



Review of Existing Licence

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L8649/2012/1
Applicant	Tox Free Australia Pty Ltd
ACN	127 853 561
File Number	2012/003306
Premises	Tox Free Henderson 24 Stuart Drive, HENDERSON Lot 300 on Plan 23084 Certificate of Title Volume 2202 Folio 933
Date of Report	19 September 2017
Status of Report	Final

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1. Definitions of terms and acronyms

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

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
BoM	Bureau of Meteorology
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CoC	City of Cockburn
CS Act	<i>Contaminated Sites Act 2003 (WA)</i>
CW Regs	<i>Environmental Protection (Controlled Waste) Regulations 2004</i>
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the <i>Public Sector Management Act 1994</i> and is responsible for the administration of the <i>Environmental Protection Act 1986</i> along with other legislation.
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of, and during this Review

Term	Definition
IBC	Intermediate Bulk Containers (1000 litres)
ICMS	Incidents Complaints Management System
Licence Holder	Tox Free Australia Pty Ltd
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
MTBE	Methyl Tertiary Butyl Ether; MTBE is a volatile, flammable, and colorless liquid that is soluble in water
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
PDWSA	Public Drinking Water Source Area
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Primary Activities	as defined in Schedule 2 of the Revised Licence
Quarantine Area	Area for the storage of liquid waste residual solid waste from the oily water treatment plant prior to disposal off-site – as depicted in Appendix 2.
Review	this Licence review
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act following the finalisation of this Review.
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
Tank Farm	The roofed and fully sealed and bunded building that houses the oily water storage tanks and treatment tanks, air pollution control equipment (activated carbon filters), centrifuge and truck discharge bay at the Premises – as depicted in Appendix 2.
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>
VOC's	Volatile Organic Compounds
Waste Code	means the Waste Code assigned to the type of controlled waste for purposes of waste tracking and reporting as specified in the Department of Environment Regulation 'Controlled Waste Category List' (April 2015), as amended from time to time

2. Purpose and scope of assessment

On 12 July 2016, Tox Free Australia Pty Ltd (the Licence Holder) was notified that a risk based Review of Licence L8649/2012/1 for the liquid waste facility at the Premises was required. Deficiencies in the Licence had been identified by the CEO, specifically that the types and amounts of liquid waste that can be accepted at the Premises were not specified.

This Review is documented through this Decision Report.

This Review has been undertaken in accordance with DWER's published regulatory risk-based framework, including *Guidance Statement: Decision Making* and *Guidance Statement: Risk Assessment*.

3. Background

The Existing Licence authorises prescribed premises categories under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regs) as listed in Table 2.

Table 2: Prescribed Premises Categories

Classification of Premises	Description	Approved premises production or design capacity or throughput
Category 61	<i>Liquid waste facility</i> : premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	Not currently specified on the Existing Licence. Refer to Section 4.2.1 for a review of the proposed waste acceptance at the premises

The Premises is also listed as a waste facility in DWER's Controlled Waste Tracking System (CWTS). Listing of a waste facility in the Controlled Waste Tracking System (CWTS) provides the Licence Holder with a tool to assist compliance with its obligations under the *Environmental Protection (Controlled Waste) Regulations 2004* (CW Regs).

4. Overview of Premises

4.1 Infrastructure

Liquid waste facility infrastructure for the Premises, as it relates to Category 61 activities, is detailed in Table 3 and with reference to the Site Plan (Appendix 2).

Table 3: Premises infrastructure

Infrastructure	
Prescribed Activity Infrastructure - Category 61	
Tank Farm: oily water separator treatment plant	
1	Tank Farm – covered, perimeter bunded and impervious concrete lined (permeability of at least 1×10^{-9} m/s) structure
2	2 x 25,000 kL vertical fixed-roof tanks (Tanks 1 and 2) – located within Tank Farm

Infrastructure	
3	8 x 70,000kL vertical fixed-roof tanks (Tanks 3-10) – located within Tank Farm
4	Micron Filter system; 25 Micron Filter and 5 Micron Filter (for wastewater filtration system) – located within Tank Farm
5	Activated Carbon Filter (for the wastewater filtration system) – located within Tank Farm
6	5 x Activated Carbon Filters (air pollution control equipment) – located within Tank Farm Air emissions from all on-site treatment and storage tanks vent through interconnected Activated Carbon Filters. Tox Free have indicated that respective filters have a 95% VOC removal efficiency based on a standard 2 second bed residence time.
7	Bubble clear unit (dissolved air flotation (DAF) treatment system)
8	Centrifuge (for the physical treatment of waste sludge) – located within Tank Farm
9	Truck discharge bay for unloading of liquid wastes – located within Tank Farm
10	Liquid waste discharge bund; concrete lined and uncovered – located within Tank Farm
11	Sealed drainage collection network within Tank Farm – leach drains (recovered liquid discharge is pumped back into the treatment plant for processing)
12	Sewer discharge point – located within Sample Shed
13	Sample Shed – attached to Tank Farm structure
Quarantine Area: residual solid waste storage in Intermediate Bulk Container's (IBC).	
1	Perimeter bunded and impervious concrete lined (permeability of at least 1×10^{-9} m/s) storage area (partially covered – western side).
2	Two sealed sumps within storage area (1) (stormwater and liquid spills is recovered as required and pumped back into the treatment plant within the Tank Farm for processing)
Other premises infrastructure related to Prescribed Activity	
1	Warehouse and offices – office space, general storage and workshop
2	Groundwater monitoring wells x 4 (BH1, BH2, BH3, BH4, BH5A and BH6)
3	General stormwater collection infrastructure on the premises: eleven (11) unsealed sumps for stormwater collection and disposal (infiltration).

4.2 Operational aspects

The Licence Holder operates a liquid waste treatment facility that accepts and treats a broad range of bulk liquid wastes produced by industry and commercial sectors. The treatment process employed on-site primarily involves the operation of an oily water separator treatment plant (Tank Farm) that undertakes physical and physiochemical process to remove contaminants.

Wastes received at the premises arrive as bulk wastes within tanker loads or within Intermediate Bulk Container's (IBC).

Waste acceptance and treatment process – bulk wastes and IBCs:

Liquid wastes are delivered to site as bulk wastes (within tanker trucks) and/or within Intermediate Bulk Container's (IBC). A summary of the waste treatment process is provided below.

- Prior to delivery of liquid waste to the Premises the waste consigner must schedule delivery with the Licence Holder who then undertakes a preliminary (desktop) assessment on whether the waste types are suitable for acceptance;
- At the point of delivery the Licence Holder inspects the required paper-work including the associated Controlled Waste tracking forms in order to verify waste acceptance. Additionally the Licence Holder collects a sample of the waste to test for pH, zinc and a lab-scale treatment test; these tests inform the level of treatment with regards to the addition of chemical additives such as coagulants and flocculants. If tests indicate that waste is treatable then waste is accepted if not the load is rejected and sent to the Tox Free Kwinana premises (Licence L6297/1993/11) for further characterisation and treatment.
- Accepted wastes are unloaded at the truck discharge bay into the discharge bund before being pumped to one of the wastewater treatment tanks (Tanks 5-10). Different waste types can also be mixed within the discharge bund prior to being pumped to one of the treatment tanks. If the waste is comprised predominantly of waste oils or oily sludge it can be pumped directly to the discharge bund or to the untreated oil storage tanks (Tanks 1 and 2) for storage, consolidation and settlement and off-site removal.
- Any settled water from Tanks 1 and 2 is re-directed (pumped) to the oily water separation treatment tanks (Tanks 5-10) for treatment as required. Conversely skimmed oil from tanks 5-10 is then transferred back to Tanks 1 and 2 for storage pending removal off-site.
- Heavily oil contaminated wastewater is passed through a dissolved air flotation (DAF) treatment system to remove suspended oil, grease, fats and solids in the wastewater stream, prior to being pumped back to one of the treatment tanks (nominally Tank 4) where chemical additives are utilised in the next phase of treatment. As mentioned above the amount of chemical additives (eg. acid solution, caustic solution, Ferric chloride solution and Flocculent) used is dependent on the lab-scale treatment test which is conducted at the acceptance stage. After the addition of chemicals the tank is then mixed and allowed to settle.
- After further settlement a wastewater sample is collected and tested to demonstrate that sewer discharge criteria can be met. If discharge criteria is met the treated wastewater is pumped from the tank and directed through the Carbon Filter prior to being discharged sewer. There is an automatic sampler connected to sewer discharge point to verify volumes and quality of water being disposed (note: the automatic sampler was installed by Water Corporation as a requirement of the discharge permit as described below).
- The Licence Holder has a *Permit to Discharge Industrial Waste* from Water Corporation; refer to Appendix 3. No treated liquid waste is discharged to the environment; DWER does not consider a discharge to sewer as a discharge to the environment as wastewaters are conveyed through the reticulated sewer network and ultimately end up at a Wastewater Treatment Plant (WWTP) where further treatment is undertaken. Any discharges from the WWTP are related to that premises and not from those discharging to the reticulated sewer network.
- Any remaining sludge in the treatment tanks is pumped to the Centrifuge for treatment. Centrate (liquid fraction) from the Centrifuge is either returned to one of the treatment tanks (Tanks 5-10) and subject to further treatment as per the above process or in

some circumstances it is collected in IBCs or within Tankers and sent to Tox Free Kwinana (Licence L6297/1993/11) for fixation. The remaining dewatered sludge is collected in a skip bin for off-site disposal.

Residual waste management:

- Residual waste oils, oily sludge (solid waste), and other solids collected through the treatment process are stored in IBC's in the Quarantine Area pending removal off-site by a licensed controlled waste carrier such as Wren Oil or sent to Tox Free Kwinana for characterisation and further treatment as required. The skip bin that holds dewatered sludge from the Centrifuge is also located in the Quarantine Area pending removal off-site. Tox Free Kwinana is currently licensed to receive a broad range of solid and liquid waste types.

Summary of hardstand infrastructure and drainage:

- The Tank Farm operations are all contained within a covered, bunded and impervious concrete area (permeability of at least 1×10^{-9} m/s).
- The Quarantine Area is partially covered on the western side; hardstand consists of a perimeter bunded impermeable concrete hardstand (permeability of at least 1×10^{-9} m/s).
- A sealed drainage collection network is in place within the Tank Farm and two sealed sumps are located in the Quarantine Area. Any liquid waste that is spilt and contained within the bunds or sumps is pumped out and processed back through the oily water treatment plant within the Tank Farm.

Maintenance and cleaning of treatment tanks:

The Licence Holder carries out daily site inspections of the Tank Farm and Quarantine Area to monitor for odours and any potential impacts to the amenity of neighboring industrial and commercial premises.

Tanks 1 and 2 are licensed by the Department of Mines, Industry Regulation and Safety as combustible liquid tanks and are therefore maintained in accordance with Australian Standard AS1940 *The storage and handling of flammable and combustible liquids*. Cleaning frequency is dependent on sludge level and performance of wastewater treatment process.

Tanks 3-10 are regularly monitored to determine frequency of maintenance and cleaning. The cleaning frequency for these tanks is also dependent on sludge level and performance of wastewater treatment process.

Chemical storage:

A copy of the dangerous goods manifest for the site is provided in Appendix 4. The following chemicals are listed on the manifest:

- Motor oil (waste oils) as stored in Tanks 1 and 2 (combined storage capacity of 50,000L) within the Tank Farm;
- Class 8 corrosive substance; 2000L, stored in the Tank Farm;
- Class 8 corrosive substance; 2000L, stored in the Quarantine Area;
- Class 2 (2.1) Flammable gas 300L, stored in the Warehouse; and
- Class 2 (2.2/5.1) Non-Flammable Non-Toxic Gas and Class 5 (5.1) Oxidizing Agent 100L, stored in the Warehouse.

A process overview of the on-site wastewater treatment processes is provided in Appendix 5.

4.2.1 Proposed waste acceptance and treatment process

As part of the Review the Licence Holder has requested the waste types as detailed in Table 4 be authorised for waste acceptance. The Licence Holder has also confirmed the respective treatment process for each waste type.

The Licence Holder has indicated that the production or design capacity of the premises is 28,000 tonnes per annual period.

