Decision Report

Application for Licence Amendment

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

Licence Number	L8332/2009/3
Applicant	Cleanaway Co Pty Ltd
ACN	127 853 561
File number	DER2014/000655
Premises	Karratha Liquid Waste Treatment and Waste Transfer Station Lot 126 on Plan 183297 COOYA POOYA WA 6714
Date of report	3 May 2022
Decision	Licence granted

Marko Pasalich

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Date: 2022.05.03 12:02:00 +08'00'

SENIOR ENVIRONMENTAL OFFICER - WASTE
REGULATORY SERVICES

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

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1. Decision summary

Licence L8332/2009/3 is held by Cleanaway Co Pty Ltd (the Licence Holder) for the Karratha Liquid Waste Treatment and Waste Transfer Station (Karratha waste facility) that is located on approximately 6 km southwest of the City of Karratha.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes, relevant to the amendment application, to the emissions and discharges during the operation of the Premises. As a result of this assessment, a revised Licence has been granted.

The revised licence issued as a result of this amendment consolidates and supersedes the existing licence and amendment notice 1 previously granted in relation to the Premises. The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department) has considered and given due regard to its regulatory framework and relevant policy documents under the *Environmental Protection Act 1986* (EP Act) that are available at https://dwer.wa.gov.au/regulatory-documents.

Operations at the premises are subject to the provisions of the *Dangerous Goods Safety Act 2004* and the acceptance and management of naturally occurring radioactive material (NORM) is also subject to provisions under the *Radiation Safety Act 1975* (RS Act).

2.2 Application summary and overview of premises

The existing Karratha waste facility serves as a liquid and solid waste storage and treatment facility. Waste may be stored and/or processed before being sent to alternative authorised premises or directed, as treated liquid waste, to high density polyethylene lined evaporation basins.

On 14 June 2021, the licence holder submitted an application to the department to amend Licence L8332/2009/3 under section 59 and 59B of the EP Act. The following amendments are being sought:

- The addition of waste code 270 to the existing Licence to facilitate the acceptance of liquid wastes contaminated with Per- and polyfluoroalkyl substances (PFAS);
- Operational conditions to facilitate the decontamination cleaning of Naturally Occurring Radioactive Material (NORM) surface contaminated objects; and
- The demolition of an existing recycling shed to provide access to an absorption pad and provide additional storage area for absorbed waste material.

No changes to the cumulative production or design capacity of the Karratha waste facility are proposed as part of the amendment application.

2.2.1 Acceptance of PFAS contaminated wastes

Waste code M270 refers to PFAS contaminated materials, including waste PFAS containing products and contaminated containers. The waste code M270 came into effect via the *PFAS National Environmental Management Plan* (PFAS NEMP). This waste type may have historically been accepted under waste code L150 (industrial waste water contaminated with a controlled waste) or waste code M160 (organohalogen compounds not elsewhere listed).

To ensure ongoing compliance with waste acceptance specifications on the Licence, the Licence Holder seeks to incorporate the acceptance of PFAS contaminated wastes onto the existing Licence. Throughput volumes of PFAS contaminated wastes are expected to be up to 1000 tonnes per annual period, however this will be dependent upon market conditions. The acceptance of PFAS contaminated material will not increase current premises throughput as the waste will be accepted as a component of the current Category 61 permissible throughput of 40,000 tonnes per annual period.

PFAS contaminated liquid wastes accepted to the premises will be stored at the premises on the bunded dangerous goods hardstand storage pad, which is bunded and consists of sealed sumps. Spills of environmentally hazardous materials will be pumped from the sumps directly to IBCs for treatment at the facility.

Additionally, the Licence Holder is seeking to further treat accepted liquid PFAS contaminated waste using the process of absorption to ensure that PFAS wastes can be disposed of to an appropriately authorised landfill facility. Absorption is a practice in current use at the premises, by which liquid wastes are mixed with woodchips to create a spadable consistency (as defined by the *Landfill Waste Classification and Waste Definitions 2019)* which is then considered acceptable for landfill disposal.

PFAS contaminated waste to be accepted at the premises will be analysed by the on-site chemist to determine its PFAS concentration. Based on this determination, the waste will be treated as follows:

- Low level waste

  The Applicant defines low level waste as waters which have come into contact with PFAS contamination.

  Liquid wastes will undergo pretreatment with Rembind™, which is an activated carbon product and acts as an adsorbent for the remediation of contaminated soil and groundwater. The applicant intends to use Rembind™ as it should bind to any PFAS present in liquid waste, preventing the leaching of PFAS to the environment.

  Once treated with Rembind™, the waste will undergo absorption with woodchips prior to disposal at an appropriately licenced facility. Absorption will be undertaken at the premises fixation bay. Every batch of PFAS contaminated waste will be analysed post absorption to determine the final PFAS concentration prior to disposal

- Concentrated waste

  The Applicant defines concentrated waste as products known to contain PFAS (i.e. straight aqueous film-forming foam (AFFF)) and mixtures of these products and water (i.e. 3% AFFF solution).

  Any waste meeting the sites definition of concentrated waste will not be processed on site and it is proposed to be removed offsite to an approved facility for disposal.

A flowchart outlining the Licence Holders proposed PFAS waste acceptance and processing specifications is outlined in Figure 1.

