Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L7236/1997/12
Licence Holder	A.K.C Pty Ltd (Trading as Baileys Fertilisers)
ACN	008 747 911
File Number	DEC2248/1 APP-0025975
Premises	Baileys Fertilisers 24 Beach Street KWINANA WA 6167 Legal description – Being Lot 432 on Plan 3837 As defined by the coordinates in Schedule 2 of the Revised Licence
Date of Report	12/03/2025
Decision	Revised licence granted

Melissa Chamberlain

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Melissa Chamberlain
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L7236/1997/12 is held by A.K.C Pty Ltd (Licence Holder) for Baileys Fertilisers (the Premises), located at 24 Beach Street, Kwinana WA.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the assessed production capacity of the Premises. As a result of this assessment, Revised Licence L7236/1997/12 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 17 January 2024, the Licence Holder submitted an application to the department to amend Licence L7236/1997/12 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- An increase to the assessed production capacity of Category 67A from 20,000 tonnes per annual period to 30,000 tonnes per annual period.

On 15 December 2023 the Licence Holder submitted an Annual Audit Compliance Report for the 2022-2023 period, which highlighted an exceedance in the assessed production capacity for category 67A. Composting activities on site have decreased, but blending activities have increased, which lead to an oversight of how much product was being produced. The Licence Holder subsequently submitted an application to amend the licence to increase the assessed production capacity for category 67A from 20,000 tonnes per annual period to 30,000 tonnes per annual period. However, the actual production capacity will likely be less than 30,000 tonnes per annual period. No changes to the aspects of the existing licence relating to Category 33 have been requested by the Licence Holder.

Table 1 below outlines the proposed changes to the existing licence.

Table 1: Proposed throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
67A	20,000 tonnes per annual period	30,000 tonner per annual period	Composting operations on site have declined, but blending activities have increased, resulting in an annual throughput that exceeded the current throughput capacity on the licence.
33	10,000 tonnes per annual period	No change	N/A

2.3 Groundwater monitoring data

During validation of the application, a review of groundwater data was conducted. The applicant samples groundwater from four monitoring wells as required by the current licence. The locations of the wells are shown in Figure 1 below (MB1-MB4). Groundwater data from the last 20 years provided by the Licence Holder was analysed using the GSI MannKendall toolkit. This toolkit is used to analyse groundwater data for trends in constituent concentrations over time. This analysis was referred to a contaminated sites specialist who confirmed statistically meaningful trends in some of the individual groundwater monitoring wells, such as increasing levels of nitrogen, nitrates, phosphorous, total dissolved solids, conductivity and pH.

Groundwater monitoring well 2 showed consistent increasing trends for all species. However, the positioning of the groundwater monitoring wells does not provide suitable upgradient background data, which causes uncertainty as to whether the increasing trends are due to sources on the Licence Holder's premises or another upstream source.

