



Amendment Notice 4

Licence Number L6131/1990/13

Licence Holder Pilbara Manganese Pty Ltd

ACN 074 106 577

File Number: DER2013/001337

Premises Woodie Woodie Manganese Project
Mining tenements: G45/332, G45/333, G45/334,
G45/335, G45/336, G45/37-40, G46/4-5, L46/29,
M45/107, M45/429-433, M45/517, M45/600-602,
M45/637-641, M45/1218, M46/92-93, M46/108,
M46/137, M46/150, M46/161-162, M46/383 and
M46/384

MARBLE BAR WA 6760

Date of Amendment 2 May 2018

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Date signed: 2 May 2018

Alana Kidd

Manager, Licensing (Resource Industries)

Regulatory Services (Environment)

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

Definitions and interpretation

Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
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
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)
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 Amendment
Licensee	Pilbara Manganese Pty Ltd
Occupier	has the same meaning given to that term under the EP Act
Prescribed Premises	has the same meaning given to that term under the EP Act
Premises	refers to the premises to which this Amendment Notice applies, as specified at the front of this Amendment Notice
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>

Amendment Notice

This amendment is made pursuant to section 59 of the EP Act to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 89. No other changes to the aspects of the Existing Licence or Amendment Notices 1, 2 and 3 relating to Category 5, 6, 54 and 73 have been requested by Pilbara Manganese Pty Ltd (Licensee).

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles (July 2015);*
- *Guidance Statement: Setting Conditions (October 2015);*
- *Guidance Statement: Decision Making (February 2017);*
- *Guidance Statement: Risk Assessment (February 2017);* and
- *Guidance Statement: Environmental Siting (November 2016).*

Amendment description

On 19 December 2017 the Licensee submitted an application (Application 2017) to DWER for an amendment to the Woodie Woodie Manganese Project (Premises) licence L6131/1990/13. The Licensee has applied for the following:

1. Construction and operation of a new bioremediation area on top of the Greensnake Western Waste Dump; and
2. Disposal of waste tyres within the Vesta Waste Dump;

On 1 March 2017 the Licensee submitted another application (Application 2018) to DWER for an amendment to the Premises licence L6131/1990/13. The Licensee has applied for the following;

3. An increase to the approved throughput for Category 89 from 1,000 tonnes per annum (tpa) to 1,650 tpa.

These two amendments have been amalgamated and form the basis of this assessment.

1. Bioremediation Area at the Greensnake Western Waste Dump

The Existing Licence allows for soil contaminated by hydrocarbons as a result of inadvertent spills or waste products (vehicle wash bay) to be treated at the onsite bioremediation area, which is located at the Workshop.

The Workshop Bioremediation Area is however at capacity. The Licensee is requesting approval to construct a new Bioremediation Area (Greensnake Bioremediation Area) on top of the completed Greensnake Western Waste Dump. The Greensnake Bioremediation Area will be located on a 6 metre (m) raised portion (3.6 hectares (ha) in total) of the Greensnake Western Waste Dump as shown in Figure 1.

The Greensnake Western Waste Dump is constructed from inert clay material that will be utilised to contain all contaminated material. Each cell will be approximately 7 m wide and approximately 100 m long.