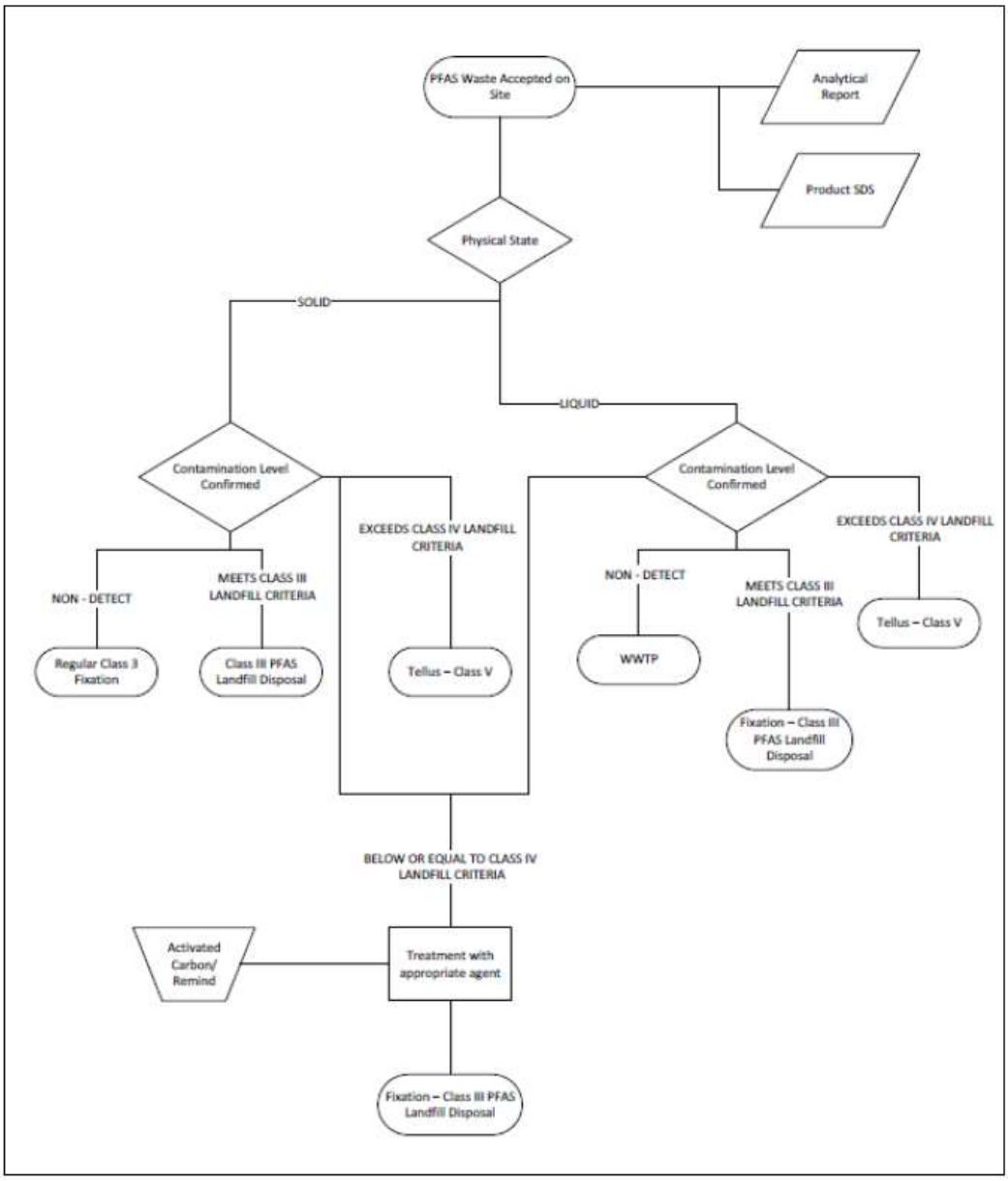


Figure 1: PFAS waste acceptance and processing specifications

Key findings: The Delegated Officer has reviewed the acceptance and processing specifications for PFAS contaminated waste proposed by the Licence Holder and considers the following:

1. DWER is under international obligation to implement the PFAS treatment, storage and disposal methodologies outlined in the PFAS NEMP.

   The PFAS NEMP considers the dilution of PFAS contaminated waste as an unacceptable treatment strategy for the handling and disposal of PFAS waste. DWER has regard of the PFAS NEMP in assessing risk relating to emissions and discharges from premises that handle, treat and dispose of PFAS waste.

2. DWER considers that the act of absorption, being the mixing of PFAS contaminated wastes with another medium, constitutes the dilution of the PFAS wastes as defined by the PFAS NEMP.

3. It is DWER's preference that wastes should be analysed for PFAS concentration immediately after liquid wastes are treated with Rembind™ and prior to mixing with woodchip for the purposes of landfill waste classification. This methodology of testin g of waste prior to adsorption activities will provide a more accurate understanding of PFAS concentration within the waste (i.e. will prevent any uncertainty that may be apparent due to dilution that may occur during mixing of the liquid and solid waste types) for the purposes of understanding risk associated with any leachate generated from the waste in a landfill.
4. DWER considers that waste containing identified concentrations of PFAS is deemed to be Special Waste Type 3 (as defined in the *Landfill Waste Classification and Waste Definitions 1997*) and as such, will be required to be disposed of to a landfill facility that can accept Special Waste Type 3.
5. Concentration limits for accepted PFAS contaminated wastes will be conditioned so as to align with the contamination limits outlined in the PFAS NEMP.
6. Additional groundwater monitoring requirements for PFAS will be considered as part of the risk assessment.

2.2.2 Decontamination cleaning of NORM surface contaminated objects

The Licence Holder received approval for the acceptance and storage of NORM contaminated infrastructure associated with the offshore oil and gas industry under an amendment to the existing Licence, which was granted in May 2017. In December 2020, the Radiation Council of Western Australia (RCWA) approved the operation to decontaminate NORM surface contaminated objects at the premises, within the Licence Holder's Registration under the *Radiation Safety Act 1975* (RS5/202031906). The Licence Holder is seeking an amendment to the existing Licence to authorise the decontamination of NORM surface contaminated objects and align with the RCWA approval.

In accordance with the RCWA approval, the Licence Holder proposes to conduct decontamination activities within a controlled bunded area. All waste generated from decontamination activities, including any items that could not be successfully decontaminated, will remain sealed in the storage area whilst awaiting approval for disposal. The Licence Holder has also provided the premises Radiation Safety Management Plan (endorsed by RCWA) in support of the application, which outlines:

- Design considerations;
- Environmental hazards and controls;
- The decontamination procedure; and
- Spill and emergency response procedures.

The management of NORM surface contaminated objects involves two locations, a NORM decontamination area and NORM storage area. Both areas comprise of hardstands and are within enclosed warehouses/sheds. Decontamination will involve:

- The washing of NORM contaminated material and treating the wash waters; and
- The containment and storage of NORM, including adding reagents to solidify wastes.