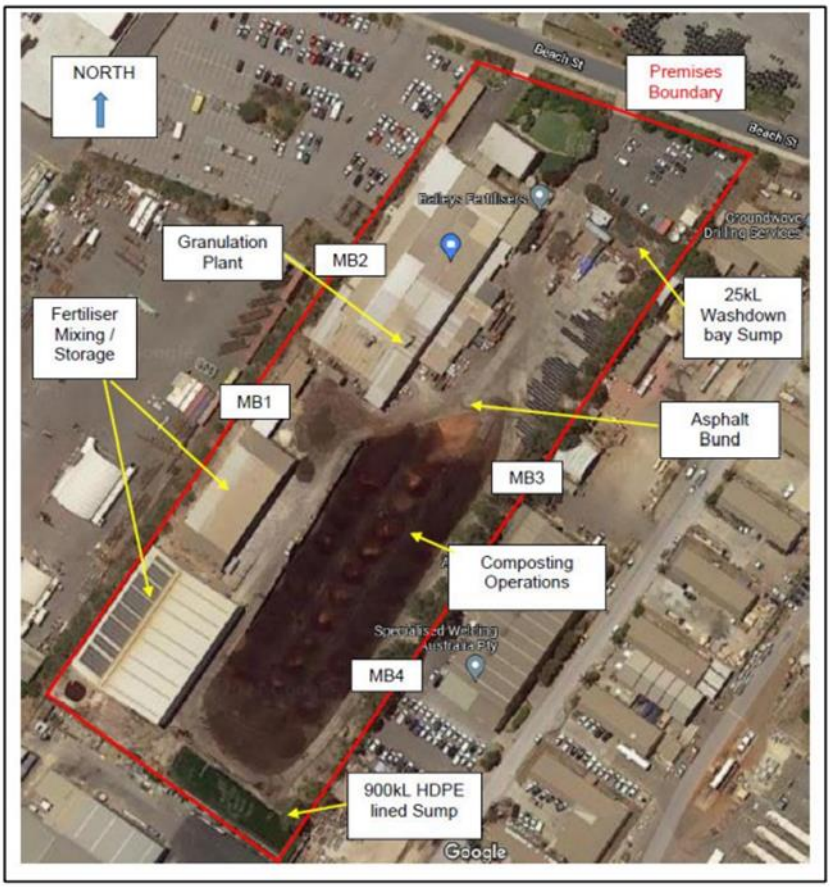

Figure 1: Site map including locations of current groundwater monitoring wells (MB1-MB4)

2.4 Complaints

From 28 February 2023 to 25 July 2024, DWER has received 14 complaints in relation to emissions arising from the premises. Of the complaints:

- 6 related to odour emissions; and
- 8 related to dust emissions.

Complaints regarding odour and dust reported amenity and health impacts including respiratory impacts, throat and eye irritation, and impact to works and vehicles. DWER's Waste Assurance branch manage investigation and response to complaints.

2.5 Site visit

During the validation process of the licence amendment application, gaps in the information provided and uncertainty about current site operational procedures were identified. Concerns were also raised about possible increasing contaminant levels in groundwater sampling results. A site visit was conducted by Industry Regulation officers to better understand current site operations and the condition of infrastructure.

Table 2: Summary of site visit findings

Date	Findings
28 February 2024	• Several divots and cracks on the hardstand and trafficable areas • Pooling of contaminated water above the northwest corner of the leachate pond • Damage to fertiliser storage sheds and spillages of fertiliser outside of storage sheds • Mixing of compost material and fertiliser occurring on a cracked hardstand area • A large earthen bund located on the southern boundary contained sweepings from the hardstand. Sweepings primarily contain soil and residual fertiliser material • The lined sump at the front of the premises that holds runoff from the washdown bay was in poor condition • The large, lined sump at the rear of the premises did not have a freeboard marker and contained a visible build-up of sludge/dirt • Spillage of product near the rear unlined soak well • The fertiliser granulator dust collector was not in operation at the time of the site visit as the cartridge needed servicing

2.6 Dust management

During validation stage, a request for further information required the applicant to provide a dust management plan and maintenance program for both the cyclone and bag house. This information was provided on 9 April 2024.

2.7 Leachate management

At the time of validating the application, no information was available on the condition of the two lined sumps or a water balance calculation for stormwater and leachate on site. As part of a request for further information, the applicant was requested to engage a consultant to inspect the condition of the lined sumps and carry out a water balance calculation. The applicant was also requested to provide a plan on how contaminated sweepings will be managed.

The applicant has since constructed a concrete-walled area to contain sweepings and advised they will be removed periodically. The applicant advised they would not be able to inspect the condition of the lined sumps until summer. The water balance report was provided to DWER

on 18 July 2024. This report found that in both mean and decile 9 rainfall years there is insufficient capacity in the southern large lined sump to hold and evaporate all run off from the composting and product storage area. The applicant has advised an independent wastewater company is contracted to remove excess water to ensure there is sufficient capacity. They are also exploring options to improve leachate capture on site. The applicant has advised that they have installed tanks for additional leachate storage at the premises, however this has not been assessed by the department, and the applicant has been advised that an additional licence amendment application is required to permit the use of these tanks for leachate storage. The applicant also advised the southern large lined sump is proposed to be expanded, and was advised that an additional licence amendment application would also be required for this change to infrastructure.

