



Licence Number L6131/1990/13

Licence Holder Pilbara Manganese Pty Ltd

ACN 074 106 577

File Number: DER2013/001337-1

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 30 January 2019

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.

ALANA KIDD

MANAGER, RESOURCE INDUSTRIES

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
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
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
CS Act	<i>Contaminated Sites Act 2003 (WA)</i>
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
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 Amendment

Licence Holder Licensee	Pilbara Manganese Pty Ltd
m ³	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
mtpa	million tonnes per annum
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
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 Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (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 Categories 6 and 89. No changes to the aspects of the original Licence or Amendment Notices 1, 2, 3 or 4 relating to Categories 5, 54 and 73 have been requested by the Licence Holder.

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)*

Amendment description

On 25 October 2018 the Licence Holder submitted an application to DWER for an amendment to Licence 6131/1990/13 for the following:

1. Dispose waste tyres within the Paystar Waste Dump;
2. Dispose waste tyres within the Bells West Pit;
3. Extend the Greensnake Landfill footprint;
4. Dispose dewatering discharge from Extension Cord pit into Paystar pit; and
5. Dispose dewatering discharge from Topvar Pit into Cracker (W1) sedimentation pond, which discharges to Muddauthera Creek.

Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 2.

Table 2: Relevant approvals

Legislation	Number	Approval
Department of Mines, Industry Regulation and Safety (DMIRS)	Reg ID 39373	Disposal of tyres within Paystar Waste Dump, including mining of Extension Cord has been approved by Mining Proposal " <i>Chutney Project, Chutney, Extension Cord, Paystar and Vespa Pits Woodie Woodie Operations. East Pilbara, Western Australia</i> ".
DMIRS	Reg ID 74160	Topvar Stage 2 pit is being mined in accordance with DMIRS mining proposal Reg ID 74160

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 for the following: <ol style="list-style-type: none"> 1. Construction and operation of a new bioremediation area on top of the Greensnake Western Waste Dump; 2. Disposal of waste tyres within the Vespa Waste Dump; and 3. An increase to the approved throughput for Category 89 from 1,000 tonnes per annum (tpa) to 1,650 tpa.
L6131/1990/13	30/01/2019	Amendment Notice 5 Licence amended for the following: <ol style="list-style-type: none"> 1. Dispose waste tyres within the Paystar Waste Dump; 2. Dispose waste tyres within the Bells West Pit; 3. Extend the Greensnake Landfill footprint; 4. Dispose dewatering discharge from Extension Cord pit into Paystar pit; and 5. Dispose dewatering discharge from Topvar Pit into Cracker (W1) sedimentation pond, which discharges to Muddauthera Creek.

Location and receptors

Table 4 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 4: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Accommodation Village at the Nifty Copper Operation	40 km east of the Premises
Telfer	100 km east of the Premises
Nullagine	100 km west of the Premises
Irrungadji and Five Mile Aboriginal communities	120 km west south west of the Premises
Gooda Binya and Pipunya Aboriginal Communities	160 km west north west of the Premises
Warrawagine Homestead	180 km north of the Premises
Port Hedland	400 km north west of the Premises

Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Oakover River	8 km west of the Premises
Minor tributaries, including Stony, Brumby and Muddautherra Creeks (ephemeral creek lines)	Flow through the site
TEC	None recorded within 50 km of the Premises
Priority 3 ecological community – ‘Rudall River riparian vegetation associated with creek lines and watercourses	50 km east of the Premises
Priority 3 ecological community – ‘Stony saline clay plains of the Mosquito Land System	50 km east of the Premises
<i>Lepidium catapycnon</i> (DRF, Vulnerable)	105 km south-south-west of the Premises
Nullagine Water Reserve (P3)	120 km west of the Premises
Pilbara Groundwater Management Area	Covers entire Pilbara region
Pilbara Surface Water Area	Covers entire Pilbara region

Three Priority flora species, have been recorded within the Woodie tenements: *Aristida jerichoensis* var. *subspinulifera* (P1), *Lepidium amelum* (P1) and *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (P3). A fourth priority species, *Euphorbia clementii* (P2) was not found during the field surveys, but is recorded as having been found within the Woodie Woodie vicinity.