An overview of the decontamination and disposal pathway for NORM surface contaminated objects and the proposed NORM decontamination bay is provided in Figure 2 and Figure 3 below.

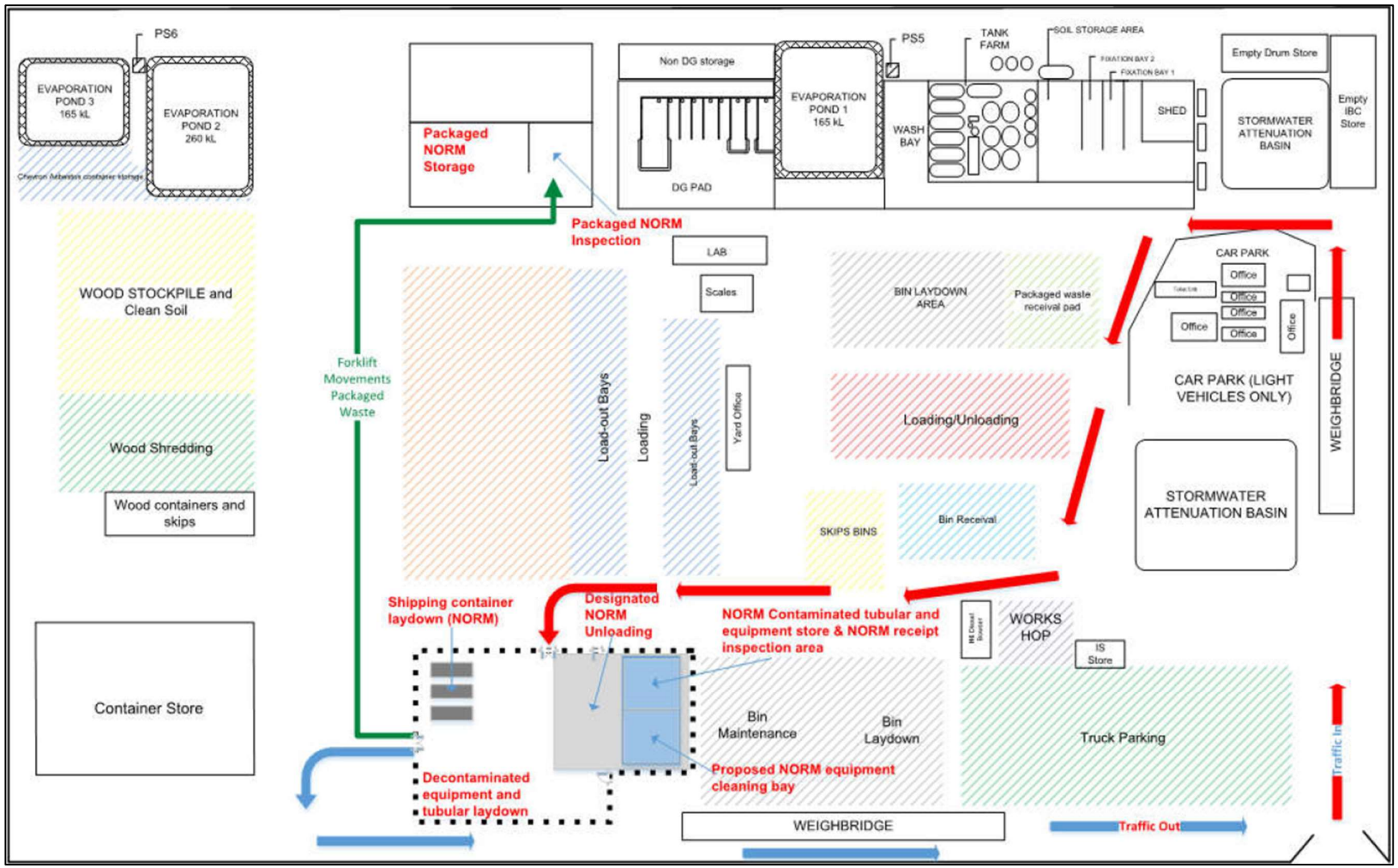


Figure 2: Premises layout for management of NORM contaminated materials

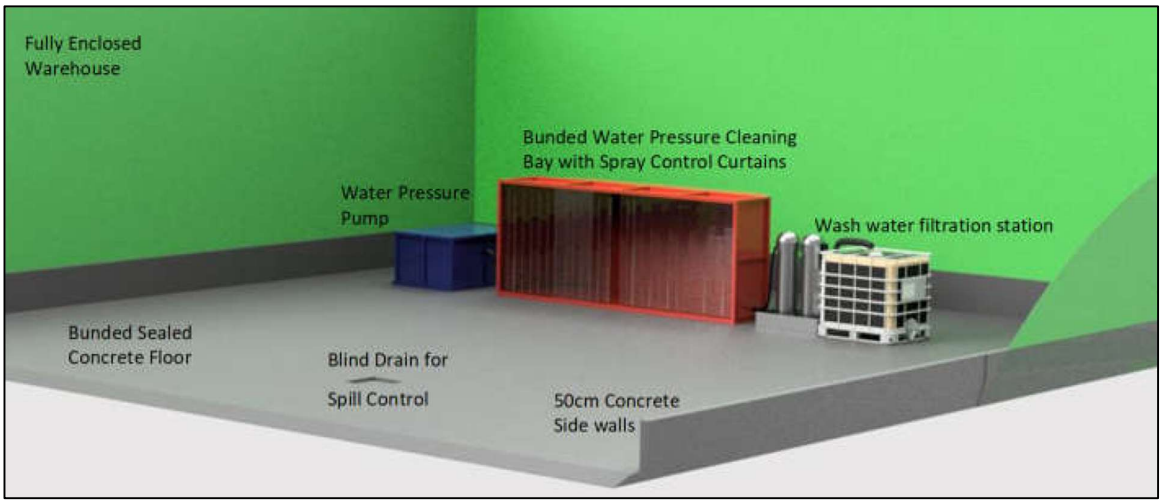


Figure 3: Proposed NORM material decontamination bay

2.2.3 Repurposing of existing storage area

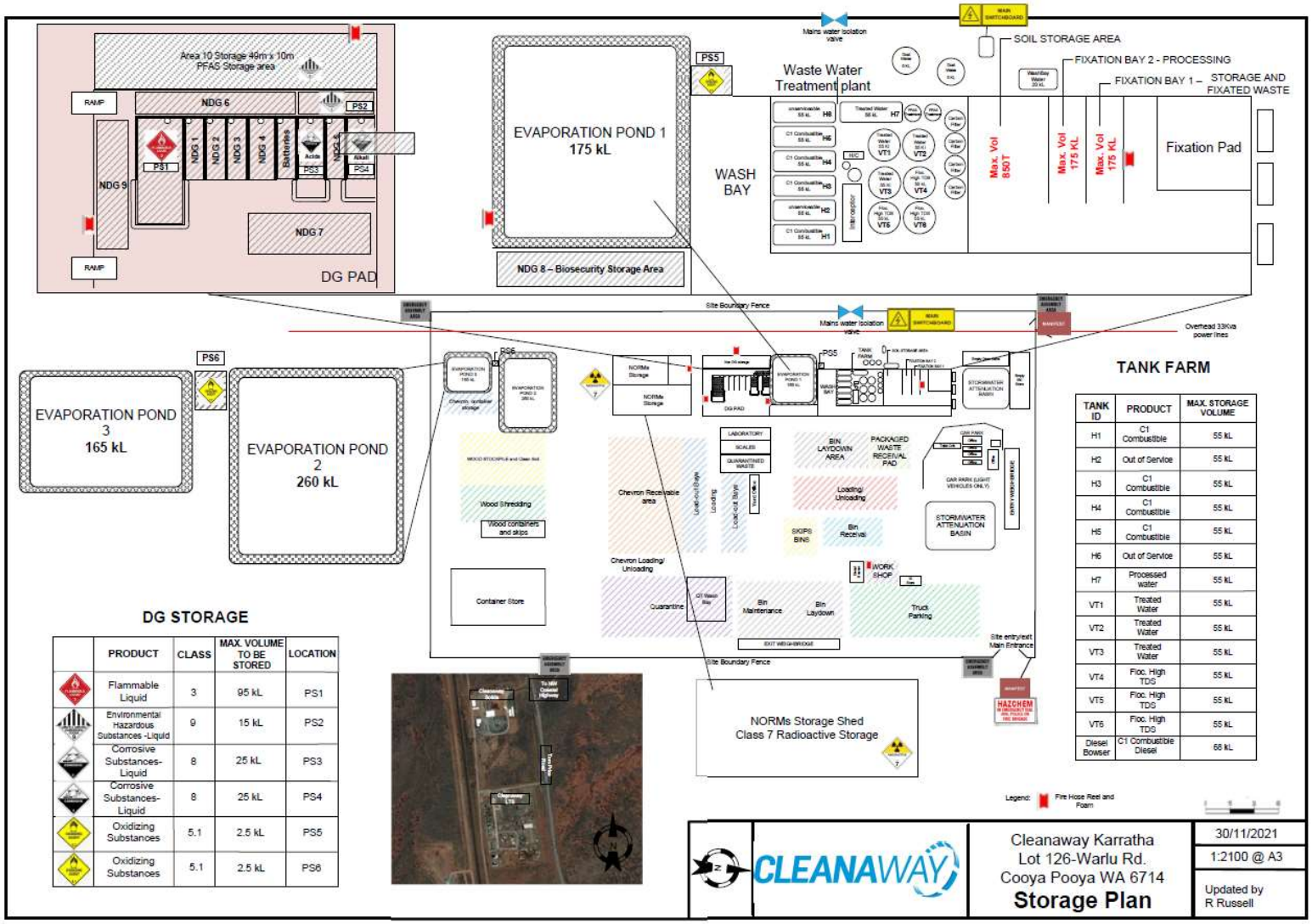
The Licence Holder has requested that the demolition of an existing recycling shed to provide access to an absorption pad and provide additional storage area for absorbed waste material be considered under the scope of this amendment application. The existing recycling shed is located in the north west corner of the premises next to the existing fixation bays. The Applicant has provided an updated site layout incorporating the new 'fixation area' to replace the recycling shed as indicated in Figure 1Figure 4 below.

It is the Licence Holders intent to stored fixated wastes in this area whilst awaiting analysis and transport to appropriate landfill facilities for disposal. Wastes to be stored in this area are anticipated to be oily sludges, drill muds, contaminated soils and other compatible bulk industrial wastes.

The Licence Holder intends to leave the existing concrete pad on which the existing recycling shed sits intact and overlay this area with a HDPE liner before pouring an additional 250mm of concrete over the top. This should ensure that the hardstand can accommodate heavy vehicle movements without cracking and ensure the hardstand remains impermeable. The pad will be divided into two areas, being the main fixation bay, which will have 2m high pushed up walls for the maximum storage of fixated wastes, and a smaller bay for the storage of other wastes. The pad will also be graded to ensure any stormwater will run back into the fixation area as opposed to away from it. This methodology permits 170 kL of water storage if required, with all roadways bordering this area fitted with blind sumps that can be pumped out in the event of any overflows.

Key findings: The Delegated Officer notes that the Licence Holder refers to the term 'fixation' to describe the absorption practice in current use at the premises, by which liquid wastes are mixed with woodchips to create a spadable consistency (as defined by the *Landfill Waste Classification and Waste Definitions 2019)* which is then considered acceptable for landfill disposal.

The Delegated Officer considers the term 'fixation' to represent the treatment of waste to chemically immobilize harmful contaminants so as to prevent the leaching of these contaminants to the environment when disposed of to landfill. As the Licence Holder's treatment of liquid waste with sawdust to create a solid does not act to immobilize contaminants within the waste, the Delegated Officer does not consider the use of the term 'fixation' appropriate and as such, will refer to the Licence Holders waste treatment process and treatment areas by the term 'absorption'.