2.8 Contaminated Sites Branch advice

Due to concerns about possible increasing contaminant levels in groundwater sampling results and uncertainty about the reliability of the current groundwater monitoring network, internal advice was sought from DWER's Contaminated Sites Branch (CSB) on the suitability of the current groundwater monitoring program at the premises. The current monitoring network consists of four monitoring wells (MB1-MB4), which were installed in 2003 and are located as shown in Figure 1 above. The current monitoring suite in the licence requires sampling for pH, electrical conductivity, total dissolved solids, total nitrogen, nitrate nitrogen and total phosphorus. Construction reports of the four wells, monitoring data and background information were provided to CSB, who provided advice as summarised below:

- There is an absence of wells on the south-west boundary with Summit Fertilizers (29 Ocean Street, Kwinana Beach). As such, the potential off-site impacts from the adjacent Summit site cannot be appropriately monitored using the well network.
- The wells are constrained to the perimeter of the site and do not appear to specifically target potential on-site sources of contamination, such as the vehicle washdown bay sump and southern leachate sump. MB2 may be considered down-gradient of these potential sources (assuming a westerly flow direction), however there is no suitable monitoring well located up-gradient of these potential sources to determine whether increasing contaminant concentrations in MB2 is attributable to on-site sources or background concentrations/ off-site sources.
- The wells have long screened sections (6 metres), which has the potential to dilute groundwater samples due to mixing with groundwater that is not impacted by contamination.
- The screened sections do not target different portions of the aquifer. As such, inferred groundwater flow direction or contamination within different portions of the aquifer is not well understood.
- The analytical suite does not include common contaminants associated with composting, fertiliser manufacture and blending activities, such as ammonia and metals.
- Based on the above identified limitations, it is recommended that consideration should be given to the installation of new monitoring wells.
- The hydrogeological setting should be considered to ensure that new monitoring wells are constructed in a suitable manner to intercept potentially impacted groundwater. For example, this may involve designing a monitoring well network with screened intervals at varying depths within the aquifer.
- Monitoring wells should be installed in accordance with the 'Minimum Construction Requirements for Water Bores In Australia' and Australian Standard D5092/D5092M-

16: Standard practice for design and installation of groundwater monitoring wells.

- Based on the above identified limitations, it was recommended that ammonia, boron, cadmium, cobalt, copper, magnesium, molybdenum and zinc should be added to the analytical groundwater suite as a minimum. In addition, it was advised the guideline 'Assessment and management of contaminated sites' (Department of Water and Environmental Regulation, 2021) should be consulted to determine whether there are other substances associated with a composting and blending land use that should be included in the analytical suite and justification should be provided if these are discounted.

Based on the above advice and a recent groundwater monitoring event report at a neighbouring site, which indicates groundwater flow direction is generally in a north-to-north westerly direction, proposed locations of new monitoring wells were referred to CSB for further advice. This includes two nested wells with deeper wells at MW3 and MW4 in high-risk contamination areas. These locations are shown in Figure 2 below.

Figure 2: Proposed locations of new groundwater monitoring wells

CSB confirmed the proposed locations of MW1-MW6 were appropriate to capture upgradient and downgradient data when considering the positions of site infrastructure that are potential sources of contamination (such as the washdown bay sump, large leachate sump, composting area, and the fertiliser mixing/storage sheds).

CSB advised historical groundwater data indicates that standing water levels (SWL) below the site are between 3 and 4 m bgl. Screened intervals of standpipes are usually installed 1 m above and 2 m below the approximate SWL, so new shallow monitoring wells should be installed as such. Deeper nested wells should be installed to capture potential contamination at the base of the superficial aquifer. This depth should be around 14-18 m bgl, with screen lengths of 1-2 m.

2.9 Consolidation of Licence

As part of this amendment package the department has consolidated the licence by incorporating changes made under the Amendment Notices as summarised in Table 3.

Table 3: Licences consolidated in this amendment

Instrument	Issued	Summary of approval
L7236/1997/12	06/12/2021	Reporting requirements have been updated in line with the *Notice of Amendment of Licence Reporting Requirements (2022).*

The obligations of the Licence Holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- Updated the condition on annual environmental reporting to biennial reporting;
- Updated the format of some conditions to align with the current template; and
- corrected clerical mistakes and unintentional errors.