The Pilbara Olive Python, Northern Quoll and Orange Leaf Nose Bat have the potential to be found within the tenements. Night calls of the Orange Leaf Nose Bat have been recorded and

one deceased Pilbara Olive Python and Northern Quoll have historically been identified.

Risk assessment

Tables 6 and 7 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 6: Risk assessment for proposed amendments during construction

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning	
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts					
Cat 6 <i>Mine dewatering</i>	Construction of dewatering pipelines from: <ul style="list-style-type: none"> Extension Cord pit into Paystar pit; and Topvar Pit into Cracker (W1) sedimentation pond that discharges to Muddauthera Creek. 	Dust associated with construction activities of the dewatering pipelines	The closest sensitive receptor is the Accommodation Village at the Nifty Copper Operation located about 40 km east of the Premises Vegetation	Air / wind dispersion Particulate matter (fugitive dust)	Health and amenity impacts	Slight	Rare	Low	The Delegated Officer considers the distance to the nearest sensitive receptor to be sufficient to ensure that there are minimal impacts to public health and amenity on a local scale
		Noise associated with construction activities of the dewatering pipelines		Air / wind dispersion Noise generated by the operation of equipment during construction	Amenity impacts	Slight	Rare		
Category 89 <i>Putrescible landfill sites</i>	The Paystar Waste Dump and Bells West pit are previously mined pits that are now being used as waste rock dumps and tyre disposal can be integrated with waste rock.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	As these pits are previously mined, construction has already occurred.
	Greensnake landfill extension	Dust associated with construction activities	The closest sensitive receptor is the Accommodation Village at the Nifty Copper	Air / wind dispersion Particulate matter (fugitive dust)	Health and amenity impacts	Slight	Rare	Low	The Delegated Officer considers the distance to the nearest sensitive receptor to be sufficient to ensure that there are minimal impacts to public health and amenity on

		Noise associated with construction activities	Operation located about 40 km east of the Premises Vegetation	Air / wind dispersion Noise generated by the operation of equipment during construction	Amenity impacts	Slight	Rare	Low	a local scale
--	--	---	--	--	-----------------	--------	------	-----	---------------

Table 7: 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					
Cat 6 Mine dewatering	Discharge from the Extension Cord pit to Paystar pit for evaporation/infiltration	Mine dewatering water discharge, pipelines – leaks/ rupture	Groundwater Impacts to existing groundwater quality if different aquifers/ water quality	Seepage via infiltration at the base of the Paystar pit	Groundwater mounding and changes to water quality	Minor	Unlikely	Medium	Amended Licence conditions for mine dewatering water from the Extension Cord pit to be disposed of to the Paystar pit for evaporation/infiltration. Refer to the risk assessment below – Discharge of mine dewatering water from Extension Cord pit to Paystar pit.
	Discharge from the Topvar pits to the Big Mack sedimentation pond, which will subsequently flow downstream into the Cracker sedimentation pond prior to being discharged to Muddauthera Creek	Mine dewatering water	Riparian vegetation and water quality of Muddauthera Creek, which is an ephemeral watercourse. Cattle are known to congregate around areas of dewater discharge	Discharges to surface water	Water quality and vegetation decline in the receiving environment Erosion	Minor	Unlikely	Medium	Refer to the risk assessment below – Discharge of mine dewater from Topvar pits to Muddauthera Creek.
	Dewatering pipelines	Mine dewatering	Vegetation adjacent to	Direct discharges	Waterlogged soils, impacts	Slight	Unlikely	Low	The Delegated Officer considers that the dewatering

