



Application for Licence Amendment

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

Licence Number	L9304/2021/1
Licence Holder	Shire of Ashburton
File Number	DER2021/000287
Premises	Pilbara Regional Waste Management Facility Lot 550 and Lot 551 on Plan 414367, being Reserve 53324 Onslow Road TALANDJI WA 6710 Certificate of Title: Volume LR3169, Folio 963
Date of Report	21/09/2022
Proposed Decision	Revised licence granted

STEVE CHECKER
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 L9304/2021/1 is held by the Shire of Ashburton (Licence Holder) for the Pilbara Regional Waste Management Facility (the Premises), located at Lot 550 and Lot 51 on Plan 414367, Onslow Road, Talandji.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L9304/2021/1 has been granted.

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 6 April 2022, the Licence Holder submitted an application to the department to amend Licence L9304/2021/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The Licence holder is proposing the acceptance of PFAS contaminated solid wastes which meet the requirements for disposal into Class IV landfill cells, and disposal to the current Class IV cell at the premises.

No additional infrastructure or equipment, or changes to processes or operations is required for this proposal. This amendment is limited only to changes to Category 65 activities from the Existing Licence. No changes to the aspects of the existing Licence relating to Category 13, 61, 61A, 62 or 63 have been requested by the Licence Holder.

As part of this amendment, a number of wording changes have been made to the licence to clarify the intent of conditions or remove duplication including;

- Removing acceptance specifications for Inert Waste Type 1 which duplicate the requirements of Condition 4;
- Clarifying that Special Waste Type 1 may not be accepted unless >24 hours noticed has been provided;
- Clarifying that both receipt and processing of waste must cease during periods of strong winds;
- Removing duplicate Putrescible waste (green waste) processing limits;
- Clarifying that green waste stockpile separation distances relate to potentially flammable materials and vegetation only, and not the adjacent hardstand storage areas;
- Including product testing required by conditions 10 and 12 within the Annual Environmental Report requirements.

These changes do not alter the current operations at the facility, the previously assessed risk profiles or control measures.

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 1 below. Table 1 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Leachate containing PFAS	Acceptance of solid wastes contaminated with PFAS	Overland flow due to overtopping of leachate storage ponds or failure of leachate conveyance infrastructure.	<ul style="list-style-type: none"> Existing leachate containment infrastructure Existing stormwater management controls Existing laboratory testing, waste placement and landfilling procedures
Contaminated stormwater with PFAS		<p>Overland runoff (from stormwater migration).</p> <p>Infiltration and subsequent movement on contaminants through groundwater.</p> <p>Abstraction and use of groundwater – direct exposure.</p>	

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 2 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 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Pastoral stations and leases	<p>Lands used for agricultural purposes (grazing) on Minderoo and Peedamulla station extend from ~3.2 km west and ~8 km north of the premises.</p> <p>Minderoo Station homestead is located ~20 km south-west of the premises.</p> <p>Peedamulla Station homestead and campground are</p>

	located ~40km east north east of the premises.
Onslow town site and industrial areas	Wheatstone oil and gas worker accommodation is located ~22 km north-west of the premises. Onslow town site is located ~30 km north-west of the premises.
Users of Conservation Park (existing and proposed)	The proposed extension to the Cane River Conservation Park (CRCP) includes all lands surrounding the premises except easements associated with the Onslow Road and associated infrastructure. The boundary of the proposed extension to the CRCP is located between 150 and 1,500 m from the PRWMF infrastructure.
Environmental receptors	Distance from prescribed activity
Cane River Conservation Park (CRCP)	Current: located approximately 32 km south-east. Proposed extension: surrounding the premises, between approximately 150 m and 1,500 m from the PRWMF infrastructure. No management plan has been published for the existing or proposed extension to the CRCP. Consistent with section 56 of the CALM Act, the purpose of conservation parks is to conserve the natural environment, protect flora and fauna and preserve features of archaeological, historic or scientific interest while providing for suitable levels of public recreation.
Public Drinking Water Source Area (PDWSA) under the <i>Country Areas Water Supply Act 1947</i>	The Cane River Water Reserve Priority 1 PDWSA is located approximately 21.1 km north-east (up-gradient) of the premises.
Surface Water: River systems	The premises is located along the divide of the Ashburton River and Cane River catchment which discharges into the Ashburton River catchment. Ashburton River: Approximately 20.5 km west of the premises (down-gradient). Cane River: Approximately 22 km north-east of the premises (up-gradient)
Surface Water Resource Proclaimed Area	Surface Water Area which is proclaimed area under the RIWI Act. The premises is specifically located within the Ashburton River surface water resource proclaimed portion. Surface water areas are proclaimed for the purposes of regulating the taking of water from watercourses and wetlands and where there is a need for systematic management for the use of water.
Surface water bodies	A series of non-perennial lakes are situated to the west (down-gradient), south-west (up-gradient) and north-east (up-gradient) of the premises. The closest

