Application form: Works Approval / Licence / Renewal / Amendment / Registration

Part V Division 3, *Environmental Protection Act 1986*
Environmental Protection Regulations 1987

Part 1: Application type

INSTRUCTIONS:

- **Completion of this form is a statutory requirement under s.54(1)(a) of the *Environmental Protection Act 1986* (WA) (EP Act) for works approval applications; s.57(1)(a) for licence and licence renewal applications; s.59B(1)(a) for applications for an amendment; and under r.5B(2)(a) of the Environmental Protection Regulations 1987 (WA) (EP Regulations) for applications for registration of premises.**
- **The instructions set out in this application form are general in nature.**
- **A reference to 'you' in these instructions is a reference to the applicant.**
- **The information provided to you by the Department of Water and Environmental Regulation (DWER) in relation to making applications does not constitute legal advice. DWER recommends that you obtain independent legal advice.**
- **Applicants seeking further information relating to requirements under the EP Act and/or EP Regulations are directed to the Parliamentary Counsel's Office website (www.legislation.wa.gov.au). Schedule 1 of the EP Regulations contains the categories of prescribed premises.**
- **For prescribed premises where activities fall within more than one category, ALL applicable categories must be identified. This applies for existing prescribed premises seeking renewal or amendment, as well as new prescribed premises.**
- **The application form must be completed with all relevant information attached. Attachments can be combined and submitted as one or more consolidated documents if desired, provided it is clear which section of the application form the information / attachments relate to. Where attachments are submitted separately, avoid duplicating information. Ensure that any cross-references between the application form and the supporting document(s) are accurate.**
- **If an application form has been submitted which is incomplete or materially incorrect, the Chief Executive Officer of DWER (CEO) will decline to deal with the application and advise the applicant accordingly.**
- **On completing this application form, please submit it to DWER in line with the instructions in Part 15 of the form.**

1.1	**This is an application for:** *[Select one option only. Your application may be returned if multiple options are selected.]* under Part V, Division 3 of the EP Act. Please see the: • *Guideline: Industry Regulation Guide to Licensing* • *Procedure: Prescribed premises works approvals and licences* for more information to assist in understanding DWER's regulatory regime for prescribed premises.	☐ Works approval ☐ Licence Existing registration number(s): [ ] Existing works approval number(s): [ ] ☐ Renewal Existing licence number: [ ] ☒ Amendment Number of the existing licence or works approval to be amended: [L6764/1997/14] ☐ Registration (works approval already obtained) Existing works approval number(s): [ ]
1.2	**For a works approval amendment or licence amendment, are there less than 90 business days until the expiry of the existing works approval or licence?** Only active instruments can be amended. Applications to amend a works approval or licence must be made 90 business days or more prior to the existing works approval or licence expiring to ensure there is adequate time to assess the amendment.	Yes ☐
1.3	**This application is for the following categories of prescribed premises:** *(specify all prescribed premises category numbers)*	[Category 62] ☒ All activities that meet the definition of a prescribed premises as set out in Schedule 1 of the EP Regulations have been specified above (tick, if yes).

Completion Matrix
The matrix below explains what sections are required to be completed for different types of applications.

Application form section	New application / registration	Renewal	Amendment
Part 1: Application type	•	•	•
Part 2: Applicant details	•	•	•
Part 3: Premises details	•	•	Δ
Part 4: Proposed activities	•	•	•
Part 5: Index of Biodiversity Surveys for Assessment and Index of Marine Surveys for Assessment	If required.	If required.	If required.
Part 6: Other DWER approvals	•	•	•
Part 7: Other approvals and consultation	•	•	•
Part 8: Applicant history	•	•	Δ
Part 9: Emissions, discharges, and waste	•	•	Δ
Part 10: Siting and location	•	•	Δ
Part 11: Submission of any other relevant information	•	•	If required.
Part 12: Category checklist(s)	•	•	•
Part 13: Proposed fee calculation	•	•	•
Part 14: Commercially sensitive or confidential information	•	•	•
Part 15: Submission of application	•	•	•
Part 16: Declaration and signature	•	•	•
Attachment 1A: Proof of occupier status	•	•	N/A
Attachment 1B: ASIC company extract	•	•	N/A
Attachment 1C: Authorisation to act as a representative of the occupier	•	•	•
Attachment 2: Premises map/s	•	•	Δ
Attachment 3A: Environmental commissioning plan	If required.	N/A	If required
Attachment 3B: Proposed activities	•	•	Δ
Attachment 3C: Map of area proposed to be cleared (only applicable if clearing is proposed)	•	•	•
Attachment 3D: Additional information for clearing assessment	If required.	If required.	If required.
Attachment 4: Marine surveys (only applicable if marine surveys included in application)	•	•	•
Attachment 5: Other approvals and consultation documentation	•	•	Δ
Attachment 6A: Emissions and discharges	If required.	If required.	If required.
Attachment 6B: Waste acceptance	If required.	If required.	If required.
Attachment 7: Siting and location	•	•	Δ
Attachment 8: Additional information submitted	If required.	If required.	If required.
Attachment 9: Category-specific checklist(s)	•	If required.	If required.
Attachment 10: Proposed fee calculation	•	•	•
Attachment 11: Request for exemption from publication	If required.	If required.	If required.

Key:

•	Must be completed / submitted.
Δ	To the extent changed / required in relation to the amendment.
N/A	Not required with application, but may be requested subsequently depending on DWER records.
"If required"	Sections for applicants to determine.

Part 2: Applicant details

INSTRUCTIONS:

- **The applicant (the occupier of the premises) must be an individual(s), a company, body corporate, or public authority, but not a partnership, trust, or joint-venture name. Applications made by or on behalf of business names or unincorporated associations will not be accepted.**
- **If applying as an individual, your full legal name must be provided.**
- **If applying as a company, body corporate, or public authority, the full legal entity name must be inserted.**
- **Australian Company Number's (ACN) must be provided for all companies or body corporates.**
- **DWER prefers to send all correspondence electronically via email. We request that you consent to receiving all correspondence relating to instruments and notices under Part V of the EP Act (Part V documents) electronically via email, by indicating your consent in Section 2.3.**
- **Companies or body corporates making an application must nominate an authorised representative from within their organisation. Proof of authorisation must be submitted with the application (see Section 2.10). If you are applying as an individual, you are the representative.**
- **Details of a contact person must be provided for DWER enquiries in relation to your application. This contact person can be a consultant if authorised to represent the applicant. Written evidence of this authorisation must be provided.**
- **Details of the occupier of the premises must be provided. One of the options must be selected and if you have been asked to specify, please provide details. For example, if 'lease holder' has been selected, please specify the type of lease (for example, pastoral lease, mining lease, or general lease) and provide a copy of the lease document(s). Note that contracts for sale of land will not be sufficient evidence of occupancy status.**

2.1	**Applicant name/s (full legal name/s):** The proposed holder of the works approval, licence or registration.	Brajkovich Landfill & Recycling (Malaga) Pty Ltd			
	ACN (if applicable):	658 651 337			
2.2	**Trading as (if applicable):**				
2.3	**Authorised representative details:** The person authorised to receive correspondence and Part V documents on behalf of the applicant under the EP Act. Where 'yes' is selected, all correspondence will be sent to you via email, to the email address provided in this section. Where 'no' has been selected, Part V documents will be posted to you in hard copy to the postal / business address specified in Section 2.4, below. Other general correspondence may still be sent to you via email.	Name	[redacted]		
		Position			
		Telephone			
		Email			
		I consent to all written correspondence between myself (the applicant) and DWER, regarding the subject of this application, being exclusively via email, using the email address I have provided above.		**Yes** ☒	**No** ☐
2.4	**Registered office address, as registered with the Australian Securities and Investments Commission (ASIC):** This must be a physical address to which a Part V document may be delivered.	1686 Great Northern Highway Upper Swan WA 6069			

Part 2: Applicant details				
2.5	**Postal address for all other correspondence:** If different from Section 2.4.	281 Newcastle Street Northbridge WA 6003		
2.6	**Contact person details for DWER enquiries relating to the application (if different from the authorised representative):** For example, could be a consultant or a site-based employee.	Name		
		Position		
		Organisation		
		Address		
		Telephone		
		Email		
2.7	**Occupier status:** Occupier is defined in s.3 of the EP Act and includes a person in occupation or control of the premises, or occupying a different part of the premises whether or not that person is the owner. Note: if a lease holder, the applicant must be the holder of an executed lease, not just an agreement to lease.	Registered proprietor on certificate of title.		☐
		Lease holder (please specify, including date of expiry of lease).		☒
		Public authority that has care, control, or management of the land.		☐
		Other evidence of legal occupation or control (please specify – for example, joint venture operating entity, contract, letter of operational control, or other legal document or evidence of legal occupation).		☐
		The tenement holder shares a director with the applicant company		

Attachments			N/A	Yes
2.8	**Attachment 1A: Proof of occupier status**	Copies of certificate of title, lease, or other instruments evidencing proof of occupier status, including the expiry date or confirmation that there is no expiry date, have been provided and labelled as Attachment 1A.	☐	☒
2.9	**Attachment 1B: ASIC company extract**	A current company information extract (not the company information summary) purchased from the ASIC website(s) for all new applications / registrations has been provided and labelled as Attachment 1B.	☐	☒
2.10	**Attachment 1C: Authorisation to act as representative of the occupier**	A copy of the documentation authorising the applicant to act on the occupier's behalf as their authorised agent/representative has been provided and labelled as Attachment 1C.	☐	☒

Part 3: Premises details				
3.1	**Premises description (whole or part to be specified):** Include the land description (volume and folio number, lot, or location number/s); Crown lease or reserve number; pastoral lease number; or mining tenement number (as appropriate), of all properties, as shown on title details registered with Landgate.	Lot 821 on Deposited Plan 404602 Volume 2941 Folio 372 Lot 802 on Deposited Plan 424564 Volume 4040 Folio 768		
	Premises street address Include the suburb.	501 Alexander Drive, Mirrabooka- (Lot 821) 272 Victoria Road, Mirrabooka (Lot 802)		
	Premises name (if applicable):			
3.2	**Local Government Authority area:** City, Town, or Shire.	City of Stirling		
3.3	**GPS (latitude and longitude) coordinates:** GPS coordinates determined using the GDA 2020 (Geographic latitude / longitude) coordinate system and datum must be provided for all points around the proposed premises boundary, where the entirety of the cadastre (land parcel) or mining tenements are not used as the premises boundary.	Lot 821 Northeast: (-31.861574854539008, 115.87450966379187) Northwest: (-31.86163864046344, 115.86957976379124) Southwest: (-31.865411043784775, 115.86966559447505) South: (-31.865356372375384, 115.8744399262623) Southeast of Lot 802: (-31.86533819631291, 115.87631200950138) East of Lot 802 (: (-31.863734486894703, 115.8761618058047) East of Lot 821: (-31.863688926560467, 115.87461685349602)		
Attachments			**N/A**	**Yes**
3.4	**Attachment 2: Premises map(s)**	You must provide as an attachment to this application form, labelled Attachment 2, either: 1. an aerial photograph, map, and site plan of sufficient scale showing the proposed prescribed premises boundary *or* 2. where available, a map of the proposed premises boundary and site plan as an ESRI shapefile (accepted file types include .dbf, .shp, .prj, and .shx) with the following properties (provided on a suitable portable digital storage device, if submitting application in hard copy form): • Geometry type: Polygon Shape • Coordinate system: GDA 2020 (Geographic latitude / longitude) • Datum: GDA 2020 (Geocentric Datum of Australia 2020). You must also provide a map or maps of the prescribed premises, clearly identifying and labelling: • layout of key infrastructure and buildings, clearly labelled; • the premises boundary (where the premises boundary does not align with the entirety of the cadastral boundary, identify the Lot Number for which the premises is part of); • emission and discharge points (with precise GPS coordinates where available); • monitoring points (with precise GPS coordinates where available); • sensitive receptors and land uses • all areas proposed to be cleared (if applicable). Maps must contain a north arrow, clearly marking the area in which the activities are carried out. The map or maps must be of reasonable clarity and have a visible scale.	☐	☒

Part 4: Proposed activities

INSTRUCTIONS:

- **You must provide a description and the scope, size and scale of all prescribed activities of Schedule 1 to the EP Regulations including the maximum production or design capacity of each prescribed activity.**
- **If applying for a works approval or licence amendment involving the construction of new infrastructure, you must provide information on infrastructure to be constructed and how long construction is expected to take. You must confirm if commissioning is to occur and how long it will take.**
- **If applying for a works approval or licence amendment *not* involving the construction of new infrastructure, provide details of the proposed amendment.**
- **You must identify all emission sources on the premises map/s.**
- **You must also provide information on activities which directly relate to the prescribed premises category which have, or are likely to result in, an emission or discharge.**
- **If clearing activities are proposed provide a description and details. If a relevant exemption under Schedule 6 of the EP Act or r.5 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA) (Clearing Regulations) may apply, provide details.**
- **Note that in some cases, DWER may require that the clearing components of a works approval or licence (or amendment) application be submitted separately through the clearing permit application process. Refer to the *Procedure: Prescribed premises works approvals and licences* for further guidance.**
- **Please note that the requested information is critical to DWER's understanding of the proposed activities. The more accurate, specific, and complete the information provided in the application, the less uncertainty that DWER may identify in the application, therefore facilitating completion of the assessment in a more efficient and timely manner.**

4.1 **Prescribed premises infrastructure and equipment**

In Table 4.1 (below), provide a list of all items of infrastructure and equipment within the boundary of the prescribed premises relevant to this application, and include the following details for each:

- **relevant categories (if known)** – the categories of prescribed premises (as listed under Schedule 1 of the EP Regulations) that relate to that infrastructure or equipment;
- **site plan reference** – the location of that infrastructure or equipment (with reference to the site plan map or maps provided above in Section 3.4 and labelled as Attachment 2 – e.g. use GPS coordinates or a clear description such as *"labelled as [label on premises map] on Map A"*);
- **is it critical containment infrastructure (CCI)?** – indicate if the identified infrastructure or equipment would be categorised as CCI. Refer to the *Guideline: Industry Regulation Guide to Licensing* for further information on CCI; and
- **is environmental commissioning required?** – indicate if environmental commissioning is intended to be undertaken for that item of infrastructure or equipment. Refer to the *Guideline: Industry Regulation Guide to Licensing* for further information on environmental commissioning.

Add additional rows to Table 4.1 (below) as required.

Table 4.1: Infrastructure and equipment

	Infrastructure and equipment	Relevant categories (if known)	Site plan reference	CCI? (mark if yes)	Environmental commissioning? (mark if yes)
1.	**Administration building**		**Figure 2**	☐	☐
2.	**Weighbridge**			☐	☐
3.	**Water Cart**			☐	☐
4.	**Excavators (x3)**			☐	☐
5.	**Wheel Loaders (x2)**			☐	☐
6.	**Monitoring bores (Multiple)**			☐	☐
7.	**Production bore (Licence:50920; on Lot 802)**		**Figure 2**	☐	☐
8.				☐	☐
9.				☐	☐
10.				☐	☐

Part 4: Proposed activities

4.2 Detailed description of proposed activities or proposed changes (if an amendment):

You must provide details of proposed activities relevant to this application within the boundary of the prescribed premises, identifying:

- scope, size, and scale of the project, including details as to production or design capacity (and/or frequency, if applicable);
- key infrastructure and equipment;
- description of processes or operations (a process flow chart may be included as an attachment);
- emission / discharge points;
- locations of waste storage or disposal
- activities occurring during construction, environmental commissioning, and operation (if applicable).

If assessment and imposition of conditions to allow environmental commissioning to be undertaken are requested, please provide an environmental commissioning plan as Attachment 3A (see 4.11 below).

Additional information relating to the proposed activities may be included in Attachment 3B (see 4.12 below).

Construction activities (if applicable):

N/A

Environmental commissioning activities (if applicable):

Refer to the *Guideline: Industry Regulation Guide to Licensing* for further guidance.

N/A

Time limited operations activities (if applicable):

Different elements of the premises may require time limited operations to commence at different times. In these circumstances, please specify the infrastructure and/or equipment for which time limited operations authorisation is being applied for.

If time limited operations are expected to differ from future licensed operations, specify how and why this would be the case.

Refer to the *Guideline: Industry Regulation Guide to Licensing* for further guidance.

N/A

Operations activities (for a licence):

4.3	**Estimated operating period of the project / premises (e.g. based on estimated infrastructure life):**	25 Years
4.4	**Proposed date(s) for commencement of works (if applicable):**	Upon approval
4.5	**Proposed date(s) for conclusion of works construction (if applicable):** This date should coincide with the submission to DWER of an Environmental Compliance Report(s) and/or a Critical Containment Infrastructure Report(s) as required. Refer to the *Guideline: Industry Regulation Guide to Licensing*.	-
4.6	**Proposed date(s) for environmental commissioning of works (if applicable):** Refer to the *Guideline: Industry Regulation Guide to Licensing*.	N/A
4.7	**Proposed date/s for commencement of time limited operations under works approval (if applicable):** Refer to the *Guideline: Industry Regulation Guide to Licensing*.	N/A

Part 4: Proposed activities				
4.8	**Maximum production or design capacity for each category applied for (based on infrastructure operating 24 hours a day, 7 days a week):** Provide figures for all categories listed in Section 1.2. Units of measurement must be the same as the units of measurement associated with the relevant category as identified in Schedule 1 of the EP Regulations.		20,000 tonnes per annum	
4.9	**Estimated / actual throughput for each category applied for:** Provide figures for all categories listed in Section 1.2. Units of measurement must be the same as the units of measurement associated with the relevant category as identified in Schedule 1 of the EP Regulations.		100 – 20,000 tonnes per annum	
Attachments			**N/A**	**Yes**
4.10	**Attachment 2: Premises map**	Emission/discharge points are clearly labelled on the map/s required for Part 3.4 (Attachment 2).	☐	☒
4.11	**Attachment 3A: Environmental commissioning plan**	If applying to construct works or install equipment, and environmental commissioning of the works or equipment is planned, an environmental commissioning plan has been included in Attachment 3A. The environmental commissioning plan is expected to include, at minimum, identification of: • the sequence of commissioning activities to be undertaken, including details on whether they will be done in stages; • a summary of the timeframes associated with the identified sequence of commissioning activities; • the inputs and outputs that will be used in the commissioning process; • the emissions and/or discharges expected to occur during commissioning; • the emissions and/or discharges that will be monitored and/or confirmed to establish or test a steady-state operation (e.g. identifying emissions surrogates, etc.), including a detailed emissions monitoring program for the measurement of those emissions and/or discharges; • the controls (including management actions) that will be put in place to address the expected emissions and/or discharges; • any contingency plans for if emissions exceedances or unplanned emissions and/or discharges occur • how any of the above would differ from standard operations once commissioning is complete. Note that DWER will not include conditions on a granted instrument that authorise environmental commissioning activities where it is not satisfied that the risks associated with environmental commissioning can be adequately addressed.	☒	☐
4.12	**Attachment 3B: Proposed activities**	Additional information relating to the proposed activities has been included in Attachment 3B (if required).	☒	☐
Clearing activities 4.13 to 4.19 are only required if the application includes clearing of native vegetation.				
4.13	**Proposed clearing area (hectares and/or number of individual trees to be removed):**		N/A	
4.14	**Details of any relevant exemptions:** Refer to DWER's *A guide to the exemptions and regulations for clearing native vegetation*.		N/A	
4.15	**Proposed method of clearing:**		N/A	

Part 4: Proposed activities				
4.16	**Period within which clearing is proposed to be undertaken:** For example, May 2020 – June 2020.		N/A	
4.17	**Purpose of clearing:**			
	N/A			
Clearing activities – Attachments			**N/A**	**Yes**
4.18	**Attachment 3C: Map of area proposed to be cleared**	You must provide: an aerial photograph or map of sufficient scale showing the proposed clearing area and prescribed premises boundary *OR* if you have the facilities, a suitable portable digital storage device of the area proposed to be cleared as an ESRI shapefile with the following properties: • Geometry type: Polygon Shape • Coordinate system: GDA 2020 (Geographic latitude / longitude) • Datum: 2020 1994 (Geocentric Datum of Australia 2020).	☒	☐
4.19	**Attachment 3D: Additional information for clearing assessment**	Additional information to assist in the assessment of the clearing proposal may be attached to this application (for example, reports on salinity, fauna or flora studies or other environmental reports conducted for the site).	☒	☐

Part 5: Index of Biodiversity and Marine Surveys for Assessments (IBSA and IMSA)				
INSTRUCTIONS: • **Biodiversity surveys should be submitted through the IBSA Submissions Portal at ibsasubmissions.dwer.wa.gov.au** • **Biodiversity surveys submitted to support this application must meet the requirements of the EPA's *Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA).*** • **Marine surveys submitted to support this application must meet the requirements of the EPA's Instructions for the preparation of data packages for the Index of Marine Surveys for Assessments (IMSA).** • **If these requirements are not met, DWER will decline to deal with the application.**				
Attachments			**N/A**	**Yes**
5.1	**Biodiversity surveys** Please provide the IBSA number(s) (or submission number(s) if IBSA number has not yet been issued) in the space provided. Note that a submission number is not confirmation of acceptance of a biodiversity survey and is not the same as an IBSA number. IBSA numbers are only issued once a survey has been accepted. Once an IBSA number is issued, please notify the department.	All biodiversity surveys submitted with this application meet the requirements of the EPA's *Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA)*.	☒	☐
		Submission number(s)		
		IBSA number(s)		
5.2	**Attachment 4: Marine surveys**	All marine surveys submitted with this application meet the requirements of the EPA's *Instructions for the preparation of data packages for the Index of Marine Surveys for Assessments (IMSA)*.	☒	☐

Part 6: Other DWER approvals

INSTRUCTIONS:

- **If you have applied, or intend to apply, for other approvals within DWER that may be relevant to this application, you must provide relevant details.**
- **If you have referred, or intend to refer, your proposal to the Environmental Protection Authority (EPA), you must provide the requested details.**

Pre-application scoping

6.1	**Have you had any pre-application / pre-referral / scoping meetings with DWER regarding any planned applications?**	☒ No ☐ Yes – provide details:

Environmental impact assessment (Part IV of the EP Act)

6.2	**Have you referred or do you intend to refer the proposal to the EPA?** Section 37B(1) of the EP Act defines a 'significant proposal' as *"a proposal likely, if implemented, to have a significant effect on the environment"*. If DWER considers that the proposal in this application is likely to constitute a 'significant proposal', DWER is required under s.38(5) of the EP Act to refer the proposal to the EPA for assessment under Part IV, if such a referral has not already been made. If a relevant Ministerial Statement already exists, please provide the MS number in the space provided.	☐ Yes (referred) – reference (if known): [ ] ☐ Yes – intend to refer (proposal is a 'significant proposal')☐ Yes – intend to refer (proposal will require a s.45C amendment to the current Ministerial Statement): MS [ ] ☐ No – a valid Ministerial Statement applies: MS [ ] ☒ No – not a 'significant proposal'

Clearing of native vegetation (Part V Division 2 of the EP Act and *Country Area Water Supply Act 1947*)

6.3	**Have you applied or do you intend to apply for a native vegetation clearing permit?** In accordance with the *Guideline: Industry Regulation Guide to Licensing* and *Procedure: Native vegetation clearing permits*, where clearing of native vegetation: • is exempt under Schedule 6 of the EP Act or the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA) (refer to *A guide to the exemptions and regulations for clearing native vegetation*) • is being assessed by a relevant authority which would lead to an exemption under Schedule 6 of the EP Act, or • has been referred under s.51DA of the EP Act and a determination made that a clearing permit is not required (refer to the *Guideline: Native vegetation clearing referrals*), the clearing will not be reassessed by DWER or be subject to any additional controls by DWER. If the proposed clearing action is to be assessed in accordance with, or under, an *Environment Protection and Biodiversity Conservation Act* (Cth) (EPBC Act) accredited process, such as the assessment bilateral agreement, the clearing permit application *Form Annex C7 – Assessment bilateral agreement* must be completed and attached to your clearing permit application.	☐ Yes – clearing application reference (if known): CPS [ ] ☐ Yes – a valid EP Act clearing permit already applies: CPS [ ] ☐ No – this application includes clearing (please complete Sections 4.13 to 4.19 above) ☒ No – permit not required (no clearing of native vegetation) ☐ No – permit not required (clearing referral decision): CPS [ ] ☐ No – an exemption applies (explain why):

