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Ref: ISA-160-18-19

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Dear Jessica,

RE: Development Application 2019/143

We thank you for your second letter reference DOC19/212921-41 dated 18th December 2019 in respect of Development Application 2019/143. We shall respond to your queries in the same order as you have raised them.

1. Water Assessment

1.1 Evaporation volume calculations

We acknowledge your comments that the EPA is unclear how the monthly pond evaporation volumes, used in the leachate modelling to determine the leachate pond size were calculated, specifically evaporation rate and volumes and the leachate pond surface area. We have requested SLR Consulting provide these details, however, evaporation rates in mm/month are outlined within Table 5 of the SLR Consulting Leachate Generation Assessment. Leachate pond sizing is covered in detail within Section 4.5 of the SLR report with specific attention to the leachate pond surface area provided within Table 10.

1.2 Stormwater discharges

We acknowledge that the EPA requires additional detail on sediment basin discharges and water reuse etc.

Water Quality

There is limited existing water quality monitoring data for the proposed activity from which to predict future water quality. However, since stormwater will not be in contact with any waste, it should primarily comprise of clean water with a sediment load.

Stormwater discharged from the site sediment basin will need to meet the water quality trigger values identified in Tables 2 and 3 of the SLR Consulting Surface Water Assessment report. This SLR Consulting report also identifies a recommended water quality monitoring regime for surface water in Section 9.3.

SLR have stated that discharges will also comply with any further requirements that might be identified in any future EPA licence. The onus will require compliance with general requirements not to cause environmental pollution in accordance with the NSW POEO Act.

Stormwater re-use and on-site stormwater management:

With regard to stormwater management and re-use on site, the following points clarify the proposed management regime:

- Stormwater retained on site would be re-used for operational and construction related dust suppression and for watering to establish and/or maintain vegetative cover especially on the proposed hydroseeded temporary stockpile side slopes and crown. Water will also be needed for the engineering phase of the project during the construction of the side slope and intercell containment bunds and engineered sub-base where optimum moisture contents will be required to achieve the required degree of compaction. Use of retained stormwater will reduce both the volume and frequency of planned discharges from the on-site sediment basin. For example, following a rainfall event, the stormwater captured in the sediment basin can be re-used on site rather than treated (if required) and discharged downstream.
- Available capacity in the sediment basin will be managed to maintain design capacity within the settlement zone of the sediment basin. If significant (likely to generate runoff) rainfall is forecast, this water may require testing, treating and subsequent planned discharge from the sediment basin.
- Planned and controlled discharges from the proposed sediment basin will be undertaken allowing water to flow within the existing drainage channels, and through an existing culvert under Tumblong Reserve Road and allowed to accumulate in the existing downstream farm dam where the water is used for the purpose of stock watering.
- On-site re-use of stormwater will reduce the volume or frequency of unplanned discharges from the sediment basin (when the spillway overtops during heavy rainfall).

Residual risk to receiving environment:

The potential impact of stormwater on the downstream receiving environment and water users is relatively low as there are no highly sensitive receptors and the environment has been modified by farming land-uses.

SLR Consulting state that following the implementation of stormwater re-use and management measures as outlined above, the residual impact of stormwater discharges to the downstream receiving environment and water-users is very low.

Mitigating factors include

- Low sensitivity of the downstream receiving environment and water users;
- Reuse of water on site reduces frequency and volume of planned discharges;
- Planned discharge water will be tested and treated (if necessary) prior to release from site; and
- Both planned and unplanned discharge water will be captured in an existing farm dam downstream of the site, where water quality would be further improved prior to release to the downstream watercourse, or the water will be captured and re-used for stock watering.

2. Air Assessment

2.1 Unclear modelling assumptions

The bulk excavation of materials from the proposed landfill footprint will be hauled to the adjacent temporary stockpile area with the emissions associated with loading of trucks, two way traffic to and from the stockpile, and unloading of that material have been modelled appropriately. The bulk excavation of materials from Cell 2 has been assumed to be complete within nine weeks from commencement. Our previous response to the EPA dated 13

December 2019 provided a detailed breakdown of earthworks volumes including their use on site for construction, operational and rehabilitation uses. The data also details what will be used by Council for their ongoing engineering requirements.

In response to the specific queries

a. no blasting is will be undertaken, as stated within the EIS

b. the surface area of the temporary stockpile is estimated to be approximately 20,000 m_2 to 25,000 m_2 which is significantly more than the 1,200 m_2 (0.12 ha) assumed in the AQIA (as the stockpile geometry was not fully known at the time of the assessment). Further discussion of this discrepancy is provided below in Section 2.2.

c. it is understood that a portion of the material may be trucked out on an as-needs basis by Council. This has not been accounted for in the AQIA. Further discussion of this aspect is provided below.

Appendix D of the AQIA intended to outline the assumptions adopted in the performance of the AQIA (Tables D1, D2 and D3). An updated version of table D1 is provided below which includes the numbers of hours per day, and days a year activities are performed, as requested.

