic Engineering Solutions
ABN: 64 451 362 914

EXECUTIVE SUMMARY

A granite quarry is proposed to operate between 7am and 7pm on Monday to Saturday excluding public holidays at Lot 22 Edwards Road Roelands. Acoustic Engineering Solutions (AES) has been commissioned by ABEC Environmental Consulting to undertake environmental noise impact assessment of the proposed quarry. The aim of this assessment is to determine whether or not the noise emissions from the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations).

An acoustic model has been created and seven scenarios are modelled to represent the proposed worst-case quarry operations:

Scenario 1: represents the construction of haul roads.
Scenarios 2 & 3: represent the topsoil stripping and overburden removal.
Scenarios 4 & 5: represent the quarry crushing process with ROM in the pits.
Scenarios 6 & 7: represent the quarry crushing process with alternative ROM location.

Scenario 1 is a construction scenario while scenarios 2 to 7 are the operational scenarios.

Three closest residences are selected for the detailed assessments of noise impact. Noise levels are predicted at the 3 residences for a range of daytime meteorological conditions including calm and worst-case winds in 8 cardinal directions. The predicted noise levels are then adjusted to account for their dominant characteristics. The table below summarises the adjusted worst-case noise levels.

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	24.7	39.1	34.8	36.8	35.9	40.4	39.9
R2	16.8	32.2	27.7	33.6	24.8	42.7	42.2
R3	9.7	25.8	25.8	26.9	26.2	30.9	30.7

According to Regulation 13, no assigned noise levels apply to the construction activities (scenario 1) as long as "*the construction work was carried out in accordance with control of environmental noise practices set out in section 4 of AS 2436:2010 and the equipment used on the premises was the quietest reasonably available*".

For the operational scenarios (2 to 7) at the closest residences, the adjusted daytime worst-case noise levels (≤43 dB(A)) are below the assigned noise levels on Monday to Saturday. This concludes that full compliance is achieved for the proposed quarry.

TABLE OF CONTENTS

1.0 INTRODUCTION

A granite quarry is proposed at Lot 22 Edwards Road Roelands. Acoustic Engineering Solutions (AES) has been commissioned by ABEC Environmental Consulting (ABEC) to undertake an environmental noise impact assessment of the proposed quarry. The objective of this assessment is to determine whether or not the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations).

Figure 1 in APPENDIX A presents an aerial view of the subject site and surrounding area including the closest residences, which are more than 1.6km away from the quarrying pit boundaries.

Figure 2 to Figure 4 in APPENDIX A present the site layout and quarrying pit plans. Two quarrying pits (North Pit and South Pit) are proposed between 7am and 7pm on Monday to Saturday excluding public holidays. Each pit is quarried at three phases. For the north pit, quarrying starts from south towards north while for the south pit, quarrying starts from north towards south.

For each pit, four (4) quarrying stages are proposed:

Stage 1: Construction of internal haul roads.
Stage 2: Clearing and stockpiling of topsoils.
Stage 3: Clearing and stockpiling of overburden.
Stage 4: Extraction and Transportation of granite.

Table 1-1 lists the name and number of fixed plant and mobile equipment operating onsite for different stages.

Table 1-1: Fixed plant and mobile equipment.

Stage	Equipment	Number
1	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	1
	Fuso FV517J Watercart	1
	Cat 14M Grader	1
2	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	1

Stage	Equipment	Number
	Fuso FV517J Watercart	1
3	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	2
	Fuso FV517J Watercart	1
4	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	2
	Fuso FV517J Watercart	1
	Cat 14M Grader	1
	Drill Rig	1
	LT120D Jaw Crusher	1
	LT300HP Cone Crusher	2
	Barmac 7150SE VSI	1
	Metso ST4.10 Screen	1
	Metso 2.11 Scalping Screen	1

The depth of overburden varies depending on locations. Topsoils and overburden will be stockpiled for the future refilling but they are not proposed to be used for constructing noise bunds along the pit boundaries.

The crushing plant is proposed to operate at two options:

Option 1: On the mined pit floor behind (and close to) the quarrying pit.

Option 2: At an alternative ROM to southwest of the south pit.

For option 1, the location of crushing plant will change as the quarrying progress. For quarrying at the north pit, option 1 means that the crushing plant is located on the mined pit floor in (and close to) the south of quarry activities. For quarrying at the south pit, option 1 means that the crushing plant is located on the mined pit floor in (and close to) the north of quarry activities.

2.0 NOISE CRITERIA

Noise management in Western Australia is implemented through the Environmental Protection (Noise) Regulations 1997 (the Regulations). The Regulations set noise limits which are the highest noise levels that can be received at noise-sensitive (residential), commercial and industrial premises. These noise limits are defined as 'assigned noise levels' at receiver locations. Regulation 7 requires that "noise emitted from any premises or public place when received at other premises must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind".

Table 2-1 presents the assigned noise levels at various premises.

Table 2-1: Assigned noise levels in dB(A).

Type of Premises Receiving Noise	Time of Day	Assigned Noise Levels in dB(A)[1]		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday	45 + Influencing factor	55 + Influencing factor	65 + Influencing factor
	0900 to 1900 hours Sunday and public holidays	40 + Influencing factor	50 + Influencing factor	60 + Influencing factor
	1900 to 2200 hours all days	40 + Influencing factor	50 + Influencing factor	60 + Influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + Influencing factor	45 + Influencing factor	55 + Influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80
Industrial and utility premises other than those in the Kwinana Industrial Area	All hours	65	80	90

For highly noise sensitive premises, an "influencing factor" is incorporated into the assigned noise levels. The influencing factor depends on road classification and land use zonings within circles of 100 metres and 450 metres radius from the noise receiver locations.

[1] Assigned level L_{A1} is the A-weighted noise level not to be exceeded for 1% of a delegated assessment period.
Assigned level L_{A10} is the A-weighted noise level not to be exceeded for 10% of a delegated assessment period.
Assigned level L_{Amax} is the A-weighted noise level not to be exceeded at any time.

2.1 CORRECTIONS FOR CHARACTERISTICS OF NOISE

Regulation 7 requires that that "noise emitted from any premises or public place when received at other premises must be free of:

(i) tonality;
(ii) impulsiveness; and
(iii) modulation.

when assessed under Regulation 9".

If the noise exhibits intrusive or dominant characteristics, i.e. if the noise is impulsive, tonal, or modulating, noise levels at noise-sensitive premises must be adjusted. Table 2-2 presents the adjustments incurred for noise exhibiting dominant characteristics. That is, if the noise is assessed as having tonal, modulating or impulsive characteristics, the measured or predicted noise levels have to be adjusted by the amounts given in Table 2-2. Then the adjusted noise levels must comply with the assigned noise levels. Regulation 9 sets out objective tests to assess whether the noise is taken to be free of these characteristics.

Table 2-2: Adjustments for dominant noise characteristics

Adjustment where noise emission is not music. These adjustments are cumulative to a maximum of 15 dB.			Adjustment where noise emission is music	
Where tonality is present	Where Modulation is present	Where Impulsiveness is present	Where Impulsiveness is not present	Where Impulsiveness is present
+5 dB	+5 dB	+10 dB	+10 dB	+15 dB

2.2 CONSTRUCTION NOISES

Noise associated with the construction activities in WA is managed through Regulation 13.

Regulation 13 (2) states:

Regulation 7 does not apply to noise emitted from a construction site as a result of construction work carried out between 0700 hours and 1900 hours on any day which is not a Sunday or public holiday if the occupier of the premises or public place, shows that

(a) the construction work was carried out in accordance with control of environmental noise practices set out in section 4 of AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites; and

(b) the equipment used on the premises was the quietest reasonably available; and

(c) if the occupier was required to prepare a noise management plan ……in respect of the construction site —

i) the noise management plan was prepared and given in accordance with the requirement, and approved by the Chief Executive Officer; and

ii) the construction work was carried out in accordance with the noise management plan, excluding any ancillary measure.

2.3 INFLUENCING FACTORS

The subject site and closest residences are located in rural area. Residences are more than 1.6km away from the subject site.

Influencing factor varies from residence to residence depending on the surrounding land use. No industrial and commercial zones are located with 450m to the selected residential receivers. Traffic flows on roads in the vicinity (≤450m) of the selected residential receivers are insufficient for any of the roads to be classified as either the major or the secondary roads. Therefore, influencing factor is zero for all of the three closest residences.

3.0 NOISE MODELLING

3.1 METHODOLOGY

An acoustic model has been developed using SoundPlan v8.0 program, and the CONCAWE[2,3] prediction algorithms are selected for this study. The acoustic model is used to predict noise levels at residential receivers and generate noise contours for the subject site and surrounding area.

The acoustic model does not include noise emissions from any sources other than from the proposed quarry operations. Therefore, noise emissions from road traffic, aircraft, animals, etc are excluded from the modelling.

3.2 INPUT DATA

3.2.1 Topography

The ground contours for the subject site and surrounding area are provided by ABEC in AUTO-CAD dxf format. The ground contours have been amended to incorporate details of quarrying pits including the depths of topsoils and overburden, which are provided by ABEC. The ground is assumed to be absorptive.

No buildings and sheds are considered. No topsoil and overburden stockpiles are considered because their detailed information of locations and shapes is not available yet. This may result in the over-prediction of noise levels in the shadow areas of topsoil and overburden stockpiles.

3.2.2 Noise Sensitive Premises

Three (3) closest residences are selected for the detailed assessments of noise impact, as shown in Figure 1 in APPENDIX A. All of them are the ground receivers at 1.5m above the ground.

3.2.3 Source Sound Power Levels

Table 3-1 presents the overall source sound power levels. The overall sound power levels are provided by ABEC but the sound power spectrum shapes are fitted from the AES database for similar equipment.

[2] CONCAWE (Conservation of Clean Air and Water in Europe) was established in 1963 by a group of oil companies to carry out research on environmental issues relevant to the oil industry.
[3] The propagation of noise from petroleum and petrochemical complexes to neighbouring communities, CONCAWE Report 4/81, 1981.

Table 3-1: Sound power levels

Equipment	Overall Sound Power Level in dB(A)
Bell 40T Articulated Dump Truck	107
Cat D9T Dozer	114
Hitachi 70T Excavator	115
Watercart	107
Cat 14M Grader	100
Drill Rig	118
LT120D Jaw Crusher	122
LT300HP Cone Crusher	113
Barmac 7150SE VSI	113
Metso ST4.10 Screen	117
Metso 2.11 Scalping Screen	109

3.3 METEOROLOGY

SoundPlan calculates noise levels for defined meteorological conditions. In particular, temperature, relative humidity, wind speed and direction data are required as input to the model. For this study the "default" worst-case day-time meteorological conditions[4] are assumed, as shown in Table 3-2.

Table 3-2: Worst-case day-time meteorological conditions.

Time of day	Temperature Celsius	Relative Humidity	Wind speed	Pasquill Stability Category
Day (0700 --- 1900)	20° Celsius	50%	4 m/s	E

[4] Guideline: Assessment of Environmental Noise Emissions, Draft for Consultation, May 2021.

3.4 NOISE MODELLING SCENARIOS

ABEC advised that:

- The quarry operates between 7am and 7pm on Monday to Saturday excluding public holidays.
- Two quarrying pits (North Pit and South Pit) are proposed. Each pit is quarried at three phases.
- The quarry is progressed in four stages:
  Stage 1: Construction of internal haul roads.
  Stage 2: Clearing and stockpiling of topsoils.
  Stage 3: Clearing and stockpiling of overburden.
  Stage 4: Extraction and Transportation of granite.
- The crushing plant is proposed to operate at two options:
  Option 1: On the mined pit floor behind (and close to) the quarrying activities.
  Option 2: At an alternative ROM to southwest of the south pit.
- No plan is proposed to use topsoils and overburden for constructing noise bunds along the pit boundaries.

Based on the provided information, the following scenarios are modelled to represent the proposed worst-case quarry operations:

Scenario 1: represents the haul road construction (for stage 1).
Scenario 2: represents the overburden removal (for stage 3) of the north pit.
Scenario 3: represents the overburden removal (for stage 3) of the south pit.
Scenario 4: represents the quarry crushing process with ROM in the north pit.
Scenario 5: represents the quarry crushing process with ROM in the south pit.
Scenario 6: Scenario 4 but with the alternative ROM location.
Scenario 7: Scenario 5 but with the alternative ROM location.

Scenario 1 is a construction scenario while scenarios 2 to 7 are the operational scenarios. Table 1-1 lists the name and number of fixed plant and mobile equipment operating for different scenarios. Figure 5 to Figure 11 in APPENDIX B present the assumed locations of the fixed plant and mobile equipment operating in different scenarios.

Top soils are less than 1m. As indicated in Table 1-1, stages 2 and 3 use the same types of equipment but stage 3 has two Bell B40D Articulated Dump Trucks while stage 2 has one only. The noise emission from the operation of stage 3 will be higher than that from the operation of stage 2. Therefore, scenarios 2 and 3 represent the overburden removals for stage 3 and also cover the operations of stage 2 for clearing and stockpiling of topsoils.

For the worst-case operation, all items of equipment are assumed to operate on the natural surfaces for scenario 1, but at 1m below the natural surfaces for scenarios 2 and 3.

The thickness of overburden varies. For scenarios 4 to 7, the blasting and extraction equipment are assumed to operate at 4m below the natural surfaces. The crashing plant is assumed to operate at the floor of quarried north pit (150m AHD) for scenario 4 and at the

floor of quarried south pit (153m AHD) for scenario 5 but on the natural surfaces of alternative ROM for scenarios 6 and 7.

4.0 MODELLING RESULTS

4.1 POINT CALCULATIONS

Noise levels for the seven (7) scenarios are predicted at the 3 closest residences for a range of day time meteorological conditions including calm and worst-case winds in 8 cardinal directions.

The full point prediction results for different wind conditions are presented in Table C1 to Table C7 in APPENDIX C. These tables indicate that wind direction has a big impact on the noise levels received at the closest residences.

Table 4-1 summarises the predicted worst-case day-time noise levels in dB(A), which are the maximum day-time noise levels likely to be observed at the closest residences. All of the predicted noise levels are below 37.7 dB(A). The highest noise level is predicted at:

- R1 for scenarios 1 to 5; but
- R2 for scenarios 6 and 7.

Table 4-1: Predicted worst-case noise levels in dB(A).

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	19.7	34.1	29.8	31.8	30.9	35.4	34.9
R2	11.8	27.2	22.7	28.6	19.8	37.7	37.2
R3	4.7	21.5	21.1	22.6	21.5	25.9	25.7

4.2 NOISE CONTOURS

Figure 12 to Figure 18 in APPENDIX D present the worst-case daytime noise level contours at 1.5m above the ground. These noise contours represent the worst-case noise propagation envelopes, i.e., worst-case propagation in all directions simultaneously. Detailed locations of the operating mobile equipment are presented in Figure 5 to Figure 11 in APPENDIX B.

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

OF

GRANITE QUARRY

AT

EDWARDS ROAD ROELANDS

1 September 2025

AES-890410-R01-A-01092025

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DOCUMENT CONTROL

Prepared for: **ABEC Environmental Consulting**
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ABN: 64 451 362 914

EXECUTIVE SUMMARY

A granite quarry is proposed to operate between 7am and 7pm on Monday to Saturday excluding public holidays at Lot 22 Edwards Road Roelands. Acoustic Engineering Solutions (AES) has been commissioned by ABEC Environmental Consulting to undertake environmental noise impact assessment of the proposed quarry. The aim of this assessment is to determine whether or not the noise emissions from the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations).

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Scenario 1 is a construction scenario while scenarios 2 to 7 are the operational scenarios.

Three closest residences are selected for the detailed assessments of noise impact. Noise levels are predicted at the 3 residences for a range of daytime meteorological conditions including calm and worst-case winds in 8 cardinal directions. The predicted noise levels are then adjusted to account for their dominant characteristics. The table below summarises the adjusted worst-case noise levels.

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	24.7	39.1	34.8	36.8	35.9	40.4	39.9
R2	16.8	32.2	27.7	33.6	24.8	42.7	42.2
R3	9.7	25.8	25.8	26.9	26.2	30.9	30.7

According to Regulation 13, no assigned noise levels apply to the construction activities (scenario 1) as long as "*the construction work was carried out in accordance with control of environmental noise practices set out in section 4 of AS 2436:2010 and the equipment used on the premises was the quietest reasonably available*".

For the operational scenarios (2 to 7) at the closest residences, the adjusted daytime worst-case noise levels (≤43 dB(A)) are below the assigned noise levels on Monday to Saturday. This concludes that full compliance is achieved for the proposed quarry.

TABLE OF CONTENTS

1.0 INTRODUCTION

A granite quarry is proposed at Lot 22 Edwards Road Roelands. Acoustic Engineering Solutions (AES) has been commissioned by ABEC Environmental Consulting (ABEC) to undertake an environmental noise impact assessment of the proposed quarry. The objective of this assessment is to determine whether or not the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations).

Figure 1 in APPENDIX A presents an aerial view of the subject site and surrounding area including the closest residences, which are more than 1.6km away from the quarrying pit boundaries.

Figure 2 to Figure 4 in APPENDIX A present the site layout and quarrying pit plans. Two quarrying pits (North Pit and South Pit) are proposed between 7am and 7pm on Monday to Saturday excluding public holidays. Each pit is quarried at three phases. For the north pit, quarrying starts from south towards north while for the south pit, quarrying starts from north towards south.

For each pit, four (4) quarrying stages are proposed:

Stage 1: Construction of internal haul roads.
Stage 2: Clearing and stockpiling of topsoils.
Stage 3: Clearing and stockpiling of overburden.
Stage 4: Extraction and Transportation of granite.

Table 1-1 lists the name and number of fixed plant and mobile equipment operating onsite for different stages.

Table 1-1: Fixed plant and mobile equipment.

Stage	Equipment	Number
1	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	1
	Fuso FV517J Watercart	1
	Cat 14M Grader	1
2	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	1

Stage	Equipment	Number
	Fuso FV517J Watercart	1
3	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	2
	Fuso FV517J Watercart	1
4	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	2
	Fuso FV517J Watercart	1
	Cat 14M Grader	1
	Drill Rig	1
	LT120D Jaw Crusher	1
	LT300HP Cone Crusher	2
	Barmac 7150SE VSI	1
	Metso ST4.10 Screen	1
	Metso 2.11 Scalping Screen	1

The depth of overburden varies depending on locations. Topsoils and overburden will be stockpiled for the future refilling but they are not proposed to be used for constructing noise bunds along the pit boundaries.

The crushing plant is proposed to operate at two options:

Option 1: On the mined pit floor behind (and close to) the quarrying pit.

Option 2: At an alternative ROM to southwest of the south pit.

For option 1, the location of crushing plant will change as the quarrying progress. For quarrying at the north pit, option 1 means that the crushing plant is located on the mined pit floor in (and close to) the south of quarry activities. For quarrying at the south pit, option 1 means that the crushing plant is located on the mined pit floor in (and close to) the north of quarry activities.

2.0 NOISE CRITERIA

Noise management in Western Australia is implemented through the Environmental Protection (Noise) Regulations 1997 (the Regulations). The Regulations set noise limits which are the highest noise levels that can be received at noise-sensitive (residential), commercial and industrial premises. These noise limits are defined as 'assigned noise levels' at receiver locations. Regulation 7 requires that "noise emitted from any premises or public place when received at other premises must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind".

Table 2-1 presents the assigned noise levels at various premises.

Table 2-1: Assigned noise levels in dB(A).

Type of Premises Receiving Noise	Time of Day	Assigned Noise Levels in dB(A)[1]		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday	45 + Influencing factor	55 + Influencing factor	65 + Influencing factor
	0900 to 1900 hours Sunday and public holidays	40 + Influencing factor	50 + Influencing factor	60 + Influencing factor
	1900 to 2200 hours all days	40 + Influencing factor	50 + Influencing factor	60 + Influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + Influencing factor	45 + Influencing factor	55 + Influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80
Industrial and utility premises other than those in the Kwinana Industrial Area	All hours	65	80	90

For highly noise sensitive premises, an "influencing factor" is incorporated into the assigned noise levels. The influencing factor depends on road classification and land use zonings within circles of 100 metres and 450 metres radius from the noise receiver locations.

[1] Assigned level L_{A1} is the A-weighted noise level not to be exceeded for 1% of a delegated assessment period.
Assigned level L_{A10} is the A-weighted noise level not to be exceeded for 10% of a delegated assessment period.
Assigned level L_{Amax} is the A-weighted noise level not to be exceeded at any time.