Table 4: Proposed controlled waste types to be authorised for acceptance

Category Group	Waste Code	Waste Type (Description)	Treatment process or storage/consolidation off-site disposal
J Oils	J100	Waste mineral oils unfit for their intended purpose	Tank farm: storage, consolidation in Tanks 1 and 2 with subsequent off-site disposal to Wren Oil
	J120	Waste oil and water mixtures or emulsions and hydrocarbon and water mixtures or emulsions	Tank farm: Oily wastewater treatment process; or,
	J130	Oil interceptor waste	Storage, consolidation in Tanks 1 and 2 with subsequent off-site disposal to Wren Oil
	J180	Oil sludge	Oily sludge treatment process, storage with subsequent off-site disposal to Wren Oil or Tox Free Kwinana
L Industrial Wash Water ¹	L100	Car and truck wash waters ¹	Tank farm: Oily wastewater treatment process (mixed with other oily and non-oily wastes)
	L150	Industrial wash waters contaminated with a controlled waste ¹	Tank farm: Oily wastewater treatment process (mixed with other oily and non-oily wastes)
N Soils and Sludge ¹	N140	Fire debris and wash water ¹ (liquid wastes only)	Tank farm: Oily wastewater treatment process (mixed with other oily and non-oily wastes)

Note 1: Wastes are considered to predominantly comprise of water and in many cases may contain hydrocarbons, chemicals or other contaminants in unknown proportions.

4.2.2 Review of waste acceptance history

Liquid waste acceptance data recorded in DWER's Controlled Waste Tracking System (CWTS) for the four (4) previous financial years is listed below:

- 2015-16 – received an estimated total of 7037 tonnes

- 2014-15 – received an estimated total of 10,541 tonnes;
- 2013-14 – received an estimated total of 14,845 tonnes;
- 2012-13 – received an estimated total of 16,415 tonnes; and
- 2011-12 – received an estimated total of 7,257 tonnes.

Records from DWER's CWTS indicates the Premises accepted the following bulk and packaged controlled waste in the 2015-16 financial year as detailed in Table 5.

Table 5: 2015-16 Controlled waste types received at the Premises.

Category Group ¹	Waste Code ¹	Waste Type (Description)	Reported waste acceptance in the 2015-16 financial year		
			Litres	Kg	Estimated total – tonnes ²
A Plating and Heat Treatment	A100	Waste resulting from surface treatment of metals and plastics	4,100	0	4.1
B Acids	B100	Acid solutions or acids in solid form	400	0	0.4
F Paints, Resins, Inks and Organic Sludge	F100	Aqueous based waste from the production , formulation and use of inks, dyes, pigments, paints, lacquers and varnish	5,000	0	5
J Oils	J100	Waste oils unfit for their intended purpose	188,540	4,000	192.54
	J120	Waste oil and water mixtures or emulsions and hydrocarbon and water mixtures or emulsions	3,073,245	237,535	3310.78
	J130	Oil interceptor waste	5,500	0	5.5
	J180	Oil sludge	111,150	18,670	129.82
K Putrescible and organic wastes	K210	Septage waste	12,700	0	12.7
L Industrial Wash Water	L100	Car and truck wash waters	124,740	11,320	136.06
	L150	Industrial wash waters contaminated with a controlled waste	2,938,475	142,880	3081.35
M Organic Chemicals	M130	Non halogenated organic chemicals	205	0	0.2
N Soils and	N100	Containers or drums	0	5,900	5.9

Category Group ¹	Waste Code ¹	Waste Type (Description)	Reported waste acceptance in the 2015-16 financial year		
			Litres	Kg	Estimated total – tonnes ²
Sludge		contaminated with residues of a controlled waste			
	N120	Soils contaminated with a solid waste.	1,800	18,000	19.8
	N140	Fire debris and wash water	124,000	0	124
	N160	Encapsulated, chemically fixed, solidified or polymerized controlled wastes	0	8,900	8.9
Total			6,589,855 (6589.85 kL)	447,205 (447.2 tonnes)	7037

Note ¹: The Controlled Waste category list arranges the controlled wastes listed in Schedule 1 of the CW Regs into 15 broad waste groups and assigns a waste code to each waste type within the group. The waste codes are used by industry and DWER Regulation for waste tracking and reporting purposes.

Note ²: The total estimated tonnes assumes a 1:1 volume to mass ratio for the reported litres of controlled waste accepted at the premises. DWER notes that the density (kg/L) of individual liquid wastes will vary however, the use of this general conversion factor is considered appropriate for the purposes of the review.

As indicated in the CWTS a small amount of solid waste was received at the Premises (N120 – Soils contaminated with a solid waste) in the 2015-16 financial year. The Licence Holder has advised DWER that this waste was transferred to the Tox Free Kwinana facility (Licence L6297/1993/11). The Licence Holder has also advised that no solid waste will be accepted at the Premises in the future as it will be sent directly to the Tox Free Kwinana facility.

The Licence Holder has also advised that the premises currently accepts wash waters which have the potential to contain asbestos fibres (L150). These wash waters are pre-treated by being pumped through a 2 micron filter before entering the discharge bund within the Tank Farm and are then subject to the same treatment as other liquid wastes. There is no solid asbestos waste (i.e. sheeting) accepted at the premises. Spent filters from this process are disposed of to an appropriately authorised landfill facility as required

4.2.3 Review of waste acceptance and treatment process

The oily wastewater treatment process, as described in Section 4 and Appendix 5, includes a physicochemical process involving phase separation, coagulation, flocculation, settling and filtration. This treatment method is commonly used to treat oily and hydrocarbon impacted wastewaters.

The Delegated Officer has reviewed waste acceptance records, the proposed waste acceptance and the operational processes and found:

1. Waste acceptance records for the 2015-16 financial year indicate that the site exceeds the production or design capacity threshold for Category 61 Liquid waste facility of 100 tonnes or more per year.
2. Waste acceptance records for the five (5) previous financial year periods indicates

an annual average acceptance rate of 11,219 tonnes per annum. The highest rate being 16,415 tonnes which was received in the 2012-13 reporting period.

- 3. The Licence Holder has indicated that the production or design capacity of the premises is 28,000 tonnes per annual period.*
- 4. The treatment method used is a common method for treating oily wastewaters. Other non-oily wastewaters may also be suitable for treatment using on-site treatment infrastructure based on waste specific lab-scale treatment tests conducted during the waste acceptance process.*
- 5. Lab-scale treatment tests consist of waste-specific tests to inform the level of treatment with regards to the addition of chemical additives such as coagulants and flocculants. The Licence Holder has provided additional information on lab trails/tests however; this information is marked as 'Commercial in Confidence. pH adjustment is also undertaken based on lab testing results.*
- 6. Under normal operations, there are no wastewater discharges to the environment at the premises. Accepted oily and non-oily wastewaters are treated through the on-site oily water separator treatment plant and then disposed of to the sewer network before ending up at an off-site Part V licensed WWTP for subsequent treatment.*
- 7. Residual solid wastes from the oily water separator treatment plant are contained on-site pending removal off-site by a licensed controlled waste carrier; solid wastes are re-directed to other appropriately authorised waste treatment or disposal facilities or sent to the Tox Free Kwinana premises (Licence L6297/1993/11) for further characterisation or treatment prior to disposal.*
- 8. Waste is initially unloaded to an un-covered discharge bund with no odour control infrastructure in place prior to being pumped to a treatment tank.*
- 9. Liquid waste processing/treatment takes place within an enclosed system with odour and air emission controls (Activated Carbon Filters).*

5. Legislative context

5.1 Part IV of the EP Act

The Premises has not been referred to the EPA and is not subject to Ministerial conditions.

5.2 Part V of the EP Act

5.2.1 Guidance Statements

The overarching legislative framework of this assessment is the EP Act and EP Regs.

DWER Guidance Statements which inform this assessment are:

- Guidance Statement: Regulatory Principles (July 2015)
- Guidance Statement: Decision Making (February 2017)
- Guidance Statement: Risk Assessment (February 2017)
- Guidance Statement: Environmental Siting (November 2016)
- Guidance Statement: Setting Conditions (October 2015)
- Guidance Statement: Land Use Planning (February 2017)
- Guidance Statement: Licence Duration (August 2016)

DWER Guidance Statements can be accessed on DWER's website at <https://www.DWER.wa.gov.au/our-work/regulatory-framework>. Other documents used in this assessment are documented in Appendix 1

5.2.2 Licence amendments

The Premises was first licensed under L8084/2004/1 from 9 April 2006 until 8 April 2009 and L8084/2004/2 from 9 April 2008 to 8 April 2012. This licence expired on 8 April 2012 due to non-payment of annual fees.

The Existing Licence (L8649/2012/1) was subsequently granted for the premises on the 7 June 2012 to replace former licence L8084/2004/2 – the conditions placed on the Existing Licence are consistent to those which were previously imposed under L8084/2004/2.

The Existing Licence was amended on 16 January 2014 to transfer the licence from Tox Free Henderson Pty Ltd to Tox Free Australia Pty. Ltd.

Following the publication of DWER's *Guidance Statement: Licence Duration*, the duration of the Existing Licence was amended on 29 April 2016 by an Amendment Notice. The new expiry date for the Existing Licence is 6 June 2021.

5.2.3 Compliance inspections

A review of compliance records for the premises indicates that the site has been inspected once in the last three years (since 1 January 2014):

- A Part V compliance inspection was conducted on the 17 February 2015. No compliance matters were observed or reported.

5.2.4 Annual Audit Compliance Reports and Annual Environmental Reports

Condition 1 of the Existing Licence requires the Licence Holder to submit an Annual Audit Compliance Report (AACR) by the 31 July each year. A summary of the submitted AACRs since 2014 is provided below. The Existing Licence does not require the submission on an AER.

July 2016 AACR

For the 2016 AACR, the Licence Holder submitted the AACR on 28 July 2016 and ticked 'Yes' for compliance with all licence conditions.

July 2015 AACR

For the 2015 AACR, the Licence Holder submitted the AACR on 7 July 2016 and ticked 'Yes' for compliance with all licence conditions.

July 2014 AACR

For the 2014 AACR, the Licence Holder submitted the AACR on 31 July 2016 and ticked 'Yes' for compliance with all licence conditions.

5.2.5 Compliance history check

A review of DWER's Incident and Complaint Management System (ICMS) has identified two incidents and 1 complaint relating to the Premises that have occurred since 1 January 2014.

- Two incidents related to minor wastewater spills at the premises in March 2015. ICMS records indicate that appropriate measures were taken to contain and clean-up the respective spills.
- One complaint related to odour from the premises in October 2015. ICMS records indicate that the Licence Holder conducted an internal investigation and identified the source being bacteria in one of the treatment tanks; the tank was treated with

chlorine to remove the bacteria.

5.2.6 Site Visit – May 2017

On 10 May 2017 DWER Licensing Officers attended the site to visually verify the presence and integrity of infrastructure on the premises as is documented in Section 4. DWER officers observed infrastructure in the Tank Farm and the Quarantine Area. Photos of site infrastructure are presented in Appendix 6.

DWER also met with operational personal to discuss the treatment processes to assist in DWER's understanding of on-site activities.

5.3 Environmental Protection (Controlled Waste) Regulations 2004

Toxfree Australia Pty Ltd currently holds a controlled waste carrier licence issued under the CW Regs:

- Licence Number T00700 for handling and transport of Category Group and/or Waste Code A, B, C, D, E, F, G, H, J, K, M, N, R and T bulk and packaged controlled waste.

5.4 Contaminated Sites Act 2003

The Premises is not registered under the *Contaminated Sites Act 2003*.

5.5 Planning approvals

The City of Cockburn (CoC) provided the Licence Holder with planning approval on 7 September 2004. Planning consent provides approval for 'General Industry – Workshop and Wastewater Treatment Facility'.

The Delegated Officer has reviewed the evidence of planning approval and confirms that the approval is consistent with on-site operations as currently authorised on the Existing Licence.

5.6 Water Corporation – Permit to Discharge Industrial Waste

The Licence Holder has a Water Corporation Permit to Discharge Industrial Waste; permit number 21873 which was granted on 4 May 2007. The copy of the Permit is provided as Appendix 3 to this Decision Report.

