



Works Approval Number	W6108/2017/1
Works Approval Holder	BGC (Australia) Pty Ltd
ACN	005 736 005
Registered business address	18 Mount Street PERTH WA 6000
File Number	DER2017/002102
Duration	27/04/2018 to 26/04/2020
Date of issue	27/04/2018
Prescribed Premises	Category 35 – Asphalt manufacturing Category 61A – Solid waste facility
Premises	BGC Asphalt Neerabup 31 Turnbull Drive, NEERABUP Legal description - Lot 23 on Diagram 63843 Certificate of Title Volume 1630 Folio 956

This Works Approval is granted to the Works Approval Holder, subject to the following conditions, on 27/04/2018, by:

Date signed: 27 April 2018

Caron Goodbourn

A/Manager Licensing (Process Industries)

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

Explanatory notes

These explanatory notes do not form part of this Works Approval.

Defined terms

Definition of terms used in this Works Approval can be found at the start of this Works Approval. Terms which are defined have the first letter of each word capitalised throughout this Works Approval.

Department of Water and Environmental Regulation

The Department of Water and Environmental Regulation (DWER) is established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the *Environmental Protection Act 1986 (WA) (EP Act)*. The Department also monitors and audits compliance with licences and works approvals, takes enforcement action and develops and implements licensing and industry regulation policy.

Works Approval

Section 52 of the EP Act provides that an occupier of any premises commits an offence if any work is undertaken on, or in relation to, the premises which causes the premises to become, or to become capable of being, Prescribed Premises, except in accordance with a works approval.

Section 56 of the EP Act provides that an occupier of Prescribed Premises commits an offence if Emissions are caused or increased or permitted to be caused or increased, or Waste, noise, odour or electromagnetic radiation is altered or permitted to be altered from Prescribed Premises, except in accordance with a works approval or licence.

Categories of Prescribed Premises are defined in Schedule 1 of the *Environment Protection Regulations 1987 (WA) (EP Regulations)*.

This Works Approval does not authorise any activity which may be a breach of the requirements of another statutory authority including, but not limited to, the following:

- conditions imposed by the Minister for Environment under Part IV of the EP Act;
- conditions imposed by DWER for the clearing of native vegetation under Part V, Division 2 of the EP Act;
- any requirements under the *Waste Avoidance and Resource Recovery Act 2007*;
- any requirements under the *Environmental Protection (Controlled Waste) Regulations 2004*; and
- any other requirements specified through State legislation.

It is the responsibility of the Works Approval Holder to ensure that any action or activity referred to in this Works Approval is permitted by, and is carried out in compliance with, statutory requirements.

The Works Approval Holder must comply with the Works Approval. Contravening a Works Approval Condition is an offence under s.55 of the EP Act.

Responsibilities of Works Approval Holder

Separate to the requirements of this Works Approval, general obligations of Works Approval Holders are set out in the EP Act and the regulations made under the EP Act. For example, the Works Approval Holder must comply with the following provisions of the EP Act:

- the duties of an occupier under s.61; and

- restrictions on making certain changes to Prescribed Premises unless the changes are in accordance with a Works Approval, Licence, closure notice or environmental protection notice (s.53).

Strict penalties apply for offences under the EP Act.

Reporting of incidents

The Works Approval Holder has a duty to report to the Department all Discharges of Waste that have caused or are likely to cause Pollution, Material Environmental Harm or Serious Environmental Harm, in accordance with s.72 of the EP Act.

Offences and defences

The EP Act and its regulations set out a number of offences including:

- Offence of emitting an Unreasonable Emission from any Premises under s.49.
- Offence of causing Pollution under s.49.
- Offence of dumping Waste under s.49A.
- Offence of discharging Waste in circumstances likely to cause Pollution under s.50.
- Offence of causing Serious Environmental Harm (s.50A) or Material Environmental Harm (s.50B).
- Offence of causing Emissions which do not comply with prescribed standards (s.51).
- Offences relating to Emissions or Discharges under regulations prescribed under the EP Act, including materials discharged under the *Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)*.
- Offences relating to noise under the *Environmental Protection (Noise) Regulations 1997 (WA)*.

Section 53 of the EP Act provides that a Works Approval Holder commits an offence if Emissions are caused, or altered, from a Prescribed Premises unless done in accordance with a Works Approval, Licence or the requirements of a closure notice or an environmental protection notice.

Defences to certain offences may be available to a Works Approval Holder and these are set out in the EP Act. Section 74A(b)(iii) provides that it is a defence to an offence for causing Pollution, in respect of an Emission, or for causing Serious Environmental Harm or Material Environmental Harm, or for discharging or abandoning Waste in water to which the public has access, if the Works Approval Holder can prove that an Emission or Discharge occurred in accordance with a Works Approval.

This Works Approval specifies the Emissions and Discharges, and the limits and Conditions which must be satisfied in respect of specified Emissions and Discharges, in order for the defence to offence provision to be available.

Authorised Emissions and Discharges

The specified and general Emissions and Discharges from the Works authorised through this Works Approval are authorised to be conducted in accordance with the Conditions of this Works Approval.

