Decision Report

Application for Works Approval

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

Works Approval Number	W6695/2022/1
Applicant	BGC (Australia) Pty Ltd
ACN	005 736 005
File number	DER2022/00192
Premises	BGC Wangara 329 Gnangara Road WANGARA WA 6065 Legal description Part of Lot 600 on Deposited Plan 73328 Certificate of Title Volume 28030 Folio 788 As defined by the coordinates in Schedule 1 of the works approval
Date of report	23/08/2022
Decision	Works approval granted

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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 W6695/2022/1 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 and overview of premises

Background

On 28 April 2022, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The applicant seeks to establish a new concrete batching plant at 329 Gnaragra Road, Wangara which is within an industrial area and 500 metres from the nearest residential property.

The premises relates to prescribed premises category 77: concrete batching and cement products manufacture, with an assessed production capacity of 250,000 tonnes per year under Schedule 1 of the *Environmental Protection Regulations 1987*.

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 W6695/2022/1.

Proposed Works

The proposed works will include:

- Hardstand comprising 50% asphalt and 50% concrete
- Concrete batch plant
- 4 x 100 tonne silos
- 2 x 45 tonne silos
- 4 x aggregate and sand material bins each of 250 m^3 capacity
- Enclosed radial conveyor and feed hopper
- 2 x above ground wet waste bins each of approx. 90 m^3 capacity
- 4 x below ground slurry waste ins of approx. 60 m^3 capacity
- 2 x 80 KL storage tanks to store returned wastewater
- 30 kL self-bunded diesel refuelling facility
- Materials storage bins.

2.3 Noise modelling

The applicant engaged Lloyd George Acoustics to undertake an environmental noise assessment. Noise modelling software was used to predict noise levels at nearby noise sensitive receptors under

worse case meteorological conditions. Taking into account the 24 hours a day, 7 days a week proposed operating hours, the applicant considered the night-time scenario as most critical for receptors. The modelled scenarios were therefore:

1. Night L_{A10} – Consists of 2 concrete trucks (1 slumping, 1 dry loading) in loading positions, the loader working, 1 dry loading truck in the rock/sand area, and a cement blowing activity occurring; and
2. Night L_{A1} – Consists of all the activities of scenario 1 but with the addition of hopper loading noise, and a reversing beeper in the mixer truck area.

2.3.1 Application results

The model predicts that noise levels resulting from operations at the proposed facility will comply with the most critical night-time assigned levels at residential premises as determined by the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations). A summary of the applicant's predictions for scenario 1 and scenario 2 are provided in Table 1. The applicant is of the view that no additional mitigation measures are required.

Table 1: Applicants predicted noise levels at modelled receptors for scenario 1 (L_{A10}) and scenario 2 (L_{A1}) in comparison to assigned levels in the Noise Regulations

Receptor	Predicted noise		Assigned noise level	
	LA_{10} (scenario 1)	LA_1* (scenario 2)	LA_{10} (scenario 1)	LA_1 (scenario 2)
Residential north	35	37	46	56
Residential east	39	41	44	54
Residential south	32	32	40	50

Includes the L_{A10} noise sources from scenario 1.

2.3.2 DWER technical review

The department reviewed the noise report and identified that:

- The methodology of the noise modelling and assessment seem correct. The assigned noise levels calculations, the input of the noise modelling such as sound power levels of the major equipment items and scenarios are reasonable.
- The predicted noise levels do not include 5 dB for tonality adjustment which may occur at night which means the margin is very small and there is a risk of non-compliance with the noise regulations at the closest residences to the east.
- The reversing beepers in the agitator truck area together with other short duration noise sources are predicted to comply with L_{A1} assigned noise levels. This is also questionable because of the strong tonality of the beepers which is often a source of complaint.

The applicant responded to these queries by noting that although the compliance was marginal, the assessment takes a conservative "worst case" scenario and expects that in reality the impact is likely be less than predicted. The applicant did not agree that tonality would be a factor because the combined noise level is comprised of vehicle engines and plant working at different levels therefore it is not likely that tonality will be detected.