6. Modelling and monitoring data

6.1 Groundwater Monitoring

There is no requirement in the Existing Licence for Licence Holder to carry-out groundwater monitoring on the Premises. Notwithstanding this the Licence Holder currently carries out annual groundwater monitoring within the Premises to assess any impacts that may be occurring due to the integrity and effectiveness of on-site infrastructure.

The on-site monitoring bores are listed in Table 6 below and have been identified as being either up-gradient or down-gradient based on the inferred westerly flow direction as determined from the 2017 groundwater monitoring event (360 Environmental, August 2017).

Table 6: Groundwater monitoring network

Placement	Bore ID	Description
Up/cross gradient	BH4	Located along the northern boundary of the Premises. Water quality results may be representative of water quality flowing onto the site.
Down-gradient	BH1, BH2	Located along the southern boundary of the Premises. These bores are down-gradient from the Tank Farm infrastructure. Water quality results may be representative of water quality immediately beneath or flowing from beneath the Tank Farm infrastructure.
	BH3	Located along the western boundary of the Premises and situated between the Tank Farm infrastructure and the Warehouse. Water quality results may be representative of water quality immediately beneath or flowing from beneath the Warehouse infrastructure. May also be representative of water quality beneath Tank Farm infrastructure.
	BH5A	Bore destroyed. Last sampled in February 2014. Bore was reinstated on 1 August 2017 (360 Environmental, August 2017) Located in the south-eastern corner of the Premises and up-gradient of the Quarantine Area. Water quality results may be representative of water flowing onto the Premises however it may also provide an indication of water quality immediately beneath or emanating from beneath the Quarantine Area infrastructure.
	BH6	Located towards the center of the Premises to north and adjacent to the eastern end of the Tank Farm and western end of the Quarantine Area. Monitoring results from August 2017 groundwater monitoring event (GME) indicates that groundwater was observed to flow towards the west with mounding noted at BH6.

Figure 1 depicts the groundwater bore monitoring locations at the Premises.

Groundwater monitoring was most recently undertaken in August 2017. A summary of the 2017 monitoring results and a review of the monitoring program was provided to DWER in the report titled *August 2017 Groundwater Monitoring Event – Henderson Facility* (360 Environmental, August 2017). In addition summary tables for groundwater monitoring data from 2011 to 2016 was also provided by the Licence Holder.

A summary of the 2017 monitoring event and historical monitoring data is provided below:

- 2017 field results indicate neutral water quality with regards to pH and fresh to brackish water quality with regard to salinity levels (360 Environmental, August 2017). These results are within the range of historically observed values.
- Consistent with historically observed trends, iron concentrations at BH2 remain elevated above Australian Drinking Water Guidelines for aesthetic values. Analytical results from 2015-2017 also indicate that iron concentrations exceed the Department

of Health non-potable groundwater use guidelines (NPUG) (DoH, 2014).

- Results for 2017 show that Total Recoverable Hydrocarbon (TRH) concentrations were below Limit of Reporting (LOR) levels indicating that hydrocarbons have not impacted groundwater beneath the Premises. Concentrations of BTEX were also below LOR levels.
- Historical analytical results for BH5 (now destroyed) indicated the presence of hydrocarbons detected in the 2013 monitoring event. The concentration of ethylbenzene was also noted to have exceeded the Australian Drinking Water Guidelines for aesthetic values and the Department of Health non-potable groundwater use guidelines (NPUG) (DoH, 2014). Subsequent results from the 2014 monitoring event for BH5 indicated that hydrocarbon concentrations were below LOR levels. This bore was destroyed sometime after the 2014 monitoring event therefore no further analytical results are available to assess potential impacts in this area of the site.
- BH5 was reinstated in August 2017 (BH5A). Analytical results from the August 2017 GME indicated that hydrocarbon/BTEX concentrations were below LOR levels.

Key finding: Historical groundwater monitoring results indicates that groundwater beneath the Premises does not appear to have been impacted by on-site activities relating to wastewater treatment and storage.

The 2013 monitoring event did detect the presence of hydrocarbons in BH5 however; subsequent results collected in 2014 did not detect hydrocarbons at this location. BH5 was destroyed sometime after the 2014 monitoring event. BH5 was reinstated in August 2017 (BH5A). Analytical results from the August 2017 GME indicated that hydrocarbon/BTEX concentrations were below LOR levels

The frequency of past groundwater monitoring events has not been consistent therefore it is difficult to assess seasonal (natural) variability in water quality at the Premises.

On-going groundwater monitoring at the Premises provides a useful tool to assessing any impacts that may be occurring due to the integrity and effectiveness of on-site infrastructure.

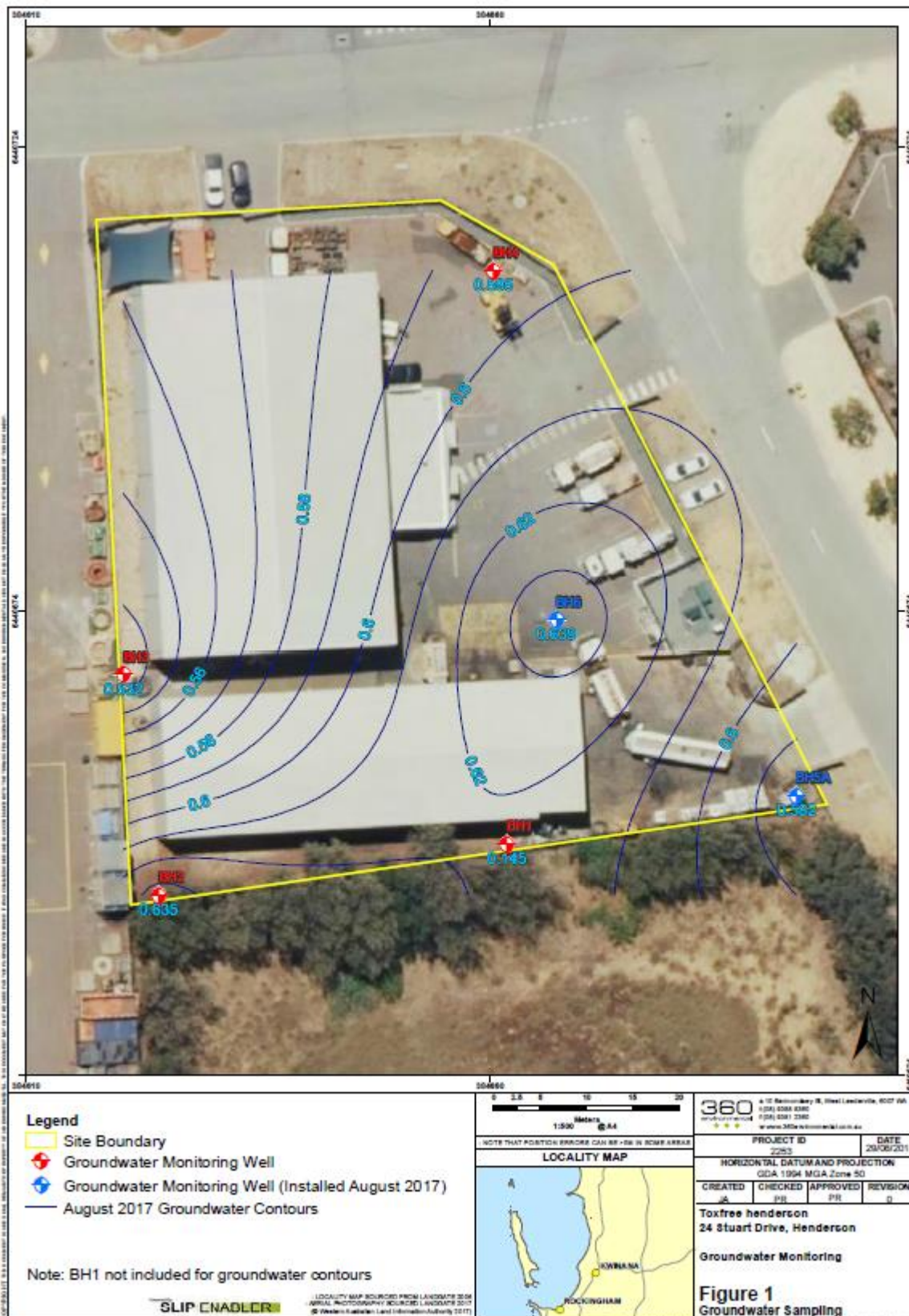


Figure 1: Groundwater monitoring bore locations

7. Location and siting

7.1 Siting context

The Premises is located in the City of Cockburn, 30 km south-west of Perth. The surrounding area is predominately light industry.

7.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are as follows:

Table 7: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Residential Premises	1.7 km to the south-east
Neighbouring commercial/industrial premises	Immediately adjacent

7.3 Environmental Protection Policy (EPP) Area

The *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999* (Kwinana EPP) covers the entire premises. The Kwinana EPP aims to provide ambient air quality standards and limits for the concentration of atmospheric wastes in the Kwinana Industrial area. General dust provisions relating to ambient concentrations of total suspended particulates (TSP) are covered with the purpose of the Kwinana EPP to protect the 'beneficial uses' of the environment.

The Kwinana EPP defines three areas with regards to different ambient air quality standards and ambient air quality limits, increasing in stringency from Area A to Area C:

- Area A is the area of land on which heavy industry is located;
- Area B is outside area A and is zoned for industrial purposes from time to time under a Metropolitan Region Scheme or a town planning scheme; and
- Area C is beyond Areas A and B, predominantly rural and residential.

The Premises is located within Area A.

The operations on the Premises are not expected to impact the Kwinana EPP ambient air quality standards and ambient air quality limits for the concentration of atmospheric wastes in the relevant portion of the environment.

7.4 Specified ecosystems

The distances to specified ecosystems are shown in Table 8.

Table 8: Specified ecosystems

Specified ecosystems	Distance from the Premises
Cockburn Sound – marine ecosystem	620m south-west of the Premises boundary
Conservation Park – Crown Reserve 39752 – Beeliar Regional Park (Lot 301 on Plan 45080)	340m east of the Premises boundary
Coastal Park – Crown Reserve 39455 (Lot 4626 on Plan 221218)	230m south of the Premises boundary

Conservation Park – Crown Reserve 39584 – Beeliar Regional Park (Lot 4628 on Plan 221217)	300m south of the Premises boundary
Unallocated Crown Land – Bushland (Lot 503 on Plan 62396)	380m north-east of the Premises boundary
Little Henderson South – Conservation category sumpland	500m east of the Premises boundary
Brownman Swamp – Conservation category sumpland	830m east of the Premises boundary
Lake Mount Brown – Conservation category sumpland	1.39km south-east of the Premises boundary
Other relevant ecosystem values	Distance from the Premises
Bush Forever Site no. 346 – Beeliar Regional Park	620m south-west, 340m east and 230m south from the Premises boundary

7.5 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 9.

Table 9: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental Value
Little Henderson South, Brownman Swamp and Lake Mount Brown	460m east and 690m north-east from the premises boundary	Protected area/bushland sumpland highly saline seasonal wetlands. Representation of ecological communities, diversity, scientific or evolutionary importance.
Groundwater	<p>Monitoring results from the August 2016 groundwater monitoring event indicates that groundwater levels at the premises range from 0.4mAHD in the south-west corner to 0.66mAHD in the western corner of the premises; correlates to levels ranging from 5.57 metres below ground level (mBGL) to 6.27 mBGL at the site (360 Environmental, 20 October 2016).</p> <p>No regional groundwater flow contours are available for the site (DoW Perth Groundwater Atlas).</p> <p>Regional groundwater flow is inferred to flow in a westerly/ south-westerly direction towards the ocean (Cockburn Sound). Local flow gradients determined from on-site groundwater monitoring is consistent with inferred regional groundwater flow paths as outlined above (360 Environmental, 20 October 2016).</p>	<p>Water is not used for potable or industrial use.</p> <p>Monitoring results indicate neutral water quality with regards to pH and marginal to brackish water quality with regard to salinity levels (360 Environmental, 20 October 2016).</p> <p>No registered or licensed groundwater bores are located within 1km of premises (based on available GIS dataset –WIN Groundwater Sites).</p>

7.6 Soil type

The Premises is mapped in an area superficial formation characterised as Tamala Limestone (1:250 000 Geology Maps, Geoscience Australia); therefore soils at the premises would likely be considered sands derived from Tamala Limestone.