2.1 CORRECTIONS FOR CHARACTERISTICS OF NOISE

Regulation 7 requires that that "noise emitted from any premises or public place when received at other premises must be free of:

(i) tonality;
(ii) impulsiveness; and
(iii) modulation.

when assessed under Regulation 9".

If the noise exhibits intrusive or dominant characteristics, i.e. if the noise is impulsive, tonal, or modulating, noise levels at noise-sensitive premises must be adjusted. Table 2-2 presents the adjustments incurred for noise exhibiting dominant characteristics. That is, if the noise is assessed as having tonal, modulating or impulsive characteristics, the measured or predicted noise levels have to be adjusted by the amounts given in Table 2-2. Then the adjusted noise levels must comply with the assigned noise levels. Regulation 9 sets out objective tests to assess whether the noise is taken to be free of these characteristics.

Table 2-2: Adjustments for dominant noise characteristics

Adjustment where noise emission is not music. These adjustments are cumulative to a maximum of 15 dB.			Adjustment where noise emission is music	
Where tonality is present	Where Modulation is present	Where Impulsiveness is present	Where Impulsiveness is not present	Where Impulsiveness is present
+5 dB	+5 dB	+10 dB	+10 dB	+15 dB

2.2 CONSTRUCTION NOISES

Noise associated with the construction activities in WA is managed through Regulation 13.

Regulation 13 (2) states:

Regulation 7 does not apply to noise emitted from a construction site as a result of construction work carried out between 0700 hours and 1900 hours on any day which is not a Sunday or public holiday if the occupier of the premises or public place, shows that

(a) the construction work was carried out in accordance with control of environmental noise practices set out in section 4 of AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites; and

(b) the equipment used on the premises was the quietest reasonably available; and

(c) if the occupier was required to prepare a noise management plan ……in respect of the construction site —

i) the noise management plan was prepared and given in accordance with the requirement, and approved by the Chief Executive Officer; and

ii) the construction work was carried out in accordance with the noise management plan, excluding any ancillary measure.

2.3 INFLUENCING FACTORS

The subject site and closest residences are located in rural area. Residences are more than 1.6km away from the subject site.

Influencing factor varies from residence to residence depending on the surrounding land use. No industrial and commercial zones are located with 450m to the selected residential receivers. Traffic flows on roads in the vicinity (≤450m) of the selected residential receivers are insufficient for any of the roads to be classified as either the major or the secondary roads. Therefore, influencing factor is zero for all of the three closest residences.

3.0 NOISE MODELLING

3.1 METHODOLOGY

An acoustic model has been developed using SoundPlan v8.0 program, and the CONCAWE[2,3] prediction algorithms are selected for this study. The acoustic model is used to predict noise levels at residential receivers and generate noise contours for the subject site and surrounding area.

The acoustic model does not include noise emissions from any sources other than from the proposed quarry operations. Therefore, noise emissions from road traffic, aircraft, animals, etc are excluded from the modelling.

3.2 INPUT DATA

3.2.1 Topography

The ground contours for the subject site and surrounding area are provided by ABEC in AUTO-CAD dxf format. The ground contours have been amended to incorporate details of quarrying pits including the depths of topsoils and overburden, which are provided by ABEC. The ground is assumed to be absorptive.

No buildings and sheds are considered. No topsoil and overburden stockpiles are considered because their detailed information of locations and shapes is not available yet. This may result in the over-prediction of noise levels in the shadow areas of topsoil and overburden stockpiles.

3.2.2 Noise Sensitive Premises

Three (3) closest residences are selected for the detailed assessments of noise impact, as shown in Figure 1 in APPENDIX A. All of them are the ground receivers at 1.5m above the ground.

3.2.3 Source Sound Power Levels

Table 3-1 presents the overall source sound power levels. The overall sound power levels are provided by ABEC but the sound power spectrum shapes are fitted from the AES database for similar equipment.

[2] CONCAWE (Conservation of Clean Air and Water in Europe) was established in 1963 by a group of oil companies to carry out research on environmental issues relevant to the oil industry.
[3] The propagation of noise from petroleum and petrochemical complexes to neighbouring communities, CONCAWE Report 4/81, 1981.

Table 3-1: Sound power levels

Equipment	Overall Sound Power Level in dB(A)
Bell 40T Articulated Dump Truck	107
Cat D9T Dozer	114
Hitachi 70T Excavator	115
Watercart	107
Cat 14M Grader	100
Drill Rig	118
LT120D Jaw Crusher	122
LT300HP Cone Crusher	113
Barmac 7150SE VSI	113
Metso ST4.10 Screen	117
Metso 2.11 Scalping Screen	109

3.3 METEOROLOGY

SoundPlan calculates noise levels for defined meteorological conditions. In particular, temperature, relative humidity, wind speed and direction data are required as input to the model. For this study the "default" worst-case day-time meteorological conditions[4] are assumed, as shown in Table 3-2.

Table 3-2: Worst-case day-time meteorological conditions.

Time of day	Temperature Celsius	Relative Humidity	Wind speed	Pasquill Stability Category
Day (0700 --- 1900)	20° Celsius	50%	4 m/s	E

[4] Guideline: Assessment of Environmental Noise Emissions, Draft for Consultation, May 2021.

4.0 MODELLING RESULTS

4.1 POINT CALCULATIONS

Noise levels for the seven (7) scenarios are predicted at the 3 closest residences for a range of day time meteorological conditions including calm and worst-case winds in 8 cardinal directions.

The full point prediction results for different wind conditions are presented in Table C1 to Table C7 in APPENDIX C. These tables indicate that wind direction has a big impact on the noise levels received at the closest residences.

Table 4-1 summarises the predicted worst-case day-time noise levels in dB(A), which are the maximum day-time noise levels likely to be observed at the closest residences. All of the predicted noise levels are below 37.7 dB(A). The highest noise level is predicted at:

- R1 for scenarios 1 to 5; but
- R2 for scenarios 6 and 7.

Table 4-1: Predicted worst-case noise levels in dB(A).

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	19.7	34.1	29.8	31.8	30.9	35.4	34.9
R2	11.8	27.2	22.7	28.6	19.8	37.7	37.2
R3	4.7	21.5	21.1	22.6	21.5	25.9	25.7

4.2 NOISE CONTOURS

Figure 12 to Figure 18 in APPENDIX D present the worst-case daytime noise level contours at 1.5m above the ground. These noise contours represent the worst-case noise propagation envelopes, i.e., worst-case propagation in all directions simultaneously. Detailed locations of the operating mobile equipment are presented in Figure 5 to Figure 11 in APPENDIX B.

5.0 COMPLIANCE ASSESSMENT

5.1 ADJUSTED NOISE LEVELS

The noises emitted from the proposed fixed plant and mobile equipment are expected to exhibit tonality. According to Table 2-2, the predicted noise levels shown in Table 4-1 should be adjusted by adding 5 dB.

Table 5-1 presents the adjusted worst-case noise levels in dB(A).

Table 5-1: Adjusted worst-case noise levels in dB(A).

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	24.7	39.1	34.8	36.8	35.9	40.4	39.9
R2	16.8	32.2	27.7	33.6	24.8	42.7	42.2
R3	9.7	26.5	26.1	27.6	26.5	30.9	30.7

5.2 CONSTRUCTION NOISE

Scenario 1 represents the noises from the construction of haul roads. As indicated in section 2.2, no assigned noise level applies to the construction noises.

As indicated in section 3.4, scenarios 2 and 3 represent both the topsoil stripping and overburden removal. Topsoil stripping is construction activities while overburden removal may be classified as operational activities.

5.3 COMPLIANCE ASSESSMENT

All activities proposed in this project will be undertaken during the day (between 7am and 7pm) on Monday to Saturday excluding public holidays. No evening and night-time compliance assessment is required.

Table 5-2 presents the day-time compliance assessment for Monday to Saturday excluding public holidays. It is shown that the adjusted worst-case noise levels are much below the assigned noise levels at all of the residences for all of the operational scenarios. This concludes that full compliance is achieved for the proposed quarry operations.

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Table 5-2: Daytime compliance assessment.

Receivers	Assigned Levels L_{A10} in dB(A)	Adjusted Noise Levels in dB(A)					
		S2	S3	S4	S5	S6	S7
R1	45	39.1	34.8	36.8	35.9	40.4	39.9
R2	45	32.2	27.7	33.6	24.8	42.7	42.2
R3	45	26.5	26.1	27.6	26.5	30.9	30.7

APPENDIX A SITE PLANS

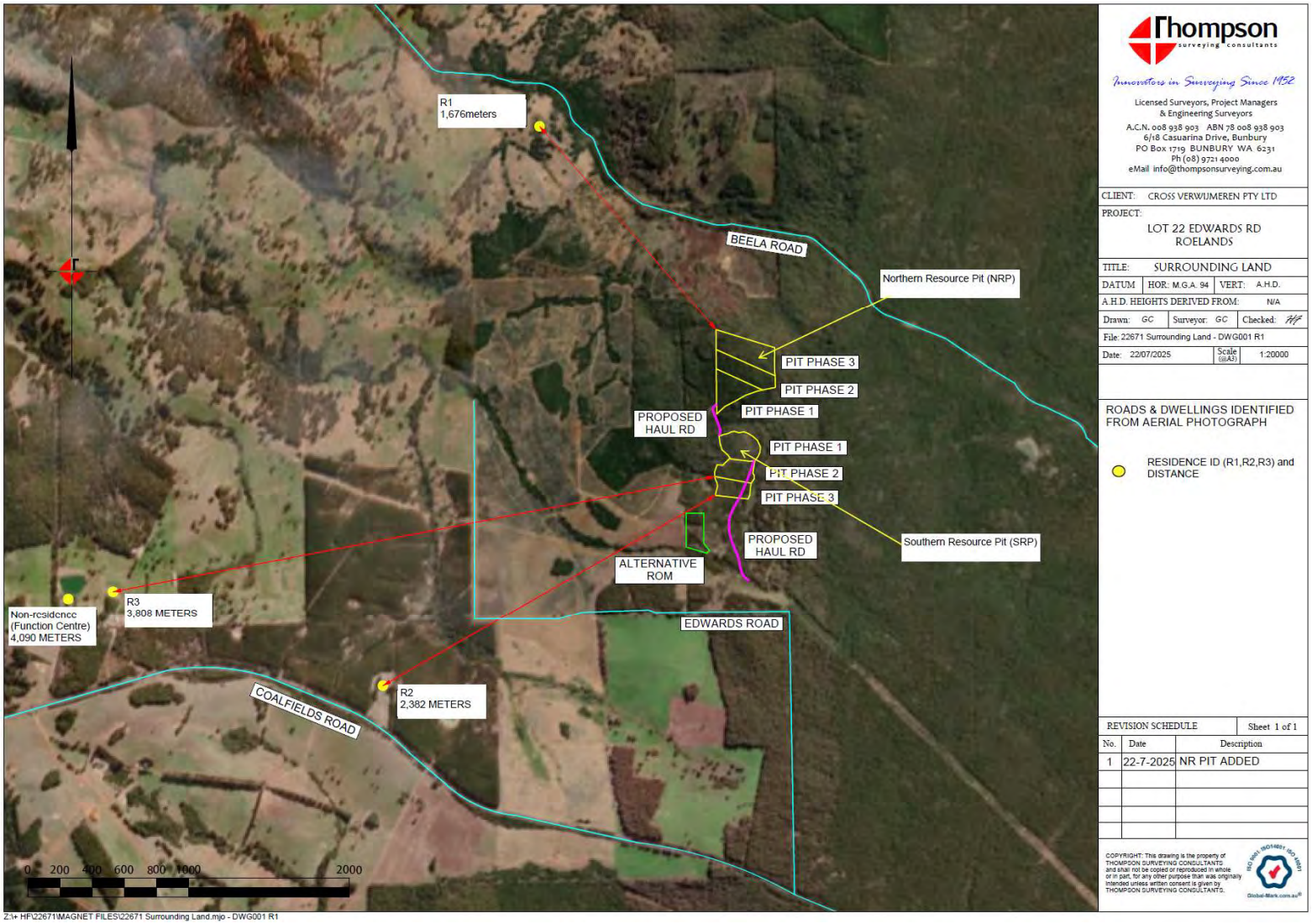

Figure 1: Aerial view of the subject site and surrounding area.

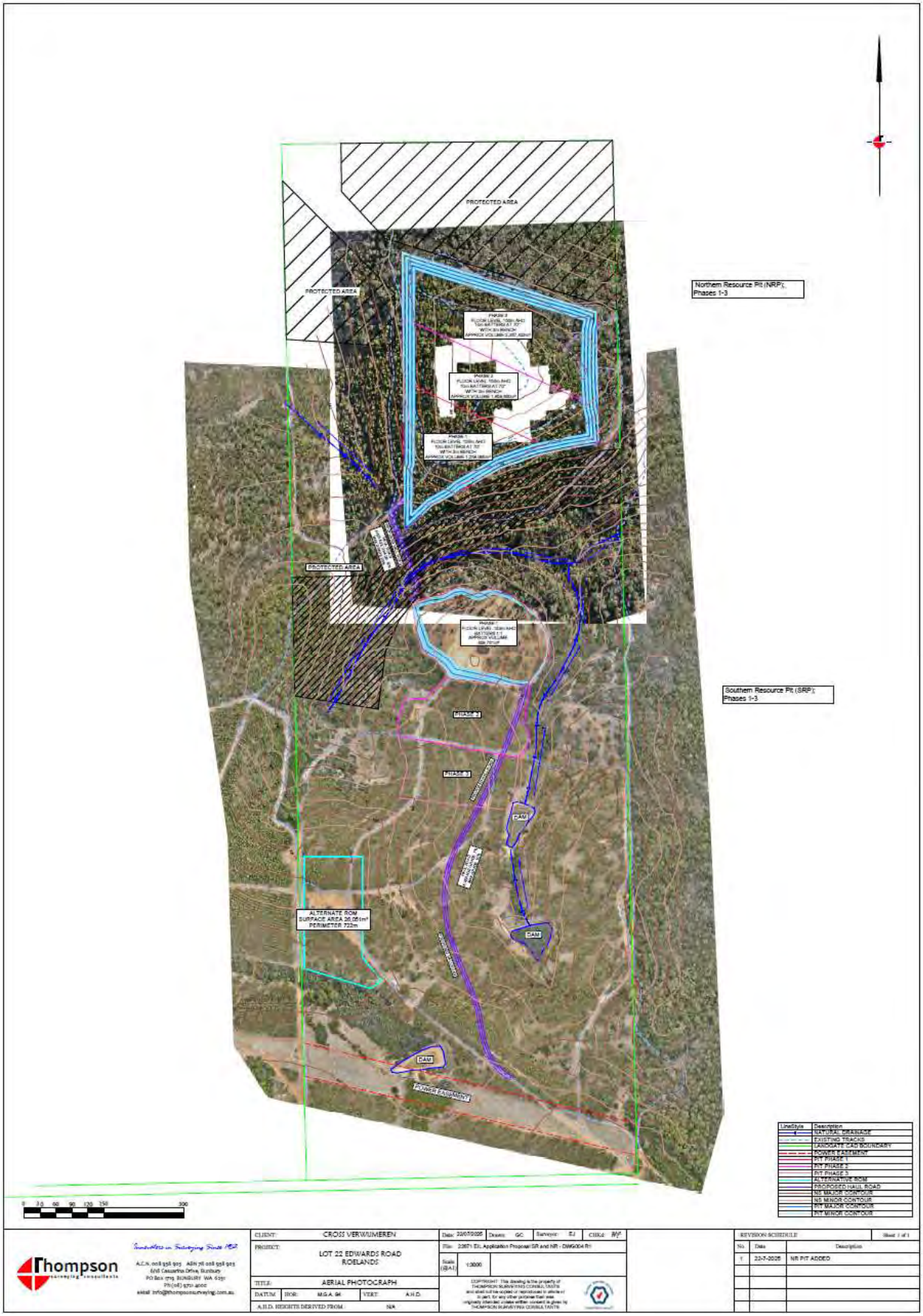

Figure 2: Site layout.

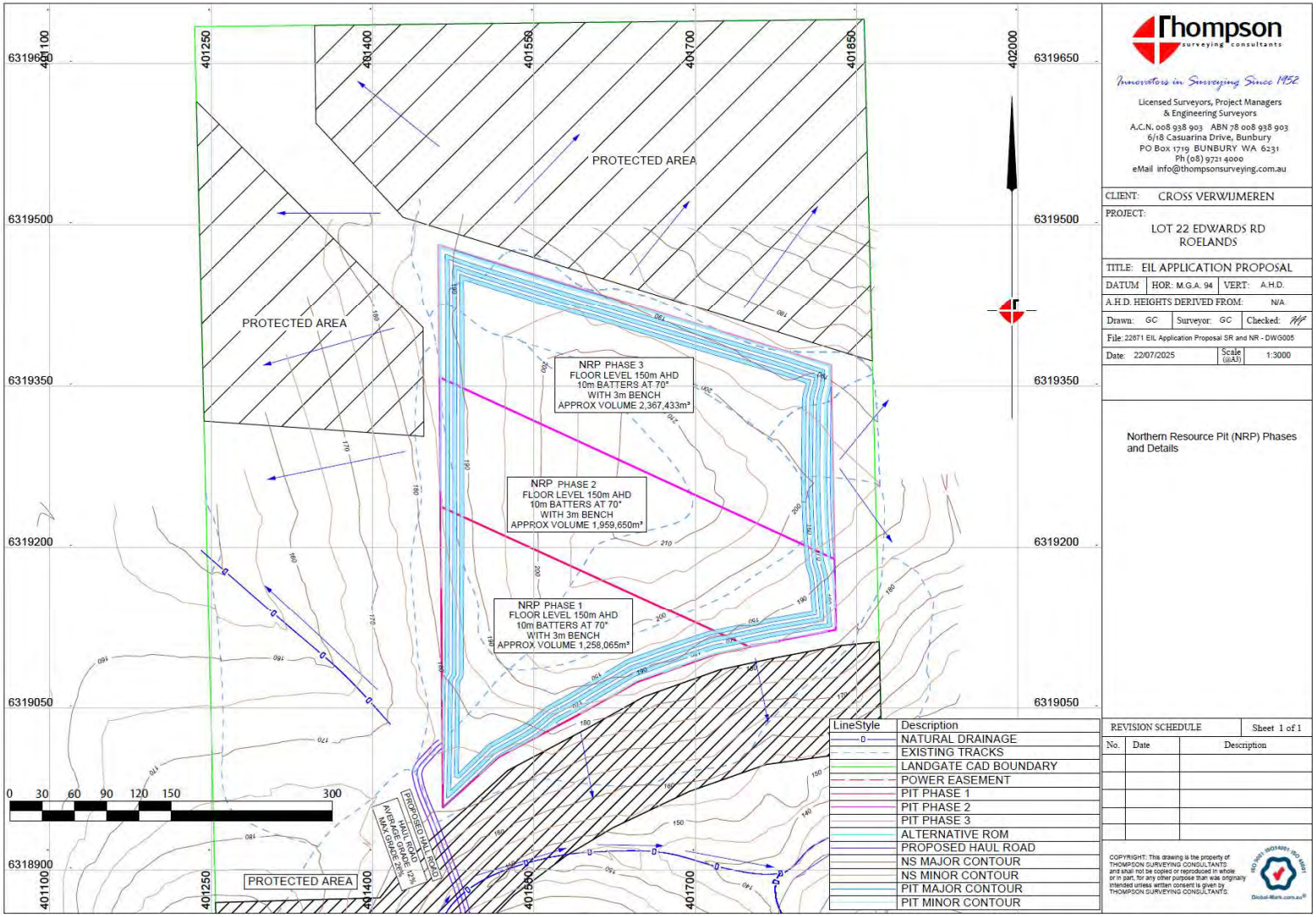

Figure 3: North pit plan.

