Amendment Report

Application for Licence Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L8937/2015/1
Licence Holder	Pilbara Ports Authority
File Number	DER2015/002837
Premises	Utah Point Multi-User Bulk Handling Facility Portion of Lot 370 on Plan 35619 PORT HEDLAND, WA 6721 Certificate of Title Volume LR3118 Folio 753 As defined by the Premises maps attached to the Revised Licence
Date of Report	20 June 2022
Proposed Decision	Revised licence granted

Paul Newell

Digitally signed by Paul Newell
Date: 2022.06.20 12:29:04 +08'00'

Paul Newell
Senior Manager, Process Industries
Regulatory Services
an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Table of Contents

1. Decision summary

Licence L8937/2015/1 is held by Pilbara Ports Authority (Licence Holder) for the Utah Point Multi-user Bulk Handling Facility (the Premises) in Port Hedland.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L8937/2015/1 has been granted.

The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (DWER/ the department) has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 31 July 2021, the Licence Holder submitted an application (the Application; Pilbara Ports Authority, 2021) to the department to amend Licence L8937/2015/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). This amendment is limited only to changes to Category 58 and 58A activities from the Existing Licence. The following amendments are being sought:

- Increase in overall throughput from 24.1 million tonnes per annum (Mtpa) to 28 Mtpa (see Table 1).
- Authorisation for infrastructure optimisation works that includes Stockyard 2 (SY2) infrastructure upgrades to relocate existing conveyor CV04 to create space in the stockyard allowing for radial stacking. To further increase throughput capacity the Licence Holder seeks authorisation to install a third stacker in SY2. This would require the addition of three ore feed hoppers and two new enclosed transfer stations (TS5 and TS6) to reconnect the relocated CV04 back to existing out-loading infrastructure (see Figure 1).

Table 1: Proposed throughput capacity changes

Categories	Bulk material	Current annual throughput capacity (exported)	Proposed annual throughput capacity (exported)
58 and 58A[1]	Iron ore	Up to 24,100,000 tonnes	Up to **28,000,000** ~~**24,100,000**~~ tonnes
	Manganese ore	Up to 2,000,000 tonnes	Up to 3,500,000 tonnes
	Chromite ore	Up to 350,000 tonnes	Up to 350,000 tonnes (no change)
	Spodumene ore	Up to 3,000,000 tonnes	Up to 3,000,000 tonnes (no change)

	Total tonnes (aggregate of all ores)	**24,100,000 tonnes**	**28,000,000 tonnes**

Note 1: Category 58A has been applied to the licence to authorise the loading of salt products and other evaporites such as gypsum and potash under trial conditions

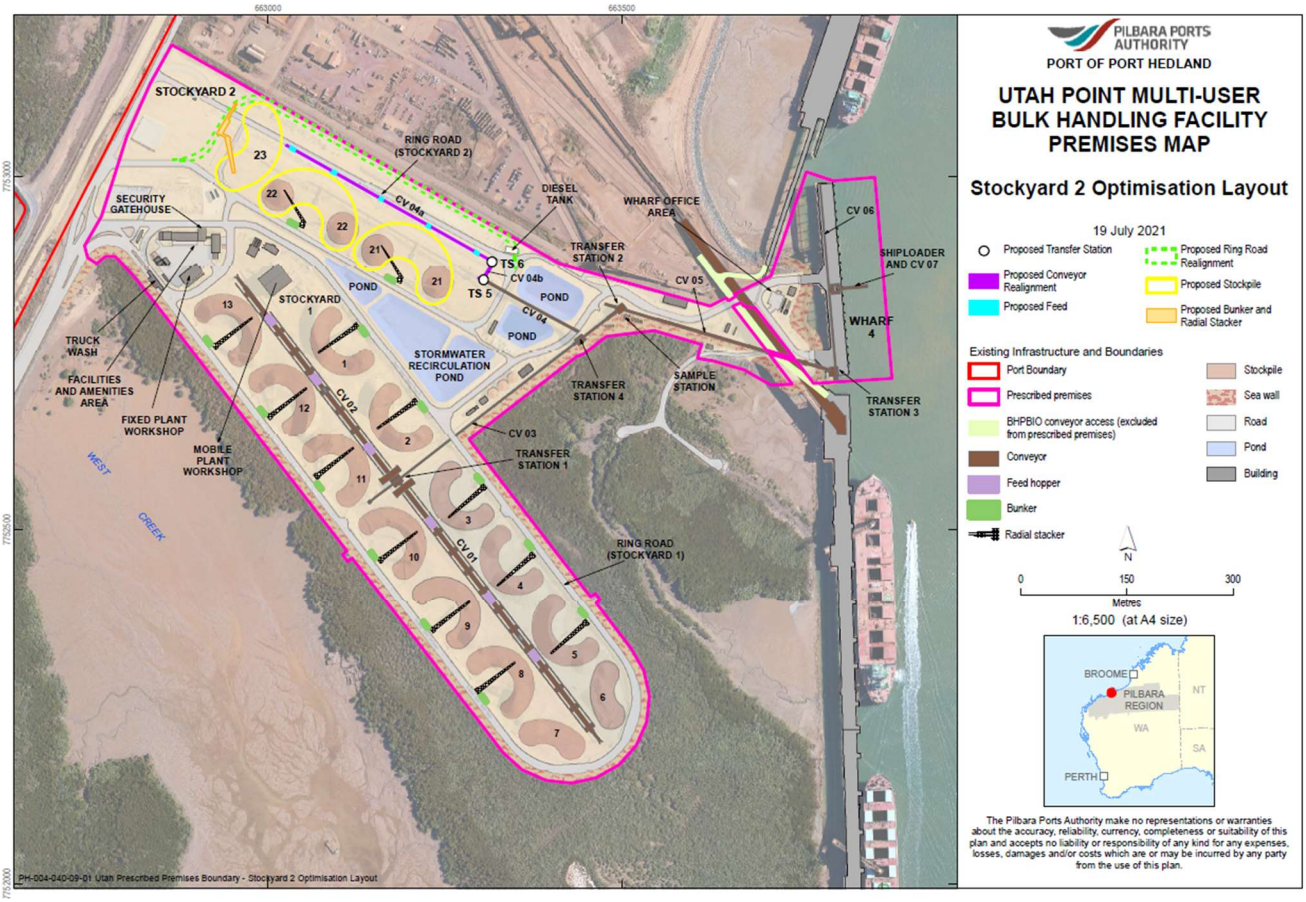

Figure 1: Proposed SY2 optimisation works (CV04a, CV04b, TS5 and TS6)

The current location of CV04 prevents radial stacking/stockpiling with stockpiles 21 and 22, requiring the Licence Holder to stockpile iron ore in two smaller piles in SY2 (Figure 2). Radial stockpiling will increase the footprint of iron ore stockpiles and thereby increase the Licence Holder's ability to outload iron ore from SY2 at a faster rate, on the provision that additional front end loader (FEL) movements are also enabled.

To further increase the efficiency of FEL movements the Licence Holder also seeks the option to install three additional feed hoppers, bringing the total along the route to five feed hoppers. Feed hoppers will be either fixed or mobile along the outloading conveyor network.

