Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6913/2024/1
Applicant	BGC (Australia) Pty Ltd
ACN	005 736 005
File number	DER2024/000069
Premises	Midland Brick Caversham 29 Harper Street CAVERSHAM WA 6055 Part of Lot 2984 on Plan 202244, Lot 2985 on Plan 202244
Date of report	26 February 2025
Decision	Works approval granted

Lauren Edmands
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A/SENIOR MANAGER, RESOURCE INDUSTRIES

INDUSTRY REGULATION (STATE-WIDE DELIVERY)

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6913/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 16 February 2024, BGC (Australia) Pty Ltd (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act). The application is to undertake construction works and time-limited operations at Midland Bricks Caversham relating to Category 13: Crushing of building material, Category 61A: Solid waste facility, and Category 77: Concrete batching or cement products manufacturing as defined in Schedule 1 of the *Environmental Protection Regulations 1987* (and as listed on the works approval).

The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6913/2024/1.

2.3 Overview of prescribed premises

The application is to undertake construction works relating to the construction of a reconstituted limestone manufacturing facility, located on Harper Street in Caversham, where the applicant intends to process and store recycled concrete material from other sites owned by the applicant.

The premises was previously licence under L6825/1967/17 which was owned by Austral Bricks (WA) Pty Ltd. Previous infrastructure continues to exist from previous operations.

As per the comments provided by the City of Swan, the relevant Local Government Authority, the proposed use of the site for the manufacturing of reconstituted limestone blocks is consistent with Schedule 4 of Swan Valley Planning Scheme No.1 (SVPS1) where the land is zoned Special Use Zone No.1 with the following bespoke land use permitted on the subject lots: *Manufacture and Sale of Building Products and Associated Activities including Clay Extraction.*

2.4 Overview of prescribed activities

2.4.1 Stage 1 and 2 of demolition and construction

The applicant intends to partially demolish and reuse the existing infrastructure from previous operations, this includes:

- Raw material storage area
- Concrete batching area
- Block manufacturing hardstand
- Drainage infrastructure

The demolition activities are not considered as a prescribed activity and are outside the scope of this assessment.

Stage 1 of the development will construct or install additional infrastructure on the premises for the proposed concrete batching plant, this includes:

- 6 x two-sided raw material bins (18 m x 15 m x 3 m) (2 x gravel; 1 x quarry stone; 2 x limestone; 1 x Tianqi Alumina Silicate)
- Reclaimed concrete storage area (36 m x 15 m)
- Reclaimed concrete crushing plant (vibrating feeder, jaw crusher, cone crusher, vibrating screen, belt conveyors)
- Crushed concrete storage area (31 m x 15 m)
- Concrete batching plant (Orumultis 55 M-B or similar)
- 3 x raw material silos: 2 x 55 m^3 (77 tonne) cement silos; 1 x 70 m^3 (98 tonne) lime silo; each silo includes an air cleaning system, level indicator, pressure gauge, and audible alarm. The applicant has confirmed that the air cleaning system is a filter system where dirt is removed off the filters by vibration which results in the filters being kept free of dust contamination. This also reduces the incidences of pressurisation of the silo which would result if filters clogged up. As the vibration removes dust off the filters there is very minimal chance of dust emissions through the filters into the atmosphere
- Finlay Block Machine (F44-L or similar), for construction of block materials

Stage 1 intends to be in operation for 3 years before Stage 2 is implemented which is the construction of a new shed over the block manufacturing area's existing hardstand (marked as 'New Shed' in Figure 2). The layout for the prescribed premises and the location of infrastructure is shown in Figure 1 and Figure 2.