		water discharged through pipeline leaks or ruptures	pipelines	to land	to vegetation health depending on the quality of water and volume discharged				<p>pipelines are to be:</p> <ul style="list-style-type: none"> • Constructed of high density polyethylene; • Contained within windrows; • flow meters installed to record the volume of all water discharged to the Cracker Sedimentation Pond; and • The quality of groundwater proposed to be discharged is of reasonable quality with TDS being <1,000 mg/L and a mildly alkaline pH. <p>It is expected that there would be slight if any, consequence of a release to land.</p> <p>Given that the pipelines will be located adjacent to the access road and through already disturbed ground, the likelihood of an impact to vegetation as a result of a pipeline rupture/leak will probably not occur in most circumstances. Therefore, the likelihood of the consequence occurring is unlikely.</p> <p>The overall rating for the rupture/leaks of pipelines from the Extension Cord and Topvar pits dewatering is low.</p>
Cat 89 <i>Putrescible landfill sites</i>	Landfilling of tyres within the Paystar Waste Dump and Bells West pit	Dust from machinery associated with the burial	The closest sensitive receptor is the Accommodation	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

		of tyres within the Paystar Waste Dump and Bells West pit. These are previously mined pits that are now being used as waste rock dumps and tyre disposal can be integrated with waste rock.	Village at the Nifty Copper Operation located about 50 km east of the Premises						health and amenity on a local scale
		Noise from machinery associated with the burial of tyres within the Paystar Waste Dump			Amenity impacts	Slight	Rare	Low	
		Smoke from potential fire Impacts/ infiltration to groundwater Contaminated stormwater	Vegetation surrounding the Paystar Waste Dump and Bells West Pit	Air / wind dispersion Infiltration Direct discharges	Disturbance of ecosystems	Slight	Unlikely	Low	The vegetation surrounding the waste dumps is minimal and highly disturbed. No specified ecosystems identified as per Guidance Statement: Environmental Siting are located within the Premises. The distance to groundwater at the Paystar Waste Dump is 85 m below ground level and at Bells West pit is 45 m below ground level. 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

									<p>tyre fire would result in low level on-site impacts, which will only occur in exceptional circumstances.</p> <p>Fencing is not proposed for these waste dumps as there is no putrescible wastes to be disposed of, only inert wastes so ingress of feral animals and windblown waste is not expected.</p> <p>It is expected that there would be slight if any, consequence from these emissions. Given that the Licence Holder has controls in place the likelihood of an impact to vegetation as a result of these emissions will probably not occur in most circumstances. Therefore, the likelihood of the consequence occurring is unlikely. The overall rating for these emissions is low.</p>
Landfilling of waste within the Greensnake landfill extension	Dust from machinery associated with the extension of the landfill to the east.	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 landfill extension			Amenity impacts	Slight	Rare	Low		
	Smoke from potential fire Impacts/ infiltration to	Vegetation surrounding the landfill	Air / wind dispersion Infiltration	Disturbance of ecosystems	Slight	Unlikely	Low		The vegetation surrounding the landfill is minimal and highly disturbed. No specified ecosystems identified as per Guidance Statement:

		<p>groundwater</p> <p>Contaminated stormwater</p>		Direct discharges					<p>Environmental Siting are located within the Premises.</p> <p>The distance to groundwater at the Greensnake Landfill is 112 m below ground level.</p> <p>Weekly compaction and covering is to occur. Based on the above, the Delegated Officer has determined that a fire would result in low level on-site impacts, which will only occur in exceptional circumstances. Weekly inspections of the tipping area are to occur.</p> <p>The Greensnake Landfill is to be fenced to prevent fauna ingress and windblown waste. Fauna egress ramps are to be installed.</p> <p>Windrows are to be implemented to prevent stormwater from becoming contaminated.</p> <p>It is expected that there would be slight if any, consequence from these emissions. Given that the Licence Holder has controls in place the likelihood of an impact to vegetation as a result of these emissions will probably not occur in most circumstances. Therefore, the likelihood of the consequence occurring is unlikely. The overall rating for these emissions is low.</p>
--	--	---	--	-------------------	--	--	--	--	---

Risk Assessment – Discharge of mine dewatering water from Extension Cord pit to Paystar pit.

