Licence

Licence number	L9268/2020/2
Licence holder	Cleanaway Co Pty Ltd
ACN	127 853 561
Registered business address	Level 4, 441 St Kilda Road MELBOURNE VIC 3004
DWER file number	DER2020/000545~3
Duration	09/08/2024 to 08/08/2044
Date of issue	08/08/2024
Premises details	Cleanaway Port Hedland Resource Recovery Centre 20 Schillaman Street WEDGEFIELD WA 6725 Legal description - Lot 5857 on Deposited Plan 191016 As defined by the coordinates in Schedule 2.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production / design capacity**
Category 39 Chemical or oil recycling: premises on which waste liquid hydrocarbons or chemicals are refined, purified, reformed, separated or processed.	10,000 tonnes per annual period
Category 61 Liquid waste facility: premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	30,000 tonnes per annual period
Category 61A Solid waste facility: premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land.	20,000 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 08 August 2024, by:

Neville J Welsh Date: 2024.08.08 08:32:03 +08'00'

SENIOR INDUSTRY LICENSING OFFICER
INDUSTRY REGULATION
Officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
L6310/1991/1	29/10/1997	Licence amendment
L6311/1991/1	06/09/2000	Licence amendment
L6789/1994/5	29/01/2001	Licence reissue.
L6789/1994/6	06/02/2002	Licence reissue.
L6789/1994/7	17/02/2003	Licence reissue.
L6789/1994/8	5/02/2004	Licence reissue.
L6789/1994/9	07/02/2005	Licence reissue.
L6789/1994/10	08/02/2007	Licence reissue.
L6789/1994/11	07/02/2008	Licence reissue.
L6789/1994/12	06/02/2009	The Licence was reissued with global changes only following email confirmation that there were no significant changes to the site.
L6789/1994/13	09/02/2012	The Licence was reissued and included notification to DER prior to quarterly stack testing. The Licence was also changed to an annual duration due to its reclassification as a high priority site.
L6789/1994/14	08/02/2013	The Licence was reissued with the following changes: • Updated to include the appeal outcomes; • Chlorine and fluorine input further reduced on the licence to zero input; • Additional metals requiring sampling in the waste material (manganese, chromium and copper); • Additional definitions added as per advice from Industry Regulation Licensing Branch; • Definitions for polycyclic aromatic hydrocarbons (PAH) added (as per appeal outcome); • A target of 0.1 ng/m^3 added for dioxins and furans in the interim until an appropriate limit could be established (this required further data, modelling and Stack testing results for various waste streams); • Include dioxins, furans, PAH and Polychlorinated biphenyl (PCB) testing during all quarterly stack testing; and, • Stack testing results to be provided to DER within 3 months (and a report should the target be exceeded, which detailed the amount emitted, the time and what was being incinerated, as well as measures taken to prevent this reoccurring), rather than annually.

Date	Reference number	Summary of changes
L6789/1994/15	08/08/2013	New format licence reissue for categories 39 and 61. Removal of category 60.
L6789/1994/15	22/05/2014	Licence transferred from Oil Energy Corporation Pty Ltd to Tox Free Australia Pty Ltd.
L6789/1994/16	31/07/2014	Licence reissued.
L6789/1994/16	08/01/2015	Licence amendment to remove the previous IR2, change the completion dates for IR1 and IR2 for the Improvement program and inclusion of waste codes.
L9268/2020/1	19/01/2021	Replacement licence for L6789/1994/16 issued
L9268/2020/1	25/05/2022	Licence amendment to facilitate the acceptance, storage and treatment of PFAS contaminated wastes (M270).
L9268/2020/2	08/08/2024	Administrative Licence renewal with twenty-year licence duration.

Interpretation

In this licence:

a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;

b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

c) where tables are used in a condition, each row in a table constitutes a separate condition;

d) any reference to an Australian or other standard, guideline, or code of practice in this licence:

   i) if dated, refers to that particular version; and

   ii) if not dated, refers to the latest version and therefore may be subject to change over time;

e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Premises operation

1. The licence holder must only accept onto the premises waste of a waste type, which does not exceed the corresponding rate at which waste is received, and which meets the corresponding acceptance specification set out in Table 1.

Table 1: Types of waste authorised to be accepted onto the premises.