Amendment of Works Approval

The Works Approval Holder can apply to amend the Conditions of this Works Approval under s.59 of the EP Act. An application form for this purpose is available from DWER.

The CEO may also amend the Conditions of this Works Approval at any time on the initiative of the CEO without an application being made.

Duration of Works Approval

The Works Approval will remain in force for the duration set out on the first page of this Works Approval or until it is surrendered, suspended or revoked in accordance with s.59A of the EP Act.

Suspension or revocation

The CEO may suspend or revoke this Works Approval in accordance with s.59A of the EP Act.

Definitions and interpretation

Definitions

In this Works Approval, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
Books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
Condition	means a condition to which this Works Approval is subject under s.62 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
Department Request	means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Works Approval Holder in writing and sent to the Works Approval's address for notifications, as described at the front of this Works Approval, in relation to: (a) compliance with the EP Act or this Works Approval; (b) the Books or other sources of information maintained in accordance with this Works Approval; or (c) the Books or other sources of information relating to Emissions from the Premises.
Discharge	has the same meaning given to that term under the EP Act.
DWER	Department of Water and Environmental Regulation
Emission	has the same meaning given to that term under the EP Act.
Environmental Harm	has the same meaning given to that term under the EP Act.
EP Act	means the <i>Environmental Protection Act 1986</i> (WA).
EP Regulations	means the <i>Environmental Protection Regulations 1987</i> (WA).
Implementation Agreement or Decision	has the same meaning given to that term under the EP Act.

Inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
Material Environmental Harm	has the same meaning given to that term under the EP Act.
Pollution	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Works Approval applies, as specified at the front of this Works Approval and as shown on the map in Schedule 1 to this Works Approval.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Reportable Event	means an exceedance above the target limit specified in Column 4 of Table 6, in Schedule 3.
Serious Environmental Harm	has the same meaning given to that term under the EP Act.
Unreasonable Emission	has the same meaning given to that term under the EP Act.
Waste	has the same meaning given to that term under the EP Act.
Works	refers to the Works described in Schedule 2, at the locations shown in Schedule 1 of this Works Approval to be carried out at the Premises, subject to the Conditions.
Works Approval	refers to this document, which evidences the grant of the works approval by the CEO under s.54 of the EP Act, subject to the Conditions.
Works Approval Holder	refers to the occupier of the Premises being the person to whom this Works Approval has been granted, as specified at the front of this Works Approval.

Interpretation

In this Works Approval:

- (a) the words ‘including’, ‘includes’ and ‘include’ will be read as if followed by the words ‘without limitation’;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a Condition, each row in a table constitutes a separate Condition;
- (d) any reference to an Australian or other standard, guideline or code of practice in this Works Approval means the version of the standard, guideline or code of practice in force at the time of granting of this Works Approval and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Works Approval; and
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act.

Conditions

Infrastructure and equipment

1. The Works Approval Holder must install and undertake the Works for the infrastructure and equipment:
 - (a) specified in Column 1; and
 - (b) to the requirements specified in Column 2; of Table 2 below.
2. The Works Approval Holder must not depart from the requirements specified in Column 2 of Table 2 except:
 - (a) where such departure does not increase risks to public health, public amenity or the environment; and
 - (b) all other Conditions in this Works Approval are still satisfied.
3. Subject to Condition 2 the Works Approval Holder must provide to the CEO a report confirming each item of infrastructure or component of infrastructure specified in Column 1 of Table 2 below has been constructed with no material defects and to the requirements specified in Column 2 upon completion of all the works.
4. Where a departure from the requirements specified in Column 2 of Table 2 occurs and is of a type allowed by Condition 2, the Works Approval Holder must provide to the CEO a description of, and explanation for, the departure along with the certification required by Condition 2(b).

Table 2: Infrastructure and equipment requirements table

Column 1	Column 2
Infrastructure/Equipment	Requirements (design and construction)
ALmix Model TP72UF/150 Asphalt plant	Up to 150 tonnes per hour of asphalt being produced Fitted with bag filter ensuring emissions from the stack are less than 50 mg/Nm ³ Bag filter fitted with a pressure differential monitor Diesel fuelled burner To be located on hardstand
7 Raw material bins	3-sided concrete bins Raw materials not stored higher than the bin walls
Office	-
RM 70GO! 2.0 Compact Crushing or equivalent	Up to 150 tonnes per hour of RAP to be able to be processed. To be fitted with a dust suppression option.

Emissions

5. The Works Approval Holder must not cause any Emissions from the Works authorised through this Works Approval except for specified Emissions and general Emissions described in Column 1 of Table 3, subject to the exclusions, limitations or requirements specified in Column 2, of Table 3.

Table 3: Authorised Emissions table

Column 1	Column 2
Emission type	Exclusions/Limitations/Requirements
Specified Emissions	
Particulate emissions from the bag filter stack	Not more than 50 mg/m ³ at any time.
General Emissions (excluding Specified Emissions)	
Emissions which arise from undertaking the Works set out in Schedule 2.	<p>Emissions excluded from General Emissions are:</p> <ul style="list-style-type: none"> • Unreasonable Emissions; or • Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or • Discharges of Waste in circumstances likely to cause Pollution; or • Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or • Emissions or Discharges which do not comply with an Approved Policy; or • Emissions or Discharges which do not comply with prescribed standard; or • Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or • Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.