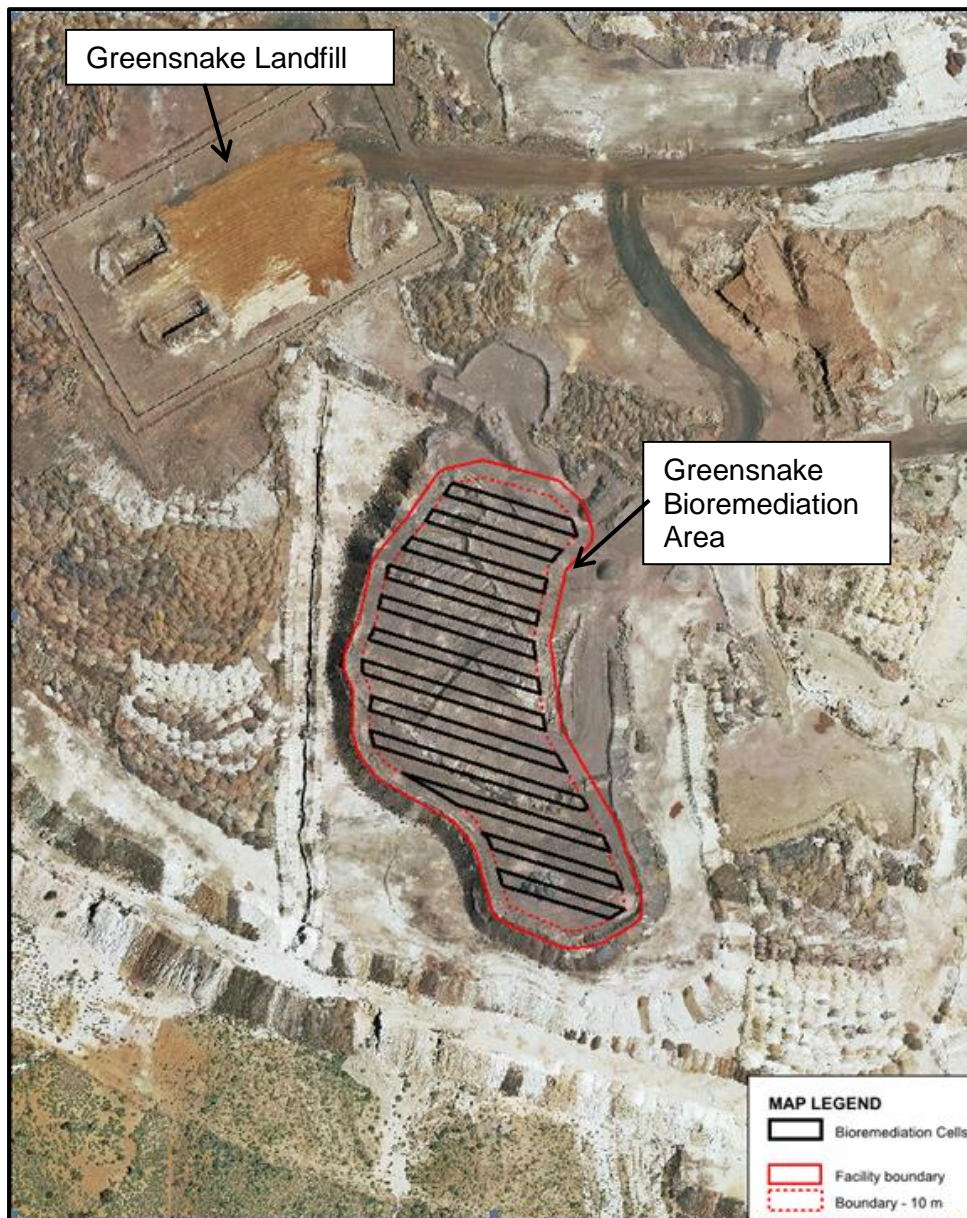
Contaminated soil will be stockpiled within designated bioremediation cells depending upon treatment status (awaiting treatment, under treatment, awaiting disposal).

The Licensee will implement the following management practices at the Greensnake Bioremediation Area:

- Each cell will be windrowed to minimise the potential contamination of surface water or migration of leachate;
- In between each cell there will be an approximate 10 m wide access to allow water carts to drive in between the cells to water contaminated material as required;
- At the end of each cell, once the stockpile has been tested, determined to be fit for purpose and removed, the Licensee will test the base of the cell for contamination and remove/treat as required. Any leachate formed or required to be removed will be evacuated and disposed of into the onsite oily water separator (ConsMin, 2018a); and
- The Greensnake Bioremediation Area will not be located within 15 m of the Waste Dump Boundary.

There is no change to the Greensnake Landfill (also located on the Greensnake Western Waste Dump as shown in Figure 1 below), which will continue to accept clean fill, putrescible waste and inert waste type 1 in accordance with the Existing Licence.

Figure 1: Location of the Greensnake Bioremediation Area and Landfill



Decision

The Greensnake Bioremediation Area does not trigger category 61 under the *Environmental Protection Regulations 1987*. The Greensnake Bioremediation Area only treats hydrocarbon contaminated soil generated from within the Premises i.e. does not receive liquid waste from other Premises.