The Tamala limestone formation extends along the coastal strip of the Perth region and consists of a creamy-white to yellow, or light-grey, calcareous aeolianite. It contains various proportions of quartz sand, fine- to medium-grained shell fragments, and minor clayey lenses. The quartz sand varies from fine to coarse-grained, but is predominantly medium grained, moderately sorted, sub-angular to rounded, frosted, and commonly stained with limonite ('Hydrogeology and groundwater resources of the Perth region, Western Australia', Western Australia Geological Survey, Bulletin 142, Davidson, W.A. (1995))

Its upper surface is exposed and leached to the extent that the upper part of the unit comprises unconsolidated sand. Depending on the location, this unit unconformably overlies the Leederville Formation, Osborne Formation or the Bassendean Sand, and is known to exhibit a maximum known thickness of 110 m. Along the coastal margin it is unconformably overlain by the Becher Sand or the Safety Bay Sand (Davidson, 1995).

7.7 Meteorology

7.7.1 Wind direction and strength

BoM provides the 9am and 3pm wind speed and direction for the Perth Metro area. Figure 2 provides the average wind speed and direction.

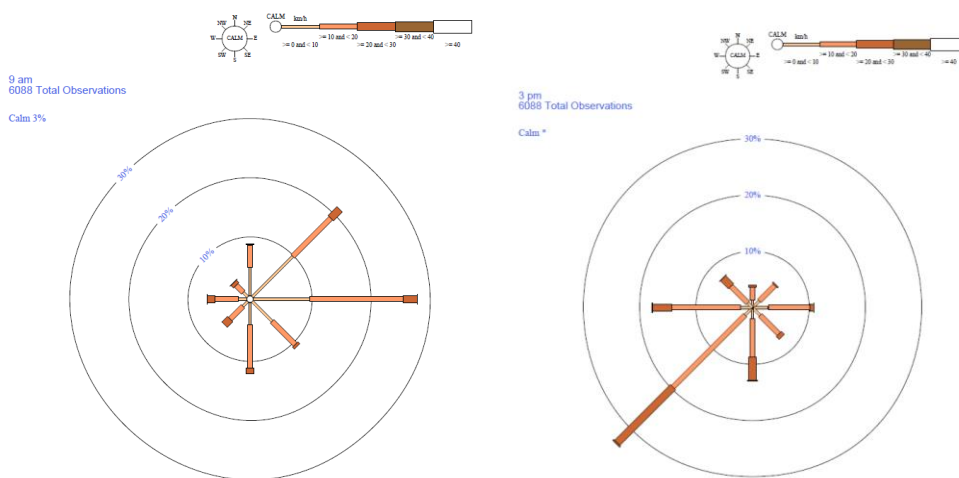


Figure 2: Perth Metro average wind speed and direction

7.7.2 Rainfall and temperature

Perth weather is often described as Mediterranean with hot dry summers and mild wet winter weather which receives moderate though highly seasonal rainfall. BoM provides the mean rainfall and maximum temperatures for the Perth Metro area (mean maximum temperature 1994 to 2016 and mean rainfall 1993 to 2016). Figure 3 provides the mean maximum temperature and the mean rainfall for Perth Metro.

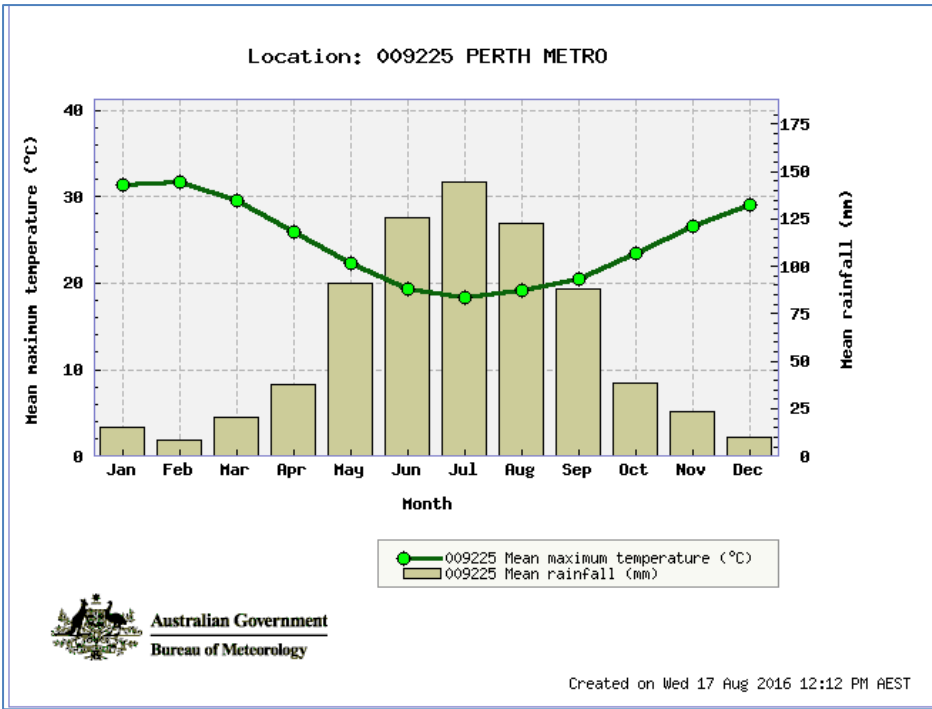


Figure 3: Mean maximum temperature and mean rainfall for Perth Metro area

8. Risk assessment

8.1 Determination of emission, pathway and receptor

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

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. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 10.

The identification of the sources, pathways, receptors to determine Risk Events are set out in Tables 10 below.

Table 10: Identification of potential emissions, pathways and receptors during operation

Risk Events					Continue to detailed Risk Assessment	Reasoning	
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts			
Category 61 <i>Liquid waste facility:</i> Operation of oily water treatment plant, machinery and vehicular movement	Waste unloading/loading, storage, treatment and disposal (to sewer)	Odour	Air / wind dispersion	Commercial/industrial properties located immediately adjacent to the premises with the closest neighbouring buildings located approximately 20 m west of the premises boundary.	Amenity impacts causing nuisance (human health)	Yes	See Section 8.4
				Residences 1.7km south-east of the Premises.		Residential premises located 1.7km south-east of the Premises.	

Risk Events					Continue to detailed Risk Assessment	Reasoning
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts		
	Air emissions (VOC's) –	Commercial/industrial properties located immediately adjacent to the premises with the closest neighbouring buildings located approximately 20 m west of the premises boundary.	Air / wind dispersion	Health and amenity impacts	Yes	See Section 8.5
		Residential premises located 1.7km south-east of the Premises.			No	The Delegated Officer considers that residential premises are sufficiently separated from the Premises and therefore, the risk of impacts from air emissions has not been assessed further.
	Seepage and runoff from spills and containment failure.	Land and underlying soil of the Premises	Direct discharge from overland flow to land or to stormwater drains.	Contamination of land and underlying groundwater	Yes	See Section 8.6.
		Groundwater levels ranging from from 5.57 metres below ground level (mBGL) to 6.27 mBGL at the site.			Infiltration to groundwater through underlying soils	
		Little Henderson South, 500m east of the Premises boundary	Transport through groundwater	Deterioration of surface water quality and ecology	No	The Delegated Officer considers that all three wetlands are located up and cross hydraulic gradient of the Premises and are therefore not in the groundwater flow path of groundwater leaving the site.
		Brownman Swamp, 830m east of the Premises boundary				

Risk Events					Continue to detailed Risk Assessment	Reasoning	
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts			
			Lake Mount Brown, 1.39km south-east of the Premises boundary				
			Marine ecosystems – Cockburn Sound, 620m south-west of the premises boundary				
	Storage and mixing of incompatible waste materials	Pollution/hazard incident; fire/explosion risk – air emissions (particulates and noxious gases)	People in commercial/industrial properties located immediately adjacent to the premises with the closest neighboring buildings located approximately 20 m west of the premises boundary.	Air / wind dispersion	Health and amenity impacts.	Yes	See Section 8.7
			Residential premises located 1.7km south-east of the Premises.				
Chemical storage	Pollution/hazard incident – fire/explosion risk – air emissions (particulates and noxious gases)	Commercial/industrial properties located immediately adjacent to the premises with the closest neighbouring buildings located approximately 20 m west of the premises boundary.	Air / wind dispersion	Health and amenity impacts; toxic fumes in the event of a fire.	No	<p>The Delegated Officer considers that chemicals and dangerous goods stored at the site are adequately managed under the Dangerous Goods Site Licence (DGS014124) as required under the <i>Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007</i> (currently administered by the Department of Mines, Industry Regulation and Safety).</p> <p>In accordance with the Dangerous Goods Site Licence (DGS014124) chemical storage</p>	
		Residential premises located 1.7km south-east of the Premises.					

Risk Events					Continue to detailed Risk Assessment	Reasoning
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts		
		Pollution/hazard incident – seepage and runoff from spills and containment failure.	Land and underlying soil of the Premises	Direct discharge from overland flow to land or to stormwater drains.	Contamination of land and underlying groundwater	<p>No</p> <p>areas are maintained and managed in accordance with relevant Australian Standards:</p> <ul style="list-style-type: none"> AS1940-2004 <i>The storage and handling of flammable and combustible liquids</i> AS/NZS 3833:2007 <i>The storage and handling of mixed classes of dangerous good, in packages and intermediate bulk containers.</i> <p>Dangerous goods licence holders must maintain a manifest and a dangerous goods site plan and keep them on site so they are readily accessible to emergency responders. DWER has sited the dangerous goods manifest and has included a copy in Appendix 4.</p>
			Groundwater levels ranging from from 5.57 metres below ground level (mBGL) to 6.27 mBGL at the site.	Infiltration to groundwater through underlying soils		
Movement of heavy and light vehicles moving around the Premises	Air emissions (fugitive dust) from access roads and laydown areas.	People in commercial/industrial properties located immediately adjacent to the premises with the closest neighbouring buildings located approximately 20 m west of the premises boundary.	Air / wind dispersion.	Health and amenity impacts.	No	The Delegated Officer considers the nature of on-site activities and materials handled are not conducive to the creation of dust. Therefore, the risk of dust emissions has not been assessed further.

Risk Events					Continue to detailed Risk Assessment	Reasoning
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts		
Waste unloading/loading, storage, treatment and disposal (to sewer) and associated vehicle movements at the site	Noise	People in commercial/industrial properties located immediately adjacent to the premises with the closest neighbouring buildings located approximately 20 m west of the premises boundary.	Air / wind dispersion	Amenity impacts causing nuisance.	No	<p>The Premises is located in an industrial precinct which are also sources of noise. Residential area sufficiently separated not to experience impacts.</p> <p>The Licence Holder has a statutory obligation to comply with the Noise Regulations.</p> <p>Premises plant is risk assessed every six months by the Licence Holder to ensure controls are effective. No recorded noise complaints have been lodged with DWER on noise emissions from the premises.</p>

8.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 11 below.

Table 11: Risk rating matrix

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

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 12 below.

Table 12: Risk criteria table

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

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

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

“onsite” means within the Prescribed Premises boundary.

8.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 13 below:

Table 13: Risk treatment table

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

8.4 Risk Assessment - Odour

8.4.1 General hazard characterisation and impact

There is potential for odour emissions during operation of the liquid waste facility from the:

- acceptance of odourous liquid wastes such as oily wastewater;
- operation of the oily wastewater treatment plant and emissions from the venting of storage and treatment tanks;
- bacterial build up in tanks due to increased sludge levels and lack of maintenance; and
- handling and storage of packaged liquid waste and residual oily sludge/solids on the premises.

8.4.2 Criteria for assessment

There are no set threshold or concentration criteria for odour assessment. Under section 49(5) of the EP Act, it is an offence to emit or cause to be emitted, an unreasonable emission from any premises.

An unreasonable emission is defined in the EP Act (section 49(1)) as an emission or transmission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

Individual responses to odour emissions may vary depending on age, health status, sensitivity, and odour exposure patterns. Perceived odour intensity may increase or decrease on exposure. Community response to an odour can include annoyance, potentially leading to stress, and loss of amenity. Exposure to repeated odour events can create a nuisance effect.

