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Planning Services Industry Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2000

Att: Nikki Matthews
nikki.matthews@planning.nsw.gov.au

Dear Sir/Madam

Concrush Increase to Capacity - State Significant Development 8753

Thank you for your letter to the Environment Protection Authority (**EPA**) on 15 November 2018 inviting comment on the proposal to increase capacity at the Concrush Resource Recovery Facility in Teralba. As a state significant development, the EPA has reviewed the proposal including the Environmental Impact Statement (**EIS**) prepared by Umwelt, dated 8 November 2018.

The EPA understands the proposal involves:

- Increasing the processing capacity of the existing facility from 108,000 tonnes per annum (tpa) to 250,000 tpa;
- Increasing the storage capacity from 40,000 tonnes at any one time to 150,000 tonnes;
- Upgrading existing facilities;
- Increasing the site area from 2.4 hectares (ha) to 4.8 ha;
- Establishing a landscaping materials and supplies retail component; and
- Extending operational hours to allow night work.

The subject site has operated under Environment Protection Licence 13351 (**the Licence**) since 2011, and if the proposal is approved, the Licence will need to be varied to include the increase in capacity. At this stage, the EPA requires further information from the proponent before determining whether the EPA can vary the Licence.

Noise

The EPA provides the following comments and recommendations for noise impacts:

- It is noted that the proposal has the potential to change the noise environment at the closest sensitive receivers.
- It is noted that a retirement village and new housing is planned approximately 200 metres from the subject site which could lead to noise-based land-use conflict.
- Construction noise levels are predicted to be below the relevant noise management level in the *Interim Construction Noise Guideline* on the basis that construction is limited to the recommended standard hours of work.
- Operational noise impacts are predicted with mitigation measures in place; with moderate impact up to 4dB exceedance in day time periods, and significant impact of up to 8 dB in night time periods.
- Maximum noise levels will be below the NPfI 52 dB LAmax night-time screening criteria.

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Recommendations

1. Construction hours should be limited to the recommended standard hours in Table 1 of the *Interim Construction Noise Guideline*; that is 7 am to 6 pm (Monday to Friday), 8 am to 1 pm (Saturday) and no work on Sundays or Public Holidays.
2. All feasible and reasonable mitigation measures should be applied to manage construction noise impacts, including those specified in Appendix H, Section 8 of the EIS.
3. The operational noise exceedance of 4 dB in the daytime period is a moderate impact. It is recommended that the proponent investigates additional feasible and reasonable mitigation measures to reduce residual noise impacts in the daytime period and include these into a revised EIS and Appendix H.
4. There is insufficient information in the EIS to determine the impact that night-time work will cause. The operational noise exceedance of 8 dB during the night period is a significant impact, which is noted in the EIS to only occur on 'market demand'. It is recommended that the proponent revise the EIS and Appendix H to include more specific details about night time noise impacts and an investigation into further feasible and reasonable mitigation measures to reduce residual noise impacts in the night-time period.
5. Operational noise predictions assume that construction noise barriers and bunds will be in place. It is recommended that the installation of construction noise barriers is required before operations commence.
6. Operational noise predictions assume that a limited number of plant will be used simultaneously and that restrictions in the use of plant will be applied during the evening and night. It is recommended that the proponent revise the EIS and Appendix H to include confirmation as to whether these limitations are viable, and if not, provide updated operational noise predictions to reflect the likely operational scenarios.
7. The proponent has not provided graphical day to page data on monitored noise levels, therefore the EPA cannot confirm rating background noise levels and the design criteria for the proposal. It is recommended that the proponent revise the EIS and Appendix H to include this data.

Water

The EIS does not provide the information required to consider the matters set out under Section 45 of the *Protection of Environment Operations Act* 1997. In particular, the EIS does not adequately:

- characterise discharge quality;
- assess the potential impact of proposed discharges;
- consider practical measures to minimise water pollution and mitigate potential impacts.

The EIS does not provide adequate details of the water balance modelling, including model assumptions (e.g. runoff coefficients) and results (e.g. runoff/leachate volumes from the northern, southern and green waste catchments; discharge frequency and volume for each discharge point).

Adjustments to the proposed monitoring program are required to include monitoring of discharges, the immediate receiving waterway and volumes of leachate transfers and overflows. The water quality monitoring analytical suite should include all pollutants potentially present at non-trivial levels, informed by a full discharge characterisation. Detailed comments and recommendations are provided at Attachment A.