Part 6: Other DWER approvals

6.4	**Have you applied or do you intend to apply for a *Country Area Water Supply Act 1947* licence?** If a clearing exemption applies in a *Country Area Water Supply Act 1947* (CAWS Act) controlled catchment, or if compensation has previously been paid to retain the subject vegetation, a CAWS Act clearing licence is required. If yes, contact the relevant DWER regional office for a Form 1 *Application for licence*. Map of CAWS Act controlled catchments	☐ Yes – application reference (if known): [ ] ☐ No – a valid licence applies: [ ] ☒ No – licence not required
Water licences and permits (*Rights in Water and Irrigation Act 1914*)		
6.5	**Have you applied, or do you intend to apply for:** **1. a licence or amendment to a licence to take water (surface water or groundwater); or** **2. a licence to construct wells (including bores and soaks); or** **3. a permit or amendment to a permit to interfere with the bed and banks of a watercourse?** For further guidance on water licences and permits under the *Rights in Water and Irrigation Act 1914*, refer to the *Procedure: Water licences and permits*.	☐ Yes –application reference (if known): [ ] ☒ No – a valid licence / permit applies: [GW bore on southeast corner of Lot 802; Licence: 50920] ☐ No – an exemption applies (explain why): ☐ No – licence / permit not required

Part 7: Other approvals and consultation

INSTRUCTIONS:

- **Please provide copies of all relevant documentation indicated below, including any conditions, exclusions, or expiry dates.**
- **"Major Project" means:**
  - **A State Development Project, where the lead agency is the Department of Jobs, Tourism, Science and Innovation (including projects to which a State Agreement applies); or**
  - **A Level 2 or 3 proposal, as defined in the Department of Premier and Cabinet's *Lead Agency Framework*.**

		N/A	No	Yes
7.1	**Is the proposal a Major Project?**		☒	☐
7.2	**Is the proposal subject to a State Agreement Act?**		☒	☐
	If yes, specify which Act:			
7.3	**Has the proposal been allocated to a "Lead Agency" (as defined in the *Lead Agency Framework*)?**		☒	☐
	If yes, specify Lead Agency contact details:			
7.4	**Has the proposal been referred and/or assessed under the EPBC Act (Commonwealth)?**	☒	☐	☐
	If yes, please specify referral, assessment and/or approval number:			
7.5	**Has the proposal obtained all relevant planning approvals?**	☒	☐	☐
	If planning approval is necessary but has not been obtained, please provide details indicating why:			
	If planning approval is not necessary, please provide details indicating why:			

Part 7: Other approvals and consultation				
7.6	**For renewals or amendment applications, are the relevant planning approvals still valid (that is, not expired)?**	☒	☐	☐
7.7	**Has the proposal obtained all other necessary statutory approvals (not including any other DWER approvals identified in Part 6 of this application)?**	☒	☐	☐
	If no, please provide details of approvals already obtained, outstanding approvals, and expected dates for obtaining these outstanding approvals:			
		N/A	**No**	**Yes**
7.8	**Has consultation been undertaken with parties considered to have a direct interest in the proposal (that is, interested parties or persons who are considered to be directly affected by the proposal)?** DWER will give consideration to submissions from interested parties or persons in accordance with the *Guideline: Industry Regulation Guide to Licensing*.	☒	☐	☐
Attachments			**N/A**	**Yes**
7.9	**Attachment 5: Other approvals and consultation documentation** — Details of other approvals specified in Part 7 of this application, including copies of relevant decisions and any consultation undertaken with direct interest stakeholders have been provided and labelled Attachment 5.		☒	☐

Part 8: Applicant history				
Note: • **DWER will undertake an internal due diligence of the applicant's fitness and competency based on DWER's compliance records and the responses to Part 8 of the form.** • **If you wish to provide additional information for DWER to consider in making this assessment, you may provide that information as a separate attachment (see Part 11).**				
		N/A	**No**	**Yes**
8.1	If the applicant is an individual, has the applicant previously held, or do they currently hold, a licence or works approval under Part V of the EP Act?	☒	☐	☐
8.2	If the applicant is a corporation, has any director of that corporation previously held, or do they currently hold, a licence or works approval under Part V of the EP Act?	☐	☐	☒
8.3	If yes to 8.1 or 8.2 above, specify the name of company and/or licence or works approval number: 1. Brajkovich Demolition and Salvage Pty Ltd (Licence L9158/2018/1) 2. Brajkovich Landfill & Recycling Pty Ltd (Licence L7038/1997/13) 3. Brajkovich Demolition Pty Ltd (Licence L8736/2013/2) 4. Brajkovich Landfill & Recycling (WA) Pty Ltd (Licence L8970/2016/2) 5. Brajkovich Landfill & Recycling Pty Ltd (Works Approval W6319/2019/1) 6. Brajkovich Landfill & Recycling (Muchea) Pty Ltd (W6909/2024/1)			
8.4	If the applicant is an individual, has the applicant ever been convicted, or paid a penalty, for an offence under a provision of the EP Act, its subsidiary legislation, or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.5	If the applicant is a corporation, has any director of that corporation ever been convicted, or paid a penalty, for an offence under a provision of the EP Act, its subsidiary legislation, or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.6	If the applicant is a corporation, has any person concerned in the management of the corporation, as referred to in s.118 of the EP Act, ever been convicted of, or paid a penalty, for an offence under a provision of the EP Act, its subsidiary legislation, or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐

Part 8: Applicant history				
8.7	If the applicant is a corporation, has any director of that corporation ever been a director of another corporation that has been convicted, or paid a penalty, for an offence under a provision of the EP Act, its subsidiary legislation, or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.8	With regards to the questions posed in 8.4 to 8.7 above, have any legal proceedings been commenced, whether convicted or not, against the applicant for an offence under a provision of the EP Act, its subsidiary legislation, or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.9	Has the applicant had a licence or other authority suspended or revoked due to a breach of conditions or an offence under the EP Act or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.10	If the applicant is a corporation, has any director of that corporation ever had a licence or other authority suspended or revoked due to a breach of conditions or an offence under the EP Act or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.11	If the applicant is a corporation, has any director of that corporation ever been a director of another corporation that has ever had a licence or other authorisation suspended or revoked due to a breach of conditions or an offence under the EP Act or similar environmental protection or health-related legislation in Western Australia or elsewhere in Australia?	☐	☒	☐
8.12	If yes to any of 8.4 to 8.11 above, you must provide details of any charges, convictions, penalties paid for an offence, and/or licences or other authorisations suspended or revoked:			

Part 9: Emissions, discharges, and waste			
INSTRUCTIONS: • **Please see *Guideline: Risk Assessments* and provide all information relating to emission sources, pathways and receptors relevant to the application.** • **You must provide details on sources of emissions (for example, kiln stack, baghouses or discharge pipelines) including fugitive emissions (for example, noise, dust or odour), types of emissions (physical, chemical, or biological), and volumes, concentrations and durations of emissions.** • **The potential for emissions should be considered for all stages of the proposal (where relevant), including during construction, commissioning and operation of the premises.**			
		No	**Yes**
9.1	**Are there potential emissions or discharges arising from the proposed activities?**	☐	☒
	If yes, identify all potential emissions and discharges arising from the proposed activities and complete Table 9.1: Emissions and discharges (below).		

Part 9: Emissions, discharges, and waste

☐ Gaseous and particulate emissions (e.g. emissions from stacks, chimneys or baghouses)

☒ Dust (e.g. from equipment, unsealed roads and/or stockpiles, etc.)

☐ Wastewater discharges (e.g. treated sewage, wash water, or process water discharged to lands or waters)

☐ Waste and leachate (e.g. emissions through seepage, leaks and spills of waste from storage, process and handling areas, etc.)

☒ Noise (e.g. from machinery operations and/or vehicle operations)

☐ Odour (e.g. from wastes accepted at putrescible landfills, storage or processing of waste or other odorous materials, etc.)

☐ Contaminated or potentially contaminated stormwater (e.g. stormwater with the potential to come into contact with chemicals or waste materials, etc.)

☐ Electromagnetic radiation[1]

☐ Other (please specify): [ ]

[1] Note that for electromagnetic radiation, copies/details of other relevant approvals (such as from the Department of Mines, Industry Regulation and Safety or the Radiological Council) must be provided where applicable.

Part 9: Emissions, discharges, and waste

Details of any pollution control equipment or waste treatment system, including any control mechanisms used to ensure proper operation of this equipment, must be included in the proposed controls column of the 'Emissions and discharges table' below. Details of management measures employed to control emissions should also be included. Please provide / attach any relevant documents (e.g. management plans, etc.).

Additional rows may be added as required and/or further information may be included as an attachment (see Section 9.3).

Table 9.1: Emissions and discharges

	Source of emission or discharge	Emission or discharge type	Volume and frequency	Proposed controls (include in Attachment 6A if extensive or complex)	Location (on site layout plan – see 3.4)
1.	Tipping/sorting and stockpiling of waste material	Dust emission	Frequently	All stockpiles will be kept in a damp state to prevent any dust lift-off. Targeted wetting will occur when the materials that have the potential to generate fugitive dust is being handled. A water cart is already present on site and shall be used for the proposed activity. A sprinkler system is proposed to be established will be on during the tipping, handling, screening and stockpiling of material.	Middle and Western part of the site
2.	Tracks/Unsealed Road	Dust emission	Frequently	Vehicle speed limits will be limited to less than 10km/hr which is supported by signage	Unsealed roads within the site boundary
3.	Vehicles and machinery	Noise emission	Frequently	Careful selection of machinery will be done to minimise the level of emitting noise. Bunds will be constructed to the north of the stockpiling area as required.	Western part of the site
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

9.2	**Waste-related activities at the premises**[2] Answer "yes" or "no" for the following questions and complete Table 9.2 (below).		No	Yes
	(a)	Is waste accepted at the premises?	☐	☒
	(b)	Is waste produced on the premises?	☒	☐
	(c)	Is waste processed on the premises?	☒	☐
	(d)	Is waste stored on the premises?	☐	☒

Part 9: Emissions, discharges, and waste

(e)	Is waste buried on the premises?	☐	☒
(f)	Is waste recycled on the premises?	☒	☐
(g)	Is any of the waste listed in Table 9.2 (below) also considered a 'dangerous good' for the purposes of the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007?[3]	☒	☐
	Specify, if yes:		

[2] Copies / details of any other relevant approvals (e.g. from the Department of Health) must be provided where applicable.

[3] Wastes derived from the storage, handling, and use of dangerous goods may be considered hazardous and may need to be handled with the same precautions. Please refer to the Department of Mines, Industry Regulation and Safety's *Dangerous Goods Safety information sheet* for more information.

Solid waste types must be described with reference to *Landfill Waste Classification and Waste Definitions 1996* (as amended from time to time) and the Environmental Protection (Controlled Waste) Regulations 2004 (Controlled Waste Regulations).

Liquid waste types must be described with reference to the Controlled Waste Regulations.

For further guidance on the definition of waste, refer to *Fact Sheet: Assessing whether material is waste*.

Detail must be provided on storage type (for example, hardstand and containment infrastructure), capacity, likely storage volumes, and containment features (for example, lining and bunding).

Additional rows may be added as required and/or further information may be included as an attachment (see Section 9.4).

Table 9.2 Waste types

	Waste type	Quantity (e.g. tonnes, litres, cubic metres)	Waste activity infrastructure (including specifications)	Monitoring (if applicable)	Location (on site layout plan – see 3.4)
1.	Inert Waste Type I				
2.	Inert Waste Type II				
3.	Uncontaminated Fill				
4.	Green waste				
5.	Clean Fill				
6.	Construction & Demolition Waste				

Attachments			N/A	Yes
9.3	**Attachment 6A: Emissions and discharges** (if required)	If required, further information for Section 9.1 has been included as an attachment labelled Attachment 6A.	☒	☐
9.4	**Attachment 6B: Waste acceptance** (if required)	If required, further information for Section 9.2 has been included as an attachment labelled Attachment 6B.	☒	☐

Part 10: Siting and location

10.1	**Sensitive land uses** What is/are the distance(s) to the nearest sensitive land use(s)? A sensitive land use is a residence or other land use which may be affected by an emission or discharge associated with the proposed activities.	Detailed List of sensitive receptors has been provided in Noise Management Plan

10.2 **Nearby environmentally sensitive receptors and aspects**

Identify in Table 10.2 (below):

- all instances of environmentally sensitive receptors that are known or suspected to be present within, or within close proximity to, the proposed prescribed premises boundary;

Part 10: Siting and location

- the nature of the sensitive receptors (e.g. type of Threatened Ecological Community, species or threatened flora or fauna, etc.);
- their actual or approximate known distance and direction from the premises boundary (at the closest point/s); and
- if applicable, what measures have been or will be taken to ensure that sensitive receptors are not adversely impacted by any emissions or discharges from the premises.

Refer to the *Guideline: Environmental siting* for further guidance.

Table 10.2: Nearby environmentally sensitive receptors and aspects

Type / classification	Description	Distance + direction to premises boundary	Proposed controls to prevent or mitigate adverse impacts (if applicable)
Environmentally Sensitive Areas [1]	Environmentally Sensitive Area- Clearing Regulation applies (DWER-046)	On and surrounding the site	
Threatened Ecological Communities	N/A		
Threatened and/or priority fauna	N/A		
Threatened and/or priority flora	N/A		
Aboriginal and other heritage sites [2]	N/A		
Public drinking water source areas [3]	The site is located within the Public Drinking Water Source Areas Protection Area P3 West Mirrabooka Underground water Pollution Control Area and Perth Coastal Underground Water Pollution Control Area	On-site	
Rivers, lakes, oceans, and other bodies of surface water, etc.	N/A		
Acid sulfate soils	Moderate to low risk of ASS occurring within 3m of natural soil surface but high to moderate risk of ASS beyond 3m of natural soil surface	Majority area of Lot 820 (lot adjacent to eastern boundary of Lot 821)	
Other			

[1] Environmentally Sensitive Areas are as declared under the *Environmental Protection (Environmentally Sensitive) Notice 2005*. Refer to DWER's website ("Environmentally Sensitive Areas") for further information.

[2] Refer to the Department of Planning, Lands and Heritage website for further information about Aboriginal heritage and other heritage sites.

[3] Refer to *Water Quality Protection Note No.25: Land use compatibility tables for public drinking water source areas* for further information.

10.3 **Environmental siting context details**

Provide further information including details on topography, climate, geology, soil type, hydrology, and hydrogeology at the premises.

Part 10: Siting and location

Topography:

The site slopes from the western end of the property at 76mAHD to the central Part of the property which sits at 31mAHD. The natural ground surface of the premises slopes towards the east. Most of the premises is relatively flat, the exception of a steep incline in the western portion of the premises.

Geology:

The site lies within the Perth Basin, a large intracratonic basin located in the Yilgarn Craton. The geology of the area is listed as chalk, greensand, glauconitic sandstone, siltstone, marl; characteristically glauconitic (DMIRS-016).

Hydrology:

Coastal Plain- Coastal and Fixed sand dunes and calcarenite. Non-calcareous sands, podsolised soils with low-lying wet areas.

Attachments			N/A	Yes
10.4	**Attachment 7: Siting and location**	You must provide details and a map describing the siting and location of the premises, including identification of distances to sensitive land uses and/or any specified ecosystems.	☐	☒

Part 11: Submission of any other relevant information

Attachments			No	Yes
11.1	**Attachment 8: Additional information submitted**	Applicants seeking to submit further information may include information labelled Attachment 8. If submitting multiple additional attachments, label them 8A, 8B, etc. Where additional documentation is submitted, please specify the name of documents below.	☐	☒
	List title of additional document(s) attached:	Licence Amendment Application (Supporting Document)		

Part 12: Category checklist(s)

Attachments			N/A	Yes
12.1	**Attachment 9: Category checklist(s)**	DWER has developed category checklists to assist applicants with preparing their application. These checklists are available on DWER's website. The relevant category-specific checklist(s) must be completed and included with the application, labelled as Attachment 9. If attaching multiple category checklists, label them 9A, 9B, etc. Do not select "N/A" unless: • a relevant category checklist is not yet published on DWER's website, or • the application is for an amendment that does not propose changes to the method of operation, or change the inputs, outputs, infrastructure, equipment, emissions, or discharges of / from the premises. Note that that a category checklist(s) may still be required for renewal applications. You will be advised in your renewal notification letter (sent approximately twelve months before the licence expiry date) if you are required to provide the information identified in a category checklist. Where a category checklist is submitted, please specify which checklist(s) in the space below.	☐	☒
	List title(s) of category checklists attached:	Category 63		

Part 13: Proposed fee calculation

INSTRUCTIONS:

Please calculate the prescribed fee using the relevant online fee calculator linked below.

- **Licence:** www.der.wa.gov.au/LicenceFeeCalculator
- **Works approval:** www.der.wa.gov.au/WorksApprovalFeeCalculator
- **Amendment:** https://www.wa.gov.au/government/publications/works-approval-and-licence-amendment-fee-calculator

Different fee units apply for different fee components. Fee units may also have different amounts depending on the period in which the calculation is made.

Once DWER has confirmed that the application submitted meets the relevant requirements of the EP Act, you will be issued an invoice with instructions for paying your application fee.

Further information on fees can be found in the *Fact Sheet: Industry Regulation fees*, and on DWER's website.

13.1	Only the relevant fee calculations are to be completed as follows: *[mark the box to indicate sections completed]*	☐ Section 13.3 for works approval applications ☐ Section 13.4 for licence / renewal applications ☐ Section 13.5 for registration applications ☒ Section 13.6 for amendment applications ☐ Section 13.7 for applications requiring clearing of native vegetation
13.2	All information and data used for the calculation of proposed fees has been provided in accordance with Section 13.8.	☐

13.3 Proposed works approval fee

Proposed works approval fee (see Schedule 3 of the EP Regulations)

Fees relate to the cost of the works, including all capital costs (inclusive of GST) associated with the construction and establishment of the works proposed under the works approval application. This includes, for example, costs associated with earth works, hard stands, drainage, plant hire, equipment, processing plant, relocation of equipment and labour hire.

Costs exclude:

- the cost of land
- the cost of buildings to be used for purposes unrelated to the purposes in respect of which the premises are, or will become, prescribed premises
- costs for buildings unrelated to the prescribed premises activity or activities
- consultancy fees relating to the works.

Fee component	Proposed fee
Cost of works: $	

13.4 Proposed licence fee (new licences and licence renewals)

Detailed licence fee calculations

Part 1 Premises component (see r.5D and Part 1 of Schedule 4 of the EP Regulations)

The production or design capacity should be the maximum capacity of the premises. For most categories, the production or design capacity refers to an annual rate. The figure should be based on 24 hour operation for 365 days, unless there is another regulatory approval or technical reason that restricts operation.

The premises component fee applies to the category in Part 1, Schedule 4 incurring the higher or highest amount of fee units in accordance with r.5D(2) of the EP Regulations.

List all categories (insert additional rows as required). Use only the higher or highest amount of fee units to determine the Part 1 fee component.

Category	Production or design capacity	Fee units
Using the higher or highest amount of fee units, Part 1 component subtotal		$

Part 2 Waste (see r.5D(1a)(b) and Part 2 of Schedule 4 of the EP Regulations)

If your premises includes one or more of the following categories specify any applicable Part 2 waste amounts. Do not include Part 3 waste components of these discharges in the below calculations.

Categories: 5, 6, 7, 8, 9, 12, 14, 44, 46, 53, 54A, 70, 80, or 85B

Part 2 waste means waste consisting of –

(a) tailings; or

(b) bitterns; or

(c) water to allow mining of ore; or

(d) flyash; or

(e) waste water from a desalination plant.

If the premises does not fall into one of the categories listed above, or there are no applicable Part 2 waste amounts, the sub total for this section will be $0.

Insert additional rows as required. Sum all Part 2 waste fees to determine the sub total.

Discharge quantity (tonnes/year)	Fee units
Part 2 component subtotal	$

Part 3 Waste – Discharges to air, onto land, into waters (see Part 3 of Schedule 4 of the EP Regulations)

Choose the appropriate location of the discharge and enter the discharge amount(s) in the units specified in the EP Regulations. This should be the amount of waste expected to be discharged over the next 12 months, expressed in the units and averaging period applicable for that waste kind (for example, g/minute or kg/day). Amounts can be measured, calculated, or estimated and can be based on data acquired over the previous 12 months, but should be based on the maximum premises capacity and not the forecast operating hours.

Where there are discharges, all prescribed waste types must be considered in the fee calculation. If a specified waste type is not present in the discharge, this must be justified using an appropriate emission estimation technique (for example, sampling data, industry sector guidance notes, National Pollution Inventory guides and emission factors).

Discharges to air			
Discharges to air	Discharge rate (g/min)	Discharges to air	Discharge rate (g/min)
Carbon monoxide		Nickel	
Oxides of nitrogen		Vanadium	
Sulphur oxides		Zinc	
Particulates (Total PM)		Vinyl chloride	
Volatile organic compounds		Hydrogen sulphide	
Inorganic fluoride		Benzene	
Pesticides		Carbon oxysulphide	
Aluminium		Carbon disulphide	
Arsenic		Acrylates	
Chromium		Beryllium	
Cobalt		Cadmium	
Copper		Mercury	
Lead		TDI (toluene-2, 4-di-iso-cyanate)	
Manganese		MDI (diphenyl-methane di-iso-cyanate)	
Molybdenum		Other waste	
Part 3 component subtotal		$	

Discharges onto land or into waters		Discharge rate
1. Liquid waste that can potentially deprive receiving waters of oxygen (for each kilogram discharged per day) —	(a) biochemical oxygen demand (in the absence of chemical oxygen demand limit)	
	(b) chemical oxygen demand (in the absence of total organic carbon limit)	
	(c) total organic carbon	
2. Bio-stimulants (for each kilogram discharged per day) —	(a) phosphorus	
	(b) total nitrogen	
3. Liquid waste that physically alters the characteristics of naturally occurring waters —	(a) total suspended solids (for each kilogram discharged per day)	
	(b) surfactants (for each kilogram discharged per day)	
	(c) colour alteration (for each platinum cobalt unit of colour above the ambient colour of the waters in each megalitre discharged per day)	
	(d) temperature alteration (for each 1°C above the ambient temperature of the waters in each megalitre discharged per day) — (i) in the sea south of the Tropic of Capricorn (ii) in other waters	

4. Waste that can potentially accumulate in the environment or living tissue (for each kilogram discharged per day) —	(a) aluminium	
	(b) arsenic	
	(c) cadmium	
	(d) chromium	
	(e) cobalt	
	(f) copper	
	(g) lead	
	(h) mercury	
	(i) molybdenum	
	(j) nickel	
	(k) vanadium	
	(l) zinc	
	(m)pesticides	
	(n) fish tainting wastes	
	(o) manganese	
5. *E. coli* bacteria as indicator species (in each megalitre discharged per day) —	(a) 1,000 to 5,000 organisms per 100 ml	
	(b) 5,000 to 20,000 organisms per 100 ml	
	(c) more than 20,000 organisms per 100 ml	
6. Other waste (per kilogram discharged per day) —	(a) oil and grease	
	(b) total dissolved solids	
	(c) fluoride	
	(d) iron	
	(e) total residual chlorine	
	(f) other	
Part 3 component subtotal		$
Summary – Proposed licence fee		
Part 1 Component		
Part 2 Component		
Part 3 Component		
Total proposed licence fees:		$

13.5 Prescribed fee for registration

A fee of 24 units applies for an application for registration of premises, unless the occupier of the premises holds a licence in respect of the premises, in accordance with r.5B(2)(c) of the EP Regulations.	☐ (Tick to acknowledge)

13.6 **Amendment fee (works approval or licence)**	
The fee prescribed for an application for an amendment to a works approval or licence is calculated in accordance with r.5BB(1)(a) of the EP Regulations: • for a single category of prescribed premises to which the works approval or licence relates, by using the fee unit number corresponding to the prescribed premises category and relevant design capacity threshold in Schedule 4 Part 1 of the EP Regulations. • for multiple categories of prescribed premises to which the works approval or licence relates, by using the highest fee unit number corresponding to the prescribed premises categories and design capacity threshold in Schedule 4 Part 1 of the EP Regulations.	
Fee Units	Proposed fee
[redacted]	

13.7 **Prescribed fee for clearing permit**	
In accordance with the *Guideline: Industry Regulation Guide to Licensing* and *Procedure: Native vegetation clearing permits*, where approval to clear native vegetation is sought as part of an application for a works approval or licence, DWER may elect to either jointly or separately determine the clearing component of the application. Where DWER separately determines the clearing component of an application, the application will be deemed to be an application for a clearing permit under s.51E of the EP Act and processed accordingly. Note: If a clearing permit application has been separately submitted and accepted by DWER, a refund for the clearing permit application will not be provided where DWER determines to address clearing requirements as part of a related works approval application.	☐ (Tick to acknowledge)

13.8 **Information and data used to calculate proposed fees**	
The detailed calculations of fee components, including all information and data used for the calculations are to be provided as attachments to this application, labelled as **Attachment 10**, with an appropriate suffix (for example 10A, 10B etc.). Please specify the relevant attachment number in the space/s provided below.	
Proposed fee for works approval	Attachment No.
Details for cost of works	
Proposed fee for licence	Attachment No.
Part 1: Premises	
Part 2: Waste types	
Part 3: Discharges to air, onto land, into waters	

Part 14: Commercially sensitive or confidential information

NOTE:
Information submitted as part of this application will be made publicly available. If you wish to submit commercially sensitive or confidential information, please identify the information in Attachment 11, and include a written statement of reasons why you request each item of information be kept confidential.