Dewatering from Extension Cord pit is required to allow mining of ore below the water table. There are two pods to the Extension Cord pit – the eastern pod is above the water table, while the western pod ore is below the water table and dewatering will be required for the remaining 15m of mining. This dewatering will last for 28 days with a total of 241,920 kL of mine dewatering water to be discharged.

The Licence Holder is proposing to transfer the excess mine dewatering water directly to Paystar pit for evaporation/infiltration. It should be noted that the Licence allows the Paystar pit to transfer mine dewatering water to the Chutney Sedimentation Pond, however, this was not constructed as the Paystar pit has not been mined below the water table and so no dewatering has been required. The Paystar pit was mined only above the water table and mining ceased once water became visible at the base at the pit, indicating the proximity to groundwater.

The Paystar pit is 85m deep with a capacity of approximately 4 million m³ so the mine dewatering discharge volume will occupy a small percentage of this.

Water quality at the Premises is of very high quality, described as fresh and neutral to slightly alkaline. A summary of water quality based upon data collected between 1993 and 2014 is shown in Table 8.

Table 8: Summary of water quality data collected between 1993 and 2014

Parameter	Unit	Site-Wide Pits and Dewatering Discharge Sites (1993 to 2014)	
		Minimum	Maximum
pH	pH units	7.2	8.8
Total Dissolved Solids	mg/L	350	850
Nitrate + Nitrite	mg/L	0.21	8
Kjeldahl Nitrogen	mg/L	<0.01	1.3
Total Nitrogen	mg/L	0.53	4.9
Filterable Reactive Phosphorus	mg/L	<0.002	1
Total Phosphorus	mg/L	<0.001	0.12
Cadmium	mg/L	<0.0001	<0.002
Lead	mg/L	<0.0001	<0.002
Manganese	mg/L	<0.001	0.31
Zinc	mg/L	<0.005	0.03
Calcium	mg/L	18.3	54
Sodium	mg/L	39	220
Magnesium	mg/L	24.5	55

Extension Cord and Paystar Pits are located within the Pinjian Chert Breccia aquifer. Water quality is not expected to change (pits are approximately 100 m away from each other). Water quality specifically for Paystar Pit is shown in Table 9.

Table 9: Paystar Pit water quality data

Analyte	Units	18/01/2015 – Paystar Pit
pH	pH Units	9.1
Total Dissolved Solids	mg/l	220
Nitrate and Nitrite	mg/l	0.27
Total Kjeldahl Nitrogen	mg/l	0.2
Total Nitrogen	mg/l	0.5
Filtratable Reactive Phosphorous	mg/l	0.005
Total Phosphorous	mg/l	0.01
Sodium	mg/l	56
Magnesium	mg/l	4.5
Zinc	mg/l	<0.001
Lead	mg/l	<0.001
Cadmium	mg/l	<0.0001
Manganese	mg/l	<0.0005

Given the following:

- The closest sensitive receptor is the Accommodation Village at the Nifty Copper Operation located about 40 km east of the Premises;
- There are no specified ecosystems identified as per *Guidance Statement: Environment Siting* within the Premises;
- There are no Threatened Ecological Communities or Declared Rare Flora species within the Premises;
- Dewater will be discharged into the Paystar pit for only a very limited time; and
- Historical monitoring results (1993-2014) generally indicate that the water quality for dewater discharged is fresh to slightly brackish, neutral to slightly alkaline with an elevated nitrate/nitrite concentration.

It has been determined that the discharge of mine dewater from the Extension Cord pit to Paystar pit will have low level on-site impacts and minimal off-site impacts on a low scale. Therefore, the consequence is considered to be **minor**.

The likelihood of an environmental impact from the discharge of mine dewater from the Extension Cord pit to the Paystar pit will probably not occur in most circumstance. Therefore, the Delegated Officer considers the likelihood of the consequence occurring to be **unlikely**.

The overall rating for the discharge of mine dewater for the Extension Cord pit to Paystar pit is **medium**.