Waste type	Waste code	Rate at which waste is received[1]	Acceptance specification[2]
Clean Fill	N/A	None specified	None specified
Recyclables	N/A	1,000 tonnes per annual period	None specified
Contaminated soil Class II and III	N/A	5,000 tonnes per annual period	None specified
Biological waste	K100, K110, K140, K190, K200 and K210	30,000 tonnes per annual period	Septage wastes – wastes from apparatus for the treatment of sewage. Grease wastes – wastes resulting from food preparation processes. Vegetable oils and derivatives and other wastes.
Solid/s sludge waste requiring special handling	E100, E120, E130, N100, N120, N140, N150, N160, N190, N205, N220 and N230	10,000 tonnes per annual period	None specified, except waste of an explosive nature not subject to other legislation is limited to oxidising solids, liquids, domestic flares.
Clinical and pharmaceutical wastes	R100, R120, R130 and R140	10 tonnes per annual period	None specified
Pesticide wastes	H100, H110, H130 and H170	500 tonnes per annual period	None specified
Paints and resins	F100, F110, F120 and F130	10,000 tonnes per annual period	None specified
Oils and emulsions	J100, J120, J130, J160, J170 and J180	30,000 tonnes per annual period	None specified
Solvents	G100, G110, G130, G150, G160, M100, M105, M130, M150, M160, M170, M180, M210, M220,	10,000 tonnes per annual period	None specified

Waste type	Waste code	Rate at which waste is received[1]	Acceptance specification[2]
	M230, M250 and M260		
Other organic chemicals	G100, G110, G130, G150, G160, M100, M105, M130, M150, M160, M170, M180, M210, M220, M230, M250 and M260	10,000 tonnes per annual period	None specified, except PBBs (polybrominated biphenyls), PCBs (polychlorinated biphenyls), PCNs (polychlorinated napthalenes) and PCTs (polychlorinated terphenyls) limited to 10 tonnes.
Acids	B100	10,000 tonnes per annual period	None specified
Alkalis	C100		None specified
Chromium	D100, D110, D120, D130, D140, D141, D150, D151, D160, D170, D180, D190, D200, D210, D211, D220, D221, D230, D240, D250, D270, D290, D300, D310, D330, D340, D350 and D360		None specified
Cyanide	A100, A110 and A130		None specified
Inorganic chemicals other than the inorganic chemicals listed as: Acids, Alkalis, Chromium and Cyanide	D100, D110, D120, D130, D140, D141, D150, D151, D160, D170, D180, D190, D200, D210, D211, D220, D221, D230, D240, D250, D270, D290, D300, D310, D330, D340, D350 and D360		None specified
Low strength waste water	L100, L150, N100, N120, N140, N150, N160, N190, N205, N220 and N230	30,000 tonnes per annual period	None specified

Waste type	Waste code	Rate at which waste is received[1]	Acceptance specification[2]
Miscellaneous	E100, E120, E130, T100, T120 and T140	10,000 tonnes per annual period Maximum storage volume for tyres is 99 tyres	None specified
PFAS contaminated wastes[3]	M270	1000 tonnes per annual period	Must be accepted in sealed impervious containers.

Note 1: Waste streams are variable for the site, however, quantity limits for waste acceptance overall must not exceed the Approved Premises production or design capacity stated on page 1 of this Licence.

Note 2: Additional requirements for the acceptance of controlled waste are set out in the Environmental Protection (Controlled Waste) Regulations 2004.

Note 3: Additional requirements for the handling and storage of PFAS wastes under the PFAS National Environmental Management Plan may apply.

2. The licence holder must ensure that where waste does not meet the waste acceptance criteria set out in Condition 1 it is removed from the Premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an appropriately authorised facility as soon as practicable.

3. The licence holder must ensure that any waste accepted at the Premises for storage and transhipment is stored in an area of the Premises which is clearly labelled and demarcated as such.

4. The licence holder must only store environmentally hazardous materials on an impervious hardstand that meets a permeability of 1x 10^{-9} m/s.

5. The licence holder must ensure that the waste types specified in Table 2 are only subjected to the corresponding process(es) subject to the corresponding process limits and/or specifications.

Table 2: Waste processing

Waste type	Process(es)	Process limits and/or specifications
All waste types excluding: • Clinical and pharmaceutical wastes; and • PBBs (polybrominated biphenyls), PCBs (polychlorinated biphenyls), PCNs (polychlorinated napthalenes) and PCTs (polychlorinated terphenyls)	Receipt, handling, consolidation and storage prior to removal	Wastes must be stored and processed in a manner that prevents incompatible wastes mixing and meets the requirements of Table 3

Waste type	Process(es)	Process limits and/or specifications
Clinical and pharmaceutical wastes PBBs (polybrominated biphenyls), PCBs (polychlorinated biphenyls), PCNs (polychlorinated napthalenes) and PCTs (polychlorinated terphenyls)	Transit storage prior to offsite disposal	None
Biological waste Solid/s sludge waste requiring special handling Paints and resins Oils and emulsions Other organic chemicals Inorganic chemicals other than the inorganic chemicals listed as: Acids, Alkalis, Chromium and Cyanide Low strength wastewater Miscellaneous	Processing of wastes by absorption with woodchips or suitable material prior to disposal off site	Storage capacity of treated material must not exceed 400 m^3 at any given time. Absorption must only occur within Solid Storage Bay 1 or 2 as indicated in Figure 2 of Schedule 1. Solid Storage Bays and the surrounding storage / laydown area must be bunded.
Oils and emulsions	Oil processing and recycling	Tank farm and packaged waste storage capacity of 230 tonnes.
Oils and emulsions Low strength wastewater	WWTP – Hydrocyclone	24 m^3 per hour
Biological waste Oils and emulsions Acids Alkalis Low strength wastewater	WWTP – Chemical/Physical	140 m^3 per day
Recyclables	Recycling General	None
All PFAS contaminated materials, including PFAS containing product and contaminated containers.(1)	Acceptance, handling and storage prior to disposal offsite	All containers utilised for the movement of PFAS contaminated materials must be managed as PFAS contaminated materials until they have been appropriately cleaned. PFAS waste exceeding a Total PFAS concentration of 50 mg/kg must be disposed of to a suitably licenced facility. Waste storage and processing to occur on a concrete hardstand area.