Information submitted later in the application process may also be made publicly available at DWER's discretion. For any commercially sensitive or confidential information, please follow the same process as described above.

DWER will take reasonable steps to protect genuinely confidential or commercially sensitive information. However, please note that DWER cannot commit to redacting all personal information from all supporting documents. You are advised to ensure that all personal information, including signatures, are removed from supporting documents prior to submitting them to the department. Please note that all submitted information may be the subject of an application for release under the *Freedom of Information Act 1992*.

	Attached	N/A
All information which you would propose to be exempt from public disclosure has been separately placed in a redacted version of the application form and its supporting documentation. Note that this is in addition to the unredacted version(s) provided to DWER for its assessment. Grounds for claiming exemption in accordance with Schedule 1 to the *Freedom of Information Act 1992* must be specified in **Attachment 11** (located at the end of this form).	☐	☒

Part 15: Submission of application	
INSTRUCTIONS: **Check one of the boxes below to nominate how you will submit your application.** **Files larger than 50MB cannot be received via email by DWER. Files larger than 50MB can be sent via File Transfer. Alternatively, email DWER to make other arrangements.**	
A full, signed, electronic copy of the application form including all attachments has been submitted via email to info@dwer.wa.gov.au; **OR**	☒
A signed, electronic copy of the application form has been submitted via email to info@dwer.wa.gov.au and attachments have been submitted via File Transfer, or electronically by other means as arranged with DWER; **OR**	☐
A full, signed hard copy has been sent to: APPLICATION SUBMISSIONS Department of Water and Environmental Regulation Locked Bag 10 Joondalup DC WA 6919	☐

Part 16: Declaration and signature

General

I / We confirm and acknowledge that:

- the information contained in this application is true and correct;
- I / we have legal authority to sign on behalf of the applicant (where authorisation provided);
- I / we have not altered the requirements and instructions set out in this application form;
- I / we have provided a valid email address in Section 2.3 for receipt of correspondence electronically via email from DWER in relation to this application;
- that successful delivery to my / our server constitutes receipt of correspondence sent electronically via email from DWER in relation to this application; and
- I / we have provided a valid postal and/or business address in Section 2.4 for the service of all Part V documents.
- giving or causing to be given information that to my knowledge is false or misleading is an offence under s.112 of the EP Act and may incur a penalty of up to $100,000.

Publication

I / We confirm and acknowledge:

- this application (including all attachments apart from the sections identified in Attachment 11) is a public document and may be published;
- marine surveys provided in accordance with Part 5 will be published and used, for the purposes of the IMSA project, in accordance with your declaration made in the *Metadata and Licensing Statement*;
- all necessary consents for the publication of information have been obtained from third parties;
- information considered exempt from public disclosure has been noted by redaction of a separately provided copy of the completed application form and its supporting documentation (in accordance with Part 14), with reasons as to why the information should be exempt in accordance with the grounds specified in Schedule 1 to the *Freedom of Information Act 1992* (WA) being provided in Attachment 11;
- subsequent information provided in relation to this application will be a public document and may be published unless written notice has been given to DWER by the applicant, at the time the information is provided, claiming that the information is considered exempt from public disclosure; and
- the decision to not publish information will be at the discretion of the CEO of DWER and will be made *Act 1992* (WA).

[redacted]

28/11/2024

Date

Date

Name

Position

NOTE: This form may be signed:

- **if the applicant is an individual, by the individual;**
- **if the applicant is a corporation, by:**
  - **the common seal being affixed in accordance with the *Corporations Act 2001* (Cth); or**
  - **two directors; or**
  - **a director and a company secretary; or**
  - **if a proprietary company has a sole director who is also the sole company secretary, by that director; and**
- **by a person with legal authority to sign on behalf of the applicant.**

ATTACHMENT 11 – Confidential or commercially sensitive information

Request for exemption from publication			
Information which you consider should not be published, on the grounds of a relevant exemption found in Schedule 1 to the *Freedom of Information Act 1992* (WA), must be specified in this Attachment. Add additional rows as required.			
NOT FOR PUBLICATION IF GROUNDS FOR EXEMPTION ARE DETERMINED TO BE ACCEPTABLE			
Section of this form:	All attachments	Grounds for claiming exemption:	Commercial in confidence
Section of this form:		Grounds for claiming exemption:	
Section of this form:		Grounds for claiming exemption:	
[redacted]			28/11/2024 Date

Attachment 1A: Proof of Occupier Status
(Provided as Appendix A of RFI response letter)

Attachment 1B: ASIC company extract
(Provided as Appendix B of RFI response letter)

Attachment 1C: Authorisation to act as representative of the Occupier

(Provided as Appendix C of RFI response letter)

Attachment 2: Premises map
(Provided as Appendix E of RFI response letter)

Attachment 8 Licence Amendment Application Report (Supporting Document)

Attachment 9 Category Checklist (Category 63)
(Provided as Appendix H of RFI response letter)

Appendix E: Updated Site layout

Figure 2. Site Layout & Infrastructure

SERS
Tel: +61 (08) 9220 2000
http://www.sers.net.au

CLIENT: Brajkovich Recycling(Malaga) Pty Ltd Landfill

PROJECT: Licence Amendment

PROJECT No: 004-28

BASEMAP: Near Maps

SCALE: 0 100 200 m

Design by: BK

Approved by: MC

SCALE: NTS ISSUE: FINAL DESIGN/DRAWN: BK DATE: November 2024

Appendix F: Emission/Discharge location Map

Figure 3. Locations of likely emissions/discharge

SERS
Site Environmental & Remediation Services
Tel: +61 (08) 9220 2000
http://www.sers.net.au

CLIENT: Brajkovich Recycling(Malaga) Pty Ltd Landfill

PROJECT: Licence Amendment

PROJECT No: 004-28

BASEMAP: Near Maps

Site Boundary
Location of likely emission or discharge

SCALE: 0 100 200 m

SCALE: NTS | ISSUE: FINAL | DESIGN/DRAWN: BK | DATE: November 2024

Appendix G: Updated Noise Management Plan

NOISE MANAGEMENT PLAN

Lot 821 & Part of Lot 802 (501) Alexander Drive, Mirrabooka WA 6061

Prepared for
Brajkovich Landfill & Recycling Pty Ltd

Prepared by
Site Environmental & Remediation Services (WA) Pty Ltd
281 Newcastle Street Northbridge WA 6003
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Client: Brajkovich Landfill & Recycling (Malaga) Pty Ltd

Project: Solid Waste Depot-Lot 821 and Part of Lot 802 (Lot 802) 501 Alexander Drive

Title NMP- Lot 821 & Part of Lot 802 501 Alexander Drive, Mirrabooka WA 6061

Reference: 004_28_NMP_SWD_November 2024

Status: Final

Report Date: 02/12/2024

Document Production Record

	Name	Signature
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Reviewed / Approved By	Matt Campbell	

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1	27th March 2023	First Issue
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4	2nd December 2024	Updated for DWER's comments on application.

Contents

Tables

1 Introduction

Site Environmental and Remediation Services (SERS) have been engaged by the proponent to develop a Noise Management Plan (NMP) for the proposed Solid Waste Depot at Lot 821 and Part of Lot 802 (501) Alexander Drive, Mirrabooka WA 6063 (hereafter referred to as 'the site') ancillary to Inert Landfill Class I. The site location and boundary are attached in **Figure 1.**

Noise assessments are undertaken as part of an environmental impact assessment to ensure that noise emissions comply with the Environmental Protection (Noise) Regulations 1997. Such an assessment includes both audible vibration (sound) and non-audible vibration, experienced as a physical sensation. Both forms have the capacity to cause discomfort, and long-term environmental noise exposure has been linked to community health impacts.

Movement of materials, disturbance of stockpile surfaces, have the potential to contribute to noise emissions, potentially impacting human health and the amenity value of the site if not effectively managed. As such, management is proposed in line with the EP Act 1986 Section 49 and the Noise Regulations 1987.

From the proposed work area, the nearest residential buildings lie within the distances below:

- 215m- 13 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 216m- 11 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 216m- 15 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 216m- 17 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 223m- 9 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 224m- 19 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 233m- 21 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)
- 254m- 23 Bencubbin Crescent, Mirrabooka (to the south of the work area on Lot 821)

1.1 Objectives of Noise Management

Objectives of managing noise include

- Prevention of noise pollution
- Prevention of impact on residents of neighbouring properties
- Prevention of impact on the amenity of the area

2 Applicable Regulation, Standards and Codes of Practice

2.1 Environmental Protection (Noise) regulations 1987

The Nose Regulations govern the following areas of noise management:

- Allowable noise emissions
- Noise management

2.2 EPA Guidance for the Assessment of Environmental Factors (in accordance with the Environmental Protection Act 1986)- Environmental Noise Draft 2007

Provides guidance to protect the environment as defined by the EP Act 1986 with a focus on noise emissions from premises; ensures noise emissions from premises comply with the Regulations 1997; addresses the factor of noise emissions from all types of proposals that result in noise emissions; and, to present the EPA position on noise emissions from premises to ensure adverse impacts are prevented.

It is used to conduct a screening procedure for deciding whether a detailed assessment of noise is required. It then provides the methodology to carry out a detailed assessment, should the screening process have identified that one was necessary.

2.3 Australian Standard- Guide to noise and vibration control on construction, demolition, and maintenance activities (AS 2436:2010)

Provides guidance on noise and vibration control with respect to construction, demolition, and maintenance sites as well as for the preparation of noise and vibration management plans, work method statements, and environmental impact studies.

2.4 National Standard and National Code of Practice- Occupational Noise NOHSC (2000)

Objectives of the above Standard comprise the reduction of the incidence and severity of an occupational noise-induced hearing loss. The Code of Practice provides practical guidance on achieving the above objective by providing a framework for the management of exposure to noise at work and minimising the effects of such exposure.

3 Noise Management and Noise control Methods

Noise can be controlled via a combination of machinery-specific and ambient methods. **Machinery-specific methods:**

- De-activating reversing beepers during more sensitive times of the day
- Negating the need for reversing beepers by using a one-way traffic system
- Ensuring machinery is well-maintained
- Using mufflers on machinery where possible

Ambient methods:

- Restricting vehicle speeds
- Restricting the use of airbrakes
- Prohibiting excess revving
- Prohibiting entry of excessively noisy trucks and reporting them for service
- Restricted operating hours

3.1 Screening procedure to establish the significance of noise emission

The screening procedure detailed in Guideline for the Assessment of Environmental Factors No. 8- Environmental Noise (WA EPA, 2005) was utilised to decide whether predicted noise levels are significant enough to warrant a detailed investigation, comprised of five questions:

i) Is the proposal particularly sensitive within the community?

Landfill activities have been carried out at the site over the past four decades. Signage has advertised the use of the site throughout this period. Proposed works differ from those that have historically occurred at the site, consisting of the delivery of waste material, sorting and storage.

Mitigation measures incorporate best practice measures outlined in AS 2436-2010 *Guide to noise and vibration control on construction, demolition, and maintenance sites*.

ii) Are there any noise-sensitive premises within the buffer distances indicated in Guidance Statement No. 3 for this type of proposal?

Appendix 1 of Guidance of the Assessment of Environmental Factor No. 3- Separation Distances between Industrial and Sensitive Land Uses (WA EPA,2005) includes the following applicable category:

a) Waste disposal- Waste Depot

Table - 1 Separation distances between industrial and sensitive land use

Industry	Description of industry	Buffer Distance (m)
Waste disposal	Waste Depot (62)- premises on which waste is stored or sorted, pending final disposal or re-use	200

3.1.1 Distance to Sensitive Receptor

There are 117 noise-sensitive premises (residential buildings) within a 200m noise buffer around the site boundary, as shown in **Figure 3. Table 3.2** shows list of sensitive receptors within 200m buffer around the site.

Table 2 - Noise-sensitive Receptors within 200m buffer around the site

Noise-sensitive Receptors (within 200m buffer)		
29 Liquidambar Heights, Mirrabooka WA 6061	16 Rheingold Pl, Mirrabooka WA 6061	17 Rheingold Pl, Mirrabooka WA 6061
25 Liquidambar Heights, Mirrabooka WA 6061	18 Rheingold Pl, Mirrabooka WA 6061	19 Rheingold Pl, Mirrabooka WA 6061
27 Liquidambar Heights, Mirrabooka WA 6061	18A Rheingold Pl, Mirrabooka WA 6061	21 Rheingold Pl, Mirrabooka WA 6061
3 Pecan Rise, Mirrabooka WA 6061	20 Rheingold Pl, Mirrabooka WA 6061	23 Rheingold Pl, Mirrabooka WA 6061
5 Pecan Rise, Mirrabooka WA 6061	22A Rheingold Pl, Mirrabooka WA 6061	25 Rheingold Pl, Mirrabooka WA 6061
7 Pecan Rise, Mirrabooka WA 6061	12 Rheingold Pl, Mirrabooka WA 6061	27 Rheingold Pl, Mirrabooka WA 6061
22 Rheingold Pl, Mirrabooka WA 6061	4 Rheingold Pl, Mirrabooka WA 6061	29 Rheingold Pl, Mirrabooka WA 6061
24 Rheingold Pl, Mirrabooka WA 6061	10 Rheingold Pl, Mirrabooka WA 6061	15 Boskoop Pl, Mirrabooka WA 6061
14 Rheingold Pl, Mirrabooka WA 6061	15 Rheingold Pl, Mirrabooka WA 6061	11 Boskoop Pl, Mirrabooka WA 6061
10 Manna Cl, Mirrabooka WA 6061	11 Manna Cl, Mirrabooka WA 6061	9 Boskoop Pl, Mirrabooka WA 6061
12 Manna Cl, Mirrabooka WA 6061	9 Manna Cl, Mirrabooka WA 6061	7 Boskoop Pl, Mirrabooka WA 6061

Noise-sensitive Receptors (within 200m buffer)		
14 Manna Cl, Mirrabooka WA 6061	7 Manna Cl, Mirrabooka WA 6061	14 Floribunda Gardens, Mirrabooka WA 6061
16 Manna Cl, Mirrabooka WA 6061	5 Manna Cl, Mirrabooka WA 6061	16 Floribunda Gardens, Mirrabooka WA 6061
17 Manna Cl, Mirrabooka WA 6061	3 Manna Cl, Mirrabooka WA 6061	18 Floribunda Gardens, Mirrabooka WA 6061
15 Manna Cl, Mirrabooka WA 6061	1 Manna Cl, Mirrabooka WA 6061	20 Floribunda Gardens, Mirrabooka WA 6061
11 Floribunda Gardens, Mirrabooka WA 6061	21 Floribunda Gardens, Mirrabooka WA 6061	22 Floribunda Gardens, Mirrabooka WA 6061
15 Floribunda Gardens, Mirrabooka WA 6061	23 Floribunda Gardens, Mirrabooka WA 6061	24 Floribunda Gardens, Mirrabooka WA 6061
17 Floribunda Gardens, Mirrabooka WA 6061	25 Floribunda Gardens, Mirrabooka WA 6061	26 Floribunda Gardens, Mirrabooka WA 6061
19 Floribunda Gardens, Mirrabooka WA 6061	27 Floribunda Gardens, Mirrabooka WA 6061	17 Silkpod Heights, Mirrabooka WA 6061
12 Silkpod Heights, Mirrabooka WA 6061	29 Floribunda Gardens, Mirrabooka WA 6061	15 Silkpod Heights, Mirrabooka WA 6061
2 Dusky Ln, Mirrabooka WA 6061	5 Silkpod Heights, Mirrabooka WA 6061	11 Silkpod Heights, Mirrabooka WA 6061
1 Dusky Ln, Mirrabooka WA 6061	3 Silkpod Heights, Mirrabooka WA 6061	9 Silkpod Heights, Mirrabooka WA 6061
3 Dusky Ln, Mirrabooka WA 6061	1 Silkpod Heights, Mirrabooka WA 6061	7 Silkpod Heights, Mirrabooka WA 6061
5 Dusky Ln, Mirrabooka WA 6061	24 Coppercups Retreat, Mirrabooka WA 6061	8 Silkpod Heights, Mirrabooka WA 6061
7 Dusky Ln, Mirrabooka WA 6061	26 Coppercups Retreat, Mirrabooka WA 6061	6 Silkpod Heights, Mirrabooka WA 6061
9 Dusky Ln, Mirrabooka WA 6061	28 Coppercups Retreat, Mirrabooka WA 6061	4 Silkpod Heights, Mirrabooka WA 6061
19 Coppercups Retreat, Mirrabooka WA 6061	30 Coppercups Retreat, Mirrabooka WA 6061	2 Silkpod Heights, Mirrabooka WA 6061

Noise-sensitive Receptors (within 200m buffer)		
21 Coppercups Retreat, Mirrabooka WA 6061	14 Everlasting Gardens, Mirrabooka WA 6061	4 Caffrum Grn, Mirrabooka WA 6061
23 Coppercups Retreat, Mirrabooka WA 6061	16 Everlasting Gardens, Mirrabooka WA 6061	6 Caffrum Grn, Mirrabooka WA 6061
25 Coppercups Retreat, Mirrabooka WA 6061	18 Everlasting Gardens, Mirrabooka WA 6061	8 Caffrum Grn, Mirrabooka WA 6061
27 Coppercups Retreat, Mirrabooka WA 6061	20 Everlasting Gardens, Mirrabooka WA 6061	10 Caffrum Grn, Mirrabooka WA 6061
14 Caffrum Grn, Mirrabooka WA 6061	16 Caffrum Grn, Mirrabooka WA 6061	12 Caffrum Grn, Mirrabooka WA 6061
18 Caffrum Grn, Mirrabooka WA 6061	11 Everlasting Gardens, Mirrabooka WA 6061	13 Everlasting Gardens, Mirrabooka WA 6061
15 Everlasting Gardens, Mirrabooka WA 6061	15 Everlasting Gardens, Mirrabooka WA 6061	17 Everlasting Gardens, Mirrabooka WA 6061
19 Everlasting Gardens, Mirrabooka WA 6061	21 Everlasting Gardens, Mirrabooka WA 6061	23 Everlasting Gardens, Mirrabooka WA 6061
7 Northcliffe Ave, Dianella WA 6059	21 Bencubbin Cres, Dianella WA 6059	19 Bencubbin Cres, Dianella WA 6059
17 Bencubbin Cres, Dianella WA 6059	15 Bencubbin Cres, Dianella WA 6059	13 Bencubbin Cres, Dianella WA 6059
11 Bencubbin Cres, Dianella WA 6059	9 Bencubbin Cres, Dianella WA 6059	43 Balikpapan Ave, Dianella WA 6059
41 Balikpapan Ave, Dianella WA 6059	39 Balikpapan Ave, Dianella WA 6059	37 Balikpapan Ave, Dianella WA 6059

3.1.2 Noise Standard

The Environmental Protection (Noise) Regulations 1997 (As Amended) regulates the level of noise emitted from any premise or public place that can be received at other premises. Regulations 7 and 8 (from the Noise Regulations), stipulate the maximum allowable external noise levels with the combination of base levels. These levels are based on the type of premises receiving the noise. For this operation, the closest receptor is residential property located 780m away from the site which could be noise sensitive. **Table 3.2**. shows the maximum assigned noise level for this category.

Table 3 - Baseline assigned outdoor noise level

Type of premises receiving noise / Time of day		Assigned level (dB)		
		LA10*	LA1**	LAmax**
Noise sensitive premises: Highly sensitive area	0700 to 1900 hours Monday to Saturday	54	64	74
	0900 to 1900 hours Sunday & Public holidays	49	59	74
	1900 to 2200 hours all days	49	59	64
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	44	54	64
Commercial Premises	All hours	60	75	80

*LA10 – a noise level not to be exceeded for more than 10% of the time i.e., over a five-hour work shift for not more than 30 minutes

**LA1 – a noise level not to be exceeded for more than 1% of the time i.e., over a five- hour work shift for not more than 3 minutes

**LAmax – noise not to be exceeded at any time

iii) Is operational noise likely to be above the relevant screening criterion?

Operational noise sources shall consist of the following:

- Arrival at and departure from the site - light vehicle movements
- Tipping of material - engine noise of trucks and impact noise
- Placement of material into stockpiles - engine noise of excavator
- Dust suppression - engine noise of water cart
- Heavy equipment use is predicted below:
  - Excavator x 3
  - Wheel Loader x 2

- Water Cart x1
- Trucks (>20 tonnes)
- Light vehicles

EPA Guidance Note 8- Environmental Noise (2007) states the screening procedure as follows:

- Identify a point on the proposed site where the noise sources could be said to be concentrated.
- Estimate a total A-weighted sound power level for all noise sources.
- Identify the locations of all nearby residences not owned by the proponent and estimate their distances from the source point on site.
- Plot the sound power level(s) for day/night operations for the nearest residence or residences.
- If below the line for daytime and night-time operations. Then operational noise is not likely to be significant.

3.1.3 Noise Prediction

To determine the estimated noise generated during the works, calculation have been undertaken using the method listed in Appendix B (Estimating Noise from Sites) of the *Australian Standard (AS) 2436:2010- Guide to noise and vibration control on construction, demolition, and maintenance sites*. This method accounts for the sound level of the equipment, the distance of receptors from the noise source and the type of ground between the two locations. All properties within 100m buffer zone have been taken into consideration as a sensitive noise receptor. The typical sound levels from construction, maintenance and demolition plant equipment listed in Table A1 of Appendix A of AS2436.2010 have been used to estimate the equipment for the project (**Table 3.4, 3.5 & 3.6**). The calculations have been based on a worst-case scenario with all equipment operating simultaneously, however it should be noted that it is unlikely all equipment will be operating at the same time. The results of these calculations are displayed in **Table 3.7.**

Table 4 - A-weighted sound power level typical range

Plant Description	A-weighted sound power level- typical range L_{WA} (dB x 10^{-12} W)	A-weighted sound power level- typical mid-point L_{WA} (dB x 10^{-12} W)	Indicative sound Pressure Level at 10m distance
Wheeled loader	99-111	105	77
Truck >20 tonnes	107	107	79
Excavator	97-117	107	79
Water Cart	106-108	107	79
Light vehicle	106	106	78

Table 5 - Cumulative sound pressure level (Low) of proposed site equipment

Equipment/Process	Indicative Sound Power Level (mid-level)	Indicative Sound Pressure Level at 10m in distance
Light vehicle	106	78
Truck (>20 tonne)	107	79
Excavator	107	79
Truck (water cart)	107	79
Loader (Wheeled)	105	77

Table 6 - Rearranged from the highest to lowest sound power level

Equipment/Process	Indicative Sound Power Level (mid-level)	Cumulative Sound Pressure Level (Lwa)
Excavator	107	-
Truck (>20 tonnes)	107	110
Truck (water cart)	107	112
Light vehicle	106	113
Loader (wheeled)	105	114

Table 7 - List of receptors within 100m buffer zone of the site and assigned noise level as per Western Australian Environmental Protection (Noise) Regulation 1997 (EPNR)

Receiver	Location	Type of Receptor	Proximity to Site boundary[1] (m)	Cumulative Sound pressure level (L_{WA})	Log values of distance ($Log_{10}R$)	Estimated Sound Level (Lpa)	Assigned Level (dBA) (LAmax)	Assigned Level Exceedance
1	29 Rheingold Place, Mirrabooka WA 6061	Residential	93	114	1.97	67	74	No
2	27 Rheingold Place, Mirrabooka WA 6061	Residential	99	114	2.00	66	74	No
3	26 Floribunda Gardens, Mirrabooka WA 6061	Residential	81	114	1.91	68	74	No
4	24 Floribunda Gardens, Mirrabooka WA 6061	Residential	100	114	2.00	66	74	No
5	20 Floribunda Gardens, Mirrabooka WA 6061	Residential	100	114	2.00	66	74	No
6	18 Floribunda Gardens, Mirrabooka WA 6061	Residential	93	114	1.97	67	74	No
7	16 Floribunda Gardens, Mirrabooka WA 6061	Residential	94	114	1.97	67	74	No
8	27 Floribunda Gardens, Mirrabooka WA 6061	Residential	100	114	2.00	66	74	No
9	29 Floribunda Gardens, Mirrabooka WA 6061	Residential	99	114	2.00	66	74	No

Receiver	Location	Type of Receptor	Proximity to Site boundary[1] (m)	Cumulative Sound pressure level (L_{WA})	Log values of distance ($Log_{10}R$)	Estimated Sound Level (Lpa)	Assigned Level (dBA) (LAmax)	Assigned Level Exceedance
10	3 Silkpod Heights, Mirrabooka WA 6061	Residential	100	114	2.00	66	74	No
11	1 Silkpod Heights, Mirrabooka WA 6061	Residential	98	114	1.99	66	74	No
12	2 Silkpod Heights, Mirrabooka WA 6061	Residential	85	114	1.93	67	74	No
13	4 Silkpod Heights, Mirrabooka WA 6061	Residential	99	114	2.00	66	74	No
14	28 Coppercups Retreat, Mirrabooka WA 6061	Residential	92	114	1.96	67	74	No
15	30 Coppercups Retreat, Mirrabooka WA 6061	Residential	85	114	1.93	67	74	No
16	25 Coppercups Retreat, Mirrabooka WA 6061	Residential	98	114	1.99	66	74	No
17	27 Coppercups Retreat, Mirrabooka WA 6061	Residential	86	114	1.93	67	74	No
18	14 Everlasting Gardens, Mirrabooka WA 6061	Residential	93	114	1.97	67	74	No
19	Part of Lot 820 (501) Alexander Drive, Mirrabooka WA 6061	Industrial	20	114	1.30	80	80	No

3.2 Noise management measures

Based on the calculation the estimated noise level from the site is within the assigned levels for residential and commercial receptors, however Condition 13(2) of the noise regulations states that the assigned noise levels listed in Condition 7 does not apply to work if the following conditions are met:

- The noise is emitted during the hours of 07.00 and 19.00 Monday to Saturday.
- The equipment used is the quietest possible.
- A noise management plan was prepared (only if required)

As such the following noise management and mitigation measures are recommended during each Stage of works:

- Careful selection of machinery based on noise output.
- All machinery/ equipment proposed across the site will be used in accordance with appropriate manufactures instructions.
- All machinery/ equipment will be regularly serviced to ensure no excess noise emissions are received.
- Ensure no work is conducted outside of the operating hours.
- Where possible, specific activities will be scheduled during hours that least adversely affect sensitive receivers.
- The current site fencing around the Site will be maintained to ensure no public access is permitted.
- Where possible, maintain any onsite vegetation to act as noise buffer.

iv) Is construction noise likely to be above the relevant screening criterion?