The applicant identified the ability to adopt reversing "croakers" for this site, schedule cement blowing to days before early morning pours and noted there were options for noise barriers at a future stage should noise outcomes be different from those expected resulting in impacts.

2.4 Concrete Batching Regulations

The delegated officer considered the applicant's proposed design and operation of the premises against the requirements of the *Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998* (Concrete Batching Regulations) which is summarised in Appendix 1. In summary, the delegated officer considered activities at the premises were likely to comply with the Concrete Batching Regulations if constructed as proposed.

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 and operation which have been considered in this decision report are detailed in Table 2 below. Table 2 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Installation of infrastructure, Construction of subsurface pits installation of hardstand	Air / windborne pathway	Water truck during construction of earthworks and on roads if required. Construction site cloth fencing Sealed aprons and site hardstand scheduled early in construction
Noise			Construction will be short term and take place between 7am and 5pm weekdays and Saturday am in accordance with the noise regulations. The separation distance sufficient to prevent noise from construction impacting sensitive receptors.
Operation			
Dust	Delivery and storage of aggregate and sand Delivery and storage of cement	Air / windborne pathway	Three sided bins with sprinklers for storage of aggregate and sand. Cement silos fitted with high and low level alarms and reverse pulse 35 m^2 top filters Enclosed conveyor and feed hopper

Emission	Sources	Potential pathways	Proposed controls
Noise	Concrete batching Movement of materials. Slumping, Front end loader and agitator trucks.	Air / windborne pathway	Separation distance to sensitive receptors 500 metres.
Contaminated water run-off		Direct Discharge	Retention of all stormwater on site

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 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Closest residential receptor	500m from eastern edge of the premises boundary
Environmental receptors	**Distance from prescribed activity**
Underlying groundwater (non-potable purposes)	1 metre to 10 metres below ground level

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account 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 4.

Works approval W6695/2022/1 that accompanies this decision report authorises construction only. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

The applicant will be able to apply for a registration once it has completed construction and submitted relevant compliance reports. Ongoing operations at the premises are subject to the Concrete Batching Regulations.

Table 4: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Reasoning
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Installing of hardstand, batching plant and silos. Construction of wedge pits and washout bays.	Dust	Air / windborne pathway causing impacts to health and amenity	Residence 500m east	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	NA	Taking into account the locational aspects, the nature/scope/duration of proposed works and the applicant's proposed controls, the delegated officer does not expect impacts from construction activities.
	Noise			Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	NA	
Operation								
Delivery of raw materials, batching of concrete, slumping and vehicle washdown facility	Noise	Air / windborne pathway causing impacts to health and amenity	Residence 500m east	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1	The delegated officer determined that operational noise emissions are not expected to impact on receptors if the premises is designed according to the applicant's proposed controls.
	Dust	Air / windborne pathway causing impacts to health and amenity	Residence 500m east	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1	Proposed dust and water management controls comply with the requirements of the Concrete Batching Regulations. Condition 1 of the works approval will impose infrastructure controls to ensure the operations comply with the minimum requirements set out in the Concrete Batching Regulations.
	Sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Surrounding land or council road and drain infrastructure	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1	

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 1 July 2022	None received	N/A
Local Government Authority advised of proposal on 4 July 2022	City of Wanneroo replied 22 July 2022 advising that Development Application DA2022/517 had been granted on 22 June 2022 and it has no objections.	Noted
Applicant provided with draft decision report and works approval on 19 August 2022	Applicant replied 22 August 2022 advising of a typographical error and that construction may occur Saturday as well as weekdays.	The error was corrected. The clarification on construction timing was noted. The delegated officer did not consider this changed the assessed risk assessment outcomes.

5. Decision

The delegated officer determined to grant a works approval for the construction of the proposed premises. This determination is based on the following:

- The risk assessment of emissions and discharges
- The location of the premises is within an area zoned for industrial use and 500 metres from the nearest sensitive receptor;
- The assessment that based on the applicant's proposed design and operation controls, activities at the premises are expected to comply with the Concrete Batching Regulations;
- Assessment of the applicant's noise impact assessment and the delegated officer's conclusions that operational activities will comply with the Noise Regulations.