8.4.3 Applicant/Licence Holder controls

The odour controls undertaken by the Licence Holder are identified in Table 13. This assessment has considered the controls set out in Table 14.

Table 14: Proponent infrastructure controls for odour emissions

Site Infrastructure	Description	Operation details	Reference in Site Plan (attached in Revised Licence)
Controls for odour emissions			
Tank Farm – storage and treatment of oily wastewaters	<p>8 x 70,000 kL sealed treatment tanks (oily water separation).</p> <p>2x 25kL storage tanks for storage of untreated oils.</p> <p>Five activated carbon filters connected to treatment/storage tanks (95% VOC removal efficiency based on a standard 2 second bed residence time):</p> <ul style="list-style-type: none"> • Tanks 1 and 2 vent through filter 1. • Tanks 3 and 5 vent through filter 2. • Tank 4 vents through filter 3. • Tanks 6, 8 and 10 vent through filter 4. • Tanks 7 and 9 vent through filter 5. 	<p>The carbon filters have been designed and installed to vent emissions when the treatment tank lids are completely sealed.</p> <p>Activated carbon filter analysed/sampled bi-annually to determine its capacity to continue to absorb VOCs. Filters are replaced as required as informed through testing procedure. Note: filters are replaced every 24 months regardless of test results.</p> <p>Air emissions are vented through pipework above roof of the Tank Farm.</p>	Tank Farm
Quarantine Area	Residual sludge and solid waste storage in Intermediate Bulk Container's (IBCs).	<p>Residual solid waste is removed off-site by a licenced Controlled Waste Carrier, as per</p> <p>Controlled waste tracking receipts are retained for audit purposes.</p>	Quarantine Area

8.4.4 Key findings

The Delegated Officer has reviewed the information regarding the odour impacts from the premises and has found:

1. *Odour emissions from the Premises primarily arise from the venting of storage and treatment tanks and have the potential to impact on nearby receptors;*
2. *Foreseeable events such as the failure of activated carbon filters on treatment tanks has the potential to result in adverse air emissions; and*
3. *The installation and use of the activated carbon filters on the Tank Farm is critical*

to reduce odour emissions from the Premises.

8.4.5 Consequence

Based upon the general hazard characterisation and Licence Holder controls, the Delegated Officer has determined that the impact of odour emissions from the liquid waste facility will only result in minimal off-site impacts to amenity at the local scale and no detectable off-site impacts at the wider scale. Therefore, the Delegated Officer considers the consequence to be **Minor**.

8.4.6 Likelihood of consequence

Based upon the Licence Holders odour management system incorporating activated carbon filters at the Tank Farm and the odour complaint history for the premises the Delegated Officer has determined that the likelihood of minor odour emissions impacting the environment could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Possible**.

8.4.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 10) and determined that the overall rating for the risk of odour on sensitive receptors during operation is **Medium**.

8.5 Risk Assessment – Air emissions

8.5.1 General hazard characterisation and impact

The 8 x 75,000kL oily wastewater treatment tanks and the 2 x 25,000kL untreated oil tanks all have vents which discharge to air. The emissions to air will include VOC's. All the tanks are serviced by five activated carbon filters that filter out the VOC's prior to discharge to the environment from the top of the Tank Farm roof.

Air emissions, particularly those containing VOCs can cause health impacts in the local community. The nature and extent of any impacts depends on many factors including level of exposure and length of time exposed.

8.5.2 Criteria for assessment

As VOC emissions only arise from the venting of tanks the Delegated Officer considers that the most appropriate criteria for assessment of VOC emissions is unreasonable air emissions.

An unreasonable emission is defined in the EP Act (section 49(1)) as an emission or transmission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

8.5.3 Assessment of Licence Holder controls

This assessment has reviewed the controls set out in Table 15 below.

Table 15: Proponent infrastructure controls for air (VOC) emissions

Site Infrastructure	Description	Operation details	Reference in Site Plan (attached in Revised Licence)
Controls for air emissions			
Tank Farm – storage and treatment of oily wastewaters	<p>8 x 70,000 kL sealed treatment tanks (oily water separation).</p> <p>2x 25kL storage tanks for storage of untreated oils.</p> <p>Five activated carbon filters connected to treatment/storage tanks (95% VOC removal efficiency based on a standard 2 second bed residence time):</p> <ul style="list-style-type: none"> • Tanks 1 and 2 vent through filter 1. • Tanks 3 and 5 vent through filter 2. • Tank 4 vents through filter 3. • Tanks 6, 8 and 10 vent through filter 4. • Tanks 7 and 9 vent through filter 5. 	<p>The carbon filters have been designed and installed to vent emissions when the treatment tank lids are completely sealed.</p> <p>Activated carbon filter analysed/sampled bi-annually to determine its capacity to continue to absorb VOCs. Filters are replaced as required as informed through testing procedure. Note: filters are replaced every 24 months regardless of test results.</p> <p>Air emissions are vented through pipework above Roof of Tank Farm</p>	Tank Farm

8.5.4 Key findings

The Delegated Officer has reviewed the information regarding the air emissions impacts from the premises and has found:

1. *Air emissions have the potential to cause odour impacts during operation of the oily water separator treatment plant within the Tank Farm;*
2. *Foreseeable events such as the failure of activated carbon filters on treatment tanks has the potential to result in adverse air emissions; and*
3. *The installation and use of the activated carbon filters on the Tank Farm is critical to reduce odour emissions from the Premises.*

8.5.5 Consequence

Based upon the general hazard characterisation and Licence Holder controls, the Delegated Officer has determined that the impact of air emissions from the liquid waste facility will only result in minimal off-site impacts to amenity at the local scale and no detectable off-site impacts at the wider scale. Therefore, the Delegated Officer considers the consequence to be **Minor**.

8.5.6 Likelihood of consequence

Based upon the Licence Holders odour/air emissions management system incorporating activated carbon filters at the Tank Farm, the Delegated Officer has determined that the likelihood of minor air emissions impacting the environment could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Possible**.

8.5.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 10) and determined that the overall rating for the risk of air emissions on sensitive receptors during operation is **Medium** subject to the maintenance of air emission controls.

8.6 Risk Assessment – Seepage and runoff from spills and containment failure

8.6.1 General hazard characterisation and impact

There are no point source emissions to land or groundwater associated with the operation of the Premises. However, emissions of controlled waste (liquid waste) may occur from the following sources and result in overland flow to soil and surface water and seepage into groundwater:

- Spillages of liquid waste at the Premises;
- Contaminated stormwater runoff;
- Tank, hardstand and bunding failure (containment failure); and
- Overflow of bunded areas.

Soil at the Premises is predominantly medium grained sand which will allow liquid waste to move through the soil profile to groundwater between 4.5m and 6m below the Premises. This may result in contamination of the soil and groundwater. Groundwater salinity in the area ranges from 500-1500mg/L TDS (Marginal to Brackish) and therefore groundwater is considered to be a receptor as it has some beneficial use as a non-potable water source.

As the regional groundwater flow is in a westerly direction towards the ocean, emissions of liquid waste that reach groundwater may impact on the Cockburn Sound marine ecosystem.

8.6.2 Criteria for assessment

Where spills have occurred and/or where containment failure can be verified then impacts to soil can be assessed against the national contaminated site assessment framework as outlined in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM). Ecological and human health assessment levels for soil include:

- Health investigation levels (HILs) and soil health screening levels (HSLs) for vapour intrusion – NEPM;
- Ecological investigation levels (EIL) and soil ecological screening levels (ESLs) – NEPM.

Groundwater can be assessed against the marine water aquatic ecosystem protection guidelines (ANZECC & ARMCANZ 2000) as well as the Non-Potable Use Guidelines (NPUG) (DoH, 2014). Given the proximity to Cockburn sound is 620m to the south-west and given that groundwater may be utilised locally for non-potable purposes, it is considered that NPUG are the most appropriate criteria as per DWER's *Guideline for assessment and management of*

contaminated sites (DWER, December 2014).

8.6.3 Assessment of Licence Holder controls

The liquid waste controls undertaken by the Licence Holder are identified in Table 16.

Table 16: Proponent infrastructure controls for seepage and surface runoff

Site Infrastructure	Description	Operation details	Reference in Site Plan (attached in Revised Licence)
Tank Farm	Facility is roofed and sealed with an impervious bunded hardstand and a sealed drainage collection network.	Located on bunded impervious hardstand pad (concrete)	Tank Farm
		Any liquid that reports to the sealed drainage collection network is transferred back into the oil water treatment plant to be processed	
Quarantine Area	Fully sealed with an impervious bunded hardstand and 2 sealed sumps.	Located on bunded impervious hardstand pad (concrete)	Quarantine Area
		Any liquid that reports to the sealed sumps is transferred into the Tank Farm to be processed in the oily water treatment plant.	
Spill kit	Spill kits stationed on-site which include absorbent pads.	In the event of a spill the spill kits are mobilised to clean up the spill. Daily inspections of the infrastructure to ensure all bunds maintain capacity.	Spill Kit
Groundwater monitoring network	4 on-site groundwater monitoring bores (BH1 – BH4); As detailed in Section 6 historical groundwater monitoring results indicates that groundwater beneath the Premises does not appear to have been impacted by on-site activities relating to wastewater treatment and storage.	Refer to Section 6. Bores are located up-gradient and down-gradient of site infrastructure.	Refer to Site Groundwater Monitoring Plan (attached in Revised Licence)

8.6.4 Key findings

The Delegated Officer has reviewed the information regarding the potential seepage and surface runoff impacts from the premises and has found:

1. *The acceptance, storage and treatment of liquid waste has the potential to impact soil and groundwater if not appropriately contained. Foreseeable events such as spills and containment failure also have the potential to impact on soil and groundwater;*
2. *The soil type at the Premises is readily permeable and groundwater is located within 5.5mBGL;*
3. *Groundwater is considered a pathway and receptor. For the purposes of this assessment, the beneficial use of groundwater is considered the receptor most affected by the potential emissions of liquid waste, being industrial/commercial non-potable use;*
4. *The Licence Holder has a number of measures in place to control emissions of liquid waste;*
5. *The Licence Holder has an obligation to comply with UDR's which prohibit materials listed in Schedule 1 of the UDR to be discharged to the environment;*
6. *Historical groundwater monitoring results indicates that groundwater beneath the Premises does not appear to have been impacted by on-site activities relating to wastewater treatment and storage; and*
7. *Ongoing groundwater monitoring provides a useful tool to assess any impacts that may be occurring due to the integrity and effectiveness of on-site infrastructure.*

8.6.5 Consequence

Based upon the potential sources of liquid waste and the key receptor (potential beneficial use of groundwater) the Delegated Officer has determined that liquid waste could cause mid level on-site impacts and low-level off-site impacts at the local scale. Therefore, the Delegated Officer considers the consequence to be **Moderate**.

8.6.6 Likelihood of consequence

Based upon the Licence Holders controls, particularly the containment systems incorporating impervious hardstand pads and sumps, and on-site groundwater monitoring infrastructure the Delegated Officer has determined that moderate impacts will probably not occur in most circumstances. Therefore, the Delegated Officer considers the consequence to be **Unlikely**.

8.6.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 10) and determined that the overall rating for the risk of liquid waste impacts is **Medium**.

8.7 Risk Assessment – Emissions to air in the event of a fire/explosion

8.7.1 General hazard characterisation and impact

Inappropriate storage, treatment and consolidation (mixing) of liquid wastes can result in

adverse chemical reactions taking place which may lead to an explosion or fire incident at the premises.

Explosions and fires can emit toxic air emissions and fine particulates that are able to travel into the lungs presenting acute or chronic health impacts for nearby receptors. Amenity impacts from visible fire plume and deposition of material on vehicle dwellings and clothing may also occur.

Toxic air emissions and particulates from a fire or explosion may travel through the air and depending on the climatic conditions at the time of the event, may result in health impacts being experienced by individuals on the adjacent industrial zoned premises as well as on residential premises located 1.7 km south-east of the Premises.

Incidents involving the storage and mixing of incompatible waste types, for example, the Bellevue liquid waste facility fire incident have previously occurred in Western Australia. The fire at Bellevue was one of the largest hazardous materials fire experienced by the emergency services in Western Australia. In the incident, the combustion of stored toxic waste together with flammable material contributed to the creation of toxic fumes. Fire-fighters and residents exposed to the smoke plume experienced nausea, sickness and anxiety. The closest residential receptors to the Bellevue premises at the time of the incident were approximately 500m away.