No construction is proposed in this area of the site, however noise levels generated by this activity are not expected to differ from predicted levels as the machinery in use shall be the same.

v) Is the proposal likely to involve blasting?

No blasting is proposed.

As there are 171 sensitive receptors were identified within 200m buffer, a detailed noise assessment has been conducted. Detailed noise assessment report has been attached as **Appendix A**.

4 Assigned Level Criteria

Environmental Protection (Noise) regulation 1997 Summary of the Regulations (1997) defines assigned noise level as 'the level of noise allowed to be received at premises at a particular time of the day or night.

They apply at the premises receiving the noise and consider the impact of surrounding land use on noise levels received at each premise. They comprise the integration of a transport factor and a consideration of the proportion of surrounding land occupied by land uses with the potential to generate ambient noise i.e., commercial, and industrial.

The transport factor is calculated according to the number of major and minor roads within 100m buffer of the premises, and the number of major roads within a 450m buffer of the premises. Proportion of 100 and 450m buffers of the site occupied by commercial and industrial premises are calculated based on zoning displayed on a combination of metropolitan regional scheme and local town planning maps.

5 Conclusion

As shown above, there are three sets of criteria applied to the cumulative sound pressure levels received by sensitive receptors within a one hundred metre buffer of the proposed site boundary.

The values calculated did not, however factor in natural elevation or added noise attenuation by buffers located between the source and the receptors. Several buffers will exist between site and receptors, comprised of attenuation bunds and screens of mature trees and vegetation. Such buffers can decrease A-weighted sound pressure level by up to 15dB, and more at greater distances, with a conservative estimation of reduction by 7-10dB as per AS 2436:2010.

As there are 171 sensitive receptors were identified within 200m of the site, a detailed noise assessment has been conducted. Detailed noise assessment report has been attached as **Appendix A**.

Figures

TITLE	Figure 1. General site location_Lot 821			
PROJECT	Lot 821 (501) Alexander Drive, Mirrabooka WA			**PROJECT CODE** 004-28
DESIGN/DRAW BK	**CHECKED BY** MC	**VERSION** 01	**DATE** July 2024	
PREPARED BY SERS Site Environmental & Remediation Services		**Source** NearMaps (GRID: GDA 1994_Perth Coastal Grid 1994)		
PREPARED FOR Brajkovich Landfill and Recycling (Malaga) Pty Ltd		**Scale** 0 100 200 m		

Appendix A – Noise Assessment Report

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Environmental Noise Assessment – Rehabilitation Works

Lot 821 Alexander Drive, Mirrabooka

Reference: 23037947-01

Prepared for:
Brajkovich Demolition & Salvage (WA) Pty Ltd

Reference: 23037947-01

Lloyd George Acoustics Pty Ltd
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Date	Rev	Description	Author	Verified
28-Mar-23	0	Issued to Client	Matt Moyle	Terry George

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Appendices

EXECUTIVE SUMMARY

Lloyd George Acoustics was engaged by Brajkovich Demolition & Salvage (WA) Pty Ltd to undertake a noise assessment for a proposed screening, sorting and filling operation to be located at Lot 821 Alexander Drive, Mirrabooka. The activities are part of a local government contract to rehabilitate the existing sand quarry to natural ground levels.

This report considered noise emissions from the proposed operations to surrounding properties by way of noise modelling. The overall site is already approved for filling operations, involving tipper trucks, front end loaders and water cartage. However, the requirement to screen and sort rubble and waste on site (within the sand quarry) has been recently proposed. It is therefore considered relevant to assess noise impacts from this additional activity and associated plant items. The plant items relevant to this study are listed as follows:

- 1x Screener (Mobiscreen MSS 802 EVO);
- 1x Excavator Volvo RC615;
- 1x TC420X PL27 Telestacker;
- 1x Case 1021F Front End Loader (Wheel) 4 cu.m.

As part of the study, noise emissions of the above items were measured on site, under typical operating conditions, while working in an adjoining approved area.

Noise emissions were then predicted from the proposed location by way of computer noise modelling and assessed against assigned levels in accordance with the *Environmental Protection (Noise) Regulations 1997*. The computer modelling also allowed for prediction of noise levels as the quarry pit is filled, being approximately 35m RL (Starting level), to 45m RL, 55m RL, and 65m RL (Fully filled).

The predicted noise levels are demonstrated to be compliant with daytime assigned levels without the need for mitigation measures. It is understood that the nature of the project to fill the quarry site is long term (up to 100 years).

1. INTRODUCTION

Lloyd George Acoustics was engaged by Brajkovich Demolition & Salvage (WA) Pty Ltd to undertake an environmental noise assessment for a proposed screening, sorting and filling operation to be located at Lot 821 Alexander Drive, Mirrabooka - refer *Figure 1-1*.

The overall site is already approved for filling operations, involving tipper trucks, front end loaders and water cartage. However, the requirement to screen and sort rubble and waste on site (within the sand quarry) has been recently proposed. It is therefore considered relevant to assess noise impacts from this additional activity and associated plant items in isolation. The plant items relevant to this study are listed as follows:

- 1x Screener (Mobiscreen MSS 802 EVO);
- 1x Excavator Volvo RC615;
- 1x TC420X PL27 Telestacker;
- 1x Case 1021F Front End Loader (Wheel) 4 cu.m.

Noise emissions of the above items were measured on site, under typical operating conditions, while working in an adjoining approved area.

Noise emissions were then predicted from the proposed location by way of computer noise modelling and assessed against assigned levels in accordance with the *Environmental Protection (Noise) Regulations 1997* for daytime operations. The computer modelling also allowed for prediction of noise levels as the quarry pit is filled, being approximately 35m RL (Starting level), to 45m RL, 55m RL, and 65m RL (Fully filled).

Figure 1-1: Subject Site Location (Source: DPLH PlanWA)

Appendix C contains a description of some of the terminology used throughout this report.

2. CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (the Regulations) as follows:

"7. Prescribed standard for noise emissions

(1) Noise emitted from any premises or public place when received at other premises –

(a) must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and

(b) must be free of –

(i) tonality; and

(ii) impulsiveness; and

(iii) modulation,

when assessed under regulation 9.

(2) For the purposes of subregulation (1)(a), a noise emission is taken to significantly contribute to a level of noise if the noise emission … exceeds a value which is 5 dB below the assigned level at the point of reception."

Tonality, impulsiveness and modulation are defined in regulation 9 (refer *Appendix C*). Under regulation 9(3), *"Noise is taken to be free of the characteristics of tonality, impulsiveness and modulation if -*

(a) the characteristics cannot be reasonably and practicably removed by techniques other than attenuating the overall level of noise emission; and

(b) the noise emission complies with the standard prescribed under regulation 7(1)(a) after the adjustments in the table [Table 2-1] … are made to the noise emission as measured at the point of reception."

Table 2-1 Adjustments Where Characteristics Cannot Be Removed

Where Noise Emission is Not Music*			Where Noise Emission is Music	
Tonality	Modulation	Impulsiveness	No Impulsiveness	Impulsiveness
+ 5 dB	+ 5 dB	+ 10 dB	+ 10 dB	+ 15 dB

* These adjustments are cumulative to a maximum of 15 dB.

The assigned levels (prescribed standards) for all premises are specified in regulation 8(3) and are shown in *Table 2-2*. The L_{A10} assigned level is applicable to noises present for more than 10% of a representative assessment period, generally applicable to "steady-state" noise sources. The L_{A1} is for short-term noise sources present for less than 10% and more than 1% of the time. The L_{Amax} assigned level is applicable for incidental noise sources, present for less than 1% of the time.

Table 2-2 Baseline Assigned Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: highly sensitive area[1]	0700 to 1900 hours Monday to Saturday (Day)	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays (Sunday)	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days (Evening)	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	35 + influencing factor	45 + influencing factor	55 + influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial Premises	All hours	60	75	80
Industrial and Utility Premises	All hours	65	80	90

1. ***highly sensitive area*** means that area (if any) of noise sensitive premises comprising —
   (a) a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
   (b) any other part of the premises within 15 metres of that building or that part of the building.

The influencing factor (IF), in relation to noise received at noise sensitive premises, has been calculated as either 2 dB or 8 dB, as determined in *Appendix B*. *Table 2-3* shows the assigned levels including the influencing factor and transport factor at the receiving locations.

The screening, sorting and filling activities are proposed to be conducted within the hours 7am and 7pm Monday to Saturday.

Table 2-3 Assigned Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
+8 dB IF Noise sensitive premises: highly sensitive area[1]	0700 to 1900 hours Monday to Saturday (Day)	53	63	73
	0900 to 1900 hours Sunday and public holidays (Sunday)	48	58	73
	1900 to 2200 hours all days (Evening)	48	58	63
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	43	53	63
+2 dB IF Noise sensitive premises: highly sensitive area[1]	0700 to 1900 hours Monday to Saturday (Day)	47	57	67
	0900 to 1900 hours Sunday and public holidays (Sunday)	42	52	67
	1900 to 2200 hours all days (Evening)	42	52	57
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	37	47	57
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80

It must be noted the assigned levels above apply outside the receiving premises and at a point at least 3 metres away from any substantial reflecting surfaces. Where this was not possible to be achieved due to the close proximity of existing buildings and/or fences, the noise emissions were assessed at a point within 1 metre from building facades and a -2 dB adjustment was made to the predicted noise levels to account for reflected noise.

The assigned levels are statistical levels and therefore the period over which they are determined is important. The Regulations define the Representative Assessment Period (RAP) as "*a period of time of not less than 15 minutes, and not exceeding 4 hours*, *determined by* an *inspector* or *authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission*". An inspector or authorised person is a person appointed under Sections 87 & 88 of the *Environmental Protection Act 1986* and include Local Government Environmental Health Officers and Officers from the Department of Water Environmental Regulation. Acoustic consultants or other environmental consultants are not appointed as an inspector or authorised person. Therefore, whilst this assessment is based on a 4-hour RAP, which is assumed to be appropriate given the nature of the operations, this is to be used for guidance only.

3. METHODOLOGY

3.1. Site Measurements

Site measurements of the screening plant, namely an excavator, screener, telestacker and front end loader, were undertaken to derive source sound levels for use in noise modelling.

Under the Regulations, there are certain requirements that must be satisfied when undertaking measurements and are defined in Regulations 19, 20, 22 and 23 and Schedule 4. In undertaking the measurements, these have been satisfied, specifically noting the following:

- The sound level meter used was:
  - Bruel & Kjaer Type 2250 (S/N: 3011946);
- The equipment holds current laboratory certificates of calibration that are available upon request. The equipment was also field calibrated before and after and found to be within +/- 0.5 dB.
- The microphone was fitted with a standard wind screen.
- The microphone was at least 1.2 metres above ground level and at least 3.0 metres from reflecting facades (other than the ground plane).
- Measurements were recorded on 7 March between 12pm and 1pm.

The following plant were measured:

- 1x Screener (Mobiscreen MSS 802 EVO);
- 1x Excavator Volvo RC615;
- 1x TC420X PL27 Telestacker;
- 1x Case 1021F Front End Loader (Wheel) 4 cu.m.

The screener, excavator and telestacker are proposed to operate simultaneously at all times, therefore these were grouped and measured as one source.

3.2. Noise Modelling

Computer modelling has been used to predict the noise emissions from the development to all nearby receivers. The software used was *SoundPLAN 8.2* with the ISO 9613 algorithms (ISO 171534-3 improved method) selected, as they include the influence of meteorological conditions. Input data required in the model are listed below and discussed in *Section 3.2.1* to *Section 3.2.4*:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

3.2.1. Meteorological Conditions

Meteorological information utilised is provided in *Table 3-1* and is considered to represent worst-case conditions for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

Table 3-1: Modelling Meteorological Conditions

Parameter	Day (7.00am to 7.00pm)	Night (7.00pm to 7.00am)
Temperature (°C)	20	15
Humidity (%)	50	50
Wind Speed (m/s)	Up to 5	Up to 5
Wind Direction*	All	All

* The modelling package allows for all wind directions to be modelled simultaneously.

Alternatives to the above default conditions can be used where one year of weather data is available and the analysis considers the worst 2% of the day and night for the month of the year in which the worst-case weather conditions prevail (source: *Draft Guideline on Environmental Noise for Prescribed Premises*, May 2016). In most cases, the default conditions occur for more than 2% of the time and therefore must be satisfied.

3.2.2. Topographical Data

Topographical data was adapted from publicly available information (e.g. *Google*) in the form of spot heights and combined with site survey information in 1-metre contour lines.

Surrounding existing buildings were also incorporated in the noise model, as these can provide noise shielding as well as reflection paths. Single storey buildings are modelled with a height of 3.5 metres and any double storey buildings identified assumed to be 7.0 metres in height with receivers 1.4 metres above ground.

3.2.3. Ground Absorption

The ground absorption has been assumed to be 0.0 (0%) for the roads and 0.5 (50%) elsewhere, noting that 0.0 represents hard reflective surfaces such as water and 1.0 represents absorptive surfaces such as grass and quarry areas.

3.2.4. Source Sound Levels

The source sound power levels used in the modelling, derived from field measurements, are provided in *Table 3-2*.

Table 3-2: Source Sound Power Levels, dB

Description	Octave Band Centre Frequency (Hz)								Overall dB(A)
	63	125	250	500	1k	2k	4k	8k	
Screener (Mobiscreen MSS 802 EVo) with Excavator and Telestacker operating – L_{A10}	103	108	108	107	102	99	93	85	**108**
Front End Loader Working – L_{A10}	107	103	103	92	90	88	82	74	**98**

The following is noted in relation to *Table 3-2*:

- Levels are based on measurements of actual equipment proposed for relocation into the sand quarry area.
- A source height of 3.0m was used as an average for the combined group source of Screener, excavator and telestacker.
- The front end loader is assumed to be working near the screening unit centrally located in the pit at a height of 1.5m above ground level.
- To simulate the various filled depths of the pit, the ground floor layer was modified in 10m intervals and subsequently raising the noise sources with it (so that they remained at the same relative level above pit floor).

4. RESULTS

The noise levels were predicted for various scenarios over the duration of the project, noting that with time the pit will fill and therefore screening plant will progress to be higher and bring noise sources higher also.

Screening Operations (L_{10}) at the following depths/stages of filling the pit were modelled:

- At RL35m (existing pit floor level)
- At RL45m
- At RL55m
- At RL65m (approximately final natural ground level)

The results are best shown figuratively, with contour lines labelled and indicating predicted levels at all locations. These figures are provided as follows:

- *Figure 4-1* showing noise levels when the quarry is at RL 35m (starting levels).
- *Figure 4-2* showing noise levels when the quarry is at RL 45m.
- *Figure 4-3* showing noise levels when the quarry is at RL 55m.
- *Figure 4-4* showing noise levels when the quarry is at RL 65m.

Figure 4-1 Screening & Filling at RL35m, dB L_{A10}

Predicted Noise level

= 35
= 40
= 45
= 50
= 55

Legend

Screener/FEL Source

N

Scale 1:4500

0 25 50 100 150 m

Project No: 23037947
Consultant: MM
Date: 21/03/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2

Lloyd George Acoustics
PO Box 717
HILLARYS WA 6923
(08) 9401 7770

Figure 4-2 Screening & Filling at RL45m, dB L_{A10}

Predicted Noise level

- = 35
- = 40
- = 45
- = 50
- = 55

Legend

- Screener/FEL Source

N

Scale 1:4500

0 25 50 100 150 m

Project No: 23037947
Consultant: MM
Date: 21/03/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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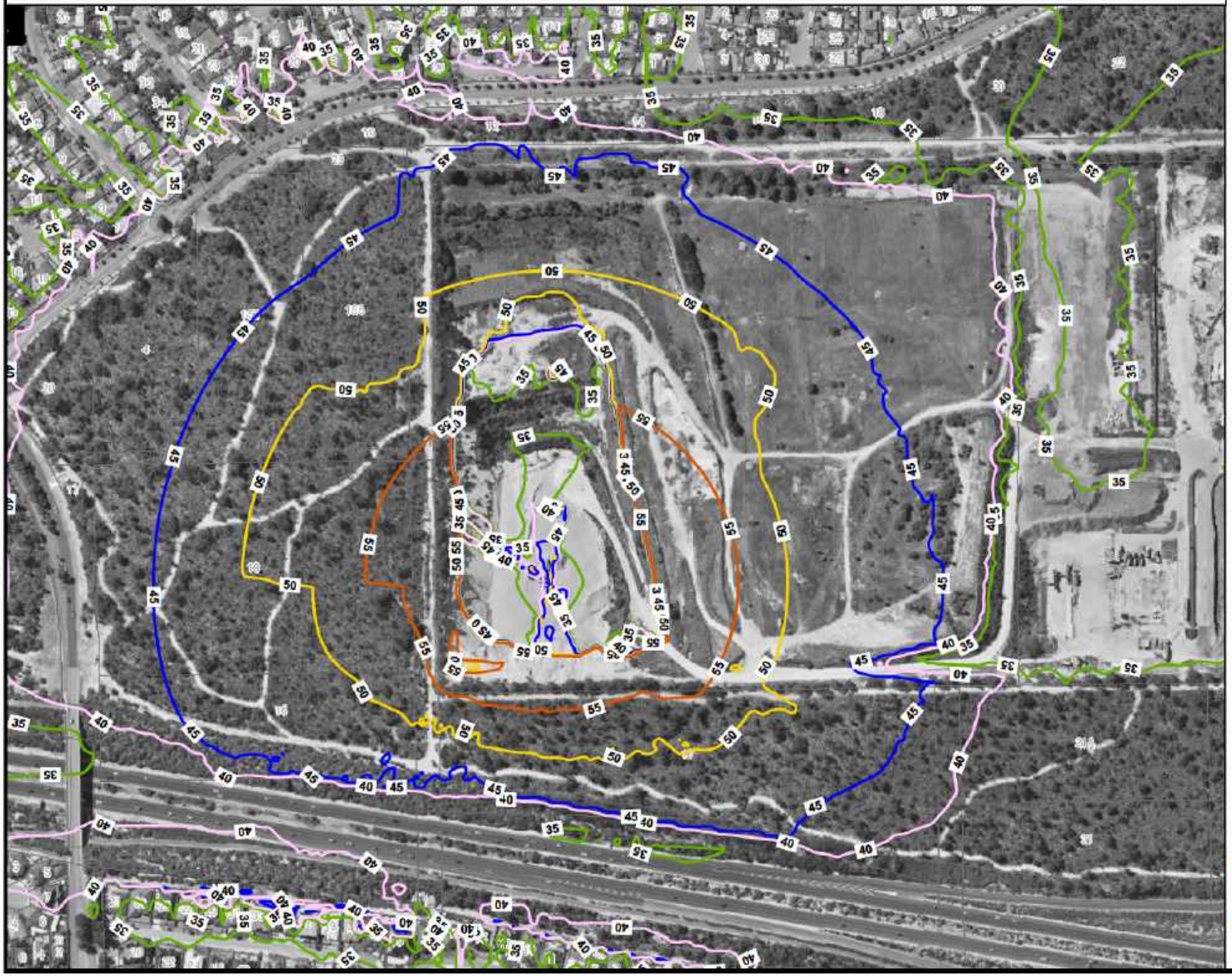
Figure 4-3 Screening & Filling at RL55m, dB L_{A10}



Predicted Noise level

- = 35
- = 40
- = 45
- = 50
- = 55

Legend

- Screener/FEL Source

N

Scale 1:4500

0 25 50 100 150 m

Project No: 23037947
Consultant: MM
Date: 21/03/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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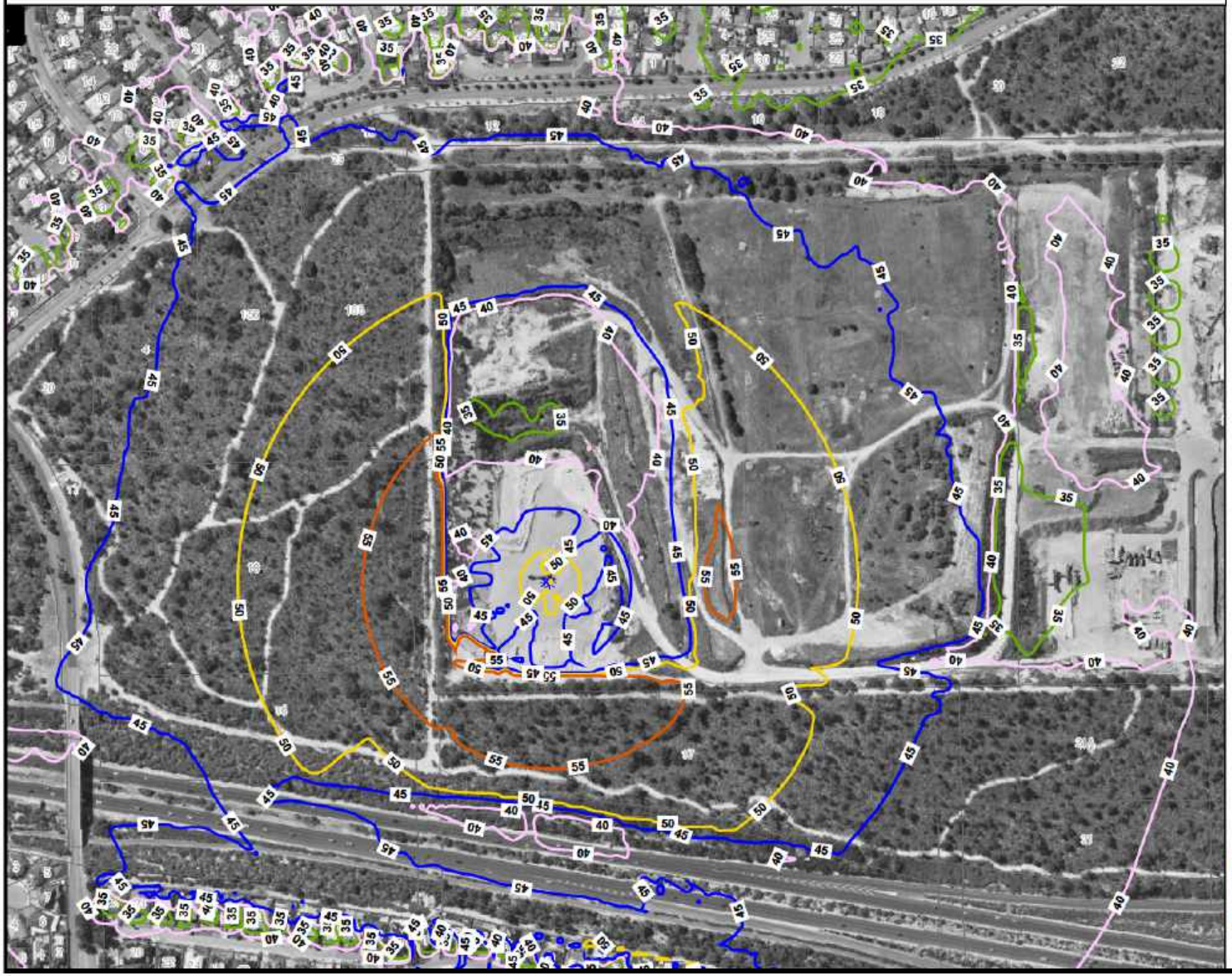
Figure 4-4 Screening & Filling at RL65m, dB L_{A10}



Project No: 23037947
Consultant: MM
Date: 21/03/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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5. ASSESSMENT AND RECOMMENDATIONS

Based on noise modelling undertaken with the proposed equipment working in the southern pit area, noise levels are predicted to be compliant with daytime assigned levels for all nearest noise sensitive receivers. The worst case level at each receiver group, for each pit depth is provided in *Table 5-1* and also assessed against respective day time assigned levels. As expected noise levels increase as the pit is progressively filled, but are predicted to remain compliant with assigned noise levels at all stages.

