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Planning and Assessment Division
Department of Planning, Industry and Environment

Via Major Projects Portal

Attention: Deanna Burn

26 February 2021

Environmental Impact Statement
Tomago Resource Recovery Facility and Truck Depot
21D and 21F School Drive, Tomago
SSD 10447

Dear Ms Burn

Thank you for the request for advice from the NSW Environment Protection Authority (EPA) on the Environmental Impact Statement (EIS) for the proposed Tomago Resource Recovery Facility (RRF) and Truck Depot (Application SSD-10447) at 21D being Lot 11 DP270328 and 21F being Lot 8 DP270328 and part of Lot 301 DP 634536 School Drive, Tomago NSW (Premises).

The EPA has reviewed the following documents:

- Environmental Impact Statement, Remondis Australia Pty Ltd, Tomago Resource Recovery Facility and Truck Depot (Version 2) – Jackson Environment and Planning Pty Ltd – 1/12/2020 (EIS)
- Air Quality Assessment – Proposed Resource Recovery Facility & Truck Parking Deport, Remondis Australia Pty Ltd – Air Noise Environment – 12/11/2020 (AQIA)
- Detailed Contamination Assessment – 21D and 21F School Drive, Tomago – JM Environments – 22/04/2020 (Detailed Contamination Assessment)
- Draft Preliminary Contamination Assessment, 21D, 21F and 21G School Drive, Tomago – JM Environments – 22/04/2020 (Draft Preliminary Contamination Assessment)
- Environmental Site Assessment – 21F and 21G School Drive, Tomago – EHO Consulting – 12/10/2020 (Environmental Site Assessment)
- Noise & Vibration Impact Assessment, Tomago Resource Recovery Facility & Truck Depot 21D & 21F School Drive, Tomago, NSW – Waves Consulting – 13/11/2020
- Phase 2 Contamination Assessment – Aluminium Rod and Conductor Manufacturing Facility, Tomago – GHD – 22/05/2011
- Remedial Action Plan, 21D and 21F School Drive, Tomago – JM Environments – 29/10/2020 (RAP)

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- Resource Recovery & Truck Parking Depot Tomago, Remondis Australia Pty Ltd, Traffic Impact Assessment (Version 3) – Seca Solution Pty Ltd – 13/11/2020
- Soil and Water Management Plan – 21D & 21F Schools Drive, Tomago – Jackson Environment and Planning Pty Ltd – 12/11/2020 (Soil and Water Management Plan)
- Waste Minimisation and Management Plan Remondis Australia Pty Ltd, Tomago Resource Recovery Facility and Truck Depot (Version 2) – Jackson Environment and Planning Pty Ltd – 25/11/2020 (Waste Management Plan)

The EPA understands that the proposed development would involve:

- Establishing a resource recovery facility within an industrial warehouse to receive, process and recover the following waste types from across the Hunter region; approximately 72,000 tonnes of general solid waste (non-putrescible) including paper, cardboard, plastic, glass, timber, wood, garden organics, metals, E-waste, drained oil filters, batteries, fluoro tubes, Gyproc and used fire extinguishers and pressure vessels; approximately 2,000 tonnes of general solid waste (putrescible) including food organics; approximately 11,000 tonnes of category 1 trackable liquid waste including drilling mud, waste mineral oils, oily water, residual solvents, thinners and paints and 13,000 tonnes of category 1 trackable solid waste including containers of controlled waste residues, contaminated soil and lead acid batteries.
- Storing all waste materials in separate concrete bays or dedicated hook lift bins.
- Storing up to 3,500 tonnes of waste materials at any one time at the RRF.
- Establishing a truck depot to provide overnight parking for 24 rigid trucks and 9 semi-trailers.
- The recovery of approximately 15,500 tonne of loose refuse-derived fuel (RDF) for export to domestic and overseas energy recovery facilities.
- The recovered waste outputs where required would comply with relevant NSW EPA Resource Recovery Orders and NSW Energy from Waste Policy Statement before being transported off site for manufacturing, recycling, re-use or energy recovery.
- Remediation works to cap 21F School Drive.
- Earthworks and installation of a weighbridge.
- An infiltration pit with a capacity of 100kL.
- Two 100kL rainwater tanks.