The full consolidation of licence conditions as they relate to this Revised Licence are detailed in Section 5.1. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in
Table 4 below.
Table 4 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 4: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Stockpiling and composting /blending	Air/windborne pathway	Existing licence controls including: • Fertiliser granulator dust collector and dust cyclone must be maintained and kept in good working order in accordance with

Emission	Sources	Potential pathways	Proposed controls
			condition 1 • Specifications for stockpile sizes, storing and processing in accordance with condition 5 The updated SOP5.08 Granulation Process contains the following updated controls for dust management: • Maintenance schedule for dust collection systems • Weekly cleaning checklist for the dust collector • Weekly checks and monthly cleans of the dust cyclone
Leachate	Stockpiling and composting/blending	Overland flow/ stormwater runoff	Existing licence controls including: • Sumps must be maintained and kept in good working order; • A minimum top of embankment freeboard of 300 mm must be maintained in ponds and sumps; • Capacity to store a 24 hour, 1 in 10-year critical rainfall event; and • Sumps must be lined, and all contaminated water must be directed to the sumps, in accordance with condition 1. Updated SOP 10.01 Environmental Procedures contains the following updated controls for leachate: • Sweeping conducted weekly. New location for sweepings stockpile in a triple-walled area. Runoff is directed to a lined sump. A vendor will be arranged to pick up the sweepings annually, or as required based on volume. Proposed controls resulting from a recent water balance calculation: • A contractor will be engaged to remove excess water in the lined sumps when necessary.
Odour	Stockpiling and composting/blending	Air/windborne pathway	Existing licence controls: • Processing of materials in accordance with condition 5 • Monitoring of compost stockpiles in accordance with condition 9

Emission	Sources	Potential pathways	Proposed controls
			No new controls proposed.
Noise	Stockpiling and composting/blending	Air/windborne pathway	Existing licence controls: • Infrastructure and equipment to be maintained in accordance with condition 1 No new controls proposed.

3.1.2 Receptors

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

Table 5 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 5: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Neighbouring commercial properties	Immediately surrounding the prescribed premises
Aboriginal Sites and Heritage Places	There are 8 within 2km of the premises.
Residences	Nearest residence is approximately 2.1km east of the premises boundary.
Wells Park	Approximately 1.6km west of the premises boundary.
Kwinana Golf Club	Approximately 1.4km east of the premises boundary.
Thomas Oval	Approximately 1.8km northeast of the premises boundary.
Environmental receptors	**Distance from prescribed activity**
Groundwater	The site is within the Cockburn Groundwater Area. Depth to groundwater fluctuates seasonally between 2.77m and 3.35m. The site is on the Quindalup South System, which consists of coastal dunes with calcareous deep sands and yellow sands. Groundwater flow is towards the ocean, with Cockburn Sound (1.8 km west) and Shoalwater Islands Marine Park being potential receptors of groundwater flow.
Threatened fauna	There are 6 species of threatened fauna within 2km of the premises.

Threatened ecological communities (TECs)	There are 5 TECs within 2km of the premises: Tuart woodlands and forests of the Swan Coastal Plain, Woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain.
TEC buffers	Site is in buffer zone of 18 TECs.
Environmentally Sensitive Area (ESA)	The site is within an ESA.
Environmental Protection Policy area	The site is within an EPP area: Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999 and Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992
Kwinana Beach	Approximately 1.7km west of the premises.