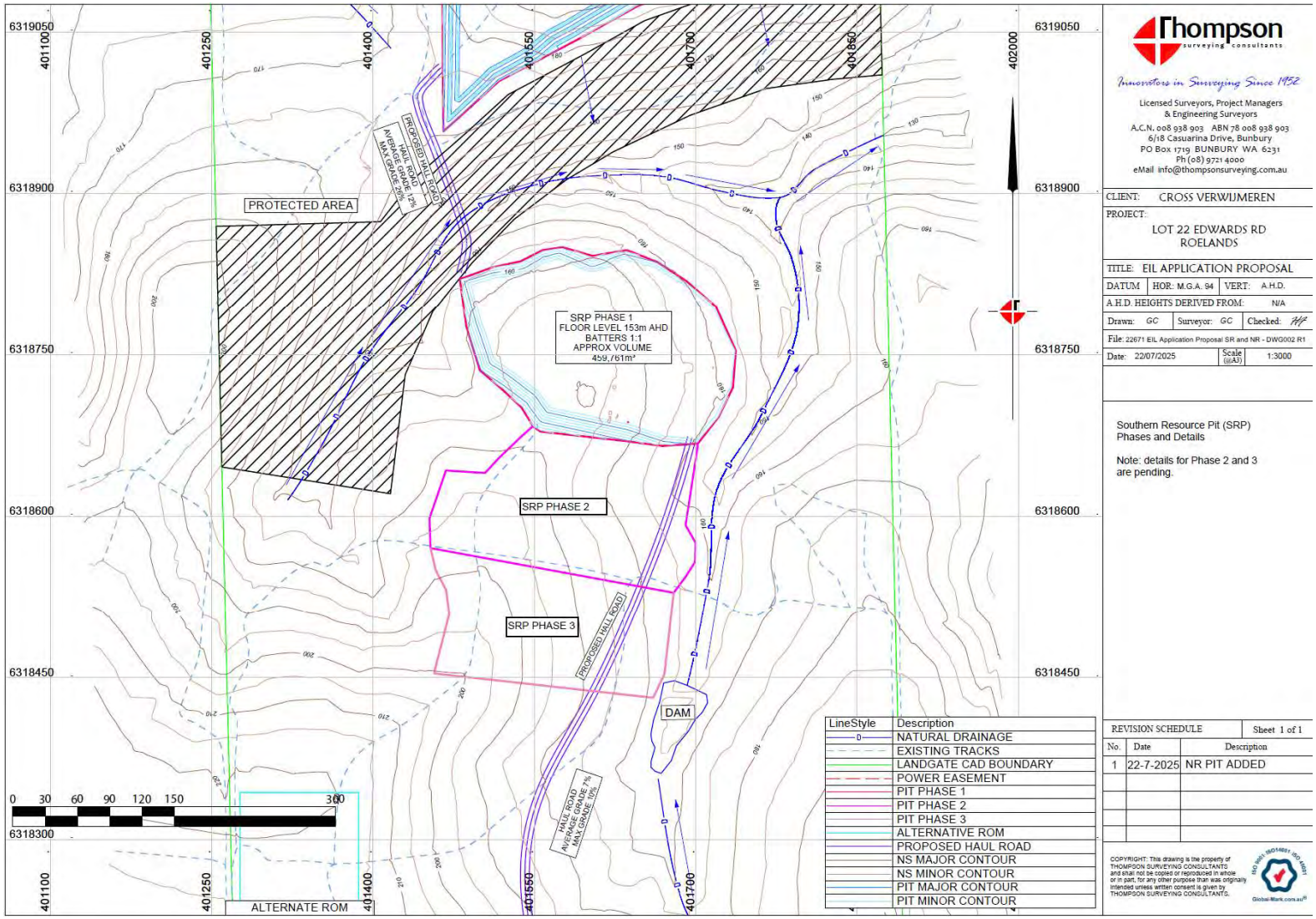

Figure 4: South pit plan.

APPENDIX B EQUIPMENT LOCATIONS

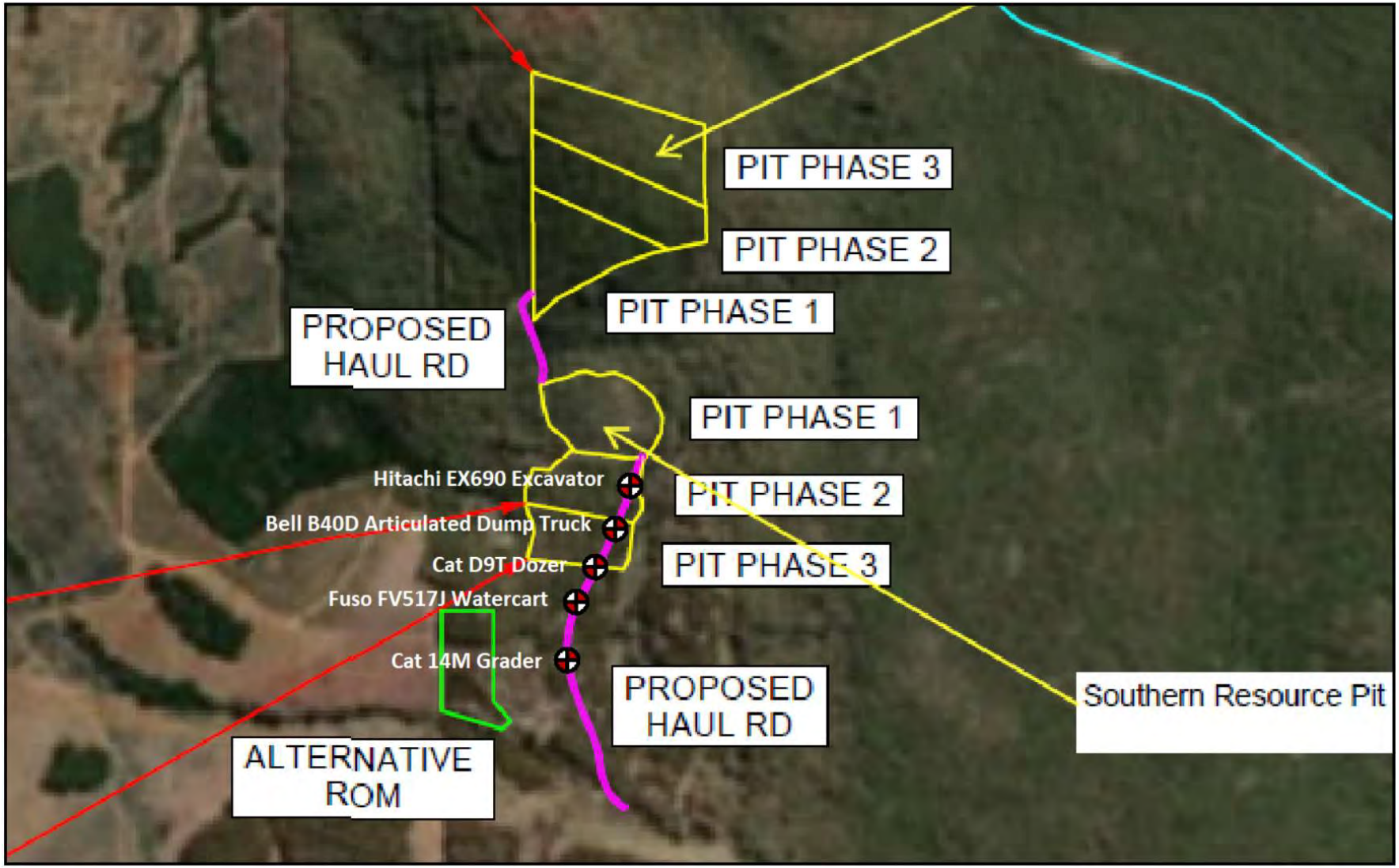

Figure 5: Assumed source locations of scenario 1 — Construction of haul roads.

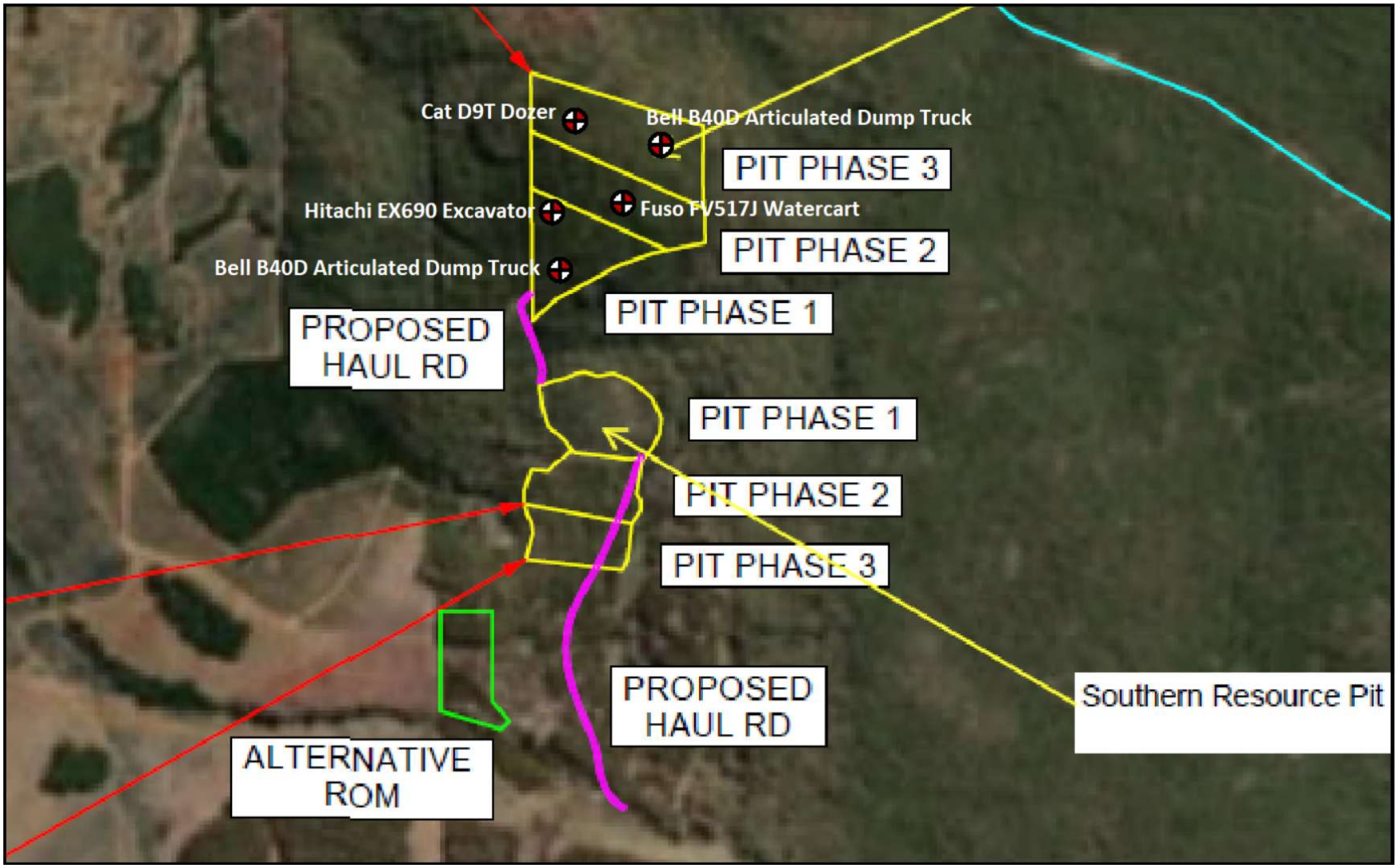

Figure 6: Assumed source locations of scenario 2 – Overburden removal in the north pit.

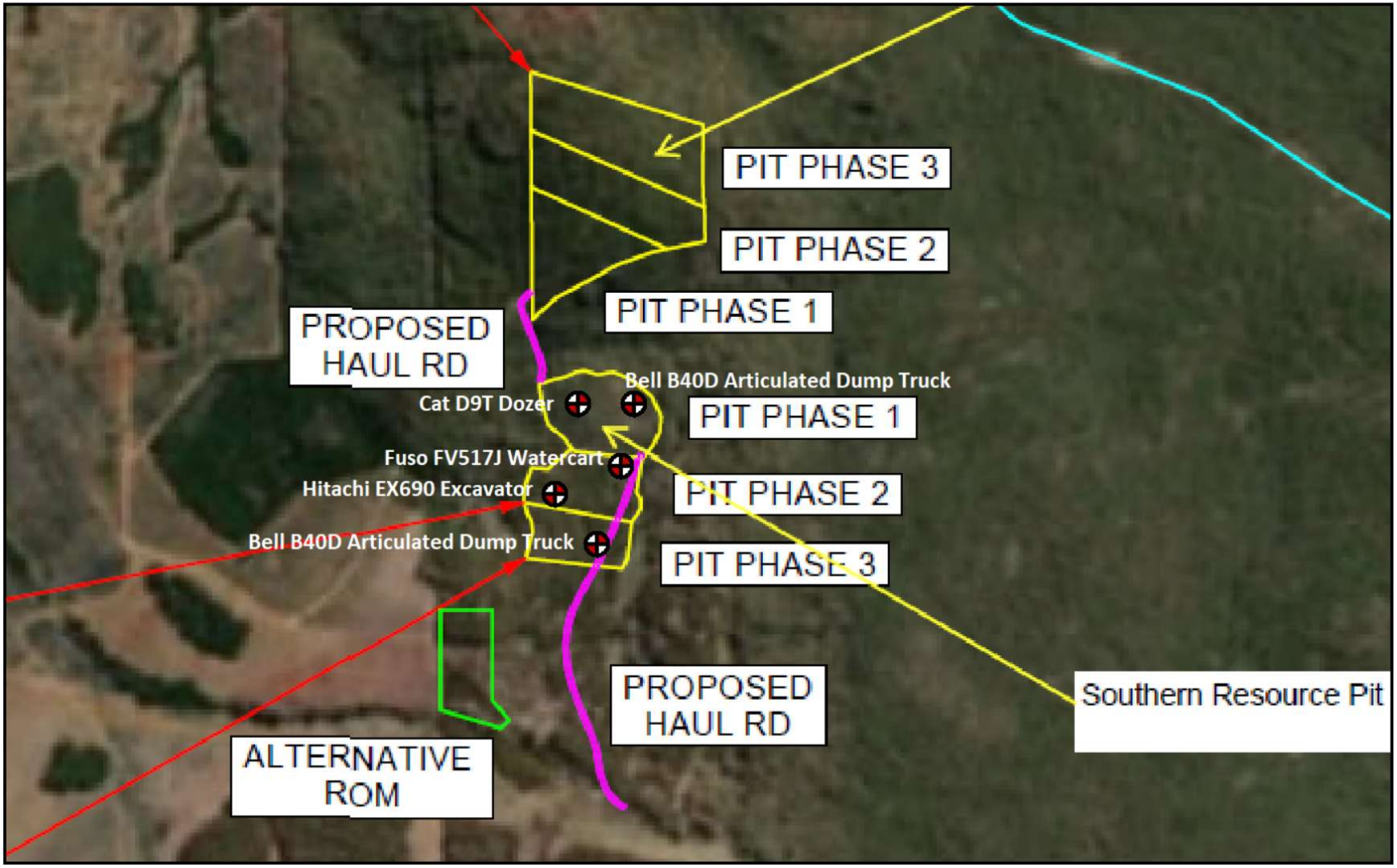

Figure 7: Assumed source locations of scenario 3 – Overburden removal in the south pit.

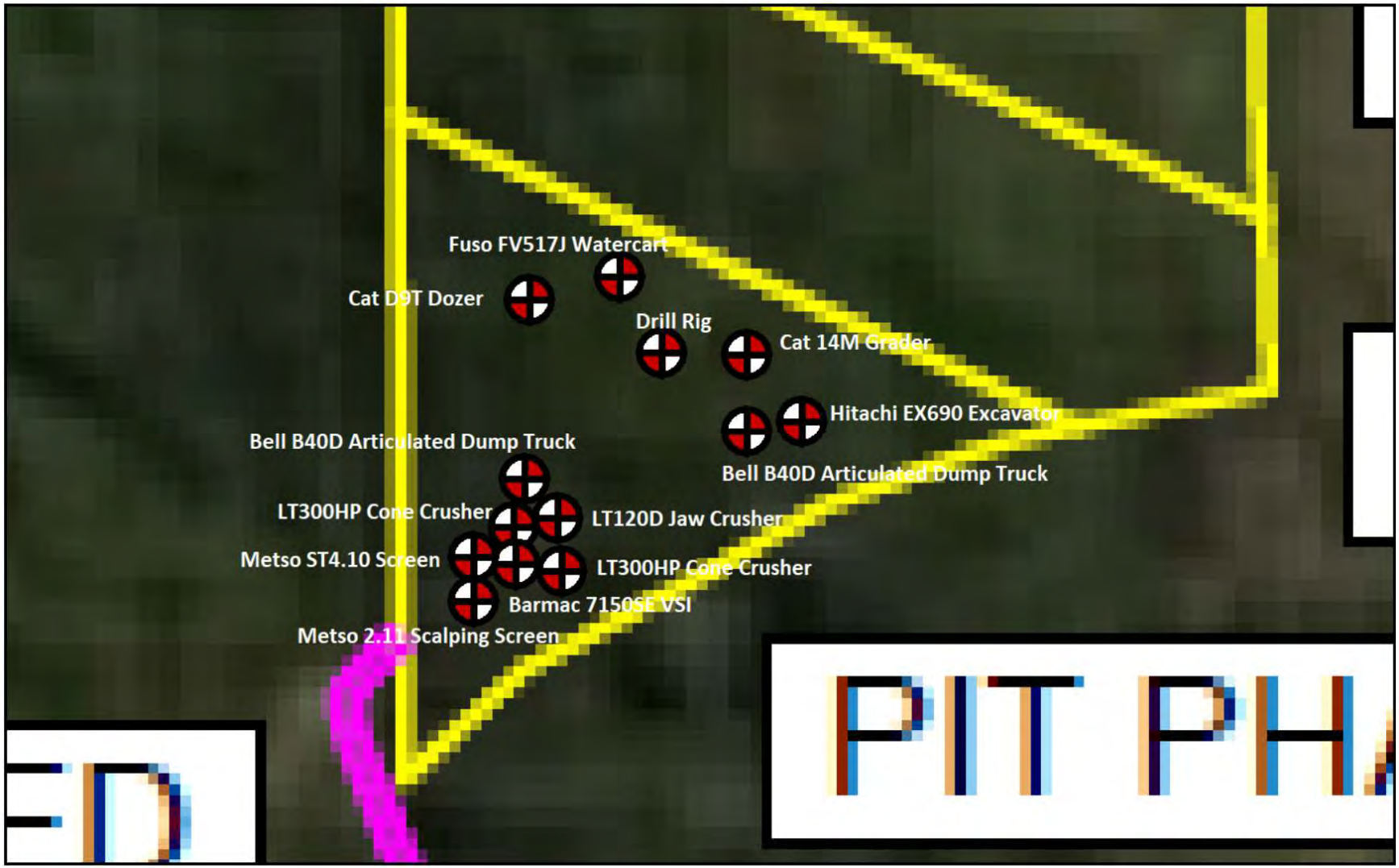

Figure 8: Assumed source locations of scenario 4 – Quarry crushing process with ROM in the north pit.

Figure 9: Assumed source locations of scenario 5 — Quarry crushing process with ROM in the south pit.

