



# Amendment Report

<b>Licence Number</b>	L5099/1974/14
<b>Licence Holder</b>	Southern Ports Authority
<b>File Number:</b>	DER2016/000420-1
<b>Premises</b>	<p>Port of Esperance The Esplanade and Bower Avenue ESPERANCE WA 6450</p> <p>Legal description –</p> <p>Part of Crown Reserve 28207 Certificate of Title Volume 3127 Folio 354</p>
<b>Date of Report</b>	1 July 2020
<b>Decision</b>	Licence amended

# 1. Definitions and interpretation

## Definitions

In this Amendment Report, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Report	refers to this document
AS 4156.6 – 2000	Australian Standard AS 4156.6 – 2000: Determination of Dust/moisture Relationship for Coal.
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Chief Executive Officer Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP WA 6027 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
DEM	Means the dust extinction moisture number the moisture content of the material at which the Dust Number is 10 derived from the Australian Standard AS 4156.6 - 2000
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)

Term	Definition
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Licence Holder	Southern Ports Authority
m <sup>3</sup>	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
mtpa	million tonnes per annum
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997</i> (WA)
Occupier	has the same meaning given to that term under the EP Act.
PM	Particulate Matter
PM <sub>10</sub>	used to describe particulate matter that is smaller than 10 microns (µm) in diameter.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Amendment Report applies, as specified at the front of this Amendment Report.
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this Amendment Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>

## 2. Amendment Description

The following guidance statements have informed the assessment and decision outlined in this Amendment Report:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Licence Duration (August 2016)*
- *Guideline: Decision Making (June 2019)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

### 2.1. Purpose and scope of assessment

A trial notification for the shiploading of four bulk spodumene products (<3% content of fines (<10µm)) on Berth 3 was received by the Department on 19 November 2018. DWER responded on 19 November 2018 after carrying out a risk assessment in accordance with the *Guideline: Port Authority bulk handling trials* (the Guideline) and the first trial shipment commenced on 23 January 2019.

The Licence Holder is now applying to amend the Licence to allow ongoing export of bulk spodumene (<3% content of fines (<10µm)) across Berth 3. The amendment application was received by the Department on 26 August 2019 from the Licence Holder. In addition to the ongoing shiploading of bulk spodumene, the Licence Holder is seeking a number of other changes to the Licence.

Further amendments which the Licence Holder has requested include:

- An increase in the maximum allowable muscovite content from 5% to 10%;
- Correction of numeric format in Condition 21;
- Removal of Condition 12 as noise cladding in car dumper has been certified;
- Removal of requirement in Condition 36(b) to annually report on condition 16, 20, 24 and 31;
- Add an annual report requirement for conditions 21, 26 and 33;
- Update Australian Standard AS3580.9.3 to AS3580.9.6 in Table 6, row 5, column 7;
- An increase in throughput of spodumene from 1,000,000 tonnes per annum (tpa) to 2,000,000 tpa and;
- Delete “TEOM” from the Definition and Interpretation table, as it is no longer used.

Currently, the licence permits spodumene to be exported out of Berth 2, where the handling method used is a rotating tipping frame, which loads the closed containers into the vessels. The current risk assessment for this product (in the form of dust), came out as rare, which was based on product information at the time as well as Licence Holder controls (shiploading via rotating shipping frame). The Delegated Officer notes this is not the same method of handling as Berth 3 where product is stored on a concrete hardstand, transported via enclosed conveyors and loaded into vessels using a chute that is lowered to beneath the vessel's hold.

#### 2.1.1 Ongoing shipment of Bulk Spodumene

The spodumene product, currently being trialled through Berth 3, is exclusively sourced from the Mt Marion Lithium Project, owned and operated by Process Minerals International (PMI).

The exported spodumene can be classed into four products:

- 6% Lithium Spodumene Coarse Products;
- 6% Lithium Fine
- 6% Lithium 50:50 Coarse:Fine; and
- 4% Lithium Coarse

They are all sourced from the same mine area and physically and chemically treated in the same facilities, however, removed from the process at different stages. They are physically processed on the PMI site to reduce particle size, through a crusher, and then treated through a multi stage wet beneficiation process to remove unwanted components. Products are transported from the mine site to the Port in road trains and unloaded into Shed 4 onto concrete floor. Front end loaders then outload into the shed hoppers into the enclosed circuit to the Berth 3 shiploader.

### **Trial shipment air quality monitoring**

As part of the trial notification assessment, the Licence Holder was required to meet Minimum Handling Method 2 from the Guideline for three of the four spodumene products (6% Coarse; 6% 50:50 Blend; and 4% Coarse).

Minimum Handling Method 2 requires storage to be within a shed, or open stockpile with moisture content above DEM. Loading from the shed/stockpile must use conveyors with a product specific loading head.

It was determined that the 6% Fine spodumene product presents a higher dust risk as the proportion of particles sized 10 microns or finer is greater than 3% meaning that Minimum Handling Method 3 is required based on the distance to the nearest sensitive receptor.

Minimum Handling Method 3 required the product to be stored within a shed and loading to the vessel must be via a covered conveyor, delivered into the vessel using a chute lowered as far as possible below the ship's hold.

Trial shipments have occurred since January 2019, for the 4% coarse and 6% coarse products. The Licence Holder has advised DWER at the time this application was submitted, that the trial of the 6% Fines spodumene product (>3% (<10µm)) has yet to commence.

The key hazards associated with spodumene dust include crystalline silica and muscovite (mica). Crystalline silica is considered a Group 1 Carcinogenic by the International Agency for Research on Cancer (IARC) and respirable forms may result in lung cancer or silicosis, a lung disease that severely reduces respiratory function. Epidemiologic data is emerging suggesting that crystalline silica may also impact the kidneys and trigger renal disease (Safe Work Australia 2013).

Mica, otherwise known as muscovite, is a non-toxic, non-fibrous silicate that can be abrasive when inhaled, having the potential to irritate eyes and skin as well as causing scarring of the lungs following repeated and high exposure (Ambrosino *et al* 2017). Muscovite may lead to pneumoconiosis, an occupational lung disease, when an individual is exposed to ongoing and high concentrations of finer muscovite particulates (Moitra *et al* 2018). Occupational mica concentrations are not expected to exceed Safe Work Australia recommended maximum concentrations of 2.5 mg/m<sup>3</sup> over an 8-hour time weighted average.

