



# Decision Report

## Application for Licence

### Division 3, Part V *Environmental Protection Act 1986*

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|                         |   |
|-------------------------|---|
| <b>Applicant:</b>       | <b>Pilbara Ports Authority</b>  |
| <b>ACN/ABN:</b>         | 94 987 448 870  |
| <b>Licence Number:</b>  | L8937/2015/1  |
| <b>File Number:</b>     | <b>DER2015/002837</b>   |
| <b>Premises:</b>        | <b>Utah Point Multi-User Bulk Handling Facility</b><br><br><b>Portion of Lot 370 on Plan 35619</b><br><b>PORT HEDLAND, WA 6721</b><br><b>Certificate of Title Volume LR3118 Folio 753</b> |
| <b>Date of report:</b>  | <b>Thursday, 18 August 2016</b>   |
| <b>Status of Report</b> | <b>Final</b>  |

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## Definitions of terms

| Term                    | Definition   |
|-------------------------|--|
| Ambient noise           | means the noise present at the time of measurement from all sources  |
| AS 4156.6 – 2000        | Australian Standard AS 4156.6 – 2000: Determination of Dust/moisture Relationship for Coal.  |
| Assigned level          | means noise level not to be exceeded at receiving premises, defined by Part 2, Division 1 of the <i>Environmental Protection (Noise) Regulations 1997</i>  |
| Cr III                  | trivalent chromium   |
| Cr VI                   | hexavalent chromium  |
| dB                      | decibel, a unit of measurement of sound level  |
| dB(A)                   | means the A-weighted decibel, a unit of measurement of sound level weighted to reflect the frequency response of the human ear   |
| EP Act                  | means the <i>Environmental Protection Act 1986</i>   |
| L <sub>AS 1</sub>       | means a sound level, determined as an L <sub>A Slow</sub> value, exceeded for 1% of the time period over which the level is determined   |
| L <sub>AS 10</sub>      | means a sound level, determined as an L <sub>A Slow</sub> value, exceeded for 10% of the time period over which the level is determined  |
| L <sub>AS max</sub>     | means a maximum sound level, determined as a L <sub>A Slow</sub> value   |
| L <sub>A Slow</sub>     | means the reading in decibels (dB) obtained using the A frequency weighting characteristic and the S time weighting characteristic on the sound level meter as defined by Part 1 of the <i>Environmental Protection (Noise) Regulations 1997</i> |
| Mtpa                    | Million tonnes per annum   |
| Noise                   | means unwanted sound and is defined in the EP Act to include vibration of any frequency, whether transmitted through air or any other physical medium  |
| Noise-emitting proposal | a proposal that will result in noise emissions beyond the notional boundary of the premises where the operations will be located   |
| PM                      | Particulate Matter   |
| PM <sub>10</sub>        | Used to describe particulate matter that are smaller than 10µm in diameter.  |
| Premises                | is defined in the EP Act to mean residential, industrial or other premises of any kind whatsoever and includes land, water and equipment   |

## 1. Background

The Pilbara Ports Authority (Licensee) holds a licence (L4432/1989/14) for a Category 58 premises under the EP Act for the Utah Point Multi-User Bulk Handling Facility (Utah facility). The Port Hedland Port licence included the Utah facility on the western side of the Port Hedland harbour on Finucane Island and Eastern Operations on the eastern side of the Port Hedland harbour. The port of Port Hedland is a heavily used port, predominantly for the export of iron ore.

The licensee has held the licence for the Eastern Operation since 2010, when it was transferred from P&O Automotive and General Stevedoring Pty Ltd. The Utah facility was included in L4432/1989/14 after the facility was commissioned in 2011.

As part of the Western Australian State Government consideration of port asset divestment the Licensee submitted a licence application to the Department of Environment Regulation (DER) to create a new standalone licence for the Utah facility.

The Department of Health (DoH) has also recently released the Port Hedland Health Risk Assessment. The assessment and finding have been considered by the Department of Environment Regulation (DER) in this assessment and more broadly in the context of Port Hedland. Subsequently as well as assessing this licence application DER will be assessing all Category 58 premises within Port Hedland.

The Licensee is a port authority established by section 4 of the *Port Authorities Act 1999* (PA Act). The Utah facility is a port controlled and managed by the Licensee under the PA Act. The land upon which the Utah facility is situated is port land under the PA Act, meaning land vested or acquired by a port authority.

No works or operational changes are proposed by the Licensee for the Utah facility in relation to this licence application. The issued Licence (L8937/2015/1) is set out in Attachment 1.

## 2. Overview of Utah Facility

The Utah facility is a multi-user bulk commodity berth and storage facility located on the eastern shore of Finucane Island within the Port of Port Hedland. The facility comprises two stockyards and one berth. Stockyard 1 and Wharf 4 were commissioned in 2011 under works approval W4520/2009/1 and Stockyard 2 was commissioned in 2014 under works approval W5201/2012/1.

### 2.1 Infrastructure

The Utah facility infrastructure, as it relates to Category 58 activities, is detailed in Table 1 and with reference to the Site Plan (attachment in the Issued Licence).

**Table 1 - Utah facility Category 58 infrastructure**

|   | Infrastructure   | Plan reference  |
|---|--|---|
| 1 | Sealed ring road stockyard 1 and stockyard 2 (elevated for ring road to stockyard 1) | Premises Map: Ring Road (Stockyard 1)<br>Ring Road (Stockyard 2). |
| 2 | Sea wall around the perimeter stockyard 1 ring                                       | Premises Map: Sea wall  |
| 3 | Bunkers  | Premises Map: Bunker 1-13, 21, 22                                 |

|    | Infrastructure               | Plan reference   |
|----|------------------------------|--|
| 4  | Radial stackers              | Premises Map: Radial stacker 1-5, 8-13, 21, 22   |
| 5  | Stockpiles                   | Premises Map: Stockpile 1-13, 21 and 22  |
| 6  | Feed Hoppers                 | Premises Map: Stockyard 1 – 6 mobile feed hopper trains. Stockyard 2 – 2 fixed feed hoppers  |
| 7  | Conveyor system              | Premises Map: CV 01, CV 02, CV 03, CV 04, CV 05, CV 06, CV 07  |
| 8  | Transfer stations            | Premise Map: Transfer Station 1, Transfer Station 2, Transfer Station 3, Transfer Station 4  |
| 9  | Shiploader                   | Premises Map: Shiploader   |
| 10 | Wharf 4                      | Premises Map: Wharf 4 (272 metre to accommodate Panamax and small Cape Size vessels, including Cavotec system (vacuum-based mooring system) and other associated facilities and services.) |
| 11 | Stockyard 1 truck wash       | Premises Map: SY1 truck wash   |
| 12 | Stockyard 2 dry sweep        | Premises Map: SY2 dry sweep area   |
| 13 | Stormwater containment ponds | Premises Map: Stormwater recirculation pond, SY2 north pond, SY2 south pond.   |

## 2.2 Exclusions to premises

An easement is located between Wharf 4 and the main Utah Facility to allow for the BHP Billiton Iron Ore access and infrastructure. The infrastructure is an overhead conveyor feeding iron ore from Finucane Islands to berths A and B located to the south of Wharf 4.

The easement effectively separates the two portions of the Utah Facility however a limited access corridor (gated vehicle access crossing) is in place for the Licensee at the northern end and Licensee maintains and operates the aerial conveyor system (CV 05) at the southern end (CV 05 crosses under the BHP Billiton Iron Ore conveyor).

These exclusions to the prescribed premises boundary are reflected in the Premises Map.

## 2.3 Operational Aspects

Material arrives at the Utah facility via road trains and is side tipped over bunkers along the ring roads. There are approximately 500 truck movements per day. The Utah facility operates 7 days per week 24 hours per day.

Material is stacked via radial stackers at bunkers 1-5, 8-13, 21 and 22. At bunkers 6 and 7 material is built into a stockpile via front end loader. Material is then reclaimed via a front end loader (FEL) and placed via a feed hopper onto a conveyor. Conveyors and transfer stations move material along the outload circuit to the ship-loader, where it is loaded into a ships hold via dribbler chute.

The Licensee coordinates operations at the Utah facility. Through a Common User Agreement and direct lease arrangements a number of entities operate from the facility including:

- Atlas Iron - Stockyard 2 and parts of Stockyard 1;
- Consolidated Minerals - part of Stockyard 1;

- Mineral Resources Limited (and related entities) - part of Stockyard 1; and
- Qube - undertakes stevedoring operations at the premises.

**Table 2 - Facility/Infrastructure ownership and operation**

| Facility/Infrastructure            | Owner                                       | Operator                      |
|------------------------------------|---|-------------------------------|
| Wharf and cavotec system           | PPA   | PPA                           |
| Shiploader                         | PPA   | Qube                          |
| Outload conveyor                   | PPA   | Qube                          |
| Stockyard conveyor                 | PPA (SY1)<br>Atlas Iron (SY2)               | Qube                          |
| Transfer stations                  | PPA (TS01, TS02, TS03)<br>Atlas Iron (TS04) | Qube                          |
| Radial stackers                    | Qube (SY1)<br>Atlas Iron (SY2)              | Qube                          |
| Bunkers                            | Qube (SY1)<br>Atlas Iron (SY2)              | Qube                          |
| Ring roads                         | PPA (SY1)<br>Atlas Iron (SY2)               | PPA (SY1)<br>Atlas Iron (SY2) |
| Office, workshops, sample stations | PPA (SY1)<br>Atlas Iron (SY2)               | PPA (SY1)<br>Atlas Iron (SY2) |

Information on the bulk granular material handled and exported from Utah facility for the 2013 and 2014 period is set out in Table 3 below.

**Table 3 - Bulk granular materials exported from Utah facility 2013 and 2014**

|               | Bulk Material | Bulk Material Owner  |
|---------------|---------------|--|
| <b>Export</b> | Iron ore      | Atlas Iron, Mineral Resources Limited (and related entities) |
|               | Manganese ore | Consolidated Minerals, Mineral Resources Limited             |
|               | Chromite ore* | Consolidated Minerals  |

\*There are currently no exports of Chromite from the Utah facility (ceased in March 2014) however, the Licensee has applied for it to be considered by DER through the licence application.

## 3. Legislative Context

### 3.1 Part IV of the EP Act

The Utah facility has been assessed by the Environmental Protection Authority (EPA).

#### 3.1.1 Ministerial Statement 788

Ministerial Statement 788 was issued on 4 March 2009 for the Utah Point Berth Project. There are no conditions directly related to management or control of emission and discharges, however within Schedule 1 of the Ministerial Statement and the summary of the



key proposal characteristics, operational emissions relating to dust, noise and stormwater management are specified.

On 14 December 2015 a section 45C amendment under the EP Act (Changes to proposal) was issued by the EPA removing dust and noise suppression and stormwater management from Schedule 1 of the Ministerial Statement.

### **3.1.2 Environmental Protection Authority Report 1311**

The EPA assessment of Utah Point (Utah Point Berth Project (Stage B) [UPBP]) released on 12 January 2009 (report 1311) was undertaken for the construction and operation of the facility. The EPA considered that the key environmental factors for the UPBP were:

- mangrove (habitat loss);
- air quality (dust); and
- noise.

A brief summary of each key environmental factor is discussed below.

#### **Mangrove (habitat loss)**

Mangrove habitat loss was considered through the construction of the UPBP. A Mangrove Management Plan (MMP) was developed to include mangrove health surveys, monitoring of water quality, sediment deposition and fugitive dust within the mangrove community and assessment of potential changes in soil salinity associated with the construction of the bunds.

#### **Air Quality (dust)**

Dust was considered through the operation of the UPBP with particulate matter (PM) sized 10 microns ( $\mu\text{m}$ ) or less ( $\text{PM}_{10}$ ), chromite ( $\text{FeCr}_2\text{O}_4$ ) and manganese oxide ( $\text{MnO}_2$ ) being assessed.

The EPA report noted that the air quality impact modelling undertaken by the proponent suggested that the proposal may improve local air quality as the stockpiles would be moved further away from the westernmost end of Port Hedland. However it was also mentioned that the National Environmental Protection (Ambient Air Quality) Measure (NEPM) standard for  $\text{PM}_{10}$  (50 micrograms/ $\text{m}^3$ ) was still likely to be exceeded due to the port operations, naturally high background levels, and other sources.

The EPA considered that air quality would be subject to regulation through licensing under Part V of the EP Act, which could have regard for air quality limits for dust.

#### **Noise**

The EPA considered that noise emissions comprised of traffic noise and operational noise. Traffic noise occurs due to the use of road trains to transport the ore to UPBP. Based on noise modelling undertaken by the proponent it was predicted that improvements to noise levels would be achieved for the town of Port Hedland (residential west-end) through a change to the transport route, with a predicted increase of up to 3.5 decibels (dB) (barely perceptible).

The EPA noted that the proponent was committed to instituting noise control treatment to those affected dwellings.

Operational noise was considered from the use of front end loaders at the wharf and stockpile areas, conveyors, screening plant and equipment, transfer towers and hoppers. Based on noise modelling undertaken by the proponent it was predicted that noise emissions would be improved through the operation of UPBP (similar to dust emissions) as the noise source would be located further away from the township.

### 3.1.3 Environmental Protection Authority – Bulletin No. 2 – Port Hedland Noise and Dust

The EPA released Environmental Protection Bulletin No.2 – Port Hedland Noise and Dust, January 2009 (at the same time as EPA report 1311), as a result of concerns of health effects to residents within the town of Port Hedland from PM<sub>10</sub> arising from sources such as dust. The EPA formed a view that a coordinated government and industry approach to the development and execution of an integrated government and industry strategy (with explicit emission reduction strategies and explicit exposure reduction strategies) was required with strong and inclusive governance arrangements.

### 3.1.4 Consideration

This review of the Utah facility has had regard to Ministerial Statement 788 and to the EPA report on the environmental factors relating to noise and dust.

## 3.2 Department of Mines and Petroleum

The project is currently actively registered since 24 June 1994 under the project name Port Hedland Ports (Project Code J01715) owned by Pilbara Ports Authority. The registration covers Port Hedland Berth 4 – Utah Point, registered as site code S0023400 operation commenced 30 September 2010 for the commodities iron, manganese and Chromium (iron, specifically iron ore commodity group).

## 3.3 Port Hedland Dust Management Taskforce

### 3.3.1 Management Plan

The State Government established the Port Hedland Dust Management Taskforce (the Taskforce) in May 2009 to review existing reports and develop an integrated dust management plan for Port Hedland. The Taskforce is coordinated by the Department of State Development (DSD) and includes a range of industry and government members including this Department.

The Taskforce issued the *Port Hedland Air Quality and Noise Management Plan* (Management Plan) in 2010 to manage planning conflicts between industrial growth and adjacent residential areas. The Management Plan was adopted by the Government. Relevant to this report, the Management Plan recommended:

- adoption of interim air management criteria of 70 µg/m<sup>3</sup> (24 hour average) with allowance for 10 exceedances per calendar year at Taplin Street (residential street in Port Hedland); and
- the establishment of a State Environmental Policy for Port Hedland to monitor and manage noise using *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) regulation 17 exemptions where appropriate. This included the development of a cumulative noise model, defining the noise sensitive zones, clarifying planning measures and clarifying building standards.

### 3.3.2 Health Risk Assessment

The Department of Health recently released the *Port Hedland Air Quality Health Risk Assessment for Particulate Matter* dated January 2016 (HRA). The report provides the final health risk assessment for Port Hedland.

The HRA found that there is sufficient evidence of potential impacts on human health from dust and that the interim guidance of 24-hour average of 70 µg/m<sup>3</sup> PM<sub>10</sub> + 10 exceedances

per annum would be appropriate to manage the risk in residential areas in Port Hedland.

The HRA noted that despite good dust management practices, weather events and local sources of dust (such as the spoil-bank) can result in exceedances above the interim criteria. The HRA noted that the application of the interim guidance to residential areas west of Taplin Street will also require land use planning restrictions, and that a long term planning strategy may offer a tool for gradually moving residential areas from the port operational area.

The HRA notes that it should not be the only source of information guiding decisions and must be combined with other studies including the noise model, the air quality model and the source apportionment model. There have been other models including cumulative air quality impacts undertaken by the Port Hedland Industries Council (PHIC) to date. DER does not have access to the analysis of the data for the models undertaken by PHIC and, at the time of this assessment, the analysis of this data has not been considered by DER.

DER has considered the findings of the HRA in undertaking the risk assessment for the Utah facility.

## **4. Site and Operational History**

### **4.1 Works approvals**

#### **4.1.1 W4520/2009/1**

Works approval W4520/2009/1 – Utah Point Berth Project, was issued 28 May 2009 for a category 58 premises. The works approval related to the construction of Stockyard 1, open loading system and berth 4, road access and associated services and facilities. An environmental management plan was developed for commissioning and submitted to the Department on 26 July 2010. DER provided a response authorising commissioning on 9 August 2010.

#### **4.1.2 W5201/2012/1**

Works approval W5201/2012/1 Utah Berth Facility Stockyard 2 Interim Development was issued on 13 December 2012. The works approval related to an interim development of Stockyard 2, which would be followed by the completion of an automated materials loading system. On 27 February 2014 a compliance document was provided by the works approval holder stating that the premises was constructed in accordance with conditions of the works approval. DER acknowledged receipt of the compliance document on 8 July 2014.

### **4.2 Licence amendments**

An improvement condition is detailed on L4432/1989/14. Condition 4.1.1 requires the Licensee to implement an Environmental Improvement Plan (EIP). The EIP is defined in section 1 of the licence as the document title “Utah Point Berth Facility Stockyard 2 – Environmental Improvement Plan – Dust Management (143-LAH-EN-APP-0001), Revision 1” Atlas Iron Limited (12/01/2015).

The EIP is related to Stockyard 2 and included seven improvement areas including:

1. improve product management;
2. improve dust suppression;
3. improve air quality monitoring and adaptive management;
4. conduct and validate dust modelling;
5. treat and maintain open areas;

6. upgrade and maintain roads and berm; and
7. implement an automated system.

The Licensee has reported that all but the final improvement are either scheduled or have been completed.

The Licensee has requested that the requirement for the final improvement relating to the implementation of an automated system rather than the current use of front end loaders be removed.

DER has considered the current infrastructure and use of front end loaders for potential to generate fugitive dust emissions in this assessment. All improvements except for the automated system have been included in the Issued Licence.

### 4.3 Compliance inspection

DER has undertaken compliance inspections on four occasions during the previous four years. The following summary of inspections is provided below.

- Inspection undertaken 11/06/2012: An Environmental Field Notice was issued by the then Department of Environmental Conservation (DEC) in relation to excess iron and manganese being identified below the conveyor system in front of the sample station at Utah Point. DEC requested the removal of excess iron ore and manganese ore near the sample station. The Licensee responded 29 June 2012 by letter advising that iron ore and manganese ore had been removed. No further action was required.
- Inspection undertaken 12/06/2013: No non-compliances were noted in the report.
- Inspection undertaken 2/05/2014: One non-compliance was noted relating to condition 1.2.4 (*"The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system."*). The inspection report details that the spills and impacted areas were not remediated immediately (not within 48 hours). No further action was required.
- Inspection undertaken 15/10/2014: No non-compliances were noted in the report.

### 4.4 Annual Audit Compliance Reports

The reporting period for the Licensee under L4432/1989/14 is has previously been the calendar year (1 January to 31 December), however was amended to Financial Year during a licence amendment in 2015. A review of the previous three Annual Environmental Reports (AER) /and Annual Audit Compliance Reports (AACR)s has been undertaken and issues of note are set out below.

#### 4.4.1 2014 Report

An AER and AACR compliance review and report was undertaken by DER, dated 6 May 2015 for the 2014 reporting period. No non-compliances or issues were noted in the report.

Key observations within the AER include the following:

- The Licensee reported 204 environmental incidents which fell within the categories of discharges to water and to land. Majority of incidents related to small scale hydrocarbon or ore spills to land. No significant spills were reported to impact the marine environment (the largest spill incident being a

1600 litre diesel spill to the Stockyard 2 ring road). This was reported in the AACR.

- Total number of dust target exceedances recorded at Licensee's boundary network was 652 in 2014 with 95 attributed to the Licensee operations. This was reported as a 38 per cent increase from 2013 with it being stated to relate to the increase in throughput and the commissioning of Stockyard 2.

#### **4.4.2 2013 Report**

Key observations within the AER/AACR include the following:

- The Licensee reported 170 environmental incidents which fell within the categories of discharges to water, land and hazardous materials spills. Majority of incidents related to small scale spills.
- Total number of dust target exceedances recorded at the Licensee's boundary network was 661 in 2013, with 84 attributed to the Licensee operations. (Note there was a change to monitoring equipment in 2013).
- Through the AACR, the Licensee self-reported non-compliance with condition relating to small scale spills and discharges. No issues or concerns noted.

