



Licence Holder	BHP Billiton Iron Ore Pty Ltd.
ACN	008 700 981
Licence Number	L8898/2015/1
File Number	2015/000814
Category	62 – Solid waste depot
Premises	Quarry 2 Sleeper Storage Area BHP Billiton Iron Ore Newman Mainline Crown Lease I123599 Via Pippingarra Road Indee PORT HEDLAND WA 6721 Being Lot 141 on Deposited Plan 48923.
Date of amendment	Thursday, 22 June 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: 22 June 2017

Steve Checker

MANAGER LICENSING (WASTE 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 of the following:

1. Expansion of the lay down area within the prescribed premises boundary and update of maps within the Licence;
2. Change to visual monitoring frequency from weekly to monthly for the lay down area for fire risk, security and management requirements;
3. Removal of Wayeranna Well as a groundwater monitoring point; and
4. Inclusion of a requirement for the addition of a down gradient monitoring bore to replace the Wayeranna Well.

The following DER Guidance Statements have informed the decision made on this amendment:

- *Guidance Statement: Land Use Planning* (February 2017)
- *Guidance Statement: Decision Making* (February 2017)
- *Guidance Statement: Risk Assessment* (February 2017)
- *Guidance Statement: Setting Conditions* (October 2015)

Amendment Description

BHP Billiton Iron Ore Pty Ltd submitted an application for amendment to Licence L8898/2015/1 on 28 March 2017 to:

1. Expand the lay down area within the prescribed premises boundary and update maps within the Licence (See Map 1 below);
2. Change the visual monitoring frequency from weekly to monthly for the lay down area for fire risk, security and management requirements;
3. Remove 'Wayeranna Well' as a groundwater monitoring point.

The proposed changes to the premises will include:

- Clearing of native vegetation under CPS 7009/1 within the premises boundary, as shown in Map 3 below, to expand the lay down area used for the temporary storage of old/ used treated, railway timber sleepers;

The current sleeper storage area is for the temporary storage of up to 60,000 old treated railway sleepers until a preferred final treatment/ disposal solution is determined. The proponent proposes to expand the sleeper storage lay down area by an additional 2.3 ha within the premises boundary.

The 'Quarry 2 sleeper storage area' is located on Lot 141 on Deposited Plan 48923, Crown Lease I123599, Indee, Port Hedland, adjacent to Quarry 2, located at the 73 chainage marker on the BHP Billiton Iron Ore Newman Mainline. The facility is located approximately 73 kilometers south east of Port Hedland.

The Premises is located on five hectares of an area that was previously utilised as a quarry and stockpile area for the storage of railway ballast and other materials and equipment used in

the operation and maintenance of the railway line (in accordance with the *Iron Ore (Mount Newman) Agreement Act, 1964*). The storage area has a 150mm compacted hardstand on which the old timber sleepers are to be placed.

The storage and stacking plan of the timber railway sleepers, consists of:

- each block of sleepers located within the storage area must be at a distance of 15m apart to allow for access between blocks;
- each sleeper stack will consist of approximately 150 bundles (approximate dimensions of 13m x 10m x 3m);
- each sleeper bundle will consist of 20 to 25 sleepers; and
- a minimum 3m firebreak will be maintained around the outer boundary of the sleeper laydown area with a 2m internal firebreak.

The sleeper storage area was constructed for the temporary storage of up to 60,000 old treated railway sleepers until a preferred final treatment/ disposal solution is determined. The construction of the premises was undertaken through works approval W5851/2015/1. The compliance report was received by DER on 21 August 2015.

The expansion of the lay down area with an additional 2.3 ha will not change the management requirements for monitoring, stacking, storage, timeframes, maintenance or reporting as defined within the Licence L8898/2015/1.

Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 1.

Table 1: Relevant approvals

Legislation	Number	Approval
Department of Mines and Petroleum – Clearing permit	CPS 7009/1	<p>Clearing permit approved on 21 June 2016 for clearing within the Sleeper Storage Area, and shown within the permit as Plan 7009/1C.</p> <p>The current proposal will result in 2.3 ha being cleared (1.5 ha native vegetation in excellent condition and 0.8 ha clearing of native vegetation regrowth) within the prescribed premises boundary.</p> <p>The permit application decision report showed variance with the following clearing principles which determined the conditions placed within the permit:</p> <ul style="list-style-type: none"> • Native vegetation should not be cleared if it compromises a high level biological diversity - determined as “may be at variance to this principle” ; • Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia – determined as “at variance to this principle”; • Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland – determined as “at variance to this principle” • Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation – determined as “may be at variance to this principle”.