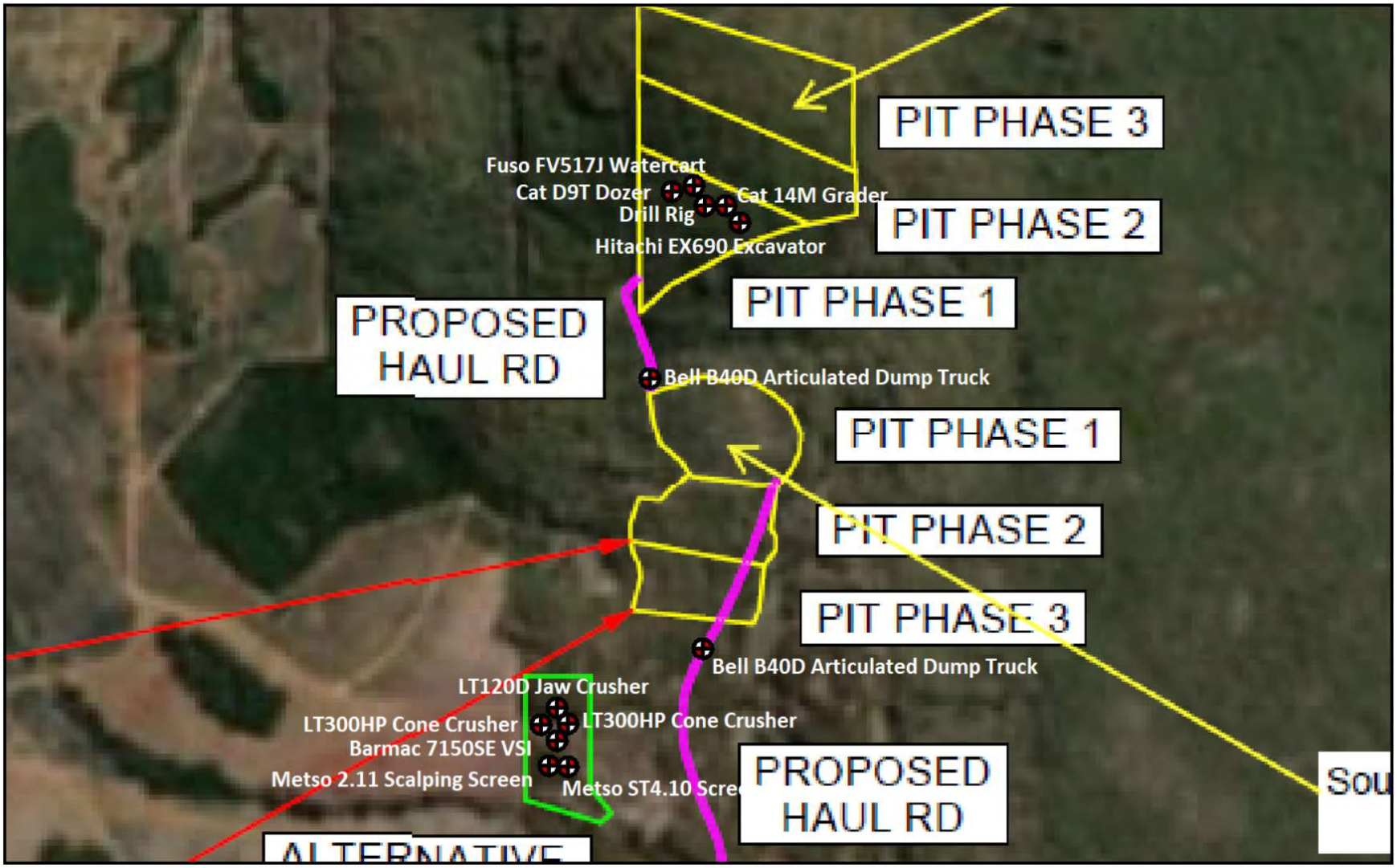

Figure 10: Assumed source locations of scenario 6 – Quarrying in the north pit with alternative ROM location.

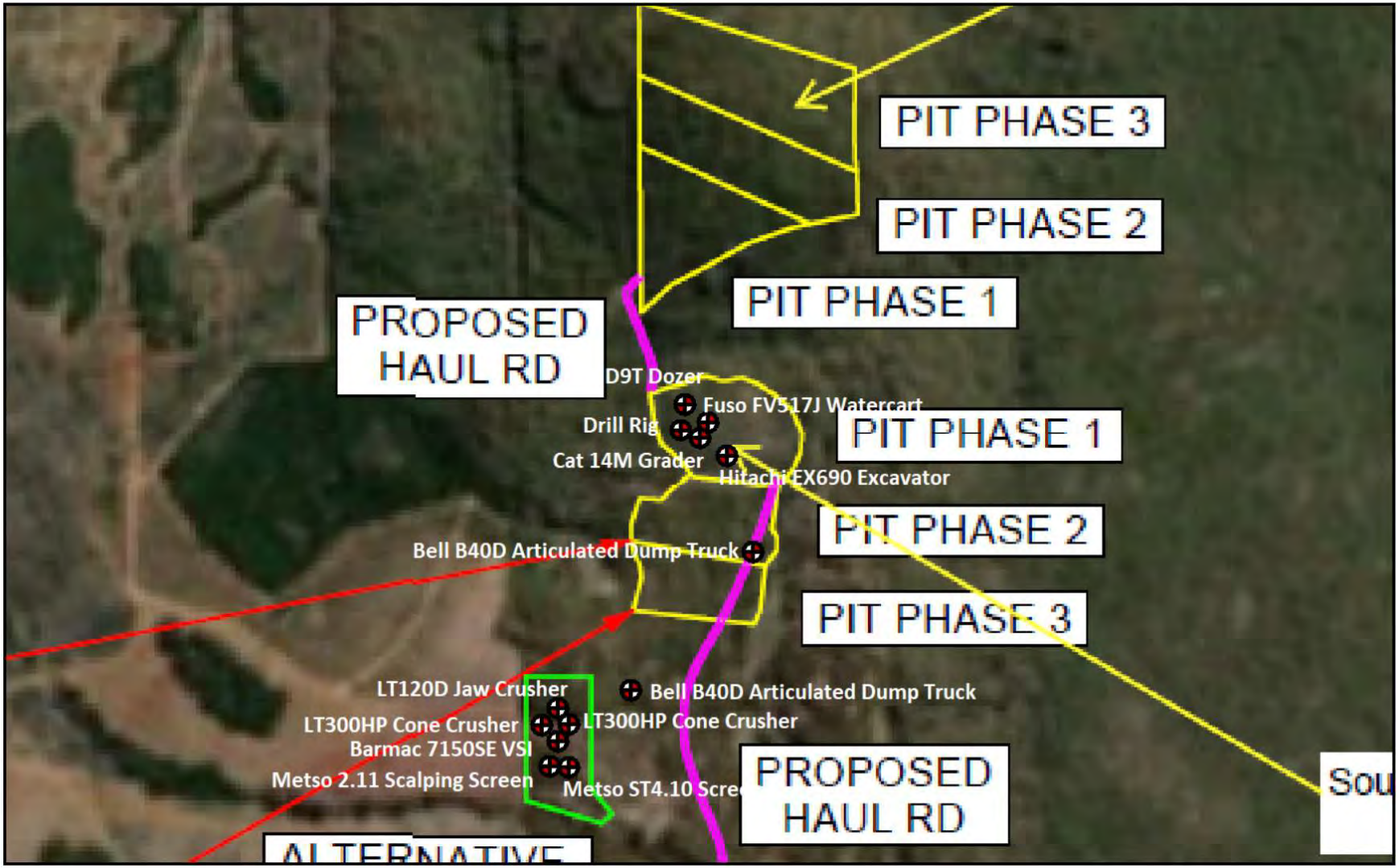

Figure 11: Assumed source locations of scenario 7 — Quarrying in the south pit with alternative ROM location.

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

OF

GRANITE QUARRY

AT

EDWARDS ROAD ROELANDS

1 September 2025

AES-890410-R01-A-01092025

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Acoustic Engineering Solutions
ABN: 64 451 362 914

EXECUTIVE SUMMARY

A granite quarry is proposed to operate between 7am and 7pm on Monday to Saturday excluding public holidays at Lot 22 Edwards Road Roelands. Acoustic Engineering Solutions (AES) has been commissioned by ABEC Environmental Consulting to undertake environmental noise impact assessment of the proposed quarry. The aim of this assessment is to determine whether or not the noise emissions from the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations).

An acoustic model has been created and seven scenarios are modelled to represent the proposed worst-case quarry operations:

Scenario 1: represents the construction of haul roads.
Scenarios 2 & 3: represent the topsoil stripping and overburden removal.
Scenarios 4 & 5: represent the quarry crushing process with ROM in the pits.
Scenarios 6 & 7: represent the quarry crushing process with alternative ROM location.

Scenario 1 is a construction scenario while scenarios 2 to 7 are the operational scenarios.

Three closest residences are selected for the detailed assessments of noise impact. Noise levels are predicted at the 3 residences for a range of daytime meteorological conditions including calm and worst-case winds in 8 cardinal directions. The predicted noise levels are then adjusted to account for their dominant characteristics. The table below summarises the adjusted worst-case noise levels.

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	24.7	39.1	34.8	36.8	35.9	40.4	39.9
R2	16.8	32.2	27.7	33.6	24.8	42.7	42.2
R3	9.7	25.8	25.8	26.9	26.2	30.9	30.7

According to Regulation 13, no assigned noise levels apply to the construction activities (scenario 1) as long as "*the construction work was carried out in accordance with control of environmental noise practices set out in section 4 of AS 2436:2010 and the equipment used on the premises was the quietest reasonably available*".

For the operational scenarios (2 to 7) at the closest residences, the adjusted daytime worst-case noise levels (≤43 dB(A)) are below the assigned noise levels on Monday to Saturday. This concludes that full compliance is achieved for the proposed quarry.

TABLE OF CONTENTS

1.0 INTRODUCTION

A granite quarry is proposed at Lot 22 Edwards Road Roelands. Acoustic Engineering Solutions (AES) has been commissioned by ABEC Environmental Consulting (ABEC) to undertake an environmental noise impact assessment of the proposed quarry. The objective of this assessment is to determine whether or not the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations).

Figure 1 in APPENDIX A presents an aerial view of the subject site and surrounding area including the closest residences, which are more than 1.6km away from the quarrying pit boundaries.

Figure 2 to Figure 4 in APPENDIX A present the site layout and quarrying pit plans. Two quarrying pits (North Pit and South Pit) are proposed between 7am and 7pm on Monday to Saturday excluding public holidays. Each pit is quarried at three phases. For the north pit, quarrying starts from south towards north while for the south pit, quarrying starts from north towards south.

For each pit, four (4) quarrying stages are proposed:

Stage 1: Construction of internal haul roads.
Stage 2: Clearing and stockpiling of topsoils.
Stage 3: Clearing and stockpiling of overburden.
Stage 4: Extraction and Transportation of granite.

Table 1-1 lists the name and number of fixed plant and mobile equipment operating onsite for different stages.

Table 1-1: Fixed plant and mobile equipment.

Stage	Equipment	Number
1	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	1
	Fuso FV517J Watercart	1
	Cat 14M Grader	1
2	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	1

Stage	Equipment	Number
	Fuso FV517J Watercart	1
3	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	2
	Fuso FV517J Watercart	1
4	Hitachi EX690 Excavator	1
	Cat D9T Dozer	1
	Bell B40D Articulated Dump Truck	2
	Fuso FV517J Watercart	1
	Cat 14M Grader	1
	Drill Rig	1
	LT120D Jaw Crusher	1
	LT300HP Cone Crusher	2
	Barmac 7150SE VSI	1
	Metso ST4.10 Screen	1
	Metso 2.11 Scalping Screen	1

The depth of overburden varies depending on locations. Topsoils and overburden will be stockpiled for the future refilling but they are not proposed to be used for constructing noise bunds along the pit boundaries.

The crushing plant is proposed to operate at two options:

Option 1: On the mined pit floor behind (and close to) the quarrying pit.

Option 2: At an alternative ROM to southwest of the south pit.

For option 1, the location of crushing plant will change as the quarrying progress. For quarrying at the north pit, option 1 means that the crushing plant is located on the mined pit floor in (and close to) the south of quarry activities. For quarrying at the south pit, option 1 means that the crushing plant is located on the mined pit floor in (and close to) the north of quarry activities.

2.0 NOISE CRITERIA

Noise management in Western Australia is implemented through the Environmental Protection (Noise) Regulations 1997 (the Regulations). The Regulations set noise limits which are the highest noise levels that can be received at noise-sensitive (residential), commercial and industrial premises. These noise limits are defined as 'assigned noise levels' at receiver locations. Regulation 7 requires that "noise emitted from any premises or public place when received at other premises must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind".

Table 2-1 presents the assigned noise levels at various premises.

Table 2-1: Assigned noise levels in dB(A).

Type of Premises Receiving Noise	Time of Day	Assigned Noise Levels in dB(A)[1]		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday	45 + Influencing factor	55 + Influencing factor	65 + Influencing factor
	0900 to 1900 hours Sunday and public holidays	40 + Influencing factor	50 + Influencing factor	60 + Influencing factor
	1900 to 2200 hours all days	40 + Influencing factor	50 + Influencing factor	60 + Influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + Influencing factor	45 + Influencing factor	55 + Influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80
Industrial and utility premises other than those in the Kwinana Industrial Area	All hours	65	80	90

For highly noise sensitive premises, an "influencing factor" is incorporated into the assigned noise levels. The influencing factor depends on road classification and land use zonings within circles of 100 metres and 450 metres radius from the noise receiver locations.

[1] Assigned level L_{A1} is the A-weighted noise level not to be exceeded for 1% of a delegated assessment period.
Assigned level L_{A10} is the A-weighted noise level not to be exceeded for 10% of a delegated assessment period.
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Regulation 7 requires that that "noise emitted from any premises or public place when received at other premises must be free of:

(i) tonality;
(ii) impulsiveness; and
(iii) modulation.

when assessed under Regulation 9".

If the noise exhibits intrusive or dominant characteristics, i.e. if the noise is impulsive, tonal, or modulating, noise levels at noise-sensitive premises must be adjusted. Table 2-2 presents the adjustments incurred for noise exhibiting dominant characteristics. That is, if the noise is assessed as having tonal, modulating or impulsive characteristics, the measured or predicted noise levels have to be adjusted by the amounts given in Table 2-2. Then the adjusted noise levels must comply with the assigned noise levels. Regulation 9 sets out objective tests to assess whether the noise is taken to be free of these characteristics.

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Adjustment where noise emission is not music. These adjustments are cumulative to a maximum of 15 dB.			Adjustment where noise emission is music	
Where tonality is present	Where Modulation is present	Where Impulsiveness is present	Where Impulsiveness is not present	Where Impulsiveness is present
+5 dB	+5 dB	+10 dB	+10 dB	+15 dB

2.2 CONSTRUCTION NOISES

Noise associated with the construction activities in WA is managed through Regulation 13.

Regulation 13 (2) states:

Regulation 7 does not apply to noise emitted from a construction site as a result of construction work carried out between 0700 hours and 1900 hours on any day which is not a Sunday or public holiday if the occupier of the premises or public place, shows that

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(c) if the occupier was required to prepare a noise management plan ……in respect of the construction site —

i) the noise management plan was prepared and given in accordance with the requirement, and approved by the Chief Executive Officer; and

ii) the construction work was carried out in accordance with the noise management plan, excluding any ancillary measure.

2.3 INFLUENCING FACTORS

The subject site and closest residences are located in rural area. Residences are more than 1.6km away from the subject site.

Influencing factor varies from residence to residence depending on the surrounding land use. No industrial and commercial zones are located with 450m to the selected residential receivers. Traffic flows on roads in the vicinity (≤450m) of the selected residential receivers are insufficient for any of the roads to be classified as either the major or the secondary roads. Therefore, influencing factor is zero for all of the three closest residences.

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An acoustic model has been developed using SoundPlan v8.0 program, and the CONCAWE[2,3] prediction algorithms are selected for this study. The acoustic model is used to predict noise levels at residential receivers and generate noise contours for the subject site and surrounding area.

The acoustic model does not include noise emissions from any sources other than from the proposed quarry operations. Therefore, noise emissions from road traffic, aircraft, animals, etc are excluded from the modelling.

3.2 INPUT DATA

3.2.1 Topography

The ground contours for the subject site and surrounding area are provided by ABEC in AUTO-CAD dxf format. The ground contours have been amended to incorporate details of quarrying pits including the depths of topsoils and overburden, which are provided by ABEC. The ground is assumed to be absorptive.

No buildings and sheds are considered. No topsoil and overburden stockpiles are considered because their detailed information of locations and shapes is not available yet. This may result in the over-prediction of noise levels in the shadow areas of topsoil and overburden stockpiles.

3.2.2 Noise Sensitive Premises

Three (3) closest residences are selected for the detailed assessments of noise impact, as shown in Figure 1 in APPENDIX A. All of them are the ground receivers at 1.5m above the ground.

3.2.3 Source Sound Power Levels

Table 3-1 presents the overall source sound power levels. The overall sound power levels are provided by ABEC but the sound power spectrum shapes are fitted from the AES database for similar equipment.

[2] CONCAWE (Conservation of Clean Air and Water in Europe) was established in 1963 by a group of oil companies to carry out research on environmental issues relevant to the oil industry.
[3] The propagation of noise from petroleum and petrochemical complexes to neighbouring communities, CONCAWE Report 4/81, 1981.

Table 3-1: Sound power levels

Equipment	Overall Sound Power Level in dB(A)
Bell 40T Articulated Dump Truck	107
Cat D9T Dozer	114
Hitachi 70T Excavator	115
Watercart	107
Cat 14M Grader	100
Drill Rig	118
LT120D Jaw Crusher	122
LT300HP Cone Crusher	113
Barmac 7150SE VSI	113
Metso ST4.10 Screen	117
Metso 2.11 Scalping Screen	109

3.3 METEOROLOGY

SoundPlan calculates noise levels for defined meteorological conditions. In particular, temperature, relative humidity, wind speed and direction data are required as input to the model. For this study the "default" worst-case day-time meteorological conditions[4] are assumed, as shown in Table 3-2.

Table 3-2: Worst-case day-time meteorological conditions.

Time of day	Temperature Celsius	Relative Humidity	Wind speed	Pasquill Stability Category
Day (0700 --- 1900)	20° Celsius	50%	4 m/s	E

[4] Guideline: Assessment of Environmental Noise Emissions, Draft for Consultation, May 2021.

3.4 NOISE MODELLING SCENARIOS

ABEC advised that:

- The quarry operates between 7am and 7pm on Monday to Saturday excluding public holidays.
- Two quarrying pits (North Pit and South Pit) are proposed. Each pit is quarried at three phases.
- The quarry is progressed in four stages:
  Stage 1: Construction of internal haul roads.
  Stage 2: Clearing and stockpiling of topsoils.
  Stage 3: Clearing and stockpiling of overburden.
  Stage 4: Extraction and Transportation of granite.
- The crushing plant is proposed to operate at two options:
  Option 1: On the mined pit floor behind (and close to) the quarrying activities.
  Option 2: At an alternative ROM to southwest of the south pit.
- No plan is proposed to use topsoils and overburden for constructing noise bunds along the pit boundaries.

Based on the provided information, the following scenarios are modelled to represent the proposed worst-case quarry operations:

Scenario 1: represents the haul road construction (for stage 1).
Scenario 2: represents the overburden removal (for stage 3) of the north pit.
Scenario 3: represents the overburden removal (for stage 3) of the south pit.
Scenario 4: represents the quarry crushing process with ROM in the north pit.
Scenario 5: represents the quarry crushing process with ROM in the south pit.
Scenario 6: Scenario 4 but with the alternative ROM location.
Scenario 7: Scenario 5 but with the alternative ROM location.

Scenario 1 is a construction scenario while scenarios 2 to 7 are the operational scenarios. Table 1-1 lists the name and number of fixed plant and mobile equipment operating for different scenarios. Figure 5 to Figure 11 in APPENDIX B present the assumed locations of the fixed plant and mobile equipment operating in different scenarios.

Top soils are less than 1m. As indicated in Table 1-1, stages 2 and 3 use the same types of equipment but stage 3 has two Bell B40D Articulated Dump Trucks while stage 2 has one only. The noise emission from the operation of stage 3 will be higher than that from the operation of stage 2. Therefore, scenarios 2 and 3 represent the overburden removals for stage 3 and also cover the operations of stage 2 for clearing and stockpiling of topsoils.

For the worst-case operation, all items of equipment are assumed to operate on the natural surfaces for scenario 1, but at 1m below the natural surfaces for scenarios 2 and 3.

The thickness of overburden varies. For scenarios 4 to 7, the blasting and extraction equipment are assumed to operate at 4m below the natural surfaces. The crashing plant is assumed to operate at the floor of quarried north pit (150m AHD) for scenario 4 and at the

floor of quarried south pit (153m AHD) for scenario 5 but on the natural surfaces of alternative ROM for scenarios 6 and 7.

4.0 MODELLING RESULTS

4.1 POINT CALCULATIONS

Noise levels for the seven (7) scenarios are predicted at the 3 closest residences for a range of day time meteorological conditions including calm and worst-case winds in 8 cardinal directions.

The full point prediction results for different wind conditions are presented in Table C1 to Table C7 in APPENDIX C. These tables indicate that wind direction has a big impact on the noise levels received at the closest residences.

Table 4-1 summarises the predicted worst-case day-time noise levels in dB(A), which are the maximum day-time noise levels likely to be observed at the closest residences. All of the predicted noise levels are below 37.7 dB(A). The highest noise level is predicted at:

- R1 for scenarios 1 to 5; but
- R2 for scenarios 6 and 7.

Table 4-1: Predicted worst-case noise levels in dB(A).