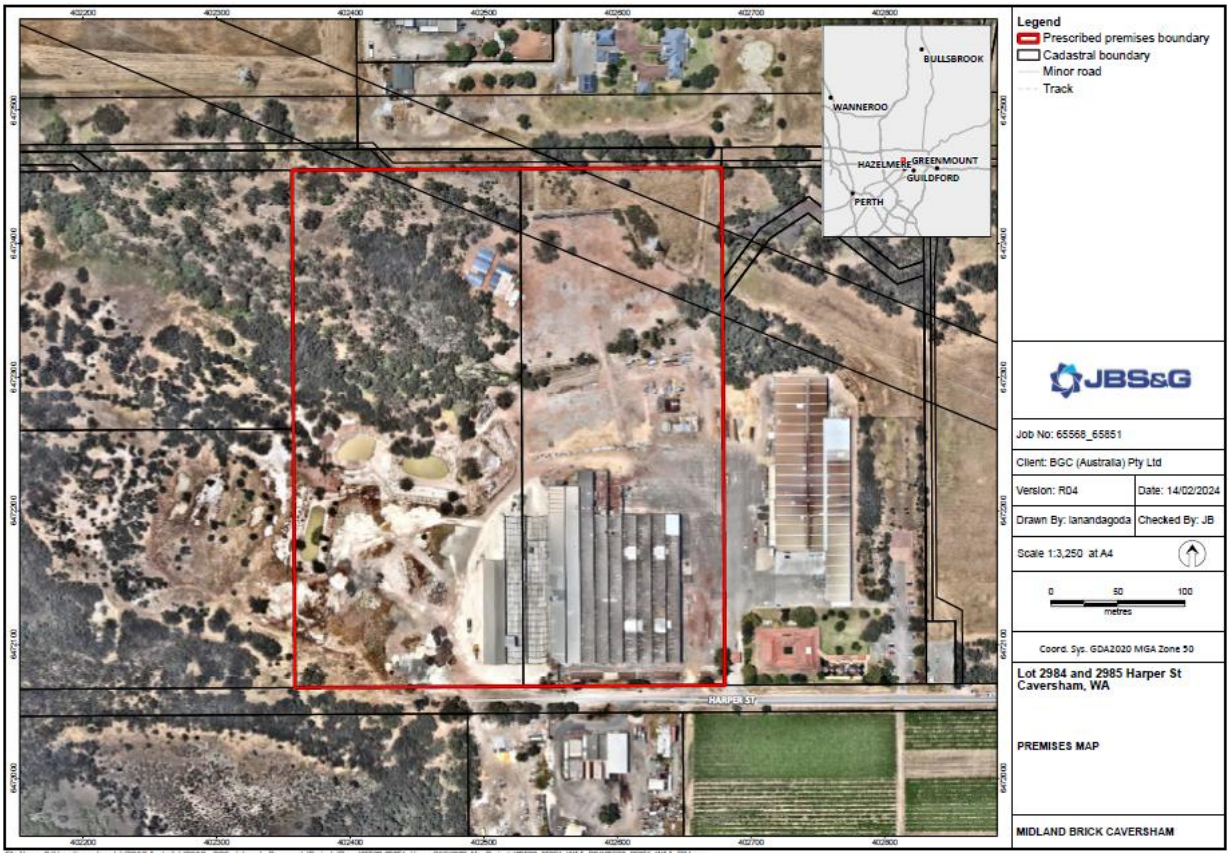

Figure 1: Layout of the prescribed premises boundary

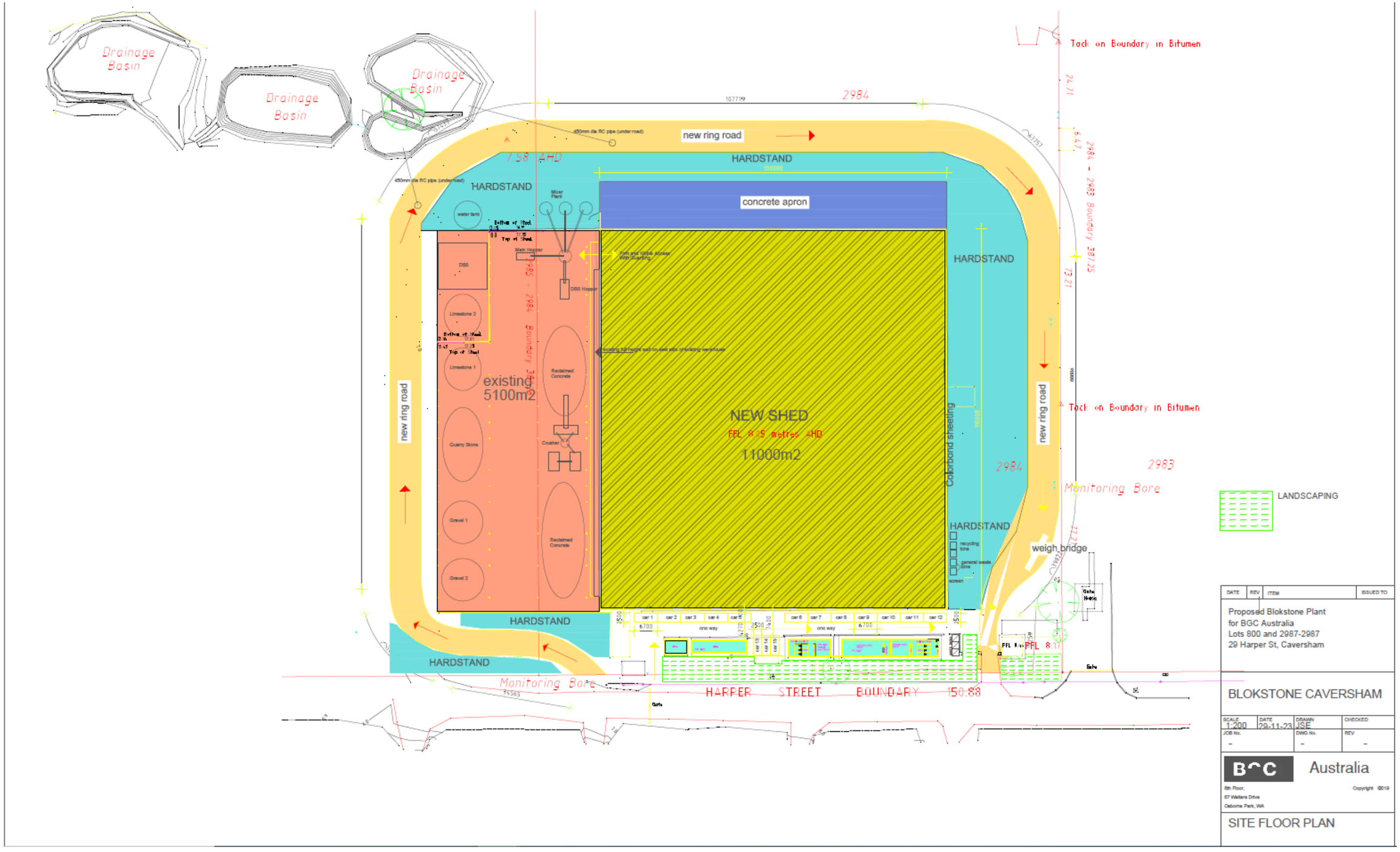

Figure 2: Infrastructure layout within the prescribed premises boundary

2.5 Stormwater Management

The applicant has developed a Stormwater Management Plan to ensure that stormwater runoff from the premises does not cause detriment to nearby waterways. The applicant intends to reuse a stormwater drainage system which has existed within the site since 2006 (Figure 3). In addition to the existing infrastructure a swale drain will be constructed along the western edge of the ring road for runoff from the western portion of the proposed development.

The site has grated pits which are interconnected with pipes that flow to drainage basins (Figure 4). The drainage basins are all interconnected to one another and serve to settle solids before discharge to Bennet Brook. The basin system has been designed to retain a 1 in 100-year rain event and water from the basins will be utilised in the block making process and for dust suppression.

There are currently four basins however only three basins, 1, 2 and 3, will form part of the stormwater drainage system. The lowest invert levels of three basins are RL 5.4m, which is 3.6m above the maximum groundwater level of RL 1.8m AHD. The basins do not intersect the groundwater table.

Basin 3 is the first point of discharge and is connected to Basin 2 via a pipeline, once the water level in Basin 2 and 3 reaches RL 6.2m, Basin 2 then overflows above ground via a shallow swale drain to Basins 1 and 4. However, Basin 4 will not form part of this system and the interconnecting swale between Basins 2 and 4 will be removed. Basin 1 serves as the only discharge point to the creek system via the overflow pipe at the rear of the basin.

The applicant intends to plant native vegetation at the overflow and outfall points to help reduce erosion and assist in filtration. The applicant will have the stormwater runoff directed to Basins 2 and 3 to allow the sediments to settle out, then overflow to the most downstream basin (Basin 1) which will be planted out, and the water treated by biofiltration. During larger storm events, the cleaner stormwater will overflow to Basin 1 and be treated with biofiltration.

The applicant intends to install an oil/water interceptor pit/s in Basin 3 to ensure hydrocarbons and oils/grease do not enter the basin system.

To control the outflow from Basin 1 to the creek in the north, a grated 1800mm diameter stormwater pit is to be installed within Basin 1 with a 225mm diameter overflow pipe. The pit will have a grated lid set at RL 6.0m, which will only allow stormwater from Basin 1 to flow out once the water level in the basin reaches RL 6.0m. The locations of the pit and pipe are shown in Figure 3.

The top of the bank for Basin 1 will be set at RL 6.2m AHD, with an emergency overflow point provided within the northern bank, filled to RL 6.15m AHD in the event that the stormwater pit becomes blocked.

Scour protection will be provided at the downstream end of the 225mm diameter overflow pipe and along the bank of Basin 1 to minimise erosion. The scour protection will be provided in the form of unmortared rocks on geofabric, planted with ground covers, shrubs and trees lining the sides of the outflow. The rock sizes and detailed scour protection design will be provided in the detailed design stage.