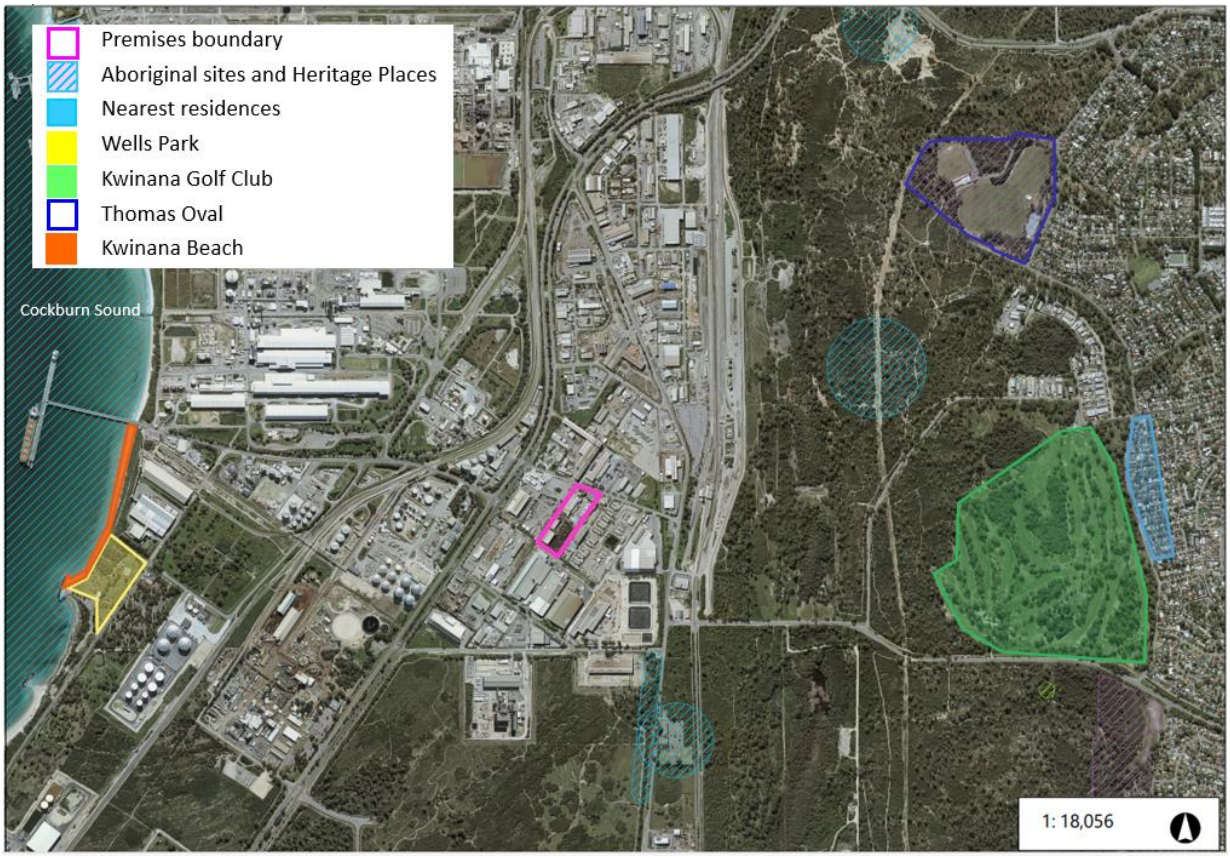

Figure 3: Distance to sensitive receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

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

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 6.

The Revised Licence L7236/1997/12 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. composting, soil blending, and chemical blending and mixing.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 6. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
An additional 10,000 tonnes per annum throughput of existing waste stockpiling, composing and blending activities.	Dust	**Pathway:** Air/windborne pathway **Impact:** impacts to the environment, public health and amenity.	Neighbouring commercial properties Aboriginal sites and Heritage Places Wells Park Kwinana Golf Club Thomas Oval Groundwater	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	No	Conditions **1**, 5	Due to the findings of the site inspection (see section 2.5) and the history of dust complaints (see section 2.4) the Delegated Officer considers that additional controls related to dust mitigation are required to maintain a medium risk profile.
	Leachate	**Pathway**: Overland flow/ stormwater runoff **Impact:** causing impacts to the environment, public health and amenity.	Neighbouring commercial properties Groundwater Threatened Ecological Communities Environmentally Sensitive Area		C = Moderate L = Possible **Medium risk**	No	Conditions **1**, **2**, **3**, **10**, **16, 17 and 18**	Due to the findings of the site inspection (see section 2.5), outstanding information as identified in section 2.7, and advice from DWER's Contaminated Sites Branch (see section 2.8), the Delegated Officer considers that additional controls related to leachate are required to maintain a medium risk profile. Additional groundwater monitoring parameters have been added consistent with Appendix B of the *Assessment and management of contaminated sites guideline* and anticipated indicator parameters for

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
								composting facilities.
	Odour	**Pathway:** Air/windborne pathway **Impact:** Impact to public health and amenity	Neighbouring commercial properties Wells Park Kwinana Golf Club Thomas Oval		C = Minor L = Possible **Medium risk**	Yes	Conditions 5 and 9	N/A
	Noise	**Pathway:** Air/windborne pathway **Impact:** Impact to the environment and amenity	Neighbouring commercial properties Wells Park Kwinana Golf Club Thomas Oval		C = Minor L = Possible **Medium risk**	Yes	Condition 1	N/A

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

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

4. Consultation

Table 7 provides a summary of the consultation undertaken by the department.