Record-keeping

6. The Works Approval Holder must maintain accurate Books including information, reports and data in relation to the Works and the Books must:
 - (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) be retained for at least 3 years from the date the Books were made;
 - (d) be available to be produced to an Inspector or the CEO.
7. The Works Approval Holder must comply with a Department Request within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

Stack testing and reporting

8. The Works Approval Holder must conduct a stack test of the bag filter stack in accordance with USEPA method 5, measuring the particulate emissions in mg/m³ and g/s.
9. The Works Approval Holder must submit the original stack testing report to the CEO together with the report as required per condition 3.
10. The Works Approval Holder must ensure that the reporting of the particulate emissions is done at STP dry.

Schedule 1: Maps

Premises map

The Premises are shown in the map below.

BGC Asphalt Neerabup



LEGEND

✓ Road Centrelines

Cadastre

- Freehold
- Crown Reserve
- State Forest / Timber Reserve
- Marine Park
- Crown Lease
- Lease / Reserve
- Lease on State Forest / Timber Reserve
- Public Roads
- Unallocated Crown Land
- Water

Perth Metropolitan Area Central 15cm Orthomosaic - Landgate 2016

* Project Data. This data has not been quality assured. Please contact map author for details.



Scale 1:1565
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Prepared by: Peter Knot
Prepared for: DWER
Date: 27/03/2016 12:12:01 PM

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Government of Western Australia
Department of Environment Regulation

WA Crown Copyright 2002

Site plan



Schedule 2: Works

At the time of assessment, Emissions and Discharges from the Works listed in Table 5 were considered in the determination of the risk and related Conditions for the Works Approval.

Table 4: Authorised Works

	Works
1	ALmix Model TP72UF/150 Asphalt plant
2	7 Raw material bins
3	Office
4	RM 70GO! 2.0 Compact Crushing or equivalent

Site layout

The infrastructure and equipment are set out on the Premises in accordance with the site layout specified on the Premises map in Schedule 1.



Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number W6108/2017/1

Applicant BGC (Australia) Pty Ltd

ACN 005 736 005

File Number DER2017/002102

Premises BGC Neerabup
31 Turnbull Road, Neerabup WA 6031
Lot 23 on Diagram 63843
Certificate of Title Volume 1630 Folio 956

Date of Report 24/04/2018

Status of Report Final

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1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
m ³	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Primary Activities	as defined in Schedule 2 of the Revised Licence
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>

2. Purpose and scope of assessment

This decision report is prepared for the assessment of an application for a Works Approval for an asphalt manufacturing plant on 31 Turnbull Road in Neerabup. This assessment also provides a guide for the future licence for the Premises. A concrete batching plant is currently located on one side of the Premises and the asphalt manufacturing plant will be located on the other side. The works approval is only for the asphalt manufacturing plant, whereas the licence will include the whole Premises.

3. Background

The Applicant currently operates on the Premises a concrete batching plant under registration R368/2003/1. With this application the Applicant seeks to add an asphalt manufacturing plant to the Premises that also would be able to accept reclaimed asphalt pavement (RAP) and process the RAP by crushing and screening it and using the processed RAP for the asphalt manufacturing process.

Table 2 lists the prescribed premises categories that have been applied for.

Table 2: Prescribed Premises Categories

Classification of Premises	Description	Requested Premises production or design capacity or throughput
35	Asphalt manufacturing: premises on which hot or cold mix asphalt is produced using crushed or ground rock aggregates mixed with bituminous or asphaltic materials for use at a place or premises other than those premises	250,000 tonnes per annum
61A	Solid waste facility: premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated or discharged onto land	Up to 10,000 tonnes per annum
77*	Concrete batching or cement products manufacturing: premises on which cement products or concrete are manufactured for use at places or premises other than those premises	Not applicable.