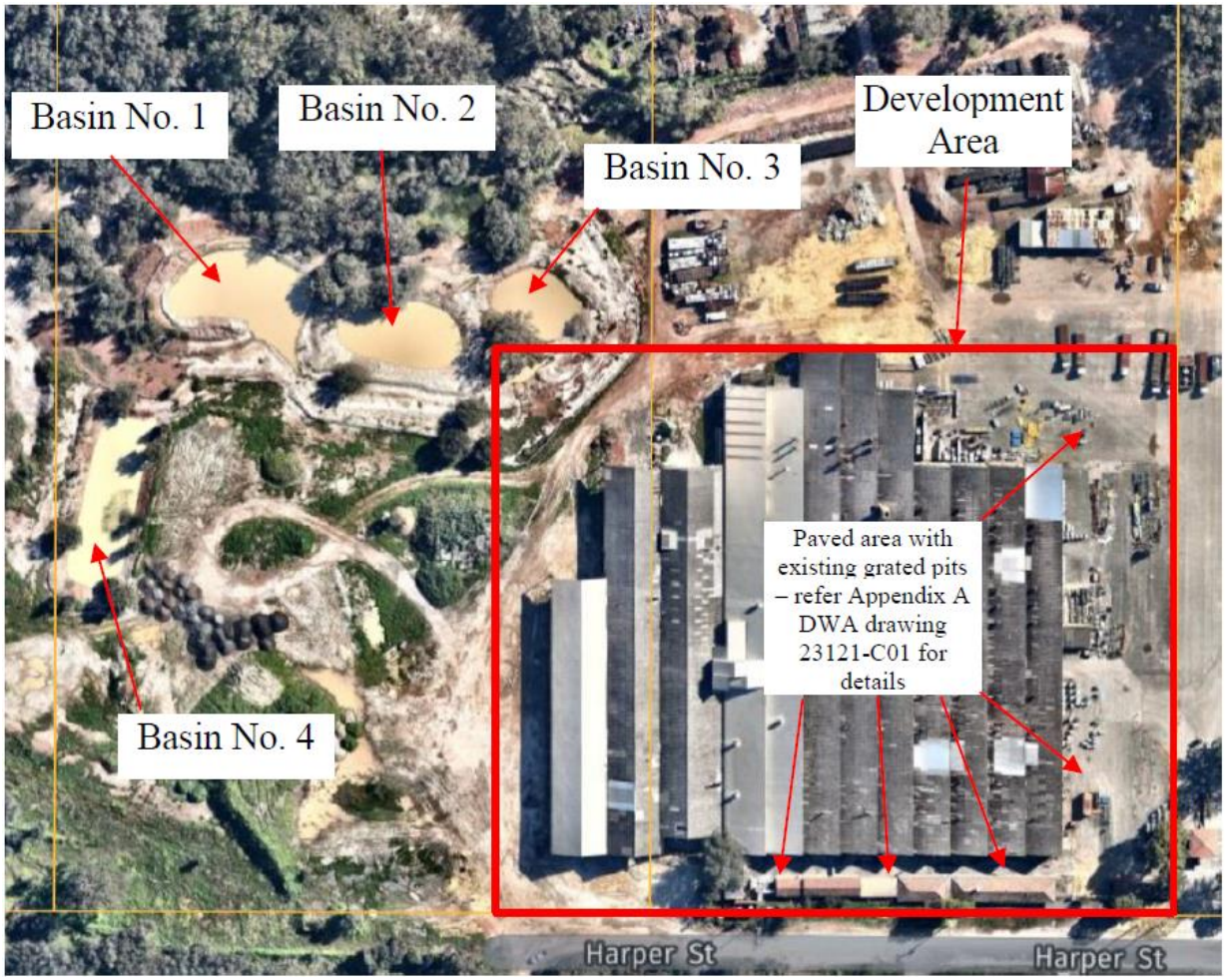

Figure 3: Stormwater management layout of basins

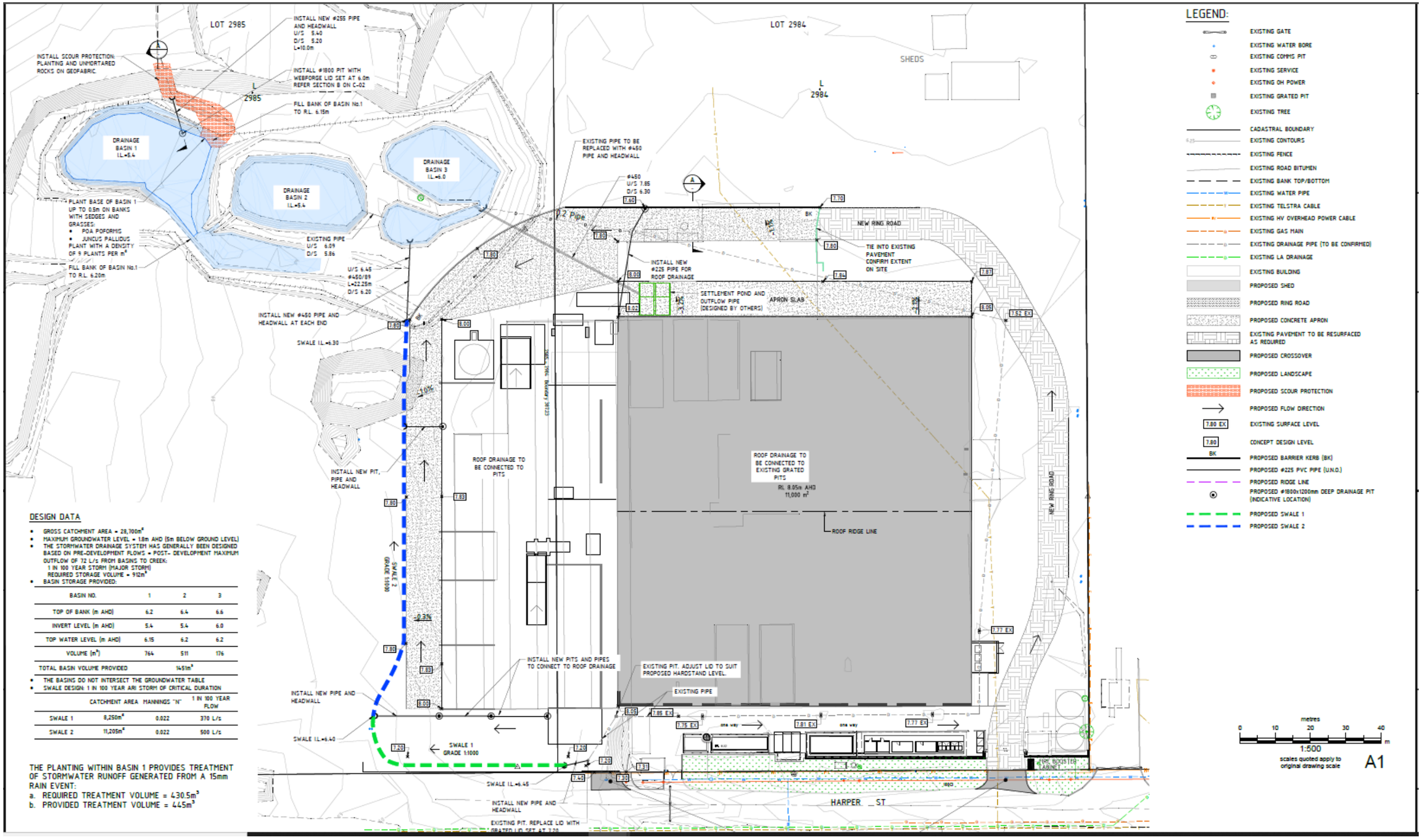

Figure 4: Stormwater drainage pit and pipeline layout

2.5.1 DWER Stormwater Management Review

The department reviewed the Stormwater Management Plan provided with the application and upon review, required the applicant to revise the plan to address the below concerns:

- The premises has (and will continue to) discharge highly turbid stormwater into the adjacent waterway. This is not considered acceptable and would be contrary to the Stormwater Management Manual (DWER, 2004), and State Planning Policy 2.9 – *Water Resources, and water sensitive urban design*. The significance of the turbidity issue is evident from aerial photography.
- The Stormwater Management Plan contains virtually no information on water quality management. The applicant must identify the source of turbidity, why the stormwater settling basins (which are stated as "the interconnected basin system allows suspended solids to settle out") appear to be highly turbid, and what structural and non-structural actions will be undertaken to resolve this turbidity.
- Aerial photography appears to show a significant amount of sediment build-up in the adjacent waterway/wetland area that is potentially from this site. The department would not support the discharge of any stormwater from this site until a satisfactory management plan has been provided.
- The Department's Stormwater Management Manual (DWER, 2004) provides sufficient options for the management of turbid stormwater, although depending on the source of the turbidity may require additional management options. This is further complicated by the proposal to decommission Basin 4 which appears to be necessary to manage turbidity.

The applicant, with the above comments from the department and additional input provided to them from the Department of Biodiversity, Conservation, and Attraction (DBCA), responded by providing an updated Stormwater Management Plan, as well as providing a Drainage and Stormwater Monitoring and Maintenance Plan (DSWMMP). The DSWMMP addressed the issue of existing sediment build up in the basins by removing sediment from the basins and swales yearly in summer months, and as required. The sediment will be placed in the crushed material bay to be mixed through for production of recycled backing blocks. DBCA also supported the Stormwater Management Plan. Stormwater controls are discussed further in Section 3.1.1.

2.6 Noise Modelling

The department has conducted a technical review of the noise assessment for the premises prepared by Herring Storer Acoustics (HSA). Noise modelling software was used to predict noise levels at nearby noise sensitive receptors (Figure 5) under the worse-case scenario of all the mechanical noise sources operating simultaneously to simulate the maximum noise received at a noise sensitive premises (residence).