#### **4.4.3 2012 Report**

The AER found that the total number of dust target exceedances recorded at the Licensee's boundary network was 178 in 2012, with 22 attributed to the Licensee's operations.

### **4.5 Compliance history check**

There is no history of prosecution or formal statutory compliance/enforcement notices issued under the EP Act by DER to the Licensee for the Utah facility.

The DER's Incident and Complaints Management System (ICMS) is the system used to record complaints received and non-compliance requiring investigation. Following a review of ICMS there has been no complaints received from members of the public or surrounding operators relating to the Utah facility extending to its operation.

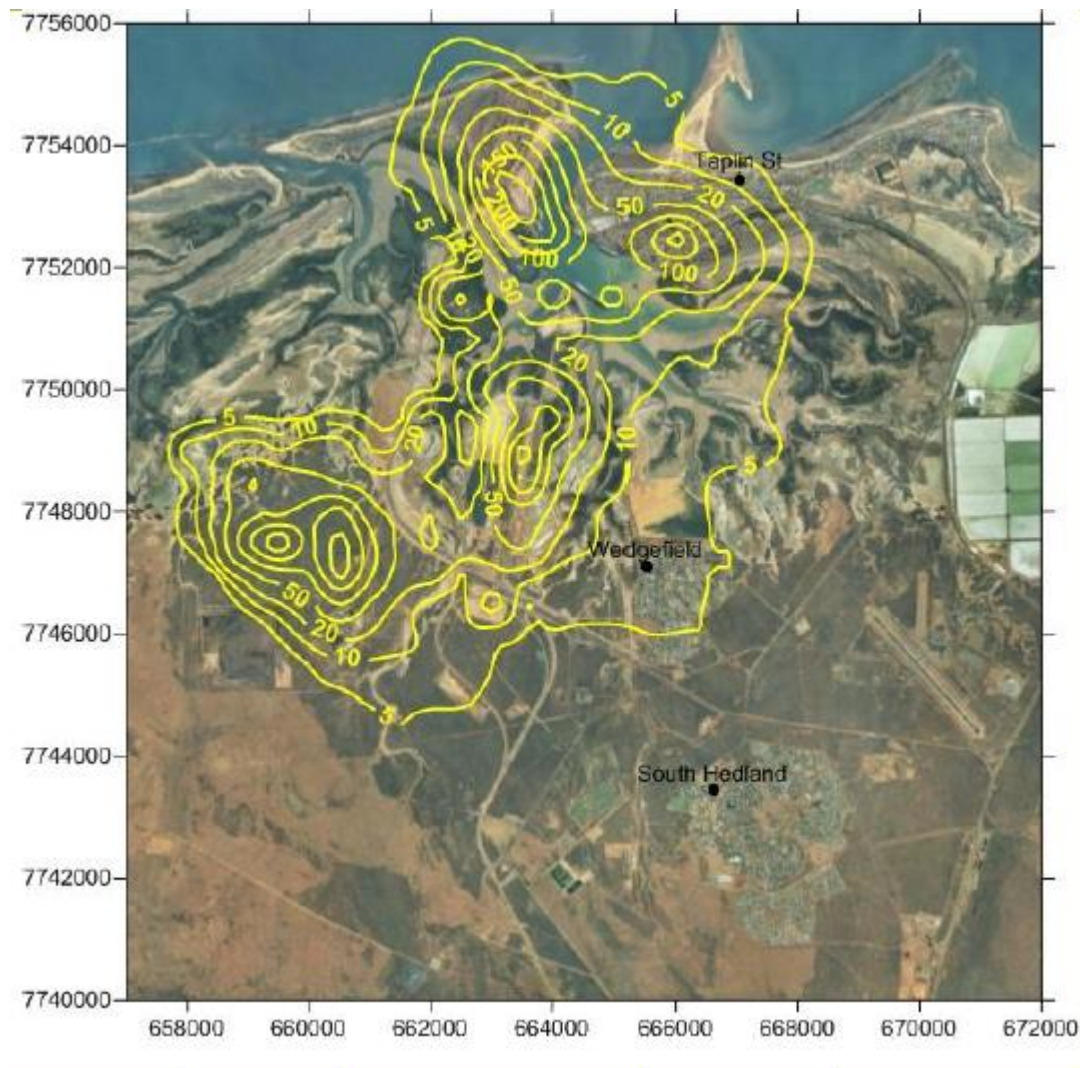


## 4.6 Modelling and monitoring data

### 4.6.1 Dust modelling

Figure 1 below is a contour map prepared by the Licensee showing the cumulative levels of PM<sub>10</sub> exceedances to criteria (70µg/m<sup>3</sup>). Locations to the west of Taplin Street are expected to receive exceedances of between 10 and 100 per year, with the high levels being expected to occur closer to the port operations.

**Figure 1 – Number of excursions above 70µg/m<sup>3</sup> (cumulative)**



The Utah facility as a standalone source of PM<sub>10</sub> was subject to air modelling by the Licensee in 2012. DER notes that the modelling has a number of limitations. DER's modelling review concluded that the modelling, as presented, was not suitable for assessing the Licensee's total contribution to air quality impacts.

DER notes that a cumulative model has been developed for Port Hedland by PHIC, which is currently being peer reviewed. For the purposes of this assessment, DER has assumed that the Utah facility contributes to the levels of PM<sub>10</sub>.

#### 4.6.2 Dust monitoring data

Ambient air quality monitoring is undertaken in Port Hedland through a number of monitoring stations within the Town of Port Hedland. Monitoring is coordinated through the PHIC and real-time monitoring is reported on their website. A summary of Taplin Street exceedances are provided below.

- 2012-2013 period - 17 exceedances at Taplin Street monitoring station with two confirmed to be attributed to industry; and
- 2013-2014 period - six exceedances at Taplin Street with three confirmed to be attributed to industry.

The HRA noted that the reported PM<sub>10</sub> levels at the west end of Port Hedland (Taplin, Kingsmill and Richardson) for the 2011-2014 period were found to be above the interim guidance of 70 µg/m<sup>3</sup> (24 hour average) at 16 per cent of the sampled days, compared with 3 per cent and 2 per cent at South Hedland and Yule River respectively.

#### 4.6.3 Dust boundary monitoring

The Licensee undertakes boundary monitoring for dust as detailed in Table 4 below. Boundary monitoring is undertaken at five locations with three being used for PM<sub>10</sub> and two being used for Chromium and manganese.

Targets were developed as an early warning system and have been varied through licence amendments. Under Condition 3.8.1 of the current licence L4432/1989/14, in the event of target exceedances an investigation is required to be undertaken by the Licensee to determine root cause (ie background or operational related exceedance).

**Table 4 - Air Quality Monitoring undertaken for the Utah facility**

| Monitoring Point                            | Parameter        | Targets               | Averaging period | Frequency                             |
|---|------------------|-----------------------|------------------|---------------------------------------|
| Berth 4:<br>M5 North<br>BAM 1020            | PM <sub>10</sub> | 145 µg/m <sup>3</sup> | 24 hours         | Continuous                            |
| Berth 4<br>M6 South<br>Esampler             | PM <sub>10</sub> | 105 µg/m <sup>3</sup> | 24 hours         | Continuous                            |
| Berth 4<br>M7 West<br>BAM 1020              | PM <sub>10</sub> | 145 µg/m <sup>3</sup> | 24 hours         | Continuous                            |
| Berth 4<br>M8 North Ecotech<br>3000<br>HVAS | Cr (III & VI)    | 3.5 µg/m <sup>3</sup> | Annual           | One 24 hour sample<br>every sixth day |
|   | Mn               | 10 µg/m <sup>3</sup>  | Any one sample   |                                       |
|   |                  | 3 µg/m <sup>3</sup>   | Annual           |                                       |
| Berth 4<br>M9 East<br>Ecotech 3000<br>HVAS  | Cr (III & VI)    | 3.5 µg/m <sup>3</sup> | Annual           |                                       |
|   | Mn               | 10 µg/m <sup>3</sup>  | Any one sample   |                                       |
|   |                  | 3 µg/m <sup>3</sup>   | Annual           |                                       |
| Taplin Street*                              | PM <sub>10</sub> | 70 µg/m <sup>3</sup>  | 24 hours         | Continuous                            |
| BOM*  | PM <sub>10</sub> | N/A                   | 24 hours         | Continuous                            |

\*Monitoring undertaken through PHIC and provided to the Licensee

A review of monitoring data for PM<sub>10</sub>, chromium and manganese for 2012 through to 2014 period has been undertaken in this assessment.

For the 2013 and 2014 period boundary target exceedances for PM<sub>10</sub> of 10.6 per cent and 12.7 per cent respectively were attributed to the Licensee's operational activities. The Licensee reported an increase in boundary exceedances from 2012 to 2013 was primarily attributed to upgrades from eSamplers to BAM1020 monitors which are considered far more

robust and accurate.

For the 2012 to 2014 period the Licensee was not required to undertake a report on boundary exceedances for PM<sub>10</sub> against data reported for Taplin Street or other ambient monitoring data in Port Hedland.

Monitoring results for Cr III, Cr VI and manganese indicate that levels are well below the boundary targets.

#### 4.6.4 Ambient monitoring network

The HRA has assessed the monitoring data in Port Hedland and notes that exceedances occurred at individual monitoring stations independent of increased PM<sub>10</sub> at other sites; indicating impacts are likely to be from local dust sources. (see page 23 of the HRA report).

The HRA also found that the number of exceedances of the interim guideline increased with proximity to the West End and that there are also seasonal influences on exceedances. The Health HRA noted that the analysis of monitoring data was consistent with preliminary modelling data from 2010 that indicated Nelson Point and Finucane Island operations (which include the Utah facility) dominate the background levels and exceedances of PM in the West End.

The HRA has assessed the ambient monitoring network in Port Hedland and recommends continued monitoring and air modelling to better understand the dust impacts. Accordingly, DER will be undertaking further review of the monitoring network data.

#### 4.6.5 Noise modelling

Noise levels within Port Hedland are currently above the assigned noise levels specified in the Noise Regulations.

Through works approval W4520/2009/1 noise criteria were specified for the nearest sensitive receptors, detailed in Table 5 below.

**Table 5 - Noise criteria**

| Location           | L <sub>A10</sub><br>dB(A) | L <sub>A1</sub><br>dB(A) | L <sub>AMAX</sub><br>dB(A) |
|--------------------|---------------------------|--------------------------|----------------------------|
| Pier Hotel         | 41                        | 51                       | 61                         |
| Esplanade Hotel    | 41                        | 51                       | 61                         |
| Backpackers Hostel | 37                        | 47                       | 57                         |
| Hospital           | 32                        | 42                       | 52                         |

Noise modelling was undertaken as part of the works approval W4520/2009/1 (Utah facility). The modelling demonstrated that there was one noise sensitive premises (Backpackers, located north of the Pier Hotel, Port Hedland) which had a predicted exceedances of the assigned criteria from the Utah facility. This is shown in Table 6.

**Table 6 - Predicted noise levels from Utah facility in isolation**

|                            | Esplanade | Pier Hotel | Backpackers | Hospital |
|----------------------------|-----------|------------|-------------|----------|
| Assigned noise criteria    | 41 dB(A)  | 41 dB(A)   | 37 dB(A)    | 32 dB(A) |
| Modelled level at receptor | 37 dB(A)  | 28 dB(A)   | 40 dB(A)    | 29 dB(A) |
| Achieved compliance        | Yes       | Yes        | No          | Yes      |

Cumulative noise was modelled as part of the EPA's assessment and through works



approval W4520/2009/1 (Utah facility). The modelling demonstrated that while cumulative noise was above assigned noise levels there would be a significant reduction as a result of the development of the Utah facility. This was due to relocating operational activities from Eastern Operations to the Utah facility. This is shown in Table 7.

**Table 7 - Cumulative noise levels Utah facility**

|  | <b>Esplanade<br/>dB(A)</b> | <b>Pier Hotel<br/>dB(A)</b> | <b>Backpackers<br/>dB(A)</b> | <b>Hospital<br/>dB(A)</b> |
|--|----------------------------|-----------------------------|------------------------------|---------------------------|
| Existing Berth All Noise Sources Untreated<br>(does not include some noise sources decommissioned) | 58                         | 56                          | 49                           | 31                        |
| Total post Utah facility   | 49                         | 48                          | 45                           | 31                        |
| Reduction from pre Utah facility to post Utah facility   | 9                          | 8                           | 4                            | 0                         |

Further modelling was undertaken for works approval W5201/2012/1 (Stockyard 2) and concluded that the proposal would comply with Noise Regulations and not significantly contribute to the cumulative noise emission levels at any of the sensitive receptors.

## 4.7 Contaminated Site Matters

Portion of Lot 370 on Deposited Plan 35619, known as the Port Hedland port (including but not limited to the Utah facility), is awaiting classification under the *Contaminated Sites Act 2003*.

## 5. Consultation

DER referred the application on 29 December 2015 to the Town of Port Hedland who has direct interest in the application.

DER also publically advertised the application in *The West Australian* newspaper on 28 December 2015 and did not receive any submissions.

## 6. Location and Siting

### 6.1 Siting Context

The Utah facility is located within the Port of Port Hedland which is the world's largest volume port for bulk materials export. The Port of Port Hedland is currently utilised for the bulk loading of material, predominately iron ore by BHP Billiton Iron Ore and Fortescue Metals Group with Roy Hill currently commissioning port infrastructure. Table 8 details current port operators within Port Hedland.

**Table 8 - Port of Port Hedland operators (category 58 and 58A premises)**

| Operator                                   | Bulk Granular Material                      | Scale of operation  |
|--|---|---|
| BHP Billiton Iron Ore                      | Iron ore                                    | Allocated capacity 270 Mtpa<br>Four berths at Nelson Point<br>Four berths at Finucane Island    |
| Fortescue Metals Group                     | Iron ore                                    | Allocated capacity 175 Mtpa<br>Three berths at Anderson Point                                   |
| Roy Hill (note not yet fully commissioned) | Iron ore                                    | Allocated capacity 55 Mtpa<br>Two berths at South West Creek                                    |
| Pilbara Port Authority                     | Iron ore,<br>Manganese ore,<br>Chromite ore | Allocated capacity 21.35 Mtpa<br>Single berth at Utah Point                                     |
| Dampier Salt                               | Salt  | Allocated capacity 75,000 tonnes per day<br>Single berth (berth 3) leased from PPA              |
| Eastern Operations                         | Copper concentrate                          | Throughput approximately 500,000 tonnes per annum<br>Two berths in Port Hedland (berth 1 and 2) |

The Utah facility is situated in the middle of the four BHP Billiton berths at Finucane Island, as detailed in the plan below.

**Figure 2 - Aerial image of the Utah berth located between BHP Billiton Iron Ore berths (town of Port Hedland located to the east)**



In addition to port operations, a number of other industrial activities are undertaken in Port Hedland including a variety of light and service industries at the Wedgefield Industrial Estate. The Wedgefield Industrial Estate is located approximately 5 kilometres (km) south of the Utah facility.

## 6.2 Residential and Sensitive Premises

The distances to residential and sensitive receptors are as follows:

**Table 9 - Receptors and distance from prescribed activity**

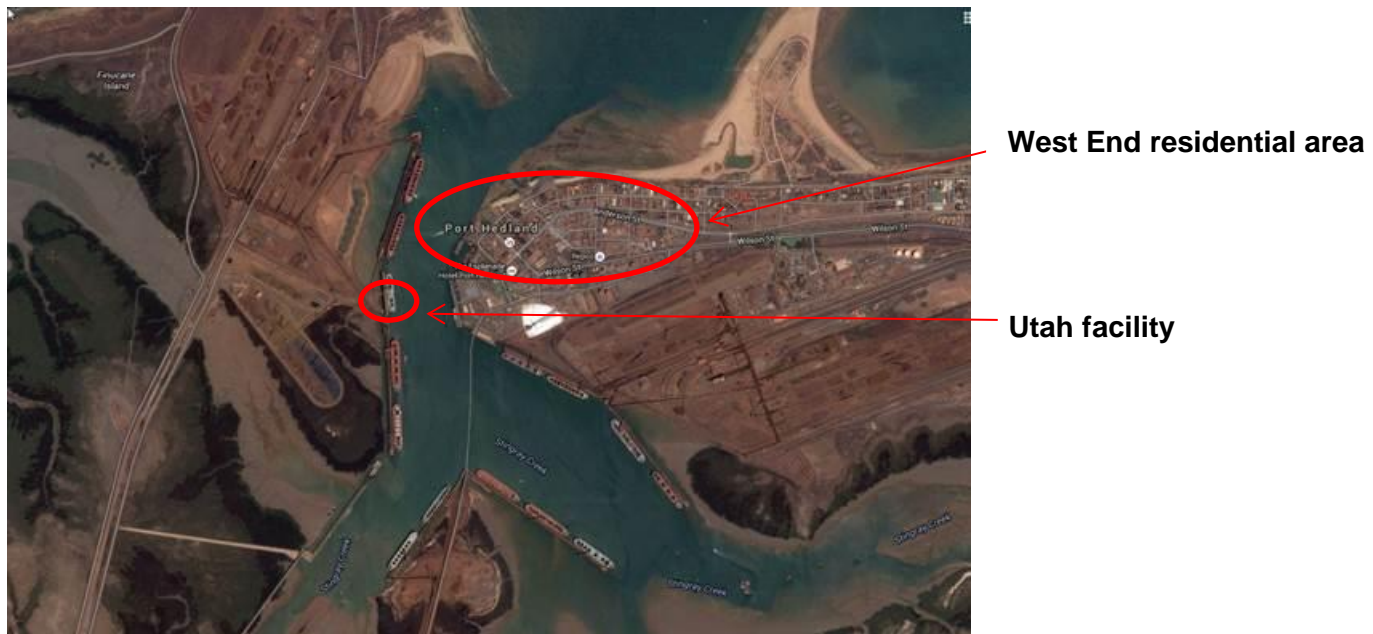
| Residential and Sensitive Premises  | Distance from Prescribed Activity |
|---|-----------------------------------|
| Pier Hotel – located east of Utah Point<br>(zoned town centre – retail/commercial<br>Town of Port Hedland Planning Scheme No.5)                   | 670m to the east                  |
| Port Hedland Visitors Centre – located east of Utah Point<br>(zoned town centre – retail/commercial<br>Town of Port Hedland Planning Scheme No.5) | 800m to the east                  |
| Closest residential zoned premises<br>(zoned residential Town of Port Hedland Planning Scheme No.5)   | 1,200m to the north-east          |
| Taplin Street<br>(zoned residential Town of Port Hedland)   | 3,340m to the east                |

| Residential and Sensitive Premises | Distance from Prescribed Activity |
|------------------------------------|-----------------------------------|
| Planning Scheme No.5)              |                                   |

The Town of Port Hedland reported in the HRA a permanent population of 4,590 people in 2012/13 within Port Hedland and a larger population of fly-in-fly-out workforce.

The closest residential area to the Utah facility is the West End, shown in Figure 3 below.

**Figure 3 - Aerial image of Port Hedland showing West End**



### 6.3 Specified Ecosystems

The Utah facility is situated proximate to the following specified ecosystem:

**Table 10 - Specified ecosystems**

| Sensitive ecosystems                    | Distance from Prescribed Premises   |
|---|---|
| Port Hedland harbour – marine ecosystem | Within and directly adjacent to the premises boundary.<br>Moderate level of ecosystem protection* |

\* Department of Environment, Pilbara Coastal Water Quality Consultation Outcomes: Environmental Values and Environmental Quality Objectives, Marc h2006 (DoE 2006).