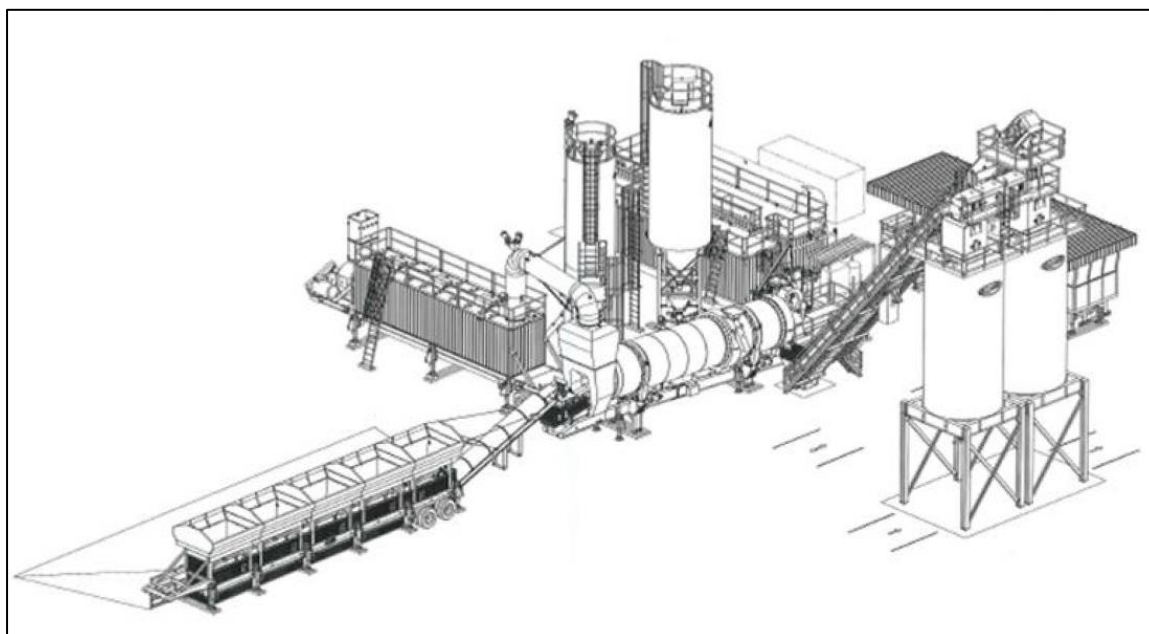
*Category 77 is not included in this assessment as it is already located on the premises and is registered, but will fall under the licence once the works have been completed.

4. Overview of Premises

4.1 Operational aspects

The Applicant currently operates a concrete batching plant within the premises and applied for a Works Approval to add an asphalt manufacturing plant, which has previously operated at Coodewanna Airport, to the premises. The asphalt manufacturing process used for this plant is a standard process, where aggregate is dried, then transported to hoppers above a pugmill and then mixed with bitumen and additives and sometimes with Reclaimed Asphalt Pavement (RAP) to form asphalt. This hot mix asphalt is then delivered to heated storage tanks prior to delivery in trucks for transport offsite. Supporting activities like the storage of the aggregate, the RAP storage and processing, the bitumen storage and diesel storage on site are all standard activities commonly associated with the asphalt manufacturing process. A 3D view of the plant layout is presented in Figure 1 below. The operating hours for the Premises will be from 7:00hrs to 17:00hrs. When RAP is being processed within the Premises it will occur within these hours and will occur on an irregular bases (expected to be operating on site for about one week possible occurring 4 times per year).

Figure 1 Generic 3D view of the proposed asphalt plant



4.2 Infrastructure

The infrastructure, as it relates to the asphalt manufacturing process on site, is detailed in Table 3. A site plan is given in Figure 2.

Table 3 lists infrastructure associated with each prescribed premises category.

Table 3: Infrastructure

	Infrastructure	Specifications
	Prescribed Activity Category 35 Asphalt Manufacturing	
1	ALmix Model TP72UF/150 Asphalt plant	Up to 150 tonnes per hour of asphalt being produced Fitted with bag filter ensuring emissions from the stack are less than 20 mg/Nm ³ Bag filter fitted with a pressure differential monitoring system Diesel fuelled burner To be located on hardstand
2	7 Raw material bins	3-sided concrete bins Raw materials not stored higher than the bin walls
3	Office	-
	Prescribed Activity Category 61A Solid Waste Processing	
1	RM 70GO! 2.0 Compact Crushing or equivalent	Up to 150 tonnes per hour of RAP to be able to be processed. To be fitted with the dust suppression option.