Monitoring data from the trial shipments of bulk spodumene (<3% content of fines (<10µm)) at Berth 3 reveals the following:

- (a) Moisture content of the product was maintained at or above DEM;
- (b) The overall concentration of spodumene in dust was <0.1%. This is consistent with the long term baseline (2010 to 2018) of 0.003 µg/m<sup>3</sup> of lithium measured in Total Suspended Particles (TSP) using High Volume Air Samplers (HVAS) at sites 1 to 5. It

is therefore unlikely that the background levels of lithium measured were significantly affected by the trials;

- (c) The proportion of muscovite from representative samples of the spodumene was at or below 5% by weight, compliant with licence condition 21(j);
- (d) The proportion of respirable silica quartz contained the spodumene was at or below 1% by weight, compliant with licence condition 21(k);
- (e) Following the first two trial shipments (captured within the first monitoring report), the Licence Holder determined that mobile Esamplers should be used for at least one trial shipment to conduct targeted monitoring on-site close to the shiploader and the storage shed to enable full compliance and improve the risk assessment. It was concluded that further information was required to be collected in more prevalent onshore winds as evidence to further support that dust leaving the ships hold or sheds, or past the Premises Boundary, is not influenced by the trials. Figure 1 shows the locations of the E-samplers, as well as the HVAS and Beta-attenuation Particulate Monitors (BAM).





**Figure 1: Location of air quality monitors**

- (f) One 24-hour PM<sub>10</sub> dust exceedance ( $>50\mu\text{g}/\text{m}^3$ ) occurred throughout the trial shiploading events on 29 March 2019. The Licence Holder attributed this to several bushfires burning north, north-east and north-west of the town and was reported to DWER at the time. The exceedance was reported at site 4, which was upwind of the port at the time. The HVAS showed that lithium levels were below detection level,

indicating that spodumene loading did not contribute to the elevated PM<sub>10</sub> levels.

- (g) The meteorological data collated from the shipment dates has been compared with the corresponding data on dust. It shows that there were times during shiploading where wind direction placed monitors downwind of the shiploaders.

The Licence Holder has advised that during the trial shipments, other activities at the port were occurring which could also cause dust, such as iron ore unloading, grain unloading and the trucking of containers and movement of other vehicles on unsealed roads.

Product is stored on a concrete hardstand, transported via enclosed conveyors and loaded into vessels using a chute that is lowered to beneath the vessel's hold. This method of handling aligns with the Minimum Handling Method 3 from the Guideline.

### 2.1.2 Increase in muscovite content

The Licence Holder has requested that the maximum allowable muscovite (mica) content be increased from 5% to 10%. The Licence Holder has provided the following reasons for the request:

- Clean-up of muscovite in the circuit at 5% has been managed effectively, a level of 10% is manageable and should not restrict trade without demonstrable OHSE risks;
- The 5% limit is not supported by any relevant health criteria; and
- Attaining muscovite levels <5% has been practically challenging and is a costly impost for the mine.

### 2.1.3 Fertiliser storage request

An application to amend licence L5099/1974/14 was received by DWER on 4 February 2020 to permit the inloading, storage and outloading of fertiliser in Shed 6, as well as a change to Condition 25 in regards to the iron ore moisture content monitoring standards. As the amendment application submitted in September 2019 was still processing at the time, the two applications will be assessed in one amendment document which is consistent with the Department's *Guideline: Decision Making* (June 2019).

The Licence Holder has requested up to 15,000 tonnes of fertiliser be permitted to be stored in Shed 6. This will be mostly urea, monoammonium phosphate (MAP) and diammonium phosphate (DAP).

The Licence Holder has also requested in the February 2020 amendment that Condition 25 be amended to remove CV09 moisture analyser. The analyser does not operate accurately with the colour variety of the iron ore from PMI. The colour difference causes significant differences in the moisture results, and as such, the analyser is not reliable for determining moisture content.

### 2.1.4 Summary of amendment approval

A risk assessment has been carried out for the amendments in which the Licence Holder has applied for. DWER has granted the following amendments:

- Ongoing acceptance of spodumene export through Berth 3;
- Increase in exported spodumene from 1,000,000 tpa to 2,000,000 tpa;
- Administrative amendments to remove redundant conditions due to works being completed and compliance achieved;
- The storage and handling of fertiliser in Shed 6;
- Removal of the CV09 dust moisture analyser with replacement conditions added.



The amendment does not approve:

- The increase of muscovite content within the accepted spodumene from 5% to 10%.

Section 5 of this report outlines the risk assessment for the applied amendments and subsequent determinations.

### 3. Amendment history

Table 2 provides the amendment history for L5099/1974/14.

**Table 2:** Licence amendments

Instrument	Issued	Amendment
L5099/1974/14	28 February 2014	Amendment to remove emission targets for silica (no spodumene export at the time) and to change several of the monitoring dates.
L5099/1974/14	19 February 2015	Amendment to change ownership of Licence from Esperance Port Authority to Southern Ports Authority
L5099/1974/14	29 April 2016	Notice of Amendment to Licence Expiry Dates to extend the duration of the licence until 6 March 2032
L5099/1974/14	3 October 2016	Amendment Notice 1 to authorise the export of spodumene from Galaxy's Mt Cattlin Mine using the rotating tipping frame system.
L5099/1974/14	25 November 2016	Amendment Notice 2 to authorise temporary increase in the authorised maximum mica content of spodumene handled at the Premises from 5% to 7.25% by weight. Following 31 December 2016, the Licence Holder was only authorised to ship spodumene with a mica content equal or less than 5% by weight.
L5099/1974/14	4 July 2017	Amendment Notice 3 to allow for doors to remain open at Shed 6 during the loading of spodumene into containers prior to shiploading.
L5099/1974/14	23 February 2018	A full review of the licence was undertaken, incorporating a number of amendment requests. These included increasing the bulk handling production capacity from 82,000 tonnes to 100,000 tonnes per day, replacing and updating some of dust monitors, removing duplication of reporting requirements and removing duplication of annual reporting requirements between regulation 17 reporting and Part V licence for noise.
L5099/1974/14	1 October 2018	Licence amendment combined two applications to amend conditions of the Reviewed Licence and also to authorise the handling of bulk nickel and copper concentrate. DWER also included Trial Conditions to the licence at this time.
L5099/1974/14	22 October 2018	Licence amendment application submitted on behalf of Mineral Resources Limited (MRL) to authorize the operation of a hybrid car dumper for the in-loading of iron ore.
L5099/1974/14	1 July 2020	Licence amendment to allow the ongoing handling of spodumene through Berth 3 following a 12 month trial shipment.  Amendment also incorporates application to store fertilizer within shed 6 and to remove CV09 dust moisture analyser due to inaccuracies with readings.