Stage 1 will utilise the existing shed on site, with the block laying machine operating on an adjacent hardstand. Stage 2 will see a shed built on the hardstand area, and the block laying machine will then operate within the new shed. Modelling was performed for both stages of the operation, and resultant noise levels at the noise sensitive premises obtained.

Figure 5: Noice receptors around the proposed development

2.6.1 Modelling results

The applicant's modelling predicts that noise levels will comply with the assigned levels specified in the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations). A summary of the applicant's predictions for Stage 1 and Stage 2 during daytime hours (7am to 7pm Monday to Saturday, 9am to 5pm Sundays and Public Holidays) are provided in Tables 1 and 2.

Table 1: Assessment of noise level emissions – Stage 1

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{A10} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
I1	49	Day Period	65	Complies
I2	52	Day Period	65	Complies
I3	48	Day Period	65	Complies
C1	35	Day Period	60	Complies
C2	34	Day Period	60	Complies
R1	32	Day Period	46	Complies
R2	32	Day Period	45	Complies
R3	40	Day Period	46	Complies
R4	38	Day Period	45	Complies
R5	36	Day Period	45	Complies

Table 2: Assessment of noise level emissions – Stage 2

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{A10} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
I1	44	Day Period	65	Complies
I2	48	Day Period	65	Complies
I3	43	Day Period	65	Complies
C1	25	Day Period	60	Complies
C2	34	Day Period	60	Complies
R1	22	Day Period	46	Complies
R2	32	Day Period	45	Complies
R3	40	Day Period	46	Complies
R4	38	Day Period	45	Complies
R5	36	Day Period	45	Complies

2.6.2 DWER Noise Assessment Review

The department reviewed the noise report and identified that:

- The methodology of the noise modelling for both operation scenarios, including the model inputs and assumptions, seems correct. The identification of the nearby noise receivers (including industrial, commercial and residential) seems correct and complete for the noise assessment. The Influencing Factors, as well as the assigned noise levels calculated for each of the receivers seem correct.
- There also seems to be industrial operations on the neighbouring lands, such as Lot 2983 (28) Harper Street and Lot 2996 (33) Harper Street. In the situation that the existing industrial noise levels at the sensitive premises are high, then noise generated from the proposed operation may significantly contribute to a level of noise which exceeds the assigned level in respect of noise received at the closest receivers. In accordance with Regulation 7(2) of the Noise Regulations, noise emission levels from the proposed project needs to be 5 dB below the assigned noise level for it not to be taken to 'significantly contribute to' that level. HSA may be required to present the ambient noise assessment results, which needs to demonstrate that the existing noise levels generated by other industries are low and not cumulative.
- The major issue is that the modelled noise levels are not able to be at least 5 dB below the assigned noise level at all receiving locations, particularly at R3 and possibly including C1 (if it is treated as a residential). This requirement needs to be met for not to 'significantly contribute to' a level leading to the exceedance of the assigned noise level, when there are other operations in the area.

The department provided the above comments to the applicant and an updated noise assessment was provided as a response to these queries. The applicant has added controls to construct a 1.8m high noise barrier spanning the southern end of the hardstand to be constructed in Stage 1. The applicant has also changed the sound power level of the Block Laying Machine, which is reduced from the previous 114 dB(A) to 105 dB(A); a significant reduction. HSA has advised that this reduction was made through muffling the exhaust, as well as the addition of acoustic panelling. The new sound power level of this machine was measured on the 22 October 2024.

The Block Laying Machine is the number one noise source of the operation. The 9 dB reduction will result in significantly lower predicted noise emission levels at the neighbouring receiving locations, as modelled by HSA in the revised report. Noise compliance is now predicted to be achieved at all receiving locations.

2.7 Air Quality – Dust emissions

The proposed concrete batching plant is to be considered as source of dust during construction and operation with the primary concern being dust leaving the premises. Dust emissions from these types of operations may contain asbestos or silica. In addition, the applicant proposes to accept delithiated β (beta)-spodumene by-product (known as TAS or DBS) from Tianqi Lithium Kwinana Pty Ltd's lithium refinery, which operates under works approval W5977/2016/1. TAS/DBS may contain asbestos, respirable crystalline silica (RCS) and heavy metals.

Due to the premises being in close proximity (<100m) to local vineyards and residential areas, there is a risk of dust deposition occurring on produce from the vineyards as well as reducing air quality, health and amenity to the surrounding residential receptors. Commercial vineyards may be at risk of having produce being contaminated by the deposition of dust which could cause issues with produce sales and production quality. These concerns were raised by local receptors during the application's public consultation period (further details in Section 4).

The department has consulted with the Department of Primary Industries and Regional Development (DPIRD) regarding the potential impacts of dust and airborne emissions to vineyard health and biosecurity. DPIRD has recommended for external monitoring to be undertaken to measure dust levels, and to ensure that the emissions do not exceed relevant thresholds. DPIRD expects the applicant will adopt vehicle hygiene practices to ensure machinery entering or leaving the facility will be clean of loose soil or declared species (plants / insects).

The applicant has proposed controls to manage dust lift-off from active construction areas and intends for majority of the dust emissions to be contained by the shed covering the proposed activities. The applicant intends to have water carts available on site to hose/water down surfaces within the premises alongside sweeping.

The applicant's supporting documentation discussed an analysis of the TAS/DBS and stated that the testing undertaken on the material *shows nothing of concern regarding asbestos, RCS or heavy metals.* However, the applicant has confirmed that as TAS is a known crystalline silica substance (CSS), there is always a risk that RCS may be present.

The department has conditioned PM_{10}, RCS and dust deposition monitoring to be done by the applicant to quantify the risk of dust emissions. The monitoring is intended to be undertaken monthly for the first 12 months and quarterly after to ensure there is sufficient data to inform future controls. The department is able to revise the controls in the future to ensure that there are no adverse effects on air quality and other environmental receptors. The applicant's proposed controls for dust are discussed further in Section 3.1.1.

2.8 Concrete Batching Regulations

The proposed design and operation of the premises will be subject to the requirements of the *Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998* (Concrete Batching Regulations), which the applicant has committed to complying with.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway, and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction / time-limited operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Installation of new shed, crushing plant, silos, concrete plant, and storage bins Vehicle movements (including reversing alarms)	Air/Windborne	• Regular sweeping or hosing/watering down of surfaces within the premises. • A 15km/hr speed limit will be enforced on site. • A 9kL water cart will be present on site and will be filled by the Harper Street Standpipe at the commencement of the daily operations and as required.
Noise			• Construction hours limited to Monday to Saturday 0600-1800 and 0900-1700 on Sundays and Public Holidays *The department notes that 0600 – 0700 is considered night-time hours and noise modelling was only undertaken for day-time hours.* • Non-tonal reversing beepers will be used on all mobile plant and equipment. • Effective exhaust mufflers will be fitted on mobile and stationary equipment. • Equipment will be maintained in good working order. • A complaints procedure will be implemented at the premises.
Operation (on next page)			

Emission	Sources	Potential pathways	Proposed controls
Dust (particulates and RCS)	Loading and unloading materials Storage of materials and TAS Operation of concrete batching plant, crushing screening plant, and block forming equipment Vehicle movements	Air/Windborne	• TAS received at site has been tested and will be monitored to confirm it does not contain any concerning amount of RCS. • When unloading, if any visible dust escapes from the site, the activity will stop immediately and will not resume until appropriate measures have been taken to ensure no further dust escapes. • The concrete batching plant feed hoppers will have wind shields fitted. • The crusher, mixing plant and hoppers will be located undercover in the existing covered shed. • Materials to be kept undercover within the shed. The height of material in a storage bin will not exceed the height of the bin. • Installation of sprinkler system around hardstand. • The vibrating air cleaning system in each silo will be inspected at least weekly. Any blocked or damaged filters, or filters with excessive build of dust, will be cleaned, repaired or replaced as soon as practicable. • Meteorological conditions will be checked daily to plan and modulate site operations. • All plant and equipment will be maintained in good working order. • Fugitive dust emission inspections will be conducted on a regular basis in accordance with a documented site operational procedure; the results of all inspections will be documented and recorded. • TAS will be stored under cover on concrete hardstand.
Noise	Loading and unloading materials Operation of concrete batching plant, crushing and screening plant, and block forming equipment Vehicle movements (including reversing alarms)	Air/Windborne	• Operational hours limited to day-time hours only (Monday to Saturday 0700-1900 and 0900-1700 on Sundays and Public Holidays). • Crushing, concrete batching and block forming carried out in covered, partially enclosed sheds. • Non-tonal reversing beepers will be used on mobile plant and equipment. • 1.8m high noise barrier spanning the southern end of the hardstand to be constructed in Stage 1. • Effective exhaust mufflers will be fitted on mobile and stationary equipment. • Equipment will be maintained in good working order. • A complaints procedure will be implemented at the premises.