## 6.4 Groundwater and water sources

**Table 11 - Groundwater and water sources**

| Groundwater and water sources      | Distance from Prescribed Premises  | Environmental Value   |
|------------------------------------|--|---|
| Groundwater is considered brackish | Depth to groundwater encountered at approximately 0.7m – 2.5m (based on information within works approval W4520/2009/1). Variation driven by tidal variation.<br><br>No bores located within 1km of premises (based on available GIS dataset – WIN Groundwater Sites). | Water is not used for potable or industrial use.<br><br>Groundwater system linked to marine ecosystem with Mangrove community located on the boundary of the premises boundary. |

## 6.5 Other site characteristics

**Table 12 - Other factors or sources of concern**

| Other factors or sources of concern       | Location  |
|---|---|
| Mangrove community (high value ecosystem) | Located on the southern and eastern boundary of the prescribed premises |

## 6.6 Soil Type

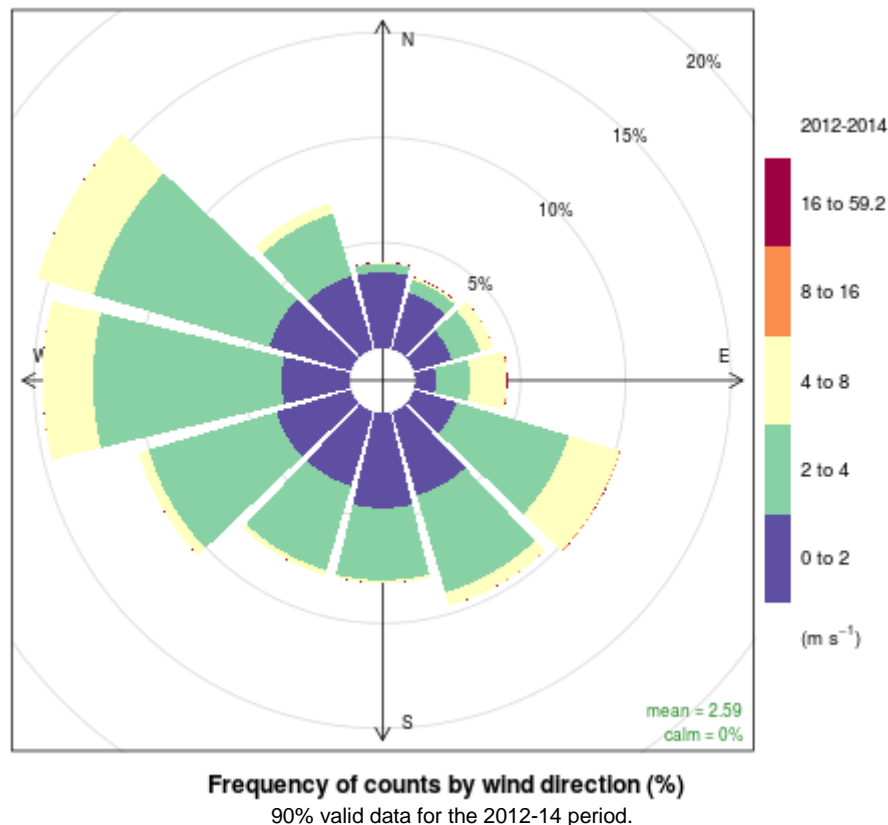
The Utah facility is located on tidal flats featuring bare sand. The location for the premises is a limestone outcrop surrounded by mangrove muds.

## 6.7 Meteorology

### 6.7.1 Wind direction and strength

DER's Air Quality branch has analysed five minute averaged data for Taplin Street, for the period spanning 25 January 2012 to 24 December 2014. Taplin Street is located approximately 3.3km east from the Utah facility. The following wind rose (Figure 4) provides the annual wind direction and strength for this period at the Taplin site.

**Figure 4 – Wind Rose Taplin Street, Port Hedland**



### 6.7.2 Regional climatic aspects

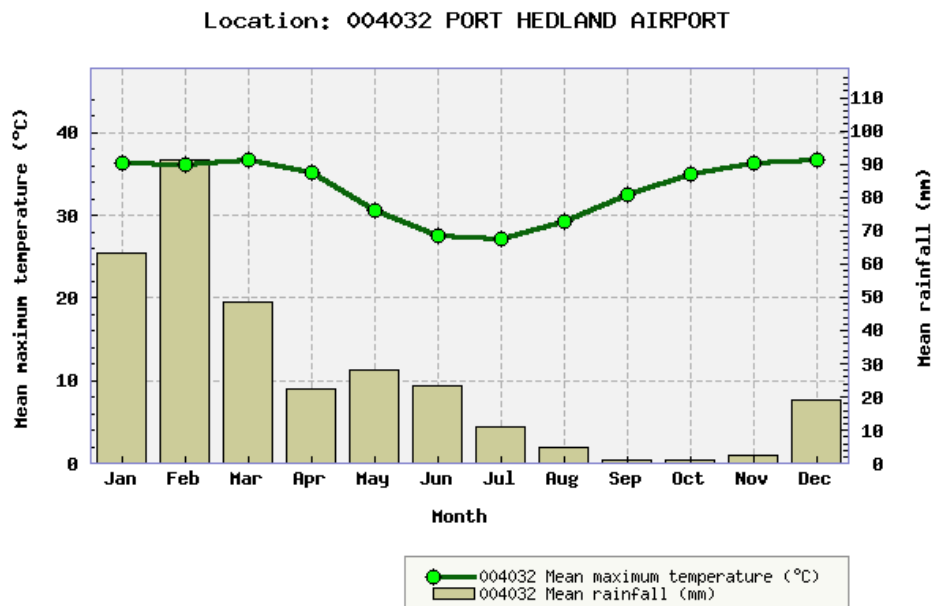
Port Hedland is located in a semi-arid environment. Rich mineral content is reflected in the red soil and dust (see HRA page 12).

The Port Hedland region has dominant annual wind direction consisting of north-westerly during the summer months and south-easterly during the winter months. Spring also shows high north-westerly dominance.

### 6.7.3 Rainfall and temperature

The Bureau of Meteorology provides the mean rainfall and maximum temperature for the Port Hedland (mean maximum temperature 1948-2016 and mean rainfall 1942 to 2016). The Port Hedland region is hot to warm all year round with rainfall predominantly over December to July.

**Figure 5 – Mean temperature and rainfall Port Hedland**



## 7. Risk Assessment

### 7.1 Hazard – Pathway – Receptor identification

The emission types have been identified with the pathways and receptors in Table 13 below.

**Table 13 - Emission Risk to Receptor**

|   | Emission Type   |   |   |   |
|---|---|---|---|---|
|   | Dust  | Noise   | Discharge to Waters   | Land infiltration to groundwater                              |
| <b>Potential Receptor</b><br>(see Section 6.2 for receptor details)       | Pier Hotel –<br>located 670m east of Utah Point<br><br>Closest zoned residential premises – 1,200m to the north east  | Pier Hotel –<br>Located 670m east of Utah Point<br><br>Closest zoned residential premises – 1,200m to the north east  | Marine ecosystem  | Groundwater   |
| <b>Pathway Type</b>   | Air (windborne)   | Air   | Direct spills and contaminated stormwater or wash down water  | Contaminated stormwater or wash down water                    |
| <b>Pathway Assessment</b><br>(see Section 6.7 for meteorological details) | <ul style="list-style-type: none"> <li>Pier Hotel - short term residence located 670m east of Utah facility</li> <li>Residential – located 1,200m to the north east<br/>Pathway through air.</li> </ul>   | <ul style="list-style-type: none"> <li>Pier Hotel - short term residence located 670m east of Utah facility</li> <li>Residential – located 1,200m to the north east<br/>Pathway through air.</li> </ul> | Utah facility is located within the marine environment within Port Hedland. The berth is located within a Moderate Ecological Protection Area (DoE, 2006). Material may enter the marine environment directly from spills during ship loading and unloading or through openings (gaps and drainage holes) which allow a direct pathway. | Depth to groundwater encountered at approximately 0.7m – 2.5m |
| <b>Potential impact</b>   | <p>Amenity impacts: may include visible dust plumes including the deposition of material on vehicles, plant and equipment</p> <p>Public health effects may include potential acute effects such as hayfever and asthma and chronic effects such as reduced respiratory function.</p> <p>Note: HRA found that in the west end of Port Hedland the risk</p> | Amenity impacts: potential impact on amenity.   | <p>Ecosystem health: potential impact on marine environment can include turbidity impacting water quality and visibility.</p> <p>Mangrove community potential to be impacted by sedimentation.</p>  | Ecosystem health: potential contamination of groundwater.     |



|  | Emission Type   |       |                     |                                  |
|--|---|-------|---------------------|----------------------------------|
|  | Dust  | Noise | Discharge to Waters | Land infiltration to groundwater |
|  | from PM <sub>10</sub> may be up to twice as high than for those living in South Hedland. Further that there is sufficient evidence to demonstrate that concentrations of PM <sub>10</sub> over 70 µg/m <sup>3</sup> are associated with morbidity and mortality and is associated with increased levels of acute and chronic respiratory and cardiovascular health effects. |       |                     |                                  |

## 7.2 Emission Sources

Material description and handling summaries are set out in Table 14 below.

**Table 14 - Emission description and handling process**

|                      | Description   | Handling  |
|----------------------|---|---|
| <b>Iron ore</b>      | <p>Iron ore comprises of lump ore (&gt;6mm diameter) and fines (0.15-6mm)</p> <p>Iron oxide is not considered toxic or carcinogenic</p> <p>Iron ore is not soluble in water</p> | <p><i>Movement of iron ore through Stockyard 1</i></p> <p>Iron ore is delivered by road trains via the Stockyard 1 ring road and side tipped over bunker walls. Iron ore is then stacked via radial stacker into stockpiles (at bunkers 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13) At bunkers 6 and 7 material is built into a stockpile via front end loader. It is then reclaimed via front end loader to mobile feed hoppers where it is conveyed through CV01, CV02, CV03, CV05, CV06, CV07 and transfer stations TS1, TS2, TS3. It is then loaded onto the ship via ship loader at berth 4.</p> <p>Iron ore can be stacked, stored and reclaimed from all stockpile areas within the premises.</p> |
|                      |   | <p><i>Movement of iron ore through Stockyard 2</i></p> <p>Iron ore is delivered by road trains via the stockyard 2 ring road and side tipped over bunker walls (Bunker 21 and 22). Iron ore is then stacked via radial stacker into stockpiles (21, 22) in Stockyard 2. It is then reclaimed via front end loader to fixed feed hoppers where it is conveyed through CV04, CV03, CV05, CV06, CV07 and transfer stations TS4, TS2, TS3. It is then loaded onto the ship via ship loader at berth 4.</p>  |
| <b>Manganese ore</b> | <p>Manganese ore comprises of lumps and fines</p> <p>Manganese is an essential nutrient however it exhibits toxic effects if exposure is excessive or</p>                       | <p>Manganese ore is delivered via haul trucks and side tipped over bunker walls (Bunker 3, 4 and 5.). Manganese Ore is then stacked via radial stacker into stockpiles (3,4, 5) in Stockyard 1. It</p>  |

|                     | Description   | Handling   |
|---------------------|---|--|
|                     | <p>prolonged.</p> <p>Manganese ore is not soluble in water.</p> <p>Manganese is hydrophobic and as such, repels water.</p>  | <p>is then reclaimed via front end loader to mobile feed hoppers where it is conveyed through CV01, CV03, CV05, CV06, CV07 and transfer stations TS1, TS2, TS3. It is then loaded onto the ship via ship loader at berth 4.</p>  |
| <b>Chromite ore</b> | <p>Chromite is an iron chromium oxide.</p> <p>Chromium is an essential nutrient and predominantly exists in two valence states, Cr III and Cr VI.</p> <p>Cr VI is a genotoxic carcinogen. Inhalation increases the risk of lung cancer. The potential for exposure to Cr VI is generally small because it is relatively unstable in the environment converting to Cr III. Lung cancer from Cr VI exposure is almost exclusively from occupational settings.</p> | <p>Handling of Chromite ore at the Utah facility ceased in March 2014.</p> <p>Previously, Chromite ore was delivered via road trains and side tipped over the bunker wall at bunker 6. Chromite ore was then built into a stockpile via front end loader. It was then reclaimed via front end loader to mobile feed hoppers where it was conveyed through CV01, CV03, CV05, CV06, CV07 and transfer stations TS1, TS2, TS3. It was then loaded onto the ship via ship loader at berth 4.</p> |

The emission sources are identified in Table 15 below.

**Table 15 - Emission sources**

|  |  | Emission |        |              |       |                    |                   |
|--|--|----------|--------|--------------|-------|--------------------|-------------------|
|  |  | Dust     |        |              | Noise | Discharge to Water | Discharge to Land |
|  |  | Iron ore | Mn ore | Chromite Ore |       |                    |                   |
| Source (see Section 2.1 for infrastructure references) | <b>Road train side tipping to bunkers (1-13, 21, 22)</b><br>(Refer to Schedule 1 - Premises Map)                             | •        |        |              | •     |                    |                   |
|  | <b>Road train side tipping to bunkers (3-10)</b><br>(Refer to Schedule 1 - Premises Map)                                     |          | •      |              | •     |                    |                   |
|  | <b>Road train side tipping to bunker B6</b><br>(Refer to Schedule 1 - Premises Map)  | •        |        | •            | •     |                    |                   |
|  | <b>Stacker to stockpiles (1-5, 8-13, 21, 22)</b><br>(Refer to Schedule 1 - Premises Map)                                     | •        |        |              | •     |                    |                   |
|  | <b>Stacker to stockpiles (3-10)</b><br>(Refer to Schedule 1 - Premises Map)  |          | •      |              | •     |                    |                   |
|  | <b>Stacker to stockpile (6)</b><br>(Refer to Schedule 1 - Premises Map)  | •        |        | •            | •     |                    |                   |
|  | <b>Stockpiles 1-13 at stockyard 1 and 21-22 at stockyard 2</b><br>(Refer to Schedule 1 - Premises Map)                       | •        | •      | •            | •     |                    |                   |
|  | <b>Reclaiming - Front end loader to mobile feed hopper trains (6) at stockyard 1</b><br>(Refer to Schedule 1 - Premises Map) | •        | •      | •            | •     |                    |                   |
|  | <b>Reclaiming - Front end loader to fixed feed hoppers (mobile) at stockyard 2</b><br>(Refer to Schedule 1 - Premises Map)   | •        |        |              | •     |                    |                   |

|  |  | Emission |        |          |       |                    |                   |
|--|--|----------|--------|----------|-------|--------------------|-------------------|
|  |  | Dust     |        |          | Noise | Discharge to Water | Discharge to Land |
|  |  | Iron ore | Mn ore | Chromite |       |                    |                   |
|  | <b>Conveyor – CV01, CV03, CV05, CV06, CV07</b><br>(Refer to Schedule 1 - Premises Map) | •        | •      | •        | •     |                    |                   |
|  | <b>Conveyor – CV02, CV04</b><br>(Refer to Schedule 1 - Premises Map)                   | •        |        |          | •     |                    |                   |
|  | <b>Transfer Station – TS1, TS2, TS3</b><br>(Refer to Schedule 1 - Premises Map)        | •        | •      | •        | •     |                    |                   |
|  | <b>Transfer Station – TS4</b><br>(Refer to Schedule 1 - Premises Map)                  | •        |        |          | •     |                    |                   |
|  | <b>Shiploader</b><br>(Refer to Schedule 1 - Premises Map)                              | •        | •      | •        | •     | •                  |                   |
|  | <b>Accessible trafficable areas</b><br>(Refer to Schedule 1 - Premises Map)            | •        | •      | •        | •     |                    |                   |
|  | <b>Contaminated stormwater</b>   |          |        |          |       | •                  | •                 |
|  | <b>Material spills</b>   |          |        |          |       | •                  | •                 |

DER notes that material is in-loaded via road trains and reclaimed via front end loaders. This represents increased material handling and subsequently increased emission potential.

## 7.3 Risk of Dust Impact Analysis

### 7.3.1 General Hazard Characterisation

National and international occupational and environmental health databases (United States Environmental Protection Agency, Agency for Toxic Substances and Disease Registry, International Programme on Chemical Safety, (US); National Institute for Occupational Health and Safety, National Occupational Health and Safety Commission, (NOHSC)) were used to review toxicology profiles of all materials currently imported or exported at the Utah facility (Iron ore, Manganese ore and Chromite ore). The following profiles have been noted.

- Iron oxide is not considered toxic or carcinogenic. The HRA found that there is no clear evidence of a causal link between iron-oxides and diseases (although there have been suspected health effects).
- Manganese is an essential nutrient however it exhibits toxic effects if exposure is excessive or prolonged.
- Chromium is an essential nutrient and predominantly exists in two valence states, Cr III and Cr VI. Cr VI is a genotoxic carcinogen. Inhalation increases the risk of lung cancer. The potential for exposure to Cr VI is generally small because it is relatively unstable in the environment converting to Cr III. Lung cancer from Cr VI exposure is almost exclusively from occupational settings.

DER considers the key hazard associated with the Utah facility is PM generated through fugitive dust emissions. PM has the potential to impact public health and affects both the respiratory and cardiovascular systems following both long and short term exposures.

The HRA (see page 30) summarised the findings of a comprehensive and detailed hazard assessment by Toxikos of PM<sub>10</sub> health effects in Port Hedland as follows:

- increase in daily mortality;
- increase in hospital admissions associated with respiratory disease, cardiovascular disease and pneumonia and bronchitis; and
- increase in emergency room attendance for pre-existing respiratory conditions.

The HRA noted that given the small population size of Port Hedland, the risks are not excessive or urgent.

### 7.3.2 Air Quality Criteria for Dust

Based on the Management Plan endorsed by the Taskforce, an interim air quality guidance of 24-hour PM<sub>10</sub> of 70µg/m<sup>3</sup> (+10 exceedances per calendar year) applied for residential areas east of Taplin Street.

In considering the HRA recommendations, the interim guidance of 24-hour PM<sub>10</sub> of 70µg/m<sup>3</sup> at Taplin Street will be continued to be applied in the assessment of risk and controls for the Utah facility.

### 7.3.3 Volume and Frequency Considerations

Due to the nature of fugitive dust emission concentrations of PM at generation points/sources are not quantified. However, consideration has been given to the truck movements, as well as the volume and frequency of the materials exported from the Utah facility (based on the 2013 and 2014 period).

**Table 15: Volumes of bulk material**

|                      | Volume   | Frequency  |
|----------------------|--|--|
| <b>Iron ore</b>      | 13,258,921 tonnes exported for 2013 calendar year<br><br>18,724,537 tonnes exported for 2014 calendar year | 118,014 road trains dumped and 124 shipping movements in the 2013 calendar year.<br><br>172,008 road trains dumped and 187 shipping movements in the 2014 calendar.<br><br>Gross ship loading capacity of 3,700 – 4,300 tonnes per hour                              |
| <b>Manganese ore</b> | 1,740,595 tonnes exported for 2013 calendar year<br><br>2,007,288 tonnes exported for 2014 calendar year   | Approximately 18,000 road trains dumped and 25 shipping movements in the 2013 calendar year.<br><br>Approximately 16,000 road trains dumped and 26 shipping movements in the 2014 calendar year.<br><br>Gross ship loading capacity of 2,200 – 3,500 tonnes per hour |
| <b>Chromite ore</b>  | 351,380 tonnes exported for 2013 calendar year<br><br>26,771 tonnes exported for 2014 calendar year        | Chromite ore has not been exported since March 2014.<br><br>Approximately 3,000 road trains dumped and 15 shipping movements in the 2013 calendar year.<br><br>Approximately 250 road trains dumped and 3 shipping movements in the 2014 calendar year               |

### 7.3.4 Assessment of Proponent Controls

The Licensee has provided the following dust management plans which document how fugitive dust emissions from the Utah facility are being managed:

- Qube, SHEMS Guide, Dust Management Guide, issue 10/07/2013;
- Pilbara Port Authorities, Dust Management Plan Berth 4, Port of Port Hedland; and
- Pilbara Port Authorities, PM<sub>10</sub> Dust Alarm Response Procedure Port of Port Hedland, 11/09/2015.

This assessment has reviewed these dust management plans which contain the controls set out in Table 17 below.