## 4. Location and receptors

Table 3 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 3: Receptors and distance from activity boundary**

Residential and sensitive premises	Distance from Prescribed Premises
Residential Premises 46 Bostock St (currently a vacant port-owned premises)	420m to from shed 4 and 660m from Berth 3

Table 4 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 4: Environmental receptors and distance from activity boundary**

Environmental receptors	Distance from Prescribed Premises
Lake Warden (RAMSAR wetland)	Approximately 4,400 m northwest
Esperance Harbour – marine ecosystem The Esperance Harbour is defined as a moderate ecological protection zone in accordance with EPA's Environmental Assessment Guideline 15	Within and directly adjacent to the premises boundary.
Threatened Ecological Community (TEC)	All of Esperance including unreclaimed sections of the Premises and surrounding industrial areas are registered as TECs.  The Premises is a pre-existing facility that is located on cleared land and is unlikely to support native vegetation or animals.

## 5. Risk assessment

Table 5 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

**Table 5: Risk assessment for proposed amendments during operation**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Ongoing in-loading and out-loading of spodumene using hoppers, trucks, grab buckets and shiploaders	Dust: Fugitive dust emissions from ongoing handling and movement of spodumene across Berth 3 including points where material is emptied into the ship, tracked on the outside of containers and emitted from storage sheds	<p><b>Receptors:</b> Closest residential premises – 660m from Berth 3 shiploader</p> <p><b>Pathway</b> – Air (windborne): wind temperature inversions, speed and direction can change the level of dust generation.</p> <p><b>Impacts:</b> Amenity impacts may include visible dust plumes including the deposition of material on vehicles, recreational vessels, dwelling and clothing.</p> <p>Public health effects may include potential acute effects that may include hay fever and asthma, and chronic effects such as reduced respiratory function. Silica found within spodumene presents a respiratory risk as it is potentially carcinogenic depending on its particle size and availability in air.</p> <p>Health impacts from muscovite may lead to pneumoconiosis, an occupational lung disease, when an individual is exposed to ongoing and high concentrations of finer muscovite particulates.</p>	<p>The storage shed where the product is stockpiled is enclosed.</p> <p>The Berth 3 conveyor system is enclosed and the end of the chute is placed below the ship's hold.</p> <p>The moisture of the product is kept above the DEM before and during shiploading.</p> <p>If dust is visibly escaping the hold, misting sprays on the shiploader will be operated.</p> <p>Licence Holder has committed to install a fully automated wheel wash system, to be constructed on exit to Shed 4 by 31 December 2020. Although this control will not reduce dust emissions until it has been installed, the Delegated officer considers that once operational, this will further reduce risk of product being tracked out of the shed via trucks.</p>	Moderate	Possible	Medium	<p>Crystalline silica and muscovite (mica) are key hazards associated with spodumene dust.</p> <p>Results from the required monitoring demonstrated that emissions of spodumene dust were negligible and constituted &lt;0.1% of overall dust (based on concentrations of lithium).</p> <p>The Department of Health (DOH) has previously provided general advice to DWER in relation to spodumene stating that <i>"DOH is not aware of any adverse health effects from spodumene, silica, quartz or mica among the general public. Instead, adverse health effects tend to be limited to work places when significant concentrations of fine dusts are generated from some type of mechanical action on ores containing these compounds"</i>. Further that <i>"spodumene concentrate is comprised predominantly of particles that are too large to be inhaled"</i> (Department of Health, January 2018).</p> <p>However, DWER has since received further advice from DoH regarding spodumene ore, recommending that a full suite of metals be analysed in the surrounding dust monitors to understand the composition of the ore.</p> <p>Each source of spodumene comes from a different mine site and hence different geological sites. A full suite of metals/metalloids in the dust monitoring will allow a comprehensive understanding of the different product types from each of the source and allow DWER a more complete understanding of any potential risks from the different ore sources.</p> <p>DWER does not consider risks to any human receptors within the prescribed premises boundary as these risks are regulated by the Department of Mines, Industry Regulation and Safety (via WorkSafe).</p> <p>The Likelihood has been rated possible as the handling method at Berth 3 is not a fully enclosed system. And given the distance of 660m to the nearest offsite human receptor it is possible for dust emissions to occur during the loading of spodumene into the ship's hold.</p> <p>The monitoring reports from the trial shipments show compliance was achieved with the current monitoring conditions and</p>	<p>Conditions 19 to 22 of the existing Licence relate to spodumene acceptance and monitoring.</p> <p>Ambient air quality monitoring is required through conditions 27 to 29 and includes the monitoring of lithium as PM10.</p> <p>Based on the trial period monitoring results and on the general advice from DoH, the Delegated Officer has determined the ongoing export of spodumene through Berth 3 will be permitted on the Licence.</p> <p>However, due to the significant increase in throughput from 1mtpa to 2mtpa, the proximity of receptors to the Port and in consideration of further advice received from DoH, the Delegated Officer has determined that further air monitoring with a full suite of metals and metalloids is required in order to ensure emissions from the spodumene remain at an acceptable level.</p> <p>Currently monitoring sites 1 to 5 have HVAS fitted with filter papers that analyse for PM10, iron, lead, nickel and lithium. Table 6 will be amended to include a full suite of metals and metalloids to be monitored by the HVAS during the next 3 month period and annually thereafter.</p> <p>By including a full suite of analytes in the dust monitoring, DWER can analyse the results and be satisfied that no elements of concern are present. The information on the overall emissions of metals in dust around the Port will assist in providing baselines for any mineral products that could be handled through the Port in the future. DWER can then use the data to reconsider ongoing monitoring and reduce it to key indicators.</p> <p>The Licence also includes the requirement of the product to be kept above DEM before and during shiploading.</p> <p>These conditions will remain and apply to the ongoing handling of bulk spodumene.</p>