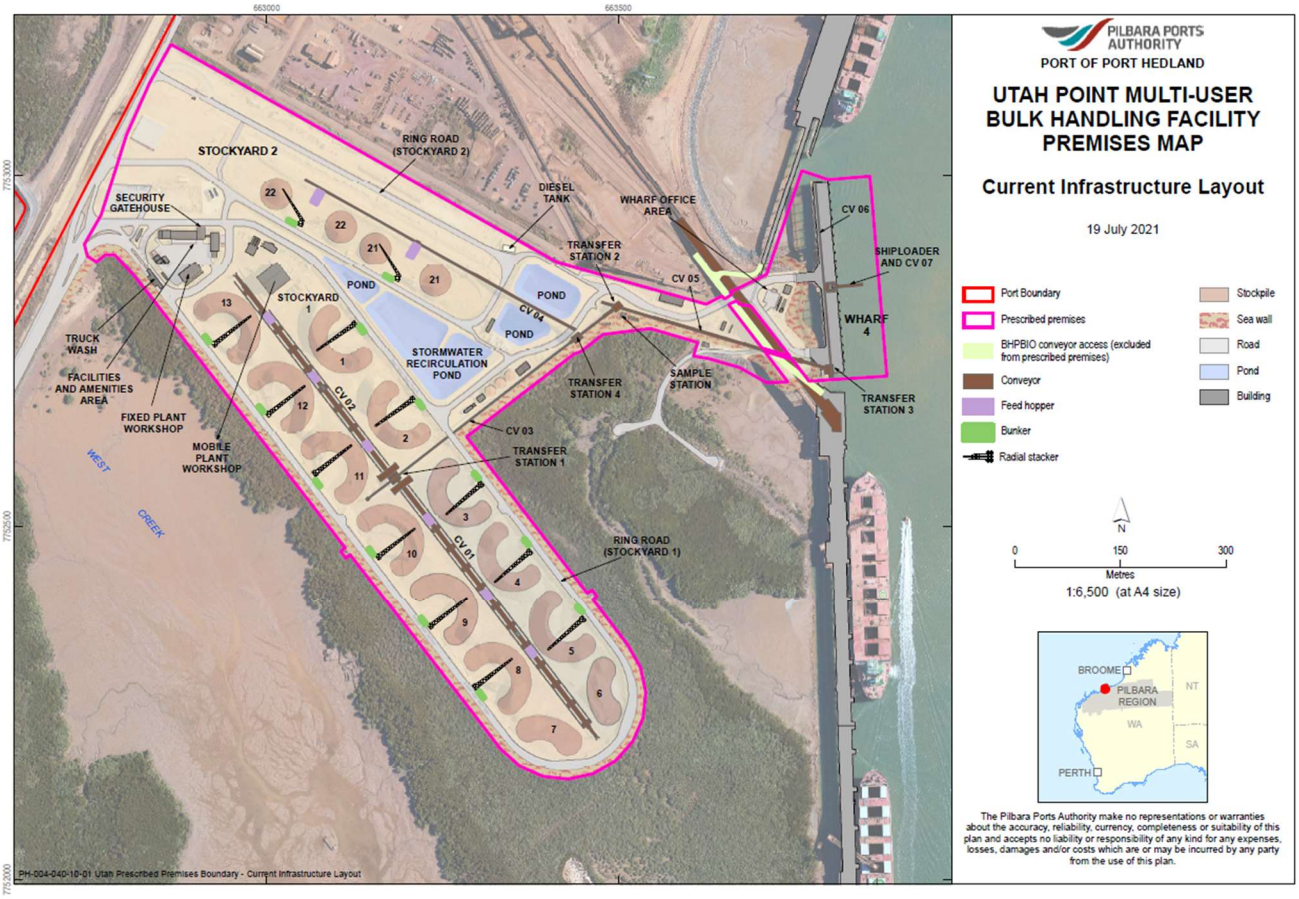

Figure 2: Existing Premises infrastructure and stockpile layout

The Licence Holder notes that it remains possible to achieve the 28 Mtpa outputs based on existing infrastructure depicted in Figure 2. It is possible that the Licence Holder will only perform part of proposed works under the Application. DWER has considered both scenarios of throughput increase in this Amendment Report.

3. Port Hedland Regulatory Strategy

In May 2021, the Department released its Port Hedland Regulatory Strategy. The Strategy outlines how the Department will regulate in the context of Port Hedland and implement the Government's response to the 2016 Port Hedland Dust Taskforce Report.

On 1 January 2022, the Department took control of the network monitoring air quality in Port Hedland. Transfer of the Network from PHIC to DWER was a key recommendation of the Taskforce, accepted by the State Government in 2018. The Department now displays clear and transparent information relating to ambient dust levels in real time on its website. Detailed analysis of the dust impacts in the greater Port Hedland area will be published on an annual basis ongoing to measure the Department's stated objective, which is to:

> *"Ensure that dust emissions from premises licensed under the EP Act are not increased in the short term. And, that following the introduction of dust management controls from the Dust Management Guideline, impacts are reduced to the lowest practicable level across the whole Port Hedland peninsula to at a minimum meet the air guideline at and to the east of the Taplin Street monitor"*

The Department has both short- and medium-term strategies to meet this objective. In the short term:

- *The Department expects industry to achieve reductions in prescribed premises dust*

emissions, which will in turn produce measurable reductions in ambient dust levels (not simply reduce the number of air guideline value exceedances) across the entire Port Hedland peninsula, and in particular the West End.

- *The Dust Management Guideline Review will inform future decisions on the ongoing effectiveness of industry regulation for consideration by government.*
- *The Department will have adequate information about both the emissions (from port operators) and impacts to the environment and community to inform government direction on the ongoing approach in Port Hedland.*

Ahead of the implementation of the Dust Management Guideline, the Department has set a clear position for port operators, that applicants wishing to expand their operations will need to demonstrate that dust emissions and discharges have not increased as a result of their proposal, and the current risk (as defined in DWER's *Guideline: Risk Assessments*) is not increased.

The position will allow the introduction of the Dust Management Guideline to potentially reduce the impacts of dust in the short-term. The Port Hedland Dust Management Strategy is a critical outline of the Department's approach to regulating dust in Port Hedland and should be read alongside this decision.

Key findings relevant to DWER's regulation of Category 58 premises (bulk handling) in Port Hedland is provided below.

Key findings: The Delegated Officer notes that:

- DWER has published the Port Hedland Regulatory Strategy to provide a clear and concise overview of the Department's regulatory approach in Port Hedland.
- The Delegated Officer notes the Regulatory Strategy provides clear direction on how the Department will utilise the 24-hour PM_{10} target of 70 µg/m^3 (excluding natural events), hereafter referred to as the air guideline value (AGV), in the context of its assessment.
- DWER will implement the commitments made by the Government in its response to the Taskforce Report. Specifically, it will develop a dust management guideline for bulk handling port premises and implement the guidelines through Industry self-assessments and licence reviews.
- The Delegated Officer notes the department's position that applicants wishing to expand their operations will need to demonstrate that emissions and discharges have not increased as a result of their proposal, and the current risk is not increased.

4. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

4.1 Dust modelling

As described in the Decision Report to licence L8937/2015/1, ore is transported to the Premises via trucks that side-tip the product into either hoppers to stackers, or bunkers for re-handling by FEL into a stockpile. Ore is then transported from the stockpile to conveyor

hoppers via FEL and loaded onto the vessel through a series of conveyors and transfers to a dribbler chute. Dust can be generated at each handling point where ore is dropped from height. In addition, each product has different physical characteristics that can alter the dust potential and handling requirements for that ore product.

A dispersion model was developed based on three operational scenarios for the following scenarios (Environmental Technologies & Analytics (ETA), 2021):

- ***Base scenario:*** existing authorised throughput at the Premises – 24.1 Mtpa,
- ***Scenario 1:*** potential future throughput at the Premises to 28 Mtpa with no further works; and
- ***Scenario 2:*** potential future throughput at the Premises to 28 Mtpa with SY2 optimisation.

Table 2: Modelled dust emissions

Scenario	Emission prediction
Base scenario	413,965 kg/year
Scenario 1	404,638 kg/year
Scenario 2	405,658 kg/year

Reductions in the emission rates are associated with increased rates of ore moisture content exceeding the DEM level. For all truck unloading, stacking and conveyor transfer dust sources, National Pollutant Inventory emissions estimations (Environment Australia, 2012) have been adopted to differentiate between dry and wet ores. In the absence of NPI emissions estimations for conveyors and reclaimer dust generation, the model assumes a constant emission rate from these emission points under each modelled scenario presented in Table 2, regardless of moisture content and ore type.

Some conservatism was applied to the model, including the following considerations and exclusions (ETA, 2021):

- Ore moisture for all in-loaded and outloaded ore is assumed to achieve a 95% rate of compliance with DEM level in modelling (refer to section 4.1.2).
- New implemented improvements to dust suppression equipment that were not considered within modelling assumptions. This includes:
    - improvements to the height and throw of SY2 bunker 22 water cannon;
    - the installation of two additional water cannons on the western end of SY2 to provide better stockpile coverage;
    - the installation of additional permanent sprays installed on CV1, CV2 and CV5 (manganese outloading conveyors) since the most recent licence amendment in 2020 were not considered within the model; and
    - modifications to chute sprays from single nozzle to a ‘duck bill’ style spray that improves coverage.
- Worst case meteorological conditions assumed when presenting modelled outputs (refer to section 4.1.1).

In addition, total tonnages and tonnages of manganese ore being in-loaded were assumed in the model to be marginally greater than requested authorised tonnages at outload, as detailed in Table 3.