	<p>of these is located approximately 2.3 km west of the premises.</p> <p>Beyond these is a series of Saline Coastal Flats which extend towards the Indian Ocean.</p>
Threatened Ecological Communities (TEC) (buffers)	<p>The closest TEC buffer, being Tanpool land system, is situated 36.8 km north-east of the premises.</p> <p>A Tanpool land system is a “highly restricted land system that occurs between Pannawonica and Onslow. It consists of stony plains and low ridges of sandstone and other sedimentary rocks supporting hard spinifex grasslands and snakewood shrublands” (DBCA, 2017), with a Priority 1 category rating.</p>
Indian Ocean	Approximately 40.3 km north-west (down-gradient) of the premises.
Groundwater: superficial and confined aquifers	<p>The premises is located with the Carnarvon confined Birdrong aquifer and Carnarvon superficial aquifer. Talis (2018a) reported that the superficial aquifer was not encountered during intrusive investigations at the premises.</p> <p>Depth to groundwater ranges across the premises from 5.4 metres below ground level (m BGL) (BH03 January 2018) to 20.9 m BGL (BH10 April 2019)</p> <p>Groundwater dependent ecosystems have not been investigated within the unallocated crown land surrounding the premises, proposed as an extension to the CRCP, for the purposes of the risk assessment they are assumed to be potentially present.</p>
Users of groundwater resources	<p>The premises is located within the RIWI Act proclaimed Pilbara Groundwater Area.</p> <p>Groundwater licences are granted ~20 km south-west (Ashburton River – bore is up-gradient), ~27 km north-east (Cane River – up-gradient) and from ~16 km north-west (down-gradient) of the premises. A series of licences are also granted along the Onslow Road from ~5 km north-west (up-gradient) and ~1 km south-east (up-gradient) that are predominately granted to Main Roads Western Australia.</p> <p>Groundwater may also be used for stock water on nearby pastoral stations.</p>