A works approval will therefore be granted subject to conditions consistent with the assessed risk, the applicant's proposed controls and to ensure the premises is designed to comply with the Concrete Batching Regulations. Subject to submitting relevant works approval compliance reports, the applicant is able to apply for a registration in respect of the operational phase of the premises. Operational activities are regulated by the Concrete Batching Regulations and subsidiary legislation such as the Noise Regulations.

References

1. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. DWER 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2019, *Guideline: Decision Making*, Perth, Western Australia.

Appendix 1: Assessment against the Concrete Batching Regulations

Concrete Batching Regulation requirements	Proposed applicant controls
An operator must not carry on concrete batching or cement product manufacturing unless it is carried on in such a manner that no visible dust escapes from the premises (or if there are no defined boundaries to the premises, no such dust escapes onto any place to which the public has access).	The plant will be covered with a hardstand of asphalt or concrete. Site swept, hosed or otherwise cleaned as often as is necessary
An operator must ensure that all parts of the premises to which vehicles have access — a) are either — i. paved or sealed; or ii. treated with water or surfactants as often as is necessary; and b) are swept, hosed or otherwise cleared of any loose aggregate, sand, cement, concrete or other material as often as is necessary, to prevent loose material adhering to vehicles and to minimize dust.	The plant will be covered with a hardstand of asphalt or concrete Site swept, hosed or otherwise cleaned as often as is necessary
An operator must not allow any vehicles carrying concrete, or any of the ingredients of concrete, to leave the premises until it has been washed free of cement slurry and dust.	Agitator trucks cleaned of excess cement at slumping stand.
An operator must store all aggregate and sand kept on the premises in storage bins or bays which are designed to minimize airborne dust, or where the use of such bins or bays is not practicable, in stockpiles on the ground.	3 sided bins of 250 m^3 capacity constructed of concrete for walls and floors Bins will be equipped with water sprays.
Where aggregate or sand is stored in a stockpile on the ground the operator must keep it covered or damp, or otherwise treat it, so as to minimise airborne dust.	
If, during the unloading of aggregate or sand, any visible dust escapes from the premises the operator must ensure that unloading stops immediately and does not resume until appropriate measures have been taken to prevent the escape of the dust from the premises.	
An operator must store all cement kept on the premises — a) in bags; or b) in a cement storage silo — i. which complies with subregulation (2); or ii. which is one of a series of interconnected silos at least one of which complies with subregulation (2).	6 cement storage silos. Silos have high- and low-level alarms Relief valve discharging within 1 metre of the ground
To comply with this subregulation a cement storage silo must be fitted with —	

a) an air cleaning system, which complies with regulation 7, through which all air extracted from the silo while it is being filled must pass before it is discharged into the environment; and b) either — i. a level indicator which complies with regulation 8(1); or ii. a relief valve, which complies with regulation 8(3).	
The air cleaning system for a cement storage silo must — a) be either — i. a mechanical rapping air cleaning system with a minimum filter area of 23 square metres; or ii. a reverse pulse air cleaning system which reduces dust emissions to less than 50 milligrams of particulate matter per cubic metre; and b) discharge air from the system into a weigh hopper or to an outlet which is within one metre of the ground.	Reverse pulse dust filter air cleaning system fitted to silo.
A level indicator system for a cement storage silo must include — a) an audible alarm which sounds if cement stored in the silo reaches — i. 0.6 m below the inlet to the silo's air cleaning system; or ii. 2 tonnes less than the silo's maximum capacity; and b) a test circuit which indicates whether the level indicator and alarm are working correctly.	Silos fitted with revers pulse air filter system with discharge system with outlet within 1 metre of the ground. Spare filters to be kept on site. Silos fitted with an audible alarm and test circuit. Relief valve to discharge within 1 metre of the ground
A relief valve for a cement storage silo must be designed — a) to automatically prevent the level of cement in the silo rising above the level referred to in subregulation (1)(a)(i) or (ii); and b) so that any excess cement is piped into a weigh hopper or to an outlet which is within one metre of the ground.	
An operator must not use — a) a hopper, conveyor, chute, bucket elevator or transfer point to move material on the premises; or b) any area of the premises to load agitators, unless it is – c) enclosed; d) fitted with wind shields, water sprays or a dust extraction system; or e) otherwise designed and operated, so as to prevent the escape of any visible dust.	Conveyor and feed hopper to be enclosed. Transfer points to be fitted with sprays