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	19.7	34.1	29.8	31.8	30.9	35.4	34.9
R2	11.8	27.2	22.7	28.6	19.8	37.7	37.2
R3	4.7	21.5	21.1	22.6	21.5	25.9	25.7

4.2 NOISE CONTOURS

Figure 12 to Figure 18 in APPENDIX D present the worst-case daytime noise level contours at 1.5m above the ground. These noise contours represent the worst-case noise propagation envelopes, i.e., worst-case propagation in all directions simultaneously. Detailed locations of the operating mobile equipment are presented in Figure 5 to Figure 11 in APPENDIX B.

5.0 COMPLIANCE ASSESSMENT

5.1 ADJUSTED NOISE LEVELS

The noises emitted from the proposed fixed plant and mobile equipment are expected to exhibit tonality. According to Table 2-2, the predicted noise levels shown in Table 4-1 should be adjusted by adding 5 dB.

Table 5-1 presents the adjusted worst-case noise levels in dB(A).

Table 5-1: Adjusted worst-case noise levels in dB(A).

Receivers	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
R1	24.7	39.1	34.8	36.8	35.9	40.4	39.9
R2	16.8	32.2	27.7	33.6	24.8	42.7	42.2
R3	9.7	26.5	26.1	27.6	26.5	30.9	30.7

5.2 CONSTRUCTION NOISE

Scenario 1 represents the noises from the construction of haul roads. As indicated in section 2.2, no assigned noise level applies to the construction noises.

As indicated in section 3.4, scenarios 2 and 3 represent both the topsoil stripping and overburden removal. Topsoil stripping is construction activities while overburden removal may be classified as operational activities.

5.3 COMPLIANCE ASSESSMENT

All activities proposed in this project will be undertaken during the day (between 7am and 7pm) on Monday to Saturday excluding public holidays. No evening and night-time compliance assessment is required.

Table 5-2 presents the day-time compliance assessment for Monday to Saturday excluding public holidays. It is shown that the adjusted worst-case noise levels are much below the assigned noise levels at all of the residences for all of the operational scenarios. This concludes that full compliance is achieved for the proposed quarry operations.

Table 5-2: Daytime compliance assessment.

Receivers	Assigned Levels L_{A10} in dB(A)	Adjusted Noise Levels in dB(A)					
		S2	S3	S4	S5	S6	S7
R1	45	39.1	34.8	36.8	35.9	40.4	39.9
R2	45	32.2	27.7	33.6	24.8	42.7	42.2
R3	45	26.5	26.1	27.6	26.5	30.9	30.7

APPENDIX A SITE PLANS

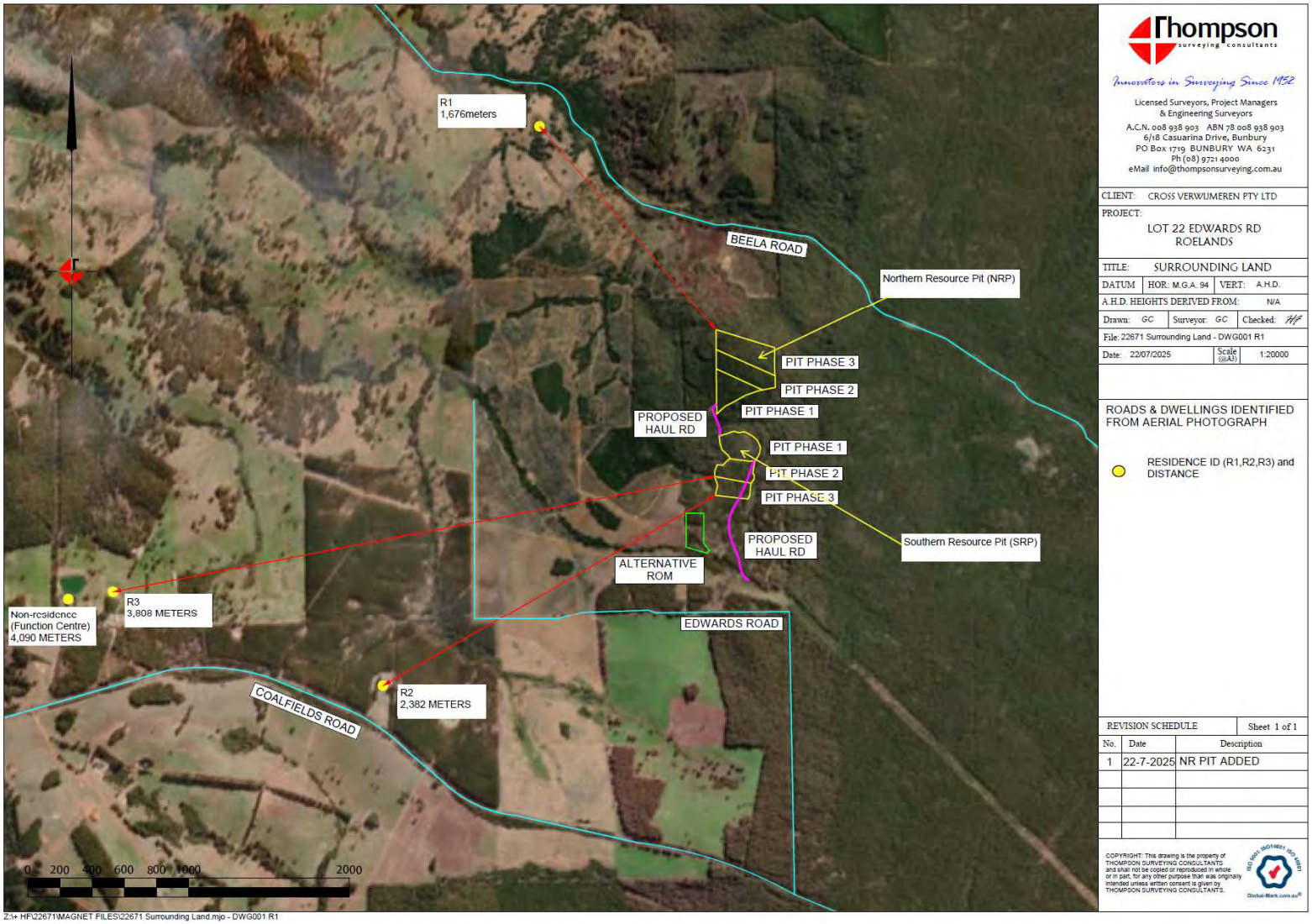

Figure 1: Aerial view of the subject site and surrounding area.

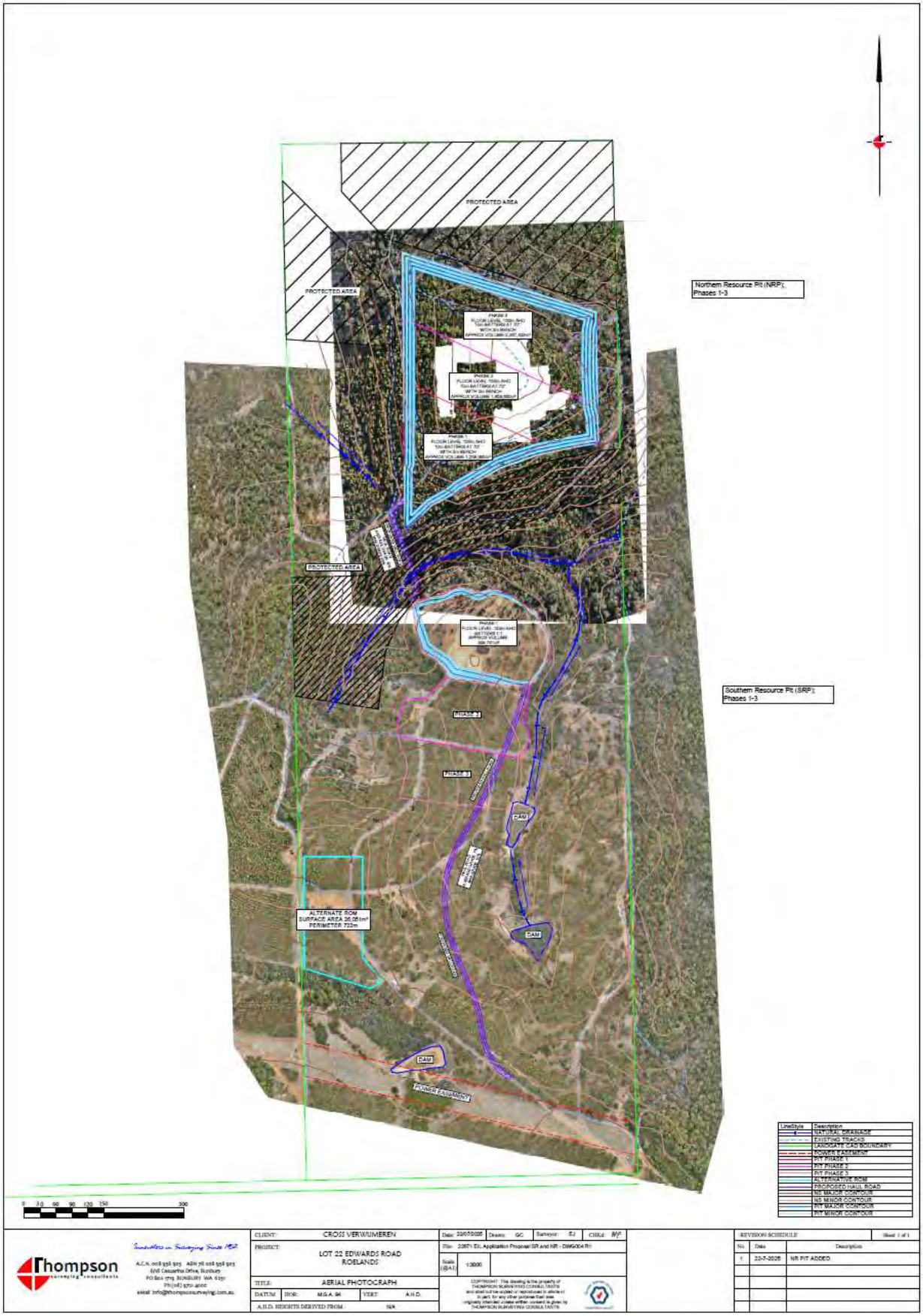

Figure 2: Site layout.

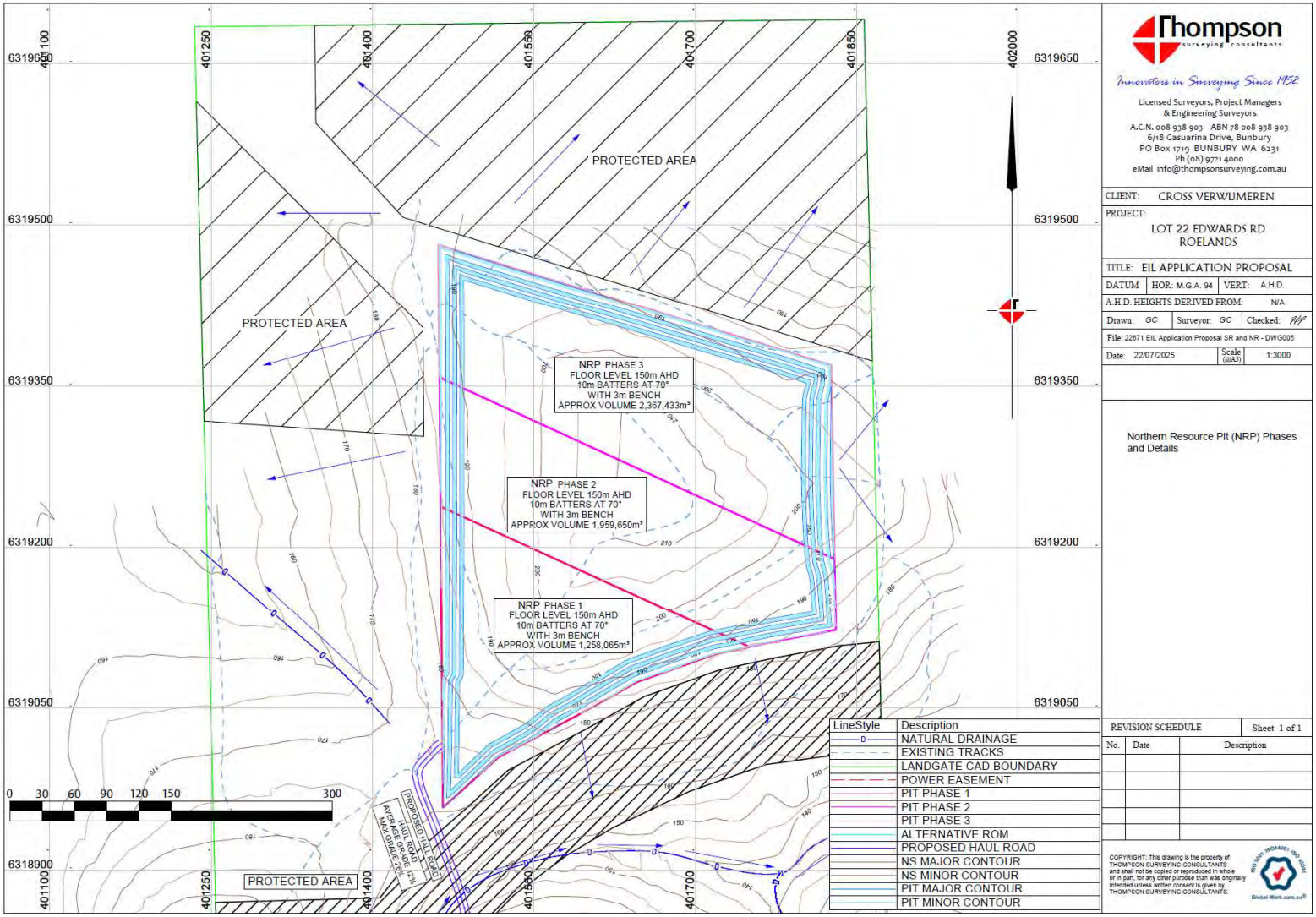

Figure 3: North pit plan.

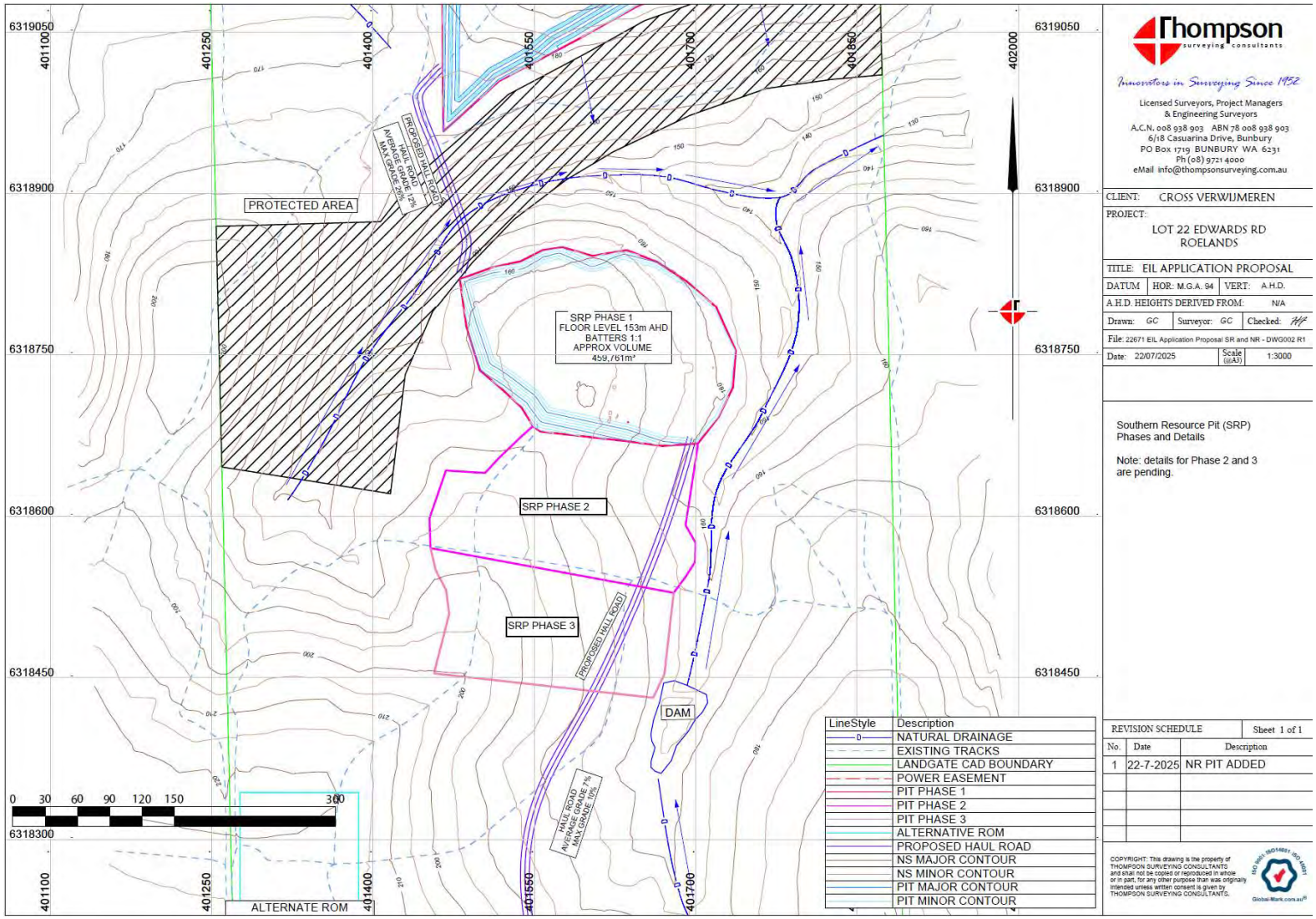

Figure 4: South pit plan.

APPENDIX B EQUIPMENT LOCATIONS

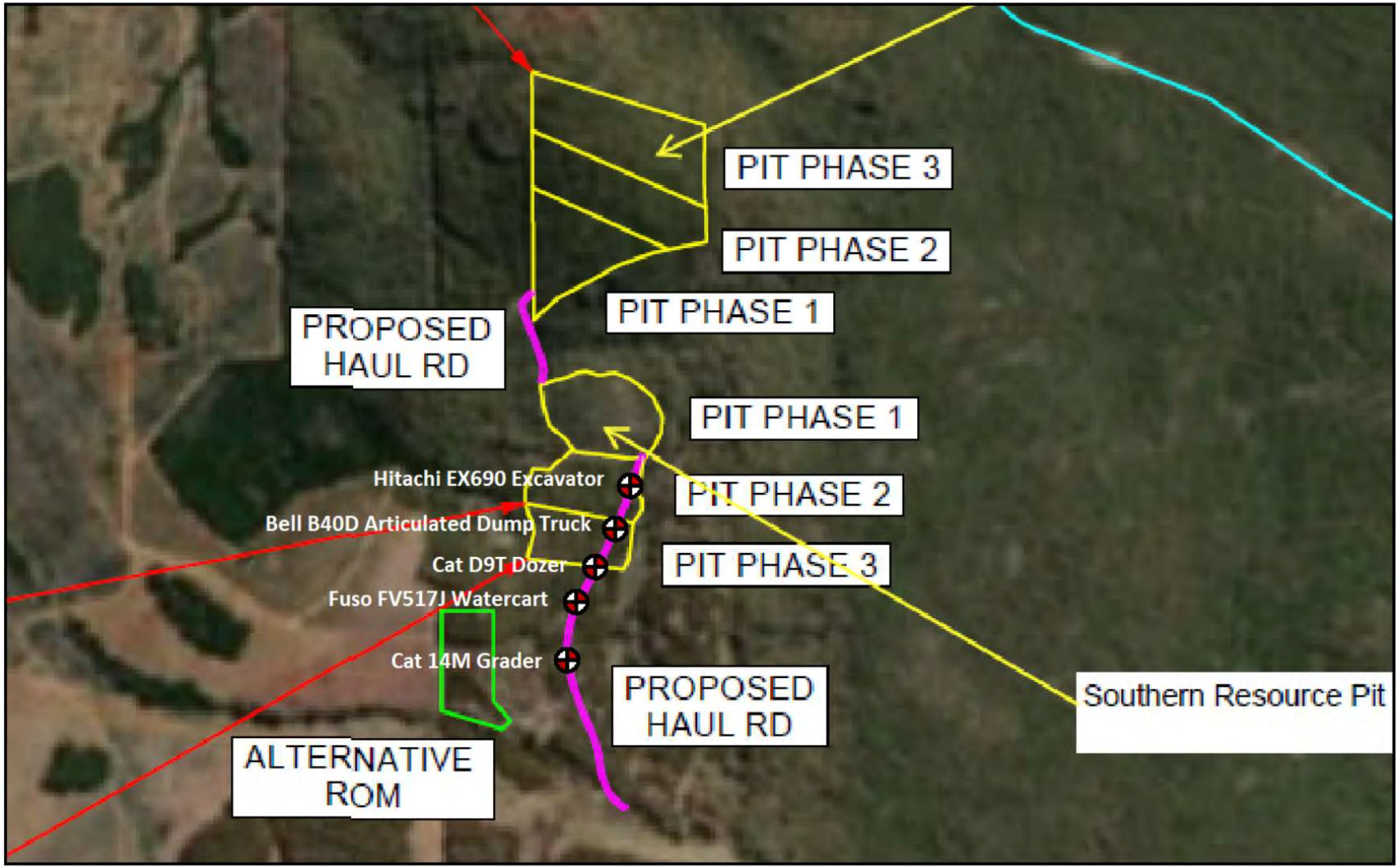

Figure 5: Assumed source locations of scenario 1 — Construction of haul roads.