Waste type	Process(es)	Process limits and/or specifications
PFAS contaminated liquid waste(1)	Treatment with Rembind™ or equivalent treatment process if required, followed by absorption with woodchips, soil or other suitable material prior to disposal off site	Absorption must only occur within Solid Storage Bay 1 or 2 as indicated in Figure 2. All runoff from the Solid Storage Bays must be diverted to capture and storage pits. Waste must be tested for final PFAS concentration prior to absorption to determine the suitability for landfill disposal. PFAS waste exceeding a Total PFAS concentration of 50 mg/kg must be disposed of to a suitably licenced facility. Volume of material being processed by absorption must not exceed 100 m^3 at any given time.

Note 1: The PFAS National Environmental Management Plan may require additional specifications for appropriate infrastructure for the storage of PFAS wastes.

6. The licence holder must ensure that waste material specified in Table 3 is only stored and/or treated within vessels or compounds provided with the infrastructure detailed in Table 3.

Table 3: Waste containment infrastructure

Material	Vessel or compound	Requirements
Processed (treated) wastewater	2 x Evaporation Ponds	HDPE lined and maintained as per condition 10
Wastewater, stormwater and oil	Storage Tanks	Licence condition 4
As per Table 2	Packaged waste for transhipment, IBCs and Drums	Licence condition 4
Materials for landfill pending analysis	Solids Storage Bays	Licence condition 4
Solids and Liquids	Discharge Bay	Licence condition 4

Note 1: The PFAS National Environmental Management Plan may require additional specifications for appropriate infrastructure for the storage of PFAS wastes.

7. The licence holder must ensure that all waste containers at the Premises are clearly labelled to display the following information:

(a) unique container identification number which includes the Waste Receival Ticket Number; and,

(b) waste description.

8. The licence holder must perform a visual check of all operating systems for irregularities on a daily (5 days a week) basis. This check must include all contaminant material storage/process areas.

9. The licence holder must record the plants condition and any observations as required by condition 8 in a log book together with the date and time of the check. The log book shall be retained on the Premises and made available to the CEO on request.

10. The licence holder must manage all wastewater treatment and evaporation ponds such that:

(a) overtopping of the ponds does not occur;

(b) a freeboard equal to, or greater than, 500 mm is maintained;

(c) the integrity of the containment infrastructure is maintained; and

(d) vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond.

11. The licence holder must ensure that:

(a) all washdown water will be directed to and treated through the liquid waste treatment plant;

(b) only residual treated wastewater will be directed to the evaporation ponds; and

(c) in the event of extreme rainfall, all wastewater sumps and bunded areas are managed such that contaminated waters do not discharge offsite.

12. The licence holder must:

(a) implement security measures at the site, including suitable fencing, to prevent as far as is practical unauthorised access to the Premises;

(b) undertake regular inspections of all security measures and repair damage as soon as practicable; and

(c) ensure the entrance gates are securely locked when the Premises is unattended.

13. The licence holder must install and maintain a sign at the entrance to the Premises which clearly displays the following information;

(a) hours of operation;

(b) contact telephone number; and

(c) list of materials accepted for recycling and the location of where they can be deposited on the Premises.

Emissions and discharges

14. The licence holder must ensure that stormwater that comes in contact with PFAS storage and processing areas must be processed in accordance with PFAS contaminated liquid waste, as outlined in Condition 5 - Table 2.

Monitoring

15. The licence holder must ensure that:

(a) monthly monitoring is undertaken at least 15 days apart;

(b) quarterly monitoring is undertaken at least 45 days apart; and,

(c) six monthly monitoring is undertaken at least 5 months apart.