Air

The EPA provides the following comments and recommendations for air impacts:

- The EIS and attached Air Quality Impact Assessment (Appendix I) has predicted that the proposal will comply with the EPA criteria for odour and dust impacts at full operational scale when mitigation measures are implemented.

- An Air Quality Management Plan (AQMP) will be adopted for the proposal to be implemented at the premises by the proponent to mitigate dust and odour impacts.

Recommendations

1. The EIS uses meteorological data collected from Nobbys Beach in 2015, which lead to the exclusion of certain sensitive receivers to the north, west and south of the premises. As this meteorological data is not representative of the premises, it is recommended the proponent include all sensitive receivers in dust and odour modelling in a revised EIS and Appendix I.
2. It is recommended the proponent revise the EIS and Appendix I to benchmark the proposal against best practice process design and emission control; i.e. assess other options for reducing air emissions such as enclosing operations or other engineered dust suppression controls.
3. It is recommended that the proponent revise the EIS and Appendix I to include the leachate catchment as an odour source, assessing its emissions, impacts and mitigation measures as appropriate.
4. Dust and odour impacts are predicted to comply with EPA criteria only when mitigation measures are implemented. It is recommended that the active implementation of an AQMP be included as a condition of approval.

Other

Further comments and recommendations from the EPA:

- It is recommended the proponent revise the EIS to detail the expected quantity of each waste type proposed to be accepted at the premises when Stage 2 of the proposal is in operation.
- Until further information is provided for the "market demand" nature of night work, it is recommended that the operational hours of the proposal are for day work only.

On receipt of the information requested in this letter and any submissions on the proposal, the EPA will reassess the proposal and provide DPE with further comments for consideration. If the proposal is approved, the proponent must apply to the EPA separately to vary the Licence before any works in the proposal can commence.

If you have any questions in relation to this matter, please call Grace Bell on 02 4908 6845.

Yours faithfully

13/12/2018

STEVEN JAMES
Unit Head - Waste Compliance - Hunter
Environment Protection Authority

Attachment A: Comments and Recommendations for Water Impacts

Attachment A – Comments and Recommendations for Water Impacts

Section 45 of the *Protection of Environment Operations Act* 1997 (**POEO Act**) sets out matters that the EPA must consider when making licensing decisions, including:

- the pollution caused or likely to be caused by the carrying out of the activity or work concerned and the likely impact of that pollution on the environment;
- the practical measures that could be taken to prevent, control, abate or mitigate that pollution, and to protect the environment from harm as a result of that pollution;
- in relation to an activity or work that causes, is likely to cause or has caused water pollution:
    - the environmental values of water affected by the activity or work;
    - the practical measures that could be taken to restore or maintain those environmental values.

The EIS does not provide the information required to consider these matters.

1. Discharges

It is understood there would be two discharge points from the premises, one for each of the two proposed sediment retention basins. Figure 3.2 of the *Soil and Water Impact Assessment* appears to identify the location of the proposed discharge point from 'Sediment Dam 2' and the EIS states that discharges will flow to the drainage depression which flows 1.5 kilometres to Cockle Creek. Details of the location of the proposed discharge point from 'Sediment Basin 1' and the flow path from the discharge points to Cockle Creek are required to understand any potential risks to waters.

The water balance results indicate that on average ~15 ML of treated wastewater (combined runoff and leachate) would be discharged per year under the proposal (note that it is assumed that the values listed in Tables 4.1, 4.2 and 4.3 of Appendix K of the EIS are annual volumes). However, the EIS does not adequately characterise the quality of the proposed discharges or assess the potential impact of discharges on the environmental values of the drainage depression and Cockle Creek with reference to the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* guideline values.

It should be noted that the POEO Act defines waters as, "...the whole or any part of:

a) any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea); or
b) any water stored in artificial works, any water in water mains, water pipes or water channels, or any underground or artesian water."

The drainage depression (into which discharges would flow) is therefore the immediate receiving waterway and it is important that the potential impact of discharges on the environmental values of this waterway are assessed. The EIS suggests that discharges would be further treated in the drainage depression after discharging from the premises and before entering Cockle Creek. It is not appropriate to consider potential further treatment that may occur outside the premises, where the operator may not have control over treatment effectiveness and in a waterway that may be impacted by the discharges.

The EIS provides a limited characterisation of discharge quality, estimating the discharge pH range, maximum total suspended solids concentration and average total nitrogen and total phosphorus concentrations. However, runoff from waste storage and processing areas and treated leachate could potentially contain a range of other pollutants, including dissolved pollutants, at non-trivial levels. For example, crushed concrete can potentially leach a range of contaminants including bicarbonate, sulfate/sulphide, salts, heavy metals, polycyclic aromatic hydrocarbons, chemicals in admixtures (e.g. surfactants, methylphenols, nitrates, cyanide) and supplementary cementitious materials (e.g. industrial by-products).

