# APPENDIX E MITIGATION MEASURES AND ENVIRONMENTAL RISK ASSESSMENT

## SSD-21190804 – JALCO MANUFACTURING FACILITY

The following section provides recommendation for mitigation measures in response to potential impacts identified in Section 6 of this report. The structure of mitigation measures is based on the DPIE's hierarchy of approaches for managing impacts identified in the *Draft Environmental Impact Assessment Guidance Series* released by DPE in June 2017, as:

- **Performance based measure** – identify performance criteria that must be complied with to achieve an appropriate environmental outcome but do not specify how the outcome is to be achieved.
- **Prescriptive measure** – require action to be taken or specify something that must not be done.
- **Management based measure** – identify one or more management objectives that must be achieved through the implementation of a management plan.

Following the implementation of appropriate mitigation measures as recommended, it is determined that the proposal will not result in any significant adverse impacts on the surrounding environment. The following table illustrates how the matters raised within the SEARs and CIP Conditions will be addressed.

This analysis comprises a qualitative assessment consistent with AS/NZS ISO 31000:2009 *Risk Management–Principles and Guidelines* (Standards Australia 2009). The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures. In accordance with the SEARs, the Environmental Risk Assessment (**ERA**) addresses the following significant risk issues:

- The adequacy of baseline data;
- The potential cumulative impacts arising from other developments in the vicinity of the Site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for ‘likelihood’ and ‘consequence’.

| **Likelihood** | | **Consequence** | |
|---|---|---|---|
| A | Almost certain | 1 | Widespread and/or irreversible impact |
| B | Likely | 2 | Extensive but reversible (within 2 years) impact or irreversible local impact |
| C | Possible | 3 | Local, acceptable or reversible impact |
| D | Unlikely | 4 | Local, reversible, short term (<3 months) impact |
| E | Rare | 5 | Local, reversible, short term (<1 month) impact |

The risk levels for likely and potential impacts were derived using the following risk matrix.

| CONSEQUENCE | LIKELIHOOD | | | | |
|---|---|---|---|---|---|
| | **A** | **B** | **C** | **D** | **E** |
| **1** | High | High | Medium | Low | Very low |
| **2** | High | High | Medium | Low | Very low |
| **3** | Medium | Medium | Medium | Low | Very low |
| **4** | Low | Low | Low | Low | Very low |
| **5** | Very low | Very low | Very low | Very low | Very low |

The results of the environmental risk assessment for the proposed development are presented in the below table and are based upon the range of technical and specialist consultant reports appended to the EIS. The table has directly related mitigation measures responding to each impact also based upon the range of technical and specialist consultant reports appended to the EIS.

**N.B.** **'O' – Operational; 'C' – Construction**

**'Pe' – Performance based mitigation measure; 'Pr' – Prescriptive based mitigation measure 'Ma' – Management based mitigation measure**

| SEAR | Potential Impact | Stage of Project | Likelihood | Consequence | Risk Level | Mitigation Measure | Mitigation Measure (Pe/Pr/Ma) | Residual Impact |
|---|---|---|---|---|---|---|---|---|
| **Traffic & Transport** | Increased traffic, impacting the local road network, especially with consideration of Old Wallgrove Road, Lenore Drive, M7 Motorway and Mamre Road. Impact however is less than the traffic volumes anticipated for this tenancy under previous approval SSD 10436. | C & O | A | 3 | Medium | Traffic control would be required to manage and regulate traffic movements into and out of the site during construction.<br><br>Disruption to road users would be kept to a minimum by scheduling intensive delivery activities outside of peak network hours.<br><br>Fit-out and delivery vehicles would be restricted to using Old Wallgrove Road, Lenore Drive, M7 Motorway and Mamre Road. | Pe | Management of traffic and transport impacts specifically during the construction phase and ongoing during operational. |
| **Noise & Vibration** | Operational noise.<br><br>Impact has been assessed as being within the accepted limits for the site as determined by SSD-10436. | O | A | 3 | Medium | 18mm marine plywood internal lining fixed to inside of purlins to the Southern elevation of Liquid Packaging Area. The plywood lining is required have a minimum surface density of 10 kg/m2 and form a continuous layer to the full height of the 0.48mm steel external wall.<br><br>Four-sided enclosure to rooftop fans, minimum enclosure height 1.0m above fan height.<br><br>Acoustic louvres to the Southern elevation of Liquid Packaging Area, specified as NAP 300 H-line, Fantech SBL1 or equivalent.<br><br>The use of non-tonal reversing alarms for all vehicles and forklifts accessing the loading and hardstand areas.<br><br>Electric forklifts are proposed to be used for all external and internal operations to reduce noise compared to gas forklifts.<br><br>The maximum SWL of occasional impact sounds in the Waste Area is considered unlikely to exceed the modelled heavy vehicle air brake SWL of 118 dBA and these activities are therefore covered by the sleep disturbance screening assessment.<br><br>Operation Noise Management Plan for Lot 201 should be provided prior to occupancy. | Pr | Risk of disturbance from cumulative operational impact with multiple tenants operating industrial and warehouse facilities that has the potential to cause impact to nearby sensitive receivers. However residual impact expected to be low as noise generation has been assessed as being below the thresholds approved by SSD-10436. |