Table 3: Modelled assumptions for in-loaded tonnages (ETA, 2021)

Ore	Assumed tonnes in-loaded (annually)	Assumed tonnes in-loaded (tonnes per hour)	Number of trucks per hour
Iron ore	21,167,664	2,416	17
Manganese	3,524,728	402	3
Chromite	353,220	40	0.3
Spodumene	3,000,000	342	2
Total	**28,042,612**	**3,197**	**23**

4.1.1 Modelled impacts to receptor locations

The purpose of modelling is to identify the key differences between the dust impacts of current and future scenarios at nearby receptor locations. Modelling submitted with the Application has identified that:

- there will be a reduction in the annual average concentrations across the airshed, particularly those to the west of Taplin St;
- there will be a general reduction in the predicted ground level concentrations at receptors west of Taplin St including the Richardson St and Kingsmill St receptors based on standalone/'in isolation' scenarios; and
- there will be no increase in the number of AGV exceedances at Taplin St for each scenario, when considering each scenario in the cumulative context and the premises in isolation.

Consideration of standalone (in isolation) modelling can be useful to identify the significance of change to the premises' dust outputs between each scenario. However, dust in Port Hedland is affected by a number of significant sources, including other industrial sources and regional sources. Therefore this assessment has also reviewed the cumulative scenarios of the model submitted with the application, to demonstrate the influence of the premises (under each scenario) on the potential overall dust impacts at receptor locations.

Predicted maximum, 95th percentile 24-hour PM_{10} concentrations at identified receptor locations are provided in Table 4.

Table 4: Predicted cumulative 24-hour ground level PM_{10} (maximum and 95th percentile) concentrations and exceedances of the AGV at receptor locations

Scenario		Richardson	Kingsmill	Hospital	Taplin	Neptune	South Hedland	Wedgefield
Base case (24.1 Mtpa)	Maximum	220	220	217	200	194	187	194
	95th percentile	94	87	77	57	44	46	72
	Days >70µg/m^3	83	51	33	8	1	1	22

Scenario 1 (28Mtpa)	Maximum	212	222	217	200	193	187	193
	95th percentile	89	79	73	57	44	46	72
	Days >70µg/m^3	60	31	25	7	1	1	22
Scenario 2 (28 Mtpa with further works)	Maximum	212	222	217	200	193	187	193
	95th percentile	89	79	73	57	44	46	72
	Days >70µg/m^3	61	31	25	7	1	1	22

The Licence Holder notes that the proposed final throughput (28 Mtpa) is achievable without the implementation of an additional stacker and hopper feeds. Modelling suggests that emission outputs from utilising existing assets (Scenario 1) and handling practices is likely to result in lower dust emissions when compared to Scenario 2 as shown below:

- Base case (24.1 Mtpa) – 413,965 kg/year
- Scenario 1 (28 Mtpa) – 404,638 kg/year
- Scenario 2 (28 Mtpa + optimisation of SY2) – 405,628 kg/year

This indicates that the addition of handling infrastructure and stockpiles in SY2 will result in a greater dust emission profile from the premises compared with increased utilisation of existing equipment.

Improvements to dust emissions in Scenarios 1 and 2 from the base case centre on improvements to ore moisture content. Many of the additional proposed controls in the Application are not explicitly considered within the model as they cannot be accurately calculated, although they are likely to result in some improvement.

4.1.2 Ore moisture improvements

The Licence Holder has identified moisture content as a key control to justify the increased throughput rates at the Premises to 28 Mtpa:

"The previously approved baseline model for dust emissions was developed in 2017 as part of a previous application for a licence amendment from 21.35 to 24.1 million tonnes per annum (Mtpa). This model was developed using the assumption of 85% of product being at DEM and 15% of product being below DEM… This licence increase to 24.1 Mtpa was approved (amended Licence issued in May 2020) with the associated model estimated emission of dust as PM_{10} from the facility to be 413,965 kg/year" (Pilbara Ports Authority, 2021)

In FY2021, the Licence Holder reported 100% of all ore received having a moisture content greater than DEM level, with the exception of one manganese lump product having a moisture content of 0.1% less than the DEM level. All outloaded ore from the Premises had a moisture content greater than the DEM level for approximately 99% of shipments. Improved ore moisture content is expected to have resulted in a significant positive impact on dust emissions from the premises since 2017.

While DWER recognises improvement to ore moisture content since the 2017 application, rates of compliance with DEM level were already higher than the conservative estimate of 85% compliance rate presented in the original modelling submitted with the 2017 application. Moisture content compliance reporting indicates that each ore was received and/or shipped

with a moisture content at above the DEM level approximately 95% of the time. Therefore modelled compliance rates of 95% in the current Application is a more accurate reflection of Premises operations from the time since the 2017 application, as opposed to a marker for significant rates of improvement to justify further expansion.

Conditions of the Existing Licence require all ore received at the Premises to have a moisture content greater than the respective DEM level for each ore. These conditions were placed on licence L8937/2015/1 issued 18 August 2016 and were determined to be necessary for addressing the high dust risk at the Premises. The subsequent assessment for increased authorised throughputs from 21.35 Mtpa to 24.1 Mtpa were also predicated on moisture content conditions for truck in-loading being met.

Conclusions of the risk assessment issued with the Existing Licence (11 May 2020) were not based on the assumptions of dust modelling, or modelled dust outputs from the premises overall.

Key findings and determinations:

1) The Delegated Officer has determined not to take into consideration theoretical (modelled) increases in ore moisture content as justification for the Application to increase authorised throughputs.
2) Previous decisions to approve throughput increases are not to be considered as approval of, or agreement with dust model outputs.
3) Improvements to rates of moisture content exceeding DEM levels are recognised as largely theoretical from the date of the 2017 application (2020 amendment) and are considered to form part of the current suite of controls required to maintain risk levels associated with dust from existing operations (24.1Mtpa).
4) Additional controls are required to ensure that additional dust generated from increased throughputs and installation of new emissions sources meets the objective of the Port Hedland Regulatory Strategy of 'no net increase' in dust from the premises.

4.1.3 Limitations of modelling

Modelling is used in risk assessment to demonstrate the potential change in impacts from one scenario to another. The base model assumptions used in modelling remain unchanged between scenarios to identify what could happen when sources of dust are changed, in this case throughput and the introduction of a new stacker, stockpile, hoppers and transfer stations. Model results are broad approximations whose accuracy is limited by the simplifications used to determine emissions and dust controls.

As described in section 4.6.2 of the Amendment Report (issued 11 May 2020), modelling is limited by the accuracy of emissions estimations. For example, emissions estimates in modelling do not accurately take into consideration the dust potential of each ore type, applying dust factors to iron ore, manganese, spodumene and chromite.

It is well documented in Licence Holder reports and licence submissions that each ore type has variability (sometimes significant) in moisture content, DEM level, particle size and friability, which all have an impact on an individual product's dust potential.

To counter this Licence Holder-acknowledged uncertainty, and as with dust modelling provided for previous applications, modelling submitted with this Application attempts to demonstrate a conservative approach to enhance the validity of modelling (refer to section 4.1). However, some of that conservatism is lost to a correction of modelled moisture content rates that aims to more accurately represent the real moisture content compliance rates already achieved by the Licence Holder. This is a statistical correction that does not represent

a comparative change in actual compliance rates with moisture content conditions against those achieved at the time of the last amendment in 2020.

Key determination: The Delegated Officer concludes that the modelling, as presented, is not suitable for assessing the Licence Holder's potential future contribution to dust in Port Hedland. Modelling assumptions are more reflective of recent premises operations relating to ore moisture contents.

Increased throughputs at the premises will result in increased generation of dust. Therefore additional controls proposed by the Licence Holder (refer to sections 4.2.3 and 6.1.1), and not incorporated into modelling assumptions, are necessary to allow throughput increases whilst avoiding an increase in dust from the premises.

4.2 Risk Event – Dust

As discussed in section 4.1, key emission points are typically found where ore is handled and/or dropped from height. This is supported by source emissions estimates assumed through modelling and presented in Table 5. Also identified in modelling was the significant variability in PM_{10} generated from stockpile erosion, largely due to different dust factors and wind thresholds assumed for each product type i.e. iron ore, manganese and spodumene. Consistent with DWER's understanding of Premises dust sources, emission estimates of wind erosion from open areas was considered to be a significantly lesser emission source than wind erosion from stockpiles (Table 5).

Table 5: PM_{10} emission estimates per source for Scenario 2

Source	Maximum PM_{10} emission rates (g/s)[1]
Truck unloading to bunker	0.26 - 0.54
Stacking	0.57 - 1.60
Reclaiming	7.5
Transfer stations	3.5
Conveyors	0.6
Shiploader	9.38
Wind erosion - stockpiles	10.44 - 56.98
Wind erosion - open area	10

Note 1: Emission rates at each source/activity are presented as either a single value or as a range.