Figure 2 Location of the premises in relation to nearest sensitive receptor

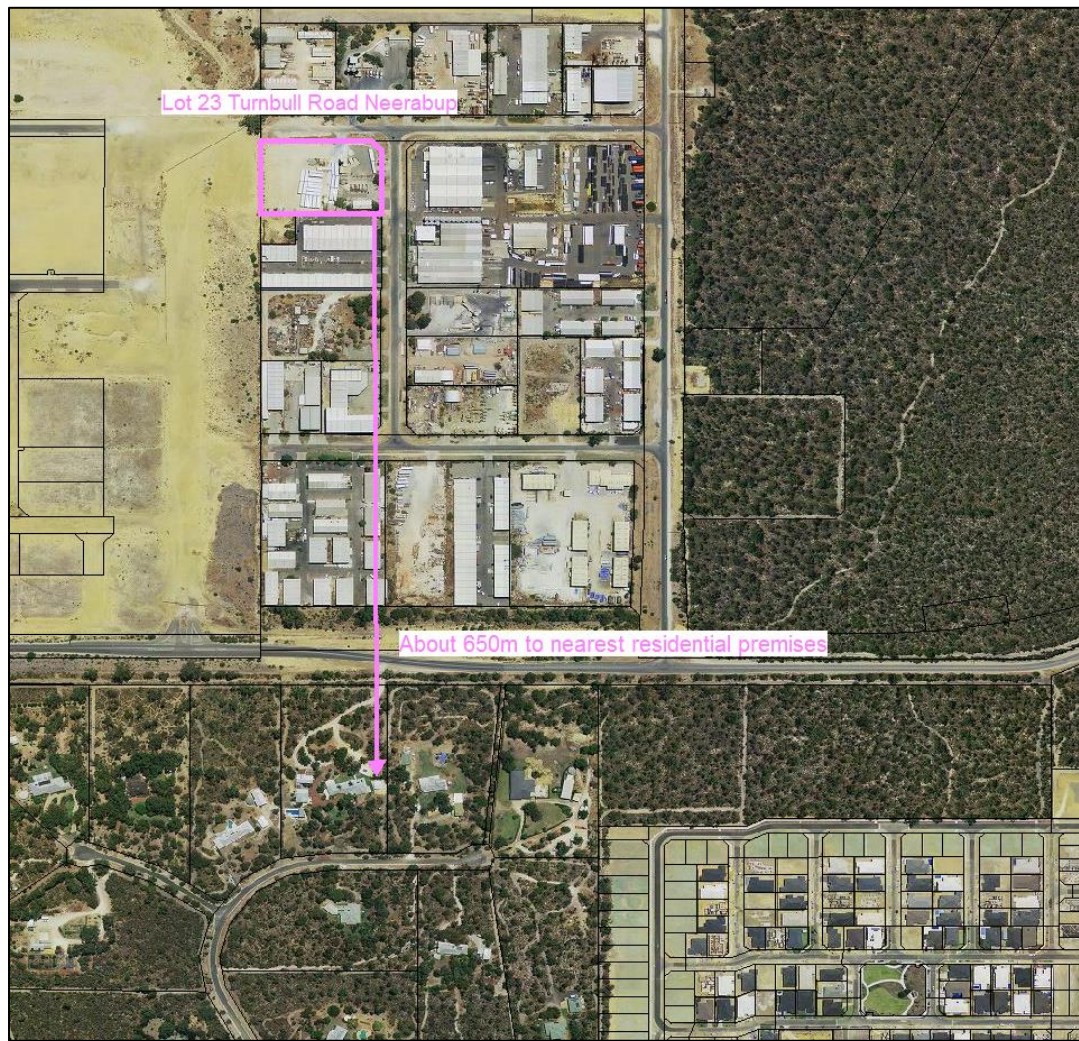


Figure 3 Site Plan



5. Legislative context

There is currently an existing concrete batching plant operational on the Premises, also owned by BGC. The concrete batching plant is registered with DWER under R368/2003/1. Upon completion of the construction of the asphalt manufacturing plant, the new licence will include both the asphalt manufacturing plant and the concrete batching plant.

5.1 Other relevant approvals

The City of Wanneroo informed the Department by letter of 13 March 2018 (received per email on 14 March 2018) that the proposed works received an approval on the development application on 13 February 2018.

6. Modelling and monitoring data

The Applicant provided stack testing results of the asphalt plant that is proposed to be relocated to the Premises. The Applicant also provided stack emission modelling for the proposed Premises. The stack testing results showed that the bag filter that is used for dust collection from the dryer performs at a very high standard as particulate emissions were less than 5mg/m³. The modelling results concluded that the risk for residents to be negatively affected by the emissions from the premises was deemed to be very unlikely.

7. Consultation

The Application for a Works Approval was advertised in The West Australian on 26 February 2018 and a letter was sent to the City of Wanneroo on 21 February 2018. No submissions from the general public were received within the comment period. The City of Wanneroo notified DWER, by letter received on 14 March 2018, that the proposed works received approval for on the development application on 13 February 2018.

8. Location and siting

8.1 Siting context

The premises are located within a relatively new industrial area in the suburb Neerabup, which is located within the City of Wanneroo.

8.2 Residential and sensitive Premises

The distance to residential and sensitive receptors is detailed in Table 4 and shown in Figure 2.

Table 4: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Residential Premises	approximately 650m to the south

8.3 Specified ecosystems

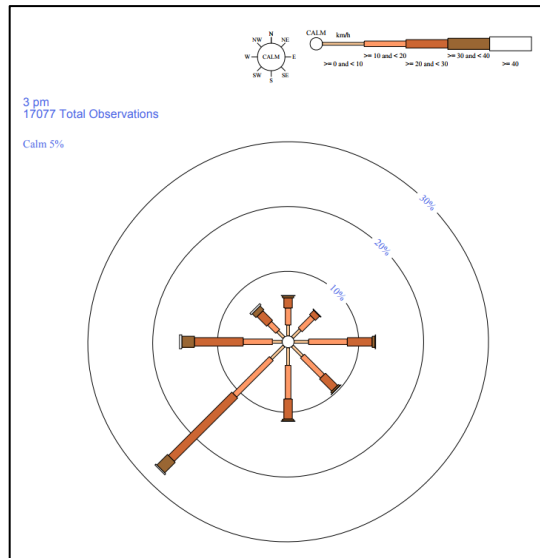
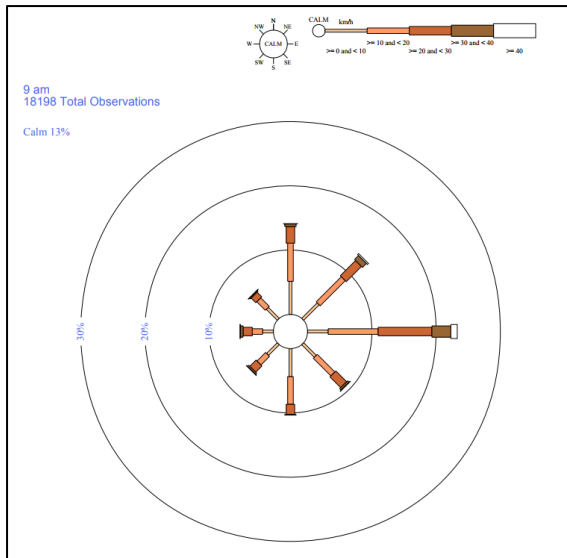
Specified ecosystems are areas of high conservation in close proximity are listed in Table 5. .