It is noted that the limited characterisation provided suggests discharges from the two proposed discharge points would be of a similar quality. However, Figure 3.2 and Figure 3.3 of the *Soil and Water Impact Assessment* indicate excess treated green waste leachate would flow to Sediment Dam 2 only. Presumably there would also be other differences between the potential sources of pollutants that would be located within the two sediment retention basin catchments. Therefore, the quality of the discharges from the two sediment retention basins is likely to differ.

To understand the potential pollution that could be caused by the proposal, a characterisation is required of the quality of discharges (from each of the discharge points) in terms of the concentrations of all pollutants potentially present at non-trivial levels. The suite of pollutants to be included in the characterisation would need to be determined with reference to a risk assessment of the types of materials that would be stored and processed within the source catchment. Potential contaminants of concern may include but not be limited to the following:

- nutrients, ammonia as a toxicant, biochemical oxygen demand and pesticides/herbicides from green waste;
- hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and metals from asphalt waste;
- metals and other toxicants from metal wastes;
- contaminants associated with wet concrete batching plant stirrer waste (e.g. cement, chemical admixtures, fuels and lubricants).

Recommendations for discharges

It is recommended that the proponent:

- *provides maps of the proposal identifying key features that could affect water quality, including:*
    - *stockpiles and processing areas and identifying the types of materials in each area;*
    - *bunds;*
    - *water storages, treatment measures and conveyances;*
    - *all proposed discharge points;*
    - *the flow path/s from the discharge points to Cockle Creek;*
- *characterises the quality of discharges from each proposed discharge point in terms of the typical and maximum expected concentrations and loads of all pollutants potentially present at levels that pose a risk of non-trivial harm to human health or the environment;*
- *assesses the potential impact of proposed discharges with reference to the environmental values of the drainage depression and Cockle Creek and the relevant* Australian and New Zealand Guidelines for Fresh and Marine Water Quality *guideline values for slightly to moderately disturbed ecosystems;*
- *demonstrates that the proposed discharges would not contain pollutants at levels that are acutely toxic or could result in bioaccumulation.*

If dilution in the environment is considered, then appropriate modelling of mixing process should be used to assess whether guideline values are achieved at the edge of a near field mixing zone.

2. Mitigation Measures

The EIS does not adequately consider practical measures that could be taken to minimise pollution and mitigate potential impacts.

Sediment retention basins

The EIS proposes to treat wastewater using type C sediment retention basins. Sediment retention basins are designed to treat stormwater containing clean sediment only and type C sediment retention basins are specifically designed to treat stormwater that contains only coarse sediment that settles readily. Additional or alternative measures may be needed to treat runoff containing fine

sediment, other pollutants and particularly dissolved pollutants (e.g. source controls; increased detention capacity; coagulation/flocculation; filtration; bioretention measures).

Green waste leachate treatment

The EIS indicates that stormwater from the existing facility has elevated nutrient concentrations and attributes this to leachate inflows to the stormwater system. There is likely to be substantial uncertainty in the treatment efficiency of the leachate wetland and there is potential for treated leachate to contain elevated concentrations of nutrients, biochemical oxygen demand and potentially toxicants (e.g. pesticides). Therefore, the treated leachate could pose risks to water if it is reused outside the green waste area or transferred to the stormwater system for discharge.

Roofing over high risk activities and materials

Although, the EIS states that mulch storage bays would be roofed, roofing and leachate containment are not considered for other activities or materials. Locating high risk activities (e.g. receivals and sorting) and materials (e.g. metals) undercover and containing the associated leachate would reduce the amount of pollutants requiring treatment. Runoff from roofs is likely to be of a higher quality than runoff from other areas of the premises. Collected runoff could be collected and reused on-site, with excess potentially discharged directly with minimal treatment, reducing the volume of wastewater requiring further treatment.