The Premises is located in the Hunter River Catchment approximately 1km upstream of the Hunter Wetlands National Park, a RAMSAR wetland and protected under Coastal Management SEPP (2018). It has been previously used for sand mining and metal manufacturing. Elevated concentration of heavy metal contamination (e.g. arsenic, cadmium, lead) were identified in some soil and groundwater samples.

Based on the information provided, the Proposal will require an environment protection licence (EPL) under section 48 of the *Protection of the Environment Operations Act 1997* (POEO Act) to authorise the carrying out of scheduled activities for resource recovery (clause 34), waste processing (non-thermal treatment, clause 41) and waste storage (clause 42) of Schedule 1 of the POEO Act.

The EPA has reviewed the EIS. It does not provide or adequately address the information required by the Secretary's Environmental Assessment Requirements 10447. The EPA is unable to determine whether to recommend conditions of approval unless the additional information listed in Attachment 1 is provided.

If you have any questions about this request, please contact Kim Stuart on 02 6659 8292 or via email at EPA.Northopsregional@epa.nsw.gov.au.

Yours sincerely

MITCHELL BENNETT
Unit Head, Regulatory Operations

ATTACHMENT 1 – ADDITIONAL INFORMATION REQUIRED
Tomago Resource Recovery Facility and Truck Depot

1. Matters to be addressed prior to determination

Water

a) Water pollution risk from contaminated areas

The EIS includes a contamination assessment and remediation plan. Further information is required to demonstrate that potential water pollution risks associated with contaminated soils would be appropriately managed.

The Premises includes 21D School Drive, which is a developed site with two large existing industrial buildings, hardstand areas and carparking, and 21F School Drive, which consists of disturbed land with no buildings or other infrastructure. The EIS indicates that there is a risk of contamination of stormwater and groundwater from contaminated soils on 21F School Drive, identifying heavy metals (arsenic, cadmium, copper, lead and zinc) as contaminants of concern. The Premises drains to an unnamed tributary of the Northern Channel Hunter River, which flows to a RAMSAR wetland and coastal wetlands protected under the *Coastal Management State Environmental Planning Policy* (2018).

The EIS does not provide details of the proposed erosion and sediment controls. The EIS indicates that during construction, erosion and sediment controls broadly consistent with *Managing Urban Stormwater Soils and Construction Vol 1* (Landcom, 2004) would be implemented. However, it is unclear whether sediment basins are proposed for the construction stage. Landcom (2004) recommends treating sediment-laden stormwater via a sediment basin, where the catchment area is >2,500m^2 and/or where soil loss greater than 150m^3/year is predicted.

The measures recommended by Landcom (2004) are designed to manage uncontaminated sediment and are not adequate for managing the potential water pollution risks associated with contaminated lands. Alternative and additional controls may be required (e.g. increased sediment basin capacity, enhanced erosion controls).

Further consideration of remediation options and details of proposed mitigation measures are required to ensure that potential ongoing risks from contaminated soils would be appropriately managed. The RAP states, ‘Heavy metal contamination is not considered extensive, but has the potential to leach into the underlying shallow sand aquifer and be transported off site, impacting groundwater-dependent ecosystems in the surrounding area’.

The RAP indicates that the heavy metal contamination is concentrated in the upper ~0.5m of fill on 21F School Drive, with soil metal concentrations varying across the site. Figure 6 of the RAP indicates that soil zinc concentrations were higher than central and southern areas of 21F School Drive (13,000 to 25,000mg/kg; 27 to 52 times the ecological investigation level for soils [480mg/kg]) than other areas (900 to 2,500mg/kg; 2 to 5 times the ecological investigation level). The RAP indicates that removal of all the contaminated soil from 21F School Drive would be cost prohibitive and does not consider targeted removal of the most contaminated soils.

The RAP proposes that remediation of 21F School Drive would involve capping with a 0.5m low permeability compacted road base material. It is unclear whether the cap would address the risk of groundwater contamination (due to percolation of rainwater) as the EIS does not specify the thickness and saturated hydraulic permeability of the proposed cap.