**Table 17 - Proponent infrastructure controls for fugitive dust emissions**

|    | Site Infrastructure      | Description   | Operation details   | Reference to plan |
|----|--------------------------|---|---|-------------------|
|    | <b>Controls for dust</b> |   |   |                   |
| 1. | Stockyard                | Sealed ring roads around stockyard 1 and 2.                               | Travel at 20 km per hour  | Premises Map      |
|    |                          | Misters on all radial stackers and at bunkers (excluding bunker 6 and 7). | <p>Bunker and stacker sprays operated whenever visible dust is being generated while tipping or stacking of material.</p> <p>Drop height from radial stacker to surface is minimised and chevron or cone pattern stacking.</p>  | Premises Map      |
|    |                          | Four water cannons per stockpile  | <p>Routinely operated to prevent visible dust lift off. Operation of cannons during in-loaded.</p> <p>Routinely means at a minimum sequence to run at least:</p> <ul style="list-style-type: none"> <li>every 3 hours during the day;</li> <li>every 6 hours during the night; or</li> <li>until small puddles just start to form as a result of rainfall or use of cannons.</li> </ul> <p>Dust forecast tool is utilised for planning of cannon operation. Cannons operated for pre-vessel wet down of material to be out loaded. Cannons operated via automated system that is centrally managed in</p> | Premises Map      |

|    | Site Infrastructure | Description  | Operation details  | Reference to plan   |
|----|---------------------|--|--|---|
|    |                     |  | the Control Room.  |   |
| 2. | Conveyors           | Under belt sprays and belt scrapers. Wind and noise barrier on raised CV06 (above wharf 4).<br><br>Under belt sprays and belt scrapers clean material carried backing from the belt. | Operation of the under belt sprays whenever visible dust is being generated from operation of conveyors.<br><br>Belt scrapers automatically operate when the conveyor is running.  | Premises Map  |
| 3. | Transfer Stations   | Partially enclosed with chute spray  | Transfer stations partially enclosed (within shed). Chute sprays operated whenever visible dust is being generated through use.  | Premises Map: TS1, TS2, TS3, TS4                              |
| 4. | Shiploader          | Shiploader and transfer chute  | Enclosed dribbler chute.   | Premises Map: CV07/Shiploader                                 |
| 5. | Dust Monitors       | Real time boundary PM <sub>10</sub> dust monitoring network comprising of M5 (BAM1020), M6 (Esampler) and M7 (BAM1020)   | Continuous.<br><br>Alarm system with internal trigger values and response procedure in place. If a trigger value is exceeded, an SMS or email notification is sent to the Licensee's staff and an investigation is implemented. If investigation finds operational related exceedence, contingency action is taken | Monitoring Locations and Stormwater Discharge Map: M5, M6, M7 |
|    |                     | Two boundary monitors for Cr (III and VI) and Mn. M8 and M9 (Ecotech 3000 HVAS)  | One 24 hour sample every sixth day, plus at least one 24 hour sample during a ship loading of chromite ore/manganese ore.  | Monitoring Locations and Stormwater Discharge Map: M8 and M9  |



|    | Site Infrastructure   | Description   | Operation details   | Reference to plan |
|----|-----------------------|---|---|-------------------|
|    |                       | Ambient monitoring at Taplin Street (Port Hedland) and Bureau of Meteorology.   | Operated by Port Hedland Industries Council (PHIC) with data management and maintenance by PHIC. Access agreement between PHIC and the Licensee to be maintained.<br><br>Target for Taplin Street only. | N/A               |
| 6. | Dust Management Tool  | Dust management tool that incorporates a forecast of local weather conditions and operational plans for each 12 hour shift.   | Dust management ongoing, records of dust management tool kept for each 12 hour shift.   | N/A               |
| 7. | Truck wash/ dry sweep | Truck wash/dry sweep located at the exit points of the premises to remove built up material from undercarriage and wheel guards.  | Fully contained truck wash facility (including sumps) at Stockyard 1 exit.<br><br>Manual dry sweep area at Stockyard 2 exit.<br><br>Every truck exiting the premises pass through truck wash/dry sweep  | Premises Map      |
| 8. | Water carts           | Operate when visible dust is generated from trafficable areas.<br>Operate proactively subject to dust forecast tool over a 24 hour period.<br>Operate when visible dust reported by site personnel. |   |                   |

### 7.3.5 Impact

PM has the potential to impact public health and affects both the respiratory and cardiovascular systems following both long and short term exposures. Long term repeated exposure is much more detrimental than short term sporadic exposure. The most severe effects being reduced life expectancy due to long-term exposures.

For Port Hedland, the HRA found that modelling scenarios indicated that the level of risk

between the lower PM<sub>10</sub> concentrations of 50 µg/m<sup>3</sup> and the interim guideline of 70 µg/m<sup>3</sup> was not discernible for the current population levels in Port Hedland. The HRA concluded that the interim guideline of 70 µg/m<sup>3</sup> should provide adequate protection of health and wellbeing.

### **7.3.6 Consequence**

Taking into consideration the relevant factors discussed in this report, in particular the current exceedance of the criteria (70 µg/m<sup>3</sup>) within the West End and the findings of the HRA (see section 3.3.2 of this decision report), DER considers that the Utah facility contributes to the cumulative concentration of PM<sub>10</sub> which may lead to permanent and short term health effects for a localised to small population.

The consequence rating is therefore major.

### **7.3.7 Likelihood of consequence**

Taking into consideration the relevant factors discussed in this report, in particular the proponent controls, meteorological conditions, and available onsite monitoring data, the likelihood of the Utah facility contributing to the cumulative effect of PM<sub>10</sub> on long term health effects to the residents in the West End of Port Hedland is considered as possibly occurring some of the time.

Therefore the likelihood rating is possible.

## **7.4 Risk of Noise Impact Analysis**

### **7.4.1 General Hazard Characterisation**

Noise is generated from normal operations onsite including noise from road trains unloading and braking, front end loader and product movement through conveyors and stackers and reverse alarms.

### **7.4.2 Noise Criteria**

Noise modelling indicates that noise from the Utah facility is within assigned levels in the Noise Regulations (see section 4.6.5 of this decision report).

### 7.4.3 Assessment of proponent controls

The Licensee has the following controls in place to reduce and manage noise emissions:

**Table 18 - Proponent controls for noise**

| Control                    | Description  |
|----------------------------|--|
| Siting                     | Location of noisy equipment away from noise sensitive areas  |
| Engineering                | Implementation of engineering designs and controls to reduce operational noise including enclosure of equipment and the use of vibration isolation and damping |
| Mobile plant and equipment | Equipment and machinery with lower noise emissions such as low noise idlers  |

### 7.4.4 Impact

Noise has the potential to impact amenity for people.

### 7.4.5 Consequence

Taking into consideration the relevant factors discussed in this report, mainly in respect to the noise modelling undertaken, DER considers that there will be no detectable impacts to amenity for residents in West End of Port Hedland.

The consequence rating is therefore insignificant.

### 7.4.6 Likelihood of consequence

Taking into consideration the relevant factors discussed in this report, mainly in regard to noise modelling from the Licensee, DER is of the view that the operation exceeding the assigned noise level criteria would only occur in exceptional circumstances.

The likelihood of causing insignificant consequences on the receptor would only be in exceptional circumstances.

The likelihood rating is therefore rare.

## 7.5 Risk of Discharge to Water Impact Analysis

### 7.5.1 General Hazard Characterisation

Material may enter the marine environment through contaminated stormwater and wash down water. Contaminated stormwater may also be discharged through stormwater infrastructure failure.

### 7.5.2 Water Quality Criteria

The Utah facility is located within the Port Hedland harbour which has been characterised as requiring moderate ecological protection (DoE 2006).

### 7.5.3 Assessment of proponent controls

**Table 19 - Proponent controls for stormwater management**

|    | Stormwater management                     |   |   |
|----|---|---|---|
| 1. | Stormwater infrastructure for Stockyard 1 | Stormwater from Stockyard 1 to be captured on land directed to a stormwater recirculation pond with 50,000m <sup>3</sup> capacity. Lined recirculated pond.   | Premises Map                                      |
| 2. | Stormwater infrastructure for Stockyard 2 | Stormwater from Stockyard 2 captured on land directed to stormwater settlement sump and ponds. The stormwater settlement pond designed to contain 1 in 10 year 24 hour rainfall event. Stormwater pond connects to the recirculation pond.  | Premises Map                                      |
| 3. | Stormwater infrastructure for berth       | The wharf is designed to prevent direct drainage of stormwater into the marine environment. The wharf deck is sloped from the front fender line to the back, which is bunded and connected to a contained drainage system. All stormwater is pumped to the recirculation pond.  | Premises Map                                      |
| 4. | Stormwater discharge                      | Storm-water discharge points to be maintained in good repair: <ul style="list-style-type: none"> <li>• W12 – Stormwater outlet</li> <li>• W13 – Emergency overflow discharge point from recirculation pond</li> <li>• W14 - Controlled discharge point from recirculation pond, activated in the event of rainfall greater than the ponds capacity</li> </ul> | Monitoring Locations and Stormwater Discharge Map |
| 5. | Road sweeper                              | Operate on sealed areas including ring roads and wharf. Used to minimise material build-up on roads and wharf.<br><br>Used at least twice a day   | N/A   |

**Table 20 - Proponent management controls spills**

| Management Control | Description   |
|--------------------|---|
| Spillage clean up  | Any spills contained and cleaned up: <ul style="list-style-type: none"> <li>• During ship loading a vacuum truck is present at all times.</li> <li>• Spillages of ore are cleaned up as soon as possible and returned to either the stockpile or sump.</li> </ul> |

**Table 21 - Proponent monitoring for surface water**

| Monitoring | Description  |
|------------|--|
| Monitoring | A surface water monitoring program with reference to The Australian and New Zealand Environment Conservation Council (ANZECC) water quality framework. |

#### 7.5.4 Impact

Sediments and material at Utah facility have the potential to contaminate stormwater and be discharged into the marine environment. High loads of sediments in stormwater can impact receiving water quality. It can also cause sedimentation impacting the surrounding mangrove community.

#### 7.5.5 Consequence

The Port Hedland port is a tidal environment with naturally elevated levels of turbidity. Taking into account the relevant factors discussed in this report, it is considered that there may be a minor impact to the marine environment which may result in local off-site impacts on the mangrove community.

The consequence rating is therefore minor.

#### 7.5.6 Likelihood of consequence

Taking into consideration the relevant factors discussed in the report, in particular the proponent controls in place, DER considers an impact to surface water would be unlikely to occur.

The likelihood rating is therefore unlikely.

### 7.6 Risk of Land Infiltration to Groundwater Analysis

#### 7.6.1 General Hazard Characterisation

Material may enter the groundwater through the infiltration of contaminated stormwater and hydrocarbon spills and leaks entering soils.

#### 7.6.2 Assessment of proponent controls

The Licensee has the following controls in place for spills of material from onshore activities.

**Table 22 - Proponent controls to minimize groundwater impacts**

| Management Control | Description  |
|--------------------|--|
| Engineering        | An impervious 'geotechnical barrier' installed 500-700mm beneath the surface of the south eastern half of Stockyard 1 to prevent infiltration of manganese or chromite contaminants to groundwater.  |
| Spillage clean up  | Any material spills contained and cleaned up:<br><br>During ship loading a vacuum truck is present at all times.<br><br>Spillages of ore are cleaned up as soon as possible and returned to either the stockpile or sump.<br><br>Hydrocarbon spills are controlled, contained and cleaned up |

#### 7.6.3 Impact

Contaminated stormwater or hydrocarbons from spills and leaks entering groundwater. Contaminated groundwater can impact the receiving environment (mangrove community).

#### **7.6.4 Consequence**

Groundwater in the area is not considered potable; however ecosystem values include the mangrove community. Taking into account the relevant factors discussed in this report, it is considered that there may be an impact to groundwater (physical, chemical or biological) which may result in local off-site impacts on the mangrove community.

The consequence rating is therefore minor.

#### **7.6.5 Likelihood of consequence**

Taking into consideration the relevant factors discussed in this report, in particular the proponent controls in place, the likelihood of causing an impact on groundwater is unlikely to occur.

The likelihood rating is therefore unlikely.

## 7.7 Risk Rating

Consideration has been given to all of the above matters and the following risk criteria have been applied, to determine the risk rating set out below.

**Table 23 - Risk rating matrix**

| Likelihood     | Consequence   |          |          |          |         |
|----------------|---------------|----------|----------|----------|---------|
|                | Insignificant | Minor    | Moderate | Major    | Severe  |
| Almost Certain | Moderate      | High     | High     | Extreme  | Extreme |
| Likely         | Moderate      | Moderate | High     | High     | Extreme |
| Possible       | Low           | Moderate | Moderate | High     | Extreme |
| Unlikely       | Low           | Moderate | Moderate | Moderate | High    |
| Rare           | Low           | Low      | Moderate | Moderate | High    |

| Likelihood  |   | Consequence   |   |   |
|---|---|---|---|---|
| The following criteria has been used to determine the likelihood of the risk / opportunity occurring. |   | The following criteria has been used to determine the consequences of a risk occurring: |   |   |
|   |   |   | Public Health   | Ecosystem/<br>Environmental   |
| Almost Certain  | The event is expected to occur in most circumstances  | Severe  | <ul style="list-style-type: none"> <li>Loss of life</li> <li>Exposure to hazard with permanent prolonged adverse health effects expected to large population</li> <li>Health criteria is significantly exceeded</li> </ul>  | <ul style="list-style-type: none"> <li>Irreversible impact to significant high value or sensitive ecosystem expected</li> <li>Irreversible and significant impact on a wide scale</li> <li>Total loss of a threatened species expected</li> <li>Ecosystem criteria is significantly exceeded</li> </ul> |
| Likely  | The event will probably occur in most circumstances   | Major   | <ul style="list-style-type: none"> <li>Exposure to hazard with permanent prolonged adverse health effects expected to small population</li> <li>Significant impact to amenity for extended periods expected to large population</li> <li>Health criteria is exceeded</li> </ul> | <ul style="list-style-type: none"> <li>Long-term impact to significant high value or sensitive ecosystem expected</li> <li>Long-term impact on a wide scale</li> <li>Adverse impact to a listed species expected</li> <li>Ecosystem criteria is exceeded</li> </ul>                                     |
| Possible  | The event could occur at some time                    | Moderate  | <ul style="list-style-type: none"> <li>Exposure to hazard with short-term adverse health effects expected requiring treatment</li> <li>Impact to amenity expected for short periods to large population</li> <li>Health criteria is at risk of not being met</li> </ul>         | <ul style="list-style-type: none"> <li>Minor and short-term impact to high value or sensitive ecosystem expected</li> <li>Off-site impacts at a local scale</li> <li>Ecosystem criteria is at risk of not being met</li> </ul>  |
| Unlikely  | The event is unlikely to occur                        | Minor   | <ul style="list-style-type: none"> <li>Exposure to hazard with short-term adverse health effects expected</li> <li>Impact to amenity expected for short periods to small population</li> <li>Health criteria are likely to be met</li> </ul>                                    | <ul style="list-style-type: none"> <li>Moderate to minor impact to ecosystem component (physical, chemical or biological)</li> <li>Minor off-site impacts at a local scale</li> <li>Ecosystem criteria are likely to be met</li> </ul>  |
| Rare  | The event may only occur in exceptional circumstances | Insignificant   | <ul style="list-style-type: none"> <li>No detectable impacts to health</li> <li>No detectable impacts to amenity</li> <li>Health criteria met</li> </ul>  | <ul style="list-style-type: none"> <li>None or insignificant impact to ecosystem component (physical, chemical or biological) expected with no effect on ecosystem function</li> <li>Ecosystem criteria met</li> </ul>  |

### 7.7.1 Risk Treatment

DER will treat risks in accordance with the Risk Treatment Matrix below:

**Table 24 – Risk treatment matrix**

| <b>Risk Rating</b> | <b>Acceptability</b>                                 | <b>Treatment</b>  |
|--------------------|--|---|
| <b>Extreme</b>     | Unacceptable   | Risks will not be tolerated. DER will refuse proposals.   |
| <b>High</b>        | Acceptable subject to primary and secondary controls | Risks will be subject to multiple regulatory controls including primary and secondary controls. This will include both outcome-based and management conditions. |
| <b>Moderate</b>    | Acceptable, generally subject to primary controls    | Risks will be subject to regulatory controls with a preference for outcome-based conditions where practical and appropriate.                                    |
| <b>Low</b>         | Acceptable, generally not controlled                 | Risks are acceptable and will generally not be subject to regulatory controls.  |



## 7.7.2 Summary of Risk Assessment and Acceptability

The risk items identified in section 7 including the application of risk criteria and the acceptability with treatment are summarised in Table 25 below:

**Table 25 - Risk rating of emissions**

|    | Emission   |                                     | Pathway and Receptor                | Proponent controls                       | Impact  | Risk Rating  | Acceptability with treatment (conditions on instrument)  |
|----|--|-------------------------------------|-------------------------------------|--|---|--|--|
|    | Type   | Source                              |                                     |  |   |  |  |
| 1. | Dust emissions from handling and movement of iron ore, manganese ore and chromite              | Infrastructure and handling process | Air, moving with direction of wind. | Infrastructure and management controls.  | Public health and amenity.  | Major consequence.<br>Possible likelihood.<br><b>High risk</b>   | Acceptable subject to proponent controls conditioned <b>and additional regulatory controls</b> |
| 2. | Noise from infrastructure and operations   | Infrastructure and handling process | Air, moving with direction of wind  | Plant/equipment and management controls. | Public health and amenity.  | Insignificant consequence<br>Rare likelihood<br><b>Low risk</b>  | Acceptable, no regulatory controls required.   |
| 3. | Discharge to water from contaminated stormwater and material spills                            | Stormwater (contaminate stormwater) | Direct from infrastructure.         | Infrastructure and management controls.  | Impacts on water quality and visibility   | Minor consequence<br>Unlikely<br><b>Moderate risk</b>            | Acceptable subject to proponent controls conditioned   |
| 4. | Discharge to land from contaminated stormwater and material spills infiltrating to groundwater | Stormwater (contaminate stormwater) | Land infiltration to groundwater.   | Infrastructure and management controls.  | Groundwater quality affected and entry into the marine environment (interface). | Minor consequence<br>Unlikely likelihood<br><b>Moderate risk</b> | Acceptable subject to proponent controls conditioned   |

## 8. Determined Regulatory Controls

### 8.1 Summary of Controls

Table 26 - Regulatory controls

|                            |   | Controls                         |                      |   |                |
|----------------------------|---|----------------------------------|----------------------|---|----------------|
|                            |   | 8.2 Infrastructure and Equipment | 8.3 Moisture content | 8.3 Specified Action (monitoring and reporting) | 8.4 Monitoring |
| Risk Items (see section 7) | 1. Dust from iron ore, manganese ore and chromite ore   | •                                | •                    | •   | •              |
|                            | 2. Noise from infrastructure and operations   | Low risk.                        |                      |   |                |
|                            | 3. Discharge to water from contaminated stormwater and material spills                            | •                                |                      |   |                |
|                            | 4. Discharge to land from contaminated stormwater and material spills infiltrating to groundwater | •                                |                      |   |                |

### 8.2 Specified Infrastructure and Equipment Controls

#### 8.2.1 Dust Management

The following environmental controls, infrastructure and equipment should be maintained and operated onsite for dust management:

- sealed and maintained ring road around stockyard 1 and 2;
- vehicles to travel at 20km per hour;
- misters on bunkers and radial stackers;
- drop height from radial stackers minimised and chevron or cone pattern stacking;
- four water cannons per stockpile routinely operated as required to prevent visible dust lift off;
- under belt sprays and belts scrapers on conveyors;
- partially enclosed transfer stations and enclosed dribbler chute on ship loader; and

- fully contained truck wash facility at Stockyard 1 exit, dry sweep area at Stockyard 2 exit.

## 8.2.2 Wash water and stormwater management

The following environmental controls, infrastructure and equipment should be maintained and operated onsite for wash-water and stormwater management:

- stormwater from Stockyard 1 captured on land directed to a lined stormwater recirculation pond with 50,000m<sup>3</sup> capacity.
- stormwater from Stockyard 2 captured on land directed to stormwater settlement sump and pond. The stormwater settlement pond designed to contain 1 in 10 year 24 hour rainfall event. Stormwater pond connects to the recirculation pond;
- berth is designed to prevent direct drainage of stormwater into the marine environment through bunding and to contained drainage system;
- stormwater discharge points restricted to:
  - W12 - Stormwater outlet;
  - W13 - Emergency overflow discharge point from recirculation pond; and
  - W14 - Controlled discharge point from recirculation pond, activated in the event of rainfall greater than the ponds capacity; and
- road sweeper which is operated on trafficable areas including ring road and berths and is used at least twice a day.

**Note:** Specified infrastructure requirements derived from those currently undertaken by the Licensee.

**Grounds:** The infrastructure and equipment is currently used by the Licensee and considered necessary based on the materials handled and the risk to public health and marine ecosystem. The condition requires the continued use of the infrastructure and equipment and ensures regulatory oversight.

## 8.3 Moisture Content Monitoring and Reporting

Bulk granular materials accepted and handled at the premises shall be adequately conditioned so to reduce the potential for the generation of fugitive dust during storage, loading, unloading and transportation activities. The adequate conditioning refers to the moisture content of material which must be maintained at or above the DEM number. The DEM number is defined as the moisture content at which the dust number is 10.

The methodology to acquire the DEM number is AS 4156.6 – 2000.

The Licensee is required to obtain the DEM for all materials and monitor the moisture content received on the premises at the time of dispatch from mine.

The Licensee is required to provide reports on compliance with DEM and any observations on a quarterly basis.