| SEAR | Potential Impact | Stage of Project | Likelihood | Consequence | Risk Level | Mitigation Measure | Mitigation Measure (Pe/Pr/Ma) | Residual Impact |
|---|---|---|---|---|---|---|---|---|
| **Fire & Safety** | Increased potential for fire hazards generated by proposed DGs and solar panels. Adverse impacts to provision of exits in an emergency. | O | E | 2 | Very Low | Preparation of a fire safety strategy to address the specific hazards identified in the development. This includes consideration for the following:<br>• Passive Fire Construction<br>• Egress Provisions<br>• Active Fire Protection Systems<br>• Occupant Fire Fighting Facilities<br>• Fire Brigade Intervention<br>• Building Management Procedures<br>• Dangerous Goods | Ma | Management and maintenance of fire management systems and plans during operations. |
| **Hazards & Risk** | Dangerous goods stored on site. Notably, the storage of DGs on the site may present potential hazards including fire impacts, explosions, toxicity and other damages to property. | O | A | 3 | Medium | The warehouse and/ or site boundaries are capable of containing 702m3 of water storage required to meet the needed 7.8m3/min of discharge for the warehouse fire, sprinkler activation and contaminated water release.<br>A storm water isolation point (i.e. penstock isolation valve) is to be incorporated into the design. The penstock shall automatically isolate the storm water system upon detection of a fire (smoke or sprinkler activation) to prevent potentially contaminated liquids from entering the water course. | Pr | Potential risk from future dangerous goods to be stored in site. |
| **Stormwater & Drainage** | Water Quality Management especially with consideration of the cleaning, use for product and wastewater treatment. Potential impacts from water over-use and spillage. | O | C | 3 | Medium | Jalco operation management procedures include fixed purge amounts, re-use of cleaning water as well as waste water flow rate and treatment management. This is to appropriately respond to managing water quality and quantity generated by the Jalco operations.<br>Rainwater effect management to manage the cumulative impacts of trade waste and rainwater flow.<br>Containment water retention to minimize the potential impacts for holding contaminated water and DGs at the site.<br>Use of Dissolved Air Flotation as a water treatment process on site to clarify wastewater through removal of suspended matter such as oils or solids, prior to water disposal to the stormwater system. | Ma | Quality of water runoff from impervious areas such as roofs, hardstand, car parking, roads and other impervious areas will be managed through the DAF process prior to entering the stormwater system. Low level potential for contaminated water runoff. |
| **Air Quality** | Odour emissions generated by the powder and liquid manufacturing and warehousing. | O | C | 3 | Medium | Ensure all equipment are maintained in good condition and serviced as per manufacturer’s recommendations. | Pe | Management of traffic and equipment impacts during operations |

| SEAR | Potential Impact | Stage of Project | Likelihood | Consequence | Risk Level | Mitigation Measure | Mitigation Measure (Pe/Pr/Ma) | Residual Impact |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Inspect the site daily and apply good housekeeping in general. General measures will include ensuring the timely clean-up of any spills as well as identifying and rectifying any leaks that could contribute to fugitive emissions.<br><br>Any modifications to the proposed design should consider positioning emission sources as far as practicable from neighbouring receptors.<br><br>Manage vehicle emissions by minimising idling times and installing signage to instruct drivers to turn off engines while loading/unloading etc.<br><br>Complaints should be investigated as soon as possible so that effective appraisal of the complaint can be carried out by subjective assessment. | | and handling of any future complaints. |
| **Bushfire** | Impact to the proposed development by threat of bushfire. | O | D | 4 | Low | No additional mitigation measures required beyond those adopted for SSD-10436. | Ma | Potential damage to life and property as a result of threat from bushfire and inappropriate mitigation measures. |
| **Waste Management** | Amassing of waste as a result of both construction and operation | O | B | 4 | Medium | The detail contained in the Waste Management Plan will inform the location and specifications for a dedicated waste storage area within the Jalco tenancy, to be detailed for Construction Certificate stage. Additional waste management measures, including waste servicing, waste avoidance, re-use and recycling, communication strategies, signage, monitoring, and reporting are discussed in the WMP and should be implemented in the operational phase of the development. | Pr | Threat of incorrect disposal of waste streams which have potential for environmental risk. |
| **ESD** | Impacts to biological diversity, ecological integrity and other environmental features | O | D | 3 | Low | Water management - in accordance with the existing procedures established in existing Jalco sites, the appropriate water flow management will be established for the relevant cleaning, waste-water treatment and rainwater flow. Additionally, the appropriate containment measures will be established for the hazardous water containment.<br><br>Achievement of BCA Section J Energy Efficiency for the base building, as approved under SSD-10436.<br><br>Requirement to ensure additional fitout works for the proposed Jalco operation, including air conditioning, light & power, hot water supply achieve the requirements of BCA Section J. | Pe | Water and energy usage for the proposed operations. |

| SEAR | Potential Impact | Stage of Project | Likelihood | Consequence | Risk Level | Mitigation Measure | Mitigation Measure (Pe/Pr/Ma) | Residual Impact |
|---|---|---|---|---|---|---|---|---|
| | | | | | | BDAR Waiver has been obtained for the development which identifies no risk to biodiversity. | | |
| **Greenhouse Gas & Energy Efficiency** | Development not being undertaken in a manner that adopts energy efficiency and BCA requirements | C | D | 4 | Low | It is recommended that the building be verified against a reference building using the Verification Method JV3. This will determine if the proposed development and its services has an equal or less annual energy consumption of the reference building. Compliance and how it is achieved should be documented in a report by an appropriately qualified engineer for certification. | Ma | Development potentially resulting in increased greenhouse gas emissions and not adopting best practice in ESD principles. |