Table 5: Environmental values

Specified ecosystems	Distance from the Premises
Bush forever sites #295, #494 and #384	Closest bush forever site is approximately 350m from the premises

8.4 Meteorology

To assist with the risk assessment a check on the prevailing wind speed and wind direction has been conducted from the Bureau of Meteorology website for the Pearce RAAF station. This data comprises of the period 2 November 1940 to 11 August 2017. The first graph displays the data for the weather observations at 9am and the second for 3pm.



9. Risk assessment

9.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Tables 6 and 7 below.

Table 6. Identification of emissions, pathway and receptors during construction

Sources/Activities		Risk Events				Continue to detailed risk assessment	Reasoning
		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Construction of infrastructure phase	Vehicle movements on unsealed access roads	Noise	Residential premises: 650m south	Air / wind dispersion	Amenity impacts	No	Construction is of a very short duration, as it is a modular plant. The plant is to be located in an industrial area, separated from residential premises. The <i>Environmental Protection (Noise) Regulations 1997</i> apply.
		Dust				No	
		Noise	Industrial premises: on the boundary of the proposed lot	Air / wind dispersion	Occupation health impacts	No	
		Dust				No	
	Construction of plant and associated infrastructure	Noise	Residential premises	Air / wind dispersion	Amenity impacts	No	Construction is of a short duration, as it is a modular plant. The plant is to be located in an industrial area, separated from residential premises. The construction of the asphalt plant is covered under the general provisions of the Act. Construction related issues are not normally associated with a manufacturing plant of this type and size. The <i>Environmental Protection (Noise) Regulations 1997</i> apply.
		Dust				No	
		Noise	Industrial premises: on the boundary of the proposed lot	Air / wind dispersion	Health impacts	No	
		Dust				No	

Table 7: Identification of emissions, pathway and receptors during operation

Risk Events					Continue to detailed risk assessment	Reasoning	
Sources/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts			
Asphalt Manufacturing	Noise (premises as a whole)	Noise	Residential premises about 650m to the south	Air	No adverse impacts expected	No	The plant is to be located in an industrial area. Reasonable separation distance to residential premises. As the site is within an industrial area, it is shielded by other industrial premises, further reducing any impacts on residential premises. No significant noise source identified. The <i>Environmental Protection (Noise) Regulations 1997</i> apply.
			Industrial premises: on the boundary of the proposed lot	Air	No adverse health impacts expected	No	The plant is to be located in an industrial area. No significant noise source identified. The <i>Environmental Protection (Noise) Regulations 1997</i> apply.
	Aggregate storage and handling	Dust emissions	Residential premises about 650m to the south	Air	Low level amenity Impacts may occur	No	The plant is to be located in an industrial area. No significant dust source identified. The general provisions of the EP Act apply.
			Industrial premises: on the boundary of the proposed lot	Air	No adverse health impacts expected	No	The plant is to be located in an industrial area. No significant dust source identified. The general provisions of the EP Act apply.
	Aggregate drying	Particulate emissions	Residential premises about 650m to the south; and Industrial premises: on the boundary of the proposed lot	Air	Low level amenity Impacts may occur	Yes	Particulate emissions when not controlled may cause an amenity issue.
	Asphalt mixing, bitumen storage and delivery of the asphalt into trucks	Odour/VOC	Residential premises about 650m to the south; and Industrial premises: on the boundary of the proposed lot	Air	Low level amenity Impacts	Yes	Odour/VOC emissions from the plant may cause an amenity issue.

Risk Events					Continue to detailed risk assessment	Reasoning	
Sources/Activities		Potential emissions	Potential receptors	Potential pathway			Potential adverse impacts
Bulk fuel storage	Bulk Diesel storage	No source of emission. Diesel is to be stored in competent primary and secondary containment.			No adverse impacts expected to occur.	No	No source of an emission. Fuel storage is regulated by the Department of Mines Industry Regulation and Safety (DMIRS).

9.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 8 below.

Table 8: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 9 below.