Emission	Sources	Potential pathways	Proposed controls
Sediment laden stormwater and wastewater	Storage of raw materials	Overland Runoff	• Stormwater and surface water from the yard area drains to the basins located northwest of the main operations via drains and swales. • Planting suitable native species at the overflow and outfall points of Basin 1 to reduce erosion from large rain events. Planting of sedges and grasses in Basin 1 to assist in nutrient filtration. • Swales and drainage channels/stormwater drains and the oil/water separator pit are to be maintained regularly and as required. • Cleaning out drains and oil/water separator pit with the vacuum truck • Utilising a bobcat/dingo to clean out sediment from swales/drainage channels. • Removal of other waste and obstructions from the swales and/or drains and basins. • Monitoring of the swales, drains and basins daily by visual assessment for hydrocarbons. If hydrocarbons get into the basin system, the design of it retains hydrocarbons in Basin 3, where hydrocarbons, if found, can be removed by skimmer booms. • Overflow from Basin 1 to be monitored visually during rain periods. • Monitoring of hydrocarbon bunds near diesel storage tanks and washdown areas. The main diesel storage tank is a self-bunded tank (double skinned). • Sediment to be removed from basins and swales and placed in crushed material bay to be mixed through for production of recycled backing blocks. • Monitoring of basin water quarterly and then twice a year going into the licence, this is to be conducted regularly in accordance with regulations and the Storm Water Management plan.
Leachate from TAS[1] storage	TAS Storage	Overland Runoff	• TAS will be stored under cover on concrete hardstand. • Moisture content of TAS will be maintained at optimal levels to prevent leachate being generated. Any leachate escaping outside of storage bins will be immediately contained and collected.
Asbestos / asbestiform fibers within dust	Materials received from other BGC sites for crushing and screening		Only material received from other BGC owned sites will be received at the premises for crushing and screening. This reduces the risk of materials containing asbestos as the applicant has control over the material being accepted and it is only being received from an asbestos-free stream.

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 4 and Figures 6, 7, 8, and 9 below provides a summary of potential human and environmental receptors that may be impacted because of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from activity / prescribed premises**
Residents	• 50 m north and 50m south of prescribed premises - residential property
Commercial	• 20 m south of prescribed premises – commercial industrial site • 100 m north of prescribed premises – commercial building
Agricultural	20 m south of prescribed premises - vineyard
Environmental receptors	**Distance from activity / prescribed premises**
Threatened and Priority Flora	Within the prescribed premises: • *Carex tereticaulis* – potentially no longer there - last recorded 1999 The prescribed premises is an existing site with previous works done to the land. Potentially no vegetation exists within the site as it has been cleared for infrastructure. No clearing is proposed as part of this application.
Underlying groundwater	Groundwater is present at depths of approximately 7.7 meters below ground level (mbgl) with the base of the aquifer at 14.00 mbgl. (Perth Groundwater Map) The applicant has provided information demonstrating that groundwater wells on site from previous reporting (Talis, 2018) indicate groundwater to be between 3.62 mbgl to 7.25 mbgl. Information provided in the Perth Groundwater Map indicates that groundwater is considered to be fresh (TDS 250 – 500 mg/L) and regional flow is in a south easterly direction towards the Swan River.
Threatened Fauna	Carnaby black cockatoo (*Zanda latirostris*) – previously sighted 300m from prescribed premises Quenda (*Isoodon fusciventer*) – previously sighted 800m from prescribed premises The nearby river (Bennet Brook) and its associated wetlands serve as a habitat for numerous native fish, reptiles, mollusks, crustaceans, and macroinvertebrates.
Surface waterbodies	The Bennet Brook and its associated wetlands is located 200m west of the premises. A lake is located within the wetland adjacent to the premises and is a declared lake under the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992*.

	It flows through Mussel Pool and runs into the Swan River. There is a system of wetlands that are interconnected along Bennett Brook. The brook holds significance to the Aboriginal people as hunting grounds and as a water source, with some of the wetlands associated with the brook being considered a conservation category wetland.

The prevailing 9am wind direction is an easterly towards Bennet Brook and the wetland system. The closest receptors to the west of the premises are over 1 km away. The 3pm prevailing wind direction is from the south-west towards the northern vineyards and residence.