The EPA requires the following information:

i. Consideration of additional and alternative measures for managing water pollution risks associated with construction in contaminated areas. Mitigation measures considered should include but not be limited to:

- *at-source controls (e.g. removal of highly contaminated material for off-site disposal, bunding, flow diversions);*

- *options to avoid contaminated stormwater discharges (e.g. full capture and reuse or tankering offsite); and*
- *additional or alternative treatment measures (e.g. increased sediment basin capacity).*

ii. *Demonstration that the proposed cap over 21F School Drive would be appropriately designed and constructed to prevent percolation of rainwater through the underlying contaminated soils. The Applicant should provide details of the proposed cap, including its:*

- *composition;*
- *thickness (mm); and*
- *in situ saturated hydraulic conductivity (m/sec).*

b) Stormwater and leachate management

The EIS includes an overview of the proposed leachate and stormwater management systems. However, further information is required to demonstrate that potential water pollution risks would be appropriately managed.

The Soil and Water Management Plan states that all waste processing and stockpiling activities would be conducted within the enclosed and bunded warehouses. The processing operations will utilise a closed loop system for the capture, use and reuse of contaminated runoff generated. The EIS does not provide details of the proposed closed loop system and it is unclear from the site drainage plans how contaminated runoff will be captured and reused.

Runoff from the proposed truck parking depot (21F School Drive) would be directed to filters to remove sediment and oil and the treated water discharged to the infiltration pit that will have a capacity of 100kL. The Soil and Water Management Plan states that during extreme rainfall events, the infiltration pit will overflow to the adjacent lot. The EIS does not specify the expected frequency of managed overflows to surface water. It is unclear from the Premises drainage plans how runoff from external areas of 21D School Drive will be managed.

A Premises drainage plan is required to demonstrate that leachate and stormwater would be appropriately managed.

The EPA requires the following information:

i. *A revised water balance to include all water usage requirements, storages, reuse and discharges (including frequency and volumes of any discharges to the infiltration pit and managed overflows from the infiltration pit); and*

ii. *A site drainage plan for the proposed development that identifies:*

- *surface water flow paths for 'clean' roof runoff, 'dirty' stormwater and contaminated runoff from waste processing, stockpiles and external areas;*
- *sub catchments (e.g. roof catchments draining to tanks, waste operations areas draining to collection pits/treatment devices, externals areas draining to each proposed discharge point);*
- *water infrastructure (e.g. bunds, collection pits, pipes, drains, storage tanks);*
- *treatment measures, including the infiltration pit; and*
- *discharge points and flow paths to receiving waterways.*

c) Water pollution impact assessment

It is unclear if controlled discharges are proposed for the construction or operation stage of the proposed development.

Options to avoid discharges, such as appropriate reuse, should be considered in the first instance. If controlled discharges are proposed, a water pollution impact assessment commensurate with the risk is required.

The Soil and Water Management Plan indicates that the existing Facility at 21D School Drive has three underground detention and infiltration tanks with capacities of 340kL, 720kL and 290kL. The water treatment devices include gravitation and filter membranes to remove suspended solids. These measures may be appropriate for treating sediment-laden stormwater but may not be suitable for contaminated runoff containing dissolved pollutants.

The EPA requires the following information:

i. *Clarification of whether controlled discharges are proposed for the construction or operation stage of the proposed development; and*

ii. *If controlled discharges are proposed, for each discharge point, the EPA requires a water pollution impact assessment. The level of assessment and consideration of practical and reasonable mitigation measures should be commensurate with the potential water pollution risk/s. This assessment must:*

- *predict the expected frequency and volume of discharges;*
- *characterise the expected discharge quality under typical and worst-case conditions, in terms of the concentrations of all pollutants of concern present at levels that pose a risk of non-trivial harm to human health or the environment;*
- *assess the potential impacts of the proposed discharges on the environmental values of the receiving waterways consistent with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) for slightly to moderately disturbed ecosystems; and*
- *demonstrate that all practical and reasonable measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented.*

Hydrogeology

d) Local and regional groundwaters

Further information is required to assess impacts to local and regional groundwaters from the additional hydraulic head caused from the infiltration tank proposed for the Proposal.

Considering, the additional hydraulic head from the infiltration tank will increase groundwater recharge hydraulically upgradient at the Premises, there is an omission of detail indicating how the changes to hydraulic properties will affect the sources of contamination downgradient throughout the Premises. Given the capping and containment of heavy metals in the subsurface is proposed as the main remedial action, the increased subsurface throughflow resulting from infiltrated stormwater could render the proposed contamination mitigation as ineffective.

It is required through either demonstrated monitoring, revised construction planning and tank placement that groundwater quality protection measures are adequate to demonstrate potential impacts as negligible or suitably managed.