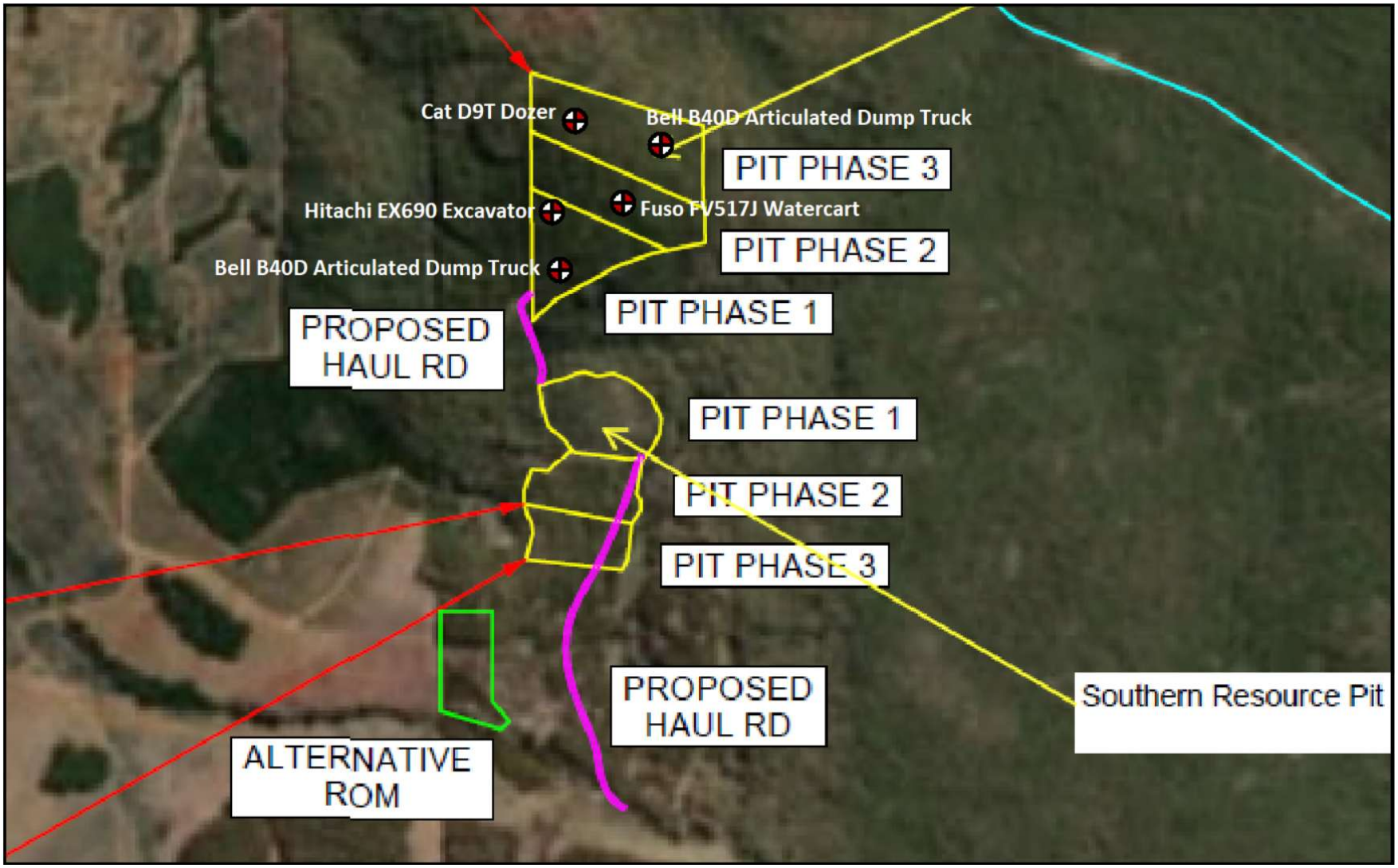

Figure 6: Assumed source locations of scenario 2 – Overburden removal in the north pit.

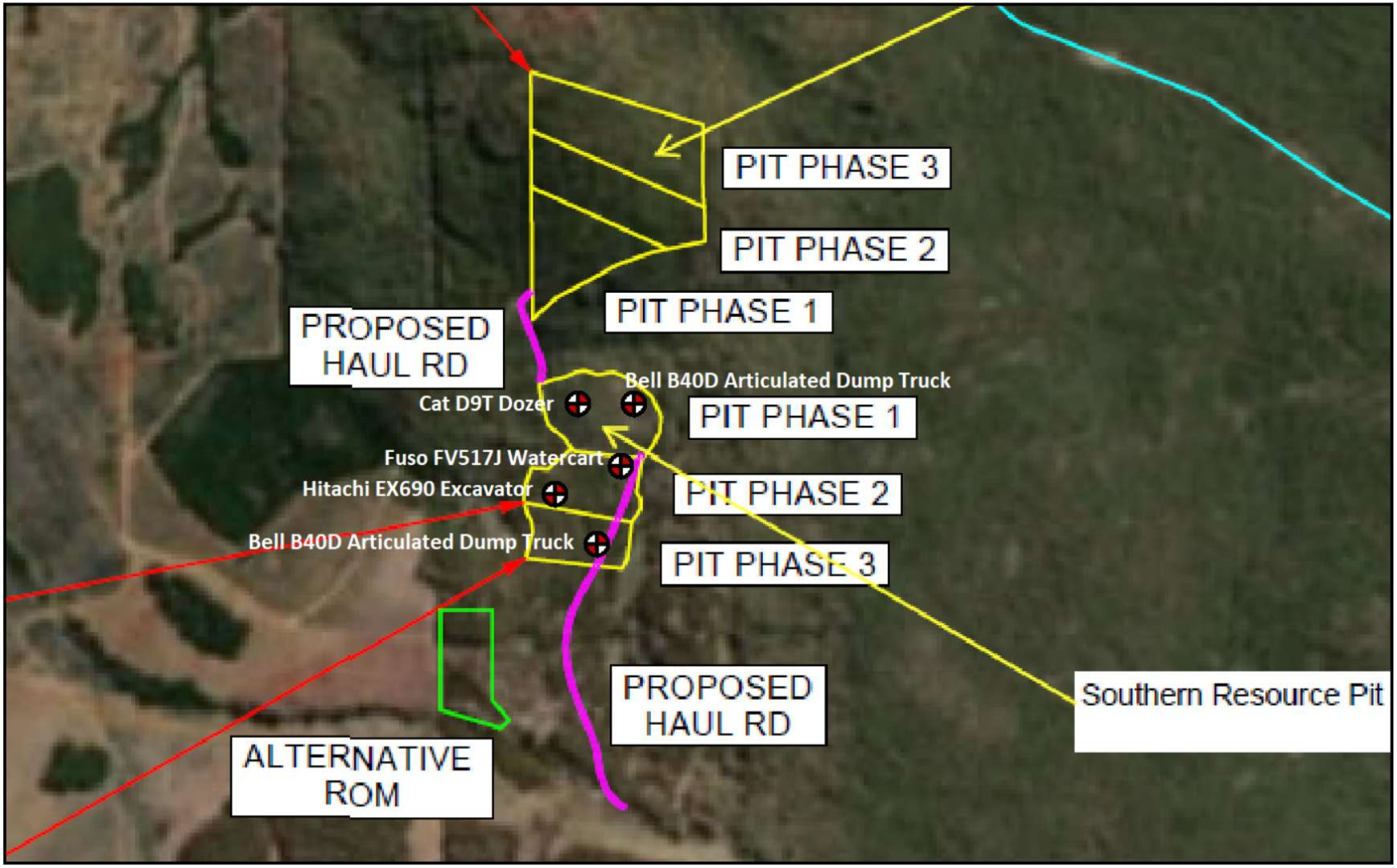

Figure 7: Assumed source locations of scenario 3 – Overburden removal in the south pit.

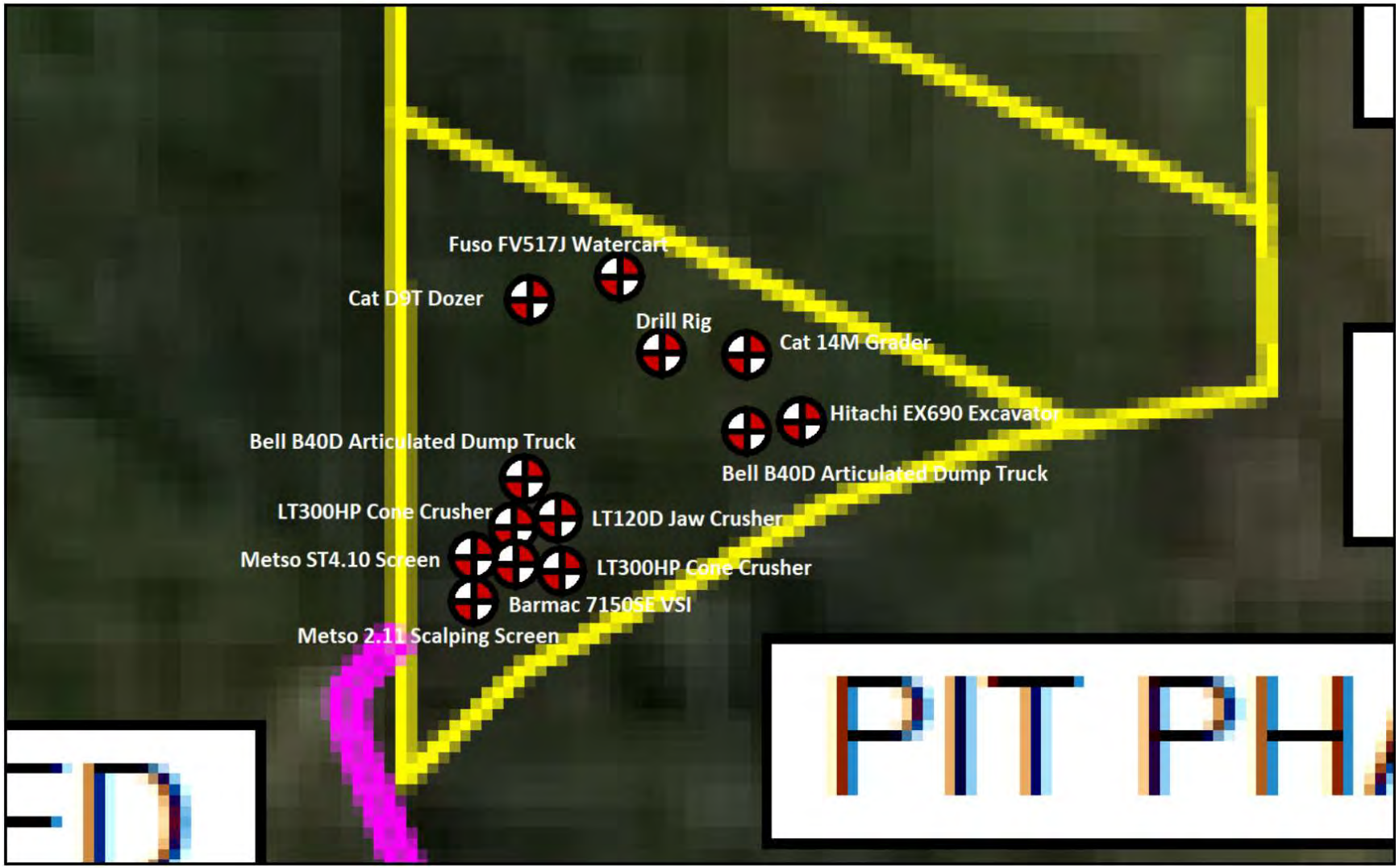

Figure 8: Assumed source locations of scenario 4 – Quarry crushing process with ROM in the north pit.

Figure 9: Assumed source locations of scenario 5 — Quarry crushing process with ROM in the south pit.

APPENDIX C POINT MODELLING RESULTS

Table C1: Predicted worst-case day-time noise levels in dB(A) for scenario 1

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 1								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	6.8	9.9	19.7	19.7	19.7	19.4	8.3	6.8	14.0
R2	11.8	11.8	11.8	11.6	1.6	0.4	0.4	2.5	6.3
R3	2.9	4.7	4.7	4.7	0.0	0.0	0.0	0.0	0.0

Table C2: Predicted worst-case day-time noise levels in dB(A) for scenario 2

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 2								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	20.6	26.7	34.0	34.1	34.1	30.7	21.4	20.5	28.5
R2	27.2	27.2	27.2	22.3	14.3	13.9	13.9	20.6	21.3
R3	21.5	20.8	20.8	21.3	9.6	7.3	7.3	9.1	14.6

Table C3: Predicted worst-case day-time noise levels in dB(A) for scenario 3

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 3								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	16.0	19.6	29.7	29.8	29.8	29.3	17.7	16.0	23.9
R2	22.7	22.7	22.7	21.5	10.9	9.6	9.6	13.5	16.8
R3	19.8	20.8	20.8	21.1	11.3	7.3	7.3	8.5	14.7

APPENDIX C POINT MODELLING RESULTS

Table C1: Predicted worst-case day-time noise levels in dB(A) for scenario 1

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 1								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	6.8	9.9	19.7	19.7	19.7	19.4	8.3	6.8	14.0
R2	11.8	11.8	11.8	11.6	1.6	0.4	0.4	2.5	6.3
R3	2.9	4.7	4.7	4.7	0.0	0.0	0.0	0.0	0.0

Table C2: Predicted worst-case day-time noise levels in dB(A) for scenario 2

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 2								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	20.6	26.7	34.0	34.1	34.1	30.7	21.4	20.5	28.5
R2	27.2	27.2	27.2	22.3	14.3	13.9	13.9	20.6	21.3
R3	21.5	20.8	20.8	21.3	9.6	7.3	7.3	9.1	14.6

Table C3: Predicted worst-case day-time noise levels in dB(A) for scenario 3

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 3								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	16.0	19.6	29.7	29.8	29.8	29.3	17.7	16.0	23.9
R2	22.7	22.7	22.7	21.5	10.9	9.6	9.6	13.5	16.8
R3	19.8	20.8	20.8	21.1	11.3	7.3	7.3	8.5	14.7

Table C4: Predicted worst-case day-time noise levels in dB(A) for scenario 4

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 4								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	18.3	23.8	31.7	31.8	31.8	29.1	19.4	18.3	26.3
R2	28.6	28.6	28.6	24.5	15.8	15.2	15.2	21.4	22.8
R3	22.6	21.9	21.9	22.4	11.0	8.5	8.5	10.1	15.8

Table C5: Predicted worst-case day-time noise levels in dB(A) for scenario 5

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 5								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	17.6	21.4	30.8	30.9	30.9	30.0	19.1	17.6	25.3
R2	19.8	19.8	19.8	18.0	8.6	7.7	7.7	11.3	14.0
R3	20.5	21.2	21.2	21.5	11.3	7.5	7.5	8.7	15.0

Table C6: Predicted worst-case day-time noise levels in dB(A) for scenario 6

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 6								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	21.8	25.8	35.3	35.4	35.4	34.4	23.9	21.8	29.8
R2	37.6	37.7	37.7	37.2	26.3	24.3	24.3	28.0	32.2
R3	23.9	25.9	25.9	25.9	20.7	15.4	15.4	16.4	23.0

Table C7: Predicted worst-case day-time noise levels in dB(A) for scenario 7

Closest Residences	Worst-case Day-time Noise Levels in dB(A) for Scenario 7								
	N	NE	E	SE	S	SW	W	NW	Calm
R1	21.4	24.4	34.8	34.9	34.9	34.6	23.7	21.4	29.2
R2	37.1	37.2	37.2	37.0	26.0	23.9	23.9	27.1	31.8
R3	23.2	25.7	25.7	25.7	20.7	15.2	15.2	16.1	22.9

APPENDIX D NOISE CONTOURS

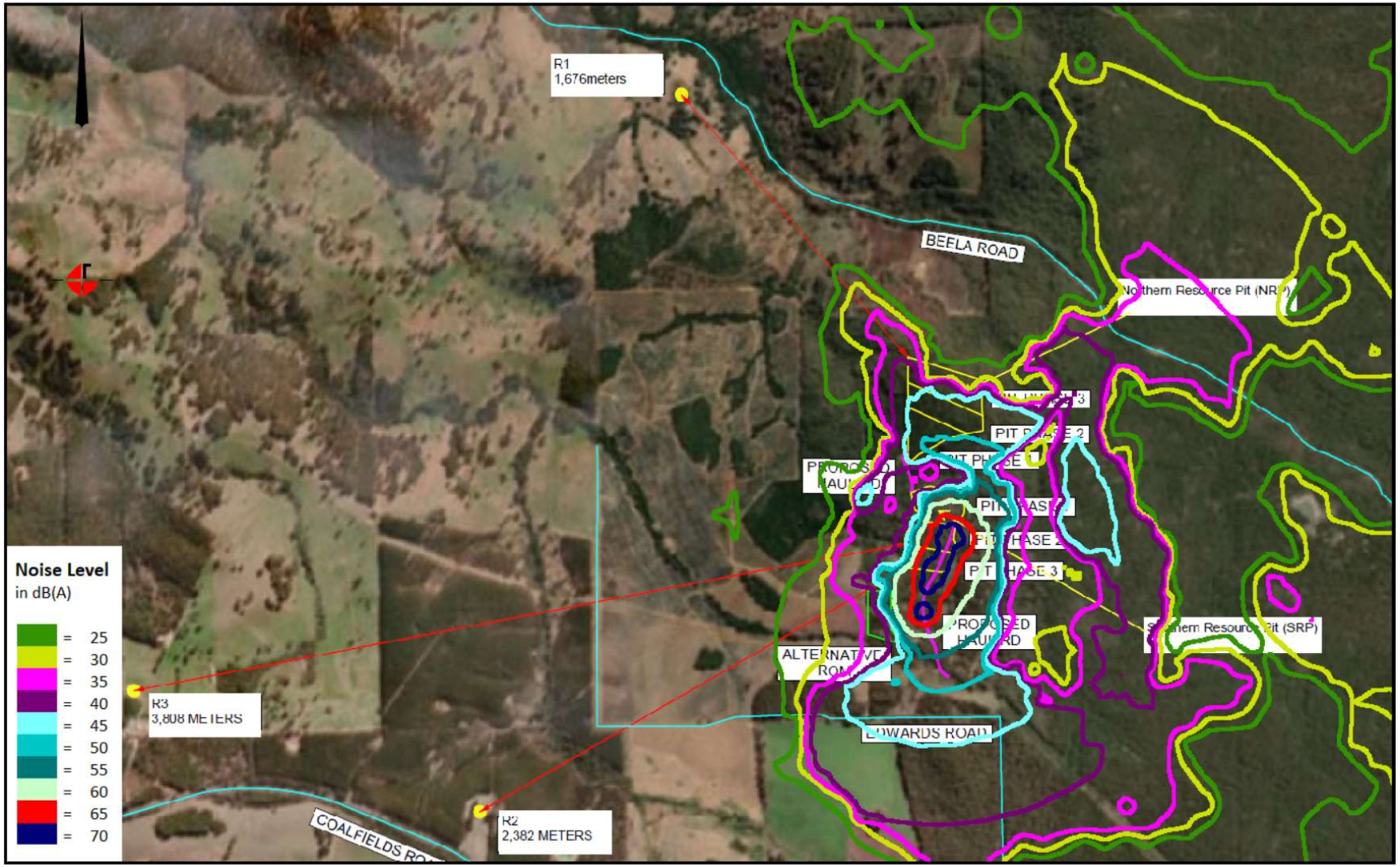

Figure 12: Worst-case noise contours for scenario 1.