No additional requirements will be imposed on the Existing Licence. The Delegated Officer considers the following sufficient in terms of regulatory control:

- The Licensee has stated that the Greensnake Bioremediation Area will be constructed and operated to comply with the *Assessment and management of contaminated sites and ASC NEPM* (ConsMin, 2018a);
- The Greensnake Western Waste Dump was constructed in three lifts, totaling a height of 38 m above surrounding natural ground surface. Groundwater at the base of the current mining pit is approximately 80 m below surface level. Therefore, there is over 100 m of separation between the Greensnake Bioremediation Area and groundwater;
- The Licensee has conducted soil assessments of the Greensnake Waste Dump material and permeability was 6.1×10^{-11} metres per second (ConsMin, 2018a);
- The Existing Licence has a condition (condition 1.3.1) relating to containment infrastructure for the bioremediation facility with specifications that the base and bunding be clay lined and that stormwater runoff is diverted so as not to flow onto the treatment facility; and
- The discharge of hydrocarbons to the environment is an unauthorised discharge under the *Environmental Protection (Unauthorised Discharges) Regulations 2004*.

2. Tyre disposal

Extension Cord pit was originally mined in the early 1990's and utilised as a waste tyre disposal location prior to current licensing practices. The pit footprint is approximately 0.5 ha.

The Licensee will be commencing the excavation of a new pit, called Vespa, and a cutback upon the Extension Cord pit (both pits are approved under the Department of Mines, Industry Regulation and Safety Mining Proposal Reg ID 39373) in the second half of 2018. Prior to commencing the cutback on Extension Cord, the Licensee will be required to excavate and remove all waste tyres.

Given the proximity of Extension Cord to Vespa (as shown in Figure 2) and the current mining schedule, this presents an opportunity to safely remove the tyres prior to commencing the cutback by disposing of them within the neighbouring Vespa Waste Dump as it is being constructed.

The Vespa Waste Dump will cover an area of approximately 10.4 ha. The Licensee has estimated that approximately 150 tonnes of tyres will need to be excavated from the Extension Cord pit and disposed of within the Vespa Waste Dump (ConsMin, 2018a).

Decision

The risk assessment for the disposal of 150 tonnes per annum of tyres into the Vespa Waste Dump has been outlined in the risk assessment table below (Table 4).

The Delegated Officer has determined that the key emissions associated with the disposal of tyres to the Vespa Waste Dump to be dust, noise and smoke from a potential fire (upset conditions).

The Delegated Officer considers the risk associated with these emissions to be *low*. The Licensee will need to ensure that the disposal of tyres (inert waste type 2) within the Premises is undertaken in accordance with Existing Licence conditions and Part 6 of the *Environmental*

Protection Regulations 1987.

The Licence has been amended via this Amendment Notice to allow tyres to be disposed of to the Vespa Waste Dump in accordance with condition 1.3.8.

3. Increase in Category 89 approved throughput

The Licensee has requested (ConsMin, 2018b and ConsMin, 2018c) that the design capacity of Category 89 be increased from 1,000 tpa to 1,650 tpa to accommodate the disposal of tyres within Vespa Waste Dump (150 tpa) and an increase in waste being generated due to a new mining fleet being brought online (350 tpa).

Waste expected to be generated include tyres, transport waste such as wooden pallets and packaging and putrescible waste from crib rooms and kitchen. All waste types will continue to be disposed of onsite (within Greensnake Landfill) as per current site practices.

Table 2 outlines the proposed changes to the Licence for the design capacity of Category 89.

Table 2: Proposed design capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
89	1,000 tonnes per annual period	1,650 tonnes per annual period	Increase in capacity for Category 89 to allow for: <ul style="list-style-type: none">- the disposal of the tyres from the Extension Cord pit to the Vespa Waste Dump; and- the increase in waste generated from bringing new mining fleet online.

Decision

The risk assessment for the disposal of 150 tpa of tyres into the Vespa Waste Dump (and subsequent increase in approved throughput for Category 89) has been outlined in the risk assessment table below (Table 4).