16. The licence holder must undertake the monitoring in Table 4 according to the specifications in that table.

Table 4: Monitoring of inputs and outputs

Input/Output	Parameter	Units	Averaging period	Frequency
Waste Inputs	Waste types listed in Table 1	tonnes or m^3	Annually	Each load arriving at the Premises
Waste Outputs	Waste types listed in Table 1			Each load leaving or rejected from the Premises
Wastewater – Inlet Flow	Volumetric flow rate (cumulative)	m^3/week	Monthly	Continuous
Treated wastewater pumped to evaporation ponds	Volumetric flow rate (cumulative)	m^3/week	Monthly	Quarterly

17. The licence holder must undertake the monitoring in Table 5 according to the specifications in that table.

Table 5: Process monitoring

Monitoring point reference	Process description	Parameter	Target	Units	Averaging period	Frequency
P1 As depicted in Figure 3 of Schedule 1	Treated wastewater from Chemical / Physical WWTP	pH	6-10	pH units	Spot sample	Monthly
		Total Recoverable Hydrocarbons	500	mg/L		

Monitoring point reference	Process description	Parameter	Target	Units	Averaging period	Frequency
P2 As depicted in Figure 3 of Schedule 1	Treated wastewater from Hydrocyclone WWTP	Total Recoverable Hydrocarbons	50	mg/L	Spot sample	Monthly
P3 As depicted in Figure 3 of Schedule 1	Consolidated treated wastewater from Chemical / Physical WWTP and Hydrocyclone WWTP feeding lined Evaporation Ponds	pH	6-10	pH units	Spot sample	Monthly
		Total Recoverable Hydrocarbons	500	mg/L		
		Total Dissolved Solids	150,000	mg/L		

18. The licence holder must conduct a groundwater monitoring program in accordance with the requirements specified in Schedule 3, condition 31 and record the results of all monitoring activity conducted under that program.

19. The licence holder must adhere to the field quality assurance and quality control procedures specified in Schedule 3, condition 32 for the monitoring required by condition 18.

20. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified in Schedule 3.

21. The licence holder must ensure that all monitoring equipment used to comply with condition(s) 16, 17, and 18 is operated and calibrated in accordance with the manufacturer's specifications.

22. The licence holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Records and reporting

Records

23. The licence holder must maintain records of all wastes accepted, stored and dispatched from the Premises that includes, but is not limited to:

(a) date of acceptance;

(b) description of the waste including waste type code;

(c) origin of the waste;

(d) name of the waste producer;

(e) quantity of the waste received;

(f) results of any analysis (if applicable);

(g) location of the waste at the Premises;

(h) controlled waste tracking form number (inwards);

(i) date(s) of transport off site;

(j) destination of waste or product;

(k) quantity of the waste or product dispatched;

(l) nature of the waste or product dispatched;

(m) any certificate of analysis of the waste dispatched (if applicable);

(n) controlled waste tracking form number (outwards);

(o) consignment authorisation for movement of controlled waste between states and territories (outwards) if required; and

(p) reconciliation of the total waste accepted, disposed and recycled at the Premises.

24. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

25. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;

(b) monitoring programmes undertaken in accordance with conditions 16, 17, 18, 19, 20, 21, 22 and 31 of this licence; and,

(c) complaints received under condition 24 of this licence.

26. The books specified under condition 23 and 25 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the licence holder for the duration of the licence; and

(d) be available to be produced to an inspector or the CEO as required.

Reporting

27. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period, and

(b) prepare and submit to the CEO an Annual Audit Compliance Report in the approved form by 30 April each year.

28. The licence holder must:

(a) prepare an Environmental Report that provides information in accordance with Table 6 for the preceding annual period, and

(b) submit that Environmental Report to the CEO by 30 April each year.

Table 6: Environmental reporting requirements

Condition	Requirement
-	Summary of any failure or malfunction of any pollution control equipment and any incidents that have occurred during the annual period and any action taken.
Condition 23	Waste records
Condition 16	Waste inputs and outputs records
Condition 17	Process monitoring results
Condition 24	Complaints summary
Condition 29	Groundwater monitoring report

29. The licence holder must submit to the CEO with the Environmental Report required by Condition 28 a groundwater monitoring report demonstrating their compliance with Conditions 18, 19, 31, 32 for the preceding annual period, and must include:

(a) a clear statement of the scope of work carried out;

(b) a description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;

(d) copies of the field monitoring records and field QA/QC documentation;

(e) an assessment of reliability of field procedures and laboratory results;

(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown);

(h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites;

(i) an interpretive summary and assessment of results against previous monitoring results;

(j) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Note 1: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*.

30. The licence holder must submit the information in Table 7 to the CEO in accordance with the specifications in Table 7.

Table 7: Non-annual reporting requirements

Condition or table	Parameter	Reporting date (after end of the reporting period)	Format or form
-	Copies of original monitoring reports submitted to the Licence holder by third parties	Within 14 days of the CEOs request	As received by the licence holder from third parties

Definitions

In this licence, the terms in Table 8 have the meanings defined.

Table 8: Definitions

Term	Definition
ACN	Australian Company Number
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates are available on the Department's website).
annual period	a 12 month period commencing from 1 January until 31 December of the immediately following year.
Assessment of site contamination NPEM	means the *National Environment Protection (Assessment of Site Contamination) Measure 1999*.
averaging period	means the time over which a limit or target is measured or a monitoring result is obtained.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the Environmental Protection Act 1986 Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
department; DWER	means the department established under section 35 of the Public Sector Management Act 1994 (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
environmentally hazardous material	means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Energy, Mines, Industry Regulation and Safety.
EP Act	Environmental Protection Act 1986 (WA)
EP Regulations	Environmental Protection Regulations 1987 (WA)
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
HDPE	High-density polyethylene
IBC	means intermediate bulk container.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.