TANK ID	PRODUCT	MAX. STORAGE VOLUME
H1	C1 Combustible	55 kL
H2	Out of Service	55 kL
H3	C1 Combustible	55 kL
H4	C1 Combustible	55 kL
H5	C1 Combustible	55 kL
H6	Out of Service	55 kL
H7	Processed water	55 kL
VT1	Treated Water	55 kL
VT2	Treated Water	55 kL
VT3	Treated Water	55 kL
VT4	Floc. High TDS	55 kL
VT5	Floc. High TDS	55 kL
VT6	Floc. High TDS	55 kL
Diesel Bowser	C1 Combustible Diesel	66 kL

	PRODUCT	CLASS	MAX. VOLUME TO BE STORED	LOCATION
	Flammable Liquid	3	95 kL	PS1
	Environmental Hazardous Substances -Liquid	9	15 kL	PS2
	Corrosive Substances-Liquid	8	25 kL	PS3
	Corrosive Substances-Liquid	8	25 kL	PS4
	Oxidizing Substances	5.1	2.5 kL	PS5
	Oxidizing Substances	5.1	2.5 kL	PS6

Figure 4: Updated site layout

3. 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 1.

Table 1: Licences consolidated in this amendment

Instrument	Issued	Summary of approval
L8332/2009/3	18 May 2017	Amendment notice 1 – storage of NORM contaminated infrastructure

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 format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the Licensee to obtain the form from the department's website;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; 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 below. 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.

4. 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.

4.1 Source-pathways and receptors

4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation that have been considered in this decision report are detailed in Table 2. Table 2 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls during operations

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust Noise	Construction of the new fixation pad hardstand	Air/windborne pathway	The Delegated Officer considers that existing controls at the Premises will e sufficient to mitigate emissions resulting from minor construction works. As such, emissions generated during construction will not be considered in the Departments risk assessment (as outline in Section 4.2 below.
Operation			
PFAS contaminated material	Spills or leaks of environmentally hazardous material	Discharge to land or surface water	• Stored on Dangerous Goods bunded hardstand where spills are contained in blind sumps • Staff trained in handling and spill response • Waste concentration analysis and classification • Waste absorption, storage and disposal to other authorised facilities
	Treatment of liquid wastes by absorption	Discharge to land or surface water Seepage to groundwater	
NORM wastes	Spills or leaks of environmentally hazardous material	Discharge to land or surface water	• Receipt, storage, washing and decontamination and storage of NORM waste is undertaken in accordance with the RCWA approval • All NORM material will be stored in sealed drums or inside shipping containers • The decontamination area will be fitted with spray curtains to contain water sprays • Decontamination area is located within an existing shed consisting of 50cm concrete walls, and a sealed, bunded hardstand fitted with blind sumps to allow the pump out of any washwaters or spills • NORM washwater will be filtered and tested before being managed as an industrial washwater, and captured within an IBC
	Decontamination activities within decontamination bay	Discharge to land or surface water Seepage to groundwater	

Emission	Sources	Potential pathways	Proposed controls
	Treatment of washwaters	Discharge to land or surface water Seepage to groundwater	• NORM washwater will be filtered and tested before being managed as an industrial washwater, and captured within an IBC • NORM washwater managed as industrial washwater will ultimately be directed to the evaporation ponds for disposal via evaporation.

4.1.2 Receptors

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

Table 3 and Figure 5 below provide a summary of potential human and environmental receptors that have been identified and may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 3: Identified sensitive human and environmental receptors

Human receptors	**Distance from prescribed activity**
Commercial / industrial receptors	Approximately 0.15 km west and 0.25 km north of the prescribed premises boundary
Kingfisher accommodation village	Approximately 2.2 km north of the prescribed premises boundary
Groundwater abstraction bore (CAW201542(1))	Approximately 0.5 km north of the prescribed premises boundary
Environmental receptors	**Distance from prescribed activity**
Seven Mile Creek	Approximately 1.2 km east of the prescribed premises boundary
Mapped Roebourne Plains gilgai grasslands (threatened ecological community)	Approximately 1.6 km east of the prescribed premises boundary
Mapped minor non-perennial water courses	Approximately 0.3 km west and 1 km east of the prescribed premises boundary
Underlying groundwater (non-potable purposes)	Between 7m and 10 m below ground level

