Government of Western Australia
Department of Environment Regulation

Amendment Notice 1

Licensee	BHP Billiton Iron Ore Pty Ltd
ACN	008 700 981
Licence Number	L4503/1975/14
File Number:	DER2013/000901
Premises	Mt Whaleback/Orebody 29/30/35 Tenements E52/2009-1, ML244SA, G52/19-G52/27, G52/276, G52/277, G52/279; and Special Leases K858923 and N088235 NEWMAN WA 6753
Date of amendment	21 April 2017

Amendment

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) has amended the above licence in accordance with section 59 of the *Environmental Protection Act 1986* 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 and follows.

Date signed: 20 April 2017

Alana Kidd

Manager Licensing – Resource Industries

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

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 Category 61 and 85B. No changes to the aspects of the original licence relating to Category 5, 6, 54, 64 and 73 activities have been requested by the Licensee.

The following DER 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 11 January 2017, BHP Billiton Iron Ore Pty Ltd (Licensee) submitted an application to DER under section 59B of the EP Act for an amendment to the Mt Whaleback/Orebody 29/30/35 licence (L4503/1975/14).

The Licensee has applied to make the following changes:

1. Removal of Category 85B for the Newman Water Treatment Plant (WTP) as this will be operated under Registration R2436/2016/1; and
2. To excise the location of the Newman WTP from within the premises boundary.

The Delegated Officer notes registration R2436/2016/1 for the Newman WTP was submitted to DER on 14 December 2016; with the registration fee being paid 4 January 2017. Pursuant to regulation 5A(1) the *Environmental Protection Regulations 1987,* the occupier of premises specified in Part 2 of Schedule 1, which includes Category 85B premises, may apply for registration of those premises.

Decision

The Newman WTP has been previously assessed under W5696/2014/1, which was issued on 18 December 2014. Raw water from three borefields is delivered to the WTP via dedicated potable distribution systems. The WTP removes salts from the raw water to produce potable water. The waste (salts) from the process is reject water. The volume of reject water produced is dependent on the Total Dissolved Solids (TDS) of the raw water. In the worst case scenario of a raw water TDS concentration of 2,000 mg/L the WTP will produce 5.7 megalitres (ML) of blended reject water per day as shown in Table 1.

Table 1: Expected volumes of raw and reject water based on raw water TDS

	Raw Water TDS of 500 mg/L	Raw Water TDS of 1,500 mg/L	Raw Water TDS of 2,000 mg/L
Volume of Raw Water required to produce 16.5 ML/day Potable Water	17.4 ML/day	20.6 ML/day	22.2 ML/day
TDS of the Potable Water	452 mg/L	550 mg/L	600 mg/L
Volume of Reject Water Produced	0.86 ML/day	4.1 ML/day	5.7 ML/day

Currently reject water from the Newman WTP is discharged to the Acid Rock Drainage (ARD) Facility in accordance with Licence L4503/1975/14.

The Licensee is proposing to discharge reject water from the Newman WTP via:

- Tank XD57 where it is blended and re-used on site for dust suppression or disposed of via the Tank XD57 licensed discharge point; or
- The ARD Facility (reject water is not blended prior to this discharge).

Estimated discharge volumes and TDS associated with each waste brine discharge option are shown in Table 2.

Table 2: Estimated discharges associated with the Newman WTP

Discharge Location	Will Waste Water be Blended	Maximum Volume of Unblended Waste Water	Volume of water used in Blending	Maximum Daily Discharge Volume	Maximum TDS of water discharged
ARD Dam and evaporation Ponds	No	5.7 ML/day	0 ML/day	5.7 ML/day	6,257 mg/L
XD57	Yes	5.7 ML/day	11.3 ML/day	17.0 ML/day	2,000 mg/L

The Tank XD57 discharge point is currently approved under Licence (L4503/1975/14) as a contingency discharge in the event that temporary storage and reuse, and tank storage has been exhausted. Water released from the Tank XD57 must comply with a TDS limit of less than 2,000 mg/L and details of the discharge (date, duration, volumes, reason for discharge and TDS levels) are required to be reported to DER in the annual report. Brine reject water from the WTP will only be discharged to the Tank XD57 discharge point in the event that the ARD Facility is temporarily unavailable (e.g. undergoing maintenance).