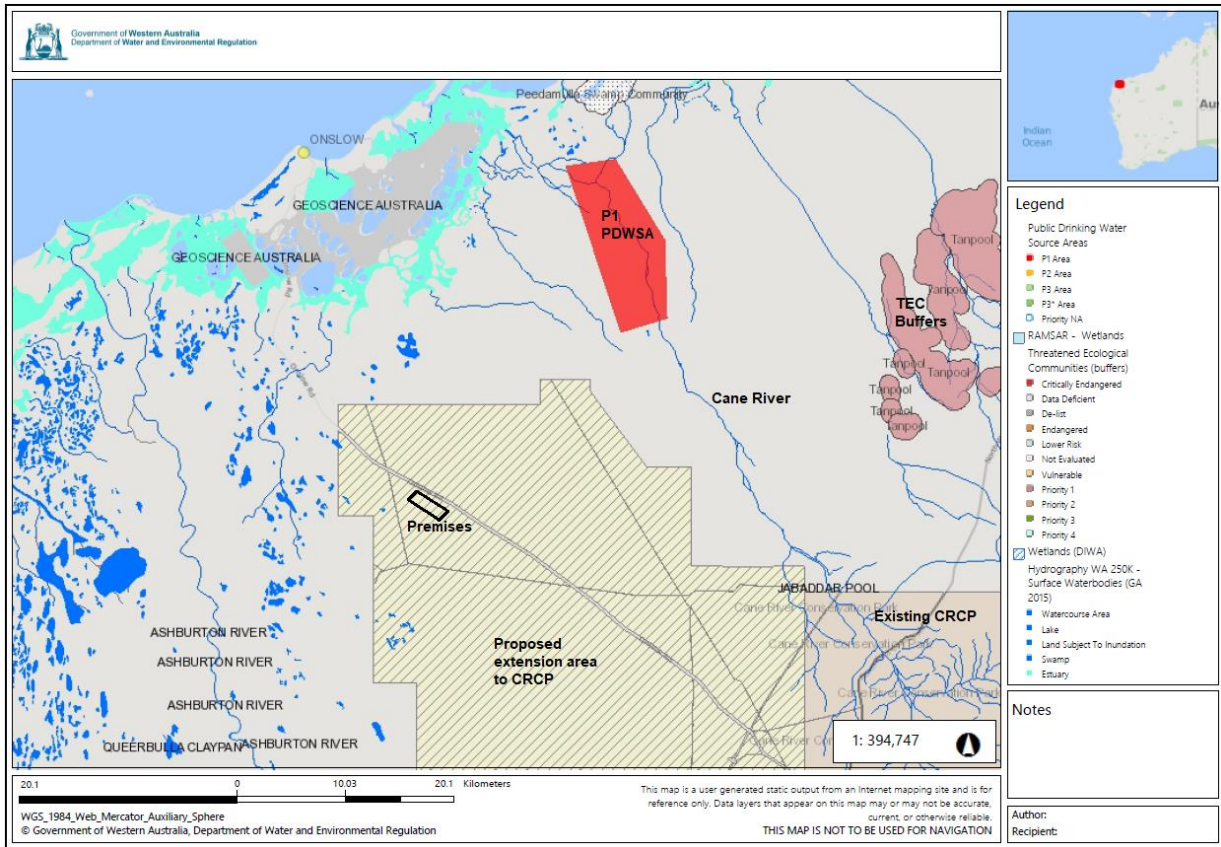


Figure 1: Proximity of premises to sensitive environmental receptors

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 incomplete 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 3.

The Revised Licence L9304/2021/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

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

Table 3. Risk assessment of potential emissions and discharges from the Premises 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								
Addition of PFAS wastes to the Class IV landfill	Landfill leachates/ contaminated stormwater that may include PFAS contaminants	<p><u>Pathways</u></p> <p>Overland flow due to overtopping of leachate storage ponds or failure of leachate conveyance infrastructure.</p> <p>Overland runoff (from stormwater migration).</p> <p>Infiltration and subsequent movement on contaminants through groundwater.</p> <p>Abstraction and use of groundwater – direct exposure.</p> <p><u>Impacts</u></p> <p>Deterioration and/or contamination of waters and local/regional aquatic ecosystems.</p> <p>Deterioration of conservation values of CRCP.</p>	<p><u>Human Receptors:</u></p> <p>Beneficial users of groundwater (including future users)</p> <p><u>Environmental Receptors:</u></p> <p>Non-perennial surface waters (see Table 5)</p> <p>Terrestrial habitats including the proposed extension of the CRCP (150 -1,500 m from premises) including native flora and groundwater dependent vegetation</p>	See table 3	See section 4			

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. Detailed Risk Assessment for leachate emissions

4.1 Description of emission and risk event

The Licence Holder is proposing to accept contaminated solid wastes that contain PFAS (per and poly fluoroalkyl substances) for disposal into the Class IV landfill cell currently within the premises. PFAS are a family of manufactured chemicals which do not occur naturally in the environment. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are two of the most well-known PFAS and are contaminants of emerging concern in Australia and internationally. The acceptance of this waste means that landfill leachates generated may also contain PFAS. PFOS and PFOA are known to be persistent, bio-accumulative and toxic and, due to their persistence in the environment and moderate solubility, can be transported long distances in water and air, and transfer between different media (for example soil, sediment, surface water and groundwater).