There is no increase in emissions or discharges expected from the small increase in waste (350 tpa) being landfilled onsite as a result of the increase in production associated with bringing a new mining fleet online.

No additional works are proposed and current landfill management practices will be maintained. The Existing Licence has landfill conditions requiring the Licensee to cover landfilled waste weekly to minimise; windblown waste, leachate and odour generation. The Delegated Officer considers these provisions sufficient. No additional requirements will be imposed on the Existing Licence.

Condition 1.3.8 has been updated to include the increase in approved throughput for Category 89 from 1,000 tpa to 1,650 tpa.



Figure 2: Location of the Extension Cord Pit and Vespa Waste Dump

Amendment history

Table 3 provides the amendment history for L6131/1990/13.

Table 3: Licence amendments

Instrument	Issued	Amendment
L6131/1990/13	30/04/2015	Licence amended for premises operation, monitoring requirements and improvement program conditions.
L6131/1990/13	26/11/2015	Licence amended to include a new sampling point at the sewage facility, new dewatering discharge points, modifications to the improvement conditions and removal of targets.
L6131/1990/13	25/02/2016	Licence amended to add tenements, include the Greensnake landfill and remove improvement conditions for the bioremediation facility.
L6131/1990/13	30/06/2016	Licence amended as mine in Care & Maintenance. Reduction of tailings inspections from daily to weekly and converting back to the use of Telfer's weather stations.
L6131/1990/13	22/12/2016	Amendment Notice 1 Licence amended to update the notification period required from 90 days to 21 days for operations recommencing after care and maintenance.
L6131/1990/13	31/03/2017	Amendment Notice 2 Licence amended to include the Homestead TSF and groundwater monitoring bores.
L6131/1990/13	01/11/2017	Amendment Notice 3 Licence amended to change the WWTP treatment method and allow dewater from the Hunter Pit to be discharged to Muddauthera Creek via the Cracker Sedimentation Pond.
L6131/1990/13	2/05/2018	Amendment Notice 4 Licence amended to assess the Greensnake Bioremediation Area, allow tyres to be disposed of at the Vespa Waste Dump and increase the design capacity of Category 89.

Location and receptors

The Premises is located approximately 400 kilometres (km) south-east of Port Hedland and 100 km east of Nullagine in the Pilbara region of Western Australia. There are no relevant sensitive land uses in the vicinity of the Premises with the Nifty Copper Mine approximately 50 km east of the Premises. The workforce is accommodated on the Premises, but as this accommodation is operated by the Licensee, it is not considered a sensitive land use or receptor.

Risk assessment

Table 4 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. This table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 4: Risk assessment for proposed amendments during operation

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning	
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts					
Tyre disposal within the Vespa Waste Dump	Landfilling of tyres within the Vespa Waste Dump	Dust from machinery associated with the burial of tyres within the Vespa Waste Dump	The closest sensitive receptor is the Accommodation Village at the Nifty Copper Operation located about 50 km east of the Premises	Air / wind dispersion	Health and amenity impacts	Slight	Rare	Low	The distance to the nearest sensitive receptor is sufficient to ensure that there are minimal impacts to public health and amenity on a local scale
		Noise from machinery associated with the burial of tyres within the Vespa Waste Dump			Amenity impacts	Slight	Rare		
		Smoke from potential fire (upset conditions)	Vegetation surrounding the Vespa Waste Dump		Disturbance of ecosystem	Minor	Rare	Low	<p>The vegetation surrounding the waste dump should be minimal and highly disturbed. No specified ecosystems identified as per <i>Guidance Statement: Environmental Siting</i> are located within the Premises</p> <p>The distance to groundwater at the Vespa Waste Dump is 80 m below ground level</p> <p>Tyres will be placed within the centre of the waste dump and fully encapsulated. Based on the above, the Delegated Officer has determined that a tyre fire would result in low level on-site impacts, which will only occur in exceptional circumstances</p>

Other amendments

During this amendment the following administrative changes have also been made to the Licence:

- Increase in capacity for Category 89 from 1,000 tonnes per annual period to 1,650 tonnes per annual period.
- Updates to definitions for 'averaging period' and 'CEO for the purposes of notification'.
- Condition 1.3.6 has been updated to reference the correct table number as there is not a Table 3.3.3 within the Licence. Table 3.6.3 relates to ambient groundwater quality monitoring at the Tailings Storage Facilities (TSFs), while condition 1.3.6 sets a groundwater limit of 4 mbgl to prevent impacts to vegetation.
- Condition 1.3.8 has been updated to remove reference to the Building Waste Landfill and Conveyor Belt Landfill. The Licensee has stated (ConsMin, 2018a) that "*No waste has ever been disposed, or is currently planned to be within the Homestead Waste Dump. Bulk earthwork for rehabilitation have commenced and is forecasted to be ongoing*". Conveyor belts (inert waste type 2) are disposed of within the Greensnake Tyre Disposal Facility.
- The Premises map also depicting the key infrastructure has been updated via this Amendment Notice.

Licensee's comments

The Licensee was provided with the draft Amendment Notice on 27 April 2018 for review and comment. The Licensee responded on 2 May 2018 waiving the remaining comment period.

Amendment

- Page 1 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

Schedule 1 of the Environmental Protection Regulations 1987

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
5	Processing or beneficiation of metallic or non-metallic ore	50,000 tonnes or more per year	5,000,000 tonnes per annual period
6	Mine dewatering	50,000 tonnes or more per year	55,188,000 tonnes per annual period
54	Sewage facility	100 cubic metres or more per day	150 cubic metres per day
73	Bulk storage of chemicals	1,000 cubic metres in aggregate	2,144 cubic metres in aggregate
89	Putrescible landfill site	More than 20 but less than 5,000 tonnes per year	4,000 <u>1,650</u> tonnes per annual period

- Definitions of the Licence are amended by the deletion of the text shown in strikethrough below:

'averaging period' means the time over which a limit ~~or target~~ is measured or a monitoring result is obtained;

'CEO' for the purposes of notification means:

Director General
 Department Administering the EP Act
 Locked Bag 33 Cloisters Square
 PERTH WA 6850
info-der@dwer.wa.gov.au;

- Condition 1.3.6 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

1.3.6 The Licensee shall take all reasonable and practicable measures to ensure groundwater levels within the zone of influence at monitoring bores detailed in ~~Table 3.36.3~~ and shown in Schedule 1, does not exceed the level specified in Table 1.3.3.

Parameter	Limit (mbgl)	Averaging Period
Groundwater	4	Spot Sample

- Condition 1.3.8 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

- 1.3.8 The Licensee shall ensure that where wastes produced on the Premises are not taken offsite for lawful use or disposal, they are managed in accordance with the requirements of Table 1.3.4.

Table 1.3.4: Management of Waste			
Facility	Waste type	Processes	Requirements^{1,2}
Kia landfill	Clean Fill	Storage and disposal of waste by landfilling	<p><u>All waste types</u> No more than 1,000 1,650 tonnes per year of all waste types cumulatively shall be disposed of by landfilling.</p> <p>Disposal of waste by landfilling shall only take place within the Kia landfill, Greensnake landfill, <u>Greensnake Tyre Disposal Facility and Vespa Waste Dump</u> and Homestead Stage 2 Waste Dump shown on the Premises map in Schedule 1.</p> <p>The separation distance between the base of the landfill and the highest groundwater level shall be not less than 3 metres.</p> <p><u>Tyres (Inert Waste Type 2)²</u> Tyres shall only be landfilled within the <u>Greensnake Tyre Disposal Facility and Vespa Waste Dump</u> shown on the Premises map in Schedule 1.</p> <p>Tyres shall consist of batches of no more than 1,000 tyres or 40 m³ of tyre pieces.</p> <p>Batches must be separated from each other by at least 100 mm of soil.</p> <p><u>Building Waste and Conveyor Belt (Inert Waste Type 2)² Landfill²</u> No more than 100 tonnes of demolition waste and 600 tonnes of conveyor belts shall be disposed of by landfilling.</p> <p>Disposal of demolition waste and conveyor belts can only take place at Homestead Stage 2 Waste Dump <u>within the Greensnake Tyre Disposal Facility</u> shown on the Premises map in Schedule 1.</p> <p>Conveyor belts shall be batched in volumes of 40 m³ or less with batches separated by 100 mm or more of soil.</p> <p>The disposal site of <u>tyres</u> demolition-</p>
Greensnake landfill	Putrescible Waste		
	Inert Waste Type 1		
<u>Greensnake Tyre Disposal Facility and Vespa Waste Dump</u>	Inert Waste Type 2		
Building Waste³ Landfill	Inert Waste Type 4		
Conveyor Belt Landfill³	Inert Waste Type 2		