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
							that current controls for dust are sufficient for the allowable licensed throughput. .	Table 10 has been amended to double the throughput from 1,000,000 mtpa to 2,000,000 mtpa of exported spodumene.  The Licence amendment will permit spodumene to be handled through Berth 3. This is specified in the Infrastructure and Equipment table in Schedule 2.
Ongoing in-loading and out-loading of spodumene using hoppers, trucks, grab buckets and shiploaders	Increase in muscovite content of spodumene from 5% to 10%	<p><b>Receptors:</b> Closest residential premises – 660m from Berth 3 shiploader</p> <p><b>Pathway</b> – Air (windborne): wind temperature inversions, speed and direction can change the level of dust generation.</p> <p><b>Impacts:</b> Amenity impacts may include visible dust plumes including the deposition of material on vehicles, recreational vessels, dwelling and clothing.</p> <p>Health impacts from muscovite may lead to pneumoconiosis, an occupational lung disease, when an individual is exposed to ongoing and high concentrations of finer muscovite particulates.</p>	The Licence Holder currently ensures the muscovite content of spodumene is at 5% or less by providing technical analysis reports of the product.	<b>Major</b> – due to potential mid-level adverse public health effects	<b>Possible</b>	<b>Medium</b>	<p>Due to its shape and weight, mica has a high dust potential and is easily visible due to its reflective characteristics.</p> <p>The presence of muscovite can present health risks. The application does not clearly demonstrate that risks to public health can be managed with an increase to the muscovite content.</p> <p>As the proposed handling method at Berth 3 is not a fully enclosed system, there is a risk of dust (containing mica) pluming from the end of the chute during loading events and impacting on the nearby receptors (660m from the Berth). This makes the likelihood of the consequence occurring possible.</p>	Given the available information on health risks from muscovite along with the results of the monitoring during the trial shipment which confirmed that a muscovite content of less than or equal to 5% was achievable, the Delegated Officer has determined that an increase in muscovite content of spodumene from 5% to 10% is not supported. The condition, therefore, will remain at ≤5% and applies to all spodumene being handled at the Premises.

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Ongoing in-loading and out-loading of spodumene using hoppers, trucks, grab buckets and shiploaders	Discharges to surface water from the berth or from spillages to harbor waters during ship loading	<p><b>Receptors:</b> Esperance Inner Harbour marine environment. Aquatic plants within Esperance Harbour. Benthic ecosystems with the Esperance Harbour.</p> <p><b>Pathways:</b> Spills and fugitive dust entering the marine environment and direct discharges to harbor waters from Hume interceptors H1 or H4 or via spillage.</p> <p><b>Impacts:</b> spills and fugitive dust may cause reduction in accessibility to sunlight for marine ecosystem which may limit photosynthetic function. Any direct discharges could alter the chemistry of the benthic layer (sediment surface) which may have acute or chronic toxic effects on marine organisms.</p>	The Berth 3 conveyor system is enclosed and the end of the chute is placed below the ship's hold. The sealed surfaces at Berth 3 drains landward to an underground sump that will be inspected monthly and emptied as required. Roof run-off from Shed 4 is not discharged as stormwater into the marine environment. It is infiltrated in soak wells around the shed to filter through reclaimed land to underlying groundwater and marine environment. A 250kL rainwater tank is also connected for water reuse.	Minor	Rare	Low	<p>There is a restricted pathway for lithium to enter the marine environment as Shed 4 is not within Berth 2 catchment where direct discharges can occur.</p> <p>The Berth 3 conveyor system is enclosed and the end of the chute is placed below the ship's hold. Fugitive dust is most likely the greatest contributor of lithium to the marine environment. Spills to the marine environment are only likely where conveyors with residual spodumene are run after a ship has departed eg. During incorrect washdown procedures.</p>	Existing controls are deemed adequate for the risk of discharges to surface water from the shiploading of bulk spodumene. No new conditions on the Licence are required.
Storage and handling (in-loading and out-loading) of fertiliser in shed 6	Dust: Fugitive dust emissions from the ongoing storage and handling of fertiliser	<p><b>Receptors:</b> Closest residential premises – 190m from Shed 6</p> <p><b>Pathway – Air</b> (windborne): wind temperature inversions, speed and direction can change the level of dust generation.</p> <p><b>Impacts:</b> Amenity impacts may include visible dust plumes including the deposition of material on vehicles, recreational vessels, dwelling and clothing. Human health impacts from dust generated by the handling of fertilisers may occur if inhaled such as nausea, vomiting or headaches.</p>	<p>The storage shed is enclosed in order to minimize movement of any dust except for ventilation windows inserted for diesel fumes to escape as per hygiene standards.</p> <p>The floor is sealed to allow trafficked areas to be swept regularly to minimize dust generation from moving trucks.</p> <p>If visible dust is observed escaping from the shed, dust mitigation methods will be implemented including shutting the doors and activating the dust extraction system. Loading will be ceased if dust is visible from the Port beach.</p>	Moderate	Unlikely	Medium	The controls proposed by the Licence Holder are considered sufficient by the Delegated Officer which deems the likelihood of the event occurring to be unlikely. As the consequence is rated moderate the overall risk is therefore Medium.	<p>Tables 9, 10 and 11 have been amended to allow fertiliser to be stored within Shed 6.</p> <p>Current licence conditions along with the Licence Holder controls are deemed sufficient for mitigating the risk of dust associated with the storage of fertiliser in Shed 6.</p>