		<p>The permit required management conditions relating to:</p> <ul style="list-style-type: none"> • Weed control; • Erosion management; • Flora and vegetation management; • Environmental Management Plans; • Retention and spread of vegetative material and topsoil.
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Location, environmental siting and potential receptors

Table 2 below lists the relevant sensitive land uses in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

Table 2: Receptors and distance from prescribed premises

Residential and sensitive premises	Distance from Prescribed Premises
Isolated	The closest residential areas to the storage area is Indie and Wallarenya Stations which are located approximately 18km north west and 24km north, north east of the premises respectively. The Great Northern Highway is located approximately 9km west of the premises.

Table 3 below lists the relevant environmental receptors in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

Table 3: Environmental receptors and distance from prescribed premises

Environmental receptors	Distance from Prescribed Premises
Northern Quoll (<i>Dasyurus hallucatus</i> – Endangered species) and other native fauna species	Within (temporary) and surrounding (permanent dens) the prescribed premises.
Groundwater	Groundwater flow is west-south west across the facility consistent with the surface water drainage of the site as well. The premises is not located within a proclaimed drinking water reserve and depth to groundwater at the site is unknown. A desktop assessment of a groundwater bore 10m south west of the laydown area (Wayeranna Well) identified groundwater to be approximately 3.5m below ground. The well is no longer in use however it was originally used for livestock watering. The soils of the area are defined by the proponent as 'hard setting soils with dispersible clay subsoils.'
Surface water	The nearest surface water body is 5.7km north east of the storage area (Turner River catchment area).

Risk assessment

Tables 4 and 5 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 human health or the environment, requiring regulatory controls.

Table 4: 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					
Category 62: Solid waste depot	Expansion of the treated timber sleeper storage lay down area	Removal of fauna preferential habitat areas	Northern Quoll (<i>Dasyurus hallucatus</i>)	Land	Reduction in habitat area of an endangered species (Northern Quoll)	Slight	Unlikely	Low	The proponent has confirmed that the proposed new boundary of the sleeper storage lay down area is more than 150 m from the nearest probable Northern Quoll den sites. The premises does not contain any current active dens.
		Removal of native flora							Vegetation loss to 2.3 ha area (1.5 ha clearing of native vegetation in excellent condition; 0.8 ha clearing of regrowth vegetation area)

Table 5: 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					
Category 62: Solid waste depot	Storage of old/ used treated railway timber sleepers	Leachates - including dieldrin (insecticide), metals (for	Soil, surface water run-off and groundwater (approx.. 3.5 mBGL)	land	Contamination of localised soil profile, surface water and groundwater, impact on soil	Moderate	Possible	Medium	The proponent confirmed that sleepers are placed in bundles on concrete rail sleepers to allow for improved handling and to reduce contact with soil

		fungicide & UV protection) and creosote (wood preservative.			microbes				and surface water. Broken and incomplete sleepers are stored in elongated rows and located in an area that will not allow for surface water pooling. The risk of surface water runoff from the site has been reduced by specifically selecting the location of the sleeper storage area on a relatively flat soil plain. Discussions with John Throssell, BHP Billiton Iron Ore's Contaminated Site Auditor, indicate that the storage design in combination with the proposed monitoring schedule (as per L8898/2015/1) is suitable as a means of reducing the risk of contamination to ground (J. Throssell 2015 pers. comm. 25 April). Current soil monitoring results taken in accordance with condition 2.4.1 and Table 2.4.2 show no evidence of soil contamination from the sleepers. Soil monitoring will continue to be conducted in accordance with Condition 2.4.1 and Table 2.4.2 of L8898/2015/1.
	Storage of old/ used treated railway timber sleepers	Crushing of endangered fauna as a result of creating artificial habitat	Northern quolls (residing within the timber sleeper stacks)	Mechanical removal of/ shifting of timber sleepers	Impact on endangered/ vulnerable native fauna populations	Minor	Unlikely	Medium	The proponent confirms that sleepers will be stored in neat groups with minimal narrow/deep voids. Broken and incomplete sleepers are stored in an elongated