The Licensee is required to undertake sampling of moisture content to confirm that the material is adequately conditioned. The moisture content must be above the DEM level as the DEM level represents the limit. The frequency of monitoring has been based on the season and when elevated levels of dust may be experienced at Taplin Street.

**Note:** The requirement for port users to achieve DEM is currently required by PPA through

contractual arrangements.

**Grounds:** DEM is required to ensure that adequate moisture is achieved within bulk materials dispatched to the premises to reduce the dust generation potential. Moisture content is a critical factor in the generation of fugitive dust. The condition requires the reporting of DEM determination and compliance based on information supplied by Port users. The second part of the condition requires the Licensee to confirm that the bulk granular material received at the premises contains adequate moisture levels (in comparison to DEM) through sampling and analysis. This allows for a greater degree of certainty that the material is adequately conditioned and can also act to validate the information supplied from Port users.

## 8.4 Particulate Monitoring Requirements

### 8.4.1 Monitoring Requirement

The monitoring of particulates through three real time monitors for monitoring of PM<sub>10</sub> located on the north-west corner and southerly boundaries. Monitoring of manganese and Chromium (III and VI) is required at monitoring stations on the west and east side of the Utah facility. Monitoring is also required to be undertaken at Taplin Street located in the town of Port Hedland (west-end).

### 8.4.2 Monitoring Report

Monitoring reports are required to be provided bimonthly. The Licensee will be required to report when levels are greater than 145 µg/m<sup>3</sup> for BAM1020 monitors and 145 µg/m<sup>3</sup> for Esampler monitor for PM<sub>10</sub>. Chromium and manganese reporting is for 3.5 µg/m<sup>3</sup> (annual) and 10 µg/m<sup>3</sup> for any one sample with an annual average of 3 µg/m<sup>3</sup>.

**Note:** Monitoring is currently undertaken and reported by the Licensee. Action is currently undertaken by the Licensee when certain levels of PM<sub>10</sub> are detected at the Licensee's boundary monitoring network. Monitoring at Taplin Street is currently undertaken by the Port Hedland Industries Council (PHIC), with the Licensee being a member.

**Grounds:** DER requires continued monitoring and specified action to be undertaken for significant sources of dust emissions within the Port Hedland air-shed given the current ground level concentration of PM. The reporting of events will provide DER additional data to determine whether more adequate risk-based controls will be required. DER notes that the development of a coordinated response to the HRA may require amendments to the controls in relation to the risk of particulate matter in Port Hedland to ensure consistency of regulation of premises under the EP Act.

## 9. Setting Conditions

The conditions in the Issued Licence have been determined in accordance with DER's *Guidance Statement on Setting Conditions*.

DER's *Guidance Statement on Licence Duration* has been applied and the Issued Licence expires in 20 years from date of issue.

**Table 27 - Grounds for applied conditions**

| Condition Ref                        | Grounds   |
|--------------------------------------|---|
| Environmental Compliance Condition 1 | Environmental compliance is a valid, risk-based condition to ensure appropriate linkage between the licence and the EP Act. |
| Notification of Material Change      | These conditions are valid, risk-based and enable   |

|   |  |
|---|--|
| 2, 3 and 4  | flexibility in operations.   |
| Infrastructure and Equipment<br>5 and 6                         | These conditions are valid, risk-based and contain appropriate controls (see section 8 of this decision report). |
| Moisture Content Monitoring and Reporting<br>7, 8, 9, 10 and 11 | This condition is valid, risk-based and consistent with the EP Act.  |
| Dust Monitoring and Reportable events<br>12, 13, 14 and 15      | This condition is valid, risk-based and consistent with the EP Act.  |
| Emissions<br>16   | This condition is valid, risk-based and consistent with the EP Act.  |
| Information<br>16, 17, 18, 19, 20 and 21                        | These conditions are valid and are necessary administration and reporting requirements to ensure compliance.     |

DER notes that it may review the appropriateness and adequacy of controls at any time, and that following a review, DER may initiate amendments to the licence under the EP Act.

## 10. Applicant's Comments on Risk Assessment

The applicant was provided with the draft decision report and draft licence on 10 March 2016 for review and comment and then again on 30 May 2016. The applicant provided a number of comments during both consultation periods which have been considered and are tabled through Appendix 3.

## 11. Conclusion

This assessment of the risks of activities on the premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 2). This assessment was also informed by a site inspection by DER officers on 8 February 2016.

Based on this assessment, it has been determined that the Issued Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

**Michael Christensen**

**Executive Advisor**

delegated Officer under section 20 of the *Environmental Protection Act 1986*

## Appendix 1: Compliance History Check

The following incidents have been recorded within the Departments Incident Complaints Management System (ICMS) since 2010.

| No.   | Date       | Incident details   | Incident Close Out   |
|-------|------------|--|--|
| 22642 | 15/11/2010 | Self-reported dust emissions from in-loading of manganese and iron ore which had deposited on mangrove community at Stanley Point. Licensee considered it was as a result of poorly conditioned material from Consolidated Minerals Limited. | Licensee required action to be undertaken by CML.<br>Incident closed on 6/09/2012  |
| 21069 | 16/03/2011 | Self-reported incident involving a load of chromite ore being dumped in manganese ore storage area.  | Incident closed on 3/12/2012   |
| 24530 | 28/02/2012 | Self-reported Discharge to water was identified through routine Licensee inspection. It was noted that approximately 100kg of material had been shoved outside of the bunded area and could have entered the marine environment.             | Licensee undertook corrective actions.<br>Incident closed on 6/09/2012   |
| 30083 | 11/06/2012 | Compliance Inspection and issue of Environmental Field Notice (EFN). EFN (#3080) issued because of copper and manganese build up under conveyors.<br>Correspondence sent to Licensee.  | Inspection undertaken on 12/06/2013 and did not find any non-compliances.<br>Licensee sent response on 2/07/2013.<br>Incident closed on 13/09/2013 |

## Appendix 2: Key Documents

Documents assessed and considered in review:

|    | Document Title  | Availability  |
|----|---|---|
| 1  | Licence L4432/1989/14 – Port Hedland Port   | accessed at <a href="http://www.der.wa.gov.au">http://www.der.wa.gov.au</a>   |
| 2  | Works Approval W4520/2009/1–Utah Point Berth Project  | DER records   |
| 3  | Works Approval W5201/2012/1 – Utah Point Berth Facility Stockyard 2 Interim Solution  | DER records   |
| 4  | DER <i>Guidance Statement on Regulatory principles</i> (July 2015)  | accessed at <a href="http://www.der.wa.gov.au">http://www.der.wa.gov.au</a>   |
| 5  | DER <i>Guidance Statement on Setting conditions</i> (September 2015)  |   |
| 6  | DER <i>Guidance Statement on Licence duration</i> (November 2014)   |   |
| 7  | DER <i>Guidance Statement on Licensing and works approvals processes</i> (September 2015)   |   |
| 8  | Ministerial Statement 788   | Ministerial Statement, Report and Bulletin accessed at <a href="http://www.epa.wa.gov.au/">http://www.epa.wa.gov.au/</a>  |
| 9  | EPA Report 1311   |   |
| 10 | Environmental Protection Bulletin No. 2   |   |
| 11 | Port Hedland Air Quality and Noise Management Plan, March 2010  | Port Hedland Air Quality and Noise Management Plan accessed at <a href="http://www.dsd.wa.gov.au/">http://www.dsd.wa.gov.au/</a>  |
| 12 | Department of Health, Impact of Dust on Port Hedland, March 2010  | accessed at <a href="http://www.public.health.wa.gov.au">http://www.public.health.wa.gov.au</a>   |
| 13 | Department of Health, Port Hedland Air Quality Health Risk Assessment for Particulate Matter, January 2016  | Accessed at <a href="http://ww2.health.wa.gov.au/Reports-and-publications/Port-Hedland-Health-Risk-Assessment">http://ww2.health.wa.gov.au/Reports-and-publications/Port-Hedland-Health-Risk-Assessment</a> |
| 14 | Department of Environment, Pilbara Coastal Water Quality Consultation Outcomes: Environmental Values and Environmental Quality Objectives, March 2006 | accessed at <a href="http://edit.epa.wa.gov.au/EPADocLib/pilbaracoastalwaterquality_Marine%20Report%201.pdf">http://edit.epa.wa.gov.au/EPADocLib/pilbaracoastalwaterquality_Marine%20Report%201.pdf</a>     |
| 15 | DER Compliance Inspection undertaken 11 June 2012   | DER records   |
| 16 | DER Compliance Inspection undertaken 2 May 2014   |   |
| 17 | DER Compliance Inspection undertaken 15 October 2014  |   |

## Appendix 3: Summary of Applicant's Comments on Draft Conditions

| Front Page                                |  |   |
|---|--|---|
| 1.  | Applicants comment and suggested change  | PPA advises that the Licensee should read "Pilbara Ports Authority".<br><br>PPA advises that the Premises should read "Utah Point Multi- User Bulk Handling Facility, Finucane Island, WA, <b>6721, PORT HEDLAND.</b>   |
|   | DER Response   | Noted and accepted.   |
| Infrastructure and Equipment              |  |   |
| 2.  | Applicants comment and suggested change  | PPA requests that all columns in the table referenced in Condition 5 are labelled, as done for the Dust Emissions Monitoring Table, for consistency and ease of reference (i.e. specify Column 1; Column 2; Column 3... etc.).<br><br>PPA requests all tables be numbered and all table numbers be referenced in the relevant conditions. For example: ' <i>The licensee must ensure that the infrastructure and equipment specified in Column 1 of Table 5 in Schedule 3...</i> ' with the table in Schedule 3 being labelled as ' <i>Table 1: Dust Emission Monitoring Table</i> '.<br><br>Please note that these comments apply to all tables within L8937 and all conditions that reference tables.   |
|   | DER Response   | Noted and accepted.   |
| Moisture Content Monitoring and Reporting |  |   |
| 3.  | Applicants comment and suggested change to Condition 7.                        | PPA suggests wording within Condition 7 be amended from " <i>The licensee must calculate the dust extinction ...</i> " to " <i>The licensee shall maintain records of the dust extinction..</i> ".<br><br>This is because DEM is calculated by a laboratory engaged by the relevant proponents of the Facility, not PPA directly. Proponents supply PPA with this information.<br><br>PPA notes AS 4156.6 is specific for coal and wishes to advise DER that Tunra Bulk Solids Handling Research Associates follow the procedures as set out in AS 4156.6-2000 and utilise the same or slightly amended technique for different ores. For example, sample quantities for iron ore are adjusted and a special rule on particle sizing and sample reconstitution is used for lump.<br><br>PPA requests this condition be reworded to align with possible variations made to AS 4156.6 when applied to iron ore, chromite ore and manganese ore. |
|   | Applicants follow up comment and suggested change to Condition 7. (6 May 2016) | DEM is calculated by a laboratory engaged by the relevant users of the facility, not PPA (as the Licensee). Facility users supply PPA with this information. The current condition could be read as PPA must undertake this determination. PPA notes AS 4156.6 is specific for coal and wishes to advise DER that Tunra Bulk Solids Handling Research Associates follow the procedures as set out in AS 4156.6-2000 and utilise the same or slightly amended technique for different ores. PPA requests this condition be reworded to align with possible variations made to AS 4156.6 when applied to different products.<br><br><u>Proposed wording</u><br>" <i>The Licensee shall obtain from facility users the dust extinction moisture (DEM) level (being the moisture content of the product at</i>  |



|    |   |  |
|----|---|--|
|    |   | <i>which the Dust Number is 10) for each product received at the Premises in accordance with AS4156.6."</i>  |
|    | DER Response  | Refer to row 72 for most recent DER response in relation to the condition.   |
| 4. | Applicants comment and suggested change to Condition 8. | <p>PPA requests this Conditions 8(a), 8(b) and 8 (c) be modified to a single condition which requires PPA to monitor the condition of received material, based on representative sample data associated with the specific product delivered to the site.</p> <p>Utah Point accepts material in bulk (from trucks) and PPA obtains product moisture levels (from facility users) on varying frequencies per truck and/or per stockpile of material. PPA suggests that the proposed redrafted condition is adequate to collect the information being sought by this condition.</p> <p>PPA advises that stockpiles can comprise of product from several different mines, each with different DEMs, therefore a single DEM value per stockpile is not available. If all product is received at or above DEM, the stockpiled product would have adequate moisture to limit dust generation.</p> <p><u>Proposed wording</u><br/> <i>"The Licensee shall obtain from facility users records to confirm products received on site are received at or above the specified DEM level (as percentage moisture) as calculated in Condition 7."</i></p> |
|    | DER Response  | Refer to row 72 for most recent DER response in relation to the condition.   |
| 5. | Applicants comment and suggested change to Condition 9. | <p>PPA requests that Condition 9 be amended to reflect the Licensees demonstrated actions to ensure product received on-site has moisture levels consistent with the DEM levels for the specific product.</p> <p>The current condition could be read to require the Licensee to accept/reject material at gate based on the real-time measure of moisture content. Instantaneous assessment of moisture content at gate is not possible for road train traffic.</p> <p><u>Proposed wording</u><br/> <i>"The Licensee shall ensure corrective actions are undertaken when product received at the premises exceeds the criteria provided in Condition 7 as evidenced by the data collected under Condition 8."</i></p>  |
|    | DER Response  | Refer to row 72 for most recent DER response in relation to the condition.   |

| Dust Monitoring and Reportable Events |  |  |
|---------------------------------------|--|--|
| 6.                                    | Applicants comment and suggested change to Condition 11. (Comment 1) | As per Condition 5, PPA requests that all tables be numbered to assist readers of the licence. For example: <i>The Licensee must monitor the emissions specified in Column 1 from the locations specified in column 2 in Table 1...</i> with the table being labelled as "Table 1: Dust Emissions Monitoring". |
|                                       | DER Response   | Noted, minor amendment made. (Note, now condition 12)  |
| 7.                                    | Applicants comment and suggested change to Condition 11. (Comment 2) | PPA recommends the term "continuous" be include in the Definitions section and recommends a definition of: <i>"Continuous means a data capture rate in accordance with the National Environment Protection (Ambient Air Quality) Measure Technical Paper 5 – Data Collection and Handling (2001)".</i>         |
|                                       | DER Response   | Noted. Alternative definition proposed based on internal technical advice.<br>DER has defined continuous as:<br><i>'Continuous means a data recovery rate of at least 90%.'</i><br>(Note, now condition 12)  |

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| 8.  | Applicants comment and suggested change to Condition 11. (Comment 3) | PPA requests a target increase for the Utah South (M6) dust monitor from 105 µg/m <sup>3</sup> to 145 µg/m <sup>3</sup> in line with the Utah North (M5) and the Utah West (M7) dust monitoring sites to ensure consistency in boundary monitoring of PM <sub>10</sub> across the site. PPA does not consider this increase would change the outcomes of DER's risk assessment.  |
|     | DER Response   | DER has reviewed and considered the proposed change from 105 µg/m <sup>3</sup> to 145 µg/m <sup>3</sup> and considers that this is appropriate, does not alter the risk and will ensure consistency in requirements and reporting. DER also notes that the nearest receptor on the southern boundary is Roy Hill (berth and shiploader) and Wedgefield (in a south-easterly direction) at approximately 5km. (Note, now condition 12)  |
| 9.  | Applicants comment and suggested change to Condition 11. (Comment 4) | PPA recommends the deletion of all reference to AS 3580.9.11 with reference to the Utah South E-Sampler, as this standard refers specifically to BAM measurement. PPA recommends including AS 3580.9.6 in the Definitions section.   |
|     | DER Response   | Noted, amendments made. (Note, now condition 12)   |
| 10. | Applicants comment and suggested change to Condition 11. (Comment 5) | PPA requests all references to ug/m <sup>3</sup> be amended to µg/m <sup>3</sup> . Editorial changes required are in <b>bold</b> .   |
|     | DER Response   | Noted, minor amendment made. (Note, now condition 12)  |
| 11. | Applicants comment and suggested change to Condition 11. (Comment 6) | PPA requests the wording for the frequency for HVAS monitoring be amended to "One 24 hour sample every sixth day, plus at least one 24 hour sample during a ship loading of chromite/manganese".   |
|     | DER Response   | Noted DER has amended from:<br>"One 24 hour sample every sixth day from commencement ship-loading of chromite or manganese ore (including day 1).", to;<br>"One 24 hour sample every sixth day, plus at least one 24 hour sample during a ship loading of chromite/manganese"<br>(Note, now condition 12)  |
| 12. | DER Amendment  | DER has additionally amended condition 12, to include monitoring at Taplin Street, with a 1-hour averaging frequency. Taplin Street has been established through the Port Hedland Dust Taskforce to be the location at which ambient levels of PM <sub>10</sub> should meet 70µg/m <sup>3</sup> (10 exceedances per year). Further DER consider that all Licences for bulk materials handling (Category 58) issued under Part V of the EP Act within Port Hedland will be required to monitoring at this location. DER considers that the 1 hour averaging frequency is the minimum required to provide meaningful data for the purposes air quality analysis. |
| 13. | Applicants comment and suggested change to Condition 12.             | PPA request the following amendment: "The Licensee must provide a report to the CEO for Reportable Events (as specified in column 4 of <b>Table 1</b> ) which have occurred, containing the information and for the periods specified in Schedule 4". Editorial changes required are in <b>bold</b> .  |
|     | DER Response   | Noted, minor amendments made. (Note, now condition 13)   |
| 14. | DER Amendment  | DER has included condition 14 and 15. These conditions relate to monitoring that is undertaken at Taplin Street and specifies the frequency for the provision of monitoring data to the CEO.   |

## Emissions

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| 15. | Applicants comment and suggested change to Condition 13. | <p>PPA request the following amendment: “<i>The Licensee must not cause any emissions from the Premises except for Specified Emissions and General Emissions described in column 1, subject to exclusions, limitations or requirements specified in column 2, of <b>Table 2</b></i>”, with the table in Condition 13 being labelled “Table 2: Emissions Table”. Editorial changes required are in <b>bold</b>.</p> <p>PPA recommends the wording within <i>Table 2: Emissions Table</i> be revised to ensure it will be clearly understood by any reader. The wording within the <i>General Emissions</i> section in particular requires revising.</p> <p>PPA recommends all words in bold within Table 2 are included in the Definitions section.</p> |
|     | DER Response   | Noted, minor amendments made.<br>(Note, now condition 16)  |

#### Information

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| 16. | Applicants comment and suggested change to Condition 14. | PPA request, for simplification, that this condition read: “ <i>The Licensee must maintain accurate and auditable records in relation to...</i> ” All other words in the condition as it currently reads are considered superfluous to its intention.  |
|     | DER Response   | Noted, minor amendments made.<br>(Note, now condition 17)  |
| 17. | Applicants comment and suggested change to Condition 15  | <p>Please note the minor typographical error within Condition 15. The condition should read “<i>If an emission type referred...</i>” Note, “the” needs to be deleted between “emission” and “type”.</p> <p>PPA seeks clarification that an extension to the 21 day timeframe stipulated in Condition 15 (d) could be sought, should the nature of the complaint require additional time to sufficiently investigate.</p> |
|     | DER Response   | DER will require the Licensee to provide a copy of the required information detailed in condition 15 within 21 days. Should the Licensee require further time to submit additional information as part of an investigation than this may be considered by the DER, however this will not negate the need for an additional report addressing the requirements of condition 15.<br>(Note, now condition 18)               |
| 18. | Condition 17   | <p>PPA requests 90 days for submission of the Compliance Report in line with the current licence. This ensures time for data to be validated and the report to be internally reviewed prior to submission.</p> <p>PPA requests the reporting period for the Compliance Report be amended back to financial year, as it is in the current licence to allow for alignment with PPA business reporting standards.</p>       |
|     | DER Response   | Noted and accepted. Amendment made.<br>(Note, now condition 20)  |