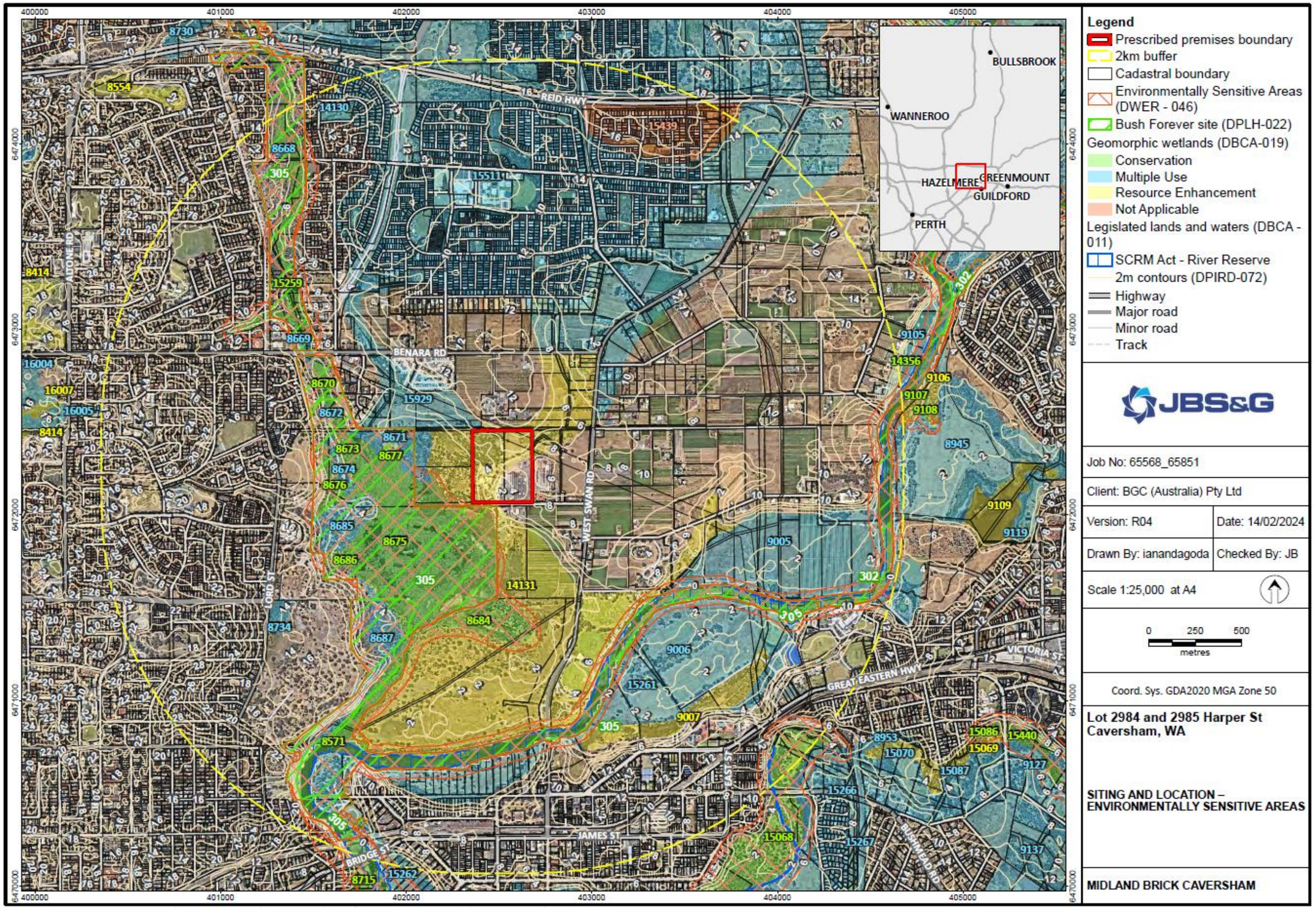

Figure 6: Prescribed premises distance to environmentally sensitive areas

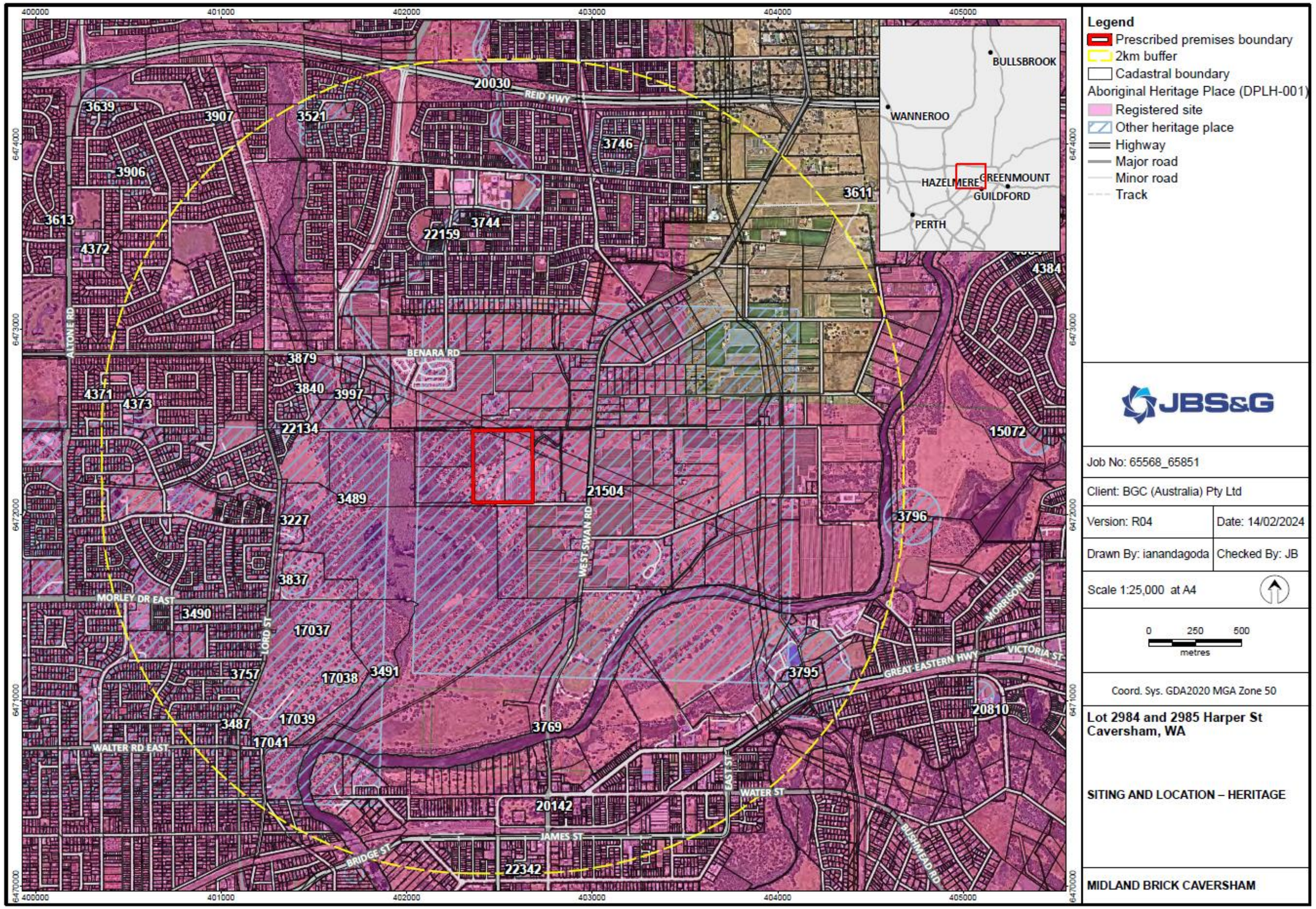

Figure 7: Prescribed premises distance to heritage sites

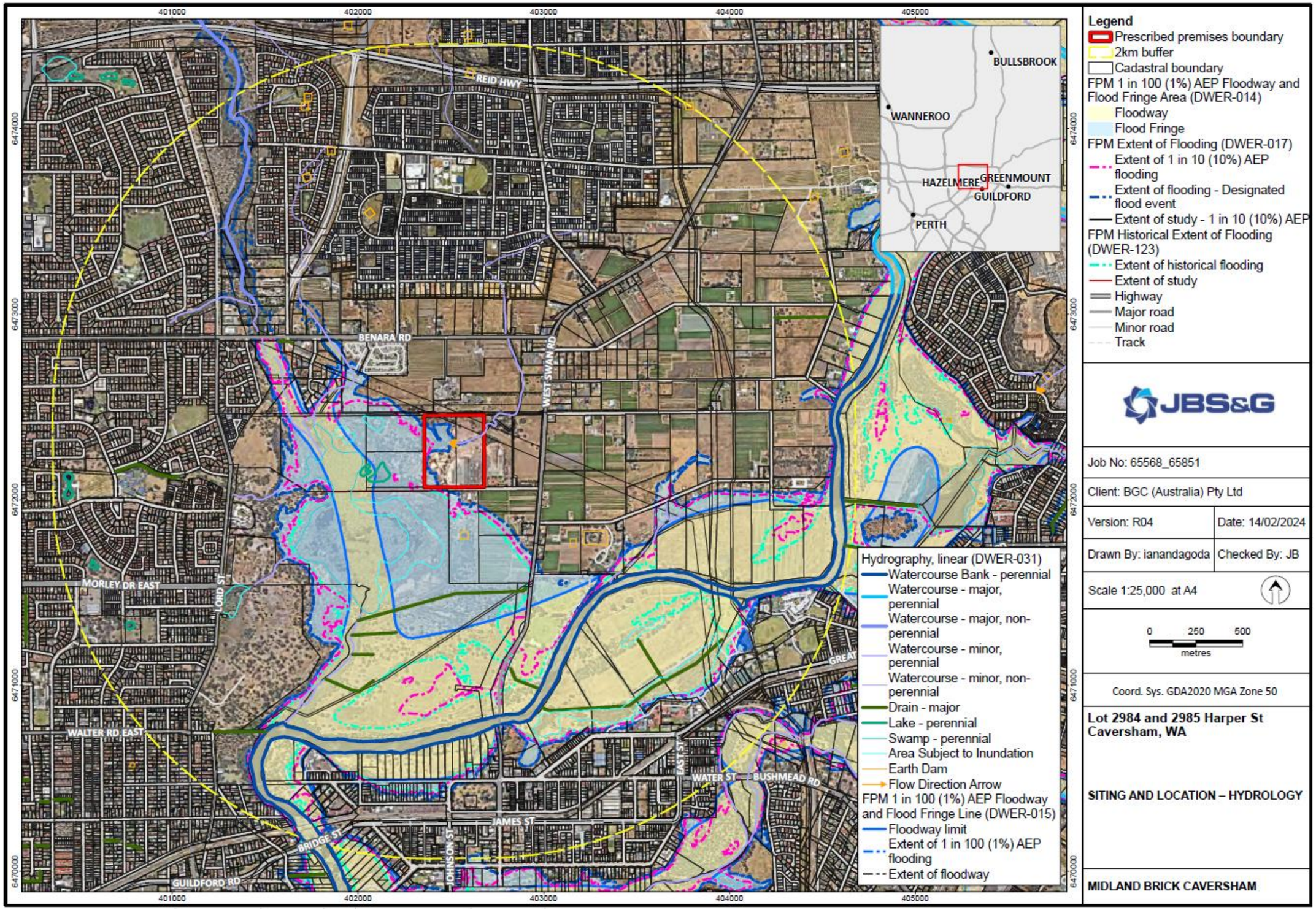

Figure 8: Prescribed premises distance to surface waterbodies and lines

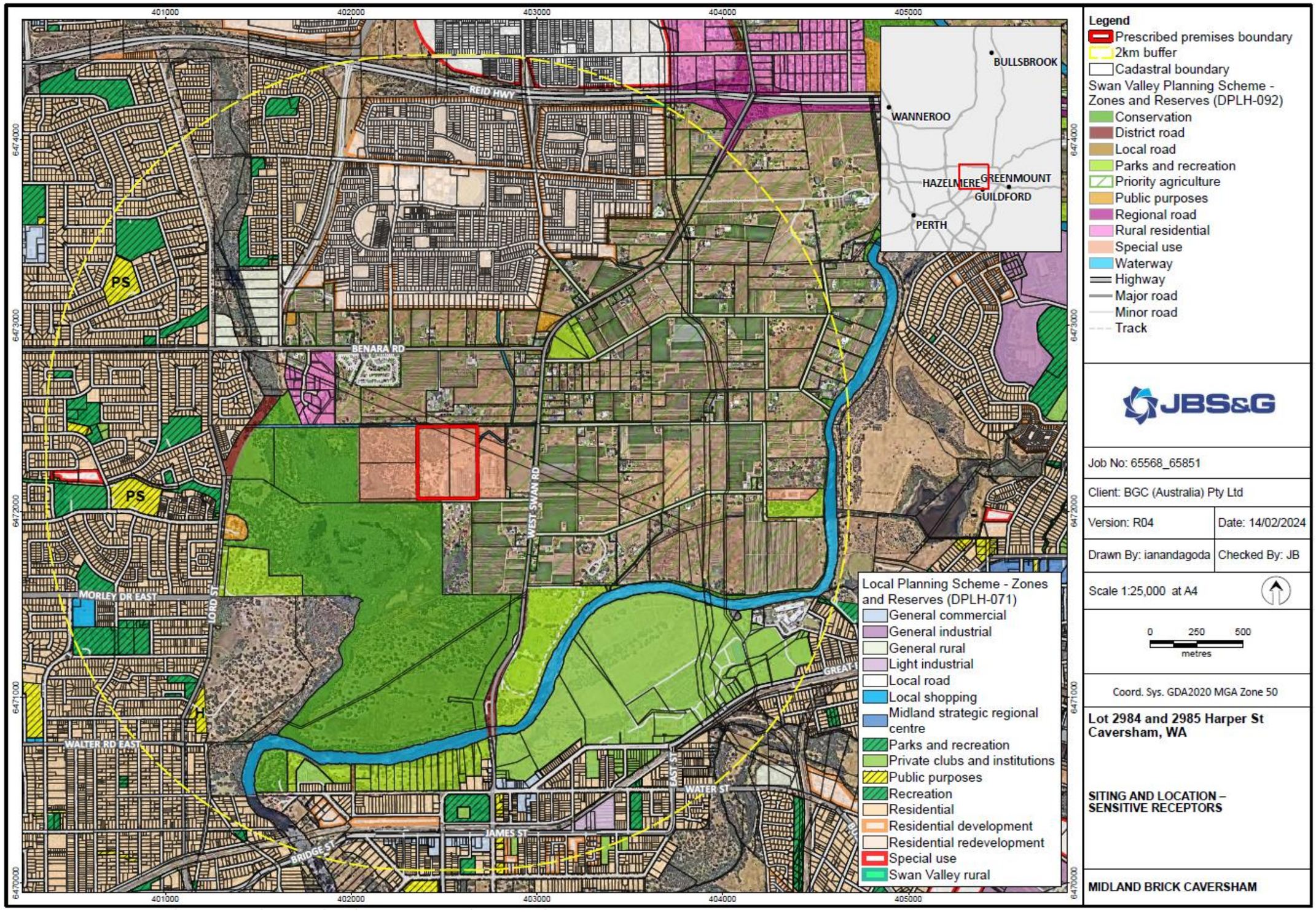

Figure 9: Prescribed premises distance to urban receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Works approval W6913/2024/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. process and store recycled concrete material from other sites. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 5: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					Risk rating [2] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[3] of works approval	Justification for additional regulatory controls / DWER Comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Installation of new shed, crushing plant, silos, concrete plant, and storage bins Vehicle Movements	Dust (particulates)	**Pathway:** Air/windborne **Impact:** Health and amenity	Residences Commercial building Commercial/industrial premises Vineyard (includes vineyard workers) Bennet Brook (for dust emissions) Threatened fauna	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	N	Condition 1 - infrastructure and equipment requirements Condition 2 – water cart use	Community submissions raised concerns on the impact of dust on the vineyards. The department has taken this into consideration when establishing controls especially due to the proximity to the prescribed premises. The applicant has provided controls that the Delegated Officer finds sufficient in ensuring that the dust has minimal impact on the nearby vineyards, environment, human receptors and air quality.
	Noise			Refer to Section 3.1	C = Moderate L = Likely **Medium Risk**	Y	Condition 1 - infrastructure and equipment requirements **Condition 3 – hours of operation** Condition 11 – reversing alarms	The Delegated Officer considers the controls proposed by the applicant including the maintenance of plant equipment in accordance with manufacturers requirements to be sufficient. The applicant had proposed to commence construction activities at 0600 hours Monday to Saturday. 0600 – 0700 is considered to be nighttime hours under the Noise Regulations. Noise modelling was not undertaken for nighttime hours therefore the Delegated Officer has specified that construction activities cannot commence until 0700. The Noise Regulations must be complied with at all times.