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Storage and handling (in-loading and out-loading) of fertiliser in shed 6	Noise	<b>Receptors:</b> Closest residential premises – 190m from Shed 6	<p>The storage shed is enclosed with conveyors which will assist to minimise noise.</p> <p>There will be scheduled regular maintenance and lubrication.</p> <p>Incidents and complaints will be investigated.</p> <p>The Licence Holder has confirmed that no additional infrastructure is required for the storage shed.</p> <p>Handling activities including use of loaders in the shed will be a continuation of previous activities shown to be compliant with the Port's Regulation 17 noise criteria.</p>	Minor	Unlikely	Medium	Given the controls in place by the Licence Holder and that the Licence Holder is currently compliant with their Regulation 17 approval and that there will be no additional infrastructure or change in handling method, the Delegated Officer is satisfied that the likelihood of the consequence will be unlikely and the overall risk medium.	The Licence Holder are required to comply with their Regulation 17 approval. No additional conditions will be included for the loading and storage of fertiliser.
	Discharges to surface water from the berth or from spillages to harbor waters during ship loading	<p><b>Receptors:</b> Esperance Inner Harbour marine environment. Aquatic plants within Esperance Harbour. Benthic ecosystems with the Esperance Harbour.</p> <p><b>Pathways:</b> Spills of fertiliser entering the marine environment and direct discharges to harbor waters via spillage.</p> <p><b>Impacts:</b> spills of fertiliser into the marine environment may have toxic effects on marine organisms due to a buildup of nutrients.</p>	<p>The storage shed consists of a sealed concrete floor and trafficked areas will be cleaned reducing product being tracked out of the shed.</p> <p>Any lodged product will be blown off the truck inside the shed.</p> <p>Trucks to be stopped outside shed and wheels washed-off within sealed catchment draining to a sump.</p>	Moderate	Rare	Medium	The Delegated Officer has determined the likelihood of the consequence occurring is rare due to the Licence Holder controls and current Licence conditions. The overall risk rating is therefore Medium.	Current licence conditions for storm water and wash water management apply. No further conditions are required.



Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Storage and handling of iron ore	Dust: fugitive dust emissions from the handling of iron ore	<p><b>Receptors:</b> Berth 3 shiploader is 660m from Shed 5, but closest storage shed (Shed 1) is 87m from the nearest residential premises.</p> <p><b>Pathway – Air</b> (windborne): wind temperature inversions, speed and direction can change the level of dust generation.</p> <p><b>Impacts:</b> The key hazard associated with iron ore dust is particulate matter which can be inhaled deep into the lungs presenting a health risk to human receptors.</p>	<p>Existing controls for iron ore dust at the site include:</p> <ul style="list-style-type: none"> <li>Sheds 1 to 3 inclusive used for stockpiling of iron ore are equipped with dust extraction;</li> <li>Enclosure of the iron ore conveyor circuit;</li> <li>Ore moisture monitoring on receipt of iron ore at the Premises (CV09) to identify ore that has moisture content below the measured DEM (applied to remove from licence through this amendment);</li> <li>A foaming system is operated within the iron ore circuit wherever iron ore is detected with moisture levels significantly below DEM;</li> <li>Implementation of a dust monitoring program for the operation of the iron ore export facility;</li> <li>Vacuuming product belt or wetting down iron ore product to prevent dust emissions on outloading system start up;</li> <li>Applying water sprays either directly at the loading chute and/at or specific conveyors;</li> <li>Shutting down loading conveyors where dust is visibly transported beyond the Premises boundary; and</li> <li>Ensuring that the moisture content of bulk mineral product stored at the premises or arriving by ship is maintained above DEM or dust reduction actions will be required to keep dust acceptable levels before unloading or ship loading can occur.</li> </ul>	Moderate	Possible	Medium	<p>Moisture content is a critical factor in the generation of fugitive dust. Being at or above DEM level at the point of acceptance will reduce dust generation potential of iron ore handling. Whilst the Delegated Officer is aware that the current moisture analyser for CV09 is not able to provide accurate readings for the iron ore type, it is still expected that the License Holder maintain moisture levels of the iron ore, at or above DEM at all times. The submission of Moisture Content Certificates will verify moisture content from the time of the mine site.</p>	<p>The regulation of impacts of dust from iron ore is covered by the EPA, and conditions are set out in Ministerial Statements 681 and 325. The condition on L5099/1974/14 relating to specific moisture monitoring of CV09 has been removed. However, a condition has been added which states the Licence Holder must receive and maintain accurate and auditable records from each Premises in relation to the moisture content.</p> <p>It will be made a requirement under the Information section of the Licence for the Licence Holder to report in the Annual Report any instances where the DEM was not met.</p> <p>A condition requiring representative sampling of moisture content of iron ore off-site has been included to ensure off-site sampling is accurate.</p>

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

## 6. Consultation

**Table 9: Summary of consultation regarding the ongoing export of spodumene through Berth 3**

Method	Comments received	DWER response
Local Government Authority advised of proposal (3 October 2019)	The Shire of Esperance has not provided any comments.	N/A
Relevant stakeholders from within local community advised of proposal (3 October 2019)	No responses or comments received	N/A

## 7. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a licence amendment will be granted to allow the continued export of spodumene through Berth 3, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

An increase in muscovite content from 5% to 10% is not supported by the Delegated Officer, as outlined in the Risk Assessment table (Table 5) of this report.

In regards to the amendment applied for in February 2020, the Delegated Officer has determined that a licence amendment will be granted to allow the storage of fertiliser in Shed 6, as well as the removal of the dust moisture analyser, subject to conditions commensurate with the determined controls and necessary administrative and reporting requirements.

### 7.1. Summary of amendments

Table 10 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Amended Licence as part of the amendment process.

**Table 10: Licence amendments**

Condition No.	Proposed amendments
8 and 10	As the compliance certificate for the hybrid car dumper has been provided with construction requirements being met, row 1 of Table 2 can be removed, along with condition 10. The truck turnaround point (hairpin bend) detailed in row 2, is also being removed at this point due to completion.
12	This condition can now be deleted as a satisfactory noise assessment was provided to the CEO on 29 November 2018 and was deemed satisfactory. DWER sent a response to the Licence Holder on 13 December 2018.
19	The numbering system in this condition has been corrected. 19(d) has also been added to specify that any spodumene handled across Berth 3 must contain <3% fines (<10µm).
19	The condition has been amended to include the term 'Distinct Bulk Spodumene Concentrate'. A definition has been added in the definition section with the meaning being 'any lump, fines or blended spodumene product with distinct physical and/or mineralogical characteristics that