Based on DWER officer observations at site visits conducted in October 2018, November 2020 and 2021, emissions from reclaiming appears to be under-represented relative to other dust sources identified in Table 5. As FELs reclaim ore from stockpiles dust can be generated from stockpile slumping, FEL tyre movement as it travels to and from the outloading feed hopper and from the loading of the hopper itself. Existing controls for dust generated during reclaiming are limited only to the operation of water carts and water cannons to wet down trafficable areas for FELs.

The Licence Holder has identified that the installation of additional outloading feed hoppers at SY2 will reduce the required distance for FELs to travel to and from stockpiles. It is assumed that this will also result in reduced dust emissions from FEL tyre movements. However, increased throughputs will necessitate greater FEL movements overall in order to load more ore onto vessels.

Based on the estimated emission rates detailed in Table 5, the construction of an additional bunker, stacker and associated stockpile at SY2 will result in additional dust sources at the Premises. Based on the data presented in Table 5, these additional dust sources will have greater overall emission rates than wind erosion from the existing open area.

4.2.1 Air quality review

Annual average PM_{10} and $PM_{2.5}$ concentrations as recorded at Port Hedland ambient monitoring locations are presented in Figures 3 and 4. It is evident from historical monitoring that ambient air quality in Port Hedland regularly exceeds annual average NEPM guideline levels for both PM_{10} (25 µg/m^3) and $PM_{2.5}$ (8 µg/m^3). Data from the most recent annual period indicates a reduction in annual average dust levels. This was coupled with a reduced number of AGV exceedance days for PM_{10} (70 µg/m^3) in the 2020/21 annual period across all Port Hedland monitoring sites.

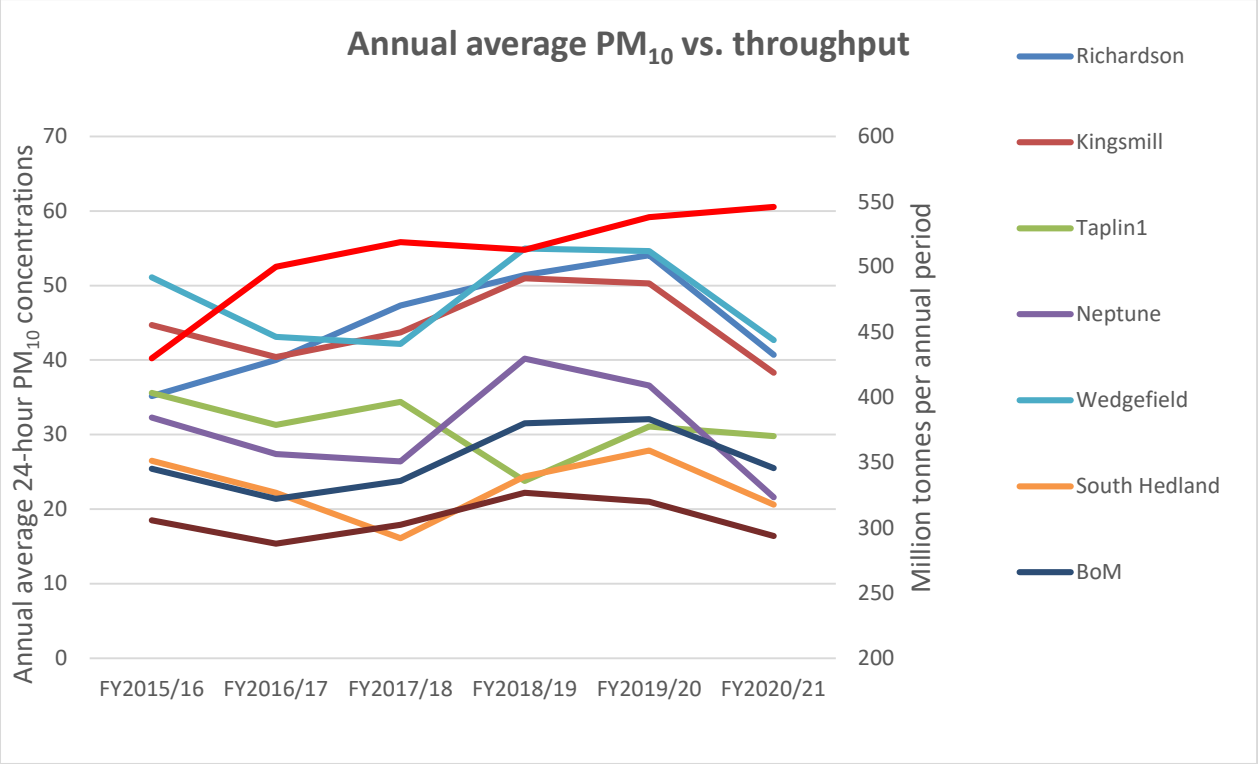

Figure 3: Annual average PM_{10} concentrations at ambient monitoring locations (2015/16 to FY2020/21)[1]

[1] Data recorded from the Taplin St monitor between April 2018 until January 2020 is unreliable and therefore does not provide an accurate representation of the number of exceedances of the AGV occurring at Taplin St during the 2018/19 to 2019/20 annual periods.

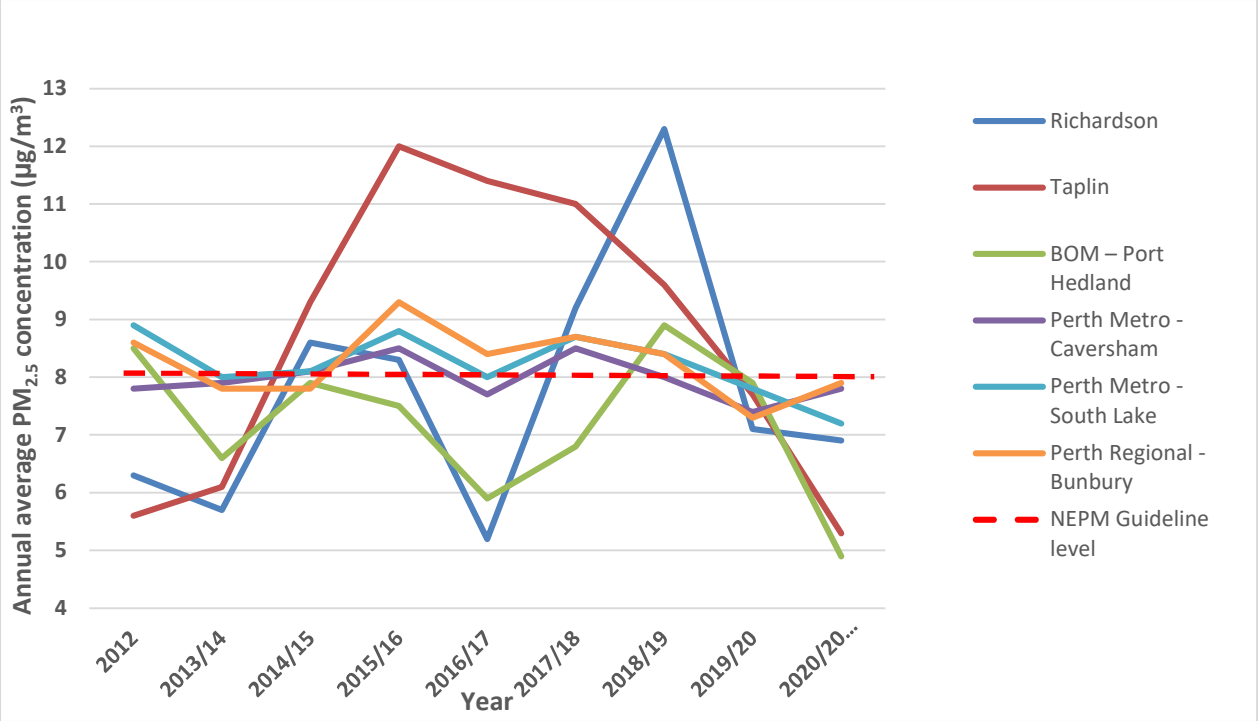

Figure 4: Annual average $PM_{2.5}$ concentrations – a West Australian comparison (2015/16 to FY2020/21)

Due to a range of other contributing factors, such as seasonal conditions and multiple, variable non-industrial sources, the level of dust recorded at each monitoring station will fluctuate over time. These fluctuations make clear source attribution difficult to determine. Possible reasons for reductions in ambient PM_{10} and $PM_{2.5}$ concentrations in the 2020/21 period may include:

- increases in throughputs have until recently, largely achieved through use of existing infrastructure, meaning that the creation of new dust sources, such as stockpiles, stackers and truck bunkers has been avoided;
- improved moisture content of ores handled Port Hedland-wide;
- increased dust controls implemented; and/or
- lower regional (background) dust influences.