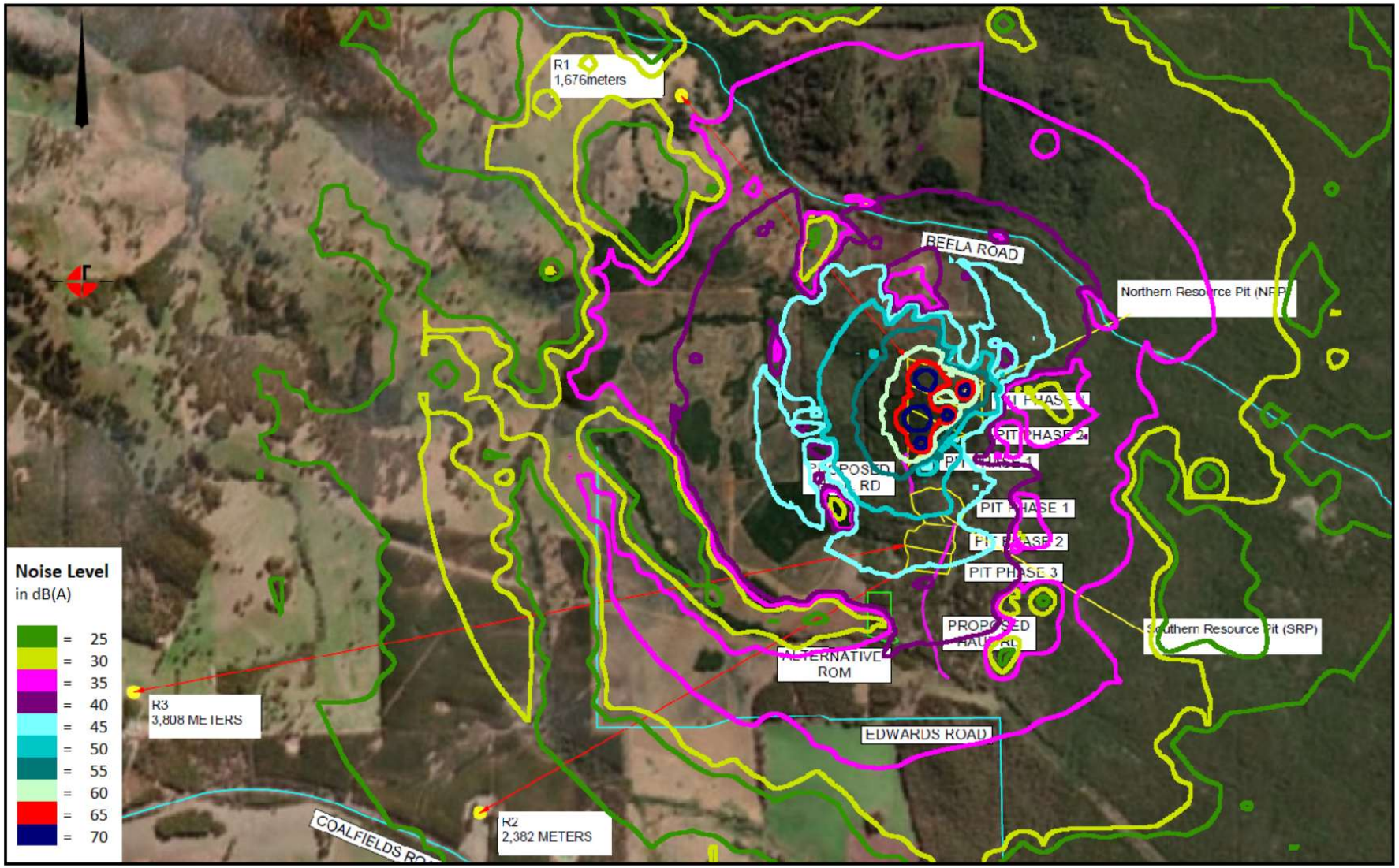

Figure 13: Worst-case noise contours for scenario 2.

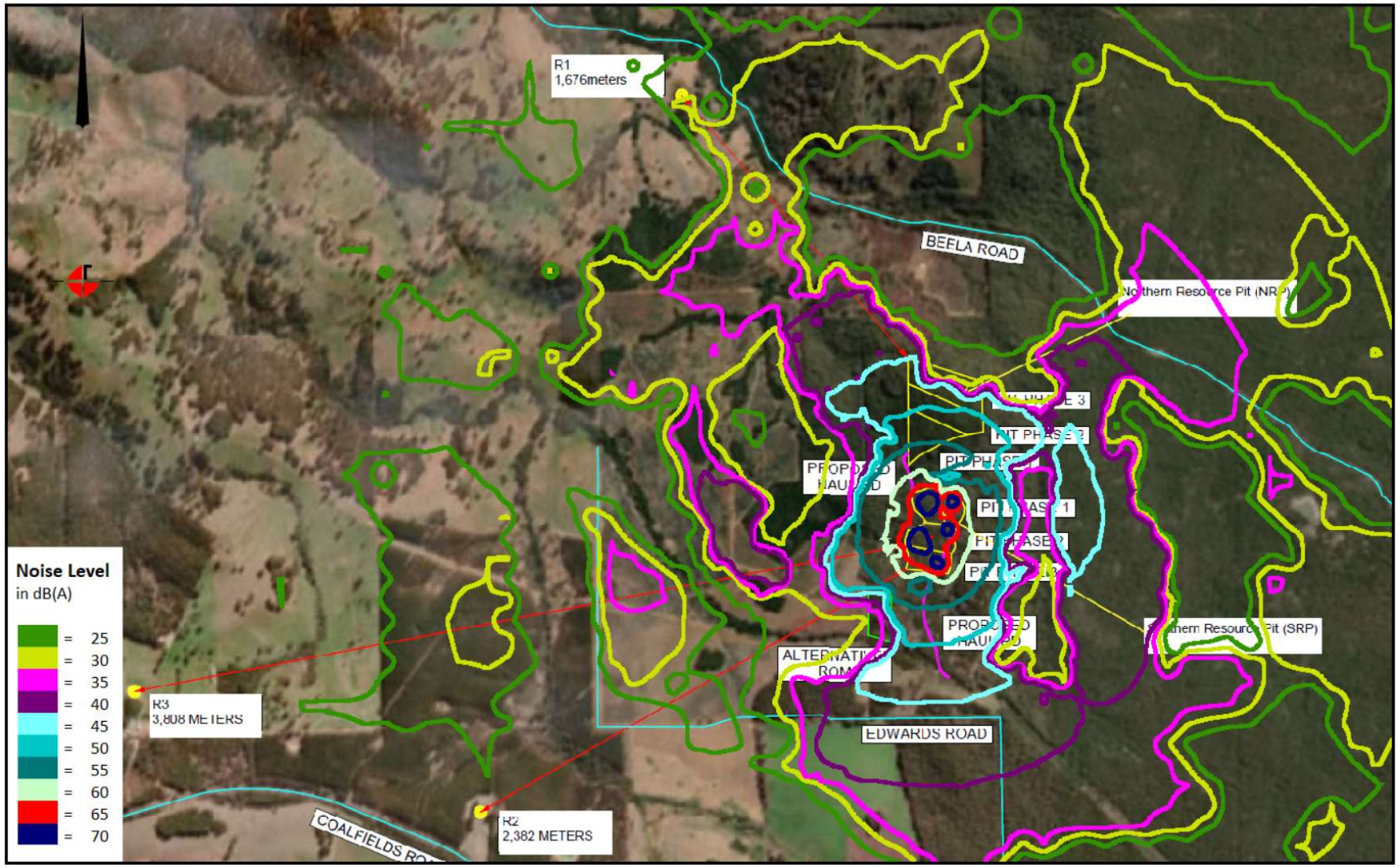

Figure 14: Worst-case noise contours for scenario 3.

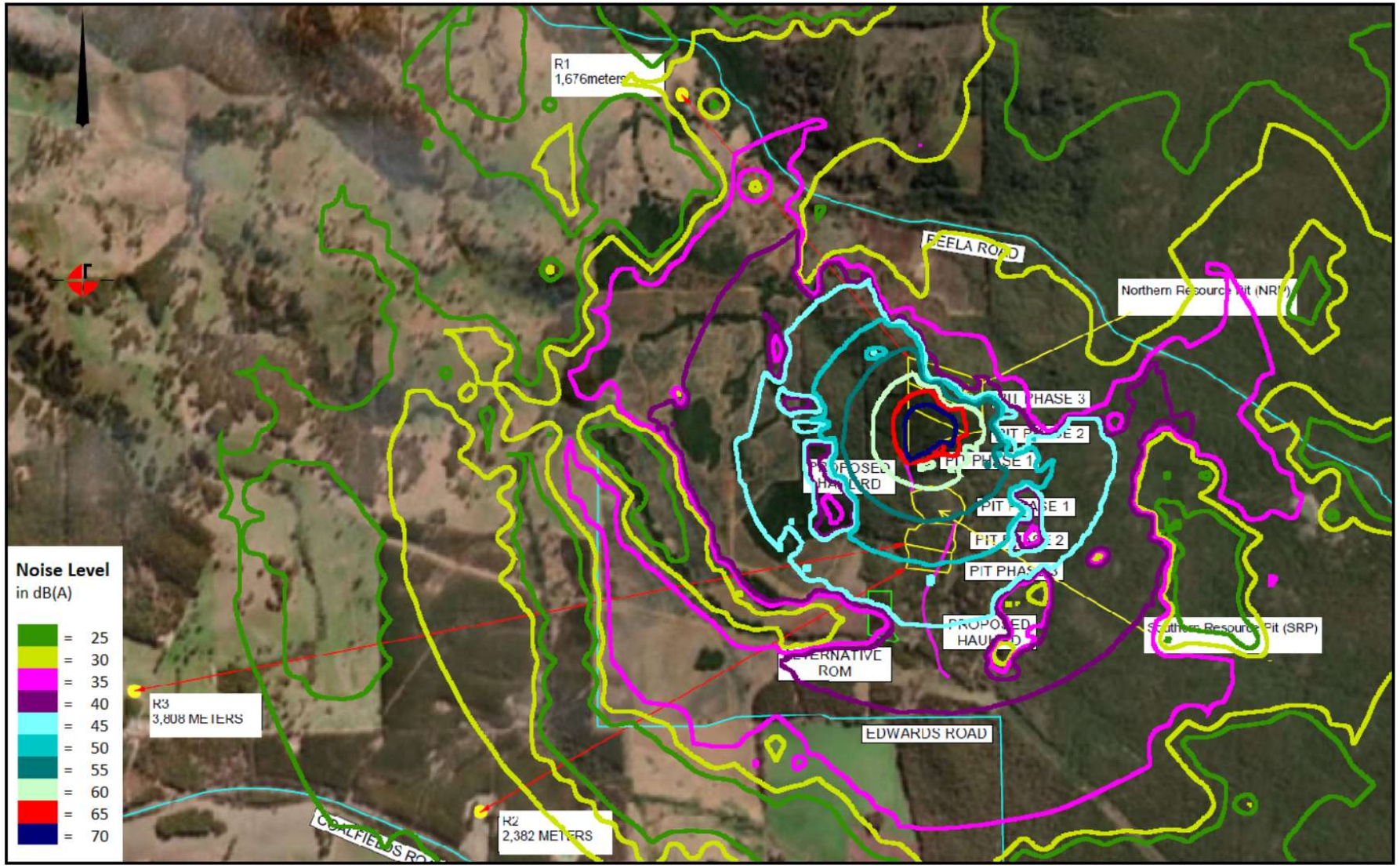

Figure 15: Worst-case noise contours for scenario 4.

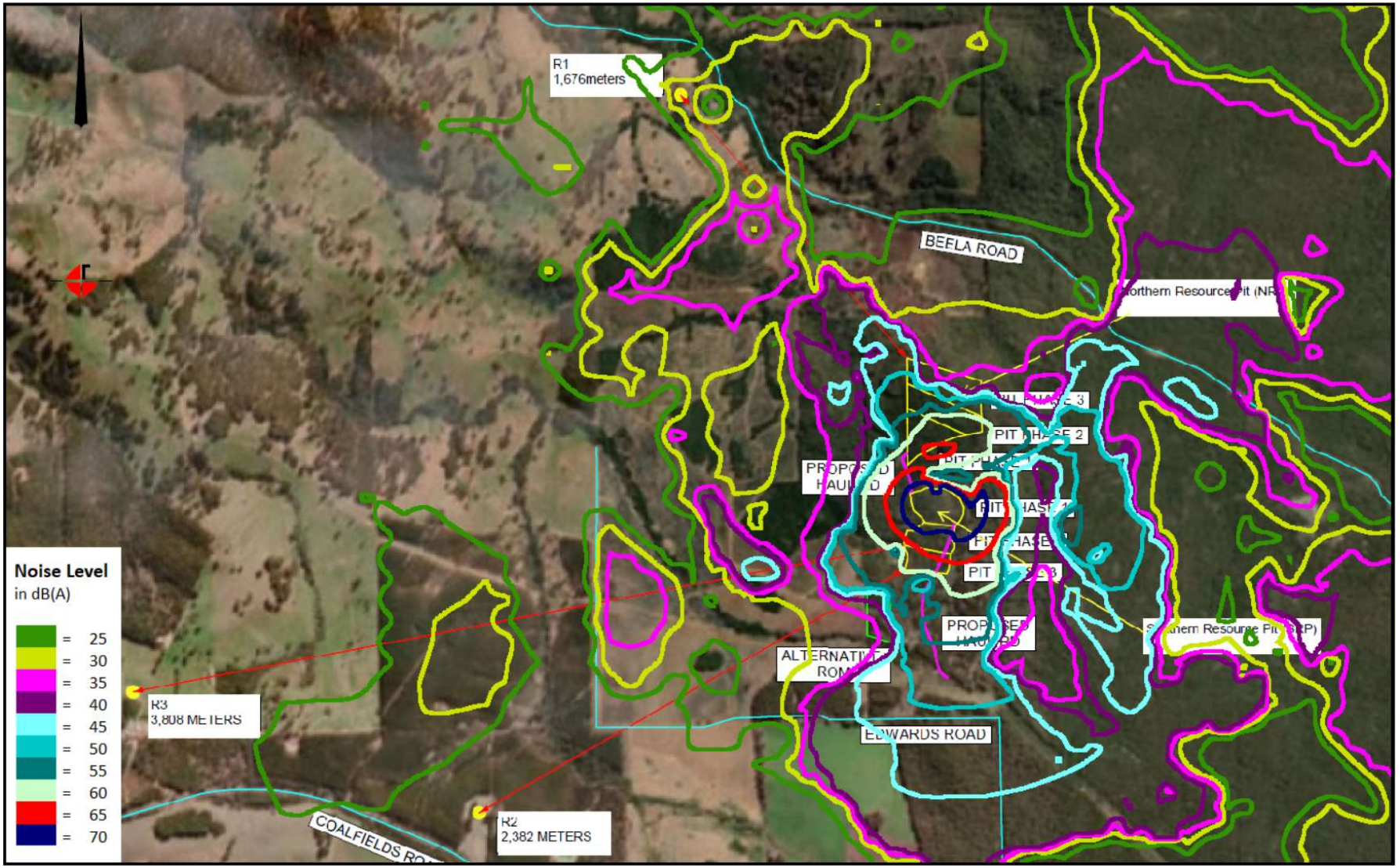

Figure 16: Worst-case noise contours for scenario 5.

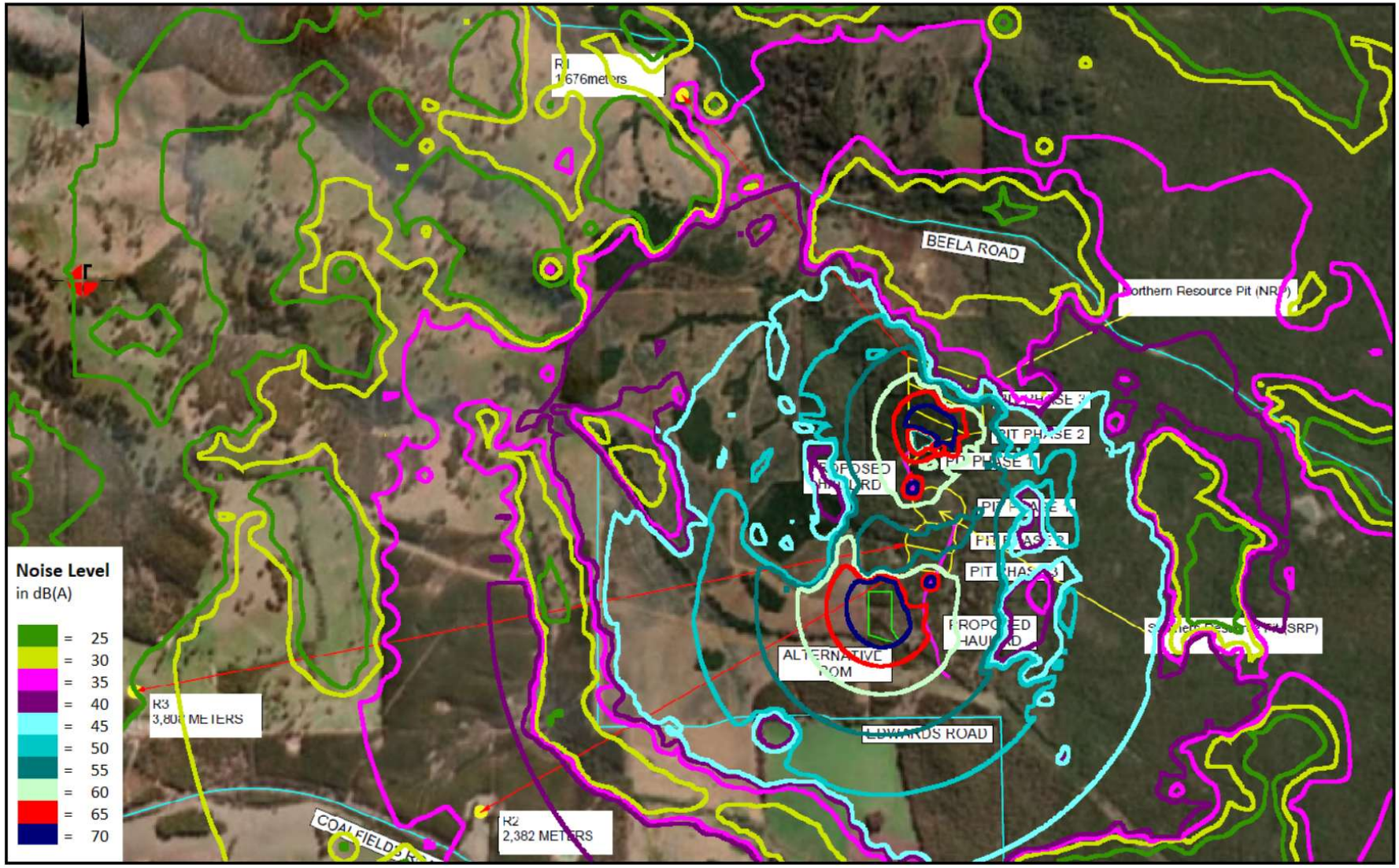

Figure 17: Worst-case noise contours for scenario 6.