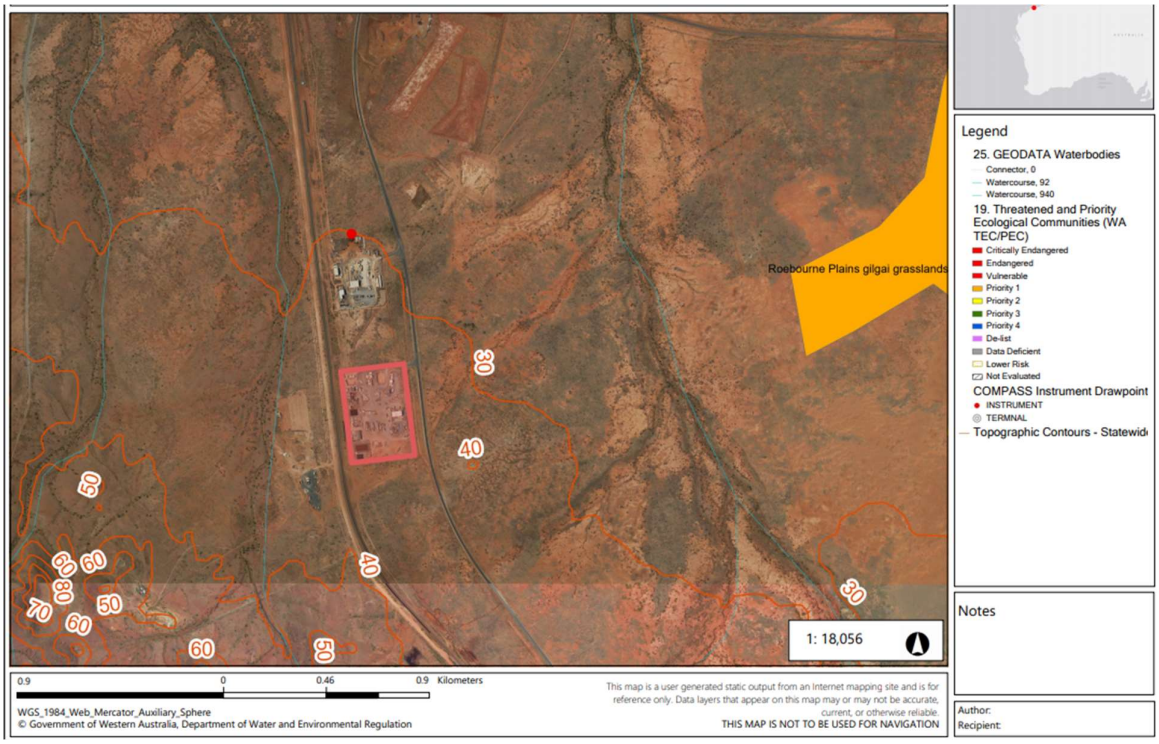


Figure 5: Distance to proximate sensitive receptors.

4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 4.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

Licence L8332/2009/3 that accompanies this decision report authorises emissions associated with the operation of the premises for waste storage and reprocessing activities. The conditions in the issued licence, as outlined in Table 4 have been determined in accordance with *Guidance statement: Setting conditions* (DER 2015).

Table 4: 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**				
Acceptance, treatment with Rembind™ and/or by absorption with woodchips and storage of PFAS contaminated waste	Spills or leaks of PFAS contaminated material	Discharge to land or surface water	Underlying soil and groundwater	See Section 4.1.1	C = Moderate L = Unlikely **Medium**	Y	Conditions 1, 4, 5, 9, 10 and 30	Emissions will also be regulated under the general provisions of the EP Act.
	Seepage or surface water runoff of PFAS contaminated material	Discharge to land or surface water Seepage to groundwater	Underlying soil and groundwater 7 Mile creek and nearby minor non-perennial water courses Industrial and commercial receptors mapped within 0.25km of the premises boundary	See Section 4.1.1	C = Moderate L = Unlikely **Medium**	Y	Conditions 1, 4, 5, 9, 10, 20, 30	The delegated officer considers it appropriate for additional groundwater monitoring requirements to be added to the licence for PFAS substances. The Delegated Officer considers that other proposed controls are adequate to mitigate potential emissions.
Decontamination and storage of NORM surface contaminated objects	Spills or leaks of environmentally hazardous material	Discharge to land or surface water	Underlying soil and groundwater	See Section 4.1.1	C = Moderate L = Unlikely **Medium**	Y	Conditions 1, 4, 5, 9, and 10	Emissions will also be regulated under the general provisions of the EP Act.

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**				
Treatment of washwaters from decontamination activities	Seepage or surface water runoff of NORM contaminated materials	Discharge to land or surface water Seepage to groundwater	Underlying soil and groundwater 7 Mile creek and nearby minor non-perennial water courses Industrial and commercial receptors mapped within 0.25km of the premises boundary	See Section 4.1.1	C = Moderate L = Unlikely **Medium**	Y	Conditions 1, 4, 5, 9, 10 and 20	The Delegated Officer considers that proposed controls are adequate to mitigate potential emissions. Emissions will also be regulated under the *Radiation Safety Act 1975.*
	Residual NORM in industrial wastewater	Discharge to land or surface water Seepage to groundwater	Underlying soil and groundwater 7 Mile creek and nearby minor non-perennial water courses Industrial and commercial receptors mapped within 0.25km of the premises boundary	See Section 4.1.1	C = Moderate L = Rare **Medium**	Y	Conditions 1, 4, 5, 6, 7, 9, 10, 19 and 20	The Delegated Officer considers that current controls in place at the premises for the treatment and management of industrial washwater will be adequate to mitigate potential emissions.

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

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

5. Consultation

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

Table 5: Consultation

Consultation method	Comments received	Department response
City of Karratha advised of proposal on 24 September 2021	None received.	N/A
Radiological Council advised of proposal on 24 September 2021	Response received 2 December 2021. The Radiological Council registration allows for the work proposed with decontaminating NORM surface contaminated objects	Noted.
Department of Planning, Lands and Heritage (DPLH) advised of proposal on 24 September 2021	None received.	N/A
Applicant was provided with draft documents on 12 January 2022	Refer to Appendix 1	Refer to Appendix 1

6. Conclusion

Based on the assessment in this decision 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.

Table 6 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 6: Summary of licence amendments

Revised licence condition	Proposed amendments
Condition 1 Table 1	Inclusion of NORM wastes and PFAS contaminated waste under the waste acceptance specifications
Condition 4 Table 2	Inclusion of NORM wastes and PFAS contaminated waste processing specifications
Condition 5 Table 3	Inclusion of NORM decontamination area, PFAS storage are and fixation pad containment infrastructure requirements. Updates to terminology surrounding treatment of waste by absorption.
Condition 3.1.6	Redundant condition deleted.

Revised licence condition	Proposed amendments
Condition 28 Table 8	Redundant reporting requirements deleted
Conditions 30, 31 and 32 Table 10	Inclusion of construction specification and validation conditions for the fixation pad.
N/A Schedule 1	Inclusion of updated figures and deletion of redundant figures.
N/A Schedule 2	Deletion of redundant AACR form – now available on the Departments website.

Table 7 provides a summary of the licence consideration and amendment process. The conversion and treatment of conditions in the Existing Licence and amendment notice are mapped against the conditions of the Revised Licence.

Table 7: Licence conversion map for new licence format

Existing condition	Condition summary	Revised licence condition	Conversion notes
All relevant	Licensee	Licence Holder	Updated to standard terminology and nomenclature.
1.1.1 1.1.2	Interpretation and definitions	N/A 'Interpretation' section and 'Definition' section - Table 11	Redundant condition deleted. All relevant definitions have been transferred to Table 11 of the revised Licence in line with new standard formatting.
1.1.3 1.1.4	Reference to Australian standard, guidelines or codes of practice.	N/A	Removed and incorporated into other conditions.
1.1.5	Authorisation of emissions	N/A	Redundant condition deleted. Regulation falls under the general provisions of the EP Act.
1.2.1	Maintain pollution control and monitoring equipment	Condition 8	Condition grouped in 'Waste processing' in line with new formatting. Revised to current licensing format.
1.2.2	Recovery of spills	Condition 9	Condition grouped in 'Waste processing' in line with new formatting. Revised to current licensing format.