The ARD Facility consists of a dam, and five shallow evaporation ponds that are designed to retain water to a maximum depth of one metre. The ponds have a compacted clay lined floor to prevent seepage to the natural environment and a combined storage capacity of 560 ML. During periods of low water demand for dust suppression, reject water will be sent to the ARD dam. Reject water will not be blended prior to discharge to the ARD dam and the evaporation ponds as the Licensee has stated that "*this will result in a better water efficiency of the site without impacting on the salt load of these facilities"* (BHP, 2016).

Groundwater monitoring required under Licence (L4503/1975/14) is performed on a network of bores to monitor for seepage from the ARD Facility. Conditions for the continuous monitoring of the volume and monthly monitoring of the pH and TDS levels of brine discharged to the ARD dam and evaporation ponds is a requirement of Licence L4503/1975/14. The existing groundwater monitoring requirements for the ARD dam and evaporation ponds have not been re-assessed at the time of this amendment.

The Delegated Officer considers the existing conditions on Licence L4503/1975/14, in particular the TDS limit for Tank XD57 and the monitoring requirements under Conditions 3.3.1 and 3.5.1 to be adequate to manage the risks associated with the discharges of reject water from the Newman WTP.

Condition 1.2.1 has been updated to separate the RO reject water from the Yarnima Power Station (licensed to discharge to the ARD evaporation ponds only) and the RO reject water from the Newman WTP.

According to the Licensee, in 2016 the maximum inflow to the ARD Facility from the Yarnima Power Station was 1,058 ML/year, which equates to 1,058,000 tonnes per year.

As outlined in Table 2, the maximum daily discharge volume for the Newman WTP to the ARD Facility and XD57 is 5.7 ML/day and 17 ML/day respectively. The Licensee states that *the "reject water will have an estimated TDS ranging from 2,758 mg/L to 6,257 mg/L (depending on raw water quality)"*.

Condition 1.2.3 has been updated so that RO brine from the Newman WTP can now be discharged to the Tank XD57 discharge point (existing licence has the ARD evaporation ponds only).

Other amendments

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

- The design capacity for Category 61 has been increased from 5,100 tonnes per annual period (tpa) to 9,348,600 tpa, due to the WTP reject water (5.7 ML/day and 17 ML/day), now triggering Category 61 of Schedule 1 of the *Environmental Protection Regulations 1987* (premises on which liquid waste produced on other premises is stored, reprocessed, treated or irrigated). The reject water produced from the Newman WTP is to be directed to the Tank XD57 located at Mt Whaleback for reuse onsite for dust suppression or discharged to the Mt Whaleback ARD Facility (as per current processes);
- Update of the Controlled Waste category in Table 1.2.1 to align with the new controlled waste category list (July 2014); and
- Improvement condition 4.1.1 has been removed from the Licence under this Notice. The Licensee submitted the document *"Risk Assessment – Mount Whaleback AMD Facility"* (RPS, 5 December 2016) to DER on 5 December 2016 to satisfy condition 4.1.1.

Separate to this Notice, the Licence is currently being reviewed by DER to align the licence with DER's risk based Regulatory Framework. The ARD Facility will be reviewed during this time.

DER is also implementing changes to update the Licence in accordance with recent administrative changes, as follows:

- Addition of definitions for 'Anniversary Date', 'Annual Audit Compliance Report', 'Department' and updates to the definition of 'Annual Period' and 'CEO for the purpose of correspondence';
- Updates to the Annual Audit Compliance Report reporting requirements specified under condition 5.2.1; and
- Removal of the Annual Audit Compliance Report Template from Schedule 2.

Amendment History

Table 1 provides the amendment history for L4503/1975/14.