									row to avoid the creation of deep voids. In addition the sleeper storage area will not support any vegetation, therefore invertebrates and or small prey species will be rare, ensuring the area will be unattractive for foraging, further reducing the time quolls may spend sheltering in the sleeper storage area. The risk of individual Northern Quolls being crushed during the future removal of sleeper stacks will be mitigated by trapping and removal of any quolls from within the storage area prior to the removal of sleepers. Trapping and removal of any Northern Quolls will be undertaken by a suitably qualified zoological consultant for three nights prior to the removal of sleepers and the decommissioning of the site.
		Fire/ Smoke (abnormal operation)	Residential receptors (18km north west and 24km north, north east of the premises boundary)	Air	Health and amenity impacts	Moderate	Unlikely	Medium	The proponent confirms that a minimum 3m firebreak will be maintained around the outer boundary of the sleeper laydown area with a 2m internal firebreak to reduce the risk

			Soil	Land	Soil contamination and sterilisation				<p>of fire setting alight the stored sleepers. In addition sleeper blocks (consisting of up to 27,000 sleepers) will be separated from each other by 15 m to reduce impact. The premises will be regularly inspected in accordance with the Licence requirements.</p> <p>The sleepers contain highly toxic chemicals which pose a risk to the environment.</p> <p>The premises is isolated with low possibility of interference from outside sources (e.g. arson attempts) unless under a high bush fire threat.</p>
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Decision

The works proposed for the expansion of the lay down area within the premises boundary will not result any changes to the premises process or operation and will include the clearing of native vegetation and levelling of the area (See Maps 1-3 below).

The Delegated Officer considers that the appropriate approvals have been obtained for the clearing and management of the area in accordance with DMP requirements, and that this will be sufficient to mitigate the impacts to the additional 2.3 ha area within the premises boundary. No additional controls are proposed in addition to the management controls set within the clearing permit.

The Delegated Officer has determined that the Licence Holder controls proposed are appropriate and relevant to the ongoing management and mitigation of impacts to flora and fauna within the prescribed premises area.

Schedule 1: Maps within the Licence has been updated with new maps (Maps 1-3) to reflect the changes to the lay down area which is located within the premises boundary.

The Delegated Officer has determined that the proposed expansion of the lay down area through the proposed works will not change any of the operational requirements as stated within the conditions of the Licence, and that the new lay down area will have the same obligations/ limitations under the licence L8898/2015/1, for the prescribed premises. The annual throughput has not been changed within the Licence and the storage of old, treated timber railway sleepers within the storage area is still considered to be a temporary initiative prior to final disposal to an appropriate facility.

The Delegated Officer has determined that that the proponent must submit a Disposal Management Plan for the timber railway sleepers to DER, in accordance with the original design and operation approach committed to within the initial application for the premises, under Works Approval W5851/2015/1. The requirements for a Disposal Management Plan have been included within the Licence through this amendment process due to the proposed increase in stored volumes within the premises boundary, and as a result of no final disposal option/ approach being defined since development of the premises.

An additional condition has been placed within section 1.2, condition 1.2.6 for the development of a Disposal Management Plan for the premises.

The Delegated Officer has determined that the total volume of treated, timber railway sleepers to be stored at the premises is to be limited to a total capacity of 20,000 tonnes at any given time.

An additional condition has been included within Section 1.3, condition 1.3.1, table 1.3.1 as a specification limiting the maximum total volume of sleepers that can be stored within the premises boundary.

The Delegated Officer considers the addition of the condition appropriate in managing potential fire risk from excessive storage of treated timber sleepers at the premises and as a result of no disposal options currently identified.

The Delegated Officer considers the reduction in visual monitoring from weekly to monthly acceptable, considering that the premises is isolated and access is restricted to the area by signage, with very low population density throughout the extended area.

Condition 2.3.1, Table 2.3.1 has been amended to change the visual monitoring frequency from weekly to monthly.

The Delegated Officer considers the removal of 'Wayeranna Well' as a monitoring bore for the premises (due to the bore being unserviceable and not suitable for use as a monitoring bore), as acceptable. The details of the well have therefore been removed from the Licence.