Table 1.3.4: Management of Waste			
Facility	Waste type	Processes	Requirements^{1,2}
			<i>waste and conveyor belts must be surveyed and recorded for location and relative level.</i>
<i>Wastewater treatment plant</i>	<i>Sewage</i>	<i>Biological, physical and chemical treatment.</i>	<i>No more than 150m³ per day.</i>

Note 1: Requirements for landfilling tyres are set out in Part 6 of the Environmental Protection Regulations 1987.

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

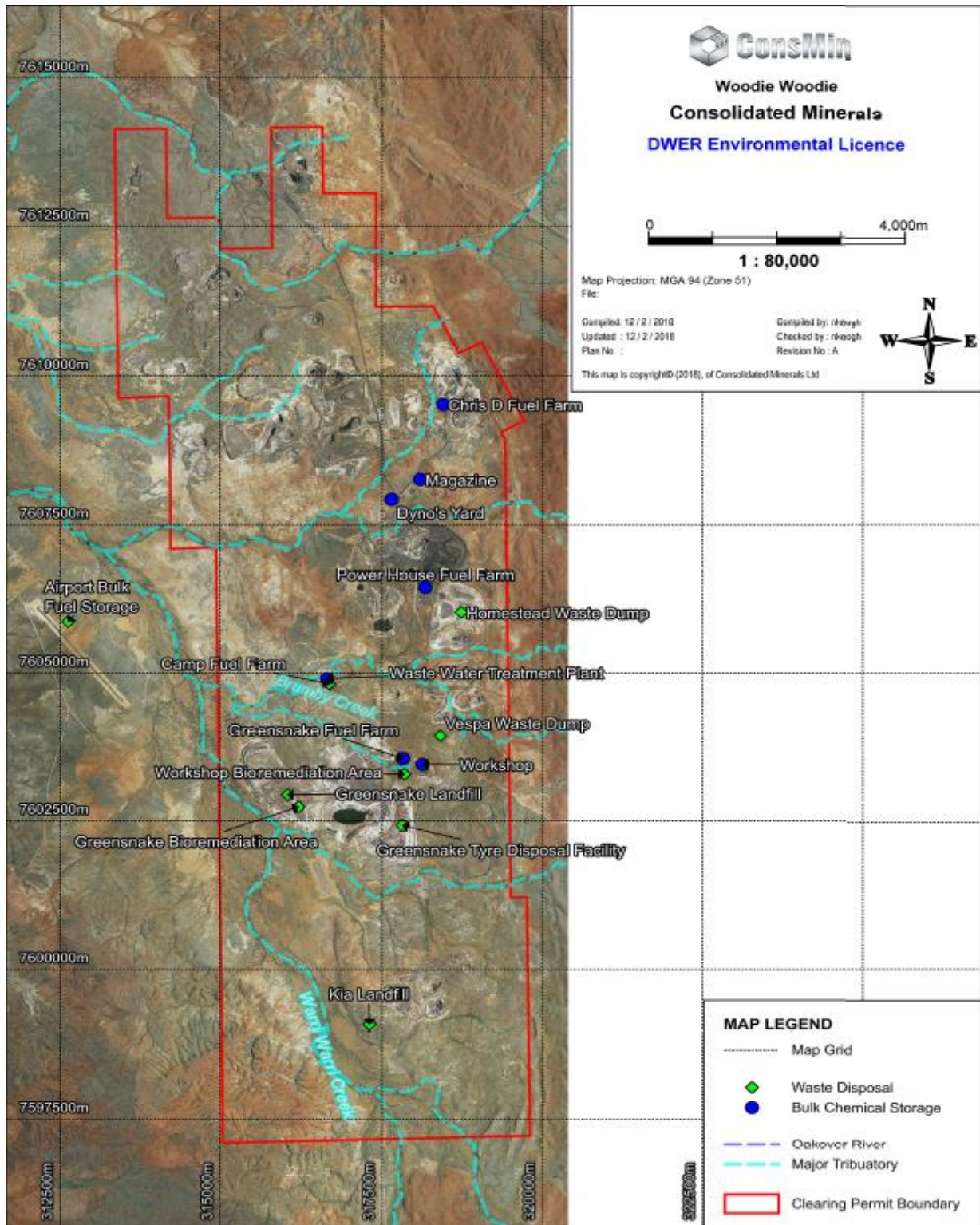
Note 3: ~~Building waste and conveyor belt landfills are single use facilities located within Homestead Stage 2 Waste Dump.~~