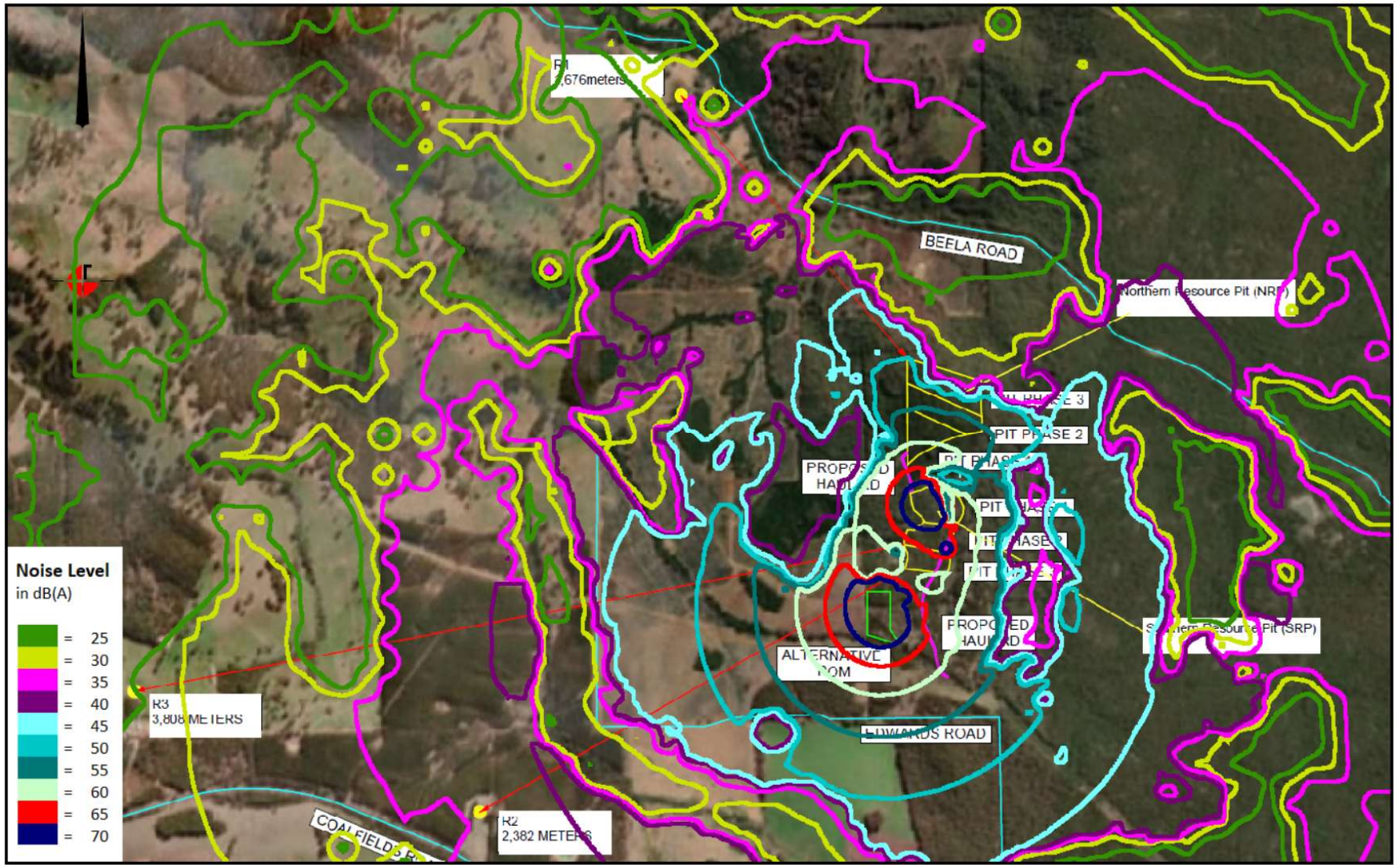

Figure 18: Worst-case noise contours for scenario 7.

APPENDIX 4: WEED ENVIRONMENTAL MANAGEMENT PLAN

WEED MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226

Prepared For:

Cross Verwijmeren Pty Ltd

Report Number:

AB209_MANAGEMENT PLANS

18-SEP-25

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DOCUMENT DETAILS

DOCUMENT ID	REPORT TITLE	REPORT NO	DATE	PREPARED FOR
JIM24-001_EIL_001_WEEDMP_EP	WEED MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226	AB209_MANAGEMENT PLANS	18/09/2025	Cross Verwijmeren Pty Ltd

PREPARED BY

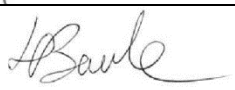
NAME	TITLE	ROLE	SIGNATURE	DATE
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		18/09/2025
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		18/09/2025

TABLE OF CONTENTS

1. WEED MANAGEMENT PLAN.

1.1. CURRENT WEED STATUS

No declared weeds or weeds of local or regional significance are currently known to be present at the Site (ABEC, 2024).

It is acknowledged that the proposed ground disturbance will result in the germination certain weeds, however the species will not be known until emergence.

1.2. PROPOSED WEED MANAGEMENT ACTIONS

Weed monitoring and management will occur within the following zones of Lot 22:

- Zone A: This is all the land within the quarry and includes the base of the excavation, roadways and stockpiles of topsoil, overburden and all product stockpiles.
- Zone B: This is all land that is at natural level and which extends 100m beyond the perimeter of the quarry and includes any stockpiles of soil or overburden created by the excavation.

1.2.1. WEED EMERGENCE MONITORING & MANAGEMENT

Monitoring of the emergence of weeds in Zones A and B will be undertaken by an experienced and licenced weed management contractor on a six-monthly basis i.e. After the first seasonal rains and at the end of spring. In addition, personnel on the site will be instructed to report any infestations that may occur on other occasions. Based on the type of weed that emerges, a control plan will be formulated by the licenced weed management contractor.

The Site Owner will ensure that all plant and equipment is clean and free from any soil when moving equipment to or from the site. The Site Owner will also ensure that any quarry products imported to the site will be free of weeds.

if a weed infestation occurs within Zones A or B, the Site Owner will apply the appropriate method of control, in accordance with the guidelines published by the DAF (2014), whether chemical or mechanical, at the appropriate time. The weed management contractor will keep a record of all treatments.

2. REFERENCES

ABEC. (2024). *Extractive Industries Licence Application And Environmental Management Plan, Lot 22 Edwards Road, Roelands Wa 6226. Report No. AB204.*

DAF. (2014). *Department of Agriculture and Food (DAF) (2014). Department of Agriculture and Food Guidelines for Weed Control Procedures for Extractive Industries Licences.*

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APPENDIX 5: DIEBACK ENVIRONMENTAL MANAGEMENT PLAN

DIEBACK MANAGEMENT LOT, 22 EDWARDS ROAD, ROELANDS WA 6226

Prepared For:

Cross Verwijmeren Pty Ltd

Report Number:

AB209_MANAGEMENT PLANS

18-SEP-25

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DOCUMENT DETAILS

DOCUMENT ID	REPORT TITLE	REPORT NO	DATE	PREPARED FOR
JIM24-001_DIEBACKMP_GA	DIEBACK MANAGEMENT LOT, 22 EDWARDS ROAD, ROELANDS WA 6226	AB209_MANAGEMENT PLANS	18/09/2025	Cross Verwijmeren Pty Ltd

PREPARED BY

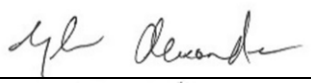
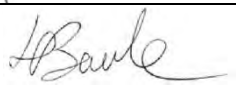
NAME	TITLE	ROLE	SIGNATURE	DATE
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		18/09/2025
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		18/09/2025

TABLE OF CONTENTS

1. INTRODUCTION

Since the proposed excavation area (ABEC, 2024) is largely disturbed, it is not possible to ascertain the dieback status. The extraction area should thus be classified as "uninterpretable" and managed as per the guidelines applicable for this classification the Dieback Working Group Inc. (DWG) document *Best Practice Guidelines for Management of Phytophthora Dieback in the Basic Raw Materials Industries* (DWG, 2021)

The following management measures will be put in place to minimise future spread of dieback:

- The property will be fenced at all times.
- Access to the property will be via a single entrance gate.
- All machinery, trucks and other vehicles will arrive in a clean condition free of soil and organic matter that may contain dieback fungus.
- Any soil and plant material brought to the site for rehabilitation purposes should be from dieback free sources.
- Employees and contractors working on the site will be informed of the purpose of the above measures and their responsibilities in relation to dieback prevention.

2. REFERENCES

ABEC. (2024). *Extractive Industries Licence Application And Environmental Management Plan, Lot 22 Edwards Road, Roelands Wa 6226. Report No. AB204.*

DWG. (2021). *Best Practice Guidelines for Management of Phytophthora Dieback in the Basic Raw Materials Industries. 2021; published by Dieback Working Group Inc. (DWG).*

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APPENDIX 6: ENVIRONMENTAL MANAGEMENT PLAN FOR GROUNDWATER, SURFACE WATER AND STORMWATER

WATER MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226

Prepared For:

Cross Verwijmeren Pty Ltd

Report Number:

AB209_MANAGEMENT PLANS

18-SEP-25

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DOCUMENT DETAILS

DOCUMENT ID	REPORT TITLE	REPORT NO	DATE	PREPARED FOR
JIM24-001_EIL_004_WATERMP_GA	WATER MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226	AB209_MANAGEMENT PLANS	18/09/2025	Cross Verwijmeren Pty Ltd

PREPARED BY

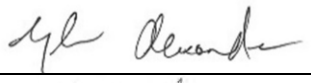
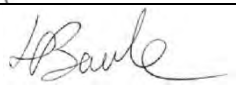
NAME	TITLE	ROLE	SIGNATURE	DATE
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		18/09/2025
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		18/09/2025

TABLE OF CONTENTS

1. WATER MANAGEMENT PLAN

The water management plans for the proposed extraction operations (ABEC, 2024) follow.

1.1. STORMWATER MANAGEMENT

- No surface water runoff from the working areas will be discharged to the surrounding unaltered landscape as any stormwater runoff will be contained within the base of the pit and retained within the extraction area.

1.2. GROUNDWATER MANAGEMENT

There will be no storage of fuels, lubricants or other toxic or hazardous chemicals on Site. Refuelling will take using a mobile refuelling vehicle which is equipped with a "snap-on snap-off", fast fill and auto shut-off facility. Plant will be refuelled each morning, leaving the vehicles almost empty overnight. No major servicing, which could lead to oil spills, will take place on Site. The Site Owner will have a Hydrocarbon Spill Management Plan outlining their procedures for controlling, recovering, treating and reporting hydrocarbon spills and this will be implemented in the unlikely event of a spill occurring.

1.3. WETLAND MANAGEMENT

No wetlands are present within the EIL area, as evidenced by the aerial imagery and topographic mapping, due to the small catchment and highly permeable land surface. As such, wetland management issues are not anticipated at the Site.

2. REFERENCES

ABEC. (2024). *Extractive Industries Licence Application And Environmental Management Plan, Lot 22 Edwards Road, Roelands Wa 6226. Report No. AB204.*

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APPENDIX 7: DUST ENVIRONMENTAL MANAGEMENT PLAN

DUST MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226

Prepared For:

Cross Verwijmeren Pty Ltd

Report Number:

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18-SEP-25

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DOCUMENT DETAILS

DOCUMENT ID	REPORT TITLE	REPORT NO	DATE	PREPARED FOR
JIM24-001_EIL_005_DUSTMP_GA	DUST MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226	AB213	18/09/2025	Cross Verwijmeren Pty Ltd

PREPARED BY

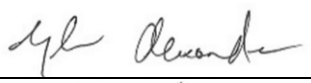
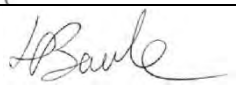
NAME	TITLE	ROLE	SIGNATURE	DATE
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		18/09/2025
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		18/09/2025

TABLE OF CONTENTS

1. DUST MANAGEMENT PLAN

The proposed sand extraction operation (ABEC, 2025) may emit dust to the atmosphere during dry and windy conditions from the following activities:

- Removing topsoil (if required);
- Excavation, handling and processing of the BRM using ripping, digging or blasting;
- Loading of haulage trucks; and
- Trafficking on unsealed surfaces.

Although there will be some uplift of the finer particle component of the BRM during extraction activities this will be limited. Although no residences are present within a 1km radius of the Site, the following dust measures will be implemented where necessary:

- A 15kl water cart will be on site during all periods when earth is being moved. If and when dust is caused to occur during these periods, the water cart will be employed to damp down the areas of concern.
- Water for dust suppression will be via the existing onsite dams or abstracted off-site from the nearest available commercial (scheme) source.
- If the wind is blowing strongly from the south east in the direction of the closest residence and conditions are dusty, then operations will be stopped until such time as adequate wetting down has occurred.
- A polymer-based spray-on soil stabilizer will be applied to topsoil and overburden stockpiles (if any) if they do not stabilize by crusting and grass regrowth.
- Truck loads will be covered so that no dust is generated in transit.
- A complaints system will be put in place and these will be recorded by the Quarry Manager and acted on promptly.
- A notice will be erected at the front gate and this will provide emergency contact details for the Quarry Manager.

2. REFERENCES

ABEC. (2025). *Extractive Industries Licence Application And Environmental Management Plan, Lot 22 Edwards Road, Roelands WA 6226. Report No. AB204.*

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APPENDIX 8: NOISE ENVIRONMENTAL MANAGEMENT PLAN

NOISE MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226

Prepared For:

Cross Verwijmeren Pty Ltd

Report Number:

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18-SEP-25

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DOCUMENT DETAILS

DOCUMENT ID	REPORT TITLE	REPORT NO	DATE	PREPARED FOR
JIM24-001_EIL_006_NoiseMP_ep	NOISE MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226	AB211	18/09/2025	Cross Verwijmeren Pty Ltd

PREPARED BY

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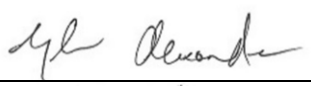
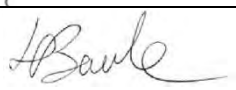
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		18/09/2025
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		18/09/2025

TABLE OF CONTENTS

1. NOISE MANAGEMENT PLAN

Noise (and vibration) is not anticipated to cause any issues due to the proposed activities, due to the isolated nature of the Site.

An Environmental Noise Impact Assessment (ENIA) commissioned to determine whether or not the noise emissions from the proposed quarry would comply with the Environmental Protection (Noise) Regulations 1997 (the Regulations). The acoustic assessment report details are:

- *Environmental Noise Impact Assessment of Granite Quarry at Edwards Road Roelands,* Acoustic Engineering Services (AES) document ID: AES-890410-R01-A-01092025, 1 September 2025, (AES, 2025).

AES (2025) found that found that full compliance was achieved for the proposed quarry.

1.1. MANAGEMENT

The following noise management plan will be implemented for the life of the Project to ensure that Site works do not result in the generation/emission of unacceptable levels of noise that has the potential to affect the amenity to nearby residents.

As detailed in (AES, 2025) the nearest noise sensitive premise (i.e. residents) in this rural area are more than 1.6km away, significantly greater that the recommended 300-500m separation distance for Extractive Industries (EPA, 2005) . Notwithstanding, the following noise management measures will be implemented for the life of the project.

1.2. MEASURES

The following noise management measures will be implemented for the life of the Project:

- Noise generating activities will be restricted to the Monday to Saturdays 7am to 7pm.
- Select quietest equipment available and install silencers to reduce exhaust noise, where possible.
- Restrict the operation of machinery relative to worst case weather conditions to minimise potential noise impacts.
- Internal traffic routing will be designed and optimised to reduce vehicle reversing requirements.
- Establish preventative maintenance schedules for all vehicles, fixed plant and mobile equipment.
- Educate employees and contractors on the importance and requirements for noise management prior to commencing work at the Site, as part of a site induction process.
- Maintain ongoing effective dialogue with nearby residents to ensure noise impacts are communicated to the Site Owner to allow for rapid resolution.
- Implement an effective noise complaint communication system to ensure all concerns are received, recorded and acted upon.
- Investigate and implement methods to reduce noise emissions in accordance with best practice when required (e.g., complaints received).
- Amendment of management measures as required to ensure noise is minimized as far as practicable.

2. REFERENCES

ABEC. (2024). *Extractive Industries Licence Application And Environmental Management Plan, Lot 22 Edwards Road, Roelands WA 6226. Report No. AB204.*

AES. (2025). *Environmental Noise Impact Assessment of Granite Quarry at Edwards Road Roelands, 1 September 2025; Acoustic Engineering Solutions (AES).*

EPA. (2005). *Separation Distances Between Industrial and Sensitive Land Uses, Guidance for the Assessment of Environmental Factors (In accrodance with the EPA Act 1986) No.3.* Environmental Protection Authority (EPA).

APPENDIX 9: REHABILITATION ENVIRONMENTAL MANAGEMENT PLAN

REHABILITATION MANAGEMENT PLAN, LOT 22 EDWARDS ROAD, ROELANDS WA 6226

Prepared For:

Cross Verwijmeren Pty Ltd

Report Number:

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4-OCT-24

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DOCUMENT DETAILS

DOCUMENT ID	REPORT TITLE	REPORT NO	DATE	PREPARED FOR
JIM24-001_EIL_007_RehabMP_ep	Rehabilitation Management Plan, Lot 22 Edwards Road, Roelands WA 6226	AB212	4/10/2024	Cross Verwijmeren Pty Ltd

PREPARED BY

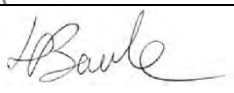
NAME	TITLE	ROLE	SIGNATURE	DATE
Elodie Payet	Environmental Scientist	Co-Author		4/10/2024
Bridget Churack	Environmental Scientist	Co-Author		4/10/2024
Glen Alexander	Principal Environmental Scientist	Author/Reviewer		4/10/2024
Damon Bourke	Principal Environmental Scientist	Author/Reviewer		4/10/2024

TABLE OF CONTENTS

1. REHABILITATION MANAGEMENT PLAN

Rehabilitation of the extraction area will aim to create landforms that are safe, stable, erosion-resistant, and aesthetically pleasing to support the ongoing use that is consistent with the current zoning for general farming and a place of landscape value.

Closure of the extraction area (SRP) is not proposed at this stage. The BRM resources extraction has a lifetime greater than 20 years. It is, however, possible that the BRM pit is closed temporarily or at completion of the EIL period, and therefore a suitable rehabilitation plan is necessary. The following sections detail the Plan.

1.1. PROPOSED REHABILITATION MEASURES

The proposed excavation area will be progressively rehabilitated during the life of the project using the following approach:

- Available topsoil that is removed from the extraction footprint will be retained and stockpiled in the immediate vicinity of the area for later re-use in rehabilitation of the area.
- The base of the SPR Phase 1 excavation is likely to be 153maHD.
- Pit construction will use 10m batters at 70° with 3m benches and will be made safe and stable;
- As far as practically possible, at completion of extraction, the pit floor will be ripped along the contour to remove potential compaction and allow the establishment of low mounds for stormwater infiltration and seedbeds.
- The resultant landform will be suitable for and consistent with the current zoning.
- The previously described weed management plan will be undertaken.
- The end land use will be ongoing general faming.

1.2. MONITORING AND MAINTENANCE

Monitoring of the rehabilitated landforms (extraction pits, haul roads and Alternative ROM) will be conducted periodically, including after each significant rainfall event, to identify any areas that require remedial work. Monitoring will assess:

- Physical stability and erosion of pit walls, floors and surrounding areas;
- Emergence of weeds.

Maintenance will be conducted as needed and may include the following:

- Stabilisation of pit walls;
- Repair any erosion;
- Weed control.

1.1. COMPLETION CRITERIA

The following completion criteria have been developed to ensure the overall objective of rehabilitation has been achieved.

CRITERIA	OBJECTIVE	COMPLETION CRITERIA
Safety	The Site is safe to humans	Site is made safe to humans
Sustainability	The Site is sustainable in the long term without additional management inputs.	No management inputs required to make Site sustainable.
Suitability	The Site is suitable for the agreed end landuse.	The end landuse of general farming with landscape value is achieved.
Visual amenity	The rehabilitated extraction areas blend into surrounding land use.	Rehabilitated extraction areas blend in with surrounding landuse.
Off-site impacts	Prevention of off-site impacts.	No adverse off-site impacts.
Hydrology	Site hydrology does not adversely affect return of the site grounds to general agriculture. Stormwater runoff is contained within the Site. Site hydrology does not reduce stability of the landform.	Regeneration of vegeation suited to general farming use is successful. No stormwater runoff exits the Site bounds. Landforms are stable and free from erosion.
Soils and stability	Soil profiles support the end landuse of agriculture.	No erosion is present in the landforms. The Site can support general farming activities.
Weeds	Declared pest weeds are absent from the excavation areas. Weed levels not adversely affect generation of sown grass species.	No declared weed species present within the extraction areas. Declared weed species removed systematically during operations.
Infrastructure	No screening, crushing or processing equipment present on site.	All infrastructure removed from Site.

2. REFERENCES

ABEC. (2024). *Extractive Industries Licence Application And Environmental Management Plan, Lot 22 Edwards Road, Roelands Wa 6226. Report No. AB204.*

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