It is noted that ambient monitors in other Pilbara locations (Newman background monitors) also recorded reduced PM_{10} annual average and exceedance days over the same period.

There remains no clear correlation between annual average dust levels and bulk loading throughputs in Port Hedland.

4.2.2 Boundary monitoring

The Licence Holder currently reports on days where dust (as PM_{10}) at boundary monitors exceeds 145 µg/m^3. However, between 2016 and 2021 there were a large number of days where the concentration is greater than the proposed 145 µg/m^3 24-hour reporting trigger (Table 6). One of the primary purposes of a reporting trigger is to assist with the identification of common events that may lead to high dust concentrations at the boundary. This may include increased ore handling, pollution control equipment availability, adverse weather patterns or ore moisture, for example.

Table 6: Reportable Event exceedance days at M5, M6 and M7 boundary monitors (depicted in Figure 5)

Year	Days at M5 > 145 µg/m^3	Days at M6 > 145 µg/m^3	Days at M7 > 145 µg/m^3
2016	33	0	85
2017	23	8	30
2018	48	3	39
2019	44	6	72
2020	27	4	59
2021[1]	15	1	27

Note 1: 2021 data is for a half year only

During the five year period, it was difficult to determine any common causal factors, suggesting that the exiting licensed concentration is not useful as a reporting criterion.

A review of PM_{10} recorded at each boundary monitor over the five years and under all wind directions, identified that although there exist outside influences, high dust concentrations are consistently from the direction of ore handling activities at the Premises. Figure 5 shows that the highest concentrations appear to be from Stockyard 2, the area within scope of this proposal.

Figure 5: Aerial image of Utah point showing PM_{10} pollution roses relative to sources.

Manganese handling

The Licence Holder is currently trialing the loading of a new Mn product at Utah Point under a notification of trail shipment (submitted 23 April 2021). Manganese ore can often be brittle, meaning that it is likely to break during handling. As the ore breaks down there exists the

potential for dust to be generated. The manganese product currently being handled at the premises is described as being significantly more hardwearing than other manganese products (less brittle), with a lower dust potential.

Throughout the trial period and as part of normal manganese handling operations, the Licence Holder monitors manganese content in particulates at its High Volume Air Sampler (HVAS) locations M8 and M9, as depicted in Figure 6. The Licence Holder is required to report any 24-hour periods where manganese, as PM_{10}, exceeds 10 µg/m^3.

Since the issue of the Reviewed Licence in 2016, the Licence Holder has reported 19 reportable events for manganese dust with 24 hour concentrations ranging between 11 and 22 µg/m^3. In each event, the moisture content of manganese both in-loaded and outloaded exceeded the DEM level for each product.

Elevated concentrations of manganese have only been recorded at HVAS during shiploading events and only at the M9 monitor located near to the vessel. A review of speciation monitoring for manganese at the Licence Holder's Eastern Operations (L4432/1989/14), indicates that manganese concentrations are very low on the other side of the Port Hedland Inner Harbour. Manganese concentrations at HVAS located at the Eastern Operations peaked at 0.8 µg/m^3.

Key findings: The Delegated Officer notes that:

- increases in averaged ore moisture at inload and improvements to dust management practices across all operators in Port Hedland are likely to have helped offset some of the expected increases in dust from increasing throughput at Port Hedland;
- the implementation of the Dust Management Guideline, as per the Government endorsed recommendations of the Port Hedland Dust Taskforce, can be expected to drive further improvements, including at the Premises;
- elevated manganese dust is more likely to be generated during handling events, as opposed to dust generation from wind erosion, and result in localised dust emissions; and
- for the majority of historical reportable events for elevated dust concentrations at the Premises boundary, ore moisture content was already above DEM level. Therefore additional controls are required for the purpose of managing dust risks.

4.2.3 Controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in 7 below. Table 7 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 7: Licence Holder controls

Emission	Application controls
Dust from in-loading, stockpiling and outloading of ore (including the operation of FELs)	*Existing control (already required):* • Ensuring high rate of compliance for all ores to have a moisture content greater than the DEM level at in-load and outload. *Additional controls since previous amendment (completed):* • Improvements to chute sprays and the stockyard water cannon at SY2, bunker 22. • Two additional water cannons on the western end of SY2. • Additional water sprays on conveyors CV1, 3 and 5 for manganese outload. *Proposed additional controls:* • Installation of three feed hoppers to reduce FEL tyre movements during loading operations. • Dust controls applied to ore feed hoppers at SY1. • Changing the existing stockpile formation from four individual piles into two bean shape stockpiles, reducing the surface area to ore volume (reducing wind erosion rates per tonne of ore stockpiled). • Revised dust management trigger procedures that seek to improve responsiveness to high dust events. • Review of stockyard water cannons to optimise efficiency and improve dust management.

Additional feed hoppers

The installation of an additional three feed hoppers at SY2 is expected to decrease the average distance that FELs must travel to load product onto the conveyor system. This reduces the potential for fugitive dust lift off from tyre movement across the stockyard floor.

The Licence Holder has requested flexibility in the type of feed hopper installed as SY2. There are no dust controls (e.g. sprays) for proposed or at existing hoppers, and dust outputs would be effectively the same from either a fixed or mobile hopper. However, there is an opportunity with mobile feed hoppers to optimise the hopper locations with each outloading event. This would require operator intervention which cannot be considered within a dust model.

Due to the confined layout of the current SY2 setup, FELs are required to manipulate stockpiles during stacking to optimise storage capacity. Allowing radial stackers to create larger bean-shaped stockpiles is expected to reduce the need for additional/double handling by FELs during product inload.

Trigger management criteria

The management trigger has not been triggered since the M10 dust monitor came online on 31 May 2021. Over the previous year since September 2020 there were 4 instances where only partial triggering of the conditions occurred, resulting in no requirement to implement additional dust controls.

Over the 2020/21 annual period, there have been 52 and 27 days (24 hour periods midnight to

midnight) where the Richardson and Kingsmill monitors have respectively exceeded the AGV[2]. Winds between the designated arc of influence for the premises (approximately westerly wind between 247° and 267°) common during spring and summer months although north-westerly winds that are beyond the premise' arc of influence are more dominant during these months. In addition, these monitors are influenced by a range of other nearby industrial and regional sources.

It remains possible that trigger management criteria on the Existing Licence are not protective of residential receptors in Port Hedland when the premises is within the nominated arc of influence.

Table 8 details the trigger management criteria applied through Existing Licence conditions.

Table 8: Trigger management criteria on the Existing Licence

Monitoring Station	Management trigger criteria	Reportable Event Criteria
Taplin Street	≥100 µg/m^3 PM_{10} (rolling 1 hour average) when: (i) wind direction is between 247 and 267° for three or more ten minute periods during the hour, as measured at Taplin Street; and (ii) PM_{10} as measured at M10 is greater than PM_{10} as measured at M5 and M7[2] Unless where, BOM or Yule River monitoring stations have recorded ≥100 µg/m^3 PM_{10} (rolling 1 hour average) within 3 hours prior to the trigger event.	≥70 µg/m^3 over 24 hour average (midnight to midnight)

The Licence Holder has proposed improvements to management trigger criteria to address the risk of peak emissions of PM_{10} resulting in impacts to the health and amenity of Port Hedland receptors. Using a screening model to predict the dispersion profile of PM_{10}, the Licence Holder has proposed the following changes to trigger criteria:

Boundary trigger criteria:

- a trigger of 392 µg/m^3 for PM_{10} (10-minute average) at monitors M5, M6, M7 and/or M10, as depicted in Figure 6;
- reducing the monitoring averaging period for a PM_{10} trigger from a 1-hour rolling average to 10-minute average;
- removing consideration of background monitoring data from Yule and BOM monitors and instead calculating Premises attribution by subtracting upwind monitoring data from M5, M6, M7 or M10, depending on wind direction.

Community trigger criteria:

- a trigger of 342 µg/m^3 for PM_{10} (10-minute average) at M10 only, as depicted in Figure 6, and only when winds are within a wind arc of between 247 – 267 degrees as measured at M5[3];

[2] Taplin St data between April 2018 and February 2020 has been invalidated and therefore no conclusions can be drawn from this monitor for the period considered.