Recommendations for mitigation measures

It is recommended that the proponent considers additional or alternative treatment measures to minimise pollution and mitigate potential water quality impacts. These could include:

- *source controls (e.g. roofing over high risk activities and materials);*
- *increased detention capacity;*
- *coagulation/flocculation;*
- *filtration;*
- *bioretention measures;*
- *options to manage green waste leachate separately from the stormwater system (e.g. increasing the capacity of the leachate dam and storing and processing green waste undercover).*

3. Water Balance

The EIS does not provide adequate details of the water balance modelling. In particular, the EIS does not specify the runoff coefficient adopted for each area of the site and the results do not differentiate on-site water sources (e.g. runoff from the northern, southern and green waste catchments). It is therefore unclear what volume or proportion of the leachate would be reused within the leachate barrier system versus transferred to the stormwater system for reuse or discharge. The EIS also does not estimate the expected volume and frequency of discharges from each of the two proposed discharge points.

Recommendations for water balance

It is recommended that the proponent provides:

- *details of the water balance assumptions including the runoff coefficient adopted for each area of the site;*
- *detailed water balance results:*
    - *differentiating on-site water sources (e.g. runoff from the northern, southern and green waste catchments);*
    - *estimating typical and wet-year annual discharge volume and frequency for each proposed discharge point.*

If it is proposed that a proportion of green waste leachate would be transferred to the stormwater system, then the proponent should specify the average annual volume and proportions of leachate would be reused within the leachate barrier system and transferred to the stormwater system.

4. Monitoring

The EIS proposes monthly surface water quality monitoring. Monitoring sites are proposed for the constructed wetland, sediment basins and upstream/downstream on Cockle Creek. Discharge monitoring is also required to ensure it is of appropriate quality. It is not necessary to monitor water quality in Cockle Creek as this is unlikely to detect changes that could be attributed to the discharges (given the distance from the discharge point to Cockle Creek and the range of other potential pollution sources in the catchment). Monitoring of water quality in the drainage depression, immediately upstream and downstream of the discharge points, would be more sensitive to potential water quality changes related to discharges.

The proposed monitoring parameters are TSS, EC, pH, total nitrogen, total phosphorus, oxides of nitrogen and ammonia. The monitoring parameters should be reviewed subject to a full characterisation of the discharges as recommended above (see Discharge section).

The EIS proposes monthly monitoring of volumes of potable water imported via water cart and water storage inventories. Monitoring of volumes of leachate transfers and overflows and discharges from the premises is also required to inform management.

The EIS states the following:

> *"Baseline surface water quality monitoring will initially be undertaken on a monthly basis for a period of 24 months to establish site specific trigger values in accordance with ANZECC water quality guidelines. The site specific triggers will allow Concrush to identify any trends or step changes in Cockle Creek water quality and assess whether Project operations could have impacted the water quality result."*

It is unclear whether the monitoring sites would be appropriate for deriving site-specific guideline values. It appears that the facility would discharge to disturbed waterways. The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* state that highly disturbed ecosystems should not be regarded as 'pollution havens' and in most cases ecological values can be maintained by applying the default guideline values for slightly disturbed systems. The concepts of adaptive management and continual improvement should always be promoted to maximise future options for a waterway. In this context, guideline values for slightly to moderately disturbed ecosystems are appropriate to support the goal of improvement, rather than maintenance, of the disturbed condition.

The Guidelines recommend deriving site-specific guideline values for physical and chemical stressors based on reference site data. The Guidelines define reference condition as "an environmental quality or condition that is defined from as many similar systems as possible and used as a benchmark for determining the environmental quality or condition to be achieved and/or maintained in a particular system of equivalent type."

Given that the goal should be to improve ecosystem condition, it is important that any site-specific guideline values should be derived based on reference sites that are representative of slightly to moderately disturbed ecosystem condition.

As discussed, monitoring in Cockle Creek unlikely to be sensitive to changes to water quality associated with discharges from the proposed development. Water quality monitoring of discharges and ambient waters in the drainage depression immediately upstream and downstream of the proposed discharge points, before and after the development, would be appropriate to detect potential water quality impacts.

Recommendations for monitoring

It is recommended that the ongoing monitoring program includes monitoring of:

- *discharge quality and volume at each proposed discharge point;*
- *water quality in the drainage depression immediately upstream and downstream of the discharge points (sampling should occur during discharges);*
- *volumes of green waste leachate transfers and overflows to the stormwater system.*

The proponent should provide a map of the proposed monitoring sites.
The water quality monitoring analytical suite should be reviewed subject to the discharge characterisations.

These requirements could potentially be reviewed subject to additional mitigation measures and initial monitoring results.

If site-specific guideline values are proposed for detecting impacts, then these should be derived consistent with Australian and New Zealand Guidelines for Fresh and Marine Water Quality, *including being based on reference sites that are representative of slightly to moderately disturbed ecosystem condition.*