	differ from another spodumene product.'
22	Condition 22 has been added to for the Licence Holder to on an annual basis, review any previous reports on the physical or mineralogical properties of each Distinct Bulk Spodumene Concentrate.
23	This condition has been added to ensure records of DEM for all iron ore samples are accurate and maintained.
25	Condition 25 which requires the Licence Holder to undertake moisture content monitoring at CV09 has been removed. This has been replaced with requirement for a representative sample for all bulk iron ore material to be undertaken at the mine site – as per spodumene representative samples.
27	Monitoring for a full suite of metals and metalloids from the HVAS monitors has been added to Table 6. This is required for three month period following the issuing of the amended licence.
34 and 36	<p>Conditions 34 and 36 have been amended to ensure the correct condition numbers are referenced</p> <p>Condition 36 has been amended to require the submission of calibration reports for monitoring data for validity purposes.</p> <p>As this amendment includes the addition of new conditions, and the deletion of some conditions, all the condition numbering has been updated.</p>
Schedule 2	Row 2 of Table 9 is amended to state both iron ore and spodumene can be handled through Berth 3
Schedule 2	Row 9 of Table 9 is amended to include the storage of fertiliser in Shed 6
Schedule 2	Row 16 of Table 9 is deleted as the moisture analyser is not accurate
Schedule 2	Row 2 of Table 10 is amended to include the storage of fertiliser in Shed 6
Schedule 2	Row 3 of Table 10 is amended to increase spodumene export from 1,000,000 mtpa to 2,000,000 tpa and to update the handling methods in Column 4
Schedule 3	Row 11 of Schedule 3 is amended to include fertiliser storage in Shed 6 and operational requirements of this.
Schedule 4	Figure 2 has been updated to a new stormwater monitoring location and discharge map.

Lauren Fox  
A/MANAGER – RESOURCES INDUSTRIES  
REGULATORY SERVICES

*An officer delegated by the CEO under section 20 of the EP Act*

## Appendix 1: Key documents

	Document title	Availability
1	Ambrosino et. al (2017) European Lung White Book, European Respiratory Society	Accessed at <a href="http://www.erswhitebook.org/">http://www.erswhitebook.org/</a>
2	Licence L5099/1974/14 – Esperance Port	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
3	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
4	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
5	DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	
6	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
7	DER, June 2019. <i>Guideline: Decision Making</i> . Department of Water and Environment Regulation, Joondalup.	
8	Department of Health (2018), Request for Advice – Amendment to Licence (L4476/1984/12), 23 January 2018	DWER records A1604566
9	Moitra. S., Bandyopadhyay. A., Moitra. S., (2018) <i>Mica pneumoconiosis: a neglected occupational lung disease</i> , The Lancet Respiratory Medicine	Accessed at: <a href="http://www.thelancet.com">http://www.thelancet.com</a>

## Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Report on 28 April 2020 for review and comment. The Licence Holder responded on 4 May 2020. The following comments were received on the draft Amendment Report.

	Summary of Licence Holder comment	DWER response
Additional analytes in dust monitoring	Advice from DOH quoted in the “Reasoning” column concludes that the “ <i>spodumene is composed predominantly of particles too large to be inhaled</i> ”, therefore the particulates are a low risk to health. This does not justify <i>an increase in regulatory controls</i> concluded in the neighbouring column titled “Regulatory Controls. This needs re-writing so that advice from DoH is consistent with DWER action;	Further justification has been included in the “Reasoning” column in regards to further advice from DoH which recommends a full suite of metals be analysed to understand the composition of spodumene dust. DWER has reduced this monitoring to 3 months of sampling to provide us with a representative analysis. An annual monitoring requirement will follow with potential to remove it completely depending on results.
	Reasoning” column, Delete: “fully enclosed like the Rotabox”. Rotabox is an open transfer point like the shiploader. SP invites the Delegated Officer to visit the Port and witness the two loading methods in operation to facilitate a more accurate risk assessment	The wording has been updated to clearly outline that whilst the Rotabox may not be a fully enclosed system, the potential for dust generation between the two methods of loading is not the same. The Rotabox handled ore is exposed to less wind disturbance than the chute at Berth 3, which may discharge product from above the tip.  During the time of Covid-19 travel restrictions, the Delegated Officer is unable to conduct a site visit.
	INSERT in “Applicant controls” column a “fully automated wheel wash system to be constructed on exit to Shed 4 by 31 December 2020” and INSERT same in Table 2 of Licence.	This has been included in the risk assessment with particular emphasis that it won’t be installed until 31 December 2020.

	Summary of Licence Holder comment	DWER response
	This action further reduces any residual risks of trucks tracking product out of the shed.	
	For mica, the existing product quality monitoring program assessing mica in spodumene as less than 5% on a weekly basis provides sufficient control to avoid the need to monitor mica in negligible levels of dust. Negligible mica flakes can be seen around the Port site or outside the Port boundary due to the containment and industrial hygiene of Port operations. Mica flakes are “easily visible” (as stated by DWER in Row 2 of “Reasoning” column in Table 5 in Amendment Report).	DWER has agreed to remove the specific mica monitoring from the list of analytes due to the requirement for 5% content of mica in spodumene accepted at the Port.
	<p><b>1. In Table 6</b> of Amendment Report include a risk assessment of restricting trade of particular clients to a particular in Port operation (“<b>Galaxy mine</b>” in Table 9 Row 1; Table 10 Row 3 and “<b>Mt Marion mine site</b>” in Table 9 Row 2; Table 10 Row 3. In the risk assessment include:</p> <ul style="list-style-type: none"> <li>Risk-based Licencing approach developed with the DWER Ports Team in 2018, that Licence conditions should focus on <b>hazards of the product</b> by measuring product quality attributes and comparing to <b>health risk thresholds</b>, and ensuring <b>adequate loading controls</b> reduce the risk to an</li> </ul>	<p>Whilst DWER understands the Licence Holder concerns, product originating from different sources must be risk assessed separately as the mine geology will vary. DWER’s risk assessment is always based on the source-pathway-receptor model.</p> <p>DWER is not restricting a supplier but rather the product from particular geological location. It is important the source is distinguished in the licence to demonstrate that the product has been specifically assessed. The trial through Berth 3 was specific to the Mt Marion spodumene product. The subsequent licence amendment, was therefore based on monitoring results relating to that trial for that specific product.</p> <p>DWER also has on record, evidence of an asbestos risk in the spodumene at a</p>



	Summary of Licence Holder comment	DWER response
	<p>acceptable level.</p> <ul style="list-style-type: none"> <li>• The success of this approach for other bulk products on the Licence including concentrates of nickel and copper, iron ore and sulphur;</li> <li>• Existing loading controls for spodumene on both Berth 2 (Rotabox) and 3 (Shiploader) are in excess of those required to ensure dust remains at acceptable levels;</li> <li>• Operations at mine sites are independent of those within the Port of Esperance;</li> <li>• Restriction by client will generate additional bureaucracy by necessitating the use of the 30 day trial notification for any new client; and</li> <li>• Restriction by client is a direct restriction on trade, and the effectiveness of this approach in reducing risks to the environment must be significant and demonstrable</li> </ul>	<p>mine site. If the Licence Holder wishes to change handling methods of this source of spodumene, then they can conduct a separate Trial through the Trial Notification conditions or through a further Licence Amendment application.</p>