[3] Monitor location M5 has been selected for measuring wind as it is the only meteorological monitor that is compliant with Australian Standard AS3580.9.11 for wind. In addition, the M5 monitor is described as the most representative of wind conditions for the premises as a whole.

- reducing the monitoring averaging period for a PM_{10} trigger from a 1-hour rolling average to 10-minute average;
- no removal of upwind PM_{10} data.

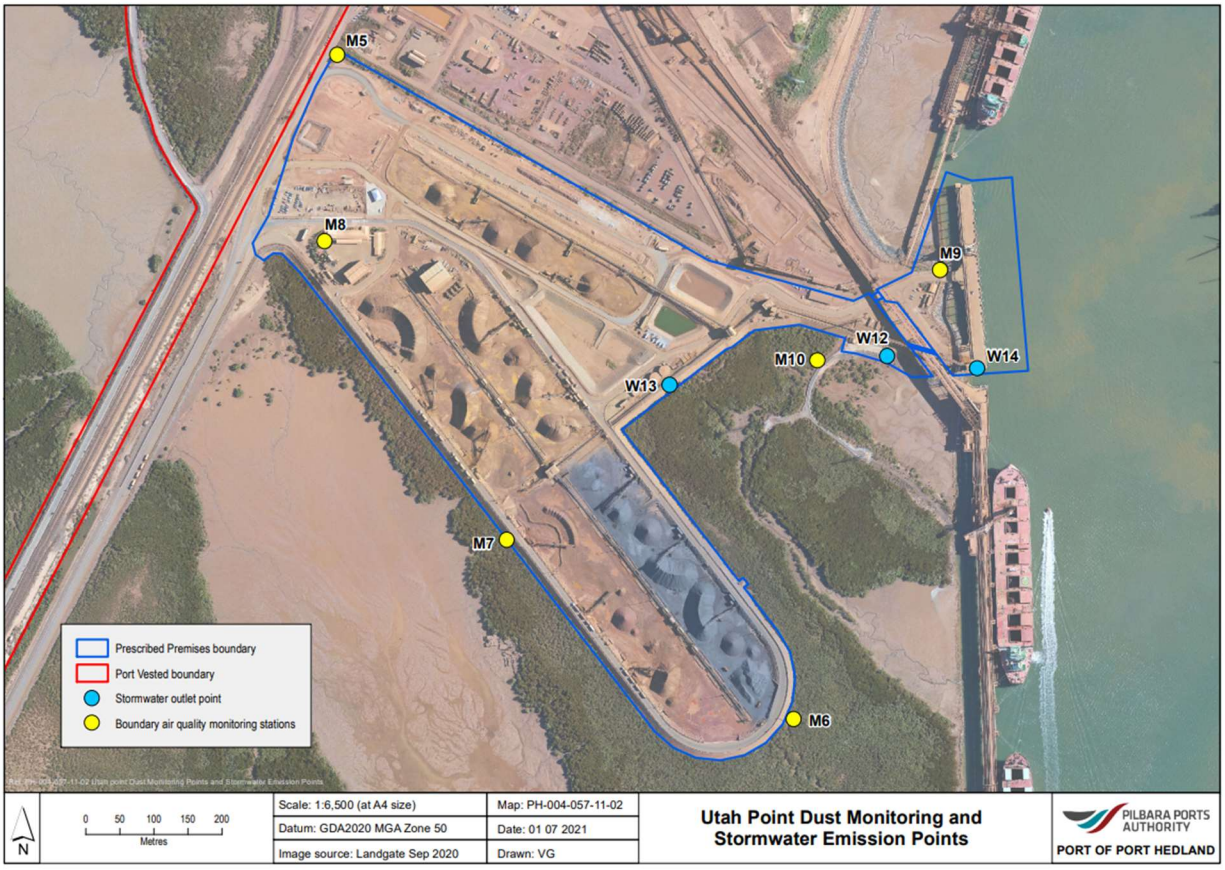

Figure 6: Premises monitoring locations

The Licence Holder's response to trigger events, consistent with their Dust Alarm Response Procedure, includes:

- investigating the dust source utilising visual displays of real-time dust monitoring and weather data as well as inspections of on-site activities by operational staff; and
- initiating management responses such as:
    - application of moisture via water cannons, water cart, sprayers on product handling infrastructure;
    - cleaning of spilt material; and
    - ceasing haulage to site of dusty bulk materials.

While trigger management planning cannot be incorporated into the assumptions of the air quality model, the likelihood of the Premises significantly contributing to high dust levels at receptors is expected to reduce as a result implementing management triggers. Triggers based on boundary data, as opposed to that measured at Taplin St approximately 3.5 km to the east, are expected to promote more reactive responses to high dust events generated at the Premises.

Key findings: The Delegated Officer has determined that proposed changes to trigger management are an improvement from those specified on the Existing Licence. While the revised approach appears sound, the proposed criteria differs to that provided on other port

operator licences in Port Hedland.

It is noted that proposed triggers attempt to address the risk of very short-term peak dust events and that in some cases, may miss sustained events where dust levels remain high but not extreme.

4.3 Risk Event – Noise

Noise levels at receptor locations in the West End currently exceed Assigned Noise levels specified in the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) and have done for some time.

Separate to this Application the Department is progressing with implementing the following Government-endorsed Taskforce Report recommendations in relation to noise:

- The Government supports DWER working with industry to explore the feasibility of approvals under Regulation 17 of the Noise Regulations, where the prescribed noise standard cannot be met by individual premises.
- The Government supports the Taskforce recommendation that the Port Hedland Cumulative Noise study is used to inform land-use planning for the West End of Port Hedland.

4.3.1 Historical noise monitoring

Port Hedland noise monitoring was undertaken in July/August 2014 and January 2015. Analysis of audio recordings identified that the noise levels exceeded for 10% of the sample periods (L_{A10}) were predominantly between 55 and 63 dB, which exceeds the Assigned Levels for night-time and Sunday/public holidays when an influencing factor is considered.

Noise emissions from the Premises, have been found to be difficult to identify at the nearest noise sensitive receptor, the Pier Hotel. This is due, in part, to existing noise sources located between the Facility and the Pier Hotel and the fact that the Pier Hotel is located in an industrially zoned area. These existing noise sources include, but are not limited to, Dampier Salt dozer operations, ships and shiploaders/conveyors and BHP operations.

Safety alarms, reverse beepers, helicopter, truck and train noises were also observed during monitoring although these are excluded from the Noise Regulations. These noise sources are typically dominant at the nearest noise sensitive receptor in Port Hedland.

Noise monitoring concluded that dominant noise sources could not be attributed to the Premises activities and that operational activities at the Premises are lower than the existing ambient noise levels from other sources in the West End (Pilbara Ports Authority, 2021).

4.3.2 Noise modelling

Noise modelling conducted for the proposal has been undertaken to estimate the impact of additional infrastructure at SY2 on Port Hedland receptors during worst case scenarios. When compared to the Base Case scenario (24.1 Mtpa), the upgrades to SY2 are expected to result in a minor increase in noise levels, ranging between 0.8 dB and 1.1 dB at all key receivers when considering PPA operations only.

Modelling conducted in 2020 identified that noise levels from the Premises in isolation are within 5 dB of Assigned Levels specified in the EP Noise Regulations. Under the EP Noise Regulations, this means that the Premises is defined as a significant contributor to cumulative noise in Port Hedland. However, in a cumulative context where all other sources are considered, modelling anticipates the impact of the 28Mtpa proposal to be <0.05 dB.

Based on the minor nature of additional noise generating infrastructure proposed and significant background noise levels, the potential changes to Premises noise outputs are not

expected to be perceptible at the nearest sensitive receptor.

Noise modelling provided assumes that all equipment is operating under worst case meteorological conditions in the Base Case scenario. Therefore the increased operating times associated with greater throughput rates are not expected to increase the previously projected noise emissions from the Premises operations, excluding for new infrastructure.

Key determinations:

- The Department has committed to investigating the feasibility of a regulation 17 exemptions in Port Hedland, which will seek to limit noise generated by port operators to as low as reasonably practicable levels.
- There is an increased likelihood that due to greater operating times required to increase throughputs, the maximum noise levels from the Premises will be reached during worst case meteorological conditions. However, impacts to amenity are not expected to occur in most circumstances due to existing high background levels.
- No additional noise controls have been proposed by the Licence Holder.

