Government of Western Australia
Department of Water and Environmental Regulation

Amendment Notice 1

Licence Number	L8437/2010/3
Licence Holder	BHP Billiton Nickel West Pty Ltd
ACN	004 184 598
File Number:	2012/000069-1
Premises	1. Kwinana Nickel Refinery Patterson Road, KWINANA BEACH WA 6167 2. Baldivis Facility Millar Road, BALDIVIS WA 6171 Legal description – Lots 89 and 88 on Deposited Plan 411084 Certificate of Title: Volume 2958/Folio 292 and Volume 2958/Folio 291 Lot 820 on Plan 77252 Certificate of Title: Volume 2841/Folio 582
Date of Amendment	11 July 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.

Paul Byrnes
Manager, Process Industries
Regulatory Services

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
GRI Test Method GM17	means the Standard Specification for “Test Methods, Test Properties and Testing Frequency for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes” Revision 10: November 14, 2014 from the Geosynthetic Institute.
HDPE	means high density polyethylene.
LLDPE	means linear low density polyethylene.

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend Licence L8437/201/3 issued under the EP Act to BHP Billiton Nickel West Pty Ltd for its nickel refinery in Kwinana. This notice of amendment is given under section 59B(9) of the EP Act.

Guidance Statements that have informed the decision on the amendment application are set out in Appendix 1. The documents that form the application are also set out in Appendix 1.

Amendment description

The Licence Holder is seeking regulatory approval for the construction and use of two effluent storage tanks (12.5ML and 2.5ML) at the Kwinana Refinery. These tanks will allow for storage of process liquids during the next major plant shutdown (October 2019) and afterwards for the storage of stormwater collected on site.

The property on which the Kwinana Nickel Refinery resides was rezoned in November 2018 and the legal land description has changed. The legal land description on this amendment notice has been updated to reflect this change.

Detailed description of proposed works

The Licence Holder has provided with the application detailed documentation of the proposed works, which are outlined below.

The two tanks, sized 14.65 ML and 3 ML are to be constructed at the northern end of the Premises. The tanks will be operated to contain 12.5 ML and 2.5 ML respectively whilst maintaining suitable freeboard. The nominal dimensions are of a raised circular dimension; both approximately 3.5m high and one has a diameter of approximately 33m and the other has a diameter of approximately 73m. They will be assembled on a compacted pad constructed from select fill (~0.5m thick) and the walls are made of pre-fabricated concrete panels, supported by steel galvanised posts and retrained by circumferential post-tensioned cables. The tanks are to have a primary and secondary liners (1mm LLDPE) with a leak detection system as follows:

- floors:
    - a primary liner of 1mm linear low density polyethylene (LLDPE);
    - electrically conductive geotextile (to enable testing of fusion welded joints during installation);
    - geonet flow / drainage layer (for leak detection system);
    - secondary liner 1mm LLDPE;
    - Geosynthetic Clay Liner (GCL) underlying the whole tank; and
- walls:
    - a primary liner of 1mm LLDPE (linear low density polyethylene);
    - electrically conductive geotextile (to enable testing of fusion welded joints during installation);
    - secondary liner 1mm LLDPE; and
    - Geotextile cushion layer (to protect secondary liner from abrasion against concrete walls).

Each tank will have a leak detection inspection tank that has a primary and secondary containment. The leak detection inspection tank consists of a HDPE liner (primary containment) within a concrete tank (secondary containment). Leak detection pipework from each of the main storage tanks ends into the primary containment structure of the leak detection inspection tank, therefore collecting any effluent that may breach the primary liner of the storage tanks. The leak

detection inspection tanks are equipped with level control and an automated pump that returns any leakage back to the storage tanks.

The tanks will be connected to the existing refinery via HDPE pipes to facilitate delivery and recovery of effluent. Each tank will contain pumping systems and level measurement instrumentation, which will be controlled by the site Distributed Control System (DCS).

Recent regulatory approval history for the premises

Table 2 provides the recent regulatory approvals history for the premises.

Table 2: Licence amendments

Instrument	Issued	Amendment
L8437/2010/3	30 October 2015	Licence reissue
L8437/2010/3	29 April 2016	Notice of Amendment of Licence Expiry Dates, extending the licence duration to 30 October 2021.
W6117/2018/1	13 July 2018	Works Approval for the construction of a Powder Leach Nickel Sulfate Plant.
L8437/2010/3	draft	Amendment to allow for the construction of two effluent storage tanks with supporting infrastructure.