Risk events					Risk rating [2] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[3] of works approval	Justification for additional regulatory controls / DWER Comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Operation								
Handling and storage of materials Operation of concrete batching plant, crushing/screening plant, block forming equipment Vehicle movements TAS[1] storage	Dust	**Pathway:** Air/Windborne **Impact:** Detriment to human health and amenity; reduced water quality; disruption to fauna hunting and breeding behaviour	Residences Commercial building Commercial/industrial premises Vineyard (includes vineyard workers) Bennet Brook Threatened fauna	Refer to Section 3.1	C = Major L = Possible **High Risk**	N	Condition 8 – operational requirements for infrastructure and equipment **Condition 9 – Dust emissions** **Condition 18 – Dust Monitoring** **Condition 19 – Meteorological monitoring**	The applicant has provided controls that the delegated officer finds sufficient in ensuring that the dust has minimal impact on the nearby vineyards, environment, and air quality. Alongside the proposed controls the department has conditioned controls for dust deposition and air quality monitoring during time-limited operations to quantify the risks if the operation continues in the future. The results from this monitoring will inform the risks in future operations within the prescribed premises. The standard set by the *Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998 (Concrete Batching Regulations)* states that concrete batching or cement product manufacturing cannot carry on unless it is carried on in such a manner that no visible dust escapes from the premises. Managing dust generally will assist in reducing the risk posed by RCS and asbestos.
Handling and storage of materials Operation of crushing and screening plant *TAS has been tested and confirmed by Applicant to not contain any asbestos.*	Dust (RCS)	**Pathway:** Air/Windborne **Impact:** Detriment to human health	Residences Commercial building Commercial/industrial premises Vineyard (includes vineyard workers)	Refer to Section 3.1	C = Severe L = Rare **High Risk**	N	Condition 8 – operational requirements for infrastructure and equipment **Condition 9 – Dust emissions** **Condition 18 – Dust Monitoring** **Condition 19 – Meteorological monitoring**	
	Dust (asbestos)			Refer to Section 3.1	C = Severe L = Rare **High Risk**	N	**Condition 11 – no asbestos**	