8.7.2 Criteria for assessment

There are no set threshold or concentration criteria for emissions to air in the event of a fire and/or explosion.

Under section 49(5) of the EP Act, it is an offence to emit or cause to be emitted, an unreasonable emission from any premises. An unreasonable emission is defined in the EP Act (section 49(1)) as an emission or transmission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

8.7.3 Assessment of Licence Holder controls

This assessment has reviewed the controls set out in Table 17 below.

Table 17: Process controls for assessing waste types and their suitability for storage, consolidation (mixing) and/or treatment.

Site Infrastructure	Description	Operation details	Reference in Site Plan (attached in Revised Licence)
None specified	Quality Assurance and Control (QA/QC) procedures relating pre-acceptance verification; sales processes:	Prior to deliver the waste consigner must schedule deliver with the Licence Holder who then undertakes a preliminary (desktop) assessment on whether the waste types are suitable for acceptance;	N/A
None Specified	Quality Assurance and Control (QA/QC) procedures relating pre-acceptance verification; pre-acceptance testing.	At the point of delivery the Licence Holder inspects the required paper-work including the associated Controlled Waste tracking forms in order to verify	N/A

Site Infrastructure	Description	Operation details	Reference in Site Plan (attached in Revised Licence)
	<p>The Licence Holder has indicated that all wastes received for consolidation and/or treatment are assessed by a qualified chemist or suitably qualified person.</p>	<p>waste acceptance.</p> <p>Additionally the Licence Holder collects a sample of the waste to test for pH, Zinc and a lab-scale treatment test; these tests inform the level of treatment with regards to the addition of chemical additives such as coagulants and flocculants.</p> <p>If tests indicate that waste is treatable then waste is accepted if not the load is rejected and sent to the Tox Free Kwinana premises (Licence L6297/1993/11) for further characterisation and treatment.</p> <p>No further information has been provided on how waste compatibility is determined for industrial wash waters and fire wash waters which may contain a spectrum of contaminants.</p>	
<p>Tank Farm – storage of untreated oils</p>	<p>2x 25kL storage tanks for storage of untreated oils.</p> <p>Activated carbon filters connected to storage tanks; Tanks 1 and 2 vent through filter 1.</p>	<p>Tanks 1 and 2 are used to store combustible liquids (C1) as defined in the <i>Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007</i>, in volumes greater than the threshold quantities.</p> <p>The Licence Holder currently holds a Dangerous Goods Site Licence (DGS014124) for the site.</p> <p>Dangerous goods licence holders are required to maintain a manifest and a dangerous goods site plan and keep them on site so they are readily accessible to emergency responders; DWER has sited the dangerous goods manifest and has included a copy in Appendix 4.</p>	<p>Tank Farm (Tanks 1 and 2)</p>

8.7.4 Key findings

The Delegated Officer has reviewed the information regarding the potential explosion and fire risks from the storage and mixing of incompatible waste types and has found:

1. *Pre-acceptance protocols must ensure that wastes are adequately chararacstised to prevent in-compatible waste types from being accepted.*
2. *Waste compatibility must be determined prior to consolidation (mixing) and/or treatment.*
3. *DWER considers that liquid wastes classed as 'Industrial wash waters contaminated with a controlled waste' (L150) and 'Fire debris and wash water' (N140) may contain hydrocarbons, chemicals or other contaminants in unknown proportions;*
4. *Wastes classed as 'Industrial wash waters' '(L150) are likely to predominantly comprise of water with low-level concentrations of chemicals or other contaminants which is unlikely to cause concern for incompatible waste types being accepted at the premises;*
5. *The Licence Holder currently has procedures in place to verify waste acceptance/types (pre-acceptance sales process and testing). Wastes that are deemed incompatible are redirected to the Toxfree Kwinana premises (Licence L6297/1993/11) for alternative treatment; and*
6. *The Licence Holder currently holds a Dangerous Goods licence for the storage of combustible liquids (C1) and are required to maintain a manifest and a dangerous goods site plan and keep them on site so they are readily accessible to emergency responders in the case of a fire incident/emergency.*

8.7.5 Consequence

The Delegated Officer has determined that the impact of air emissions from an explosion/fire incident, relating to the storage and mixing of incompatible waste types, could result in high-level on-site impacts and result in mid-level off-site local scale impacts to health and amenity. Therefore, the Delegated Officer considers the consequence to be **Major**.

8.7.6 Likelihood of consequence

Based upon the waste types accepted at the premises and the Licence Holders management controls involving pre-acceptance sales processes and on-site testing prior to waste acceptance, the Delegated Officer has determined that the likelihood of an explosion/fire incident impacting human-health and the environment may only occur in exceptional circumstances. Therefore, the Delegated Officer considers the consequence to be **Rare**.

8.7.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 10) and determined that the overall rating for the risk of air emissions from an explosion/fire incident on sensitive receptors during operation is **Medium**.

8.8 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 18 below.

Controls are described further in Section 10.

Table 18: Risk assessment summary

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	Source	Pathway/ Receptor (Impact)			
1.	Odour	Waste unloading/ loading, storage, treatment and disposal (to sewer)	Air/Wind dispersion Adjacent industrial premises and Residents located 1.7km south east of the premises.	Sealed Tanks Activated Carbon Filters Solid wastes stored in sealed IBCs.	Minor consequence Possible likelihood Medium risk	Acceptable subject to regulatory and proponent controls conditioned
2.	Air	Waste unloading/ loading, storage, treatment and disposal (to sewer)	Air/Wind dispersion Adjacent industrial premises and Residents located 1.7km south east of the premises.	Activated Carbon Filters	Minor consequence Possible likelihood Medium risk	Acceptable subject to regulatory and proponent controls conditioned
3.	Seepage and runoff from spills and containment failure	Waste unloading/ loading, storage, treatment and disposal (to sewer)	Underlying groundwater Marine ecosystems – Cockburn Sound, 620m south-west of the premises boundary: Direct discharge from overland flow to land or to stormwater drains and infiltration to groundwater.	Infrastructure-banded impervious concrete hardstand and sumps / drainage collection network (leach drains), and on-site groundwater monitoring	Moderate consequence Unlikely likelihood Medium risk	Acceptable subject to proponent controls conditioned
4.	Explosion/ fire risk	Storage and mixing of non-compatible waste materials	Air/Wind dispersion Adjacent industrial premises and Residents located 1.7km south east of the premises.	Process controls/ pre-acceptance procedures; sales process and on-site chemist or suitably qualified person verifying/assessing wastes accepted.	Major consequence Rare likelihood Medium risk	Acceptable subject to regulatory and proponent controls conditioned

9. Regulatory controls

A summary of the risks with corresponding controls are set out in Table 19. The risks are set out in the assessment in Section 8 and the controls are detailed in this Section.

DWER will determine controls having regard to the adequacy of controls proposed by the Licence Holder. The conditions of the Licence will be set to give effect to the determined regulatory controls.

Table 19: Summary of regulatory controls to be applied

		Controls (references are to Sections below setting out details of controls)					
		9.1 Throughput Restrictions.	9.2 Waste Acceptance Restrictions and Classifications	9.3 Waste Processing	9.4 Infrastructure and Equipment	9.5 Monitoring	9.6 Reporting
Risk Items (see risk analysis in Section 8)	1. Odour from waste handling and storage	•	•	•	•		
	2. Air emissions from waste handling and storage	•	•	•	•		
	3. Seepage and runoff from spills and containment failure		•	•	•	•	•
	4. Explosion/ fire risk from storage and mixing of incompatible wastes		•	•	•		

9.1 Throughput restrictions

The Licence Holder shall be subject to total annual mass limitations of throughput of 28,000 tonnes of liquid waste.

The Licence Holder will be required to record the type and volume of waste incoming and outgoing from the Premises. This will inform DWER on how much waste has been accepted at the Premises in accordance with the conditioned throughput limits.

Grounds: The Licence Holder has indicated that the production or design capacity of the premises is 28,000 tonnes per annual period. DWER notes that this amount of waste is well in excess of waste amounts received at the Premises in the past 5 years; the highest amount accepted was in this preceding period of 2012-13 where and an estimated total of 16,415 tonnes was received on-site (refer to Section 3.22 on the review of waste acceptance history at the premises).

Throughput influences the rate of turnover of materials, number of vehicle movements and the length of time treatment infrastructure is operational at the premises. All of these activities are sources of noise while the handling and treatment of waste are sources of odour and air emissions and potentially subject to seepage and runoff from spills and containment failure.

9.2 Waste type restrictions and classification

The Licence Holder must only accept those waste types as assessed in this Decision Report; refer to Section 4.2.3 on the review of waste acceptance and treatment processes. The Licence Holder must comply with a number of acceptance criteria including that wastes must either be tankered onto the Premises or delivered in intermediate bulk containers (IBC) and transferred to the waste discharge bund receivable point prior to being directed to the respective treatment or storage tank in the Tank Farm.

The Licence Holder will not be authorised to accept solid waste.

Grounds: These controls have been derived from the Licence Holder's current and proposed controls.

9.3 Waste processing and storage

The Licence Holder will be permitted to only accept and treat liquid waste which consists of waste oils, oily water and other hydrocarbon impacted liquid wastewaters (refer to Section 9.2) for physiochemical processing (separation, coagulation, flocculation, settling and filtration) and physical storage prior to on-site discharge to Water Corporation sewer or off-site disposal (refer to Section 4).

The Licence Holder must ensure that wastes are adequately characterised to prevent incompatible waste types from being accepted and treated on-site.

The Licence Holder must ensure that all wastes received for consolidation and/or treatment shall be assessed by a chemist or suitably qualified person to ensure compatibility and to verify the required treatment level prior to formal acceptance.

The Licence Holder must ensure that all liquid waste is accepted, receipted, consolidated, processed, stored and handled within the Tank Farm which comprises a hardstand area capable of preventing surface run-on and run-off.

The Licence Holder shall ensure that IBC's containing residual solid waste are only stored within the Quarantine Area which comprises a hardstand area capable of preventing surface run-on and run-off.

Grounds: These controls have been derived from the Licence Holder's current and proposed controls. The requirement to ensure pre-testing of waste materials should provide adequate process controls to mitigate the potential for incompatible waste types being accepted on-site.

9.4 Infrastructure and equipment

The Licence Holder will be required to maintain specified infrastructure and equipment for the storage and treatment of liquid wastes.

The following infrastructure will be required to be maintained at the Premises (refer also to Section 4.1):

- Tank Farm
 - Covered, bunded and impervious concrete lined (permeability of at least 1×10^{-9} m/s) facility;
 - 8 x 70,000kL treatment tanks;
 - 2 x 25,000 kL tanks (storage of untreated oils);
 - Micron Filters (wastewater filtration);
 - Carbon Filter (wastewater filtration);
 - Activated carbon filters x 5 (air pollution control)
 - Centrifuge; and
 - Truck discharge bay.

The two untreated waste oil storage tanks and eight treatment tanks are fully sealed and no overtopping can occur. Bunded and sealed infrastructure will mitigate odour and seepage emissions at the Premises. The five activated carbon filters must be maintained to ensure all venting from the treatment and storage tanks occurs through the filters and must be maintained according to the manufacturer’s specification.

- Quarantine Area
 - Bunded and impervious concrete lined (permeability of at least 1×10^{-9} m/s) facility; and
 - Two sealed sumps (collected wastewater / liquid discharges is pumped back into the treatment plant within Tank Farm)

Any contaminated storm water collected within the sealed sumps in the Quarantine Area will be directed to the Tank Farm for treatment, as is required.

- Groundwater monitoring network
 - Monitoring well BH1 to BH4 remain active on-site; and
 - Monitoring well BH5 to be replaced – refer also to Section 9.5.

Grounds: These controls have been derived from the Licence Holder’s current controls.

9.5 Monitoring requirements

The Licence Holder will be required to monitor a suite of analytes to assess and determine the extent of any potential impacts to underlying groundwater at the premises.

The Licence Holder will also be required to re-instate/replace monitoring BH5 which was located in the south-eastern corner of the Premises and within the Quarantine Area.