Table 1: Licence amendments

Instrument	Issued	Amendment
L4503/1975/13	22/12/2011	Licence amendment to increase capacity of Category 5 to 58 million tonnes per annum, change premises boundary and include Category 61 to the Licence
L4503/1975/13	16/02/2012	Licence amendment to include Category 85B constructed under W4972/2011/1
L4503/1975/13	7/11/2012	Licence amendment to incorporate three additional water treatment cells to the existing Newman temporary water treatment plant
L4503/1975/14	9/10/2014	Licence amendment to include additional discharge points and convert to new format
L4503/1975/14	11/06/2015	Licence amendment to include two inert landfills, oily water separator treated wastewater evaporation pond and contingency discharge point, extension of the hydrodynamic trial timeframe and disposal of used conveyor belts

L4503/1975/14	28/04/2016	Licence amendment to extend the duration of the hydrodynamic trial
L4503/1975/14	30/06/2016	Licence amendment to include Category 6, increase Category 73 approved design capacity, contingency discharge of Reverse Osmosis (RO) reject water to Ophthalmia Dam, increase in RO reject water discharge to Acid Mine Drainage (AMD) facility, remove wastewater treatment plants less than 20 cubic metres per day capacity and updates to monitoring requirements
L4503/1975/14	1/09/2016	Licence amendment to update the premises address and include a new asbestos disposal location
L4503/1975/14	21/04/2017	Amendment Notice 1 Licence amendment to remove Category 85B, increase capacity for Category 61 and change premises boundary

Licensee's Comments

The Licensee was provided with the draft Amendment Notice on 17 March 2017. No comments were received from the Licensee.

Amendment

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

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*	*80 000 000 tonnes per annual period*
6	*Mine dewatering*	*50,000 tonnes or more per year*	*80 000 000 tonnes per annual period*
54	*Sewage facility*	*100 cubic metres or more per day*	*183.2 cubic metres per day*
61	*Liquid waste facility*	*100 tonnes or more per year*	***9,348,600*** ~~*5 100*~~ *tonnes per annual period*
64	*Class II putrescible landfill site*	*20 tonnes or more per year*	*6 000 tonnes per annual period*
73	*Bulk storage of chemicals, etc.*	*1 000 cubic metres in aggregate*	*11 749 cubic metres*
~~*85B*~~	~~*Water desalination plant*~~	~~*0.50 gigalitres or more per year*~~	~~*4.38 gigalitres per annual period*~~

2. Page 4 of the licence is amended by the deletion of the text shown in strikethrough below and insertion of the bold text shown in underline below:

A ***temporary*** *RO water treatment plant (WTP) with a design capacity of 12 ML/day* ***previously*** *operate****d***~~*s*~~ *at the site****.*** ~~*and produces potable water for the town of Newman. The plant can produce up to 6 ML/day of reject water depending on the nature of the source water.*~~ *BHPBIO has* ***installed a new permanent WTP (with bypass) at the same location. The permanent WTP has a capacity of*** ~~*recently completed construction of an upgraded,*~~ *16.5 ML/day* ***and is required for the long-term supply of potable water to both the town of Newman and BHPBIO mining operations. The new permanent WTP operates under R2436/2016/1, with*** ~~*capacity WTP to replace the existing facility. The new WTP is currently in the commissioning phase. The*~~ *reject water* ~~*is*~~ *discharged to* ***the XD57 tank and*** *AMD* ***dam and*** *evaporation ponds. DMP have approved the use of the AMD evaporation ponds for this use.*

3. The licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below for section 1.1.2:

'Anniversary Date' means 1 July of each year;

'Annual Audit Compliance Report' means a report in a format approved by the CEO as presented by the Licensee or as specified by the CEO from time to time and published on the Department's website;

'Aannual Pperiod' *means* ***a 12 month*** *~~the inclusive~~ period* ***commencing*** *from 1 July until 30 June in the following year;*

'CEO' *for the purpose**s*** *of* ***notification*** *~~correspondence~~ means;*

Chief Executive Officer
Department ***Division 3, Part V of*** *~~Administering~~ the Environmental Protection Act 1986*
Locked Bag 33 ***Cloisters Square***
PERTH *~~CLOISTERS SQUARE~~ WA 6850*
~~Email:~~ info@der.wa.gov.au;

'Department' means the department established under section 35 of the Public Sector Management Act 1994 and designated as responsible for the administration of Division 3 Part V of the Environmental Protection Act 1986;

4. Condition 1.2.1 of the licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below:

1.2.1 The Licensee shall only accept waste on to the landfill, asbestos disposal areas, sewage treatment plants and liquid waste facility if:
(a) it is of a type listed in Table 1.2.1;
(b) the quantity accepted is below any quantity limit listed in Table 1.2.1; and
(c) it meets any specification listed in Table 1.2.1 .