#### Definition and Interpretation

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|-----|---|--|
| 19. | Applicants comment and suggested change | <p><b>Anniversary Date:</b> As noted above, PPA requests DER’s consideration that compliance reporting continues to be aligned with the financial year, not the anniversary date.</p> <p><b>Compliance Report:</b> As noted above, PPA suggests that definition of compliance report means “<i>a report in a format approved by the CEO as presented by the Licensee</i>”.</p> <p><b>Annual Period:</b> As noted above, PPA requests DER’s consideration that compliance reporting continues to be aligned with the financial year, 1 July – 30 June. PPA’s general comments regarding Definitions and Interpretation:</p> |
|-----|---|--|

|  |              |   |
|--|--------------|---|
|  |              | <p>- Please capitalise all defined terms and either italicise terms or don't italicise them for consistency throughout this section.</p> <p>- PPA notes that some terms bolded in the licence are not included in this section.</p> <p>PPA suggests adding a definition for the following terms:</p> <p>- <b>Continuous:</b> means a data capture rate in accordance with the <i>National Environment Protection (Ambient Air Quality) Measure Technical Paper 5 – Data Collection and Handling (2001)</i>.</p> <p>- <b>AS3580.9.6:</b> means the Australian Standard AS3580.9.6 <i>Determination of suspended particulate matter PM10 high volume sampler with size selective inlet Gravimetric method</i>.</p>  |
|  | DER Response | <p>Noted and accepted in part.</p> <p>DER has included the following definitions</p> <p><b>'Compliance Report</b> 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'</p> <p><b>'Continuous</b> means a data recover rate of at least 90%.'</p> <p>DER has also included the following definitions:</p> <p><b>'AS5621-2013</b> means Australian Standard AS5621-2013 Iron ores – rapid moisture determination.'</p> <p><b>ISO3087:2011</b> means International Standardization Organization ISO3087:2011 Iron ores - Determination of the moisture content of a lot.</p> <p><b>Moisture Content</b> means the ratio of the mass of water in a sample to the mass of solids in the sample, expressed as a percentage.</p> <p><b>NATA</b> means National Association of Testing Authorities.'</p> <p><b>Premises User</b> means the bulk granular material owner who uses the Utah facility for the export of their material.</p> |

#### Schedule 1: Maps

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|-----|---------------------|--|
| 20. | Applicants comment. | An updated premise map is provided in Attachment 4 to this letter. |
|     | DER Response        | Noted, updated map used.   |

#### Schedule 2: General Description

|     |   |  |   |  |   |   |   |                       |   |         |                                  |   |                 |   |   |            |  |
|-----|---|--|---|--|---|---|---|-----------------------|---|---------|----------------------------------|---|-----------------|---|---|------------|--|
| 21. | Applicants comment and proposed suggested change for Infrastructure and equipment | <p>PPA suggests the following text should be included for the infrastructure and equipment table in Schedule 2:</p> <table border="1"> <tr> <td>1</td><td>Sealed ring roads around Stockyard 1 and Stockyard 2</td><td>Premise Map: Ring road (Stockyard 1). Ring road (Stockyard 2). Ring road in Stockyard 1 is elevated</td></tr> <tr> <td>2</td><td>Seawall around the perimeter of the Stockyard 1 ring road</td><td>Premise Map: Sea wall</td></tr> <tr> <td>3</td><td>Bunkers</td><td>Premise Map: Bunker 1-13, 21, 22</td></tr> <tr> <td>4</td><td>Radial stackers</td><td>Premise Map: Radial stacker 1-5, 8-13, 21, 22</td></tr> <tr> <td>5</td><td>Stockpiles</td><td>Premise Map: Stockpile 1-13, 21 and 22</td></tr> </table> | 1 | Sealed ring roads around Stockyard 1 and Stockyard 2 | Premise Map: Ring road (Stockyard 1). Ring road (Stockyard 2). Ring road in Stockyard 1 is elevated | 2 | Seawall around the perimeter of the Stockyard 1 ring road | Premise Map: Sea wall | 3 | Bunkers | Premise Map: Bunker 1-13, 21, 22 | 4 | Radial stackers | Premise Map: Radial stacker 1-5, 8-13, 21, 22 | 5 | Stockpiles | Premise Map: Stockpile 1-13, 21 and 22 |
| 1   | Sealed ring roads around Stockyard 1 and Stockyard 2                              | Premise Map: Ring road (Stockyard 1). Ring road (Stockyard 2). Ring road in Stockyard 1 is elevated  |   |  |   |   |   |                       |   |         |                                  |   |                 |   |   |            |  |
| 2   | Seawall around the perimeter of the Stockyard 1 ring road                         | Premise Map: Sea wall  |   |  |   |   |   |                       |   |         |                                  |   |                 |   |   |            |  |
| 3   | Bunkers   | Premise Map: Bunker 1-13, 21, 22   |   |  |   |   |   |                       |   |         |                                  |   |                 |   |   |            |  |
| 4   | Radial stackers   | Premise Map: Radial stacker 1-5, 8-13, 21, 22  |   |  |   |   |   |                       |   |         |                                  |   |                 |   |   |            |  |
| 5   | Stockpiles  | Premise Map: Stockpile 1-13, 21 and 22   |   |  |   |   |   |                       |   |         |                                  |   |                 |   |   |            |  |

|   |  |   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
|---|--|---|----------|--------------|--|--------------------------|-----------------|--|------------|-------------------|---|-------------------|------------|-------------------------|---------------------|-------------------------------|---|-------------------|---|-----------------------------|-----------------|--------------------------------|---------------------------------|---------|--------------------------------|---|------------|-------------------------------|-------------------------------|---|-------------------------------|-------------------------------|
|   |  | <table><tr><td>6</td><td>Feed Hoppers</td><td>Premise Map: Stockyard 1 – 6 mobile feed hopper trains. Stockyard 2 – 2 fixed feed hoppers</td></tr><tr><td>7</td><td>Conveyor system</td><td>Premise Map: CV 01, CV 02, CV 03, CV 04, CV 05, CV 06, CV 07</td></tr><tr><td>8</td><td>Transfer stations</td><td>Premise Map: Transfer Station 1, Transfer Station 2, Transfer Station 3, Transfer Station 4</td></tr><tr><td>9</td><td>Shiploader</td><td>Premise Map: Shiploader</td></tr><tr><td>10</td><td>Wharf 4</td><td>Premise Map: Wharf 4 (272 metre to accommodate Panamax and small Cape Size vessels, including Cavotec system (vacuum-based mooring system) and other associated facilities and services.)</td></tr><tr><td>11</td><td>Stockyard 1 truck wash</td><td>Premise Map: SY1 truck wash</td></tr><tr><td>12</td><td>Stockyard 2 dry sweep</td><td>Premise Map: SY2 dry sweep area</td></tr><tr><td>13</td><td>Stormwater containment ponds</td><td>Premise Map: Stormwater recirculation pond, SY2 north pond, SY2 south pond.</td></tr></table> <p>Please note, there are several references to haul trucks within the licence and decision document. Haul trucks are the large trucks on mine sites that carry ore from the pit to the plant. Road trains transport the ore from mine site to port. Please amend all reference to “haul truck” in the licence and decision document to “road train”.</p> | 6        | Feed Hoppers | Premise Map: Stockyard 1 – 6 mobile feed hopper trains. Stockyard 2 – 2 fixed feed hoppers | 7                        | Conveyor system | Premise Map: CV 01, CV 02, CV 03, CV 04, CV 05, CV 06, CV 07 | 8          | Transfer stations | Premise Map: Transfer Station 1, Transfer Station 2, Transfer Station 3, Transfer Station 4 | 9                 | Shiploader | Premise Map: Shiploader | 10                  | Wharf 4                       | Premise Map: Wharf 4 (272 metre to accommodate Panamax and small Cape Size vessels, including Cavotec system (vacuum-based mooring system) and other associated facilities and services.) | 11                | Stockyard 1 truck wash                      | Premise Map: SY1 truck wash | 12              | Stockyard 2 dry sweep          | Premise Map: SY2 dry sweep area | 13      | Stormwater containment ponds   | Premise Map: Stormwater recirculation pond, SY2 north pond, SY2 south pond. |            |                               |                               |   |                               |                               |
| 6   | Feed Hoppers   | Premise Map: Stockyard 1 – 6 mobile feed hopper trains. Stockyard 2 – 2 fixed feed hoppers  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 7   | Conveyor system  | Premise Map: CV 01, CV 02, CV 03, CV 04, CV 05, CV 06, CV 07  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 8   | Transfer stations  | Premise Map: Transfer Station 1, Transfer Station 2, Transfer Station 3, Transfer Station 4   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 9   | Shiploader   | Premise Map: Shiploader   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 10  | Wharf 4  | Premise Map: Wharf 4 (272 metre to accommodate Panamax and small Cape Size vessels, including Cavotec system (vacuum-based mooring system) and other associated facilities and services.)   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 11  | Stockyard 1 truck wash   | Premise Map: SY1 truck wash   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 12  | Stockyard 2 dry sweep  | Premise Map: SY2 dry sweep area   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 13  | Stormwater containment ponds   | Premise Map: Stormwater recirculation pond, SY2 north pond, SY2 south pond.   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
|   | DER Response   | Noted and accepted. Amendment made.   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 22.                                       | Applicants comment and proposed suggested change for Bulk material unloaded and unloaded (Comment 1) | <p>PPA advises that the Licensee does not own and operate all unloading/loading and material loading systems at the Utah Facility. A breakdown of ownership/operation is provided below:</p> <table><tr><td>Facility</td><td>Owner</td><td>Operator</td></tr><tr><td>Wharf and Cavotec system</td><td>PPA</td><td>PPA</td></tr><tr><td>Shiploader</td><td>PPA</td><td>Qube</td></tr><tr><td>Outload conveyors</td><td>PPA</td><td>Qube</td></tr><tr><td>Stockyard conveyors</td><td>PPA (SY1)<br/>Atlas Iron (SY2)</td><td>Qube</td></tr><tr><td>Transfer stations</td><td>PPA (TS01, TS02, TS03)<br/>Atlas Iron (TS04)</td><td>Qube</td></tr><tr><td>Radial stackers</td><td>Qube (SY1)<br/>Atlas Iron (SY2)</td><td>Qube</td></tr><tr><td>Bunkers</td><td>Qube (SY1)<br/>Atlas Iron (SY2)</td><td>Qube</td></tr><tr><td>Ring roads</td><td>PPA (SY1)<br/>Atlas Iron (SY2)</td><td>PPA (SY1)<br/>Atlas Iron (SY2)</td></tr><tr><td>Offices, workshops, sample stations other</td><td>PPA (SY1)<br/>Atlas Iron (SY2)</td><td>PPA (SY1)<br/>Atlas Iron (SY2)</td></tr></table>   | Facility | Owner        | Operator   | Wharf and Cavotec system | PPA             | PPA  | Shiploader | PPA               | Qube  | Outload conveyors | PPA        | Qube                    | Stockyard conveyors | PPA (SY1)<br>Atlas Iron (SY2) | Qube  | Transfer stations | PPA (TS01, TS02, TS03)<br>Atlas Iron (TS04) | Qube                        | Radial stackers | Qube (SY1)<br>Atlas Iron (SY2) | Qube                            | Bunkers | Qube (SY1)<br>Atlas Iron (SY2) | Qube  | Ring roads | PPA (SY1)<br>Atlas Iron (SY2) | PPA (SY1)<br>Atlas Iron (SY2) | Offices, workshops, sample stations other | PPA (SY1)<br>Atlas Iron (SY2) | PPA (SY1)<br>Atlas Iron (SY2) |
| Facility                                  | Owner  | Operator  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Wharf and Cavotec system                  | PPA  | PPA   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Shiploader                                | PPA  | Qube  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Outload conveyors                         | PPA  | Qube  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Stockyard conveyors                       | PPA (SY1)<br>Atlas Iron (SY2)  | Qube  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Transfer stations                         | PPA (TS01, TS02, TS03)<br>Atlas Iron (TS04)  | Qube  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Radial stackers                           | Qube (SY1)<br>Atlas Iron (SY2)   | Qube  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Bunkers                                   | Qube (SY1)<br>Atlas Iron (SY2)   | Qube  |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Ring roads                                | PPA (SY1)<br>Atlas Iron (SY2)  | PPA (SY1)<br>Atlas Iron (SY2)   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| Offices, workshops, sample stations other | PPA (SY1)<br>Atlas Iron (SY2)  | PPA (SY1)<br>Atlas Iron (SY2)   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
|   | DER Response   | <p>DER considers for the purpose of the licence that PPA is the <i>occupier</i> of the premises as defined in the EP Act.</p> <p>The table providing a description of internal uses and stevedores who own and operate plant and equipment will be detailed in the decision document. This is because if detailed in the licence it may provide some ambiguity regarding <i>occupier</i>.</p>   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |
| 23.                                       | Applicants comment and proposed suggested change for Bulk material unloaded and unloaded (Comment 2) | <p>PPA request the text in this section be amended to the following:</p> <p><i>“The <b>material</b> is side tipped <b>over bunker walls</b> along the ring roads. Material is then stacked via radial stacker at <b>Bunkers 1-5, 8-13, 21 and 22., At Bunkers 6 and 7 material is built into a stockpile via front end loader. Material is then reclaimed via a front end loader and placed via a feed hopper onto a conveyor. The conveyors and transfer stations move material along the outload circuit to the ship loader, where it is loaded into a ships hold via dribbler chute for export.</b>”</i></p>   |          |              |  |                          |                 |  |            |                   |   |                   |            |                         |                     |                               |   |                   |   |                             |                 |                                |                                 |         |                                |   |            |                               |                               |   |                               |                               |

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|     | DER Response   | Noted and accepted. Amendment made.  |
| 24. | Applicants comment and proposed suggested change for Bulk material unloaded and unloaded (Comment 3) | <p>PPA requests a table number and caption be added to the commodities table in this section.</p> <p>PPA requests the header for “volume” in the commodities table be amended to “volume/year” and that reference to “chromite” be amended to “chromite ore”.</p> <p>PPA requests additional wording with this section to clarify that “bulk material may be loaded and unloaded for up to 21,350,000 tonnes, subject to the following limits:</p> <ul style="list-style-type: none"> <li>• 2,000,000 tonnes/year of manganese ore; and</li> <li>• 350,000 tonnes/year of chromite ore.”</li> </ul> <p>PPA notes that this would not increase the risk of emissions from the Facility.</p> |
|     | DER Response   | <p>DER does not consider that Schedule 2 is intended to act as a mechanism limiting production/throughput, rather as a description of the key characteristics considered by DER in its risk assessment at that point in time.</p> <p>The table has been amended to reflect the ability of Iron Ore exports to replace Manganese Ore and Chromite Ore as it is scaled back.</p>   |
| 25. | Applicants comment and proposed suggested change for Examples of material change                     | <p>PPA suggests bullet point 2 be amended to read:<br/><i>“Volume increases in commodities exceeding 10% of permitted volume”</i></p> <p>Under our suggested change above, this would apply above a 200,000 tonne/year increase in Manganese Ore, and 35,000 tonne/year increase in Chromite Ore and up to a 2,135,000 tonne/year increase in Iron Ore if both Manganese Ore and Chromite Ore were not exported.</p> <p>PPA also suggests bullet point 4 “removal of infrastructure and equipment” be deleted as it is considered to be captured in bullet point 6 “changes to the site layout of infrastructure and equipment”.</p>   |
|     | DER Response   | Noted and accepted. Amendment made.  |
| 26. | Applicants comment and proposed suggested change for non-material change                             | <p>PPA suggests amending the wording of bullet point 1 to read:<br/><i>“Improvements or additions to, or replacement of, infrastructure and equipment that do not increase the risk of emissions and discharges”.</i></p>  |
|     | DER Response   | Noted and accepted. Amendment made.  |

| Schedule 3: Infrastructure and Equipment |   |  |
|--|---|--|
| 27.                                      | Applicants comment and proposed suggested change for 1. Stockyard (comment 1) | <p>PPA notes the following editorial changes are required for the Schedule 3 table:</p> <ul style="list-style-type: none"> <li>- “Sealed ring road” should read “sealed ring roads”</li> <li>- “Misters on all radial stackers and at bunkers” also needs to include “(except bunker 6 and 7)”.</li> </ul> |
|  | DER Response  | <p>DER notes that stockpile 6 and 7 do not have the same materials handling infrastructure (bunkers and radial stackers) and that material is built into a stockpile via front end loader.</p> <p>Proposed amendment accepted.</p>   |
| 28.                                      | Applicants comment and proposed suggested change for 1. Stockyard (comment 2) | <p><b>Misters</b></p> <ul style="list-style-type: none"> <li>- <b>Bunker and stacker sprays operated as required while tipping or stacking to prevent escape of visible dust. Drop height from radial stacker to surface is minimised and chevron or cone pattern stacking.</b></li> </ul>                 |



|     |   |   |
|-----|---|---|
|     | DER Response  | <p>DER considers that 'as required' does not provide sufficient specificity for use of misters. This requirement has been based on <i>SHEMS Guide, Dust Management Guide</i>, issue 10/07/2013.</p> <p>To ensure the outcome is achieved the following wording has been used:</p> <p>"Bunker and stacker sprays operated whenever visible dust is being generated while tipping or stacking of material."</p>   |
| 29. | Applicants comment and proposed suggested change for 1. Stockyard (comment 3) | <p><b>Water cannons</b></p> <ul style="list-style-type: none"> <li>- Routinely operated <b>as required to prevent visible dust lift off. Operation of cannons during inload is product and weather dependent. Dust forecast tool is utilised for planning of cannon operation. Cannons operated for pre-vessel wet down of product to be out loaded. Cannons operated via automated system that is centrally managed in the Control Room.</b></li> </ul>  |
|     | DER Response  | <p>DER considers that 'as required' does not provide sufficient specificity for use of misters. This requirement has been based on <i>SHEMS Guide, Dust Management Guide</i>, issue 10/07/2013.</p>   |
| 30. | Applicants comment and proposed suggested change for 2. Conveyor              | <p>PPA notes the following editorial changes are required for the Schedule 3 table:</p> <ul style="list-style-type: none"> <li>- "Water sprays" should read "under belt sprays"</li> <li>- "at berth" should read "above wharf 4".</li> </ul> <p>With regard to "Operation detail", PPA requests the following amendments:</p> <ul style="list-style-type: none"> <li>- <b>Under belt sprays and belt scrapers clean product carry back from the belt. Operation of under belt sprays is product dependent. Under belt sprays are operated manually. Belt scrapers automatically operate when the conveyor is running.</b></li> </ul> |
|     | DER Response  | <p>DER considers that 'Operation of under belt scrapers is product depended' does not provide sufficient specificity as to when it will be used.</p> <p>To ensure the outcome is achieved the following wording has been used:</p> <p>"Operation of the under belt sprays whenever visible dust is being generated from operation of conveyors".</p>  |
| 31. | Applicants comment and proposed suggested change for 3. Transfer Stations     | <p>PPA notes the following editorial changes are required for the Schedule 3 table:</p> <ul style="list-style-type: none"> <li>- "Fully enclosed" should read "partially enclosed with chute sprays".</li> </ul> <p>With regard to "Operation detail", PPA requests the following amendments:</p> <ul style="list-style-type: none"> <li>- Transfer stations <b>partially enclosed at all times. Chute sprays operated as required to minimise dust emissions.</b></li> </ul>   |
|     | DER Response  | <p>DER considers that 'as required' does not provide sufficient specificity as to when it will be used.</p> <p>To ensure the outcome is achieved the following wording has been used:</p> <p>"Chute sprays operated whenever visible dust is being generated through use."</p>  |