4.2 Criteria for assessment

The PFAS National Environmental Management Plan (version 2.0 – January 2020) by the National Chemicals Working Group of the Heads of EPAs Australia and New Zealand (PFAS NEMP) outlines matters to be taken into consideration by the environmental regulator to determine whether the siting of an existing landfill is suitable for the acceptance of PFAS contaminated material.

Criteria to determine whether a landfill will be suitable to accept solid PFAS-contaminated materials includes:

- ensuring the landfill is not located on a vulnerable groundwater system
- depending on the landfill liner design, whether the landfill is located within 1000 m of a surface water body that supports an aquatic environment (including groundwater dependent ecosystems), or within 1000 m of a surface water drain that is connected to groundwater and/or discharges directly into an aquatic environment (including groundwater dependent ecosystems) or a water body that supports fish or other fauna species that may be caught and consumed
- performance of landfill liner and leachate management system (giving consideration to historical groundwater and surface monitoring results for existing sites)
- leachate management practices at the landfill, in particular whether landfill leachate is recirculated through the landfill or sent to a wastewater treatment plant, whether treatment occurs prior to release, or if leachate is likely to be reused either on- or off-site
- other factors as relevant to the specific landfill siting, design, operation and ongoing management

4.3 Comparison to the assessment criteria

The Premises compares to the criteria in the PFAS NEMP as follows:

- The Premises is not overlying a freshwater aquifer.
- The Premises is not within 1,000m of a surface water body that supports an aquatic environment, or a surface water drain that is connected to groundwater and/or discharges directly into an aquatic environment, or a water body that supports fish species that may be caught and consumed.
- The Premises is located in an extremely dry climate, with an evaporation rate that

exceeds the annual rainfall.

- The Premises is very remote, with the nearest sensitive receptors, and down hydraulic gradient registered bores or surface waters being significant distances away.
- The Premises has an existing double lined Class IV cell with a functional leachate management system.
- All contaminated wastes accepted at the Premises requires provision of laboratory testing to verify that contaminant levels meet the waste classification acceptance criteria for a Class IV landfill as outlined in the Landfill Waste Classification Waste Definitions, and the criteria for double lined landfills in the PFAS NEMP.

4.4 Key findings

The Delegated Officer has determined that the Premises location and infrastructure is acceptable for the disposal of solid PFAS-contaminated materials.

4.5 Consequence

If leachate emissions are generated from the premises and transported to receptors, the Delegated Officer has determined that the impacts could be high level for nearby sensitive receptors. Therefore, the Delegated Officer considers the consequence of impact due to exposure to leachate emissions to be **major**.

4.6 Likelihood

The Delegated Officer has determined that leachate impacts to sensitive receptors could occur at some time. Therefore, the Delegated Officer considers the overall likelihood of leachate impacts occurring to be **possible**.

4.7 Overall risk rating

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix and determined that the overall rating for the risk of leachate emissions is **high**.

4.8 Regulatory controls

The Delegated Officer has determined that the Licence Holder's proposed controls along with the current licence conditions are sufficient. The Licence will be amended to reflect these proposed controls as summarised in Table 7.

5. Consultation

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

Table 4: Consultation

Consultation method	Comments received	Department response
Public advertising on DWER's website for 21 days concluding 20 June 2022	No comments received	Noted
Direct interest stakeholder letter sent to Department of Mines Industry Regulation and Safety on 26 May 2022	No comments received	Noted
Direct interest stakeholder letter sent to Department of Biodiversity, Conservation and Attractions on 26 May 2022	Response indicating no comments.	Noted
Direct interest stakeholder letter sent to Department of Health on 26 May 2022	Response indicating no comment and confirmation the site is not within a sewage sensitive area or public drinking water catchment.	Noted
Works Approval/Licence Holder was provided with draft amendment on 29 July 2022	Request Table 2 updated to refer to 'Severe Weather Warning for Damaging Winds' rather than 'periods of strong winds (>40 km/hr) Request that definition of flammable material be included consistent with the hazardous chemicals and the Australian Code for the Transport of Dangerous Goods by Road and Rail requirements	Changes accepted. Flammable is not defined in the code or relevant legislation and so the dictionary definition has been used within the definitions table.