	Summary of Licence Holder comment	DWER response
	<p>to justify such an impost to trade.</p> <p>SP requests DWER consider the new bulleted information and the suggested additions to the Licence (including <b>Tables 9 and 10</b>) to re-assess the effectiveness and the requirement for restricting spodumene export by client.</p>	
Iron ore DEM conditions	<p><b>2.</b> Include the following information in the “Reasoning” column <b>in Row 6 of Table 6</b> of Amendment Report relating to iron ore moisture:</p> <ul style="list-style-type: none"> <li>Unlike the northern WA Ports, the Port of Esperance receives ore from trains in an enclosure, stockpiles are stored in a shed and the conveyor belt system is enclosed. All transfer points are enclosed (except the shiploader) and have dust extraction and/or product conditioning (water sprays/fogging).</li> <li>Trends in <b>iron dust on the Port’s border with the community are not increasing and are acceptable with no recorded exceedance of the 50 ug/m3 PM10 criteria and iron ore dust is less than 5% of the total dust around the Port</b>, the levels of dust do not justify this</li> </ul>	<p>The amendment application requested the removal of the dust moisture analyser from CV09 due to inaccuracies within the readings. DWER agreed to remove the analyser and included a replacement condition to ensure that iron ore product remains at or below DEM levels at all times.</p> <p>However, in consideration of Licence Holder comments, with particular regard to the current Ministerial Statements, DWER has agreed to remove the new condition. Condition 24 will remain which required the Licence Holder to ensure that accurate records of the DEM and Moisture Content are maintained. Any levels recorded above DEM will be required to be reported to DWER in the Annual Environmental Report.</p>

	Summary of Licence Holder comment	DWER response
	<p>significant increase in operational controls (as reported to DWER in the attached 2020 Compliance Assessment Report for Ministerial Statements 325 and 681).</p> <ul style="list-style-type: none"> <li>• Only localised and occasional emissions of visible dust have been observed on occasion from the shiploader (as reported to DWER in the attached 2020 Compliance Assessment Report for Ministerial Statements 325 and 681); and</li> <li>• MS 325 and MS 681 are currently the legislative tools managing iron ore export through the Port. Implementation of additional conditions on handling of iron ore at the Port should be via these MS's not the Licence.</li> </ul> <p>SP requests DWER re-assess the risk assessment <b>in Row 6 of Table 6</b> of Amendment Report and consider the new information above to determine if a significant increase in loading controls is required i.e. the inclusion of new conditions <b>requiring all ore to be ship loaded at moistures above the DEM</b> (Conditions 26 and 27).</p>	

	Summary of Licence Holder comment	DWER response
Ongoing trade	Based on the results of risk assessments re-assessed after Points 2 and 3 have been considered: SP requests DWER provide a <b>risk assessment on the need for another 12 month trial or determine if ongoing trade</b> of spodumene across Berth 3 can be approved, subject to the compliance of SP to the continuing Licence Conditions that will ensure the risks of dust emissions continue to remain acceptable during the loading of spodumene across Berths 3.	After careful consideration of comments from the Licence Holder, DWER has determined that an ongoing arrangement of spodumene export through Berth 3 will be permitted. As outlined in the risk assessment a full suite of metals/metalloids is still required within the dust monitoring programme for a 3 month period to ensure there are no toxic levels present and to support the allowance of ongoing trade.
Minor administrative comments	<ul style="list-style-type: none"> <li>-Condition 10: Delete as this condition was made redundant by completion of hybrid car dumper (Row 1 Table 2);</li> <li>-Condition 20 (d) After "respirable silica quartz Insert: (analysis includes % particulates &lt;10µm);</li> <li>-Condition 24 (a) delete (a) and Insert (b)</li> <li>-Table 7 Delete bookmark errors</li> </ul>	Changes accepted and document updated

DWER met with the Licence Holder on 13 May 2020 to discuss the draft amendment and to allow the Licence Holder to raise concerns. Following the meeting, the Licence Holder sent further comments on 18 May 2020:

	Summary of Licence Holder comment	DWER response
Moisture controls on iron ore	SPA indicates management of iron ore moisture under the DEM is not practical as there is no reliable moisture information until after the ore has been shiploaded.	Upon consideration of the comments regarding moisture control, a condition has been added in the Licence for iron ore representative sampling to be undertaken at the mine site to ensure Moisture Content level of the iron ore is accurate, prior to being accepted at the Premises.
Conducting hazard or risk assessments of the geology of a bulk product changes within or between mines	SPA has outlined that whilst DWER is concerned of product hazards varying with change of geology between mine sites (ie	The suggestion is appreciated by DWER, however it will require further discussions both internally and with

	Summary of Licence Holder comment	DWER response
	<p>different sources), that this can also occur within the same mine site, due to different depths within the mine or different pits. SPA has suggested to address risks of changes both between and within a mine site, that a new type of 'reportable event' is added into Schedule 4 of the Licence. The suggestion would involve a new mine site source or a significant change in geology from within a mine triggers the reporting of a product hazard assessment within 30 days.</p> <p>SPA therefore requests the restriction by mine site is removed from Table 9 and 10 in Schedule 2.</p>	<p>SPA. It is not considered appropriate to include this major change to the licence within this amendment, which is specifically related to the trial for the handling of Mt Marion sourced spodumene through Berth 3. As the handling methods at Berth 2 and 3 are different, it is not appropriate to permit the interchangeable handling of the different sources of product without a complete risk assessment to justify this. SPA may apply for this to occur through a further amendment.</p> <p>DWER suggests this is discussed further separately to this amendment.</p>
Distinct Bulk Spodumene Concentrate	<p>SPA has noted in the definition of new term 'Distinct Bulk Spodumene Concentrate' that there will be difficulty in clarifying what constitutes a distinct change in geology in the product. They have therefore suggested a condition is inserted requiring the hazard assessment or parts of it (eg asbestos analysis for PMI spodumene) to be repeated annually for higher risk loading mineral products to determine if there has been a change in hazards of the product that has not been detected by personnel at the mine site or the Port.</p>	<p>DWER does not consider it necessary to include a further condition at this stage requiring hazard assessments to be required annually.</p> <p>Condition 22 of the Licence requires an annual review of reports on physical/mineralogical properties of each Distinct Bulk Spodumene Concentrate and determine whether there have been any changes in risks to public health, amenity or environment. It is therefore, up to the Licence Holder to determine whether various spodumene concentrates have different hazards.</p>
Minor Comments...		
Risk assessment in Table 5 of the Amendment Report – Row 1	<p>SPA has requested the following to be inserted in the reasoning column:</p> <p>"The trial shipment monitoring reports submitted to DWER demonstrated that</p>	<p>A shortened version of this has been inserted into the table. However, note this does not alter the risk rating.</p>