Risk events					Risk rating [2] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[3] of works approval	Justification for additional regulatory controls / DWER Comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Handling and storage of materials Operation of crushing and screening plant	Noise	**Pathway:** Air/Windborne **Impact:** Detriment to human health and amenity; disruption to fauna hunting and breeding behaviour	Residences Commercial building Commercial/industrial premises Vineyard (includes vineyard workers) Fauna	Refer to Section 3.1	C = Moderate L = Likely **Medium Risk**	N	Condition 8 – operational requirements for infrastructure and equipment Condition 10 – hours of operation Condition 12 – reversing alarms **Conditions 14 to 17 – Noise Monitoring**	The Delegated Officer considers the controls proposed by the applicant including the maintenance of plant equipment in accordance with manufacturers requirements to be sufficient. To verify that the operation will meet the predicted noise levels, the Delegated Officer has conditioned noise monitoring to be undertaken during time-limited operations. The Noise Regulations also apply and must be complied with at all times.
Handling and storage of materials Operation of concrete batching plant, crushing and screening plant, and block forming equipment	Sediment laden stormwater, concrete slurry, and process wastewater	**Pathway:** Direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines **Impact:** Ecosystem disturbance, including fauna habitats; impacting surface water and groundwater quality	Bennet Brook and Wetlands Fauna Underlying groundwater Vineyards	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	N	Condition 8 – operational requirements for infrastructure and equipment **Condition 13 – Spills and leaks** Conditions 20 and 21 – water monitoring	The applicant intends to use pre-existing pipelines and drainage basins that exist within the premises. The existing sediment is to be managed and removed by the applicant to ensure that any discharge to the creek will have no adverse effects on the environment. Design/construction requirements for the basins and associated infrastructure should reduce the likelihood of events occurring. The Delegated Officer finds the risk of stormwater runoff to be covered by the controls set by the applicant in the Stormwater Management Plan. Discharge of sediment into the environment is also regulated under the *Environmental Protection (Unauthorised Discharges) Regulations 2004* (UDR's).
TAS[1] storage	Leachate					Y	Condition 8 – operational requirements for infrastructure and equipment Conditions 20 and 21 – water monitoring	The applicant intends to store the TAS under cover and to ensure that the moisture levels are sufficient in ensuring that no leachate is generated. The Delegated Officer finds the controls are sufficient in storing the TAS.

Risk events					Risk rating [2] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[3] of works approval	Justification for additional regulatory controls / DWER Comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Operation of concrete batching plant, crushing and screening plant, and block forming equipment Vehicle movements	Minor hydrocarbon spills or leaks	**Pathway:** Direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines **Impact:** Ecosystem disturbance, including fauna habitats; impacting surface water and groundwater quality	Bennet Brook and Wetlands Fauna Underlying groundwater Vineyards	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	N	Condition 8 – operational requirements for infrastructure and equipment **<u>Condition 13 – Spills and leaks</u>** Conditions 20 and 21 – water monitoring	The applicant intends to undertake visual inspection and removal of hydrocarbon spills into the basins to ensure there is no unintended discharge into the environment. Discharge of hydrocarbons and other harmful materials into the environment is also regulated under the UDR's.

Note 1: TAS (also known as delithiated β (beta)-spodumene [DBS]) is a by-product of the lithium hydroxide monohydrate (LHM) manufacturing process. The LHM process involves calcining spodumene, subjecting it to acid roast, leaching the resulting lithium sulphate and performing a solids/liquids separation to collect the run-of-plant TAS by-product. To meet Australian Standards for manufactured pozzolanic material, the run-of-plant product undergoes a new process of characterisation involving a two-stage separation step after water leaching, making the TAS suitable for use as a supplementary cementitious material (SCM) in the cement products manufacturing sector. A Safety Data Sheet and assessment of the TAS material was provided. The applicant considers TSA to be a low-hazard product.

Note 2: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 3: Proposed applicant controls are depicted by standard text. **<u>Bold and underline text</u>** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 12 August 2024	None received	N/A
Local Government Authority advised of proposal on 16 April 2024	The City of Swan replied on 9 May 2024 with recommendation of an approval for a separate application for the premises.	Information incorporated into the assessment and works approval, where relevant
Nearby residents advised of proposal on 12 April 2024	The department received four submissions from neighbouring properties raising concerns around dust, noise and odour impacts, contamination risks to land and local produce and amenity impacts.	The department has taken into consideration the comments provided by the residents and vineyard owners. In response to these comments, advice was sought from DPLH, DPIRD, and the City of Swan, to ensure that there are no adverse effects on amenity, health, and the local produce. Internal technical experts also provided input into this risk assessment.
Requested advice from the Department of Planning, Lands, and Heritage (DPLH) on 17 May 2024	DPLH advised *the site is the subject of an existing approved Special Use under Schedule 4 of the Swan Valley Planning Scheme No.1 for the Manufacture and Sale of Building Products and Associated Activities including Clay Extraction – as "P" – permitted Uses.* The DPLH approval is subject to conditions that must also be complied with.	Information incorporated into the assessment and works approval, where relevant.
Requested advice from the Department of Primary Industries and Regional Development (DPIRD) on 16 May 2024	Advice received recommending: • activities are enclosed; • dust monitoring; • Department of Health (DoH) to be contacted to assess impacts on food standards and impacts to human health from the proposed operations. • piezometer network installed to assess groundwater depth, water quality, flow direction, and velocity,	Information incorporated into the assessment and works approval, where relevant. Dust controls and monitoring have been added to conditions. DWER will liaise with DoH during the subsequent licence assessment when dust monitoring data is available to better inform DoH's advice. Conditions have been included to monitor water in basins and surface water (Bennet Brook).

	together with enabling a targeted groundwater monitoring program to regularly sample groundwater quality for potential contamination and to assess any change over time. • stormwater drains and detention basins should be regularly tested for alkalinity levels and treated as necessary. DPIRD noted that dust emissions can impact on grapevine quality and physiology. The presence of cement dust can significantly increase the pH of water, making it highly alkaline. If stormwater control measures fail to manage excess water that has come into contact with cement dust, this alkaline water could potentially enter the environment. This could alter the pH of surface water bodies and potentially affect groundwater.	While not conditioned at this time within the works approval, the Delegated Officer recommends that the Applicant undertake monitoring of groundwater both upstream and downstream of the premises to provide a baseline of groundwater data. This information can be used to support the subsequent licence application for the premises.
Applicant was provided with draft documents on 11 February 2025	Feedback and additional information provided for several matters highlighted in the draft. Applicant also advised that they have no other comments to make on the works approval.	Additional information incorporated into the assessment and works approval, where relevant.

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. David Will and Associates (DWA) 2023, *Stormwater Management Plan,* Perth, Western Australia
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Herring Storer Acoustics 2023, *Environmental Acoustic Assessment,* Perth, Western Australia
6. JBS&G 2024*, Reconstituted Limestone Block Manufacturing Facility – Harper Street, Caversham,* Perth, Western Australia.