Table 1.2.1: Waste acceptance		
Waste type	***Quantity limit***	***Specification*** [1]
Inert Waste Type 1	*6 000 tonnes/year*	*None specified*
Inert Waste Type 2		*Tyres and plastic only*
Putrescible Waste		*None specified*
Clean Fill		*None specified*
Special Waste Type 1		*Cement bonded and fibrous asbestos*
Controlled waste ***C****~~c~~ategory* ***J****~~6~~: Oils ~~and emulsions~~*	*5 100 tonnes/year*	*None specified*
RO reject water discharge ***Yarnima Power Station (RO Water Treatment Plant, blowdown water from heat recovery system generation and cooling tower)***	***1,058,000*** *~~11 800~~ tonnes/year ~~Total Dissolved Solids~~ ~~2 000 ML/yr~~*	*Discharged to AMD evaporation ponds with a Total Dissolved Solids less than 5 900 mg/L*
RO reject water discharge (Newman Water Treatment Plant)	***6,205,000 tonnes/year***	***Discharged to XD57 with Total Dissolved Solids less than 2 000 mg/L***
	2,080,500 tonnes/year	*Discharged to AMD evaporation ponds with a Total Dissolved Solids less than ~~5 900~~* ***6 257 mg/L***

Sewage	*183.2 m^3/day*	*Accepted through sewer inflow(s) only*

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004.*

5. Condition 1.2.3 of the licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below:

1.2.3 The Licensee shall ensure that wastes accepted onto the landfill, sewage treatment facility and liquid waste facility are only subjected to the process(es) set out in Table 1.2.2 and in accordance with any process limits described in that Table.

Table 1.2.2: Waste processing		
Waste type(s)	***Process***	***Process limits [1,2]***
All	*Disposal of waste by landfilling*	*Shall only take place within the areas shown in Schedule 1.* *No waste shall be temporarily stored or landfilled within 35 m from the boundary of the premises.* *The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2 m.*
Clean Fill *Inert Waste Type1*	*Receipt, handling and disposal by landfilling*	*None specified*
Inert Waste Type 2 – Tyres[1] and used conveyor belts	*Receipt, handling, storage prior to disposal by landfilling*	*To be stored in piles of up to 100 units with a 6 m separation distance between piles.* *Shall only be buried in overburden storage areas located within the prescribed premises boundary shown in Schedule 1.*
Putrescible Waste	*Receipt, handling, storage prior to disposal by landfilling*	*Shall only be placed in the putrescible landfill shown in Schedule 1.*
Special Waste Type 1 (Asbestos Waste[2])	*Receipt, handling and disposal by landfilling*	*Shall only be disposed of into the designated asbestos disposal area shown in Schedule 1.* *Not to be deposited within 2m of the final tipping surface of the landfill.* *No works shall be carried out on the landfill that could lead to a release of asbestos fibres.*
Controlled waste: oils and emulsions	*Receipt, handling and storage prior to removal from site*	*Only stored in designated storage tanks as depicted in Schedule 1.*
RO brine ***(Yarnima Power Station)***	*Receipt and disposal by evaporation*	*Only disposed of at the AMD evaporation ponds as depicted in Schedule 1.*
RO brine (Newman Water Treatment Plant)	***Receipt and disposal by evaporation and discharge point***	***Disposed of at the AMD evaporation ponds or Tank XD57 (L2) as depicted in Schedule 1.***

		Total Dissolved Solids limit of <2 000 mg/L must be met prior to disposal at Tank XD57.
Tailings	*Treatment and storage*	*Only stored in Tailings Storage Facility (TSF) as depicted in Schedule 1.* *A minimum freeboard of 300 mm maintained at the TSF.*
Sewage	*Biological, physical and chemical treatment*	*None specified*
Sewage sludge	*Drying and storage*	*None specified*

Note 1: Requirements for landfilling tyres are set out in Part 6 of the Environmental Protection Regulations1987.
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.