Table 9: Risk criteria table

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		The following criteria has been used to determine the consequences of a Risk Event occurring:		
			Environment	Public health* and amenity (such as air and water quality, noise, and odour)
Almost Certain	The risk event is expected to occur in most circumstances	Severe	<ul style="list-style-type: none"> onsite impacts: catastrophic offsite impacts local scale: high level or above offsite impacts wider scale: mid-level or above Mid to long-term or permanent impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are significantly exceeded 	<ul style="list-style-type: none"> Loss of life Adverse health effects: high level or ongoing medical treatment Specific Consequence Criteria (for public health) are significantly exceeded Local scale impacts: permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	<ul style="list-style-type: none"> onsite impacts: high level offsite impacts local scale: mid-level offsite impacts wider scale: low level Short-term impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are exceeded 	<ul style="list-style-type: none"> Adverse health effects: mid-level or frequent medical treatment Specific Consequence Criteria (for public health) are exceeded Local scale impacts: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	<ul style="list-style-type: none"> onsite impacts: mid-level offsite impacts local scale: low level offsite impacts wider scale: minimal Specific Consequence Criteria (for environment) are at risk of not being met 	<ul style="list-style-type: none"> Adverse health effects: low level or occasional medical treatment Specific Consequence Criteria (for public health) are at risk of not being met Local scale impacts: mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	<ul style="list-style-type: none"> onsite impacts: low level offsite impacts local scale: minimal offsite impacts wider scale: not detectable Specific Consequence Criteria (for environment) likely to be met 	<ul style="list-style-type: none"> Specific Consequence Criteria (for public health) are likely to be met Local scale impacts: low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	<ul style="list-style-type: none"> onsite impact: minimal Specific Consequence Criteria (for environment) met 	<ul style="list-style-type: none"> Local scale: minimal to amenity Specific Consequence Criteria (for public health) met

[^] Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting*.

* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines*.

"onsite" means within the Prescribed Premises boundary.

9.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 10 below:

Table 10: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

9.4 Risk assessment – Risk Event 1: particulate emissions from the drying process

9.4.1 Description of Risk Event 1

The first risk event is defined as follows:

Particulates (dust) from the normal operation of the plant are released into the atmosphere and cause a nuisance to people residing about 650m to the south or to neighbouring industrial premises.

9.4.2 Identification and general characterisation of emission

The aggregate is transported from the on-site storage to hoppers that feed into the dryer. The dryer, which uses diesel as a fuel, dries the aggregate inside the rotating drying drum. The waste gas emissions are then pulled through a bag filter and emitted to atmosphere. The bag filter will ensure that under normal circumstances (no faulty bags) particulate emissions are below 20 mg/m³.

9.4.3 Description of potential adverse impact from the emission

Loss of amenity at nearby residential and adjacent industrial premises causing a nuisance to occupants.

9.4.4 Criteria for assessment

The Delegated Officer considers that the emissions standards detailed in the *Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998*, are reasonable surrogate criteria to assess particulate emissions. The limit for particulate emissions from a stack is 50mg/m³.

9.4.5 Applicant controls

The Applicant stated in the application that the bag filter would ensure that particulate emissions would be kept to below 20 mg/m³. The bag filter will be regularly maintained to ensure that bag breakage will be limited. In case of bag breakage, the pressure differential monitoring system will show bigger than normal change to the pressure differential and production manager can then check the stack emissions visually and he/she will then decide to stop the process and get the broken bag replaced.

9.4.6 Consequence

If particulate emissions from the drying process are emitted in significant quantities to atmosphere and reach residents or adjacent industrial premises, then the Delegated Officer has determined that the impact of particulate emissions will be of low level impact to amenity. Therefore, the Delegated Officer considers the consequence of the emission of particulates to atmosphere to be **Slight**.

9.4.7 Likelihood of Risk Event

The Delegated Officer has determined that the likelihood of the negative impact occurring of particulate emissions from the drying process will be such that it is unlikely to occur. Therefore, the Delegated Officer considers the likelihood of Risk Event 1 to be **Rare**.

9.4.8 Overall rating of Risk Event 1

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 9) and determined that the overall rating for the risk of negative impacts from particulate emissions from the drying process is **Low**.

9.5 Risk assessment – Risk Event 2: odour emissions from the asphalt manufacturing process

9.5.1 Description of Risk Event 2

The second risk event is defined as follows:

Odour emissions from the normal operation of the plant are released into the atmosphere and cause a nuisance to people residing about 650m to the south-east.

9.5.2 Identification and general characterisation of emission

Odour emissions are created from the heated bitumen when it is sprayed into the mixing drum to mix with the heated aggregate and RAP (when used). The air from the mixing drum is extracted to the bag filter. The temperature of the bitumen inside the mixing drum is controlled to reduce odour emissions from this part of the process. Odour emissions are caused by Volatile Organic Compounds (VOCs) that evaporate from the bitumen.

9.5.3 Description of potential adverse impact from the emission

Odour emissions from the manufacturing plant can cause a nuisance issue and an amenity impact to nearby residential areas or adjacent industrial premises.

9.5.4 Criteria for assessment

In relation to nearby premises, the generic criteria for the assessment of Odour is in Section 49 of the Act which is to not cause an odour emission that unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

9.5.5 Applicant controls

The Applicant has proposed to locate the plant in an Industrial area and at a distance of about 650m to nearby residential premises to minimise the impact of odours upon nearby residential premises. The modern temperature control system ensures that excessive odours caused by overheating are prevented.