| 32.   | Applicants comment and proposed suggested change for 4. Shiploader  | PPA advises that the shiploader itself is not enclosed, however the dribbler chute is. PPA requests the operational details be amended to read “enclosed dribbler chute”.  |   |                  |  |   |   |   |   |   |
|---|---|--|---|------------------|--|---|---|---|---|---|
|   | DER Response  | Noted and accepted. Minor amendment made.  |   |                  |  |   |   |   |   |   |
| 33.   | Applicants comment and proposed suggested change for 5. Dust monitors   | PPA requests the description and operation detail of the dust monitor section of the Schedule 3 table read as follows:   |   |                  |  |   |   |   |   |   |
|   |   | <table><tr><th>Description</th><th>Operation detail</th></tr><tr><td>Real time boundary PM<sub>10</sub> dust monitoring network comprising of M5 (BAM1020), M6 (Esampler) and M7 (BAM1020)</td><td>Continuous.<br/><br/>Alarm system with internal trigger values and response procedure in place. If a trigger value is exceeded, an SMS or email notification is sent to the Licensee's staff and an investigation is implemented. If investigation finds operational related exceedence, contingency action is taken.</td></tr><tr><td>Two boundary monitors for Cr (III and VI) and Mn. M8 and M9 (Ecotech 3000 HVAS)</td><td>One 24 hour sample every sixth day, plus at least one 24 hour sample during a ship loading of chromite ore/manganese ore.</td></tr><tr><td>Ambient monitoring at Taplin Street (Port Hedland) and Bureau of Meteorology.</td><td>Operated by Port Hedland Industries Council (PHIC) with data management and maintenance by PHIC. Access agreement between PHIC and the Licensee to be maintained.<br/><br/>Target for Taplin Street only.</td></tr></table> | Description   | Operation detail | Real time boundary PM <sub>10</sub> dust monitoring network comprising of M5 (BAM1020), M6 (Esampler) and M7 (BAM1020)             | Continuous.<br><br>Alarm system with internal trigger values and response procedure in place. If a trigger value is exceeded, an SMS or email notification is sent to the Licensee's staff and an investigation is implemented. If investigation finds operational related exceedence, contingency action is taken. | Two boundary monitors for Cr (III and VI) and Mn. M8 and M9 (Ecotech 3000 HVAS) | One 24 hour sample every sixth day, plus at least one 24 hour sample during a ship loading of chromite ore/manganese ore. | Ambient monitoring at Taplin Street (Port Hedland) and Bureau of Meteorology. | Operated by Port Hedland Industries Council (PHIC) with data management and maintenance by PHIC. Access agreement between PHIC and the Licensee to be maintained.<br><br>Target for Taplin Street only. |
|   |   | Description  | Operation detail  |                  |  |   |   |   |   |   |
|   |   | Real time boundary PM <sub>10</sub> dust monitoring network comprising of M5 (BAM1020), M6 (Esampler) and M7 (BAM1020)   | Continuous.<br><br>Alarm system with internal trigger values and response procedure in place. If a trigger value is exceeded, an SMS or email notification is sent to the Licensee's staff and an investigation is implemented. If investigation finds operational related exceedence, contingency action is taken. |                  |  |   |   |   |   |   |
| Two boundary monitors for Cr (III and VI) and Mn. M8 and M9 (Ecotech 3000 HVAS)   | One 24 hour sample every sixth day, plus at least one 24 hour sample during a ship loading of chromite ore/manganese ore.   |  |   |                  |  |   |   |   |   |   |
| Ambient monitoring at Taplin Street (Port Hedland) and Bureau of Meteorology.   | Operated by Port Hedland Industries Council (PHIC) with data management and maintenance by PHIC. Access agreement between PHIC and the Licensee to be maintained.<br><br>Target for Taplin Street only. |  |   |                  |  |   |   |   |   |   |
| Specifically, please ensure the three types of monitors are segregated as their operation detail differs.   |   |  |   |                  |  |   |   |   |   |   |
| PPA request M9 be added to the monitoring locations list under “Reference to plan”.   |   |  |   |                  |  |   |   |   |   |   |
| DER Response  | Noted and accepted. Minor amendment made.   |  |   |                  |  |   |   |   |   |   |
| 34.   | Applicants comment and proposed suggested change for 6. Dust management tool  | PPA requests the description and operation detail of the dust management tool section of the Schedule 3 table read as follows:   |   |                  |  |   |   |   |   |   |
|   |   | <table><tr><th>Description</th><th>Operation detail</th></tr><tr><td><b>Dust management tool that incorporates a forecast of local weather conditions and operational plans for each 12 hour shift.</b></td><td><b>Dust management ongoing, records of dust management tool kept for each 12 hour shift.</b></td></tr></table>   | Description   | Operation detail | <b>Dust management tool that incorporates a forecast of local weather conditions and operational plans for each 12 hour shift.</b> | <b>Dust management ongoing, records of dust management tool kept for each 12 hour shift.</b>  |   |   |   |   |
|   |   | Description  | Operation detail  |                  |  |   |   |   |   |   |
| <b>Dust management tool that incorporates a forecast of local weather conditions and operational plans for each 12 hour shift.</b>  | <b>Dust management ongoing, records of dust management tool kept for each 12 hour shift.</b>  |  |   |                  |  |   |   |   |   |   |
| PPA wishes to advise DER that PPA is trialling alternative dust forecasting options, and as such do not want there to be any specific reference to “software”. Instead, please refer to “dust management tool”. |   |  |   |                  |  |   |   |   |   |   |
| DER Response  | Noted and accepted. Minor amendment made.   |  |   |                  |  |   |   |   |   |   |
| 35.   | Applicants comment and proposed suggested change for 7. Truck wash  | PPA advises that there are two different truck cleaning facilities at Utah Point. Stockyard 1 operates a wet truck wash and option to dry sweep, while Stockyard 2 operates a dry sweep area only.   |   |                  |  |   |   |   |   |   |
|   |   | PPA requests the description and operation detail of the truck wash section of the Schedule 3 table read as follows:<br><br>Editorial changes required are in <b>bold</b>  |   |                  |  |   |   |   |   |   |



|   |  | <table><tr><th>Description</th><th>Operation detail</th></tr><tr><td>Truck wash/<b>dry sweep</b> located at the exit points of the premises to remove built up material from undercarriage and <b>wheel</b> guards.</td><td>Fully contained truck wash facility (including sumps) <b>at Stockyard 1 exit.</b><br/><br/><b>Manual dry sweep area at Stockyard 2 exit.</b></td></tr></table>   | Description | Operation detail | Truck wash/ <b>dry sweep</b> located at the exit points of the premises to remove built up material from undercarriage and <b>wheel</b> guards. | Fully contained truck wash facility (including sumps) <b>at Stockyard 1 exit.</b><br><br><b>Manual dry sweep area at Stockyard 2 exit.</b> |
|---|--|--|-------------|------------------|---|--|
| Description   | Operation detail   |  |             |                  |   |  |
| Truck wash/ <b>dry sweep</b> located at the exit points of the premises to remove built up material from undercarriage and <b>wheel</b> guards. | Fully contained truck wash facility (including sumps) <b>at Stockyard 1 exit.</b><br><br><b>Manual dry sweep area at Stockyard 2 exit.</b> |  |             |                  |   |  |
|   | DER Response   | Noted and accepted. Minor amendment made.<br>DER has also added:<br><i>"Every truck exiting the premises pass through truck wash/dry sweep".</i>   |             |                  |   |  |
| 36.   | Applicants comment and proposed suggested change for 9. Stormwater infrastructure  | PPA requests consistent reference to stormwater throughout the licence (i.e. use either stormwater or storm-water).<br><br>PPA advises that the Stockyard 1 stormwater pond is called a "recirculation pond". Please amend all reference to the pond to reflect the correct name.<br><br>PPA notes the capitalisation of "lined" is required.  |             |                  |   |  |
|   | DER Response   | Noted and accepted. Minor amendment made.  |             |                  |   |  |
| 37.   | Applicants comment and proposed suggested change 10. Stormwater infrastructure for Stockyard 2   | PPA advises that the Stockyard 2 ponds do not connect to the recirculation pond. The only time the Stockyard 2 ponds may be manually pumped into the recirculation pond is the event of heavy rainfall and there is a risk of the Stockyard 2 ponds overflowing. This will only occur once water quality results have been sighted by PPA.<br><br><b><i>Stormwater from Stockyard 2 captured on land directed to stormwater settlement sump and ponds. The stormwater settlement pond designed to contain 1 in 10 year 24 hour rainfall event.</i></b> |             |                  |   |  |
|   | DER Response   | Noted and accepted. Minor amendment made.  |             |                  |   |  |
| 38.   | Applicants comment and proposed suggested change 11. Stormwater infrastructure for <b>wharf</b>  | PPA requests the following editorial changes to the stormwater infrastructure for wharf section of the Schedule 3 table:<br><br><b>The wharf</b> is designed to prevent direct drainage of storm-water into the marine environment. <b>The wharf deck is sloped from the front fender line to the back, which is bunded and connected to a contained drainage system. All stormwater is pumped to the recirculation pond.</b><br><br>Editorial changes required are in <b>bold</b> .   |             |                  |   |  |
|   | DER Response   | Noted and accepted. Minor amendment made.  |             |                  |   |  |
| 39.   | Applicants comment and proposed suggested change 12. Stormwater discharge  | PPA acknowledges and accepts the stormwater discharge points as detailed in the Schedule 3 table of L8937.   |             |                  |   |  |
|   | DER Response   | Noted and accepted. Minor amendment made.  |             |                  |   |  |
| 40.   | Applicants comment and proposed suggested change 13. Road sweeper  | PPA requests the following editorial changes to the road sweeper section of the Schedule 3 table:<br><br><b><i>Operates on sealed areas including ring roads and wharf. Used to minimise product build-up on roads and wharf.</i></b><br><br>Editorial changes required are in <b>bold</b> .   |             |                  |   |  |
|   | DER Response   | Noted and accepted. Minor amendment made.  |             |                  |   |  |

#### Schedule 4: Monitoring

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|-----|--|---|
| 41. | Applicants comment and proposed suggested change | PPA suggests placing the “Product Moisture Levels” section first in Schedule 4, to mirror the order of licence conditions. Note PPA suggests change of title from “Dust Extinguishment Moisture Levels” to “Product Moisture Levels”. |
|     | DER Response                                     | Noted.<br>Bulk Material/Product Moisture Content has been removed from schedule 4.  |

#### Dust Monitoring Reportable Events

|     |  |   |
|-----|--|---|
| 42. | Applicants comment and proposed suggested change Locations                         | PPA notes that the HVAS monitors have been omitted from this section (M8 and M9). PPA request clarification as to whether reporting against M8 and M9 is required.<br><br>PPA request a map reference (i.e. Figure xx) be inserted in place of the word “following”.  |
|     | DER Response   | Noted and accepted. Minor amendment made.   |
| 43. | Applicants comment and proposed suggested change Dust Monitoring Reporting Periods | PPA requests the “dust monitoring reporting period” section be worded as follows:<br><br><i>Reported <b>bi-monthly</b> by the following dates: the last day of <b>March (for January/February), May (for March/April), July (for May/June), September (for July/August), November (for September/October) and January (for November/December)</b> in any year.</i><br><br>Editorial changes required are in <b>bold</b> .<br><br>PPA advises that bi-monthly reporting, by the last day of the subsequent month, is more practical for PPA as this aligns with the provision of validated data from PPA’s service provider.   |
|     | DER Response   | Noted and accepted. Minor amendment made.   |
| 44. | Applicants comment and proposed suggested change Dust Monitoring Reports           | PPA requests the “dust monitoring reports” section be worded as follows:<br><br>The monitoring reports must contain: in relation to a Reportable Event: <ul style="list-style-type: none"> <li>the <b>reportable event</b> date(s);</li> <li>the raw monitoring data for the <b>reportable</b> event in tabulated form;</li> <li>time series graphical plot for the <b>day on which the reportable event occurred</b>;</li> <li>activities being undertaken on the Premises <b>on the day on which the reportable event occurred</b>;</li> <li>the meteorological conditions including temperature, wind speed and direction <b>at the time of the reportable event</b>;</li> <li><b>Details of the likely cause of the exceedance and a description of remedial measures taken or planned to be taken, to prevent a reoccurrence of the reportable event.</b></li> </ul> |
|     | DER Response   | Refer to final table for DER response to Dust and Monitoring Report content   |

#### Product Moisture Levels (changed title to ‘Bulk Material Moisture Level’)

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| 45. | Applicants comment and proposed suggested change | <b>PPA updated response (6 May 2016)</b><br>PPA suggests that “product moisture levels” is a more applicable name for this section. |
|-----|--|---|

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|-----|---|--|
|     | General   | As above, PPA suggests this section would be better before “dust monitoring reportable events”, so Schedule 4 reflects the order in which dust reporting and product moisture levels are referred to in the Conditions.  |
|     | DER Response  | Noted.<br>Bulk Material/Product Moisture Content has been removed from schedule 4.   |
| 46. | Applicants comment and proposed suggested change Locations                            | <b>PPA updated response (6 May 2016)</b><br>PPA suggests the sub-heading “Locations” is included, as in the “Dust Monitoring Reportable Events” section.   |
|     | DER Response  | Noted.<br>Bulk Material/Product Moisture Content has been removed from schedule 4.   |
| 47. | Applicants comment and proposed suggested change Moisture content reporting frequency | <b>PPA updated response (6 May 2016)</b><br>PPA suggests the location wording be amended to: “ <i>Sampled as-received, in accordance with Condition 8</i> ”.<br><br><i>Reported quarterly by the following dates: the last day of <b>April (for January to March), July (for April to June), October (for July to September) and January (for October to December)</b> in any year.</i><br><br>PPA requests results be reported to DER 30 days after the end of the reporting period to allow time for data collation and internal review.<br><br>The monitoring reports must contain: <ul style="list-style-type: none"> <li>• Confirmation of compliance with <b>the recorded DEM for that product, as per</b> Condition 7;</li> <li>• <b>Product moisture</b> sampling <b>data</b> and <b>sample</b> dates;</li> <li>• <b>A comparison of the Mean and Standard Deviation of moisture levels against the prescribed DEM for each product</b> in tabulated form (as per sample table below); and</li> <li>• <b>Details of any corrective measures taken where monthly mean moisture was found to be below prescribed DEM.</b></li> </ul> |
|     | DER Response  | Noted.<br>Bulk Material/Product Moisture Content has been removed from Schedule 4.   |

| <b>Dust Monitoring and Stormwater Discharge Locations</b> |  |  |
|---|--|--|
| 48.   | Applicants comment and proposed suggested change General | PPA notes that as there are stormwater discharge points identified on this map, it is more applicable to refer to this section as “dust monitoring and stormwater discharge locations”, rather than “dust monitoring locations” as it currently reads.<br><br>An updated dust monitoring and stormwater discharge locations map has been enclosed with this letter (Attachment 4).<br><br>PPA would also recommend the draft Licence and Decision Report be reviewed to ensure the consistent use of words (e.g. either “product” or “bulk granular material”), spelling and capitalisation of headings. |
|   | DER Response   | Noted and accepted. Minor amendments made.   |

Further amendments have been made to the draft Licence following a request by DER dated 6 May 2016, requesting information on investigation, corrective and mitigation measures taken as a result of exceedance to DEM or dust monitoring boundary network. A response was provided by PPA on 10 May 2016 and has been considered by DER in proposed amendments to the licence as detailed in the following tables.

| Investigation, corrective and mitigation measures |  |  |
|---|--|--|
| 49.   | Applicants comment and proposed suggested change Remedial measures for moisture monitoring<br><b>Reportable Event</b>                    | <p><b>PPA updated response (10 May 2016)</b><br/>PPA have identified investigations, corrective actions and mitigation measures as follows:</p> <p>Investigation may include but not be limited to:</p> <ul style="list-style-type: none"> <li>via email to relevant proponent, the Licensee will seek: <ul style="list-style-type: none"> <li>Confirmation that data received (including sample date and time, source verification (stockpile/truck etc)) is correct.</li> <li>Confirmation that there has been no change to products chemical or physical composition.</li> <li>Details of any system failures or program delays at the source mine site.</li> </ul> </li> <li>Where there is a reportable dust event, the Licensee will review received moisture content data of products to ascertain if product moisture levels may have contributed to the event.</li> </ul> <p>Expected corrective actions may include but not be limited to:</p> <ul style="list-style-type: none"> <li>Where weekly data shows material to be inloaded below DEM a notification will be issued to the proponent via email as per the investigation steps above.</li> <li>Providing formal written advice/warning where monthly average of specific product tested is shown to be below the required DEM. <ul style="list-style-type: none"> <li>Advice would require proponent to ensure adequate conditioning of product at mine site.</li> <li>Evidence of such conditioning would need to be provided by way of new data.</li> </ul> </li> <li>Pending the investigation above, site access restrictions may be applied to the proponent until such time it could be demonstrated that product moisture levels were compliant.</li> <li>Request for the proponent to improve conditioning of products at source mine site or haulage suspension may also arise from ongoing visual observations of inloading at the facility by the Licensee.</li> </ul> <p>Mitigation measures may include but not be limited to:</p> <ul style="list-style-type: none"> <li>Moisture data will continue to be reviewed on a weekly basis against product specific DEM to confirm compliance.</li> <li>Monthly advice will be issued to facility users on moisture content compliance.</li> </ul> <p>The various investigation, corrective actions and mitigation measures would be detailed within the site operating procedures and communicated to site staff and facility users as appropriate.</p> |
|   | DER Response   | <p>Noted.<br/>Bulk Material/Product Moisture Content has been removed from Schedule 4.</p>   |
| 50.   | Applicants comment and proposed suggested change Remedial measures for dust monitoring<br><b>Reportable Event</b><br>(for continuing BAM | <p><b>PPA updated response (10 May 2016)</b><br/>PPA have identified investigations, corrective actions and mitigation measures as follows:</p> <p>Investigation may include but not be limited to:</p> <ul style="list-style-type: none"> <li>Confirmation that data received is correct (no instrument fault)</li> <li>Determining the source of the exceedance through:</li> </ul>  |

|     |  |  |
|-----|--|--|
|     | 1020 monitoring)   | <ul style="list-style-type: none"> <li>- review of meteorological data.</li> <li>- Confirmation that ship loading took place on the day of the exceedance (on the East Side there is only potential for the Licensee to cause dust during ship loading, since there is no external storage of bulk products).</li> </ul> <p>Where a reportable event is deemed to be attributed to the Licensee's activities:</p> <ul style="list-style-type: none"> <li>• Review of moisture levels of product outloaded at the time of the exceedance against DEM.</li> <li>• Review of recorded PM10 dust levels against dust levels recorded at Taplin Street.</li> <li>• Review of operations personnel observations or actions in response to any high dust alarms.</li> </ul> <p>Mitigation measures may include but not be limited to:</p> <ul style="list-style-type: none"> <li>• Maintenance of onsite dust management infrastructure and equipment if identified as a causal factor by operations personnel.</li> <li>• Review of loading practices and trial of amended methods if possible.</li> <li>• Reporting of dust events to all stakeholders, including analysis of probable causes.</li> <li>• Audit of process controls (e.g. dust alarm procedures).</li> </ul>  |
|     | DER Response   | DER has used the information supplied from PPA on the actions taken in the event of exceedances to boundary monitoring network.<br>Refer to  |
| 51. | Applicants comment and proposed suggested change Remedial measures for dust monitoring<br><b>Reportable Event</b><br>(for proposed Ecotech 3000 HVAS monitoring) | <p><b>PPA updated response (10 May 2016)</b></p> <p>PPA have identified investigations, corrective actions and mitigation measures as follows:</p> <p>Investigation may include but not be limited to:</p> <ul style="list-style-type: none"> <li>• Confirmation that data received is correct (no instrument fault).</li> <li>• Determining the source of the exceedance through: <ul style="list-style-type: none"> <li>- review of meteorological data</li> <li>- review of copper concentration</li> <li>- Confirmation that ship loading took place on the day of the exceedance (on the East Side there is only potential for the Licensee to cause dust during ship loading, since there is no external storage of bulk products).</li> </ul> </li> </ul> <p>Where a reportable event is deemed to be attributed to the Licensee's activities:</p> <ul style="list-style-type: none"> <li>• Review of moisture levels of product outloaded at the time of the exceedance against DEM.</li> <li>• Review of recorded PM10 dust levels against dust levels recorded at Taplin Street.</li> <li>• Review of onsite dust management infrastructure and equipment specified in Schedule 3 to ensure it is working as designed.</li> <li>• Confirmation that ship loader operator/crane operator complied with relevant operational procedures when loading the vessel, this may include review of CCTV footage.</li> </ul> <p>Mitigation measures may include but not be limited to:</p> <ul style="list-style-type: none"> <li>• Implementing corrective actions in accordance with Condition 9 (if required).</li> <li>• Maintenance of onsite dust management infrastructure and equipment if identified as a causal factor by operations personnel.</li> </ul> |

|  |              |  |
|--|--------------|--|
|  |              | <ul style="list-style-type: none"> <li>Reporting of dust events to all stakeholders, including analysis of probable causes.</li> <li>Audit of process controls (e.g. operational procedures).</li> </ul> |
|  | DER Response | <p>Noted.</p> <p>DER considers that content of Dust Monitoring Reports can be consist to all dust monitoring (refer above).</p>  |

PPA provided additional interim comments following a second condition consultation period on 22 June 2016. The comments provided by PPA have been considered by DER and are detailed in the following tables.