An operator must ensure that — a) all water draining off any area where agitators, mixers or moulds are loaded or where concrete is batched drains into a slurry pit; b) all water used to wash out agitators, mixers or moulds or to clean up spilt material drains into a slurry pit; c) all other water draining off sealed or paved areas of the premises and which is likely to contain waste material drains into a slurry pit or settling pond; and d) any water removed from, or which might overflow from, a slurry pit drains into a settling pond.	Wastewater to be collected and recycled. No stormwater to be discharged off site.
An operator must ensure that no water used in concrete batching or cement product manufacturing is discharged from the premises until — a) it has been — i. through a silt trap; or ii. contained in a settling pond for long enough to allow all particulate matter to settle out; and b) if the water is likely to contain hydrocarbons, it has been through an oil interceptor.	
An operator must not allow settled material in a slurry pit to — a) dry out (except when the pit is dried out to allow the settled material to be removed); or b) be higher than 30 cm below the top of the slurry pit walls.	the yard levels will direct water to appropriate underground wedge pits, permitting the settlement of fine materials prior to returning through automatic water level control into concrete manufacturing process. The plant site will be sealed with regular sweeping and/or washed to maintain surface in a clean condition.
An operator must ensure that all waste created during concrete batching or cement product manufacturing (including material removed from slurry pits, settling ponds, silt traps and oil interceptors) is — a) recycled; or b) disposed of at an appropriate landfill site or waste treatment facility the occupier of which holds a licence under Part V of the Act in respect of that site or facility.	Solids from the concrete wedge pits will be collected and recycled or disposed of off-site. Water is pumped form the silt trap into the recycled water tank for reuse in the batching process.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY		
Application type		
Works approval	☒	
Date application received		28/4/2022
Applicant and Premises details		
Applicant name/s (full legal name/s)		BGC (Australia) Pty Ltd
Premises name		BGC Wangara
Premises location		Part Lot 600 on Plan 73328
Local Government Authority		City of Wanneroo
Application documents		
HPCM file reference number:		DWERDT596505
Key application documents (additional to application form):		• *Works Approval Supporting Document for a Concrete Batching Plant at 329 Gnangara Road, Wangara WA 6065* • *Lloyd George Acoustics noise modelling.*
Scope of application/assessment		
Summary of proposed activities or changes to existing operations.		*Works approval* Construction of concrete batching plant including: • 4 x 100 tonne silos • 4 x aggregate and sand material bins each 250 m^3 capacity • enclosed conveyor and feed hopper • 2 x above ground wet waste bins of approximately 90 m^3 capacity • 4 x below ground slurry waste bins of approximately 60 m^3 capacity • 2 x 80 KL storage tanks to store returned wastewater • Materials storage bins • Hardstand 50% bitumen and 50% concrete.

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Proposed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 77: Concrete batching or cement products manufacturing	250,000 tonnes per annum	*NA*

Legislative context and other approvals		
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a	Yes ☐ No ☒	**N/A**

significant proposal?		
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	General lease ☒ Expiry:2062
Has the applicant obtained all relevant planning approvals?	Yes ☒ No ☐ N/A ☐	Approval: DA2021/1913 Expiry date:22/11/2025
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ No ☒	No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☐ No ☒	Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	N/A
Is the Premises subject to any other Acts or subsidiary regulations?	Yes ☒ No ☐	Concrete Batching Regs 1998
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	N/A
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	Classification: N/A Date of classification: N/A