6. Condition 4.1.1 of the licence is amended by the deletion of the text shown in strikethrough below:

~~*4.1.1 The Licensee shall complete the improvements in Table 4.1.1 by the date of completion in Table 4.1.1.*~~

~~***Table 4.1.1: Improvement program***~~		
~~***Improvement reference***~~	~~***Improvement***~~	~~***Date of completion***~~
~~*IR1*~~	~~*The Licensee shall submit to the CEO a report that:*~~ ~~*(a) Identifies the location of the groundwater monitoring bores used to monitor ambient groundwater at the AMD facility;*~~ ~~*(b) Provides results from the previous ten (10) years of monitoring for the existing groundwater monitoring program at the AMD facility, including an analysis of results to identify trends in water quality;*~~ ~~*(c) Includes a summary of the fate-dispersion modelling and independent risk assessment of the existing AMD facility; and*~~ ~~*(d) Contains as appendices copies of the relevant consultant reports.*~~	~~*31 December 2016*~~

7. Condition 5.1.2 of the licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below:

5.1.2 The Licensee ***must submit*** ~~*shall complete*~~ ***to the CEO within 90 days after the Anniversary Date,*** *an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions* ***in this*** ~~*of the*~~ *Licence*~~*, and any previous licence issued under Part V of the Act for the Premises*~~ *for the* ~~*previous*~~ ***A****a**nnual* ***P****p**eriod.*

8. Condition 5.2.1 of the licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below:

5.2.1 The Licensee shall submit to the CEO an Annual Environmental Report by 1 October each year. The report shall contain the information listed in Table 5.2.1 in the format or form specified in that table.

Table 5.2.1: Annual Environmental Report		
Condition or table (if relevant)	***Parameter***	***Format or form***~~***1***~~

-	*Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken*	*None specified*
-	*Details of all dust control initiatives*	*None specified*
-	*Target and Limit exceedances*	*None specified*
Table 3.2.1 (W1)	*Surface water monitoring results*	*None specified*
Table 3.2.1 (W2)	*W2 emergency discharge to Whaleback Creek for each discharge event:* • *monitoring results;* • *date and duration of the discharge; and* • *reason for discharge.*	*None specified*
Table 3.3.1	*L1 - Volume, pH, BOD, TSS, TN, TP, E.coli, TRH and a comparison of monitoring results against the "Australian Guidelines for Sewerage Systems – Effluent Management", Australian and New Zealand Environment and Conservation Council, 1997.*	*None specified*
Table 3.3.1	*L2 and L3 contingency discharge for each discharge event:* • *monitoring results;* • *date and duration of the discharge; and* • *reason for discharge.*	*None specified*
Table 3.4.1	*Input monitoring results*	*None specified*
Table 3.5.1	*P1 and P2 - Process monitoring results*	*None specified*
	P4 for discharge event: • *monitoring results; and* • *date and duration of the discharge.*	
Table 3.6.1	*PM_{10} monitoring results*	*None specified*
Table 3.6.2	*Ambient surface water monitoring results and a comparison of results against established trigger values. Details of investigations conducted, including outcomes, environmental impacts and remedial actions, in relation to trigger exceedances and a discussion of any trends identified*	*None specified*
Table 3.6.3	*Ambient groundwater monitoring results*	*None specified*
5.1.2	*Compliance*	~~*Annual Audit Compliance Report*~~ ***None specified***
5.1.3	*Complaints summary*	*None specified*