4.4 Receptors

In accordance with the *Guideline: Risk assessments* (DWER, 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 19 of the Decision Report below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER, 2020)).

4.5 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Table 19 of the Decision Report. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Table 19 of the Decision Report), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 9.

The Revised Licence L8937/2015/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. bulk loading activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 9. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Construction								
Minor earthworks and stockpile relocation works required. General construction vehicle movements.	Dust	Air/windborne pathway causing impacts to health and amenity	Pier Hotel – located 670m east of Utah Point Closest zoned residential premises – 1,200m to the northeast	Improved trigger management criteria. Use of water carts to pre-wet down work areas.	C = Major L = Likely **High Risk**	Y	Consistent with Licence Holder proposed controls.	N/A
Installation of new stacker, conveyors, transfer stations and construction of an in-loading bunker.	Noise			None proposed	C = Moderate L = Rare **Medium Risk**	N/A	No additional controls required to manage noise generated during construction. Works are expected to be of short duration and restrict the operation of other noise sources e.g. FELs operating in SY2.	N/A
Operation								
Additional operation of FELs associated with increased throughput rates. Larger stockpiles. Operation of new dust sources i.e. bean stockpile, stacker, three additional feed hoppers, two additional transfer stations.	Dust	Air/windborne pathway causing impacts to health and amenity	Pier Hotel – located 670m east of Utah Point Closest zoned residential premises – 1,200m to the northeast	Refer to Section 4.2.3	C = Major L = Likely **High Risk**	Y	The Licence Holder is not permitted to handle the additional tonnages requested until dust control improvement works to hoppers in SY1 and/or proposed hoppers (with additional dust controls) and revised stockpile layout in SY2 is achieved. Otherwise consistent	N/A

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
							with Licence Holder proposed controls.	
Additional operation of FELs associated with increased throughput rates.	Noise			None proposed	C = Moderate L = Unlikely **Medium Risk**	N/A	N/A – no perceptible increase in ambient noise is anticipated from the proposal (refer to section 4.3.2). DWER is undertaking separate investigation to other regulatory measures for noise in Port Hedland, and for all port operators.	N/A
Construction of stormwater channels and stormwater sump.	Stormwater	Direct discharge	Benthic, mangrove and seagrass communities in the Port Hedland Inner Harbour.	Stormwater captured in lined settlement ponds and sumps for recycling onsite. Direct discharge from re-circulation pond only by emergency (1 in 10 year event)	C = Minor L = Likely **Medium Risk**	Y	Existing controls suitable for management of stormwater at SY2.	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

5. Consultation

The application was advertised on the department's website on 15 November 2021 for a period of 27 days. Letters were sent to invite comment from the Departments of Health; Planning, Lands and Heritage; Jobs, Tourism, Science and Innovation; and Primary Industries and Regional Development with no comment received. Community members identified as direct interest stakeholders were also directly invited to comment on the application. Table 10 provides a summary of the consultation undertaken by the department.

Table 10: Consultation

Consultation method	Comments received	Department response
Letters sent to invite comment from State Government agencies	None received.	N/A
Town of Port Hedland	The Town of Port Hedland has no objection to the proposed expansion and increase in throughput, however, requests that adequate conditions be placed on any approval to appropriately manage emission from these activities including (but not limited to) dust, odour and noise. While we expect that there will be limited impact on our residential population within Port Hedland, potential impacts on the adjacent marine environment also need to be appropriately managed.	Noted.
Port Hedland Industries Council (PHIC)	On the premise that individual port user environmental licence conditions continue to be met, PHIC supports the principle of allowing all Port users to continue to grow their businesses. This support extends to Pilbara Port Authority's current licence amendment application to increase capacity from 24.1 million tonnes per annum (Mtpa) to 28Mta to be permitted for export through the Utah Point Multi-user Bulk Handling Facility.	Noted.
Community member response	It doesn't matter what we say as it will be granted anyway- as has happened multiple times in the past.	Noted. The application has been granted following risk assessment conducted in accordance with relevant DWER guidelines. Refer to section 4. Comments from all stakeholders are considered and responded to through DWER's published decision/ amendment reports.

6. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements. This includes additional controls to those proposed by the Licence Holder in the original Application.

Dust

Additional controls for dust management have been considered against the Department's Regulatory Strategy for Port Hedland, which states:

"…it is the department's position that applicants wishing to expand their operations will need to demonstrate that emissions and discharges have not increased as a result of their proposal, and the current risk is not increased."

Through consultation with DWER, the Licence Holder has identified dust control improvement opportunities at ore feed hoppers at SY1. Dust may be generated during the process of dropping ore into the hopper, from height via FEL, as air is displaced from the hopper driving particulates into the air. Currently the six hoppers at SY1 and existing/proposed hoppers at SY2 do not have dust controls associated. Through preliminary trials undertaken in April 2022, the Licence Holder has determined that it is feasible to introduce dust suppression to this infrastructure.

The introduction of dust controls at SY1 feed hoppers (refer to section 6.1.1) ahead of throughput increases, which may be enabled through SY2, are considered by the delegated officer to satisfy the objective of 'no net increase' from the overall premises. As such, additional controls for the management of dust at either SY1, SY2 or both have been placed on the Licence, and the authorisation of increased throughputs is conditional on those controls being implemented.

The delegated officer notes the pending finalisation and implementation of the Port Hedland Dust Management Guidelines, which is a key recommendation of the Taskforce Report that was endorsed by the State Government. Additional controls placed on the Amended Licence for dust have been considered alongside the implementation of these Guidelines and are not expected to contradict any future requirement of the Licence Holder to improve dust controls at the Premises.

Noise

It is possible that the proposed new infrastructure would result in a slight increase in noise outputs from the premises. However, these increases are not expected to be perceptible at the nearest noise sensitive premises.

The delegated officer has elected not to apply additional controls in relation to noise emissions, in favour of awaiting the outcomes of a detailed scientific investigation into the feasibility of applying r.17 noise exemption to Assigned Levels. Such approval will need to be considered under a holistic approach to regulating noise in Port Hedland. A r.17 noise exemption is designed to limit noise generated at a premises to as low as reasonably practicable levels, placing a ceiling on noise outputs once approved.

6.1 Summary of amendments

6.1.1 Throughput limits

The Licence Holder is authorised to increase throughputs for manganese from 2 Mtpa to 3.5 Mtpa, iron ore and overall throughputs from 24.1 Mtpa to 28 Mtpa, on the condition that additional dust controls are applied to hopper infrastructure at either SY1 and/or SY2. These additional controls include:

- eco-hopper flaps or screens; and/or
- dust sprays; and/or
- dust extraction system with exhaust via bag filter.

The installation of new transfer stations TS5 and TS6 at SY2 is authorised with the following controls required if installed:

- internal spray curtains within new transfer stations; and
- rubber dust curtains at conveyor exit points.

Although the Licence Holder is able to use existing infrastructure to achieve a throughput of 28Mtpa, the Amended Licence restricts throughputs to 24.1 Mtpa until new infrastructure and dust controls are installed at either SY1 or SY2.

Utilising current assets and stockpile formation with the added tonnages would likely result in significant increase in dust emissions from ore handling and rehandling using FELs. The improved stockpile layout and added outload feed hoppers proposed through the Application are expected to reduce overall FEL movements per tonne of ore shipped. Therefore there is no restriction under the Amended Licence for the licence holder to implement dust controls at new SY2 infrastructure prior to increasing throughputs.

The addition of a bunker and stacker at Stockyard 2 will create new dust sources, once operational, and increase dust generated from wind erosion through the development of an additional stockpile (Stockpile 23). Therefore the authorised increases to overall throughput described above have not been associated with this infrastructure and the following additional controls have been applied as licence requirements prior to operating infrastructure at Stockpile 23:

- Four stockyard cannons to be available such that sprays are capable of wetting the full stockpile (Stockpile 23) when operational;
- Spray equipment installed on the stacker boom and bunker hopper; and
- The stacker has the ability to luff for the purpose of reducing the drop height of ore when beginning a new stockpile.

6.1.2 Moisture content requirements

The delegated officer acknowledges that the licence holder is not responsible for moisture control at the mine and has some, but limited, ability to reject ore arriving to site.

Conditions have been amended to recognise the practical implications of requiring compliance with accepting 100% of ore that has a moisture content above the DEM level. The Licence Holder has taken steps to improve the moisture content of ore arriving to the premises from third party mines.

Revised conditions for 95% of authorised bulk granular materials to be received with a moisture content greater than the DEM level are consistent with requirements placed on other Port Hedland operators. Amended conditions are designed with the same intent: for the licence holder to take action to encourage ore suppliers to improve the moisture content of their product prior to sending it to Port Hedland as part of contract requirements.