An error in the naming of groundwater directional flow as West North-West for the monitoring bores within the Licence resulted 'MW3' being identified as an across gradient bore, which is now considered a down gradient bore. Groundwater directional flow for the premises has been reassessed and confirmed by the Licensee as being West South-West across the premises (See Appendix 1, 8). The premises requires at least one up gradient and two down gradient bores for the purposes of monitoring potential emissions to groundwater. The Delegated Officer has determined that there are an adequate number of monitoring bores located within the premises boundary for ongoing monitoring, suitable for the purposes intended. This requirement is based in part, on an assessment undertaken by 'Coffey Environmental' on historical lay down areas which identified that leachates from stored old treated timber sleepers may result in leachates being released to land where they are left in-situ for 3 years or greater (depending on the degree of residual chemicals stored within the treated timbers).

Condition 2.4.1, Table 2.4.1 has been amended to remove the requirement to monitor from 'Wayeranna Well', and with an administrative change to 'MW3' now identified as down gradient instead of up gradient of groundwater directional flow of the lay down area.

The Delegated Officer considers these inclusions appropriate to better define the relevant process activities and infrastructure controls required as a result of the expanded lay down area, now included within the prescribed premises boundary.

Amendment History

Table 6 provides the amendment history for L8898/2015/1.

Table 6: Licence amendments

Instrument	Issued	Amendment
L8898/2015/1	29/04/2016	Amendment Notice 1 - Licence duration expiry date extension to 20 September 2029
L8898/2015/1	22/06/2017	Amendment Notice 2 – Expansion of Quarry 2 Sleeper Storage Area – Lay down area within the prescribed premises boundary.

Licence Holder's Comments

The Licence Holder was provided with the draft Amendment Notice on 19 April 2017. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. A new condition has been included within Section 1.2 of the Licence as condition 1.2.6 as shown below:

1.2.6 The Licensee must submit a Disposal Management Plan (DMP) to the CEO by 31 December 2018 for the stored timber railway sleepers located within the premises boundary. The DMP is to include, but not limited to, the following:

- (a) Identification of a suitable facility for the appropriate final disposal of the stored treated timber railway sleepers; and*
- (b) Identification of timeframes for progressive disposal of stockpiles from the premises.*

2. Condition 1.3.1, Table 1.3.1 has been amended with the inclusion of an additional waste acceptance specification, as shown in the red text in underline below:

- 1.3.1 The Licensee shall only accept waste on to the Premises if:
- it is of a type listed in Table 1.3.1; and
 - the quantity accepted is below any quantity limit listed in Table 1.3.1; and
 - it meets any specification listed in Table 1.3.1.

Table 1.3.1: Waste acceptance		
Waste type	Quantity limit	Specification
Contaminated Solid Waste	10,000 tonnes per annual period	<ul style="list-style-type: none"> Acceptance of used/ old timber railway sleepers that have been removed from BHP Billiton Iron Ore associated 'Newman to Port Hedland' rail network, for temporary storage prior to final disposal at a licenced landfill or other suitable disposal option; and Received from a licenced controlled waste carrier; and <u>No more than 20,000 tonnes of treated timber railway sleepers to be stored within the premises boundary at any given time.</u>

3. Condition 2.3.1, Table 2.3.1 of the Licence is amended with the change of monitoring frequency, shown in strike through and underlined red text below:

- 2.3.1 The Licensee shall undertake the monitoring in Table 2.3.1 according to the specifications in that table.

Table 2.3.1: Process monitoring					
Monitoring point reference	Process description	Parameter	Units	Frequency	Method
L1 – Timber sleeper storage area.	Inspection of the timber sleeper storage area.	Fire and/ or damage to storage area.	-	Weekly	Visual
				<u>Monthly</u>	Written inspection records to be kept

4. Condition 2.4.1, Table 2.4.1 of the Licence has been amended to remove and replace text, as shown in strike through and underlined red text below:

- 2.4.1 The Licensee shall undertake the monitoring in Tables 2.4.1 and 2.4.2 according to the specifications in those tables.