Clearing matters

The Licence Holder applied for a clearing permit with the Department for the required clearing. The clearing permit was issued on 14 June 2019 (Area Permit Number 8462/1).

Decision

The Delegated Officer has granted the application subject to conditions. The new conditions attached to the licence relate to the installation of infrastructure and its 'as built' quality assurance.

No additional or modified specified emission condition has been included in the amendment.

Basis for the Decision

The environmental design basis for the effluent tanks being:

- double lined containment;
- with leak detection; and
- large containment capacity;

eliminates the risk of leakages and spillages to the environment. As such the environmental design presents an acceptable level of risk.

The Applicant also identified a risk of odours being emitted from the effluent tanks but, given the likely source strength and distance to residential areas, the level of risk is considered to be acceptable.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 3 July 2019. Comments from the Licence Holder, received on 10 July 2019, have been accepted by the Delegated Officer and incorporated in this final Amendment Notice.

Details of the Amendment

1. The Licence is amended by the insertion of the following Conditions shown in red underlined text below:

Effluent storage tanks

35. The licensee must install the infrastructure and equipment:
(a) specified in Column 1;
(b) to the requirements specified in Column 2; and
(c) at the location specified in Column 3
of Table 4 below.

Table 4: Infrastructure and equipment table - effluent storage tanks

Infrastructure	Requirements (design and construction)	Site Plan Reference
Two effluent storage tanks (14.65ML and 3 ML capacity respectively)	Tanks to be constructed on a 0.5m compacted limestone pad with minimum of 2m separation distance to highest groundwater level. Tank floors liner atop the compacted pad to consist of (from top to bottom): • Primary layer: Layfield Enviro Liner 6040x geomembrane (1.0 mm thick); • Conductive layer: Bidim C19 conductive geotextile; • Geonet layer: Interdrain M5; • Secondary layer: Layfield Enviro Liner 6040x geomembrane (1.0 mm thick); and • Tertiary layer: ElcoSeal X1000 geosynthetic clay liner. Tank walls liner to consist of (from inside to outside): • Primary layer: Layfield Enviro Liner 6040x geomembrane (1.0 mm thick); • Conductive layer: Bidim C19 conductive geotextile; • Secondary layer: Layfield Enviro Liner 6040x geomembrane (1.0 mm thick); and • Cushion layer: Bidim A34 geotextile. Primary and secondary layers to be compliant with GRI Test Method GM17	Shown on the Effluent Storage Site Location Plan in Attachment 4.
Two leak detection inspection tanks	Each leak detection inspection tank is to designed with: • Primary containment constructed from HDPE; and • Secondary containment (tank) constructed from concrete.	

36. The Licensee must not depart from the requirements specified in Column 2 of Table 4 except where such departure does not increase risks to public health, public amenity or the environment.

37. The Licensee must, within 30 days of completion of the works specified in Column 1 of Table 4, submit to the CEO certification from an Engineer confirming each item of infrastructure or component of infrastructure specified in Column 1 of Table 4 has been constructed with no material defects and to the requirements specified in Column 2 of Table 4.

38. Following completion of works in accordance with conditions 35 and 36, the Licensee is permitted to operate the Effluent Storage Tanks.

2. The Licence is amended by the insertion of Attachment 4, shown in the following page:

Attachment 4 – Effluent Storage Site Location Plan

EFFLUENT STORAGE SITE LOCATION PLAN
SCALE 1:750

Appendix 1: Key documents

	Document title	In text ref	Availability
1	L8437/2010/3 –EP Act licence	-	accessed at www.dwer.wa.gov.au
2	Licence amendment application with attachments dated 10 June 2019	-	DWER records A1795207
5	DER, July 2015. *Guidance Statement: Regulatory Principles.* Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
6	DER, October 2015. *Guidance Statement: Setting Conditions.* Department of Environment Regulation, Perth.	DER 2015b	
7	DER, August 2016. *Guidance Statement: Licence Duration.* Department of Environment Regulation, Perth.	DER 2016a	
8	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DER 2016b	
9	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.	DER 2016c	