Table 5-1: Assessment of Predicted Noise Levels, dB L_{A10}

	Pit at RL 35m	Pit at RL45m	Pit at RL 55m	Pit at RL 65m	Assigned Noise Level
Group R1 (North)	36	40	42	45	**47**
Group R2 (South)	<25	35	43	48	**53**

Given that works are proposed during the day and the distance to houses, tonality is not expected to be detectable, therefore no adjustments were made to predicted levels.

Whilst it is acknowledged that the proposed screening and filling operation is planned to occur over several decades, the assessment considers outcomes based on the assumptions provided. Should significant changes to plant type and scale or location within the pit, additional modelling should be undertaken to verify that compliance can be achieved or if additional mitigation measures are required.

Appendix A – Development Plans

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ISO 9001, AS/NZS 4801, ISO14001
Global-Mark.com.au©

*THIS PLAN IS COMPILED FROM A VARIETY OF DATA SOURCES. REFER TO THE METADATA PANEL FOR FURTHER INFORMATION. THE CONTENTS OF THIS PLAN ARE CURRENT AND CORRECT AS OF THE DATE DRAWN. ALL PERSONS WISHING TO UTILISE THIS DATA SHOULD SATISFY THEMSELVES OF THE CURRENCY AND ACCURACY OF THE DATA SUPPLIED FROM THIRD PARTIES.

SCALE 1 : 1 500 @ A1 - 1 : 3 000 @ A3

30 0 120

ALL DISTANCES ARE IN METRES

501 ALEXANDER DRIVE - ORTHOPHOTO PLAN

MIRRABOOKA

SOURCE DATA	SOURCE	DATE	SCALE	EXPECTED ACCURACY*
AERIAL PHOTOGRAPHY	MNG	JULY 2021	7cm	+/- 0.2m
CADASTRAL DATA	LANDGATE	JULY 2021	N/A	+/- 0.1m
TOPOGRAPHY	MNG	JULY 2021	N/A	+/- 0.05m

PROJECT MANAGER: TREVOR VEEN
IMAGERY FILE NAME: 102450om-003a
PROJECTION: PCG94 / AHD ZONE: N/A
CONTOUR INTERVAL: 0.5m/2m

LEGEND:

DATE: 20/07/21 DRAWN: GEC CHECK: DVP

102450-OPM-004-A

Job Number | Type | Plan Number | Version

Appendix B – Influencing Factor Calculation

The assigned levels combine a baseline assigned level with an influencing factor, with the latter increasing the assigned level on the basis of the existence of significant roads and commercial or industrial zoned land within an inner circle (100 metre radius) and an outer circle (450 metre radius) of the noise sensitive premises. The calculation for the influencing factor is:

$$= \frac{1}{10}(\%\ \text{Type A}_{100} + \%\ \text{Type A}_{450}) + \frac{1}{20}(\%\ \text{Type B}_{100} + \%\ \text{Type B}_{450})$$

where:

$\%\ \text{Type A}_{100}$ = the percentage of industrial land within a100m radius of the premises receiving the noise

$\%\text{TypeA}_{450}$ = the percentage of industrial land within a 450m radius of the premises receiving the noise

$\%\ \text{Type B}_{100}$ = the percentage of commercial land within a100m radius of the premises receiving the noise

$\%\text{TypeB}_{450}$ = the percentage of commercial land within a 450m radius of the premises receiving the noise

+ Transport Factor (maximum of 6 dB)

= 2 for each secondary road (6,000 to 15,000 vpd) within 100m

= 2 for each major road (>15,000 vpd) within 450m

= 6 for each major road within 100m

The nearest noise sensitive premises are identified as:

- R1 – North Residences along Australis Avenue
- R2 – South Residences across Reid Highway

The quarry premises is considered to be an industrial classification, in accordance with Schedule 1, Part A (5). *Table B-1* shows the percentage of industrial and commercial land within the inner (100 metre radius) and outer (450 metre radius) circles of the noise sensitive premises, with this also shown on *Figure B-1* for Receiver R1.

Table B-2: Percentage of Land Types within 100m and 450m Radii

Receiver	Land Type	Within 100m	Within 450m
R1	Type A - Industrial and Utility	0	19%
	Type B – Commercial	0	0
R2	Type A - Industrial and Utility	0	20%
	Type B – Commercial	0	0

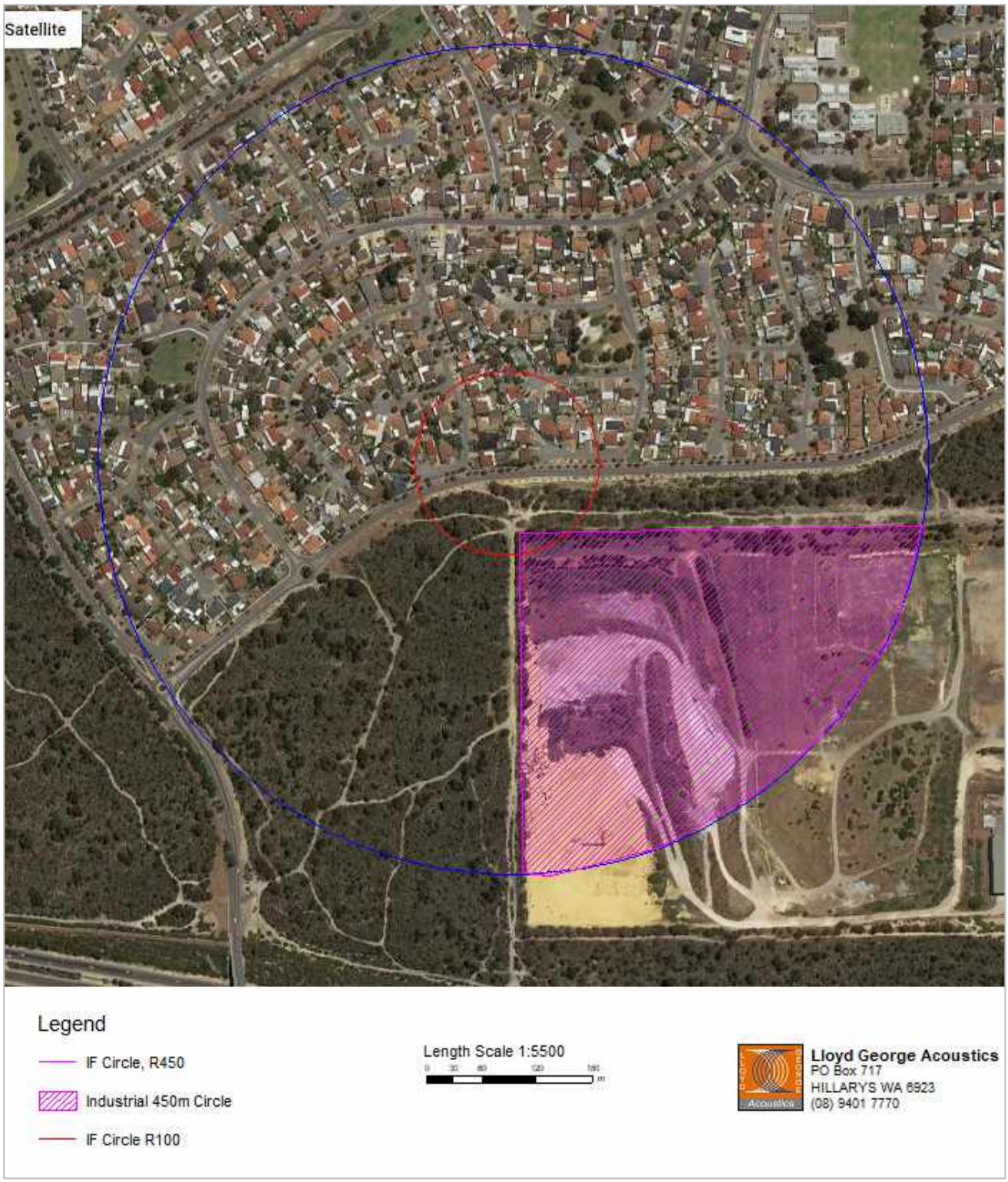


Figure B-1: Land Types within 100m and 450m Radii of R1 (North Residents)

From the Main Roads WA Traffic Map (refer *Figure B-2*), *Table B-2* shows the relevant roads and their traffic counts within the inner (100 metre radius) and outer (450 metre radius) circles.

Table B-3: Relevant Roads within 100m and 450m Radii

Receiver	Within 100m		Within 450m
	Major Road (+ 6 dB)	Secondary Road (+ 2 dB)	Major Road Not Within 100m (+ 2 dB)
R1	-	-	-
R2	Reid Highway (66, vpd 2020/21 #51545)	-	-

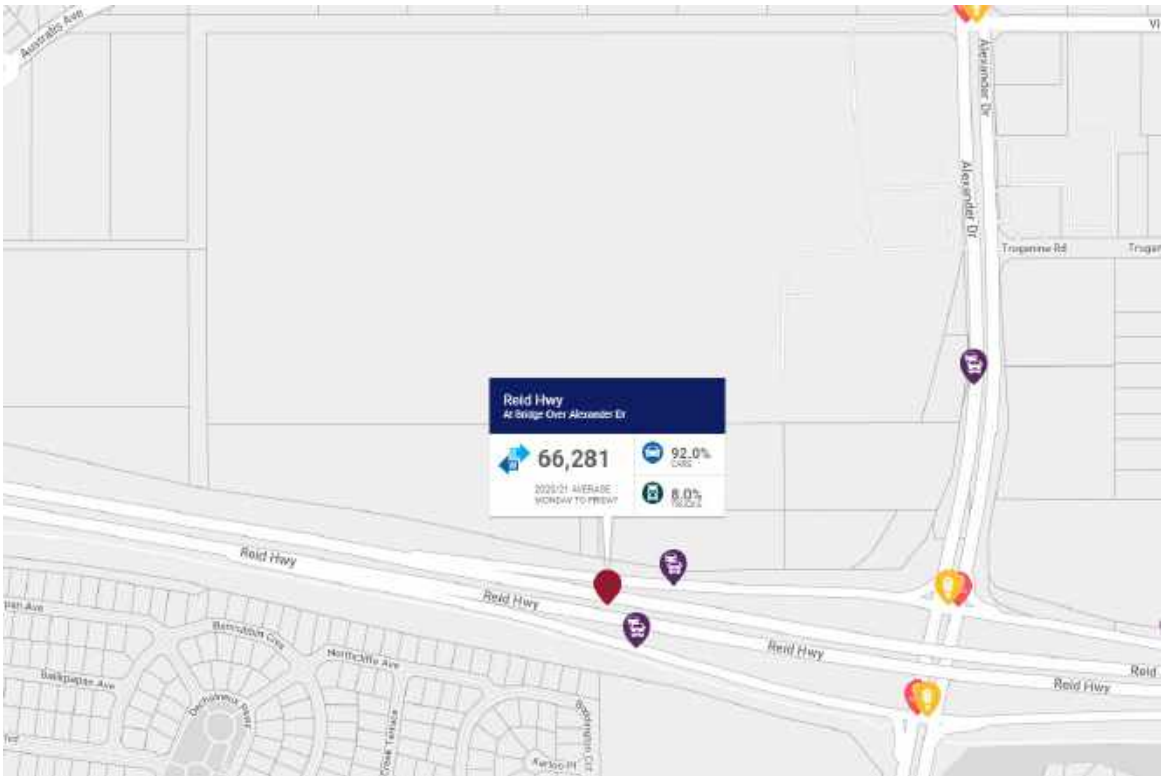


Figure B-2: MRWA Published Traffic Data

Table B-3 combines the percentage land types and Transport Factor to calculate the influencing factor.

Table B-4: Influencing Factor Calculation, dB

Receiver	Industrial Land	Commercial Land	Transport Factor	Total
R1	2.0	0	0	**2**
R2	2.0	0	6.0	**8**

The influencing factor calculated in *Table B-3* is combined with those baseline assigned levels of *Table 2-2*, resulting in the project assigned levels provided in *Table 2-3*.

Appendix C – Terminology

The following is an explanation of the terminology used throughout this report:

- **Decibel (dB)**

The decibel is the unit that describes the sound pressure levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

- **A-Weighting**

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as L_A, dB.

- **Sound Power Level (L_w)**

Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure level at known distances. Noise modelling incorporates source sound power levels as part of the input data.

- **Sound Pressure Level (L_p)**

The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc. and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

- **L_{ASlow}**

This is the noise level in decibels, obtained using the A-frequency weighting and the S (slow) time weighting. Unless assessing modulation, all measurements use the slow time weighting characteristic.

- **L_{AFast}**

This is the noise level in decibels, obtained using the A-frequency weighting and the F (fast) time weighting. This is used when assessing the presence of modulation.

- **L_{APeak}**

This is the greatest absolute instantaneous sound pressure level in decibels using the A-frequency weighting.

- **L_{Amax}**

An L_{Amax} level is the maximum A-weighted noise level during a particular measurement.

- **L_{A1}**

The L_{A1} level is the A-weighted noise level exceeded for 1 percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

- **L_{A10}**

The L_{A10} level is the A-weighted noise level exceeded for 10 percent of the measurement period and is considered to represent the "intrusive" noise level.

- **L_{A90}**

The L_{A90} level is the A-weighted noise level exceeded for 90 percent of the measurement period and is considered to represent the "background" noise level.

- **L_{Aeq}**

The equivalent steady state A-weighted sound level ("equal energy") in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the "average" noise level.

- **One-Third-Octave Band**

Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20000 Hz inclusive.

- **Representative Assessment Period**

Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

- **L_{Amax} assigned level**

Means an assigned level, which, measured as a L_{ASlow} value, is not to be exceeded at any time.

- **L_{A1} assigned level**

Means an assigned level, which, measured as a L_{ASlow} value, is not to be exceeded for more than 1 percent of the representative assessment period.

- **L_{A10} assigned level**

Means an assigned level, which, measured as a L_{ASlow} value, is not to be exceeded for more than 10 percent of the representative assessment period.

- **Tonal Noise**

A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

– the presence in the noise emission of tonal characteristics where the difference between -

(a) the A-weighted sound pressure level in any one-third octave band; and

(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

This is relatively common in most noise sources.

- **Modulating Noise**

A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

– a variation in the emission of noise that —

(a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band; and

(b) is present for at least 10% of the representative assessment period; and

(c) is regular, cyclic and audible.

- **Impulsive Noise**

An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness means:

– a variation in the emission of a noise where the difference between L_{Apeak} and L_{Amax} is more than 15 dB when determined for a single representative event.

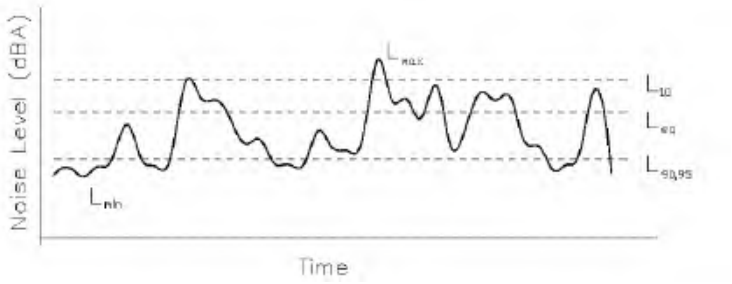
- **Major Road**

Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

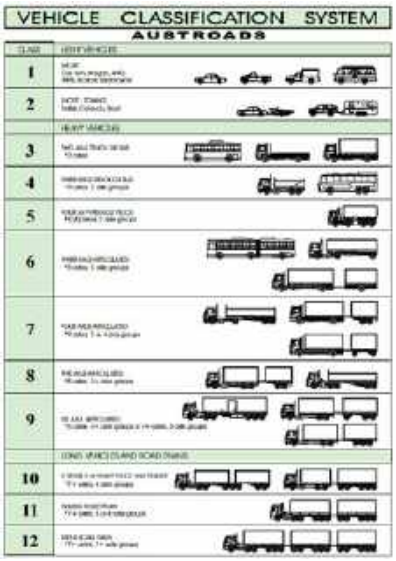
- **Secondary / Minor Road**

Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

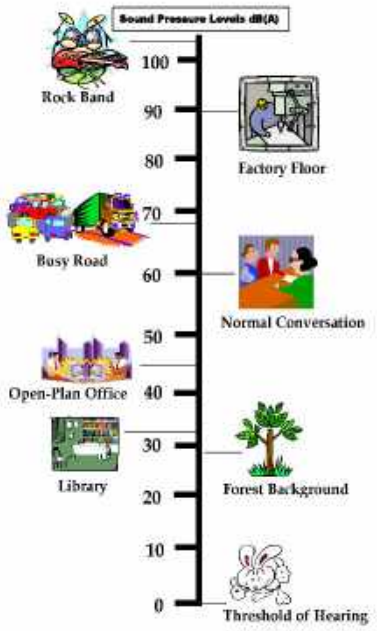
- **Chart of Noise Level Descriptors**



- **Austroads Vehicle Class**



- **Typical Noise Levels**



Appendix H: DWER's Checklist for Category 63

Application form annex: Category checklist (solid waste landfill sites)

Part V Division 3, *Environmental Protection Act 1986*
Environmental Protection Regulations 1987

INSTRUCTIONS:

- **This checklist outlines additional information requirements for applications under Part V Division 3 of the *Environmental Protection Act 1986* (EP Act) to:**
  - **construct and operate new solid waste landfills, or**
  - **amend an instrument granted for an existing landfill (i.e. new cells/landfill areas at an existing landfill facility).**
- **This checklist must be completed and submitted as an attachment to the main 'works approval, licence or amendment application form' (see Part 12 of that form). Notes included throughout this checklist must be read in conjunction with the instructions and requirements of the main application form.**
- **The application checklist must be completed with all relevant information attached. Information requirements and attachments can be combined and submitted as one or more consolidated documents if desired, provided it is clear to which section of the application checklist the information/attachments relate.**
- **If an application form and checklist has been submitted and are incomplete the Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) will decline or return the application (as applicable).**
- **The information requirements outlined in this checklist are not exhaustive. Applicants are advised to provide additional supporting information and environmental investigations as required to support the application and assessment process.**
- **This checklist does not apply to landfill sites that are associated with mining operations or for rural landfill premises (premises specified in Schedule 1 Part 2 of the Environmental Protection Regulations 1987 as category 89 premises).**
  - **However, depending on the environmental context of the proposed landfill site, DWER may still require applicants to provide a similar level of detail to support their application. Mine site and rural landfill operators should consider the environmental siting of the proposed landfill site and, depending on the site sensitivity, should contact DWER to seek advice on the likely specific information requirements, prior to submitting an application.**

Completion matrix

The matrix below explains what sections are required to be completed for different types of landfill applications. The class and category of landfill is outlined in Schedule 1 of the Environmental Protection Regulations 1987.

Form section	Prescribed premises category and landfill class				
	Category 63	Category 64	Category 64	Category 65	Category 66
	Class I	Class II	Class III	Class IV	Class V
Part 1: Environmental siting and Conceptual Site Model	•	•	•	•	•
Part 2: Landfill design and construction	•	•	•	•	•
Part 2A: Design and construction overview	•	•	•	•	•
Part 2B: Landfill liner specifications	N/A	•	•	•	•
Part 2C: Stability assessment	N/A	•	•	•	•
Part 2D: Leachate management	N/A	•	•	•	•
Part 2E: Landfill gas management	N/A	•	•	•	•
Part 2F: Stormwater/surface water management	•	•	•	•	•
Part 2G: Monitoring requirements	•	•	•	•	•
Part 3: Premises operations	•	•	•	•	•
Part 4: Landfill closure and rehabilitation	•	•	•	•	•

Key:

•	**Must be submitted**
N/A	**Not required with application, or not applicable in the context of the scope of works and operations.**

Part 1: Environmental siting and conceptual site model (CSM)		
INSTRUCTIONS: • **Refer to DWER's *Guideline: Environmental siting* for details of the specified ecosystems and other environmental attributes considered in DWER's assessment.** • **The supporting information provided as part of an application must provide sufficient evidence to allow DWER to make a reasonable decision.**		
		Yes
1.1	**Siting context and background** Provide a description of: • history of the site (past and current activities) • land ownership • the local area and the landfill's siting within this area • surrounding land uses • community and/or stakeholder need for landfill site.	☒
1.2	**Sensitive receptors and designated areas (within a 2 km radius[1])** Provide information on the distance and directions to sensitive environmental and human receptors including: • human receptors (e.g. residential, rural, industrial / commercial, and/or recreational premises) • surface waters (permanent and seasonal) • depth to groundwater and potential beneficial use(s) • sensitive flora and fauna • designated areas[2] • regional and local catchment characteristics. And other sensitive receptors as identified in the *Guideline: Environmental siting*. Note 1: depending on the proposed landfill class and site context, a larger radius may need to be assessed. Note 2: designated areas as defined by section 57 of the EP Act and comprise water source areas proclaimed under the *Rights in Water and Irrigation Act 1914*, and Public Drinking Water Source Areas proclaimed under the *Country Areas Water Supply Act 1947* and *Metropolitan Water Supply, Sewerage, and Drainage Act 1909*.	☒
1.3	**Local climate and meteorological data** Provide information on the local climate and meteorological data, including: • monthly rainfall • monthly evaporation • wind conditions (seasonal wind strength and direction) • source and date range of meteorological data (e.g. on-site weather station or from a Bureau of Meteorology [BoM] site; site details must be provided).	☒
1.4	**Topography, geology and hydrology** Provide information on the topography, geology and hydrogeology of the area including: • surface elevation and topography • regional and local geology[3] and soils[3] including site-specific soil and geological records where available • regional and local hydrology • groundwater flow direction and rate[3] • groundwater quality[3] and current or future use • groundwater aquifer characteristics • a description of geologic active processes (e.g. faulting, subsidence) (if applicable). Note 3: site-specific investigations should be undertaken where information on local attributes is not available in published documentation or digital datasets. Whether relying on published information or the results of site investigations, applicants must provide references and demonstrate that the information presented is representative of site conditions.	☒

Part 1: Environmental siting and conceptual site model (CSM)				
1.5	**Conceptual site model** Provide a site-specific conceptual site model (CSM)[4] which clearly identifies all potential source-pathway-receptor (S-P-R) linkages for all related environmental media (Section 1.8 below – Attachment 3). The development of the CSM is an iterative process, whereby the initial CSM is developed in the first stage of conceptual design/assessment (taking into consideration the nature of baseline environmental conditions) and revised as more detailed information on the site and the nature of potential risk events becomes available. The CSM is also used to identify uncertainties or critical gaps in information that may need to be addressed through additional investigations. The complexity of the CSM corresponds to the scale and complexity of the landfill activities and should be devised to help in the design process to identify appropriate design and operational measures as well as environmental monitoring requirements. Note 4: guidance on developing CSM's can be sourced in DWER's *Assessment and management of contaminated sites guidelines* and from Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM).			☒
Attachments			**N/A**	**Yes**
1.6	**Attachment 1: Locality map(s)**	An aerial photograph, map, and/or site plan of sufficient scale showing the proposed prescribed premises boundary and general locality of the premises in respect to nearby sensitive receptors and surrounding land uses. Multiple maps at different scales can be provided.	☐	☒
1.7	**Attachment 2: Topography, geology and hydrogeological plans/maps**	An aerial overview and cross-section drawings of topographical, geological, and hydrogeological features related to the site.	☐	☒
1.8	**Attachment 3: Conceptual site model**	In accordance with Part 1.5 above, provide a CSM in table format. A graphical representation can also be developed and submitted to help illustrate S-P-R linkages. An example table format is provided below.	☐	☒