Risk Assessment – Discharge of mine dewater from Topvar pits to Muddauthera Creek.

Dewatering from Topvar pits is required as the Stage 2 pit is proposed to be mined. Topvar pits are expected to be dewatered from July 2019 – October 2019 at an average rate of 425 L/s, ranging from 200 – 600 L/s. Dewatering timeframes will be determined by mine scheduling. Dewatering rates are similar to Big Mack, Chris D and Austin/Cracker which have all been historically discharged into the Austin/Cracker sedimentation pond. The Licence Holder is proposing to transfer the mine dewatering water to the Cracker Sedimentation Pond, prior to disposal to the Muddauthera Creek via a pipeline. The water hierarchy is applied by the Licence Holder. Excess water is first used for potable purposes, dust suppression, supply for drill rigs and processing water.

Given the following:

- The closest sensitive receptor is the Accommodation Village at the Nifty Copper Operation located about 40 km east of the Premises;

- There are no specified ecosystems identified as per *Guidance Statement: Environment Siting* within the Premises;
- There are no Threatened Ecological Communities or Declared Rare Flora species within the Premises;
- Dewater will be discharged through the Cracker Sedimentation Pond prior to discharge to Muddauthera Creek. The banks of Muddauthera Creek support a vegetation of widely scattered *Eucalyptus camaldulensis* (River Red Gum) to 20 m in height, the occasional *Melaleuca argentea* (Silver cajuput), dense perennial grassland of *Cenchrus ciliaris* (Buffel grass) and *Cenchrus setiger*, (Birdwood grass), and dense stands of *Sesbania* sp. (River hemp). The groundcover shade and health scores have maintained steady throughout the reporting period when compared to historic trends;
- The Muddauthera Creek is located in the northern portion of the Woodie Woodie corridor and can receive dewatering discharge from licensed dewatering points W1 Cracker (Austin/Cracker, Big Mack, Lucy Mack, Demon, Hunter pits), W3 Radio Hill (Radio Hill pits) and W4 Sardine (Dhufish pit). Dewatering discharge has not occurred since dewatering of the Big Mack Pit ceased in March 2013. The Muddauthera Creek is, therefore, typically dry and flows only after extremely heavy rainfall events;
- Historical monitoring results (1993-2014) of the Muddauthera Creek monitoring point generally indicate that the water quality for dewater discharged is fresh to slightly brackish, neutral to slightly alkaline with an elevated nitrate/nitrite concentration;
- Existing Licence condition 2.2.2 limits the Total Suspended Solids (TSS) that may be discharged to surface water. Total Dissolved Solids data is compared to an internal target of 1,500 mg/L; and
- Existing Licence condition 3.6.1, Table 3.6.4 requires monitoring of vegetation health.

It has been determined that the discharge of mine dewater from the Topvar pits to Muddauthera Creek via the Cracker Sedimentation Pond will have low level on-site impacts and minimal off-site impacts on a low scale. Therefore, the consequence is considered to be **minor**.

The likelihood of an environmental impact from the discharge of mine dewater from the Topvar pits to Muddauthera Creek will probably not occur in most circumstance. Therefore, the Delegated Officer considers the likelihood of the consequence occurring to be **unlikely**.

The overall rating for the discharge of mine dewater for the Topvar pits through the existing Cracker Sedimentation Pond to Muddauthera Creek is **medium**.

Decision

Construction

The key emissions associated with the construction of the dewatering pipelines are fugitive dust and noise emissions. The Delegated Officer considers there is no credible risk associated with these emissions due to the distance away from the nearest sensitive receptor.

The Licence Holder's controls for the construction of the dewatering pipelines have been conditioned on the Licence through condition 1.3.13 and were derived from the Licence Holder's commitments within the supporting documentation.

Conditions 1.3.13 and 1.3.14 were included during the previous Amendment Notice 4 and have been updated during this amendment to include Extension Cord and Topvar pits dewatering pipelines and relate to the operation of the dewatering pipelines following submission of the compliance document now required under condition 4.3.1.