The EPA requires additional detailed information on changes to the hydraulic properties of groundwaters as a result of increased point source recharge from the proposed upgrades to the projects stormwater collection system, demonstrating an increase to the protection of receiving groundwaters.

e) Groundwater quality controls

The proposed hardstand runoff treatment controls in the proposed infiltration tank located on 21F differ from those of the existing infiltrations tanks on 21D. They vary in their capacity to capture or not capture metals and hydrocarbons.

Specific particulate bound pollutant filters, particularly metal and hydrocarbon filter systems, are absent from the proposed infiltration tank in site 21F. As there are elevated concentrations of metals in the groundwater within the 21F vicinity, acceptable filters to ensure no increases to metal pollutants should be employed.

Given the three infiltration tanks in site 21D cater for the filtering of such pollutants using a different treatment system, the same treatment methods and systems should be uniformly adopted across the Premises to ensure consistency and reliability.

The EPA requires adequate justification for the differences in water quality treatment devices employed and proposed across Premises.

Air

f) Industrial and commercial receptors not included in AQIA

In the assessment of criteria pollutants, the Air Quality Impact Assessment (AQIA) has not considered all nearby receptors in the assessment of impacts, with the closest assessed receptor (R2) approximately 500 m from the proposed facility. No industrial or commercial receptors have been considered. The AQIA states that the Approved Methods does not mention industrial uses for a sensitive receptor.

A sensitive receptor is defined in the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW (*Approved Methods) as a location where people are likely to work or reside and that future sensitive receptors should be considered. Industrial zones do not preclude places where people are likely to work or may work in the future. Therefore, the impacts from the proposal at receptors has not been adequately assessed.

The incremental impacts of 24-hour PM10 (AQIA, Figure E31) indicate that exceedances of the criterion occur at neighbouring receptors. The modelling does not account for any potential reductions associated with conducting the operations in an enclosed building. As the impacts are for incremental only, additional exceedances would be likely at neighbouring receptors for cumulative impacts. The assessment accounts for proposed mitigation measures (including the activities being conducted inside a building) to accurately represent the proposed operations.

The EPA requires the following information:

i. *A revised AQIA that includes the industrial and commercial receptors in the complete assessment of air quality impacts; and*
ii. *A revised AQIA that accounts for the control and mitigation measures that reflect the actual proposed operations (i.e. operating proposed activities within a building).*

Should impacts above the criteria be predicted the EPA will require consideration and assessment of additional controls until compliance is achieved.

g) Assessment approach for VOCs require further information

The proposed operations include a hazardous waste recycling facility (HWRF) that will receive and store greater than 20,000 tonnes of materials that include oils, solvents and other hydrocarbon containing material, which could have the potential for VOC emissions, dependent on the nature of this proposed activity. The AQIA does not quantitatively assess VOC emissions from the HWRF. However, a maintenance workshop has been included in the model for VOC emissions despite stating that the workshop will store only a limited quantity of fuels and oils. As such, it is difficult to reconcile the VOC emissions accounted for in the modelling with respect to the proposed activities were VOC emissions may occur.

The VOC emissions modelled from waste oil unloading (P3) in the maintenance workshop (building 3) include individual VOCs, including the principal toxic benzene. Emission concentrations are given for the individual VOCs that have been identified (Table 14) and include 46.3 mg/m3 for benzene with a calculated total of 522.7 mg/m3 for VOCs. The EPA cannot reconcile these high emission concentrations with the proposed activity. The AQIA states that these emission concentrations are based on previous sampling by the consultants but has not provided any data to support these concentrations or additional information regarding waste oil quantities, source, unloading rates, storage capacity or emission controls.

The EPA requires that the following information:

i. *A revised AQIA that clarifies the proposed operations and justifies the inclusion or exclusion of the VOC emissions in the modelling;*

ii. *A revised AQIA that includes further information on the source and approach for quantitatively assessing the VOC concentrations included in the AQIA, including any supporting emissions data; and*

iii. *A revised AQIA that includes additional information regarding the waste oil unloading that has been quantitatively assessed, including but not limited to waste oil quantities, source, unloading rates, storage capacity and emission controls.*

h) Assessment of benzene requires additional information

The AQIA quantitatively assesses benzene, a principal toxic air pollutant. Section 7.2 of the Approved Methods outlines that "*Principal toxic air pollutants must be minimised to the maximum extent achievable through the application of best-practice process design and/or emission controls*".