9.5.6 Consequence

If odour emissions from the asphalt manufacturing process are emitted in sufficient amounts to reach residents, then the Delegated Officer has determined that consequence of the impact of odour emissions will be **Slight**.

As to the likely consequence on employees at adjacent industrial premises, the Delegated Officer considers there may be also be a **Slight** consequence.

9.5.7 Likelihood of Risk Event

The likelihood of Risk Event 2 is influenced by the operational processes and the local separation distance to the nearest sensitive receptors and prevailing wind direction.

Considering the above, the likelihood of Risk Event 2 occurring is: **Possible**.

In relation to adjacent industrial premises the Delegated Officer notes that the greatest OHHS (odour) exposure is to the staff employed at the proposed asphalt manufacturing plant and it is possible that they may experience unacceptable odours. Therefore, because of the close proximity to adjacent industrial premises, the likelihood of unacceptable odours is **Possible**.

9.5.8 Overall risk rating of Odour emissions from the asphalt manufacturing process

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix and determined that the overall rating for the risk of negative impacts from odour emissions from the asphalt manufacturing process is **Low**.

In setting this risk rating the Delegated Officers notes:

- the premises are to be located in an industrial area; and
- that asphalt plants are usually located in industrial areas, abutting other industrial premises without causing amenity issues for other industrial premises.

9.6 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 11 below. Controls are described further in section 11.

Table 11: Risk assessment summary

	Description of Risk Event	Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
1.	Particulate emissions from the aggregate drying are released into the atmosphere and cause an amenity issue at the residents who are about 300m to the South-East.	Bag filter and maintenance of the bag filter.	Slight consequence Rare likelihood Low Risk	Acceptable subject to regulatory controls

	Description of Risk Event	Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
2.	Odour emissions from the asphalt manufacturing process are released into the atmosphere and cause an amenity issue at the residents who are about 300m to the South-East.	Location and separation distance.	Slight consequence Unlikely Low risk	Acceptable, general provisions of the Act are sufficient.

10. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 12. The risks are set out in the assessment in section 10 and the controls are detailed in this section. DWER will determine controls having regard to the adequacy of controls proposed by the Applicant. The conditions of the Works Approval will be set to give effect to the determined regulatory controls.

Table 12: Summary of regulatory controls to be applied

		Controls		
		Infrastructure and equipment	Monitoring	Reporting
Risk events	1. Particulate emission from the aggregate drying process	•	•	•
	2. Odour emissions from the asphalt manufacturing process	•		

10.1 Works Approval controls

10.1.1 Particulate emissions from the aggregate drying process

The bag filter must be installed and all waste gases from the aggregate drying process must pass through the bag filter prior to release to atmosphere. Upon completion of the works, stack testing must be performed to ensure that particulate emissions from the bag filter stack are below 50 mg/m³. The Applicant should prepare a bag filter maintenance and inspection schedule to ensure that the risk of high particulate emissions from the stack is reduced.

10.1.2 Odour emissions from the asphalt manufacturing process

If the works are completed as proposed (will be prescribed in the infrastructure table) and the asphalt manufacturing process will occur as provided in the application, the risk of odour emissions at unacceptable levels is very low. Odour emissions are deemed sufficiently covered by the general provisions of the EP Act. Together with a general condition to maintain a complaints register this risk is deemed to be appropriately managed.

10.1.3 Monitoring requirements

To ensure that the bag filter performs as per specifications a stack testing will be conducted upon completion of the works. The requirements for stack testing are included in the Works Approval conditions.

The Licence will likely contain annual stack testing requirements to ensure the emission controls continue to work properly over the lifetime of the plant.

10.1.4 Monitoring reports

Following the completion of the works the Applicant must conduct a stack test and provide the full stack testing report with information about the production at the time of the stack test together with a completion certificate to the CEO.

11. Determination of Works Approval conditions

The conditions in the Works Approval in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

Table 13 provides a summary of the conditions to be applied to this Works Approval.

Table 13: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure and equipment Conditions 1 – 4	These conditions relate to what the Works Approval Holder is allowed to construct and what requirements are attached to that.
Emissions Condition 5	This condition authorises emissions from the works and restricts the emissions for particulates to less than 50mg/m ³ at any time.
Record-keeping Conditions 6 - 7	These conditions are required to enable compliance control with the Works Approval.
Stack testing and reporting Conditions 8 – 10	These conditions are required to ensure that the stack emissions are tested to enable confirmation of compliance with Condition 5.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the works approval under the EP Act.

12. Applicant's comments

The Applicant was provided with the draft Decision Report and draft Works Approval on 13 April 2018. The Applicant provided on 24 April 2018 a response to the draft documents. The only clarification that the Applicant wanted to make was that the pressure differential monitor within the bag filter was most likely not able to pick up a broken bag if this didn't result in a significant pressure differential change. As such the Applicant believed that the system cannot be classed as a broken bag detection system. The Delegated Officer has accepted this comment and changed the wording of Table 2 in the Works Approval.

13. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Caron Goodbourn
A/Manager Licensing (Process Industries)

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

Attachment 1: Issued Works Approval W6108/2017/1