Table 7: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website 13/08/2024	None received	N/A
Local Government Authority (City of Kwinana) advised of proposal on 13/08/2024	None received	N/A
Licence Holder was provided with draft amendment on 5/12/2024	The Licence Holder provided comments on 16/12/2024 and 26/02/2025. Refer to Appendix 1	Refer to Appendix 1

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 8 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 8: Summary of licence amendments

Condition no.	Proposed amendments
All	The word 'shall' replaced with 'must'
Cover page	• DWER file number added • Date of amendment added • Assessed production capacity for Category 67A increased from 20,000 tonnes per annual period to 30,000 tonnes per annual period
Licence history table	Current licence amendment added
Condition 1	• Bulk mixing pad added to site infrastructure and equipment • Storage ponds renamed to 2 unlined soak wells. Operational requirement added for uncontaminated stormwater to be directed to the unlined soak wells • HDPE lined sump renamed to 900kL HDPE lined sump

	• HDPE lined washdown bay renamed to 25kL HDPE lined washdown bay sump • References to storage ponds in Operational requirement 2 column changed to sumps • Sweepings storage area added to site infrastructure and equipment with operational requirements • Weekly cleaning requirement added for fertiliser granulator dust collector • Weekly inspections and monthly cleaning added for fertiliser granulator dust cyclone • Bagging hoppers added to site infrastructure and equipment • Storage and mixing sheds added to site infrastructure and equipment with operational requirements • Bagging and granulation rooms/ warehouse added to site infrastructure and equipment with operational requirements • Loading yard/ finished goods storage area added to site infrastructure and equipment • Fuel and chemical storage areas added to site infrastructure and equipment with operational requirements
New condition 2	Added to condition the installation of new groundwater monitoring wells
New condition 3	Added to condition the submission of a well construction report
Condition 2 (now condition 4)	Table 2 (now Table 3): Waste acceptance: • quantity limit updated from 20,000 to 30,000 tonnes • year updated to annual period
Condition 3 (now condition 5)	Table 3 (now Table 4): Processing of materials: • SOPs updated to latest versions
Condition 7 (now condition 9)	Table 5 (now Table 6): Process monitoring: • SOP updated to latest version
Condition 8 (now condition 10)	Table 6 (now Table 7): Ambient environmental quality monitoring: • Additional parameters added to monitoring suite.
Condition 10 (now condition 12)	Revised to current licensing format.
Condition 13 (now condition 15)	This condition has been amended to reflect the biennial reporting requirements in accordance with the *Notice of amendment and schedule of licences with amended reporting conditions (2022).* Compliance reporting removed as this is covered under condition 10 (now condition 12). Format or form column deleted as it was unnecessary.
New conditions 16, 17 and 18	Added to condition the inspection of and reporting on the condition of the lined sumps.
Definitions	• ASTM D5092/D5092M-16 added • mg/L added • µS/cm added
Schedule 1	• Figure caption added to Figure 1 • Figure caption added to Figure 2. Map updated to include compost sweepings

	storage area. • Figure 3: Infrastructure and equipment added • Figure 4: Map of proposed new groundwater monitoring well locations added
Schedule 2	Coordinates converted from GDA94 Zone 50 to GDA2020 Zone 50

References

1. Australian Government 2008, *National Environment Protection (Assessment of Site Contamination) Measure 1999* Available at: https://www.legislation.gov.au/F2008B00713/latest/text/16 (Accessed: 12 November 2024)
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2021, *Guideline: Assessment and management of contaminated sites,* Perth, Western Australia.
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
6. National Uniform Drillers Licensing Committee 2020, *Minimum Construction Requirements for Water Bores In Australia, 4th Edition*

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
1	The licence holder was requested to confirm if the 900kL HDPE lined sump is going to be expanded. The licence holder confirmed this is proposed to be expanded under a future licence amendment, along with the addition of storage tanks for storing leachate.	Noted, this expansion is not considered in this amendment.
1	The licence holder was requested to advise the amount of sweepings that can be stored in the new sweepings storage area. The licence holder confirmed a maximum of 12m^3 can be stored.	The storage capacity for sweepings has been added to the licence.
2	The licence holder requested a timeframe up to February 2026 to construct the required new groundwater monitoring wells.	Accepted.
5	The licence holder was requested to provide updated copies of SOPs. These were provided.	References to the SOPs have been updated in the licence.
16	The licence holder requested annual inspection and reporting requirements for the HDPE lined sumps.	Accepted.