Operation

The key emissions associated with the discharge of mine dewatering water from Extension Cord pit to Paystar pit for evaporation/infiltration is seepage to groundwater resulting in groundwater mounding or deterioration of groundwater quality. The Delegated Officer considers the risk associated with this emission to be *medium*. It is however noted that this dewatering will last for 28 days with a total of 241,920 kL of mine dewatering water to be discharged. Existing Licence condition 2.2.1, Table 2.2.1 has been updated to include emission point W13 Paystar pit.

The key emissions associated with the discharge of mine dewatering water from Topvar pits to the Muddauthera Creek are discharges to surface water. The Delegated Officer considers the risk associated with this emission to be *medium*. It is however noted that the Existing Licence has conditions relating to the monitoring of emissions to surface water and a TSS limit, which the Delegated Officer considers sufficient in terms of regulatory control. Existing Licence condition 2.2.1, Table 2.2.1 has been updated via this Amendment Notice to allow dewater from the Topvar pit to be discharged to the Cracker Sedimentation Pond.

Paystar Waste Dump and Bells West Pit have been included in Condition 1.3.8, Table 1.3.4. The Approved premises production or design capacity for Category 89 has been increased from 1,650 tonnes per annual period to 1,950 tonnes per annual period.

The Premises Map has been updated to include all these locations.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 15 January 2019. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. The Approved premises production or design capacity for Category 89 has been increased as indicated in the table below:

Prescribed premises category

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	4,650 1,950 tonnes per annual period

2. 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></p> <p>No more than 4,650 1,950 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, Greensnake Tyre Disposal Facility and Vespa 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></p>
Greensnake landfill	Putrescible Waste		
	Inert Waste Type 1		

Greensnake Tyre Disposal Facility and Vespa Waste Dump <u>Paystar Waste Dump</u> <u>Bells West Pit</u>	Inert Waste Type 2		<p>Tyres shall only be landfilled within the Greensnake Tyre Disposal Facility, and Vespa Waste Dump, <u>Paystar Waste Dump and Bells West Pit</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>Conveyor Belts (Inert Waste Type 2)²</u> No more than 600 tonnes of conveyor belts shall be disposed of by landfilling.</p> <p>Disposal of conveyor belts can only take place within the Greensnake Tyre Disposal Facility 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 tyres and conveyor belts must be surveyed and recorded for location and relative level.</p>
Wastewater treatment plant	Sewage	Biological, physical and chemical treatment.	No more than 150m ³ per day.

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*.

3. Condition 1.3.13 and Condition 1.3.14 of the Licence are amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

- 1.3.13 The Licensee shall construct the Hunter, ~~Extension Cord and Topvar~~ **Extension Cord and Topvar** dewatering pipelines, in accordance with the requirements specified in the infrastructure requirements detailed in Table 1.3.6. The Licensee must not depart from the requirements specified in Table 1.3.6 except:
- where such departures are minor in nature and do not materially change or affect the infrastructure; or
 - where such departure improves the functionality of the infrastructure and does not increase the risks to public health, public amenity or the environment;
- and all other conditions in this Licence are still satisfied.

Table 1.3.6: Infrastructure requirements

Infrastructure	Requirements (design and construction)
Hunter dewatering pipeline	<ul style="list-style-type: none"> Constructed of high density polyethylene Pipeline contained within windrows, constructed from inert material Flow meters installed to record volume of all water discharged into the Cracker Sedimentation Pond
<u>Extension Cord pipeline</u>	<ul style="list-style-type: none"> <u>Constructed of high density polyethylene</u> <u>Pipeline contained within windrows, constructed from inert material</u> <u>Flow meters installed to record volume of all water discharged into the Paystar pit</u>

<u>Topvar pipeline</u>	<ul style="list-style-type: none"> • <u>Constructed of high density polyethylene</u> • <u>Pipeline contained within windrows, constructed from inert material</u> • <u>Flow meters installed to record volume of all water discharged into the Cracker Sedimentation Pond</u>
------------------------	--

1.3.14 The Licensee shall operate the Hunter, Extension Cord and Topvar pits dewatering pipelines in accordance with the conditions of this Licence, following submission of the construction compliance document required under condition 4.3.1.