Example CSM table:

Source / activities	Pollutant or contaminant of potential concern	Pathway (transport mechanism)	Receptor	Potential impacts
Leachate Pond 1	*Metals, TDS, nutrients, BOD, organic acids, petroleum hydrocarbons, sulfides, alkanes, PFAS*	*Infiltration; vertical migration to the subsurface and groundwater.* *Horizontal migration in groundwater along the downgradient flow path.* *Abstraction of groundwater for non-potable uses (garden irrigation and other non-potable uses).*	*Underlying groundwater (15mBGL).* *Down-hydraulic gradient non-potable groundwater users – 8 licensed bores identified, unlicensed domestic bores may also be present (400m south-west).* *Conservation category wetland located down-hydraulic gradient (300m south-west) – considered a 'flow-through wetland' which is in direct hydraulic connection with the water-table aquifer.*	*Groundwater degradation and impacts to downgradient groundwater users.* *Impacts to wetland water quality and ecosystem disturbance.*
Landfill	*Landfill gas*	*Subsurface lateral migration along preferential pathways.*	*On-site office administration accommodation 150m from the proposal landfill cell.*	*Accumulation of LFG in subsurface structures and conduits presenting a potential explosion hazard.*

Part 2: Landfill design and construction

INSTRUCTIONS:

- **This section is made up of 7 sub-parts focusing on landfill design and construction:**
  - **Part 2A: Design overview and construction scope**
  - **Part 2B: Landfill liner specifications**
  - **Part 2C: Stability assessment**
  - **Part 2D: Leachate management**
  - **Part 2E: Landfill gas management**
  - **Part 2F: Stormwater/surface water management**
  - **Part 2G: Monitoring requirements**
- **The proposed design should consider and acknowledge the interactions between these elements and take into consideration the environment setting, adjacent current and future land uses, available materials and infrastructure, waste to be received and the need to provide integrated waste management facilities (disposal and recycling options).**
- **The CSM (required under Part 1.5) will help operators in gaining an understanding of the environmental setting and potential risk events and should be considered in the design and operation of the landfill.**
- **Where an application is for a category 63 (Class I landfill), but not any other landfill category, only sub-parts 2A, 2F, and 2G must be completed; Parts 2B to 2E are either optional or not applicable.**

Part 2A: Design overview and construction works

INSTRUCTIONS:

- **This section requires applicants to provide an overview of the proposed landfill design concept including all related infrastructure, such as leachate and landfill gas management infrastructure.**
- **This section also requires a detailed summary of the extent of construction works that are being proposed under this application to clarify the scope of assessment.**

		Yes
2.1	**Landfill design concept** Provide information on each component of the proposed landfill including (but not limited to): • landfill type and design concept: including details on size (spatial and volumetric), lifespan, geometry, proposed liner[5] and leachate management system[5] and groundwater and surface water management[5] (specified design detail must be provided for each proposed landfill cell) • waste types proposed for disposal[6] • details on the landfill cell(s) that will be subject of this application and staging of development • site infrastructure layout including details on traffic access and internal haul routes, and details on all facilities for receiving and handling waste and administration of the landfill. Note 5: Only an overview of this information is required under this part. Specific information requirements for each of these aspects is outlined further in subsequent parts of the application checklist. Note 6: Information must be consistent with the requirements outlined in Part 9.2 of the main works approval or licence application form (waste-related activities).	☐
2.2	**Scope of construction works** Provide details of construction works including: • general site preparation works[7,8] • infrastructure to be constructed • construction phases and associated timings of works • construction quality assurance (CQA) measures and procedures to be employed[9] • summary of management measures and controls to be adopted for noise, dust and odour emissions (odour in the case where new cells are tying in with existing cells) and for the management of stormwater, general erosion and sediment control[10] Note 7: Certain site preparation works may be undertaken without a works approval. Refer to Section 3 of the *Guideline: Industry Regulation Guide to Licensing* for further information. Note 8: Provide a general overview of site preparation works. Specific preparatory works in relation to the landfill liner, leachate pond and landfill cap are detailed respectively in Part 2B, Part 2E, and Part 4. Note 9: Part 2B of this checklist outlines specific CQA information requirements for the liner installation. It is essential that you adopt a quality approach to landfill engineering. CQA techniques help in providing confidence that construction works have been completed in accordance with the design specifications and, where non-conformances are identified, that appropriate corrective actions are taken. Typically for landfill applications, applicants should provide a CQA plan prepared in conjunction with design engineers and relevant CQA specialists. Note 10: Information must be consistent with the requirements outlined in Part 9.1 of the main works	☐

Part 2A: Design overview and construction works			
	approval or licence application form (potential emissions and discharges arising from the proposed activities).		
Attachments			**Yes**
2.3	**Attachment 4: Premises map and site layout plan(s)**	A premises map and site layout plan must be provided, which include the following: • premises boundary • site layout depicting all infrastructure (current and proposed) • location of the works (cells, leachate ponds, etc.) and any potential future cells/ponds (as applicable) • stormwater infrastructure • access and haulage roads • other key buildings (gatehouse, weighbridge, administration office, etc.) • scale and north arrow; GPS coordinates and legend.	☒
2.5	**Attachment 5: Detailed design drawings (multiple as required)**	Detailed design drawings:[11] • cell layout • landfill geometry • schematic cross sections of the landfill cell(s) • leachate pond layout and cross sections • landfill cap. Note 11: Additional design drawings are required for the proposed liner, leachate management system and landfill cap as detailed respectively in Part 2B, Part 2E, and Part 4.	☐

Part 2B: Landfill liner specifications			
NOTE: • **The principal functions of a landfill liner system are to limit contaminant migration to groundwater and to control landfill gas migration.** • **Construction quality assurance (CQA) measures must be in place to ensure construction of the engineered systems will meet the intended (and assessed) standards and specifications and to provide an audit trail.**			
		N/A	**Yes**
2.6	**Landfill liner system:** Provide details of the proposed landfill liner system and configuration. A statement of the intended landfill liner performance (overall permeability and containment features) should also be provided in support of the proposed liner system. Components[12] of the basal and side slope liner may include: • Subgrade[13] • Clay[14] or geosynthetic clay liner (GCL) • High Density Polyethylene (HDPE) geomembrane • leachate drainage layer[15,16] • cushion geotextile layer. Provide detailed design drawings of the liner system (see Section 2.9 – Attachment 6). Note 12: Thickness, material properties and manufacturer design specifications (including design hydraulic conductivity/permeability) must be provided for each liner component. Note 13: Where the in-situ subgrade is not suitable to form part of the foundation and liner, then an appropriate sub-grade must be constructed. Note 14: Where a natural geological barrier is in place (and forms part of the liner system) you must demonstrate that the barrier extends along the base and all the way up the sides of the landfill site. Details of the in-situ thickness, material properties and any artificial enhancements must be provided. Note 15: Part 2D of this checklist outlines specific information requirements for leachate management (which complement the detail requested in this section). Note 16: Operators may consider the need for a secondary leachate collection system (leak detection layer) to detect any malfunction of the upper primary liner components.	☒	☐

Part 2B: Landfill liner specifications			
2.7	**Liner construction and/or installation:** Provide information of the proposed construction and/or installation of the liner system. Information should be provided for each individual liner component (as the case requires). Considerations include, but are not limited to: • any preparatory works required, e.g. earthworks/subgrade preparation, compaction methods • handling and storage of liner materials • method of placement (for clay liners include details of thickness and number of lifts, compaction method and required level of compaction) • keying into existing surfaces (anchor points) and/or tying into adjacent landfill cells • conditions of underlying surface between layers • method of jointing for liner installation (e.g. bonding, welding, or seaming) • quality assurance testing (see Section 2.8 below).	☒	☐
2.8	**Construction Quality Assurance plan** The application should include a Construction Quality Assurance (CQA) plan which includes the proposed testing, inspection, and verification procedures to demonstrate that materials and constructed features at the landfill meet the designs and specifications. The CQA plan should include as a minimum: • descriptions of responsibilities, qualifications and obligations for each party involved in the CQA plan and the proposed level of supervision for liner construction/ installation • materials testing information, including sampling locations, frequency of testing, test methods, laboratories, accreditations, applicable specifications and quality standards, data evaluation, acceptance and rejection criteria, and contingency measures in the event of failure • hold and inspection points – these points are typically the start and finish of key stages of the work that cannot later be rectified because they will no longer be accessible • for geosynthetic materials (i.e. geomembranes, geosynthetic clay liners, geotextiles, geonet drainage geocomposites, and geogrids), the CQA plan should address the following requirements: o manufacturing quality control – including factory test results, certifications and material warranties o independent conformance testing – there should be a program of CQA independent conformance testing to verify that the materials supplied comply with the required specifications o installation procedures – storage to protect from weather and other damage during installation, panel overlaps, welds, jointing and seam orientation in accordance with good practice and the manufacturer's instructions and regular inspections, repairs tested and recorded and protection from UV light after installation etc. • reporting[17] and record keeping requirements. Note 17: As part of validating landfill construction works, DWER will require operators to submit a Critical Containment Infrastructure Report (CCIR). The purpose of the CCIR is to confirm that the environmental controls on containment infrastructure are properly constructed before materials are deposited in the containment cell (the CCIR is the equivalent of a CQA validation report which have historically been required for verification and audit purposes).	☒	☐
Attachments		**N/A**	**Yes**
2.9	**Attachment 6: Detailed design drawings – landfill liner** Provide detailed design drawings which clearly depict the following:		
	a) basal and side wall liner detail (typical section)	☒	☐
	b) leachate sump liner detail (typical section)	☒	☐

Part 2B: Landfill liner specifications			
	c) inferred groundwater levels (mAHD) relative to the base of the landfill cell (mAHD); depicted on cross-section drawings (showing at least two perpendicular planes on the horizontal, e.g. north-south, east-west, or otherwise as appropriate) showing perimeter side slopes/walls. All heights of the base, sump, liner, and the perimeter side walls should be shown in mAHD. Cross sections must clearly demonstrate the separation distance between the lowest point of the landfill cell or leachate sump (whichever is lowest) and the underlying water table.	☒	☐
	d) leachate collection system, depicting the distribution and layout of leachate collection pipes, sumps, leachate extraction/removal pipes with appropriate grades/slopes etc.	☒	☐
	e) anchor trench detail	☒	☐
	f) liner tie in detail and interface between adjacent cells (if required)	☒	☐

Part 2C: Stability assessment

NOTE:

- **The geotechnical stability of the lining system, wastes and underlying geological strata (foundation) must be assessed.**
- **The stability assessment should take into account the interactions between the multiple layers present in the lining system and must demonstrate structural/physical stability over the entire lifecycle of the landfill.**
- **Where DWER has previously assessed stability assessments for existing cells, which were considered appropriate, and the proposed new cells comprise a similar design then the applicant can justify a lower level of stability analysis to that outlined below. In this case the applicant must provide clear justification as to the level of analysis undertaken and give regard to and justify the applicability of previous assessments carried out to the new proposed landfill area/cell.**

		N/A	Yes
2.10	**Stability assessment** Provide a stability assessment which analyses the following aspects as a minimum: • liner interface stability a) assessment of the capping liner system (upper surface and slopes) b) assessment of the basal liner system interfaces • waste stability • embankment slope and foundation stability. Other information requirements: The software used and chosen model must be detailed and justified and all assumptions and data inputs must be clearly documented and justified.[18] All adopted factors of safety (FoS) must be clearly documented and justified. Details of the material properties used in the analysis must be provided. Where material properties are not based on site-specific investigations,[19] clear justification must be provided to demonstrate that they are appropriate for use in the stability assessment. The assessment must include the elements with the highest risk of instability (critical surfaces) based on interface properties, geometry, sequence of deposition of the waste and subsurface conditions. Interim construction/filling stages must be analysed if the geometry, loading conditions and materials are of risk. Indicate the location of the sections analysed on an appropriate figure and provide justification for why specific elements have been selected (see Section 2.11 – Attachment 7). Confirm the design assumptions regarding internal leachate phreatic surfaces and external pore pressures for the stability analysis and model the scenarios that account for a build-up of pore water pressure in the lining system and waste during normal and abnormal operations as well as post-operations. At a minimum, the following three internal leachate scenarios must be addressed: • no phreatic surface	☒	☐

Part 2C: Stability assessment			
	• elevated phreatic surfaces representing hypothetical 'steady state' condition • high phreatic surface representing a malfunction of the leachate pumps. For external pore-pressure scenarios, where relevant, the model should consider both average/expected pore pressure condition and highest inferred groundwater level. A stability analysis must also be performed for pseudo-static conditions to address the effect of a seismic event. The following scenarios must be assessed: • operation basis earthquake (OBE) • maximum design earthquake (MDE) • maximum credible earthquake (MCE). Methods for determining return period intervals for each scenario must be clearly documented and justified. A sensitivity analysis must also be carried out for the basal liner system interface to assess the effect of variability of material properties on the stability analysis outcomes. Note 18: Raw and model data (including modelling files) is not required to be submitted at the time of application but must be able to be provided, in full, on request, so that the stability analysis can be technically verified if necessary. Note 19: The characterisation of all materials incorporated into the stability assessment must be appropriately described. Site-specific investigations of material properties is recommended in preference to using other data.		
Attachments		**N/A**	**Yes**
2.11	**Attachment 7: Stability assessment drawings and figures (multiple as required)** Analysis drawings and/or figures including, but not limited to: • cell layout; aerial overview depicting analysed sections • cell cross-sections depicting analysed sections (include analysis results in table on figure) • other figures and drawings as required.	☒	☐

Part 2D: Leachate management			
NOTE: • **Operators must provide information on the proposed leachate management system including the need to recover leachate from landfill cells and store in appropriately sized leachate holding and evaporation ponds.** • **There must be sufficient leachate disposal capacity to prevent the build-up of leachate and an increase in the risks of water pollution and offensive odours.**			
		N/A	**Yes**
2.12	**Leachate management system** Provide a description of the proposed leachate management system[20] and method for managing leachate (e.g. evaporation, treatment, re-circulation). A written summary of all the related infrastructure[21] should be provided as well as depicted on an appropriately scaled site layout plan (refer to Section 2.14 – Attachment 8). Please also provide the following assessment and management detail: • water balance calculation[22,23] to predict the volume of leachate generation over time and to demonstrate that the proposed system has sufficient capacity to manage leachate volumes over the operational life of the landfill • leachate management and proposed monitoring plan, including: o maximum head of leachate on the liner surface and leachate sump during operation of the landfill o in-cell leachate monitoring, including the operational controls and infrastructure to be used to control the leachate head o leachate extraction/pumping system (including details on flow rate) o leachate pond management, including details on operational freeboard, mechanical aeration equipment (if required), and pond level alarms o proposed leachate quality monitoring program (refer also to Part 2G) o contingency plans for leachate management in the event of breakdown of various components. Note 20: Design information requirements for leachate pond design and construction are outlined in Part 2.13 (below).	☒	☐

Part 2D: Leachate management			
	Note 21: Details of the drainage/collection network infrastructure should include information on sumps, collection and extraction pipework and aggregate. Pipe material specifications, spacing gradients and sizing must be provided. Note 22: The water balance must be designed to account for monthly inputs and outputs to demonstrate that the system will be able to operate in a satisfactory manner throughout the year. Cumulative leachate storage over multiple years of operation under average and wet conditions (at least two consecutive years) should also be factored in. Note 23: Operators should use recognised water balance models to estimate leachate generation such as the Hydrologic Evaluation of Landfill Performance (HELP) model originally published by the United States Environmental Protection Agency and modified by Dr Klaus Berger at the University of Hamburg. The model should account for all predicted leachate inputs and outputs from the leachate management system.		

2.13	**Leachate pond design and construction.**
	Provide details of the leachate pond design, including but not limited to:
	• pond dimensions and volumetric capacity[24]
	• pond liner system:
	  ○ configuration of pond liner[25]
	  ○ statement of intended performance (overall permeability and containment features)
	• associated leachate conveyance infrastructure and equipment and connection points at the leachate pond(s)
	• liner construction and/or installation[26]
	• construction quality assurance (CQA) measures to be employed[27].
	Design drawings of the liner system including that of the liner anchor trench must be provided (refer to Section 2.15 – Attachment 9).
	Note 24: pond design must be determined based on the estimated leachate generation including all inputs and outputs. Refer to water balance requirements in Part 2.12.
	Note 25: Refer to Part 2A for typical liner components – noting that where the leachate pond liner design differs from the landfill liner design, justification should be provided.
	Note 26: Refer to Part 2A for construction and installation information requirements for pond liners.
	Note 27: Refer to Part 2A for CQA requirements – CQA provisions for the pond liner can be incorporated into the same CQA plan.
		☒	☐

Attachments		**N/A**	**Yes**
2.14	**Attachment 8: Figure/plan – layout of leachate management system** Provide a layout plan of the leachate management system which clearly depicts all associated infrastructure and equipment. Multiple plans can be provided.	☒	☐
2.15	**Attachment 9: Detailed design drawings – leachate pond liner** Detailed design drawings which clearly depict the following:		
	a) Basal and side wall liner detail (typical section).	☒	☐
	b) Inferred groundwater levels (mAHD) relative to the base of the leachate pond base (mAHD), depicted on cross-section drawings (showing at least 2 perpendicular planes on the horizontal, e.g. north-south, east-west, or as appropriate) showing perimeter side slopes/walls. All heights of the base, liner and the perimeter side walls should be shown in mAHD. Cross-sections must clearly demonstrate the separation distance between the lowest point of the leachate pond and underlying water table.	☒	☐
	c) Anchor trench detail.	☐	☐

Part 2E: Landfill gas management
NOTE: • **Fugitive landfill gas emissions can present a hazard to people and the environment. Landfill gas also contains many odorous trace gases which can cause degradation of amenity of nearby residential and industrial/commercial land uses.**

Part 2E: Landfill gas management			
• **Prior to establishing a landfill facility, consideration should be given to the site's ability to control and manage landfill gas emissions.**			
		N/A	Yes
2.16	**Landfill gas management system:** Provide details of the proposed landfill gas management system including: • a detailed description of the proposed management system, installation procedures, installation timeline, monitoring, and maintenance procedures, including details on: o estimated gas generation rates across the entire lifespan of the landfill[28] o the containment measures to be implemented to reduce subsurface migration (e.g. installation of appropriate basal and capping liner systems) o the collection system (active or passive) and layout of landfill gas piping and extraction wells (vertical or horizontal or both), including details on installation processes and timeframes o utilisation of captured gas (e.g. flaring, treatment, and reuse in a system of a combustion) o specifications of combustion engines/flares and likely emissions (if relevant) o in-waste gas monitoring points, perimeter monitoring bores and associated monitoring program (refer also to Part 2G) o contingency plans in the event of breakdown of various components. Note 28: Landfill gas generation can be estimated using landfill gas generation models which take account of the potential quantity, rate and composition of the landfill gas generated.	☒	☐
Attachments:		N/A	Yes
2.17	**Attachment 10: Drawings and figures – landfill gas management system** Design drawings and layout figure(s) of the proposed landfill gas management system including, but not limited to: • in-cell layout of gas collection infrastructure (aerial and cross-section diagrams should be provided where relevant) • overview of associated above-ground gas management infrastructure • landfill gas monitoring locations. Multiple drawings and figures can be provided.	☒	☐

Part 2F: Surface water management			
NOTE: • **The premises must be designed and constructed to ensure that stormwater is diverted away from the landfill cell, leachate pond and other waste handling areas. This may be achieved through the use of surface grade changes, bunding, interceptor drains, piping and other drainage systems.** • **Stormwater which has come into contact with waste materials must be collected and managed as leachate in the leachate management system.**			
		N/A	**Yes**
2.18	**Surface water management[29]** Provide details on the proposed stormwater management strategies and controls for the landfill premises including, but not limited to: • diversion of stormwater away from areas containing waste using drainage features, bunds, interceptor drains or other drainage systems • details on clean stormwater holding ponds to be constructed (if required); design specifications and an overview of construction works should also be provided • details of any proposed controlled releases of clean stormwater into the environment and/or proposed reuse options on-site • erosion and sediment control along drainage lines and discharge points, including stormwater flow control, vegetation, detention ponds, minimising land disturbance, and other temporary and permanent erosion protection measures. Note 29: Guidance on stormwater management can be found in DWER's Stormwater Management Manual for Western Australia.	☒	☐
Attachments:		**N/A**	**Yes**
2.19	**Attachment 11: Drawings and figures – surface water management infrastructure** — Design drawings and layout figure(s) of the proposed surface water management infrastructure.	☒	☐

Part 2G: Monitoring requirements			
NOTE: • **A comprehensive monitoring program should be developed to support the ongoing operation of a landfill facility. Aspects that should be included in the program (as a minimum) include leachate, landfill gas, surface water and groundwater. Odour monitoring should also be considered, depending on the environmental siting.** • **The operator must continually review the positioning of monitoring points during the regular review of monitoring data, and as the landfill facility expands consideration must be given to expanding the monitoring network to reflect the design proposals (and refinement of the CSM).** • **Typical monitoring aspects are outlined further below. Where an operator elects not to commit to certain monitoring programs, they must provide clear justification and rationale for this decision.**			
		Yes	**N/A**
2.20	**Leachate quality monitoring** Provide details of the proposed leachate quality monitoring program (refer also to Part 2D), including, but not limited to, sampling locations, sampling methodology, analysis suite, sampling frequency, and reporting requirements.	☐	☒
2.21	**Landfill gas monitoring** Provide details on the proposed landfill gas monitoring program (refer also to Part 2E), including, but not limited to, sampling locations, well/monitoring point construction specifications, sampling methodology, analysis suite, sampling frequency and reporting requirements. Proposed sampling locations should give regard to the landfill surface, subsurface (in-waste), perimeter, subsurface services on and adjacent to the site, buildings or structures on and adjacent to the site, and landfill gas treatment/management infrastructure (such as flares and combustion engines). Action levels for different monitoring locations must be documented to outline what action will be taken to address the matter and/or what further monitoring will be carried out to verify the effectiveness of corrective actions.	☐	☒
2.22	**Groundwater and surface water monitoring**	☒	☐

Part 2G: Monitoring requirements				
	Provide details on the proposed groundwater and surface water monitoring program, including, but not limited to: • sampling locations • well construction specifications • sampling methodology • analysis suite • sampling frequency • reporting requirements. The monitoring program should as a minimum seek to establish: • the background groundwater quality and levels (in mAHD and mBGL) • the background surface water quality and levels/flow rates and flow direction • the local aquifers, and groundwater flow direction and rates of each aquifer • a monitoring network that acts as an early indicator of leachate contamination in groundwater or surface water prior to offsite migration. For a new facility, the operator should seek to demonstrate baseline groundwater and/or surface water conditions prior to construction works and to feed the results of this monitoring into the initial CSM development. A sampling and analysis quality plan (SAQP) should be prepared to ensure that the data collected is representative and sufficient to address critical gaps and uncertainties identified in the CSM so that the information obtained provides a reliable basis for continually reviewing site operations and meeting compliance requirements of the operating licence. Further guidance on developing a groundwater and surface monitoring program, including the development of a SAQP, can be sourced from DWER's *Assessment and management of contaminated sites guideline* and from Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM).			
Attachments:			**N/A**	**Yes**
2.23	**Attachment 12: Landfill monitoring plan**	Applicants must document the proposed monitoring program in a landfill monitoring plan or a series of equivalent standalone monitoring and/or management plans. The SAQP required in Part 2.22 should be incorporated in this plan.	☐	☐