Existing condition	Condition summary	Revised licence condition	Conversion notes
1.2.3	Stormwater management	Condition 10	Condition grouped in 'Waste processing' in line with new formatting. Revised to current licensing format.
1.3.1	Investigation of limit exceedance	N/A	Redundant condition deleted.
1.3.2	Labelling of waste containers	Condition 2	Revised to current licensing format.
1.3.3 Table 1.3.1	Waste acceptance	Condition 1 Table 1	Revised to current licensing format. Inclusion of NORM waste and PFAS contaminated wastes
1.3.4	Waste types not authorised	Condition 3	Revised to current licensing format.
1.3.5 Table 1.3.2	Waste processing	Condition 4 Table 2	Revised to current licensing format. Inclusion of updated terminology. Inclusion of PFAS contaminated material and NORM waste.
1.3.6 Table 1.3.3	Containment infrastructure	Condition 5 Table 3	Revised to current licensing format. Inclusion of NORM decontamination area and PFAS storage/treatment area.
1.3.7	Pond management	Condition 6	Revised to current licensing format.
1.3.8	Wash down, treated and contaminated water management	Condition 7	Revised to current licensing format.
1.3.9	Security measures	Condition 11	Revised to current licensing format.
1.3.10	Entry sign	Condition 12	Revised to current licensing format.
2.1.1	Monitoring standards	Conditions 14	Revised to current licensing format.
2.1.2	Monitoring frequency	Condition 15	Revised to current licensing format.

Existing condition	Condition summary	Revised licence condition	Conversion notes
2.1.3 2.1.4	Monitoring equipment calibration	Conditions 16 and 17	Revised to current licensing format.
2.2.1 Table 2.2.1	Waste input and output monitoring	Condition 18 Table 4	Revised to current licensing format.
2.3.1 Table 2.3.1	Process monitoring	Condition 19 Table 5	Revised to current licensing format.
2.4.1 Table 3.8.1	Ambient groundwater monitoring	Condition 20 Table 6	Revised to current licensing format. Removal of reference to limits.
3.1.1	Record keeping requirements	Condition 21	Revised to current licensing format.
3.1.2	Persons to be aware of licence conditions	Condition 13	Condition grouped in 'Site management' in line with new formatting. Revised to current licensing format.
3.1.3	Annual audit compliance report (AACR)	Condition 24	Condition grouped in 'Reporting' in line with new formatting. Revised to current licensing format.
3.1.4	Complaints management system	Condition 22	Revised to current licensing format.
3.1.5	Waste acceptance records	Condition 23	Revised to current licensing format.
3.1.6	Weekly visual check of all operating systems	N/A	Removed and incorporated into other conditions.
3.2.1 Table 3.2.1	Annual environmental report (AER)	Condition 25 Table 7	Revised to current licensing format.
3.2.2	AER data assessment against previous years monitoring	Condition 26	Revised to current licensing format.
3.2.3 Table 3.2.2	Non-annual reporting conditions	Condition 27 Table 8	Revised to current licensing format. Removal of reference to deleted condition 3.1.6 (incorrectly referenced as 5.1.6).

Existing condition	Condition summary	Revised licence condition	Conversion notes
3.3.1 Table 3.3.1	Notification	Condition 28 Table 9	Revised to current licensing format.
N/A	Design and construction/installation requirements	Condition 29 Table 10	Inclusion of works conditions for the new fixation pad.
N/A	Compliance audit on works	Condition 30	Inclusion of compliance reporting condition for construction works for new fixation pad.
N/A	Compliance audit specifications	Condition 31	Inclusion of specification condition for compliance reporting.
N/A Schedule 1	Maps (premises boundary, plans and monitoring locations)	Schedule 1	New maps incorporated to depict changes to premises layout. Redundant maps deleted. Revised to current licensing format.
N/A Schedule 2	Reporting and notification forms	Schedule 2	Old AACR templeted deleted – now available on the Departments website.

References

1. Department of Environment Regulation (DER) 2015, *Guidance statement: Setting conditions*, Perth, Western Australia.
2. DER 2016, *Guidance statement: Licence duration*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk assessments*, Perth, Western Australia.
5. National Chemicals Working Group of the Heads of EPAs Australia and New Zealand 2020 *PFAS National Environmental Management Plan Version 2*, Commonwealth of Australia

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

Condition	Summary of applicant's comment	Department's response
N/A	Licence Holder confirmed to be Cleanaway Co Pty Ltd	The Licence Holder has been updated to reflect.
Condition 1 Table 1	Amend throughput for NORM waste to 5,000 tonnes per annual period to account for large volumes of sub-sea pipe work.	Not actioned as requested. The Delegated Officer notes that upon receipt of testing, pipework determined to be NORM waste should be treated as NORM waste with the remainder of the pipeline managed appropriately in accordance to the licence conditions.
Condition 1 Table 1	Revise acceptance requirement wording of a NORM waste as some NORM waste received cannot be contained in a sealed, impervious container. This change is also required in table 2 of the Licence.	Condition updated to ensure that NORM waste is received in line with the requirements of: • *Registration RS5/2020/31906 under the Radiation Safety Act 1975;* and • *ARPANSA Code for the Safe Transport of Radioactive Material Radiation Protection Series C-2 (Rev1) 2019.*
Condition 1 Table 1	Request that liquid NORM waste have a separate waste acceptance row in Table 1.	Not actioned as requested. The Delegated Officer notes that this was already included in the amended licence.
Condition 1 Table 1	Request that PFAS contaminated wastes have individual waste acceptance rows for in Table 1 for PFAS liquid concentrate, PFAS washwater and PFAS solid waste.	Not actioned as requested. The Delegated Officer notes that risk assessment for PFAS contaminated waste was undertaken on the throughput as mentioned within the application form (1,000 tonnes per annual period). The newly proposed 17,000 tonnes will alter the risk assessment undertaken as part of the licence amendment. Should Cleanaway seek to amend PFAS throughput a licence should be submitted to give effect to this increase, including additional controls, if required.