Table D1 Adopted activity data

Parameter	Units	Activity data	
Period	-	1 year	24-hour
Excavation of material	tonnes	228 600(A)	4 618(B)
Loading of dump trucks	tonnes	264 445(C)	5 342(D)
Movement of material to adjacent Lot for stockpiling(E)	kilometres	8 720	176
Movement of material to western flank for partial capping(F)	kilometres	85	2
Unloading of material on adjacent Lot	tonnes	256 147	5 175
Unloading of material at western flank	tonnes	8 298	168
Operation of dozer in the redistribution of material for sub-base layer	hours	215	3
Transfer of waste material to site(G)	kilometres	5 200	26
Unloading of waste material in active cell	tonnes	60 000	300(H)
Daily cover pickup and placement	tonnes	64 800	324
Excavated cell	hectares	2.3	2.3
Material stockpiled on adjacent Lot	hectares	0.12	0.12
Daily cover / active cell	hectares	0.06	0.06
Hours of operation assumed for all sources except wind erosion	-	7am to 5pm, 365 days per year	7am to 5pm (modelled over 365 days per year)
Hours of operation assumed for all wind erosion source	-	24 hours per day, 365 days per year	24 hours per day (modelled over 365 days per year)

2.2 Assessment has not included a worst-case scenario

The assessment of short term impacts has assumed that all operations are performed at a rate reflective of a 9 week earthworks construction period, but have been modelled for each and every day of the year (365 days). This approach was adopted to ensure that an assessment of worst case emissions and potential worst case meteorology has been performed. The landfilling operations have been assumed to occur concurrently with construction, as described within the report. For clarity, modelling has not been performed for a specific part of the year and has been performed for all 365 days at the rate reflective of the 9 week earthworks construction period, and emissions have not been 'smoothed' across the year.

In relation to the discrepancies identified above, the following observations are made:

Temporary stockpile area

The temporary stockpile area included in dispersion modelling as a source of wind erosion was assumed to be 0.12 ha (1,200 m_2) which is significantly smaller than the proposed (approx.) 25, 000 m_2 area. Adjustment of the emissions inventories to account for that discrepancy indicates that emissions of PM10 may have been underestimated by 25.2% on an annual basis and 5.4% on a 24-hour basis (see below).

- Annual (including an uncontrolled 0.12 ha stockpile) – 4,018.3 kg/yr
- Annual (including an uncontrolled 2.5 ha stockpile) – 5,029.8 kg/yr
- 24-hr (including an uncontrolled 0.12 ha stockpile) – 50.1 kg/day
- 24-hr (including an uncontrolled 2.5 ha stockpile) – 52.8 kg/day

However, as outlined within the previous response to comments on 13 December 2019, a range of controls would be applied to the temporary stockpile, including hydromulch and hydroseeding to minimise erosion. On the assumption that a portion of the stockpile would remain 'active', and that a nominal 80% of the stockpile would be stabilised at any one time, an area of 0.5 ha may be available for wind erosion at the period of maximum stockpile extent. Should that be the case, then the increases in emissions may be lower than outlined above and be of the order of 10.4% on an annual basis and 2.2% on a 24-hour basis (see below).

- Annual (including an uncontrolled 0.12 ha stockpile) – 4,018.3 kg/yr
- Annual (including a controlled 2.5 ha stockpile – assumed 70% control for vegetative ground cover) – 4,434.8 kg/yr
- 24-hr (including an uncontrolled 0.12 ha stockpile) – 50.1 kg/day
- 24-hr (including a controlled 2.5 ha stockpile – assumed 70% control for vegetative ground cover) – 51.2 kg/day

Given the modelling results presented in the AQIA, these increases would not result in any changes to the conclusions of the assessment, and compliance with all annual average criteria would be achieved. The minor increases in impact on a 24-hr basis would also be very unlikely to result in changes to the conclusions of the assessment.

The AQIA assumed that all internal site roads would be unpaved, however the proponent has committed to surface internal roads up to the edge of the quarry boundary close to the temporary stockpile. Taking this into account in the emissions inventory, including the

movement of material by Council as part of their continued use of the quarry, and also including the increased wind erosion area of 2.5 ha (80% of which is vegetated), results in maximum PM10 emissions over a 24-hour period of 45.3 kg/day, which is approximately 10% lower than those subject to dispersion modelling within the AQIA. Should these emissions be subject to modelling, incremental impacts would be anticipated to be approximately 10% lower than those presented within the AQIA, and therefore the conclusions of the assessment would be valid.

The proponent is committed to managing particulate emissions at the project site, and will provide an Air Quality Management Plan (AQMP) to the satisfaction of EPA prior to project construction or operation. The AQMP would detail the management procedures to be employed at the site, and how these measures would be reviewed and audited. A complaints register would be maintained at the site to record any complaints, including matters relating to air quality (and odour). These records would be made available to NSW EPA and DP&E upon request.

We trust this provides you with the information you require. Should you have any queries, or wish to discuss this project further, please do not hesitate to contact us.

For and on behalf of InSitu Advisory Pty Ltd

Alan Dyer

Director

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cc. Martin Hay – MH Earthmoving Pty Ltd