The delegated officer also notes that some bulk granular materials cannot have a DEM level assigned through laboratory testing, for example if they are hydrophobic or are otherwise free draining. For the purpose of demonstrating that the DEM level of a distinct bulk granular material cannot be determined, the licence holder is required to obtain a declaration from a third-party laboratory stating that the determination of DEM is not possible for that material.

The intent of this exclusion to DEM requirements to pertain only to single ore types, of single origin. That is, ore types with similar characteristics from the same mine and does not include

generic characterisations of ore types handled, e.g. manganese lump, spodumene fines, and so on. Similar conditions have been applied through Trial conditions, and those applied to other port authority licences in Western Australia.

6.1.3 Management triggers and Reportable Events

Amendments have been made to management trigger criteria to ensure that management responses are targeted toward high dust events that may result in impacts to residential receptors, or situations that indicate upset conditions. Changes to trigger criteria are in part consistent with that proposed in the Application although not all proposed inclusions of upwind monitors have been included.

Trigger criteria based on rolling 1-hour averages at slightly lower concentrations has been included as additional criteria. The purpose of this is to ensure that sustained high dust levels that do not trigger criteria based on short-term 10 minute PM_{10} averages, are addressed through the application of additional dust control. These criteria are consistent with other operator licences in Port Hedland.

To avoid the trigger of continual investigations where the source has been identified, the Amended Licence allows for the Licence Holder to focus its attention on addressing those dust sources, as opposed to conducting additional trigger investigations where the source is known.

Criteria for Reportable Events as measured at boundary monitor M10 has been adjusted for consistency with other port operator licences in Port Hedland; and to assist in the identification of causal factors associated with high dust events.

The Amended Licence removes the requirement to report on monitoring data during 24 hour periods of high throughput rates. Since the introduction of the throughput reporting condition there has been limited evidence to suggest that throughputs over a 24 hour period have resulted in elevated dust over the same periods.

The delegated officer determined that revised management trigger criteria is consistent with that applied to other port operations and that proposed additional controls at SY1 and/or SY2 adequately address the risk of dust from the premises.

6.1.4 Monitoring

Conditions for the installation of air quality monitor M10 (BAM) have been removed following its commencement of operation on 31 May 2021. The continuation of PM_{10} monitoring at monitor M6 (E-sampler) was previously required on the Licence for a period of 12 months from the date of installation of the M10 monitor, which is more representative of downwind dust concentrations when wind is blowing in the direction of residential receptors.

The M6 monitor is located below the height of the premises ring road, in amongst dense mangrove vegetation, and is not appropriately sighted to represent dust concentrations. In addition, M6 is an E-sampler and there are no Australian Standards relevant to the operation of this equipment.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Environment Australia 2012, National Pollutant Inventory Emission Estimation Technique Manual for Mining Version 3.1. Available online: http://www.npi.gov.au/system/files/resources/7e04163a-12ba-6864-d19a-f57d960aae58/files/mining.pdf.
5. Environmental Technologies & Analytics, 2021, Pilbara Ports Authority – Utah Point: Air Quality Modelling Assessment Final Report, October 2021 (DWER records: A2030872).
6. Environmental Technologies & Analytics, 2019, Utah Point Air Quality Modelling, October 2019 (DWER records: A1833063).
7. Pilbara Ports Authority/the Application, 2021 (DWER records: DER2015/002837-2~7).
8. Ramboll, 2021, Boundary Monitoring alarm Trigger Recommendations for Pilbara Port Authority – Port Hedland Operations (DWER record: A2030872).

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Draft Licence		
Overall	The licence holder requests minor changes to wording for clarity and other administrative corrections.	Noted and accepted.
Table 1 – requirement for ultra-low noise idlers on new conveyors	The licence holder requests that the requirement for the installation of hybrid ultra-low noise idlers be removed or be given a more generic definition. The licence holder presented additional information (noise model) to demonstrate that hybrid ultra-low noise idlers would not be required.	Noted. Based on additional supporting information that identifies that proposed upgrades will not result in cumulative noise levels increasing beyond perceivable levels, requested changes are accepted. DWER is currently investigating the feasibility of applying regulation 17 noise exemptions to Port Hedland operations. This process will be conducted in consultation with all port operators to ensure a coordinated response to Government-endorsed recommendations for noise in Port Hedland.
Table 1 – conveyor construction requirements	The licence holder requests that the requirement for ore feed hoppers to be installed along conveyor CV04a be amended to allow for the installation on either conveyor CV04, CV04a or CV04b so that placement is determined by maximum operational efficiency and reduction of generated dust from FEL movements and transfer stations.	Accepted. The delegated officer notes that by installing an ore feed hopper on CV04 near the junction with CV04b, could save ore from passing through two transfer points and thereby eliminate dust sources.
Table 1 and authorised throughput limits – additional proposed controls to allow throughput increases	The licence holder has identified possible constraints to installing dust control infrastructure to ore feed hoppers at SY1 (Table 1 – row 3) prior to requiring increased throughput allowances under the Part V licence. Therefore the licence holder has proposed an alternative approach that links throughput increases (mostly through SY2) to equivalent dust controls at ore feed hoppers at SY1 or SY2. Through preliminary trials undertaken in April 2022, the licence holder has determined that it is feasible to introduce dust suppression to ore feed hopper infrastructure.	Noted and accepted. The delegated officer notes that the proposed alternative control is likely to achieve the same, or similar level of dust control and meet the objective of no overall increase in dust emissions from the premises. Throughput increases will be authorised following dust control improvements at either SY1 or SY2, and the amended licence does not restrict improvements to be made at both.

Condition	Summary of Licence Holder's comment	Department's response
Ore moisture content to be above DEM level	The licence holder requests changes to allow for the flexibility to accept ore where DEM is not known as the licence allows for trial shipments of some products where DEM is unable to be calculated.	The delegated officer notes that the demonstration of compliance with this condition may not be possible for some ores. The reason being that the DEM level cannot be determined for some ores such as manganese or spodumene ores. However, the delegated officer notes that this is not the case for all manganese and spodumene ores and determination will need to be made for each distinct ore product accepted to the premises.
Dust management trigger criteria – measuring location	The licence holder requests that management trigger criteria and Reportable Event criteria to relate to the measurement of wind direction at M5 rather than M10. Monitor M5 is the most representative for wind conditions over the entire site, and the only monitoring site installed with an AS3580.9.11 compliant wind sensor.	Noted. The delegated officer notes that monitor M5 is located in the northwest corner of the premises and approximately 700m from M10 where dust is measured. While this may not be an ideal distance between PM10 monitoring and wind monitoring, the delegated officer accepts the change noting the M5 monitor is compliant with Australian Standards.
Dust management trigger criteria – measurement locations and wind arcs	The licence holder requests the management trigger criterion be modified so that it only applies while wind is from an onsite wind direction for each respective monitor to avoid triggering the criteria when dust is not associated with the premises.	Noted. The delegated officer has elected to remove newly inserted management trigger criteria at M5, M6, M7 and M10. Additional dust controls applied to SY1 and/or SY2 were determined necessary through this Amendment Report for the purpose of demonstrating achievement of the published Regulatory Strategy objective: *"...to ensure dust emissions from premises licensed under the EP Act are not increased..."* Management trigger criteria still applies at M10 but using the original parameters. DWER will continue to engage with Port Hedland operators to define the measurement of 'no net increase' for each operation in Port Hedland. These discussions are expected to inform the approach to managing high dust events at each Port Hedland premises.
Operation of sprays at outload	The licence holder requests amendment of the condition to take into consideration the moisture level of a product so that sprays are not operated for a product with a high moisture content and a low risk of dust lift off.	Noted and accepted.
Reportable Event criteria associated with boundary monitors	The licence holder requests minor changes to wording for clarity, assuming that the intent is that it only applies to reportable events associated with Taplin Street.	Noted. Condition structure changed to clarify that Reportable Events relate to all those specified in Table 4: Management triggers and Reportable Event Criteria.
Authorised throughputs	The licence holder requests that the annual tonnage of iron ore	Accepted. This was considered in the decision report and made as a typographical error in the draft licence.

Condition	Summary of Licence Holder's comment	Department's response
	authorised to be exported be amended from 'up to 24,100,000' to 'up to 28,000,000' and considers that this type of ore is a lower risk product to handle compared to all other listed products in Schedule 2, Table 9.	