| Notification of Material Change |                   |   |
|---------------------------------|-------------------|---|
| 52.                             | Condition 2, 3, 4 | <p>PPA acknowledges and accepts Conditions 2, 3 and 4 of L8937 regarding notification of change.</p> <p>PPA would suggest that reference to “within 14 days” be amended to read “<b>no later than</b> 14 days”, as a point of clarity (Condition 2). Editorial changes required are in <b>bold</b>.</p> |
|                                 | DER Response      | Noted. Accepted.  |

| Infrastructure and Equipment |              |  |
|------------------------------|--------------|--|
| 53.                          | Condition 5  | <p>PPA acknowledges that DER has accepted requested changes to Condition 5 however in reviewing Schedule 3, Table 6, PPA has noted that these changes <b>have not been made</b> (i.e. identification of columns within Table 6). PPA request that these changes be made as agreed.</p> |
|                              | DER Response | Noted and accepted.  |

| Moisture Content Monitoring and Reporting |                     |  |
|---|---------------------|--|
| 54.                                       | Condition 7         | <b><i>PPA will provide further comment on this condition in our response dated 24 June 2016.</i></b>   |
|   | DER Response        | Noted.   |
| 55.                                       | Condition 8         | <p>PPA advises that there are no NATA accredited laboratories for AS 4156.6-2000 (please see Attachment 2 – advice from NATA). Accordingly, PPA requests that reference to NATA accreditation be removed</p> |
|   | DER Response        | Noted. Condition amended.  |
| 56.                                       | Condition 9         | <b><i>PPA will provide further comment on this condition in our response dated 24 June 2016.</i></b>   |
|   | DER Response        | Noted.   |
| 57.                                       | Condition 10 and 11 | <p>PPA acknowledges Conditions 10 and 11 of L8937 however notes they are related to Condition 9 and may require amendment.</p>   |
|   | DER Response        | Noted.   |

| Dust Monitoring and Reportable Events |               |  |
|---------------------------------------|---------------|--|
| 58.                                   | Condition 12. | <p>PPA acknowledges that DER has accepted requested changes and made necessary amendments to Condition 12 of L8937 regarding monitoring.</p> <p>PPA notes and accepts DER's condition that the minimum averaging period at Taplin Street be 1 hour. PPA seeks to clarify with DER that the Port Hedland Dust Taskforce interim target for Taplin Street PM10 24 hour average remains 70 µg/m3.</p> |
|                                       | DER Response  | <p>Noted.</p> <p>DER confirms that the Port Hedland Dust Taskforce interim target for Taplin Street PM10 24 hour average remains at 70 µg/m3.</p>  |
| 59.                                   | Condition 14. | <p>PPA reminds DER that provision of data for the Taplin Street dust monitor is via the Port Hedland Industries Council (PHIC) and requests</p>  |



|  |              |  |
|--|--------------|--|
|  |              | <p>reporting of Taplin Street data be reported bi-monthly, by the last day of the subsequent month, as this aligns with the provision of validated data from PHIC's service provider. PPA requests this condition be worded as follows:</p> <p><i>The Licensee must provide monitoring data to the CEO for monitoring undertaken at Taplin Street (as specified in Table 2) on a <b>bi-monthly</b> basis, on the last day of:</i></p> <ul style="list-style-type: none"> <li>• <b>March (for January/February)</b></li> <li>• <b>May (for March/April)</b></li> <li>• <b>July (for May/June)</b></li> <li>• <b>September (for July/August)</b></li> <li>• <b>November (for September/October)</b></li> <li>• <b>January (for November/December)</b></li> </ul> <p>Editorial changes required are in <b>bold</b>.</p> <p>DER to confirm that the Taplin Street data (1 hour averages) for each period will require some 1,440 data readings at be tabulated each reporting period (bi-monthly) and PPA seeks to understand the outcome being sought by this reporting. PPA suggests that if this condition is to be standardised across all Part V operators in Port Hedland, then DER may want at consider direct access to the PHIC data.</p> |
|  | DER Response | <p>Noted and suggested amendment made.</p> <p>DER is aware that monitoring is undertaken by PHIC and the PPA is a member within PHIC. DER does not regulate PHIC through Part V of the EP Act. The provision of monitoring data is therefore not required to be provided by PHIC through any instruments issued by the DER.</p>  |

#### Emissions

|     |              |   |
|-----|--------------|---|
| 60. | Condition 16 | PPA acknowledges that DER has accepted requested changes and made necessary amendments to Condition 16 of L8937 regarding emissions. PPA would suggest that the term " <b>Discharge</b> " (bold/italic) be used consistently in bullet point 1 in Emission Discharge row of Table 3 to avoid confusion. |
|     | DER Response | Noted.  |

#### Definitions and Interpretations

|     |              |   |
|-----|--------------|---|
| 61. | Definitions  | <p>PPA acknowledges that DER has accepted requested changes and made necessary amendments to the Definitions of L8937.</p> <p>PPA would note that reference at AS5621-2013 is presented in Table 1 as ATS5621-2012. PPA suggests the most recent version be referenced in both this section and the Table 1 annotation.</p> <p>PPA also note that several other terms in bold/italic have appeared in this version, and these have not been listed in this section. These include:</p> <ul style="list-style-type: none"> <li>• <b>Approved Policy</b> (Table 3)</li> <li>• <b>Implementation Agreement or Decision</b> (Table 3)</li> <li>• <b>Reportable Event</b></li> </ul> |
|     | DER Response | Noted and accepted. Amendment made.   |

#### Schedule 1: Maps

|     |              |   |
|-----|--------------|---|
| 62. | Premises Map | An updated premise map is provided in Attachment 3 to this letter. PPA notes that the premise boundary is depicted in <b>pink/red</b> , not blue. Editorial changes required are in <b>bold</b> . |
|     | DER Response | Noted and accepted.   |

| Schedule 2: General Description |                                    |  |
|---------------------------------|------------------------------------|--|
| 63.                             | Infrastructure and equipment       | PPA acknowledges that DER has accepted requested changes and made necessary amendments to the Infrastructure and equipment section of L8937. |
|                                 | Site layout                        | An updated premises map is provided in Attachment 3 to this letter.  |
|                                 | DER Response                       | Noted.   |
| 64.                             | Bulk materials loaded and unloaded | <b>PPA will provide further comment on this condition in our response dated 24 June 2016.</b>  |
|                                 | DER Response                       | Noted.   |
| 65.                             | Examples of Material Change        | <b>PPA will provide further comment on this condition in our response dated 24 June 2016.</b>  |
|                                 | Non-Material Change                | <b>PPA will provide further comment on this condition in our response dated 24 June 2016.</b>  |
|                                 | DER Response                       | Noted.   |

| Schedule 3: Infrastructure and Equipment |                  |   |
|--|------------------|---|
| 66.                                      | General Comments | PPA requests that the columns in Table 6 be numbered such that Condition 5 is clear. PPA notes that column 1 should start at 'Site Infrastructure'.<br>PPA acknowledges and accepts DER's recurring comment that " 'as required' does not provide sufficient specificity for use of dust control equipment.   |
|  | DER Response     | Noted and accepted.   |
| 67.                                      | Stockyard        | <b>PPA will provide further comment on this condition in our response dated 24 June 2016.</b>   |
|  | DER Response     | Noted.  |
| 68.                                      | Dust monitors    | PPA requests the PHIC Bureau of Meteorology ambient monitoring site be removed from L8937 given there is no target or reportable event value included in the licence, and there is no requirement to provide data or comparison against data for this monitor. This inclusion is carry over from previous licences. PPA has no operational control over this site.<br><br>PPA seeks to clarify with DER that the Port Hedland Dust Taskforce interim target for Taplin Street PM10 is 70 µg/m3 for the 24 hour average, with allowance for 10 exceedances per calendar year.  |
|  | DER Response     | Noted, partial amendment made.<br><br>DER confirms that Taplin Street PM10 is 70 µg/m3 for the 24 hour average is applicable criteria.  |
| 69.                                      |                  | PPA notes that the wording in the Water Carts section of L8937 has been updated from the previous version, despite PPA not proposing any amendments to the original wording.<br>PPA advises that the water cart is utilised to wet down both product stockpiles and trafficable areas as required. Further PPA notes that DER has accepted PPA's proposed amendment to reference the "dust forecast software" to the "dust management tool". Therefore PPA requests the wording be amended as follows:<br>Operate proactively subject to <b>Dust Management Tool</b> .<br>Operate when visible dust is reported by site personnel.<br>Editorial changes required are in <b>bold</b> . |
|  | DER Response     | Noted and accepted.   |
| 70.                                      | Road Sweeper     | PPA requests the wording "Used at least twice a day" be amended to read "Used at least twice a day <b>during dry and/or windy periods</b> ".<br>Editorial changes required are in <b>bold</b> .   |
|  | DER response     | Noted and accepted.   |



| Schedule 4: Monitoring |                                   |  |
|------------------------|-----------------------------------|--|
| 71.                    | Dust Monitoring Reportable Events | <p>Under <b>Dust Monitoring Reports</b>, PPA notes that “the Reportable Event date(s)”, bullet point 1 and “the sampling or measurement date”, bullet point 2 is the same parameter, and therefore requests that the second bullet point be deleted.</p> <p>PPA advises that HVAS M8 and M9 are not real-time and are not able to produce a time series graphical of dust data, nor high level alarms.</p> <p>In the event of a Reportable Event at M8 or M9 all available raw monitoring data will be provided to DER, consisting of filter paper preweigh, filter paper post-weigh and laboratory report indicating metal concentration.</p> <p>PPA requests clarification around comparison of boundary dust levels against dust levels recorded at Taplin Street ambient dust monitoring station, given that DER now requires 1 hour average dust concentrations at Taplin Street. Does DER require comparison of the 1 hour averages or the 24 hour averages at the Reportable Event site and Taplin Street? PPA notes that comparison of 1 hour average data against 24 hour average data is not possible, averaging periods need to be the same for comparisons to be made.</p> <p>An updated map of monitoring locations and stormwater discharge points is provided in Attachment 3 to this letter.</p> |
|                        | DER Response                      | <p>Noted. Amendment made.</p> <p>DER is seeking comparison against the 24 hour averaging period for the Taplin Street monitoring site. This has been clarified in the licence.</p>   |

PPA provided the remaining comments following the second condition consultation on 30 June 2016. The comments provided by PPA have been considered by DER and are detailed in the following tables.

| Moisture Content Monitoring and Reporting |              |  |
|---|--------------|--|
| 72.                                       | Condition 7  | <p>PPA advises that, given the multi-user nature of the Utah facility, PPA is not able “to ensure” moisture content is at or above DEM. PPA does not operate the source mine sites, and is not responsible for the transportation of product. PPA has no physical control over product condition prior to it arriving at the Premises.</p> <p>PPA proposes the following amendment to Condition 7:<br/> “The Licensee shall <b>require that each of the Premises Users must ensure</b> that all bulk granular material transported from each Premises User to the Premises, contains a Moisture Content at or above the dust extinction moisture (DEM) level derived from application of AS 4156.6-2000”.<br/> Editorial changes required are in <b>bold</b></p> |
|   | DER Response | <p>Noted.</p> <p>DER does not accept the proposed wording by PPA as it does not consider the requirements for compliance clear. The Licence condition also needs to fairly and reasonably relate to the activities within the category of prescribed premises the subject of the Licence (see <i>Guidance Statement: Setting Conditions</i>, October 2015). DER considers that given PPA is the Licensee and the occupier of the premises it is in control of what and how bulk granular material is received and any subsequent management required on the premises. Further DER considers that moisture content is a fundamental factor in the dust generation potential of the material and based on the</p>  |

|                  |  | <p>outcomes of its risk assessment a necessary requirement to regulate.</p> <p>DER also notes that conditioning and specification of inputs accepted at prescribed premises is a standard requirement of Part V of the EP Act Licensing.</p> <p>DER considers the condition is risk based, valid and appropriate.</p> <p>DER has also amended condition 8, which will assist PPA in being able to demonstrate that it has achieved compliance with condition 7. DER also expects that PPA continue to undertake additional methods (e.g. visual inspections) at the premises gate and to make requirements for DEM clear to each premises user. It is considered that it goes some way in demonstrating that compliance with condition 7 will be achieved.</p>   |  |  |   |          |          |          |           |                   |                  |       |           |        |                  |  |                  |  |  |   |
|------------------|--|--|--|--|---|----------|----------|----------|-----------|-------------------|------------------|-------|-----------|--------|------------------|--|------------------|--|--|---|
| 73.              | Condition 9  | <p>PPA requests this condition be replaced with the following wording:</p> <p><i>The <b>Licensee</b> must require that all Premises Users undertake monitoring of bulk granular material stored at the premises for the parameter specified in column 1 from the material specified in column 2 in Table 1. The parameter must be calculated over the period specified in column 3, be at or above the Limit specified in column 4, being a weighted average of the DEM against the tonnage of source material (mine) at the frequency specified in column 5, and calculated in accordance with the method specified in column 6 in Table 1.</i></p> <p><b>Table 1: Moisture Content Monitoring Table</b></p> <table><tr><th>Column 1</th><th>Column 2</th><th>Column 3</th><th>Column 4</th><th>Column 5</th><th>Column 6</th></tr><tr><th>Parameter</th><th>Targeted Material</th><th>Averaging period</th><th>Limit</th><th>Frequency</th><th>Method</th></tr><tr><td>Moisture content</td><td>Material out-loaded from the Premises by <b>Premises Users</b></td><td>Sample per cargo</td><td>Weighted average <b>DEM</b> based on each body of ore (mine site) which is included in the outload cargo</td><td>When material is loaded to a vessel: Commencing fortnightly from 30 September to 1 March of the following year; and Monthly during the remaining period of the</td><td>Weighted average#:<br/><math display="block">\bar{x} = \frac{\sum_{i=1}^n w_i x_i}{\sum_{i=1}^n w_i},</math><br/>which means:<br/><math display="block">\bar{x} = \frac{w_1 x_1 + w_2 x_2 + \dots + w_n x_n}{w_1 + w_2 + \dots + w_n}.</math><br/><b>x = DEM</b><br/><b>w = tonnage of out-loaded ore (mine specific) per cargo (with DEM as AS4156.6:2000)</b><br/>Cargo moisture as per AS5621:2013<br/>or<br/>ISO 3087:2011<br/>or<br/>alternative method as approved by the CEO</td></tr></table> <p><b># Weighted average calculation equation may better be placed in either Definition Section or Monitoring Section (Schedule 4).</b></p> <p>PPA provided additional rationale on this request which is not detailed here.</p> | Column 1   | Column 2   | Column 3  | Column 4 | Column 5 | Column 6 | Parameter | Targeted Material | Averaging period | Limit | Frequency | Method | Moisture content | Material out-loaded from the Premises by <b>Premises Users</b> | Sample per cargo | Weighted average <b>DEM</b> based on each body of ore (mine site) which is included in the outload cargo | When material is loaded to a vessel: Commencing fortnightly from 30 September to 1 March of the following year; and Monthly during the remaining period of the | Weighted average#:<br>$\bar{x} = \frac{\sum_{i=1}^n w_i x_i}{\sum_{i=1}^n w_i},$<br>which means:<br>$\bar{x} = \frac{w_1 x_1 + w_2 x_2 + \dots + w_n x_n}{w_1 + w_2 + \dots + w_n}.$<br><b>x = DEM</b><br><b>w = tonnage of out-loaded ore (mine specific) per cargo (with DEM as AS4156.6:2000)</b><br>Cargo moisture as per AS5621:2013<br>or<br>ISO 3087:2011<br>or<br>alternative method as approved by the CEO |
| Column 1         | Column 2   | Column 3   | Column 4   | Column 5   | Column 6  |          |          |          |           |                   |                  |       |           |        |                  |  |                  |  |  |   |
| Parameter        | Targeted Material  | Averaging period   | Limit  | Frequency  | Method  |          |          |          |           |                   |                  |       |           |        |                  |  |                  |  |  |   |
| Moisture content | Material out-loaded from the Premises by <b>Premises Users</b> | Sample per cargo   | Weighted average <b>DEM</b> based on each body of ore (mine site) which is included in the outload cargo | When material is loaded to a vessel: Commencing fortnightly from 30 September to 1 March of the following year; and Monthly during the remaining period of the | Weighted average#:<br>$\bar{x} = \frac{\sum_{i=1}^n w_i x_i}{\sum_{i=1}^n w_i},$<br>which means:<br>$\bar{x} = \frac{w_1 x_1 + w_2 x_2 + \dots + w_n x_n}{w_1 + w_2 + \dots + w_n}.$<br><b>x = DEM</b><br><b>w = tonnage of out-loaded ore (mine specific) per cargo (with DEM as AS4156.6:2000)</b><br>Cargo moisture as per AS5621:2013<br>or<br>ISO 3087:2011<br>or<br>alternative method as approved by the CEO |          |          |          |           |                   |                  |       |           |        |                  |  |                  |  |  |   |
|                  | DER Response   | <p>Noted and partially accepted. The requirement to undertake spot sampling of bulk granular material has been removed at this point in time and replaced with the method proposed by PPA through the Sample Station.</p> <p>As detailed above DER consider that PPA is the occupier of the premises subject to requirements of the condition. The reference to the Premises User</p>  |  |  |   |          |          |          |           |                   |                  |       |           |        |                  |  |                  |  |  |   |

|  |  |   |
|--|--|---|
|  |  | <p>makes the condition unclear.</p> <p>Additional amendments have been made to require the Licensee to undertake the sampling of all bulk granular material exported from the premises and for that material to achieve DEM (weighted average). DER considers that given this sampling and analysis for moisture content is already being undertaken that this appropriate.</p> |
|--|--|---|

| Definitions and Interpretations |                                    |  |
|---------------------------------|------------------------------------|--|
| 74.                             | Bulk materials loaded and unloaded | <p>PPA acknowledges and accepts DER's comment that PPA is the <i>occupier</i> of the premises as defined in the EP Act, and that the table providing the description of internal uses and stevedores who own and operate plant and equipment be detailed in the Decision Report to avoid ambiguity.</p> <p>As agreed in principle at the meeting held on 17 June 2016, PPA requests that the statement "<b><i>The Licensee owns and operates ship unloading/loading and materials loading system at the Utah facility</i></b>" be removed to avoid ambiguity. PPA notes that this statement has been omitted from its Eastern Operations licence.</p>                                  |
|                                 | DER Response                       | Noted and accepted.  |
| 75.                             | Examples of Material Change        | <p>PPA acknowledges that DER has accepted requested changes and made necessary amendments to the Examples of Material Change section of L8937. However, PPA suggests bullet point 2 should read:</p> <p><i>Volume increase in commodity exceeding 10% of permitted total volume (in aggregate), or volume increases of manganese or chromite exceeding 10% of their respective permitted volumes.</i></p> <p>And bullet point 3 should read:</p> <p><i>changes to the control or ownership of the Premises or changes (other than Non-Material Changes) to the infrastructure or equipment within the Premises premises;</i></p> <p>Editorial changes required are in <b>bold</b>.</p> |
|                                 | DER Response                       | Noted and accepted.  |
| 76.                             | Non-Material Change                | <p>PPA proposes the definition of <b>Non-Material Change</b> be reworded to:</p> <p>Improvements or additions to, or replacement of, or other changes to, infrastructure and equipment within the <b>Premises</b>, that do not increase the risk of emissions and discharges.</p> <p>Editorial changes required are in <b>bold</b>.</p>  |
|                                 | DER Response                       | Noted and accepted.  |

| Schedule 1: Maps |              |  |
|------------------|--------------|--|
| 77.              | Premises Map | <p>An updated Premises Map is provided in Attachment 3 to this letter. PPA notes that the Sample Station location has been marked on the map and that the work 'Preliminary' has been removed from the reference to the Utah boundary.</p> |
|                  | DER Response | Noted.   |

| Schedule 2: General Description |                                       |  |
|---------------------------------|---------------------------------------|--|
| 78.                             | Table 4: Infrastructure and Equipment | <p>PPA requests the following row be added to 'Table 4: Infrastructure and Equipment' to reference the sample station location in the updated Premises Map.</p> <p><b>14 Sample Station Premises Map: Sample Station</b></p> <p>Editorial changes required are in <b>bold</b>.</p> |
|                                 | DER Response                          | Noted and accepted.  |

**Schedule 2: General Description**

|     |              |   |
|-----|--------------|---|
| 79. | Stockyard    | <p>PPA advises that the <i>SHEMS Guide: Dust Management Guide</i> referenced in DER's response letter received 30 May 2016 is a Qube management system document which is presented as an Appendix within the <b>Port of Port Hedland – Dust Management Plan Berth 4</b>.</p> <p>To improve clarity for compliance purposes, PPA recommends the following text be used to define Routine in the context of using misters and water cannons:</p> <p>Routinely means at a minimum sequence to run at least:</p> <ul style="list-style-type: none"><li>• every 3 hours during the day;</li><li>• every 6 hours during the night; unless</li><li>• there is no visible dust or small puddles just start to form as a result of rainfall or use of cannons.</li></ul> <p>Editorial changes required are in <b>bold</b>.</p> |
|     | DER Response | <p>Noted.</p> <p>DER understands that use of water cannons is a proactive measure to prevent the likelihood of dust emissions from stockpiles. As such waiting until visible dust is generated to operate does not seem appropriate and consistent with a routine operation of the equipment.</p>   |

## Attachment 1: Issued Licence L8937/2015/1

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