	Summary of Licence Holder comment	DWER response
	emissions of spodumene dust were negligible and constituted <0.1% of overall dust (based on concentrations of lithium). Monitoring spanned the loading of 14 shipments over the 12 month trial period. Four of these shipments included monitoring of downwind monitoring sites surrounding Berth 3 within the Port”;	
	“No submissions were received from relevant stakeholders within the local community invited to comment by DWER”	This is stated in section 6 of the report and is not required in the risk table. Stakeholder submissions (or lack of) do not reduce the risk of the event occurring.
	“Information on the overall emissions of metals in dust around the Port to provide baselines for any mineral products that could be handled through the Port in the future” – ‘we do not consider this monitoring is justified in relation to spodumene export. Monitoring risks of trace constituents from spodumene handling can be effectively undertaken using the existing dust monitoring on the Licence with lithium as the key indicator (4-6% content) of spodumene. If lithium continues to be measured at negligible levels, the emissions of trace constituents in this same dust will be orders of magnitude less than concentrations of lithium and so even more negligible.	Noted and included.
Risk assessment in Table 5 of the Amendment Report – Row 3	Note the clean roof run-off from Shed 4 is not discharged as stormwater into the marine environment. It is infiltrated in soak wells around the shed to filter through the reclaimed land to underlying groundwater and marine environment. One 250 KL rainwater tank is also connected for water reuse.	Noted and information added to ‘Applicant Controls’ column.



	Summary of Licence Holder comment	DWER response
Risk assessment in Table 5 of the Amendment Report – Row 4	<ul style="list-style-type: none"> <li>Distance from Shed 6 to the nearest residential premises owned by the Port is 190m</li> <li>There is no additional infrastructure associated with the fertiliser storage activity in Shed 6</li> <li>Handling activities including use of loaders in the shed will be a continuation of previous activities shown to be compliant with the Port's Regulation 17 noise criteria</li> </ul>	All comments accepted and included in assessment table.
Risk assessment in Table 5 of the Amendment Report – Row 5	<ul style="list-style-type: none"> <li>In Reasoning column include a summary of trends in iron ore dust as per previous comments submitted on the first draft of the licence;</li> <li>In Applicant Controls column, delete Sheds 1 to 4 and replace with Shed 1 to 3;</li> <li>Berth 3 shiploader in 660m from Shed 5 but closest storage shed (sealed, negative pressure) is the corner Shed 1 that is approximately 87m from the nearest residential premises.</li> </ul>	<ul style="list-style-type: none"> <li>It's not necessary to include a summary of trends in iron ore dust in the reasoning column. The amendment is only relating to the removal of the moisture analyser as per the Licence Holder's request. The inclusion of a summary of monitoring will not change the risk assessment.</li> <li>Shed numbers updated.</li> <li>Distance to receptors included.</li> </ul>

Following comments received from the initial draft sent to the Licence Holder on 28 April 2020 and the meeting held on 13 May 2020, DWER has determined that it is appropriate for a second draft Amendment package to be sent to the Licence Holder. The Licence Holder was provided with the second draft Amendment Report on 28 May 2020 for review and comment. The Licence Holder responded on 19 June 2020. The following comments were received on the draft Amendment Report.

	Summary of Licence Holder comment	DWER response
New restrictions on the trade of spodumene	SPA has advised of their intent to submit an appeal if this is not changed.	Following on from a working group meeting held between the department and WA Port Authorities on 23 June 2020, and following a further internal review, DWER will change the licence to

	Summary of Licence Holder comment	DWER response
		<p>remove the specific mine names. This will mean spodumene product will be required to meet requirements specified in condition 19 to be used at Berth 3.</p> <p>The application was originally assessed based on the Trial of spodumene from Mt Marion. As the application didn't specify the product already handled through the Port, DWER did not take this into consideration in their assessment. It was never DWER's intent to restrict handling by trade, rather to ensure all product meets requirements to be handled by each method.</p> <p>SPA provided further product information on 2 June 2020 regarding spodumene from Mt Cattlin (currently handled through Berth 2) and DWER originally determined this would need to be assessed separately. However, after acknowledging the WA Port Authorities concerns and conducting a further review of the application, licence conditions and information provided on 2 June, DWER has agreed to remove the site names. As mentioned above, condition 19 of the licence outlines specifications in which all spodumene product must meet in order to be handled across Berth 3.</p>
Minor Comments...		

	Summary of Licence Holder comment	DWER response
Risk assessment in Table 5 of the Amendment Report – Row 1	While stakeholder submissions may not influence the risk of an even occurring they do influence the level of concern and risk weighted applied. Therefore, the reasoning column INSERT “No submissions were received from the relevant stakeholders within the local community invited to comment by DWER”	As previously noted in DWER response to comments from 18 May, this is not required to be inserted into the reasoning column of Table 5, Row 1. The risk assessment has been carried out with the knowledge that no stakeholder submissions were received.
	<p>DELETE: The justification of monitoring risks of trace constituents from spodumene handling as Lithium is the key indicator (4-6% content) of spodumene and is measured at negligible levels. Therefore, the emissions of trace constituents in this same dust will be orders of magnitude less than concentrations of lithium and so even more negligible.</p> <p>Justification of trace metal monitoring is given by it being useful for future baselines for future handling of other minerals.</p>	<p>The table justifies the full suite of monitoring with the following statement:</p> <p>“The information on the overall emissions of metals in dust around the Port will assist in providing baselines for any mineral products that could be handled through the Port in the future.”</p>
Row 3	Update “Distance from Shed 4 to stormwater discharged location as “Not Applicable soak wells used or water is infiltrated” (as per previous comment)	Updated.