The following monitoring must be undertaken.

Table 20: Groundwater monitoring requirements

Monitoring location	Parameter	Units	Frequency
BH1 - BH5 ^R	Standing water level	mBGL and mAHD	Annually
	pH	pH units	

Monitoring location	Parameter	Units	Frequency
	Electrical conductivity	μ S / cm	
	Temperature	°C	
	Major ions (sodium, potassium, calcium, magnesium, chloride, sulphate, bicarbonate)	mg/L	
	Heavy metals (arsenic, cadmium, chromium, copper, lead, , mercury, nickel, and zinc)	mg/L	
	Monocyclic Aromatic Hydrocarbons (BTEX), Total Recoverable Hydrocarbons (TRH) and Polycyclic Aromatic Hydrocarbons (PAH)	mg/L	

Grounds: Monitoring is currently being undertaken by the Licence Holder. Ongoing groundwater monitoring provides a useful tool to assess any impacts that may be occurring due to the integrity and effectiveness of on-site infrastructure and or from spill events that may occur at the Premises.

BH5 is required to be replaced to verify up-gradient water quality along the eastern boundary and within the quarantine area on-site where sealed sumps are located.

9.6 Reporting requirements

The Licence Holder will be required to report monitoring results annually within a Compliance Report. A summary of the results should be presented in a tabulated form within the report, raw data will also be required to be submitted in a separate excel document. An interpretive summary and assessment of results against previous monitoring results and relevant assessment levels for water as published in the DER Guideline *Assessment and management of contaminated sites guidelines* (DER, December 2014) should also be provided. Trend graphs should be provided to support the interpretive summary.

The Licence Holder must ensure that sampling and field analysis is undertaken according to the methods specified and that sample analysis is conducted by laboratories with current NATA accreditation for the analysis specified.

Grounds: Reporting requirements have been included to ensure appropriate information is submitted to assess potential groundwater impacts. These reporting requirements do not negate any potential requirements under the *Contaminated Sites Act 2003* should contamination to be suspected or known.

10. Determination of Licence conditions

The conditions in the Issued Licence have been determined in accordance with DWER's *Guidance Statement on Setting Conditions*.

DWER's *Guidance Statement on Licence Duration* has been applied and the Issued Licence expires on 6 June 2021.

Table 21 provides a summary of the conditions to be applied to the Revised Licence.

Table 21: Summary of conditions to be applied

Condition Ref	Grounds
Emissions – Condition 1	This condition is valid, risk-based and consistent with the EP Act.
Waste characterisation – Condition 2	These conditions are valid, risk-based and contain appropriate controls (see Section 9 of this Decision Report)
Acceptance and throughput restrictions – Conditions 3 and 4	
Waste processing and storage – Condition 5	
Infrastructure and equipment controls – Condition 6	
Monitoring requirements - Condition 7 and 8	
Record-keeping– Conditions 9 and 10	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.
Reporting requirements – Conditions 11, 12 and 13	

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

11. Licence Holder comments

The Licence Holder was provided with the draft Decision Report and draft Revised Licence on 11 August 2017. Licence Holder comments were received on 1 September 2017 and are provided in Appendix 7.

12. Conclusion

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

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

Ruth Dowd

Senior Manager – Waste Industries (Industry Regulation)

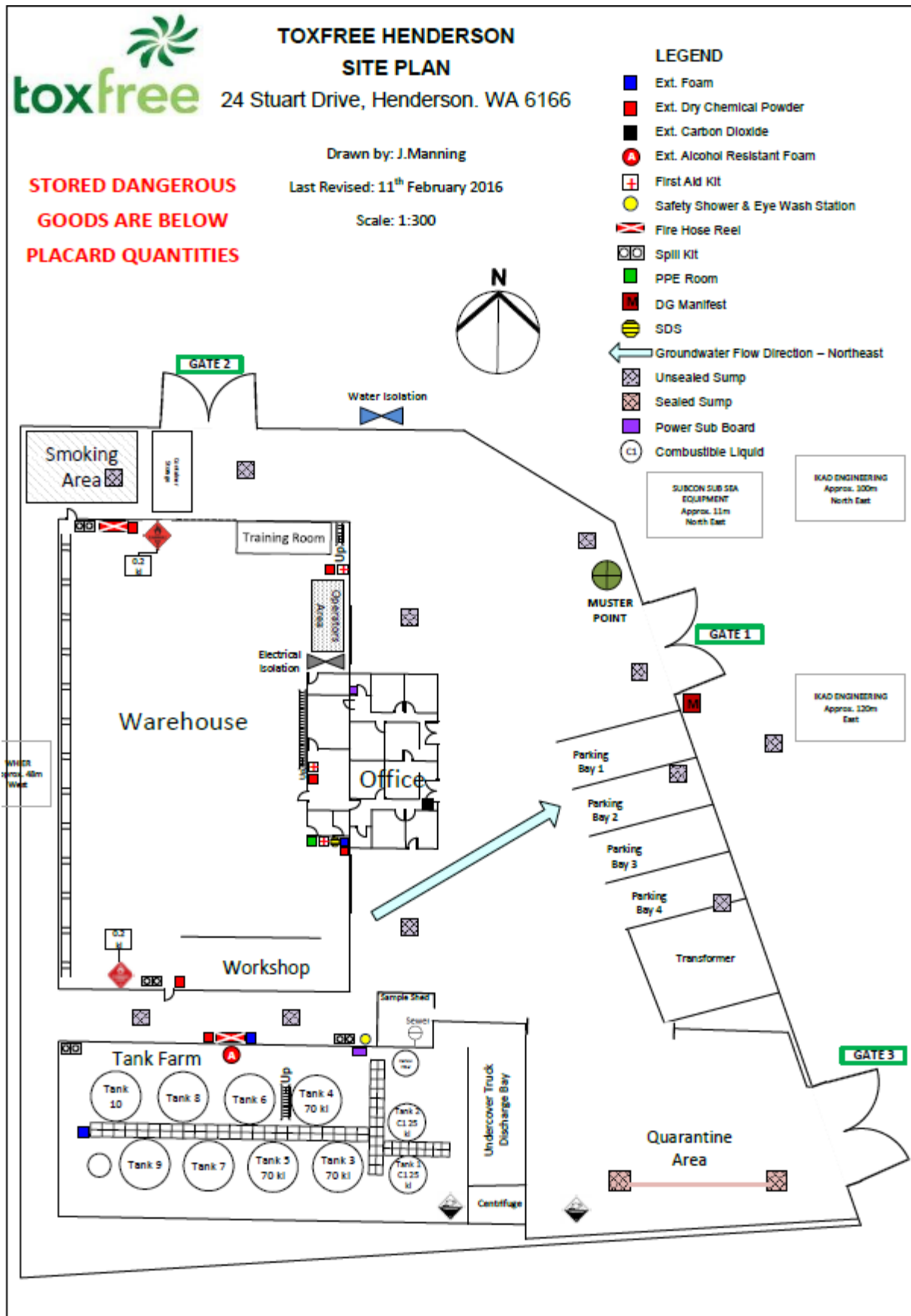
an officer delegated under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents



Document Title	Availability
ANZECC & ARMCANZ 2000. <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> , Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand.	Accessed at http://www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
Australian Standards: <ul style="list-style-type: none"> AS 1940-2004. <i>The storage and handling of flammable and combustible liquids;</i> AS/NZS 3833:2007. <i>The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers;</i> AS/NZS 4452:1997. <i>The storage and handling of toxic substances; and</i> AS/NZS 4681:2000. <i>The storage and handling of Class 9 (miscellaneous) dangerous goods and articles</i>	Accessed at https://www.saiglobal.com/online/
City of Cockburn Planning Approval – General Industry Workshop and Wastewater Treatment Facility	DWER records (A1359727)
Davidson, W.A. (1995). <i>Hydrogeology and groundwater resources of the Perth region, Western Australia, Western Australia Geological Survey, Bulletin 142.</i>	Available from Western Australia State Library.
DER, December 2014. <i>Assessment and Management of Contaminated Sites. Contaminated sites guidelines December 2014.</i>	Accessed at http://www.der.wa.gov.au
DoH 2014. <i>Contaminated Sites Ground and Surface Water Chemical Screening Guidelines, Department of Health.</i>	Accessed at www.public.health.wa.gov.au/3/1144/2/contaminated_sites.pm
Guidance Statement: Regulatory Principles (July 2015)	Accessed at http://www.der.wa.gov.au
Guidance Statement: Decision Making (February 2017)	
Guidance Statement: Risk Assessment (February 2017)	
Guidance Statement: Environmental Siting (November 2016)	
Guidance Statement: Setting Conditions (October	

Document Title	Availability
2015)	
Guidance Statement: Land Use Planning (February 2017)	
Guidance Statement: Licence Duration (August 2016)	
Licence L8649/2012/1– Tox Free Henderson	Accessed at http://www.dwer.wa.gov.au
<i>National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM).</i>	Accessed at http://nepc.gov.au/
Water Corporation Permit to Discharge Industrial Waste	DWER records (A1177431)
360 Environmental, October 2016. <i>August 2016 Groundwater Monitoring Event and Monitoring Programme Review – Henderson Facility</i>	DWER Records (A1353240)
360 Environmental, August 2017. <i>August 2017 Groundwater Monitoring Event – Henderson Facility</i>	DWER Records (A1518847)

Appendix 2: Site Plan



Appendix 3: Sewer Discharge Permit

 <p>WATER CORPORATION ABN 28 003 434 917</p>	<p>Permit Number: 21873 Permit Issued On: 04-May-2007</p>	
PERMIT TO DISCHARGE INDUSTRIAL WASTE		
<p>This Permit is issued to TOX FREE SOLUTIONS LTD Trading as SPECIALISED TANK CLEANING SERVICES PTY LTD For the business located at: 24 STUART DR HENDERSON 6166 For the purpose of conducting a business classified as: CLEANING SERVICES NEC To discharge industrial waste from the following location(s): TANK FARM AREA</p>		
<p>Conditions:</p> <p>This Industrial Waste Permit and its conditions supersede any Industrial Waste Permit and conditions issued prior to the effective date shown above on this permit.</p> <p>This Industrial Waste Permit is issued subject to compliance with the terms and conditions contained in the letter of approval and any subsequent requirements set down in writing by the Water Corporation.</p> <p>The rate of discharge of industrial waste to sewer is not to exceed 3 litres per second.</p> <p>The pH of the industrial waste discharged to sewer is to be within the range of pH 6 to pH 10.</p> <p>The final industrial waste effluent discharged to sewer is to comply with the Water Corporation's criteria as set down in the brochure "Detailed Acceptance Criteria - PUB 06".</p>		
<p>Special Conditions:</p>		
<p> General Manager Water Technologies Division</p>		
Permit No. 21873	Page: 1 of 2	Effective Date : 04-May-2007

GENERAL TERMS AND CONDITIONS OF PERMIT

1. COMPLIANCE WITH ACTS AND BY-LAWS

ALL DISCHARGE OF INDUSTRIAL WASTE INTO THE CORPORATION'S SEWER SHALL COMPLY WITH ALL RELEVANT ACTS AND BY-LAWS.

2. REVIEW OF PERMIT

THIS PERMIT IS SUBJECT TO REVIEW AND CHANGE WITH ISSUE OF ALTERNATE PERMIT AT THE DISCRETION OF THE CORPORATION.

3. LIMITATION OF DISCHARGE

NO INDUSTRIAL WASTE OTHER THAN THAT WITH EFFLUENT CHARACTERISTICS AND LIMITS FOR WHICH THE PERMIT IS ISSUED IS TO BE DISCHARGED TO THE CORPORATION'S SEWER.

4. RESPONSIBILITY OF BUSINESS OWNER OR CORPORATE ENTITY

- a. AT THEIR OWN COST PROVIDE, OPERATE AND MAINTAIN IN GOOD WORKING ORDER AND CONDITION ALL THE FIXTURES AS DESCRIBED ON THIS PERMIT INCLUDING ALL PIPEWORK ASSOCIATED WITH THE WASTE DISCHARGE.
- b. MAINTAIN RECORD(S) THAT DETAIL MAINTENANCE OF THE INDUSTRIAL WASTE FIXTURES INCLUDING DATE, MAINTENANCE PERFORMED (eg PUMPOUT), THE PERSON WHO PERFORMED THE MAINTENANCE AND THE METHOD OF DISPOSAL OF ANY RESIDUAL MATERIAL.