Term	Definition
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
NATA	means the National Association of Testing Authorities, Australia.
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis.
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map(s) (Figure 1) in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
Spot sample	means a discrete sample representative at the time and place at which the sample is taken.
µS/cm	means microsiemens per centimetre
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown by the pink line in the map below (Figure 1).

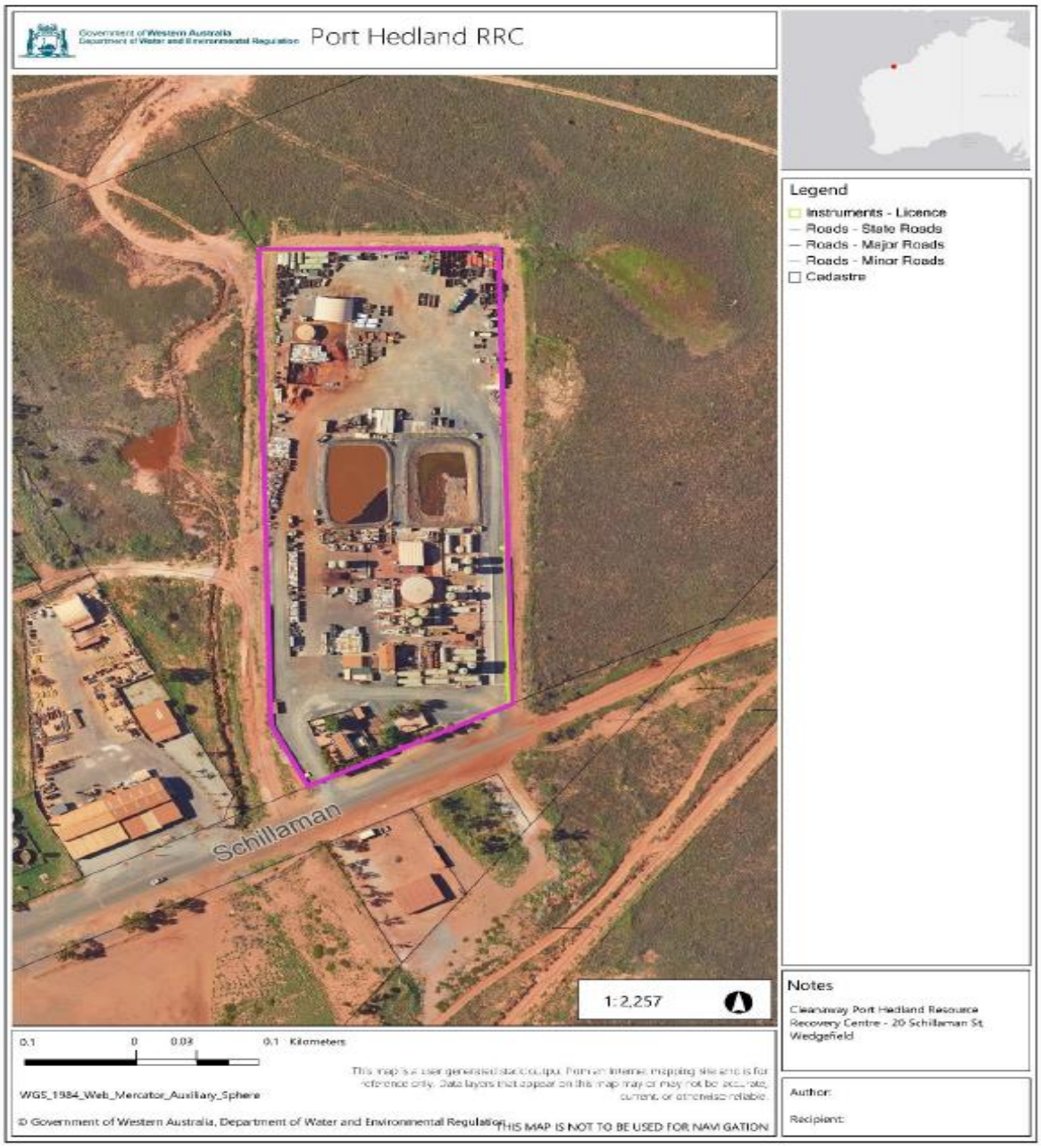

Figure 1: Map of the boundary of the prescribed premises

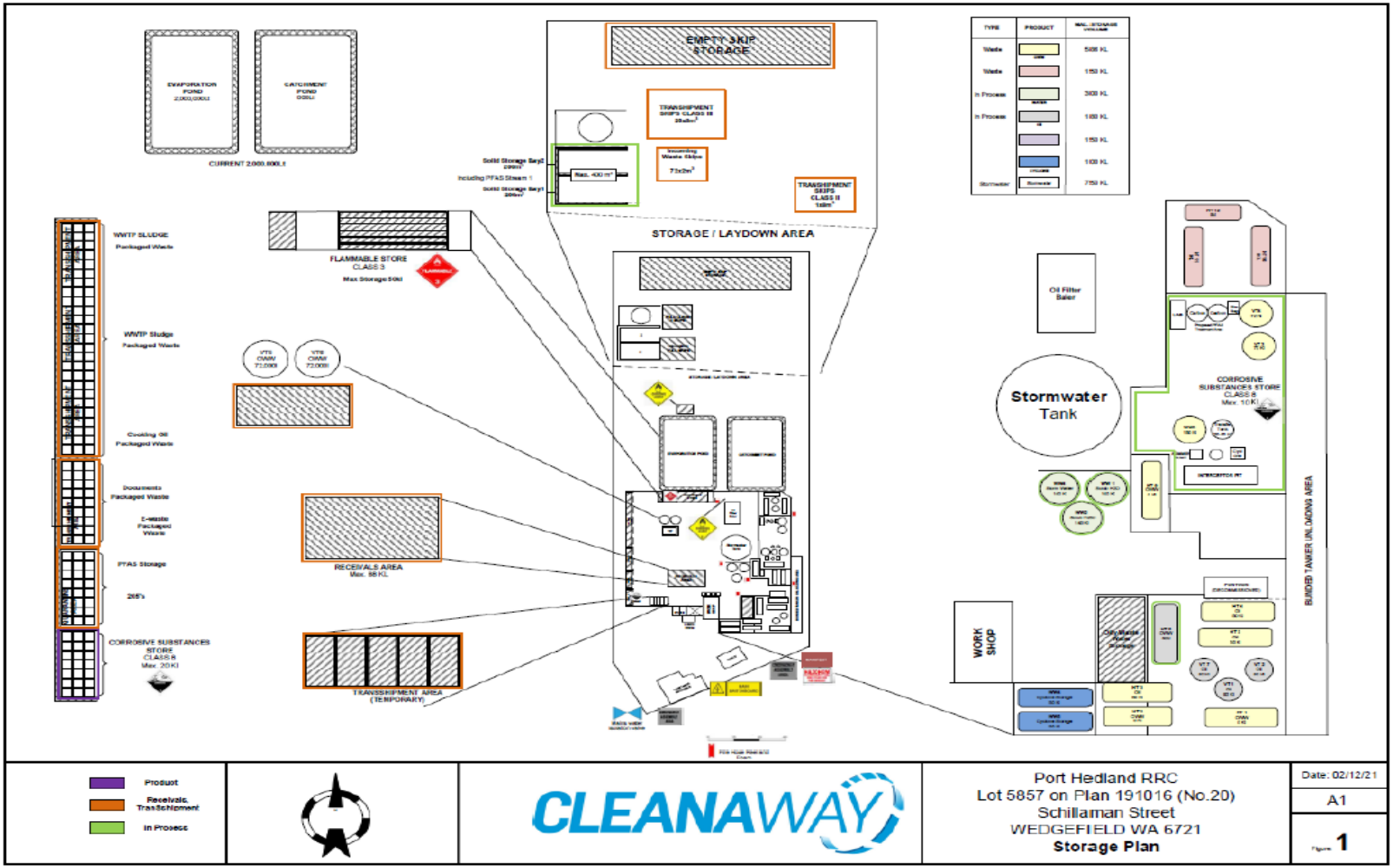

Figure 2: Site layout and storage plan

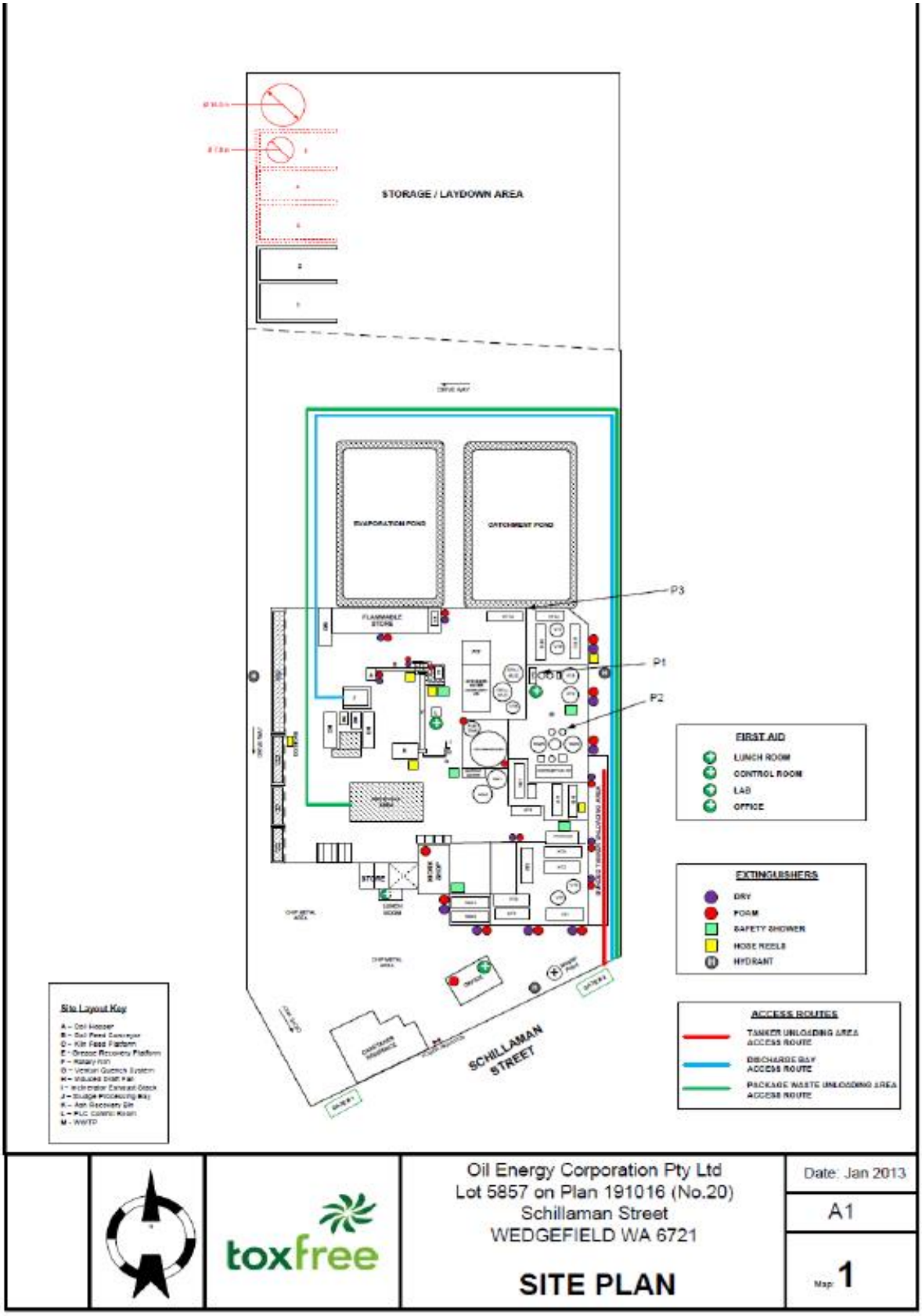

Figure 3: Map of process monitoring points

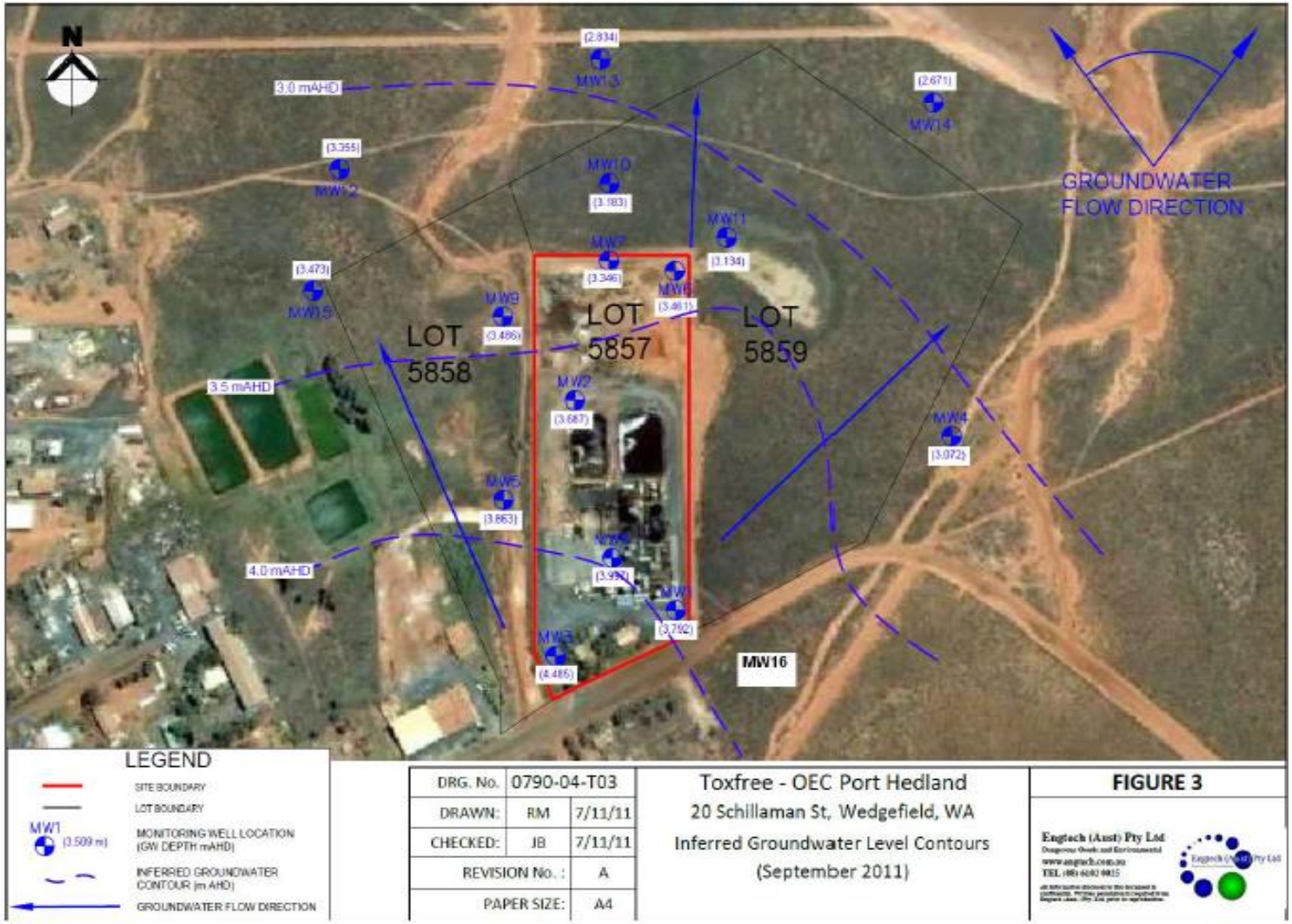

Figure 4: Map of groundwater monitoring locations

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 9.

Table 9: Premises boundary coordinates (GDA94)