6. 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.

6.1 Summary of amendments

Table 5 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 5: Summary of licence amendments

Condition no.	Proposed amendments
Table 1	Acceptance specification of Inert Waste Type 1 updated to remove wording that duplicates condition 4.
Table 1 and 2	Acceptance specifications of Special Waste Type 1 and contaminated solid wastes updated to refer to acceptance rather than arrival.
Table 1	Special Waste Type 3 added as a permissible waste type along with acceptance specification to meet the criteria of Schedule 5.
Table 2	Process limits updated for all wastes to clarify that receipt and processing of wastes must cease during periods of strong winds.
Table 2	The requirement to store green waste in accordance with DFES guidance is removed as this duplicates and conflicts with the requirements of item (d)
Table 2	The green waste buffer wording is updated to clarify that the buffer relates to flammable material and vegetation, not other inert infrastructure.
Table 3	Inclusion of Special Waste Type 3 as a waste type.
Table 12	Summary of product testing results carried out in accordance with Condition 10 and 12 to be included within the Annual Environmental Report.
Table 13	Definitions for PFAS and Special Waste Type 3 added.
Schedule 5	Landfill acceptance criteria for Special Waste Type 3 added.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

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

Condition	Summary of Licence Holder's comment	Department's response

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY						
Application type						
Works approval	<input type="checkbox"/>					
Licence	<input type="checkbox"/>	Relevant works approval number:		None	<input type="checkbox"/>	
		Has the works approval been complied with?			Yes	<input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?			Yes	<input type="checkbox"/>
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?			Yes	<input type="checkbox"/>
		Date Report received:				
Renewal	<input type="checkbox"/>	Current licence number:				
Amendment to works approval	<input type="checkbox"/>	Current works approval number:				
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L9304/2021/1			
		Relevant works approval number:		N/A	<input checked="" type="checkbox"/>	
Registration	<input type="checkbox"/>	Current works approval number:		None	<input type="checkbox"/>	
Date application received						
Applicant and Premises details						
Applicant name/s (full legal name/s)		Shire of Ashburton				
Premises name		PRWMF				
Premises location		Onslow Road, Thlandji				
Local Government Authority		Shire of Ashburton				
Application documents						
HPCM file reference number:		DER2021/000287~7				
Key application documents (additional to application form):		Application Form Certificate of Title Phase 1 Hydrological Risk Assessment Hydrogeology Peer Review Phase 2 Hydrogeological Risk Assessment Post Construction GME Report				

	Supplementary Information Surface Water Management Plan Leachate Management Plan Emergency Response Plan	
Scope of application/assessment		
Summary of proposed activities or changes to existing operations.	Licence amendment to allow the acceptance of PFAS wastes into the landfill cell.	
Category number/s (activities that cause the premises to become prescribed premises)		
Table 1: Prescribed premises categories		
Prescribed premises category and description	Assessed production or design capacity	
Category 13 - Crushing of building material:	50,000 tonnes per annual period	
Category 61 - Liquid waste facility	1,000 tonnes per annual period	
Category 61A - Solid waste facility	20,000 tonnes per annual period	
Category 62 – Solid waste depot:	100,000 tonnes per annual period	
Category 63 - Class I inert landfill site	20,000 tonnes per annual period	
Category 65 - Class IV secure landfill site	50,000 tonnes per annual period	
Legislative context and other approvals		
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:

Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Noise Regs, UDRs, Dangerous Goods.

Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A