5. The Premises map in Schedule 1 is deleted and replaced with the map in Attachment 1 of this Amendment Notice.

Attachment 1

Premises map

The Premises and key infrastructure is shown in the map below. The red line depicts the Premises boundary.



Appendix 1: Key documents

	Document title	In text ref	Availability
1	Amendment Notice 1 – L6131/1990/13	Amendment Notice 1	accessed at www.dwer.wa.gov.au
2	Amendment Notice 2 – L6131/1990/13	Amendment Notice 2	
3	Amendment Notice 3 – L6131/1990/13	Amendment Notice 3	
4	Application Enquiry Form – waste tyre disposal, received from Nathan Keogh (Consolidated Minerals), dated 18 December 2017	Consolidated Minerals, 2017	DWER records (A1581342)
5	Assessment and management of contaminated sites, Contaminated sites guidelines, Department of Environment Regulation, December 2014	Assessment and management of contaminated sites	accessed at www.dwer.wa.gov.au
6	<i>Guidance Statement: Decision Making</i> , Department of Environment Regulation, February 2017	<i>Guidance Statement: Decision Making</i>	accessed at www.dwer.wa.gov.au
7	<i>Guidance Statement: Environmental Siting</i> , Department of Environment Regulation, November 2016	<i>Guidance Statement: Environmental Siting</i>	
8	<i>Guidance Statement: Regulatory Principles</i> , Department of Environment Regulation, July 2015	<i>Guidance Statement: Regulatory Principles</i>	
9	<i>Guidance Statement: Risk Assessments</i> , Department of Environment Regulation, February 2017	<i>Guidance Statement: Risk Assessments</i>	
10	<i>Guidance Statement: Setting Conditions</i> , Department of Environment Regulation, October 2015	<i>Guidance Statement: Setting Conditions</i>	
11	Licence L6131/1990/13 – Woodie Woodie Manganese Project, amended 30 June 2016	Existing Licence	

	Document title	In text ref	Availability
12	L6131/1990/13 Licence Amendment Form, received from Nathan Keogh (Consolidated Minerals), dated 19 December 2017	Application 2017	DWER records (A1582931)
13	National Environment Protection (Assessment of Site Contamination) Measure 1999, National Environment Protection Council, April 2013	ASC NEPM	accessed at www.nepc.gov.au .
14	RE: L6131/1990/13 Licence Amendment Form – questions, received from Nathan Keogh (Consolidated Minerals), dated 16 February 2018	ConsMin, 2018a	DWER records (A1618059)
15	RE: L6131/1990/13 Licence Amendment Form – questions, received from Nathan Keogh (Consolidated Minerals), dated 23 February 2018	ConsMin, 2018b	DWER records (A1622720)
16	RE: L6131/1990/13 Licence Amendment Form – questions, received from Nathan Keogh (Consolidated Minerals), dated 1 March 2018	Application 2018	DWER records (A1628361)
17	RE: L6131/1990/13 Increase in Category 89 throughput from Nathan Keogh (Consolidated Minerals), dated 3 April 2018	ConsMin, 2018c	DWER records (A1645912)