Easting	Northing	Zone
666803.62	7747068.30	50
666904.42	7747067.32	50
666806.78	7746816.61	50
666822.15	7746785.29	50
666908.81	7746827.88	50

Schedule 3: Monitoring

Groundwater monitoring

31. The licence holder must monitor groundwater for concentrations of the identified parameter(s) in accordance with Table 10.

Table 10: Groundwater monitoring of ambient concentrations

Monitoring well location	Parameter	Unit	Frequency	Averaging period
MW1 – MW16 As depicted in Figure 4 of Schedule 1.	Standing Water Level	m(AHD)	Six monthly	Spot sample
	Total Dissolved Solids[1]	mg/L		
	Electrical Conductivity[1]	µS/cm		
	Total Recoverable Hydrocarbons	mg/L	Six monthly	Spot sample
	Benzene	mg/L		
	Toluene	mg/L		
	Ethylbenzene and Xylene	mg/L		
	Heavy Metals: • Arsenic • Cadmium • Chromium-hexavalent • Copper • Molybdenum • Nickel • Lead • Tin • Vanadium • Mercury • Zinc	mg/L	Six monthly	Spot sample
	PFAS: • Perfluorooctane sulfonate; • Perfluorooctanoic acid; • 6:2 Fluorotelomer sulfonate; • 8:2 Fluorotelomer sulfonate; • Perfluoroheptanoic acid; • Perfluorobutane sulfonate; • Perfluorobutanoic acid; • Perfluorohexanoic acid; • Perfluorohexane sulfonate; • Perfluoropentanoic acid; • Perfluorooctane sulfanomide; • Perfluorodecane sulfonate; • Perfluorononanoic acid; • Perfluorodecanoic acid; • Perfluoroundecanoic acid; • Perfluorododecanoic acid; • Perfluorotridecanoic acid; • Perfluorotetradecanoic acid; • N-Methylheptadecafluorooctane sulfanomide; • N-Eethylheptadecafluorooctane sulfanomide; • N-Methylheptadecafluorooctane sulfanomidoethanol; and,	µg/L	Six monthly	Spot sample

Monitoring well location	Parameter	Unit	Frequency	Averaging period
	• N-Ethyl-heptadecafluorooctane sulfanomidoethanol.			

Note 1: In-field non-NATA accredited analysis permitted.

Quality assurance and quality control requirements

32. The licence holder must adhere to the following field quality assurance and quality control procedures, as specified in Schedule B2 of the Assessment of Site Contamination NEPM, and must include as a minimum:

(a) decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;

(b) field instrument calibration for instruments used on site;

(c) blind replicate samples and rinsate blanks must be collected in the field and sent to the primary laboratory to determine the precision of the field sampling and laboratory analytical program;

(d) completed field monitoring sheets / sampling logs for each sample collected, showing:

(i) time of collection;

(ii) location of collection;

(iii) initials of sampler;

(iv) sampling method;

(v) field analysis results;

(vi) duplicate type / location (if relevant); and

(vii) site observations and weather conditions, and

(e) chain-of-custody documentation must be completed which details the following information:

(i) site identification;

(ii) the sampler;

(iii) nature of the sample;

(iv) collection time and date;

(v) analyses to be performed;

(vi) sample preservation method;

(vii) departure time from site;

(viii) dispatch courier(s); and

(ix) arrival time at the laboratory.