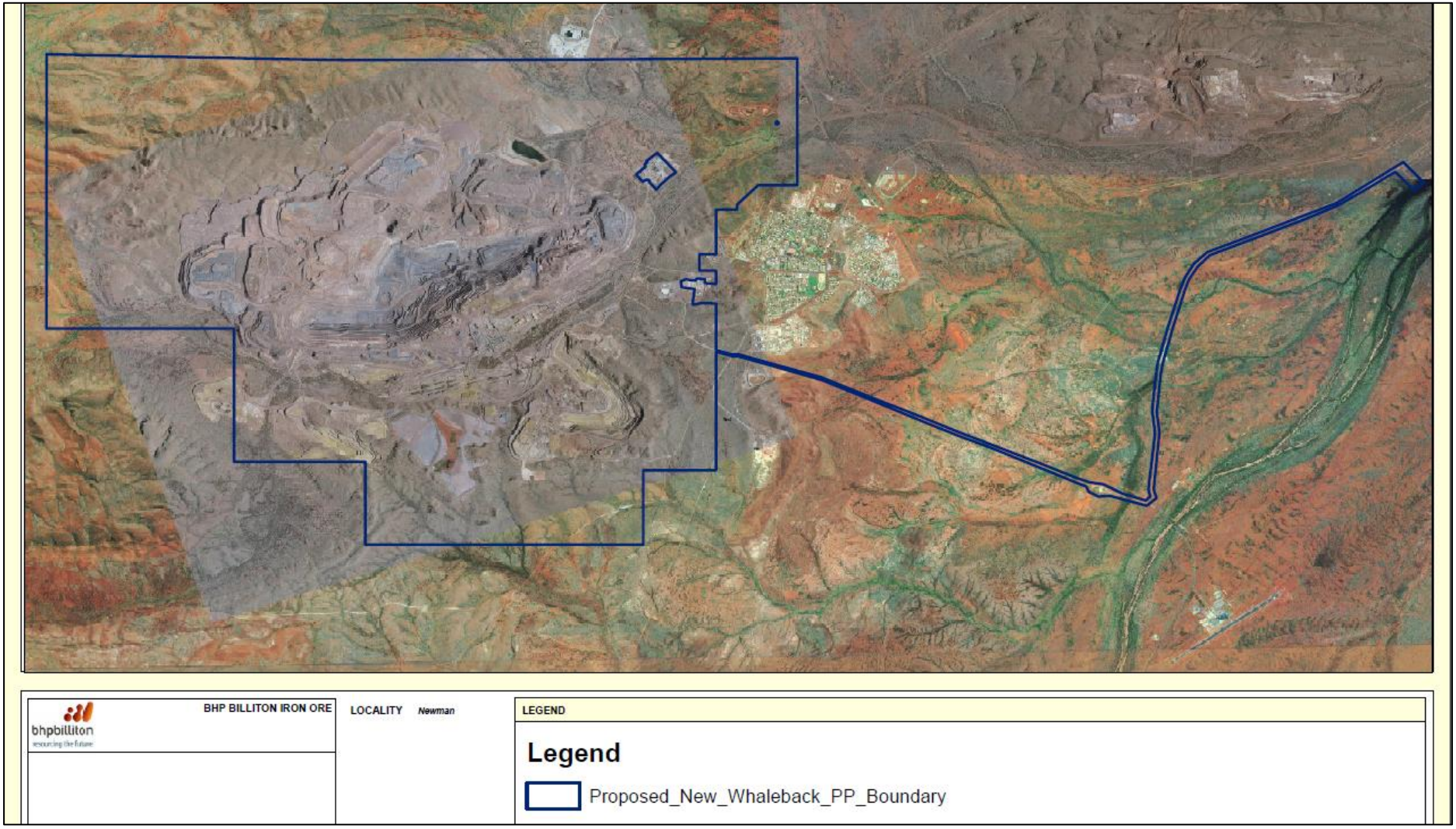
~~*Note 1: Forms are in Schedule 2*~~

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

10. The licence is amended by the deletion of the Annual Audit Compliance Report Proforma in Schedule 2.

Attachment 1: Premises map

The Premises is shown in the map below. The blue line depicts the Premises boundary.



Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.		**accessed at** http://www.der.wa.gov.au
2	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.		
3	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.		
4	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.		
5	Email: "Licence L4503/1975/14 – Mt Whaleback – amendment application", received from Tricia Merson (BHP Billiton Iron Ore Pty Ltd), dated 9 January 2017	BHP, 2017a	DER records (A1354811)
6	Email "RE: Licence L4503/1975/14 – Mt Whaleback – amendment application", received from Tricia Merson (BHP Billiton Iron Ore Pty Ltd), dated 11 January 2017	BHP, 2017b	DER records (A1356359)
7	Licence L4503/1975/14 – Mt Whaleback/Orebody 29/30/35	L4503/1975/14	**accessed at** http://www.der.wa.gov.au
8	Ministerial Statement 963	MS 963	**accessed at** http://www.epa.wa.gov.au
9	Newman Water Treatment Plant, Supporting Documentation for Registration Application of the Newman Water Treatment Plant, BHP Billiton Iron Ore Pty Ltd, December 2016	BHP, 2016	DER records (A1345414)
10	Registration R2436/2016/1 – Newman Water Treatment Plant	R2436/2016/1	**accessed at** http://www.der.wa.gov.au
11	Works Approval W5696/2014/1 – Mt Whaleback Water Treatment Plant	W5696/2014/1	