Condition	Summary of applicant's comment	Department's response
Condition 2 Table 4	Revise wording of condition to allow for the use of other suitable material for absorption.	The condition has been updated to allow for greater flexibility.
Condition 2 Table 4	Revise the condition to remove the requirement for bunding as the current design includes the requirement for the fixation bays and fixation pads to be graded back to pits. As there will be two fixation pads the total storage capacity will be 1,700 m^3 at any given time, not the 850 m^3 as previously listed.	The condition has been updated to reflect the infrastructure change.
Condition 2 Table 4	Potential typo, delete "PFAS" and insert "PFOA"	The typographical error has been corrected.
Condition 2 Table 4	Revise wording of condition to allow for the use of other suitable material for absorption and allow for the treatment of PFAS waste with Rembind or equivalent activated carbon product.	The condition has been updated to allow for greater flexibility. The changes do not alter the risk assessment.
Condition 4 Table 2	Revise the condition to remove the requirement for bunding as the current design includes the requirement for the fixation bays and fixation pads to be graded back to pits.	The condition has been updated to reflect the infrastructure change.

Condition	Summary of applicant's comment	Department's response
Condition 4 Table 2	Alternative treatment is to put low level PFAS thorough wastewater treatment plant which includes filtration through Rembind or alternative activated carbon product prior to discharge to evaporation ponds.	Not actioned as requested. The Delegated Officer notes the alternate treatment option, however the discharge of PFAS impacted liquid waste to the WWTP and evaporation pond was not included within the application and risk assessment. Any changes to the treatment of PFAS impacted liquid waste not assessed within this licence must be undertaken via a licence amendment application.
Condition 4 Table 2	Delete "No treatment of waste is to occur". Treatment should include treatment with Rembind to reduce levels to stated criteria at which point it is suitable for landfill disposal. Also, we request that solidification is allowed for PFAS above the criteria, prior to disposal to Class 5 landfill.	The condition has been updated. As outlined within the decision report a concentration limits for PFAS contaminated wastes will be conditioned in line with NEMP waste landfill acceptance criteria.
Condition 4 Table 2	PFAS treatment methods should be updated so that PFAS contaminated liquid wastes below the 50mk/kg criteria can be processed via absorption with woodchips without the need to be treated with Rembind prior to disposal.	The condition has been updated to allow for greater flexibility. The changes do not alter the risk assessment.

Condition	Summary of applicant's comment	Department's response
Condition 5 Table 3	Delete "fitted with water spray curtains" and insert with "infrastructure in place to control overspray" as the current wording is too prescriptive.	The condition has been updated to allow for greater flexibility.
Condition 5 Table 3	Delete the requirement for fixation bays and pad to require bunding.	The condition has been updated to reflect the infrastructure change.
Condition 30 Table 10	Current wording refers to figure XX	The typographical error has been corrected.
Condition 30 Table 10	Delete "2mm HDPE" and replace with "0.2mm PVC". Cleanaway design figures shows a 0.2mm PVC liner, not a 2mm HDPE liner. Cleanaway deem the 0.2mm PVC liner to be sufficient as it is a backup liner in the unlikely scenario that the slab above cracks. 2mm HDPE liners are typically used where there is permanent liquid being contained. This is not the case as has concrete layers both above and below the liner.	The condition has been updated to reflect the 0.2mm PVC liner. A permeability requirement has been added to the licence to ensure that the fixation pad provides a leachate barrier which minimises infiltration of leachate to soil, surface water and groundwater.
Schedule 1 Figure 2	Updated figure supplied to show current activities.	Updated

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
Amendment to licence	☒	Current licence number:	L8332/2009/3		
		Relevant works approval number:		N/A	☒
Date application received		14 June 2016			
Applicant and premises details					
Applicant name/s (full legal name/s)		Cleanaway Co Pty Ltd			
Premises name		ToxFree (Karratha) Karratha Liquid Waste Treatment and Waste Transfer Station			
Premises location		Lot 126 on Plan 183297, Warlu Way, Cooya Pooya WA 6714			
Local Government Authority		City of Karratha			
Application documents					
HPCM file reference number:		DER2014/000655-1~3			
Key application documents (additional to application form):		Attachment 1A: Copy of lease Attachment 5: Copy of Radiological Council *Radiation Safety Act Amendment to Registration: Unsealed Radioactive Substances*, dated 22/12/2020 Attachment 8A: Copy of *Radiation Safety Management Plan for the Storage of Radioactive Substances, NORM Handling Activities and Decontamination Cleaning of Surface Contaminated Objects*, dated October 2020			
Scope of application/assessment					
Summary of proposed activities or changes to existing operations.		Add the acceptance of waste type M270: *Per- and polyfluoroalkyl substances (PFAS) contaminated materials, including waste PFAS containing products and contaminated containers* for treatment using the process of adsorption and fixation (immobilisation). Add the process of decontaminating surface contaminated objects of Naturally Occurring Radioactive Material (NORM) that is currently approved for acceptance at the premises.			

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

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity
Category 61: Liquid waste facility: Premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated	40,000 tonners per annual period	None
Category 61A: Solid waste facility: Premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land	40,000 tonners per annual period	None

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 ☐ No ☒	N/A
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	General lease ☒ Expiry: 1/03/2024
Has the applicant obtained all relevant planning approvals?	Yes ☒ No ☐ N/A ☐	Radiological Council registration RS 5/2020/31906
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ 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 ☐ 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 ☐ No ☐	Licence / permit stated as not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	Premises is location within the proclaimed Pilbara groundwater and surface water areas
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	N/A
Is the Premises subject to any other Acts or subsidiary regulations?	Yes ☒ No ☐	The *Dangerous Goods Safety Act* 2004, *Planning and Development Act 2005*, *Radiation Safety Act 1975* and subsidiary legislation under the *Environmental Protection Act 1986*, including the *Environmental Protection (Controlled Waste) Regulations 2004*.
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	N/A
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	N/A
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	N/A