Part 3: Premises operations				
NOTE: • **In addition to the landfill design and construction, operational practices play an integral role in the protection of the environment.** • **This section outlines the operational management aspects that must be addressed as part of an application. Focus should be given to the day-to-day activities which are undertaken at the facility and the practices to be implemented to minimise amenity and environmental impacts.**				
			N/A	**Yes**
3.1	**Landfill management and operations**	Provide operational detail on the following operational aspects: • operational hours of the facility • security fencing and site access • internal traffic control • details on weighbridge for monitoring waste acceptance • waste acceptance,[30] including details of acceptance and handling requirements for different waste types (e.g. putrescibles, asbestos waste, special waste types, contaminated solid wastes, etc.) and record keeping • landfilling method/waste placement, filling sequence and tipping face management (the vertical and horizontal size of the tipping face must be specified). • waste cover[31] (details on daily, intermediate and final cover, materials to be used, volumes required and storage area pre-use), litter and debris control (measures to prevent the discharge of litter and debris beyond the active landfill area and greater premises boundary)	☐	☒

Part 3: Premises operations				
		• dust management – measures to prevent operations impacting environmental values and social surroundings • odour management – measures to protect environmental values and social surroundings from unreasonable emissions of odour • noise management – demonstrate and maintain compliance with the assigned levels specified in the Environmental Protection (Noise) Regulations 1997 (Noise Regulations) • fire prevention and management (measures to minimise the risk of fires occurring at the facility) and emergency response procedures for fire and other emergencies (e.g. spills, landfill gas emergencies, etc.) • vector management (measures to prevent the attraction, refuge, growth and spread of vermin and pests to mitigate impacts to environmental values and social surroundings) • chemical and fuel stores, including details of storage requirements • environmental monitoring (refer to Part 2G)[32] • contingency planning (map out all likely incidents and document appropriate corrective measures). Note 30: Information must be consistent with the requirements outlined in Part 8 (Emissions, discharges, and waste) of the main application form i.e. wastes must be described in accordance with the *Landfill Waste Classifications and Waste Definitions 1996*. Note 31: Alternative daily and interim cover materials can be proposed but must be supported by details of the physical and chemical properties of the alternative cover together with information on how it will achieve the same or better performance outcomes, taking into consideration seasonal variation. Note 32: Reference can be made to the information provided against Part 2G of this checklist.		
Attachments:			**N/A**	**Yes**
3.2	**Attachment 13: Landfill environmental management plan**	Applicants must document the operational management aspects in a consolidated landfill environmental management plan (LEMP).[33] The landfill monitoring plan (required by part 2G) can form part of the LEMP. Note 33: The LEMP is a dynamic document and must be reviewed on a regular basis as management and operational practices change at the facility. The LEMP should be made available to all operational staff and used in training	☐	☒

Part 4: Landfill closure and rehabilitation				
NOTE: • **Landfill closure, rehabilitation and aftercare management must be planned and considered in the initial design concept for the landfill facility.**				
			N/A	**Yes**
4.1	**Closure and aftercare management**	Provide information about the proposed closure and aftercare management of the facility, including, but not limited to: • details of future intended land use • details of progressive closure, capping and rehabilitation of used cells on the premises • final landform and surface contours (pre- and post-settlement) for each landfill cell(s) which forms the scope of the application; a discussion on the final landform in the context of surrounding topography must also be provided • landfill cap design detail and drawings (specifications and materials to be used in the final cap) – where geomembranes are proposed to be used in a capping system, similar design detail to that provided in Part 2B (landfill liner specifications) must be submitted (see Section 4.2 – Attachment 14) • design detail for connections in the cap to landfill gas and/or leachate collection and monitoring points (where relevant) • stormwater management measures for water shed from the cap and final landform • construction quality assurance (CQA) measures to be employed in cap construction/installation	☒	☐

Part 4: Landfill closure and rehabilitation				
		• details on post-closure monitoring and aftercare management[34] (details of proposed environmental monitoring must be consistent with the information requirements outlined in Part 2G) Note 34: Post-closure monitoring and aftercare management must include inspections of the cap and surveillance of differential settlement to verify continually the integrity of the landfill cap.		
Attachments:			**N/A**	**Yes**
4.2	**Attachment 14: Landfill closure plan (including design figures)**	Applicants must document the proposed objectives and closure and rehabilitation measures (as required by Part 4.1) in a consolidated landfill closure plan (LCP). Within the plan the following drawings/figures must be provided: a) final contour map – depicting proposed final contours, top & side slopes, and surface drainage features b) typical cross-sections of the proposed landfill cap and design (refer to Part 2A for liner design/construction information requirements – the same should be followed for the capping liner) c) location of passive gas and leachate management infrastructure intended to remain on the premises throughout closure.	☒	☐

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Conceptual Site Model (Dust)

Proposed Solid waste Depot at Lot 821 and Part of Lot 802 Alexander Drive, Mirrabooka WA 6061

Source	Receptors	Exposure Pathway	S-P-R Linkage	Control Measure
Emission of dust particles (Emission from tipping and sorting area)	On-site workers undertaking work in proximity to potential source area	Dust Inhalation	Possible	- Frequent passes by the water cart on all roads in use by heavy vehicles and machinery - Installation of a mobile reticulation system that caters to all areas inaccessible to the water cart i.e., stockpiles - Speed limited to 10km/h - Supervision of tipping, loading and compaction - Wetting down waste loads during tipping - Reducing tipping heights - Compacting completed areas - Ensuring vehicles are well maintained to control emission - An integrated response to complaints and installation of boundary monitors on the site perimeter if required - Additional sprinkler/water cart use throughout dry and windy conditions
	Off-site users (surrounding land users such as residential properties, commercial property)	Dust Inhalation	Possible	
	Site Visitors (Truck drivers, subcontractors undertaking maintenance work)	Dust Inhalation	Possible	

Appendix I: Updated Dust Management Plan

DUST MANAGEMENT PLAN

Lot 821 and Part of Lot 802 (501) Alexander Drive, Mirrabooka WA 6061

Prepared for
Brajkovich Landfill & Recycling Pty Ltd

Prepared by
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Client: Brajkovich Landfill & Recycling (Malaga) Pty Ltd

Project: Solid Waste Depot-Lot 821 and Part of Lot 802 (Lot 802) 501 Alexander Drive

Title NMP- Lot 821 & Part of Lot 802 501 Alexander Drive, Mirrabooka WA 6061

Reference: 004_28_NMP_SWD_November 2024

Status: Final

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	Name	Signature
Prepared By	Bhumika Kavaiya	BKavaiya
Reviewed / Approved By	Matt Campbell	

Document Revision Record

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1	15 May 2023	Original Issue
2	30th May 2024	Adjusted as per clients' instructions
3	16th July 2024	Adjusted as per client's instruction for submission
4	24th September 2024	Adjusted as per client's instruction for resubmission
5	2nd December 2024	Updated for DWER's comments on application.

Contents

Tables

1 Introduction

Site Environmental and Remediation Services (SERS) have been engaged by Brajkovich Landfill & Recycling (Malaga) Pty Ltd to develop a Dust Management Plan in support of a licence amendment Application for proposed solid waste depot site located at Lot 821 and Part of 802 (501) Alexander Drive, Mirrabooka (hereby known as 'the Site'). The site location and boundary are attached in **Figure 1**. The plan has been collated to identify dust causing activities, the health impacts and mitigation protocols. Dust-sensitive receptors are present surrounding the site, in the form of residential and industrial premises.

Solid Waste Depot operations have the potential to generate dust in the following waste.

- Movement of heavy vehicles
- Tipping of waste material
- Sorting and stockpiling waste material

Movement of materials, disturbance of stockpile surfaces has the potential to contribute to dust emission, potentially impacting human health, air pollution, and the amenity value of the site if not effectively managed. As such, management is proposed in line with the EP Act 1986 Section 49, the Regulations 1987 Schedule 1 Categories 61A and 62.

The purpose of the plan is to provide the best management strategies for dust control within the site boundaries. This DMP also identifies key issues and areas of concern and purposes to implement appropriate control measure.

1.1 Definition

Dust is any particle suspended within the atmosphere. Particles can range in size from as small as a few nanometres to 100 microns (µm) and can become airborne through the action of wind turbulence, by mechanical disturbance of fine materials, or through the release of particulate-rich gaseous emission. Emissions from operating machinery not included as greenhouse gases can also be classed as dust particulates.

Dust is measured using a variety of methods, the most common being Total Suspended Particulates (TSP), which measure up to 50µm in size, and PM_{10} or $PM_{2.5}$ (particulate matter less than 10µm or 2.5µm in size, respectively) (DEC 2011).

1.2 Purpose and Scope

The purpose of the plan is to provide the best management strategies for dust control within site boundaries. This DMP also identifies key issues and areas of concern and proposes to implement appropriate control measures.

1.3 Objectives

The objectives of the DMP are to protect human health and minimise adverse effect on environmental health and amenity by ensuring that dust arising from processing activities is curtailed, achieving benchmark for dust deposition levels and concentration of suspended particulate matter. Management strategies have been selected specifically to the site in question to address the above priorities. National Standards have been selected as performance criteria used to monitor performance.

- Prevent dust emission and implement control measures
- Fire prevention, undertake no deliberate burning, gain control of bushfires
- Prevent dust emission during site closure operation.

1.4 Legislation

The lessee of the site is to ensure that its employees and contractors comply with all relevant Commonwealth and State legislation that applies to the operation of the landfill facility. Legislation, Policy, and Guidelines relevant to the Dust Management Plan can be viewed in **Table 1.**

Table 1 - Relevant Legislation and Guidelines

Legislated Instruments
Environmental Protection Act 1986- Part II, III, IV, and V
Environmental Protection Regulations 1987
Environmental Protection (Unauthorised Discharge) Regulations 2004

Legislated Instruments
Environmental Protection Authority Guidance Statements - 3- Assessment of Environmental Factors- Separation distances between industrial and sensitive land uses 2005 - 18- Assessment of Environmental Factors- Prevention of air quality impacts from land development site 2000 - 33- Assessment of Environmental Factors- Environmental Guidance for Planning and Development 2005
Department of Environment and Conservation- A guidance for the development and implementation of a dust management program 2008
Department of Environment and Conservation- a guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites, remediation, and other related activities 2011
National Environment Protection Council (Western Australia) Act 1996
National Environment Protection (Ambient Air Quality) Measure 2003
Health Act 1911
Local Government Act 1995
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Contaminated Sites Act 2003
Health (Asbestos) Regulation 1992
National Pollutant Inventory NEPM

EPA Guidance Note 3- Separation Distances between Industrial and Sensitive Land Uses (2005)

Specifically addresses generic separation distances between industrial and sensitive land uses to avoid conflict between these land uses, considering protection of the environment under the EP Act 1986, protecting sensitive land uses from impacts on amenity from industrial operations, emission and infrastructure that are deemed unacceptable.

Separation distances referred to in the State Industrial Buffer Policy 1997 are provided, along with the types of emission associated with that industrial land use.

EPA Guidance Note 18- Prevention of air quality impact from land development sites (2000)

Specifically addresses the prevention of impacts on air quality from dust and smoke generation on land development sites.

2 Impacts of Dust on health

Particles with an aerodynamic diameter of less than 50µm (usually referred to as TSP) are typically associated with adverse aesthetic effects rather than health effects. This is because they are trapped in the upper respiratory tract (just behind the nose and mouth) when inhaled. These larger particles are called inhalable particles and comprise visible dust following settling on surfaces, causing soiling and discolouration. They may, however, be associated with irritation of the mucosal membranes (eyes, nose, and throat) and if contaminated may pose an increased health risk through ingestion.

Human health effects of dust tend to be associated with particles with an aerodynamic diameter of 10µm or less (<10µm). These smaller particles tend to remain suspended in the air for long periods and can penetrate the lungs.

The PM_{10} fraction (coarse fraction) is termed 'thoracic particles' of 'inhalable dust'. These particles are inhaled into the upper part of the airways and lungs. $PM_{2.5}$ particles are inhaled more deeply and lodge in the gas exchange region (alveolar region) of the human lung and are termed 'respirable dust'. Further, if contaminated, these fine particles may pose a further health risk through the absorption of the chemicals on the particles in the bloodstream. Sensitive groups such as people with lung or heart diseases, children, and older adults are the most likely to be affected by particle pollution exposure.

However, even healthy people may experience temporary symptoms from exposure to elevated levels of particle pollution.

3 Site Background

3.1 Site History

The site is located approximately 12 km north of the Perth CBD and is bounded by industrial/commercial receptors to the east and west and residential receptors to the north and south. The closest commercial receptor is located on east of the site. Vehicle Access to the site is gained off Victoria Road (*see* **Figure 2- Site Layout and Key Infrastructure**)

Previously sand resources were extracted from the site. This operation has been active since late 1950s resulting in a vast amount of the site being cleared. This extraction operation began on the eastern boundary of the site and were progressed towards the western boundary. In 1977, the western side of the site were repurposed into a landfill and previously both putrescible and inert wastes were accepted for burial. In 1997, the premises was reclassified from a Putrescible landfill to a Class I inert landfill only.

The proponent, Brajkovich Landfill and Recycling (Malaga) Pty Ltd acquired the site with intention of conducting operations in line with the land use of a Solid Waste Depot.

3.2 Current Site Condition

Current site condition consists of Class I inert landfill with some remnant native vegetation scattered across the site. Receptor are located to the east, north and south of the property. The closest receptor is an industrial receptor located approximately 20m away from the eastern boundary of the site.

3.3 Nearby sensitive receptors

The nearby sensitive receptors are industrial and residential resident (within 500m buffer around the site boundary); however, the closest commercial receptor is approximately 20m and residential receptor is approximately 81m from the site. A table of all sensitive receptors are attached in **Appendix A**.

3.4 Surrounding Land Uses

The property is located on industrial and park and recreation zoned land. However, land area on the north and south of the site are zoned as a residential.

3.5 Geology and particle size distribution

Lotsearch, via the Atlas of Australian Soil, identified the soil across the whole site to be a Podosol. Podosols are described as follows “Subdued dune-swale terrain: chief soils are leached sands (Uc2.33)

with (Uc2.22) and (Uc2.21) on the low dunes. Associated are small areas of other sand soils (Uc)."

It should be noted that disturbance of natural soils has not been the cause of any complaints about the site throughout the history of its operations. As such, it is more likely to be the composition of the materials brought on-site that will contribute to the generation of duct at the site.

3.6 Contamination Status of Lot 802

In May 2007, Lot 802 along with Lot 821 (501) Alexander Drive, Mirrabooka was listed on the DWER Contaminated Site database as "Possibly Contaminated- Investigation Required" based on the information provided to the department on 1St of December 2006. Following the receival of additional information in July 2023, the Department of Water and Environmental Regulation reclassified the site as "Contaminated restricted use".

The site (Comprising Lot 802 Alexander Drive, Mirrabooka) was reported because it was formerly part of a larger lot that was used as a mixed putrescible and industrial landfill for approximately 20 years, from 1977 to 1997. This is a land use that has potential to cause contamination as specified in the guideline 'Assessment and Management of contaminated sites' (Department of Water and Environmental Regulation,2021).

As per Basic Summary of Records Search Response, contamination assessments carried out in 2022 and 2023 were comprised of soil, groundwater, and landfill gas investigations. Groundwater monitoring and investigations found that groundwater beneath the landfill and across a wider area to the south-west of the landfill has been impacted by the presence of the landfill leachate. Groundwater investigations found that groundwater near the western boundary of this site is impacted with the substance indicative of landfill leachate. Nutrients, hydrocarbons, metals and per- and polyfluoroalkyl (PFAS) were found to be present in groundwater at concentrations exceeding assessment levels for non-potable use of groundwater, as published in the guideline 'Assessment and management of contaminated sites' (Department of Water and Environmental Regulation, 2021).

Similarly, landfill gas assessment focused on the potential for gas generated within the waste mass on the site indicated that landfill gases (methane, carbon dioxide and hydrogen sulfide) are being generated within the waste mass.

Based on Basic Summary of Records Search Response, Remediation of adjacent lots to the east of the site was carried out in 2023. Remediation works involved bulk excavation of all areas of buried waste fill on the adjacent lots of underlying natural soils, and screening of the excavated material to separate waste material and soil. A remediation action plan for landfill gas mitigation was developed and

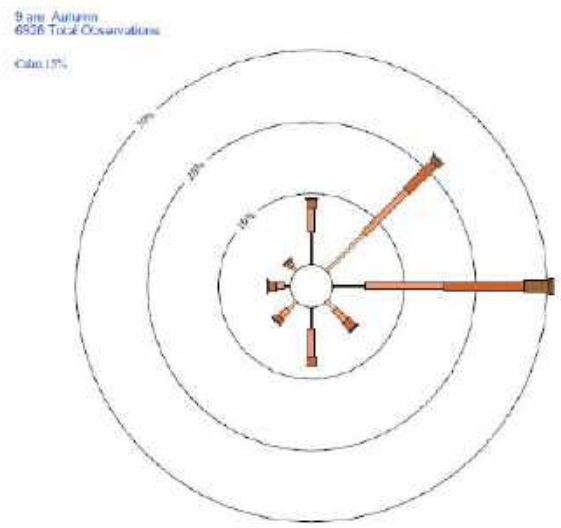
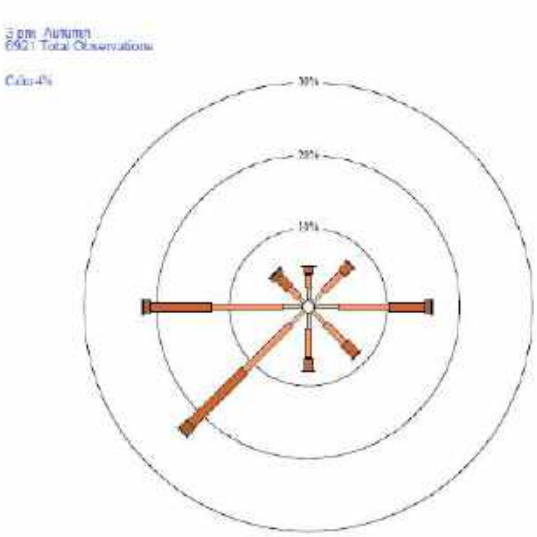
implemented to prevent lateral migration of landfill gases from beneath this site to affect the proposed adjacent commercial development. The remediation strategy comprises an actively vented gas interception system (GIS) that has been installed within an easement along the eastern boundary or Lot 802.

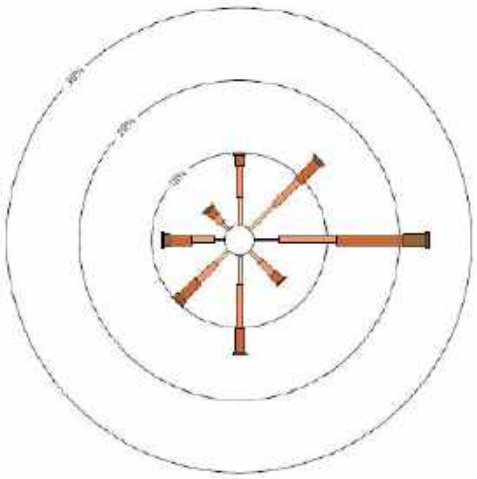
4 Meteorological Conditions

The site experiences meteorological conditions like those recorded in Perth, with the same wind patterns. Wind roses showing prevailing conditions at both 9am and 3pm are displayed in **Table 2.**

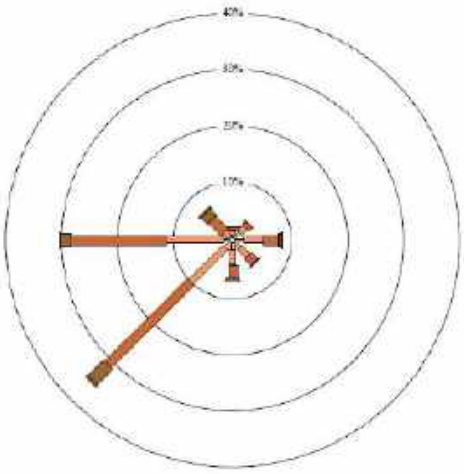
The surrounding area is not sufficiently built up that local wind conditions would not reflect regional wind conditions.

Table 2 - Wind Roses- Data recorded at Perth Airport (BOM 2023)

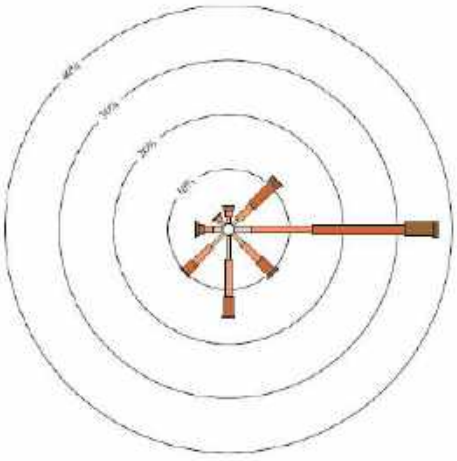
	
Autumn 9am	**Autumn 3pm**



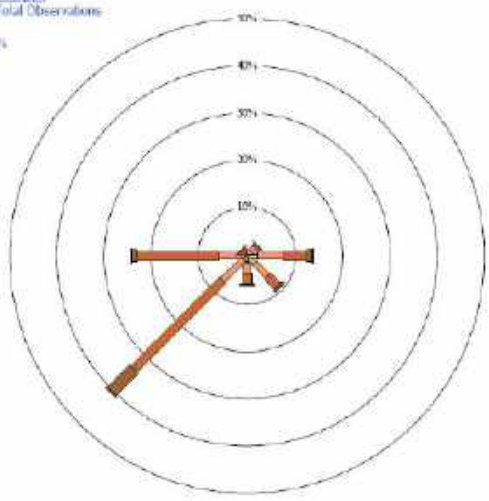
Spring 9am



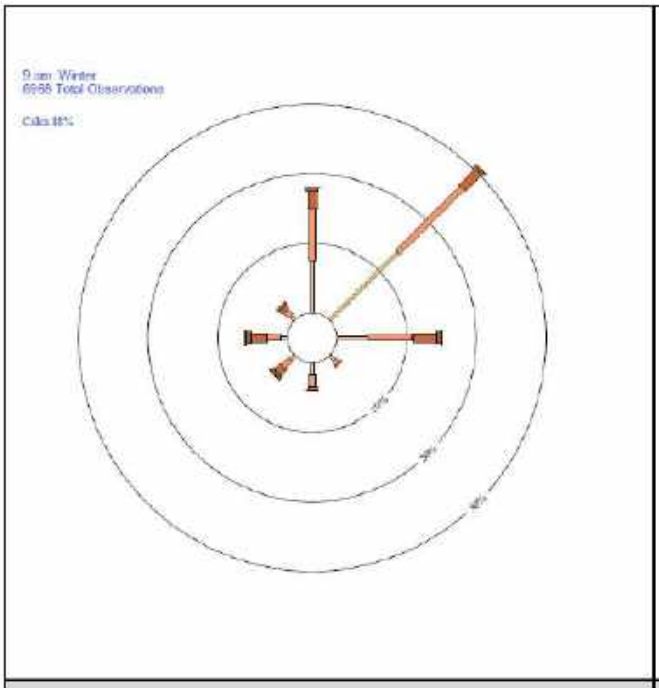
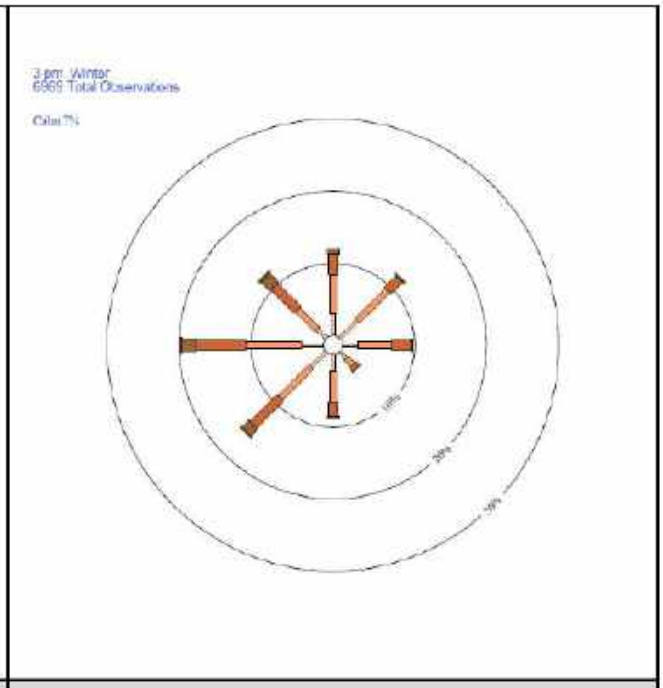
Spring 3pm



Summer 9am



Summer 3pm

	
Winter 9am	**Winter 3pm**

4.1 Morning- Wind direction

Prevailing winds in the morning are from easterly to north-easterly direction.