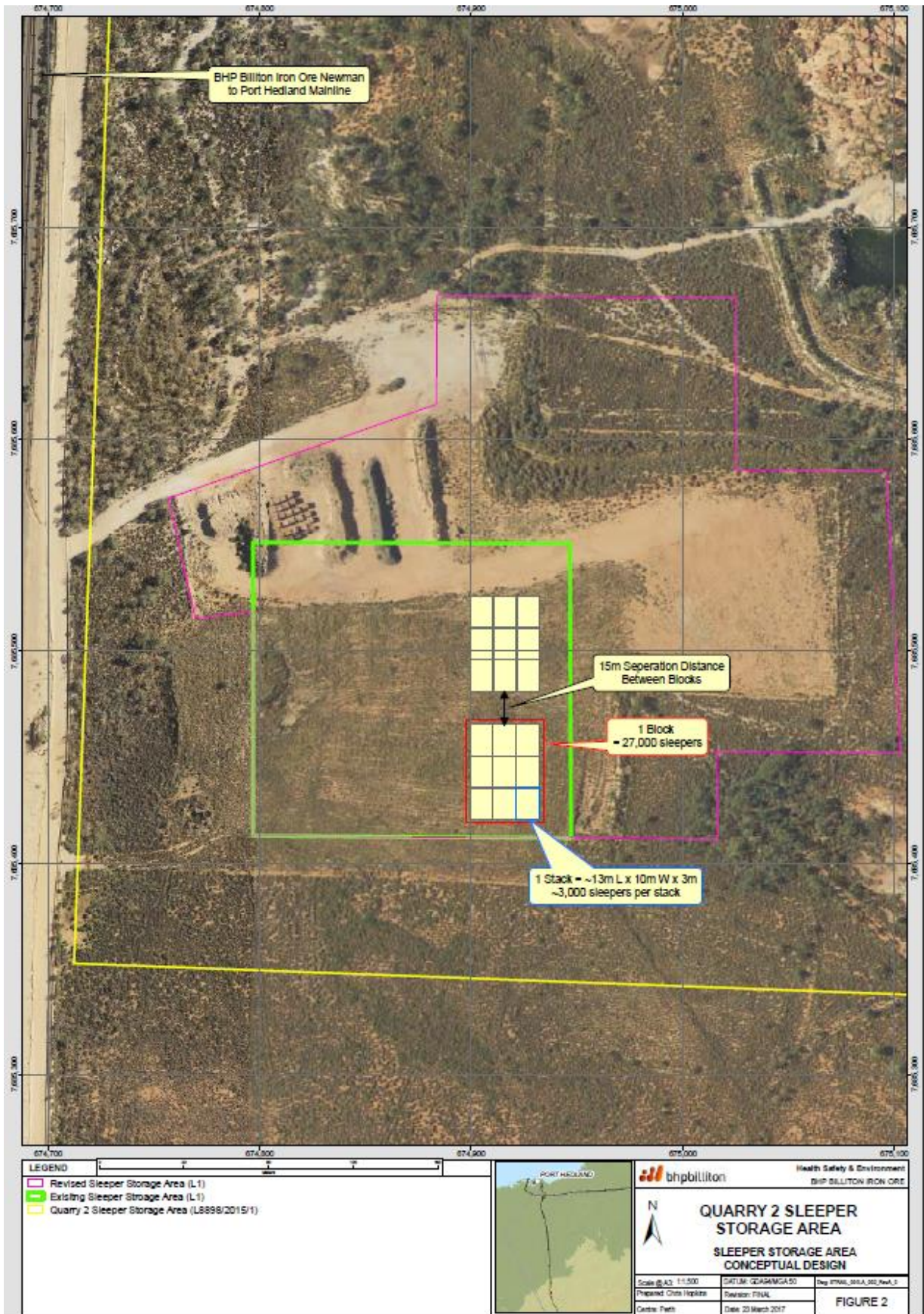
Table 2.4.1: Monitoring of ambient groundwater quality				
Monitoring point reference and location	Parameter²	Units	Averaging period	Frequency
MW1 (up gradient bore 1);	Standing water level	m(AHD)	Spot sample	Quarterly
	pH ¹	pH		
MW2 (down gradient bore 1);	Electrical conductivity	µS/cm		
	Total Recoverable Hydrocarbons (TRH)	mg/L		
MW3 (<u>down</u> up gradient bore 2); Wayeranna Well.	Total Polycyclic Aromatic Hydrocarbons (PAHs)			
	Arsenic			
	Cyanide			
	Cadmium			
	Chromium			

- 'Schedule 1: Maps' of the Licence has been updated with new maps and to replace the premises maps, as shown in Maps 1-3 below.