4. Condition 2.2.1 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:

2.2.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to surface water			
Emission point reference	Emission point reference on Map of emission points	Description	Source including abatement
W1	Cracker (CK1)	Discharge to Muddauthera Creek	Sedimentation Pond originating from dewatering at Austin, Big Mack, Lucy Mack, Demon, Hunter SE, Hunter and <u>Topvar pits</u> .
W2	Hunter (H2)		Sedimentation Pond originating from dewatering at Hunter pit.
W3	Radio Hill (RH1)		Sedimentation Pond originating from dewatering at Radio Hill pit.
W4	Sardine (SD1)		Sedimentation Pond originating from dewatering at Dhufish pit.
W5	Greensnake (GS1)	Discharge to Warri Warri Creek	Sedimentation Pond originating from dewatering at Greensnake pit.
W6	Lox (LX1)		Sedimentation Pond originating from dewatering at Lox pit.
W7	Airport (AP1)	Discharge to Brumby Creek	Sedimentation Pond originating from dewatering at Airport pit.
W8	Chris D (CD1)		Sedimentation Pond originating from dewatering at Chris D pit.
W9	Chutney (CT1)		Sedimentation Pond originating from dewatering at Chutney, Paystar and Chutney West pit.
W10	Homestead (HS1)		Sedimentation Pond originating from dewatering at Homestead pit.
W11	Rhodes (RD)		Sedimentation Pond originating from dewatering at Rhodes pit.
W12	Topvar (TD)		Dewatering from Big Mack pit and the Topvar Hub Dewatering Bores
<u>W13</u>	<u>Paystar</u>	<u>Evaporate and infiltrate into the unconfined aquifer</u>	<u>Dewatering from Extension Cord pit</u>