Any dust generation by solid waste deport operation will be intercepted by bunds, belts of remnant vegetation, and screen of established trees prior to reaching the industrial receptor located adjacent eastern boundary of the site and by another belt of dense vegetation along the bush forever area prior to teaching the nearest residential human receptors to the north, west and south of the site.

4.2 Afternoon- Wind direction

Prevailing winds in the afternoon are from a south-westerly to westerly direction. There are activities such as sorting and stockpiling taking place to the west of the site, however dust control measure will be in place so that dust generation can be avoided or minimised.

5 Dust-generating Activities

The activities listed below have the highest potential to generate dust.

Table 3 - Dust-generating activities and predicted levels of associated risk

Activity	Duration and Frequency	Level of impact
Movements of heavy vehicles on haul roads	Like to occur throughout all hours of operation	Medium
Tipping C&D material	Occurs only upon delivery to the material to the site	Medium
Filing rubble	Occurs throughout all hours of operation	Medium

5.1 Dust Control Measures

Dust can arise at the site from a variety of sources. Fugitive dust arises from surface lift-off from exposed soil surfaces and exposed stockpile and the movement of heavy vehicles and machinery around unpaved areas of the site causing dust to become airborne. Nuisance dust arises from the loading and off-loading of rubble. Dust management measure is primarily addressed at the landfill and crushing operations and secondarily at sand extraction activities however, there will be no crushing at this facility and these control measures are precautionary.

Dust mitigation measures shall comprise of:

- Frequent passes by the water cart on all roads in use by heavy vehicles and machinery
- Installation of a mobile reticulation system that caters to all areas inaccessible to the water cart i.e., stockpiles
- Speed limited to 10km/h
- Supervision of tipping, loading and compaction
- Wetting down of waste loads during tipping
- Reducing tipping heights
- Compacting completed areas
- Ensuring vehicles are well maintained to control emission
- An integrated response to complaints and installation of boundary monitors on the site perimeter if required

- Additional sprinkler/water cart use throughout dry and windy conditions

A range of control measures to mitigate dust generation on the site is detailed below.

Table 4 – Dust Mitigation Measures

1	**Reticulation Check**
The water system and sprinkler are checked daily in summer to ensure it remains fully functional to the inherent operating creation at of dust maximum through efficiency. An example dust management/Site inspection checklist is provided in **Appendix B**.	
2	**Employee induction**
Employees are to be made familiar with all dust prevention measures to be implemented on-site. Dust prevention measures appropriate with to all dust forecasted prevention working measures conditions to be implemented on-site at the pre-start toolbox meeting each day.	
3	**Dissemination of control measures**
Introduced Management Measures to be presented to all employees at pre-start toolbox meetings each morning.	
4	**Patrol of the site boundaries**
Employees shall maintain is a vigilant routine patrol along the site boundaries to detect possible errant dust. If any site activity is reported to the site supervisor who has the ultimate responsibility of immediate implementation of the management and remediation measures. On-site staff shall actively patrol site boundaries every hour throughout operating hours during periods of hot, dry, weather, and high wind forecasts (roles to be designated at pre-start toolbox meetings). It must be confirmed that all dust-suppression systems are functioning adequately to prevent dust from leaving site boundaries at pre-start toolbox meetings. Should any dust be observed leaving the site, the measures described below must be implemented.	

5	Feedback

Community notification- Notification of works shall be advertised as part of the Works Approval Application process. Notification of works and contact details of the Site supervisor shall also be provided to neighbouring properties to allow for open communication of feedback.

On-site information- Contact details for the Site supervisor shall be provided at the entrance to the site to allow for open communication of feedback.

Register- Information regarding feedback is to be recorded on a Feedback form as soon as it is received. It should be forwarded to the Site supervisor for review and action as soon as possible. The Site Supervisor shall respond to every complaint as it is received and enact appropriate remedial action. The complainant shall be duly informed for any remedial action taken and the Site Supervisor shall record the complaint in a Register of Complaints. The register shall be stored on-site always together with copies of the License for Prescribed Premises.

6	Storage of documentation

The Dust Management Plan Register of Complaints is to be stored with License for Prescribed Premises and always made available.

7	Consideration of meteorological conditions

Weather will be monitored on a 24/7 basis via the use of a Gill Windsonic device. This device will be integrated onto an online platform that will also represent real time dust levels for the site.

5.1.1 Measures to enact should dust be observed crossing site boundaries:

8	Stop work
Site activities are to cease immediately is dust is observed crossing site boundaries. Should unforeseen conditions arise that cause visible dust to be generated at levels that allow it to be observed approaching or crossing site boundaries, the activities responsible must be immediately identified, all site activities halted, and the Site Supervisor notified. All dust management systems are to be assessed for functionality. If a dust-suppression system failure has been identified and rectified should site activities re-start.	

5.2 Suppression of nuisance dust at the source

Dust suppression primarily consists of dampening dust-generating material with water or the placement of a cover to stop dust from becoming airborne, whereby it can be transported from the site.

The on-site production bore (Licence 50920) located on the southeast corner of Lot 802 will be utilised as a source of water for dust suppression.

5.3 Propose Measures

Dust is suppressed as much as possible using water at various stages throughout the operating period of the storage depot. Visible dust originating on-site must not cross any of the site boundaries. The creation of visible dust is to be addressed at the source of the dust-generating activity (movement of heavy machinery, loading and off-loading of rubble, stockpiles) rather than at the site boundaries.

9	Access-ways

On-site haul roads and access ways are regularly dampened by the watering cart as required when visual checks have identified dust to be rising because of vehicle movements. A 10km/h speed limit is implemented on-site, regulated by all Site staff, and enforced by the Site Supervisor.

Additional watering of roads (at a minimum frequency of three times a day) during dry or windy conditions. Frequency is to be determined according to the weather report at each pre-start toolbox meeting. The Site Supervisor is to dictate further watering requirements should the need arise throughout the day.

10	Stockpiles

Sprinklers continue out of hours to effectively wet down all stockpiles. Stockpiles shall be used to store material prior to its ultimate end use for landfill, cover material, and off-site use. Dust emissions from stockpiles shall also be suppressed by water from a water cart and the mobile sprinkler system, place strategically to cover the entire surface area of the stockpile.

Uncovered working stockpiles are to be wet down daily. Static unworked stockpiles are to be covered using hessian, plastic, shade cloth, or hydro- mulch. Hydro-mulch covers shall be maintained as necessary to prevent windblown dust from the stockpiles and from the screen. Hydro-mulching the screen will also improve the aesthetics of the site as well as act as a barrier to escaping dust. Hydro-mulched areas will be regularly monitored with appropriate maintenance as required.

11	Off-loading

Off-loading of C&D waste material at the site will be always supervised by appropriately trained site personnel. Water hoses will be readily available on all tipping loads to negate high-risk dust generation. Designated staff will water down the material

12	Vehicle exhaust
All on-site vehicles will not have downward-facing exhaust as these may act to raise dust in dry conditions. All vehicles and equipment will be maintained regularly to ensure minimum emissions.	

5.3.1 Measures to enact should dust be observed crossing the site boundary

13	Monitoring
Real-time monitoring of PM_{10} is proposed. Notification of exceedance is to occur via an email alert and text messages to on-sit staff should the level exceed 450µg/m over any 15-minute period.	
14	**Copolymer**
Application of a biodegradable, liquid copolymer on designated haul roads. Wetting agents and polymer binders can be added to the water for haul road dust suppression to improve the performance of the water in thoroughly wetting the surface and binding the surface materials together to reduce the likelihood of particles becoming airborne. The addition of these wetting agents and binders decreases both the application frequency and water required. This watering cart also acts as a pumper truck and has a fire hose application fitted which will be utilised for additional dust control.	

Prevention of fugitive dust from leaving site boundaries

Where dust has become airborne, it can travel beyond site boundaries where is has the potential to affect receptors sensitive to the accumulation of dust.

Proposed standard measures:

A water cart will be utilised around the site to suppress dust lift-off from site haul roads, a sprinkler system is being utilised for suppression of dust from stockpiles.

5.3.2 Proposed further measures

15	Windbreaks
Stockpiles of rubble are positioned as a screen around the area generating dust, decided according to the direction of prevailing winds and the direction in which any surrounding sensitive receptors are located.	
16	**On-site positioning of dust-generating equipment**
It is important to highlight that many site activities will occur within the tipping and sorting area, as shown in **Figure 2**. This area represents the lowest point on the site, which helps minimize the risk of dust emissions affecting off-site sensitive receptors.	

Table 5 - Dust management and consequential reduction in risk level with the implementation

Activity	Duration and Frequency	Level of impact without management	Management method	Level of risk with management
Movements of heavy vehicles on haul roads	Likely to occur throughout all hours of operation	Medium	Dampening of haul road using water truck	Low
Tipping C&D material	Occurs only upon delivery of material to the site	Medium	Dampening of material using a sprinkler system and targeted reticulation	Low

5.4 Water Sources

Sources of water for dust suppression shall be the groundwater extraction bore situated on southeast corner of Lot 802. Should there be any risk of groundwater having become contaminated from on-site spills or leaks, water for dust suppression shall not be sourced from the groundwater bore but from the bore or tinkered in from off-site.

5.4.1 Application Points

Spray points shall correspond with the location of operations areas and shall ensure coverage over areas inaccessible to the water cart. Sprinklers shall rotate and will be positioned from above to gain the greatest spray coverage and address any rising dust.

6 Risk Assessment

6.1 Ambient Dust levels

In metropolitan areas, particulate matter is present in the air because of, for example, vehicle exhausts, disturbed surface particles from traffic, construction, and demolition work, grinding and welding works, industrial stack emissions from heavy industry, bush fire smoke, and smoke from domestic fireplaces, among others.

Ambient dust levels can also be measured as Particulate Matter (PM_{10}) - particle sizes of 10µm and below, and Particulate Matter ($PM_{2.5}$) - particle sizes of 2.5µm and below. These parameters have a more direct correlation between exposure to levels and observed resulting health effects.

Being located adjacent to a major arterial road, levels of airborne particulate matter are expected to be comparatively high.

Ambient air monitoring within the Perth Metropolitan Air Quality Data Map is carried out at two locations which may be considered representative of conditions at the site:

- Caversham
- Swanbourne

Swanbourne air monitoring station does not show PM2.5 and PM10 particulate dust data, therefore, only Caversham air monitoring station was available for ambient dust level data.

PM2.5 and PM10 values were collected at Caversham between 2011 and 2022. Like all other stations at which levels have varied over this period, levels at Caversham have notably increase over the period.

Due to the rapidity of change in land use, ambient air quality has been affected, as well as increase in population and industrial activity since this time, these values should be taken as indicative only.

6.2 Risk Assessment of Threatened Species found within 2km of the Site

It is considered that dust-generating activities on-site cannot be said to contribute to the factors outlined below, and as such, the presence of the species in the area should not prevent site activities from occurring.

Threats to the species identified comprise of:

- Habitat fragmentation and loss
- Removal of nest hollows
- Competition with other species for hollows
- Loss of native food sources
- Invasive species
- Poaching and illegal shooting
- Fire

Flora species are threatened by clearing. Whilst clearing has been carried out on-site, the vegetation consists of boundary trees and a patch of vegetation to the west and was highly unlikely to have provided suitable growing conditions for the threatened species.

6.3 Potential impacts of airborne dust on human receptors

Potential impact on human health have been outlined earlier in this section.

As shown in **Figure 3**, 19 receptors fall within the 100m buffer. It is anticipated that bush forever area around the north, west and south boundary, existing buffers in the form of screens of trees or proposed earth bunds as well as dust management techniques proposed will sufficiently diminish airborne dust level such that dust will not leave the site.

Residents within 1000m of the site boundary live in a reasonably dust-prone area. Other localised dust source includes:

- Utility vehicle movement on dusty paddock in dry weather

Dust levels generated at the site are not estimated to exceed those from the above sources, thus no impact on the surrounding community is anticipated from the operation of proposed solid waste depot.

6.4 Possible effect- Air Quality

The generation of dust, smoke and odour shall be prevented by placing control measures. The generation of toxic gas shall be prevented by the active sorting and exclusion of biodegradable material that may be subject to microbial activity under anaerobic conditions.

There shall be no burning on site to prevent the generation of smoke. Vehicle movement shall be restricted to roads accessible by the water cart.

6.4.1 Odour

Due to the inert nature of the proposed waste material being accepted on-site, there is no perceived reason for offensive odours to occur in quantities at which they might affect either on-site staff within the proposed storage area or off-site receptors surrounding property.

6.4.2 Monitoring

The proposed dust suppression measure is outlined earlier in the document. With the extensive implementation of these measures, there is not expected to be any visual dust leaving the site boundary. Baseline values for PM_{10} shall be established prior to site works commencing as a point of comparison.

As a precautionary measure, dust monitoring is proposed from three strategic along the site perimeter.

6.4.3 Monitoring Policy

Proposed monitoring of dust will be conducted in accordance with the methods below:

- *AS 2922 Ambient Air – Guide for the Siting of Sampling*
- *AS/NZS 3580.1.1:2007 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment.*

The most suitable criteria to apply to results are listed below.

PM_{10} measurements

NEPM (2003) levels for PM_{10} do not represent levels of nuisance dust but would be used to assess the presence of a potential correlation between dust levels and observed health impacts. Criteria are shown in **Table 6.1** and will be subject to review following the issue of future editions of the NEPM. PM_{10} can both be measured using a DustTrak utilising the methods described below.

- AS/NZS 3580.9.6:2003 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM10 high volume sampler with size-selective inlet - Gravimetric method
- AS 3580.9. 7-1990 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter- PM (sub)10(/sub) dichotomous sampler - Gravimetric method
- AS 3580.9.8-2001 Method for sampling and analysis of ambient air - Determination of suspended particulate matter -PM (sub)10(/sub) continuous direct mass method using a tapered element oscillating microbalance analyser

Table 6 - NEPM Standards and Goals

Pollutant	Averaging Period	Maximum Concentration	Goal within 10 years maximum allowable exceedances
PM_{10}	1 day	50 μ/m^3 over 24 hours	5 days a year

6.4.4 Performance criteria and monitoring methods

Levels of TSP and PM_{10} will be measured, identifying levels of nuisance dust and the proportion of dust composed of particle size with the greatest impact on human health.

6.4.4.1 Number and location of monitoring sites

A monitoring site will be selected depending on where dust is observed leaving the site. Monitors can be relocated on site boundaries as necessary. Should dust complaints be received from nearby sensitive receptors, monitors will be placed to measure levels at the receiving point.

6.4.4.2 Quality assurance/quality control requirements

Quality assurance of dust monitoring results follows from the annual calibration of PM_{10} monitors.

Duplicates taken as quality control measures in dust monitoring rarely produce reliable results due to the irregularity of dust clouds.

6.4.4.3 Deposited dust

Dust deposition measurements may also be applicable if dust is observed off-site at nuisance levels. It can be measured using the method below:

AS/NZS 3580.10.1:2003 Methods for sampling and analysis of ambient air - Determination of particulate matter -Deposited matter - Gravimetric method.

7 Feedback Policy

Any off-site complaints known to the proponent will be taken and addressed immediately. It is the aim of the proponent is to handle all these complaints without delay. Should any complaints be received, the Site Supervisor will act as the liaison between the complainant and the proponent. Contact will be made with the complainant and investigations will occur into the nature and cause of the complaint and a corrective action solution devised to mitigate a future similar occurrence. A Complaints Register will be compiled by the Site Supervisor incorporating all future known complaints from this site, a complaints form is attached as **Appendix C**.

7.1 Stakeholder consultation

Closest potential receptor will be notified prior to the commencement of activities. In addition, contact details for the Site Supervisor will be provided to them and can also be found on signage erected at the entrance to the site.

7.2 Roles and Responsibility

All on-site haul roads and access ways will be maintained by the proponent. Dust management measures will be employed by all site employees during all hours of work. It is the duty of every staff member to prevent and/or reduce dust generation from on-site practices.

8 Conclusion

Whilst proposed activities have the potential to generate dust, this potential can be minimised using the management measures outlined. Every effort will be made to ensure that proposed works enhance rather than detract from the value of the surrounding area.

Figures

Figure 1. General Site Boundary (Proposed Solid Waste Depot)

SERS
Tel: +61 (08) 9220 2000
http://www.sers.net.au

CLIENT: Brajkovich Recycling(Malaga) Pty Ltd Landfill

PROJECT: Licence Amendment

PROJECT No: 004-28

BASEMAP: Near Maps

Site Boundary_ATLAS

SCALE: 0 100 200 m

SCALE: NTS ISSUE: FINAL DESIGN/DRAWN: BK DATE: November 2024

Figure 2. Sensitive receptors within 200m buffer area

SERS
Tel: +61 (08) 9220 2000
http://www.sers.net.au

CLIENT: Brajkovich Recycling(Malaga) Pty Ltd Landfill

PROJECT: Licence Amendment

PROJECT No: 004-28

BASEMAP: Near Maps

Site Boundary_ATLAS
Buffer 200m
Location of likely emission or discharge

SCALE:
0 100 200 m

SCALE: NTS ISSUE: FINAL DESIGN/DRAWN: BK DATE: November 2024

Appendix A- Table of Sensitive Receptors within 200m buffer around the site

Sensitive Receptors (within 200m buffer)		
29 Liquidambar Heights, Mirrabooka WA 6061	16 Rheingold Pl, Mirrabooka WA 6061	17 Rheingold Pl, Mirrabooka WA 6061
25 Liquidambar Heights, Mirrabooka WA 6061	18 Rheingold Pl, Mirrabooka WA 6061	19 Rheingold Pl, Mirrabooka WA 6061
27 Liquidambar Heights, Mirrabooka WA 6061	18A Rheingold Pl, Mirrabooka WA 6061	21 Rheingold Pl, Mirrabooka WA 6061
3 Pecan Rise, Mirrabooka WA 6061	20 Rheingold Pl, Mirrabooka WA 6061	23 Rheingold Pl, Mirrabooka WA 6061
5 Pecan Rise, Mirrabooka WA 6061	22A Rheingold Pl, Mirrabooka WA 6061	25 Rheingold Pl, Mirrabooka WA 6061
7 Pecan Rise, Mirrabooka WA 6061	12 Rheingold Pl, Mirrabooka WA 6061	27 Rheingold Pl, Mirrabooka WA 6061
22 Rheingold Pl, Mirrabooka WA 6061	4 Rheingold Pl, Mirrabooka WA 6061	29 Rheingold Pl, Mirrabooka WA 6061
24 Rheingold Pl, Mirrabooka WA 6061	10 Rheingold Pl, Mirrabooka WA 6061	15 Boskoop Pl, Mirrabooka WA 6061
14 Rheingold Pl, Mirrabooka WA 6061	15 Rheingold Pl, Mirrabooka WA 6061	11 Boskoop Pl, Mirrabooka WA 6061
10 Manna Cl, Mirrabooka WA 6061	11 Manna Cl, Mirrabooka WA 6061	9 Boskoop Pl, Mirrabooka WA 6061
12 Manna Cl, Mirrabooka WA 6061	9 Manna Cl, Mirrabooka WA 6061	7 Boskoop Pl, Mirrabooka WA 6061

Sensitive Receptors (within 200m buffer)		
14 Manna Cl, Mirrabooka WA 6061	7 Manna Cl, Mirrabooka WA 6061	14 Floribunda Gardens, Mirrabooka WA 6061
16 Manna Cl, Mirrabooka WA 6061	5 Manna Cl, Mirrabooka WA 6061	16 Floribunda Gardens, Mirrabooka WA 6061
17 Manna Cl, Mirrabooka WA 6061	3 Manna Cl, Mirrabooka WA 6061	18 Floribunda Gardens, Mirrabooka WA 6061
15 Manna Cl, Mirrabooka WA 6061	1 Manna Cl, Mirrabooka WA 6061	20 Floribunda Gardens, Mirrabooka WA 6061
11 Floribunda Gardens, Mirrabooka WA 6061	21 Floribunda Gardens, Mirrabooka WA 6061	22 Floribunda Gardens, Mirrabooka WA 6061
15 Floribunda Gardens, Mirrabooka WA 6061	23 Floribunda Gardens, Mirrabooka WA 6061	24 Floribunda Gardens, Mirrabooka WA 6061
17 Floribunda Gardens, Mirrabooka WA 6061	25 Floribunda Gardens, Mirrabooka WA 6061	26 Floribunda Gardens, Mirrabooka WA 6061
19 Floribunda Gardens, Mirrabooka WA 6061	27 Floribunda Gardens, Mirrabooka WA 6061	17 Silkpod Heights, Mirrabooka WA 6061
12 Silkpod Heights, Mirrabooka WA 6061	29 Floribunda Gardens, Mirrabooka WA 6061	15 Silkpod Heights, Mirrabooka WA 6061
2 Dusky Ln, Mirrabooka WA 6061	5 Silkpod Heights, Mirrabooka WA 6061	11 Silkpod Heights, Mirrabooka WA 6061
1 Dusky Ln, Mirrabooka WA 6061	3 Silkpod Heights, Mirrabooka WA 6061	9 Silkpod Heights, Mirrabooka WA 6061
3 Dusky Ln, Mirrabooka WA 6061	1 Silkpod Heights, Mirrabooka WA 6061	7 Silkpod Heights, Mirrabooka WA 6061

Sensitive Receptors (within 200m buffer)		
5 Dusky Ln, Mirrabooka WA 6061	24 Coppercups Retreat, Mirrabooka WA 6061	8 Silkpod Heights, Mirrabooka WA 6061
7 Dusky Ln, Mirrabooka WA 6061	26 Coppercups Retreat, Mirrabooka WA 6061	6 Silkpod Heights, Mirrabooka WA 6061
9 Dusky Ln, Mirrabooka WA 6061	28 Coppercups Retreat, Mirrabooka WA 6061	4 Silkpod Heights, Mirrabooka WA 6061
19 Coppercups Retreat, Mirrabooka WA 6061	30 Coppercups Retreat, Mirrabooka WA 6061	2 Silkpod Heights, Mirrabooka WA 6061
21 Coppercups Retreat, Mirrabooka WA 6061	14 Everlasting Gardens, Mirrabooka WA 6061	4 Caffrum Grn, Mirrabooka WA 6061
23 Coppercups Retreat, Mirrabooka WA 6061	16 Everlasting Gardens, Mirrabooka WA 6061	6 Caffrum Grn, Mirrabooka WA 6061
25 Coppercups Retreat, Mirrabooka WA 6061	18 Everlasting Gardens, Mirrabooka WA 6061	8 Caffrum Grn, Mirrabooka WA 6061
27 Coppercups Retreat, Mirrabooka WA 6061	20 Everlasting Gardens, Mirrabooka WA 6061	10 Caffrum Grn, Mirrabooka WA 6061
14 Caffrum Grn, Mirrabooka WA 6061	16 Caffrum Grn, Mirrabooka WA 6061	12 Caffrum Grn, Mirrabooka WA 6061
18 Caffrum Grn, Mirrabooka WA 6061	11 Everlasting Gardens, Mirrabooka WA 6061	13 Everlasting Gardens, Mirrabooka WA 6061
15 Everlasting Gardens, Mirrabooka WA 6061	15 Everlasting Gardens, Mirrabooka WA 6061	17 Everlasting Gardens, Mirrabooka WA 6061
19 Everlasting Gardens, Mirrabooka WA 6061	21 Everlasting Gardens, Mirrabooka WA 6061	23 Everlasting Gardens, Mirrabooka WA 6061

Sensitive Receptors (within 200m buffer)		
7 Northcliffe Ave, Dianella WA 6059	21 Bencubbin Cres, Dianella WA 6059	19 Bencubbin Cres, Dianella WA 6059
17 Bencubbin Cres, Dianella WA 6059	15 Bencubbin Cres, Dianella WA 6059	13 Bencubbin Cres, Dianella WA 6059
11 Bencubbin Cres, Dianella WA 6059	9 Bencubbin Cres, Dianella WA 6059	43 Balikpapan Ave, Dianella WA 6059
41 Balikpapan Ave, Dianella WA 6059	39 Balikpapan Ave, Dianella WA 6059	37 Balikpapan Ave, Dianella WA 6059

Appendix B- Dust Management Site Inspection Checklist

Dust Management Inspection Checklist						
Date:						
Item to Check	Yes	No	NA		Person to repair	Repaired
Water running						
Access tracks watered						
Hoses not leaking						
Sprinklers working						
Other:						
Inspected by:						
Signed:						
Repairs completed by						
Signed:						

Appendix C- Complaints Form

Complaints Registry 2024

Lot 821 and Part of 820 (501) Alexander Drive, Mirrabooka

DATE	TIME	REGO	ADDRESS	COMPANY	REASON FOR COMPLAINT