5. LIABILITY OF OCCUPIER

NOTWITHSTANDING THE PERMISSION OR APPROVAL OF THE CORPORATION THE OCCUPIER OF THE PROPERTY SHALL BE SOLELY LIABLE FOR AND IN RESPECT OF -

- a. ACCIDENT OR DAMAGE, LOSS, OR INJURY DIRECTLY OR INDIRECTLY ARISING FROM THE DISCHARGE OF INDUSTRIAL WASTE INTO THE CORPORATION'S SEWER, AND THE OCCUPIER SHALL AGREE TO HOLD HARMLESS AND KEEP INDEMNIFIED THE CORPORATION AGAINST ALL CLAIMS AND DEMANDS FOR SUCH DAMAGE, LOSS, OR INJURY OF ANY DESCRIPTION MADE AND/OR SUFFERED BY THE WORKFORCE OF THE CORPORATION OR ANY OTHER PERSONS WHOMSOEVER, AND
- b. DAMAGE, LOSS OR INJURY OCCASIONED BY OR DONE TO THE CORPORATION'S SEWER OR THE PROPERTY BELONGING TO THE CORPORATION OR TO A COMPANY, PERSON, OR PERSONS, BY REASON OF SUCH DISCHARGE FAILING TO COMPLY WITH THE TERMS, CONDITIONS, AND PROVISIONS OF THE SAID PERMIT OR THE BY-LAWS OF THE CORPORATION, AND THE OCCUPIER SHALL PAY THE COST OF MAKING GOOD ANY SUCH DAMAGE, LOSS, OR INJURY.

6. INTERRUPTION TO SERVICE

THE CORPORATION MAY FROM TIME TO TIME WITHOUT PAYMENT OF ANY COMPENSATION EXCLUDE FROM ITS SEWERS ALL INDUSTRIAL WASTE FROM ANY PROPERTY DURING THE REPAIRING, EXAMINATION, OR MAINTENANCE OF THE SEWERS OR THE CARRYING OUT BY THE CORPORATION OF ANY WORKS IN CONNECTION THEREWITH.

7. SPECIAL CIRCUMSTANCES

ALL DISCHARGE OF INDUSTRIAL WASTE SHALL BE SUBJECT TO SUCH OTHER CONDITIONS AS MAY BE REQUIRED BY THE CORPORATION HAVING REGARD TO THE SPECIAL CIRCUMSTANCES OF THE CASE.

8. RIGHT OF ENTRY

THE CORPORATION OR ANY AUTHORISED OFFICER, SERVANT, AGENT, OR EMPLOYEE OF THE CORPORATION SHALL BE AT LIBERTY AT ANY TIME AND FROM TIME TO TIME TO ENTER UPON THE PROPERTY AND EVERY PART THEREOF AND TAKE SAMPLES OF INDUSTRIAL WASTE FOR ANALYSIS AND OTHERWISE AND ALSO INSPECT THE TREATMENT APPARATUS.

9. PERMIT DETAIL TO BE CORRECT

THIS PERMIT IS NULL AND VOID WHEN ANY DETAIL DESCRIBED ON THE PERMIT IS CHANGED OR ALTERED OR INCORRECT AND REVOKES AND REPLACES ANY PREVIOUSLY ISSUED PERMIT FOR THIS AND ANY BUSINESS AT THE PROPERTY SHOWN.

Appendix 4: Copy of Dangerous Goods Manifest

Dangerous goods manifest

1. General information

Operator: Toxfree Australia

Address of site: 24 Stuart Dr Henderson

Date prepared/updated: 28/08/2017

2. Emergency contacts (at least one person at all times)

Name	Position	Telephone
Thumith Nangalla	Manager	0400 561 228
Steve Ashton	Operations Manager	0428 941 538
Reece Russell	Chemist	0477 741 177

3. Summary information about dangerous goods quantities

Class, Division, C1 or GtDtT	PG	Maximum quantity (L or kg)
C1	NA	50 000
8	II	4 000L
2.1	NA	300L
2.2 / 5.1	NA	100L

4. Bulk (other than IBC) dangerous goods storage information

Storage ID as per site plan	Product name (C1 or GtDtT) / Proper shipping name / Technical name	UN no. (not applicable for C1 and GtDtT)	Class / Division / C1 / GtDtT	PG (for PG I)	Container type	Quantity (L or kg)
Tank Farm	motor oil	NA	C1	NA	Tank	50 000L

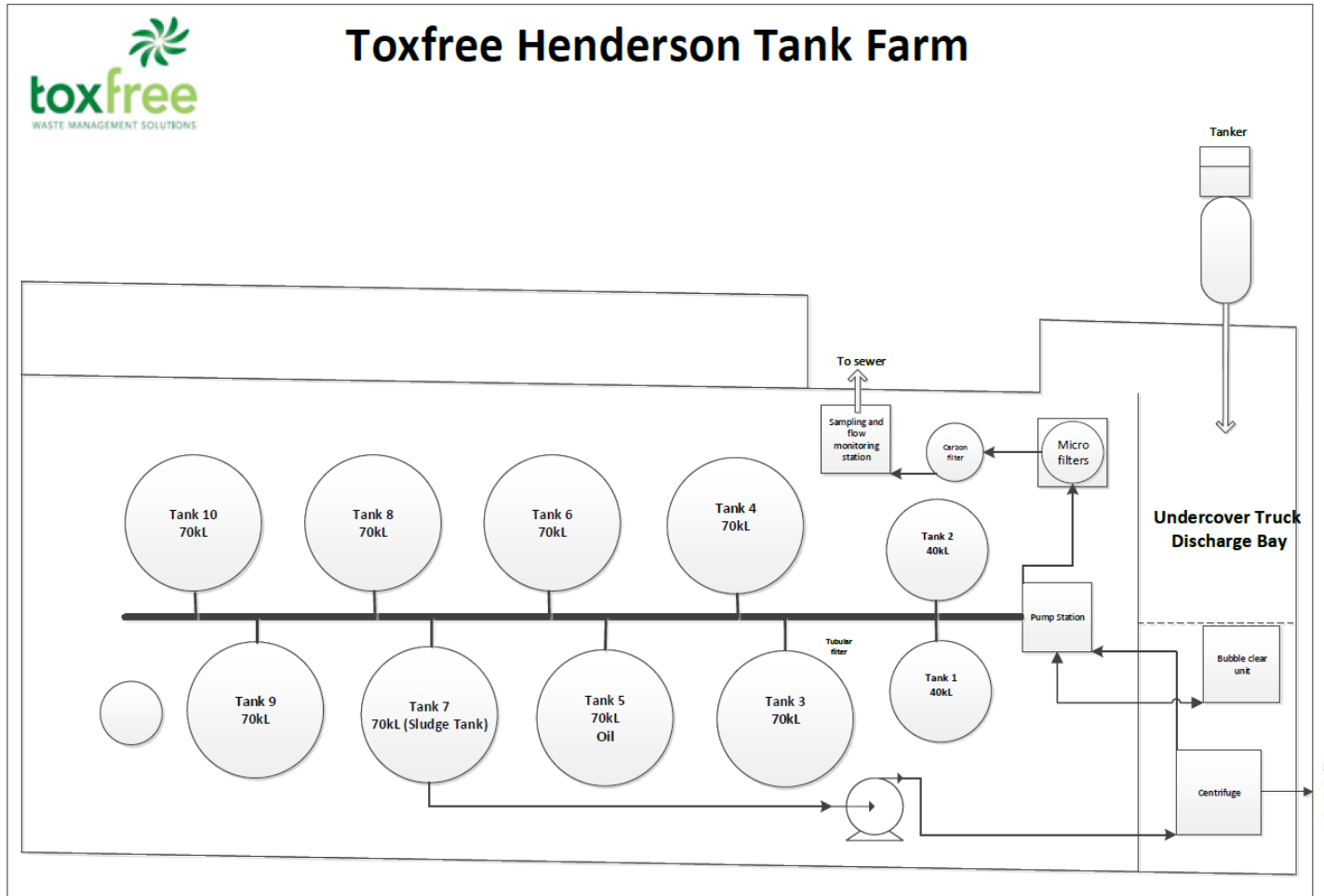
5. Packaged or IBC dangerous goods information at placard amount storage locations

Packaged or IBC of Divisions 2.1, 2.2, PGII/III or C1

Storage location ID as per site plan	Class / Division / C1	Quantity (L or kg) current / maximum
Tank Farm	8	2 000L
Tank Farm	5.1	100L
Quarantine Pad	8	2 000L
Warehouse	2.1	300L
Warehouse	2.2 / 5.1	100L

Appendix 5: Process overview – Tank Farm

Tank Farm and truck discharge bay



Appendix 6: Photos from Site Visit 10 May 2017



Photo 1: Tank Farm – Tanks 1 and 2 and Carbon Filter used for sewer discharges



Photo 2: Tank Farm – Tanks 1 and 2. Drainage also noted beneath tanks



Photo 3: Truck discharge bay and bund



Photo 4: Truck discharge bund



Photo 5: Carbon Filter and Sample Shed (sewer discharge point within)



Photo 6: Sample Shed and sewer discharge point



Photo 7: Activated carbon filters connected to Tanks



Photo 8: Quarantine area – facing south-west



Photo 9: Quarantine area – facing south-west



Photo 10: Quarantine area – facing south-east

Appendix 7: Summary of applicant's comments on Draft Decision Report and Revised Licence

Condition	Summary of Licence Holder comment	DWER response
N/A	<p>Clarification on waste treatment process in Section 4.2 of the Decision Report; 5th dot point under 'Waste acceptance and treatment process – bulk wastes and IBCs' sub-section:</p> <ul style="list-style-type: none"> • Not all loads are pumped through the dissolved air flotation (DAF) treatment system (Bubble-Clear Unit). • Updated Process Flowchart provided to provide clarity. 	Comments noted – description of treatment process updated.
N/A	<p>Clarification on waste treatment process in Section 4.2 of the Decision Report; 8th dot point under 'Waste acceptance and treatment process – bulk wastes and IBCs' sub-section:</p> <ul style="list-style-type: none"> • Centrate from the Centrifuge can also be sent to Tox Free Kwinana for fixation. 	Comments noted – description of treatment process updated.
N/A	Updated Dangerous Goods Manifest provided.	Noted. The revised manifest has been included in Appendix 4 of the Decision Report.
N/A	Copy of Dangerous Goods Site Licence (DGS014124) provided so that information can be reflected in the Decision Report/	Reference to Dangerous Goods Site Licence (DGS014124) reflected in relevant sections of the Decision Report.
7 – Infrastructure construction requirements for groundwater monitoring well.	<p>Comments provided on Section 9.5 of the Decision Report - 'Monitoring requirements':</p> <ul style="list-style-type: none"> • New bore hole note included /reflected in the proposed groundwater monitoring requirements. <p>As part of the comments Tox Free provided a copy of the</p>	<p>Comments and additional information noted.</p> <p>Bore logs and monitoring well construction details for 'BH5' and 'BH6' were noted in Attachment A of the 360 Environmental report.</p>

Condition	Summary of Licence Holder comment	DWER response
8 Groundwater monitoring requirements	<p>report titled <i>August 2017 Groundwater Monitoring Event</i> (360 Environmental, 29 August 2017) which indicated that well 'BH5', which was previously destroyed, had been reinstated and an additional new monitoring well ('BH6') had also been installed adjacent to the discharge bay to monitor potential future releases in the area.</p>	<p>As 'BH5' has been reinstated Condition 7 which requires the reinstatement of 'BH5' is no longer required and therefore been removed from the revised Licence.</p> <p>Monitoring locations 'BH5' and 'BH6' have been included in the groundwater monitoring program and consequently reflected in Condition 7 and Schedule 3 (numbering updated) of the revised Licence.</p> <p>Updated map/site plan of the 'Groundwater monitoring network' has been included in Schedule 1 of the revised Licence.</p> <p>All associated references/information in the Decision Report have also been updated.</p>

Attachment 1: Revised Licence L8649/2012/2