Map 1 below outlines the proposed changes to the prescribed premises primary activity area within the premises boundary. The purple line defines the new lay down area (primary activity area under Category 62) with the yellow line depicting the prescribed premises boundary, and the green line defining the previous lay down area boundary that has been altered:

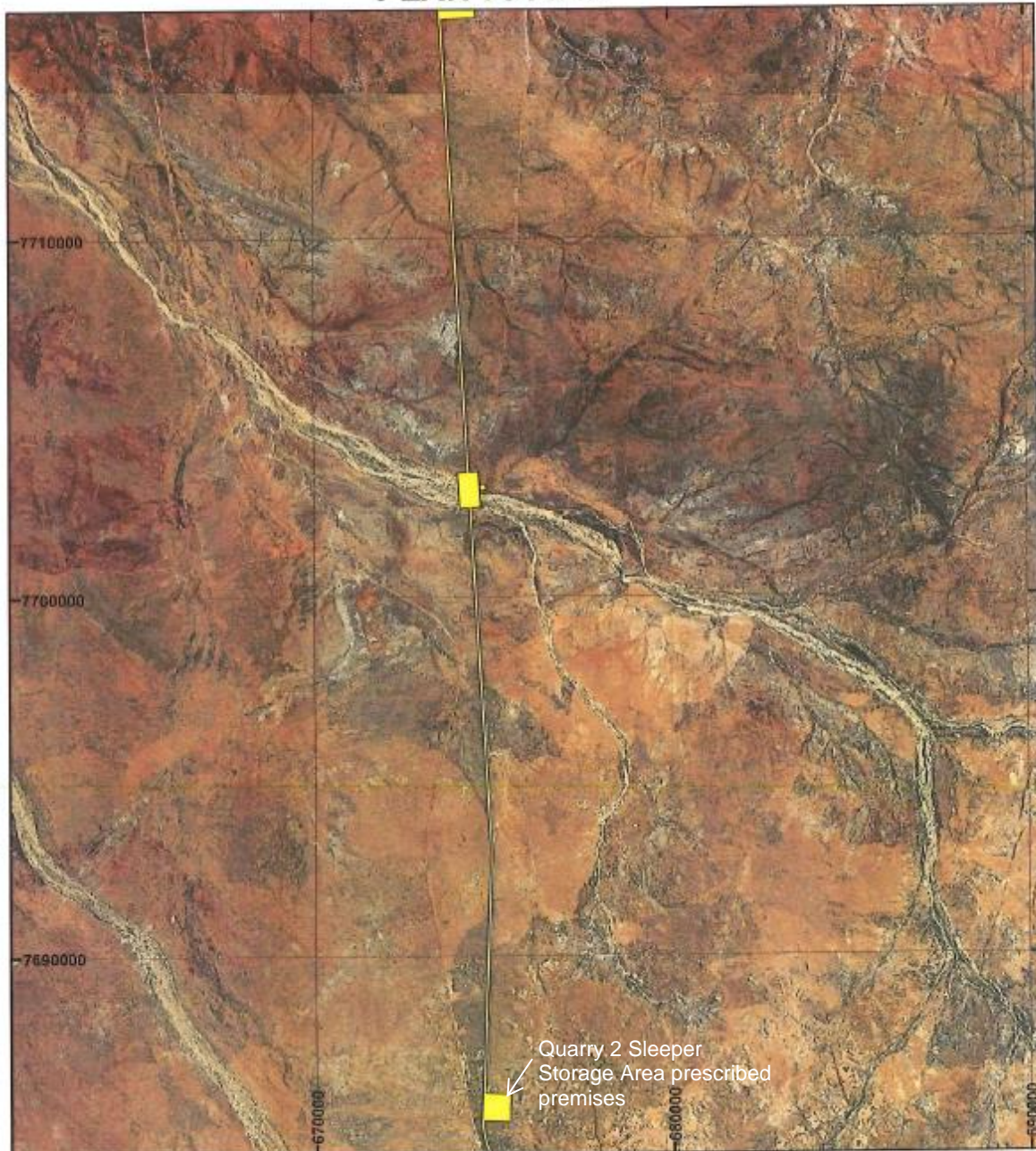


Map 2 below identifies the conceptual design of the stacking plan that will be continued within the new laydown area:



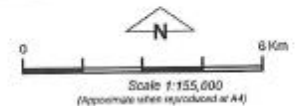
Map 3 defines the area to be cleared, as approved under CPS 7009/1C:

PLAN 7009/1C



LEGEND

- Clearing Instruments
- Areas Approved to Clear
- SEAMLESS MOSAIC



Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M. N. H. Date 21/7/16
 MARNE LEVOURNE

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data collection acknowledged by the agency acronym in the legend.



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Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Licence amendment application – Quarry 2 L8898/2015/1 Licence Amendment Supporting Documentation – Sleeper Storage Expansion, March 2017	L88982015/1	DER records (A1402206)
3	DER, July 2015. <i>Guidance Statement: Regulatory principles.</i> Department of Environment Regulation, Perth.	DER 2015a	accessed at http://www.der.wa.gov.au
4	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	DER 2015b	
5	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2016b	
6	DER, November 2016. <i>Guidance Statement: Decision Making.</i> Department of Environment Regulation, Perth.	DER 2016c	
7	Email: RE: Works Approval W5851/2015/1 – Quarry 2 Sleeper Storage Area Compliance Report, sent 28/08/2015 from Renelle Thorpe.	Sleeper Storage Area monitoring well locations	DER internal records (A960161)
8	Email: RE: Further discussions required on monitoring bores, from Chris Hopkins, BHP Billiton. 15 June 2017.	Groundwater flow: Executive Summary; Section 4.1	DER Internal records (A1453158)

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 19 April 2017 for review and comment. The Licence Holder responded on 10 May 2017. The following comments were received on the draft Amendment Notice.

Comments received	DER consideration of risk
<p>Email: Chris Hopkins, BHP Billiton, 10/05/2017</p> <p><i>“As discussed BHP Billiton is happy to waive the 21 day notification period provided the following changes can be made to the Amendment Notification:</i></p> <ol style="list-style-type: none"> 1. <i>The due date for the Disposal Management Plan is amended to 31 December 2018. This request has been made as a study into the most appropriate disposal method for the sleepers is still underway and is not anticipated to be complete until 31 December 2018. BHP Billiton Iron Ore is therefore seeking to extend the due date in the proposed new condition 1.2.6 from 30 September 2017 to 31 December 2018.</i> 2. <i>The requirement to install a second down gradient bore is removed. This request has been made as the original design of the monitoring bores for the facility was one up gradient (MW1) and two down gradient (MW2 and MW3 - note that Table 2.4.1 incorrectly identifies MW3 as an up gradient bore). The down gradient Wayeranna Well was to be monitored in addition to these wells as it was a potential stock water source. As detailed in the amendment application the request to remove Wayeranna Well has been made as the bore has collapsed and is no longer usable. BHP Billiton Iron Ore has discussed the proposed monitoring bore locations with Contaminated Sites Auditor Andrew Nunn (see attached letter) and considers that the existing monitoring bores are sufficient to capture the directional groundwater flow downstream of the expanded facility as additional up gradient wells would only be warranted if: <ol style="list-style-type: none"> a. <i>there was a significant concern that an offsite contamination source was likely to lead to contamination of the sleeper storage area and early identification of this contamination was critical based upon use of the sleeper storage area (e.g. dewatering or extractive beneficial use of groundwater); or</i> b. <i>one or more of the contaminants associated with the sleepers are naturally elevated with respect to acceptable limits and there is conjecture regarding the range of background levels.</i> <i>As this does not appear to be the case, additional up-gradient wells would unlikely provide any further useful information.”</i> </i> 	<p>DER undertook the following changes in response to the points raised by the Licensee:</p> <ol style="list-style-type: none"> 1. Due date for the ‘Disposal Management Plan’ amended to 31 December 2018 from 30 September 2017. 2. Confirmation of groundwater directional flow was requested from the Licensee. The Licensee submitted a report to DER on 15 June 2017 (See Appendix 1), confirming groundwater directional flow as West South-West. <p>Administrative changes undertaken to relevant condition to ensure that the amendment reflects this information.</p>