5. Condition 4.3.1 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:

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

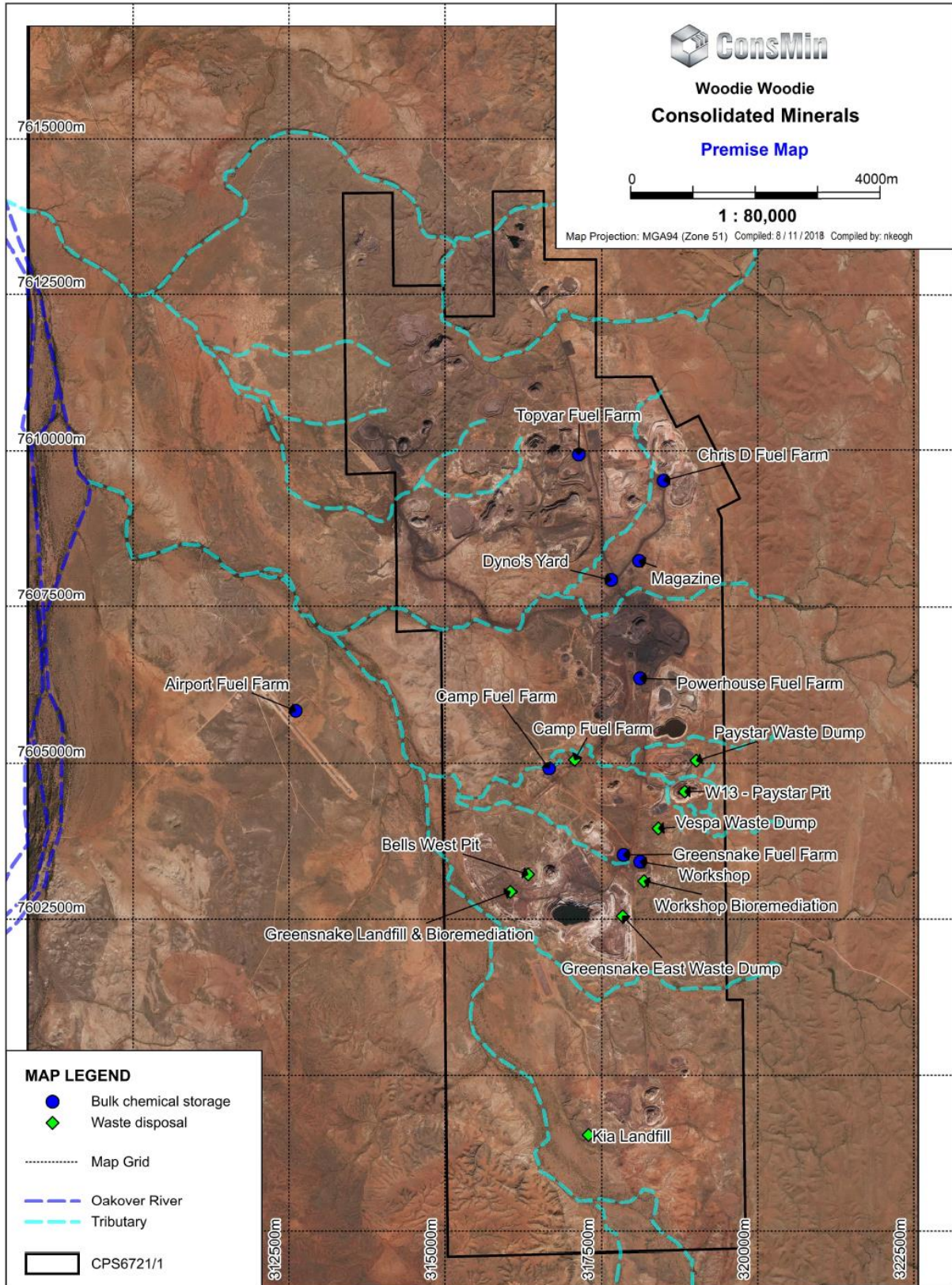
Table 4.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form²
-	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1
1.3.7	Standing Water Level exceeding 6 mbgl	Within 7 calendar days of becoming aware of Standing Water Levels exceeding 6 mbgl	None specified
1.3.14	The Licensee shall submit a construction compliance document to the CEO, following construction of the <u>Hunter, Extension Cord and Topvar</u> dewatering pipelines. The compliance document shall: (a) Clearly detail how the <u>Hunter, Extension Cord and Topvar</u> dewatering pipelines have been constructed to meet the infrastructure requirements of Condition 1.3.13 and identify any departures; (b) Be certified by a qualified professional engineer stating that the infrastructure specified in Table 1.3.6 has been constructed in accordance with the conditions of the Licence with no material defects; and (c) Be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.	Within 7 days after the completion of construction	None specified
3.1.4	Calibration report	As soon as practicable.	None specified
-	Recommencing start-up of operations (after a period of care and maintenance)	At least 21 days prior to recommencing production	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2

6. The Premises map in Schedule 1 is deleted and replaced with the following map:

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



Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L6131/1990/13 – Woodie Woodie Manganese Project	L6131/1990/13	accessed at www.dwer.wa.gov.au
2	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	N/A	accessed at www.dwer.wa.gov.au
3	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	N/A	
4	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	N/A	
5	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	N/A	

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 15 January 2019 for review and comment. The Licence Holder responded on 16 January 2019, providing some comments and waiving the remaining comment period. The following comments were received on the draft Amendment Notice.

Condition	Summary of Licence Holder comment	DWER response
Table 3	Licence amendment dated 2 May 2018, update Vesta Waste Dump to Vespa Waste Dump.	Updated.
Page 17	under Operation. <i>Existing Licence condition 2.2.1, Table 2.2.1 has been updated via this amendment notice to allow dewater from Extension Cord pit to be discharged to the Cracker Sediment Pond. Extension Cord pit should be Topvar Pit.</i>	Updated.