The AQIA does not demonstrate that the emissions of principal toxic air pollutants have been minimised to the maximum extent achievable.

Additionally, the ground level concentrations for benzene have been given as annual averaging period (Table 20). The impact assessment criteria for benzene as per the Approved Methods is applied for a 1-hour averaging period.

The EPA requires the following information:

i. *A revised AQIA that demonstrates that the emissions of principal toxic air pollutants have been minimised to the maximum extent achievable; and*

ii. *A revised AQIA that assesses benzene for a 1-hour averaging period.*

i) Inadequate assessment of receptors for principal toxics

Section 7.2 of the Approved Methods requires the impact assessment criteria for air toxics is applied at and beyond the boundary of the facility. The AQIA has included the predicted impacts for air toxics at the five identified sensitive receptors and at select locations on the Premises boundary.

The AQIA has not included consideration of potential impacts of air toxics beyond the boundary or provided contour plots to assess the dispersion of those pollutants. Peak ground level concentrations could potentially occur at a point beyond the Premises boundary. As such the presentation of ground level concentrations at select locations on the Premises boundary may not necessarily capture peak ground level concentrations beyond the Premises boundary.

The EPA requires a revised AQIA that assesses the impacts of principal air toxics across the modelling domain, evaluate the highest impact from air toxics at and beyond the boundary and provide contour plots of all assessed pollutants.

j) Justification of meteorological data not provided

The AQIA (Section 5.6) has provided a demonstration of the accuracy of the CALMET generated meteorology used for the dispersion modelling by comparing to predicted data against measured meteorological data and three nearby stations.

However, the year chosen for modelling, 2019, has not been adequately justified. Section 3.2 of the AQIA describing the meteorology in the region does not include an adequate discussion that 2019 is representative of long-term meteorological conditions of at least five years. A single wind rose of the average of 2016-2019 is provided (Figure 9) which does not provide enough information to evaluate the use of 2019.

The EPA requires adequate justification of the year 2019 for modelling.

k) Inadequate background air quality data presented

The AQIA provides only a table summary of background data (Table 5) that presents the background air quality data as a 3-year average (for both 24-hour and annual concentrations). This level of information on the background data is not adequate for assessment purposes. As a contemporaneous assessment methodology is used for particulates, the information provided on 24-hour background concentrations should be such that an understanding of the inputs used to determine cumulative impacts is possible. Only a table (Table 21) is provided that states no additional exceedances are predicted. However, the AQIA states that 6 exceedances of 24-hour PM2.5 occur in the background data, while EPA's analysis of the 2019 Mayfield 24-hour PM2.5 data notes that 22 PM2.5 exceedances were measured.

Further, the use of 2019 air quality data, when unprecedented bushfires occurred in NSW may not be a representative dataset for evaluating particulate impacts and exceedances. With PM10 24-hour incremental exceedances of 10.8 µg/m3 at identified receptors, additional exceedances could occur in future years with more representative background air quality.

The EPA requires the following information:

i. *A revised AQIA that justifies that the 2019 background air quality data is representative through comparison of 2019 air quality data with additional years. Where justification cannot be provided, other background data should be considered;*

ii. *A revised AQIA that provides more detailed information on the background air quality data, including the varying 24-hour concentrations used in the assessment of cumulative impacts; and*

iii. *A revised AQIA that re-evaluates the cumulative impacts and the predicted exceedances to ensure that the assessment of additional exceedances is correct. Results should be provided for the cumulative impacts resulting from the highest background concentrations and from the highest incremental concentrations.*

l) Unaccounted additional point sources included in modelling

Section 7.4 of the AQIA includes the point source parameters modelled (Table 16). Nine point sources are included in the model, however, the AQIA only describes three point sources.

The EPA requires a revised AQIA that includes an adequate description of all emission point sources.

m) Odour control not considered in assessment

The odour impacts are predicted to be less than 2 Odour Units (OU) at the identified receptors, but 5.2 OU at the boundary. Based on the modelling results, there is a significant potential for odour impacts to occur at nearby receptors (inclusive of industrial and commercial receptors). CALMET modelled meteorology under-predicts the proportion of calms. This may under-predict odour impacts at the boundary which are likely to be greater resulting from poor dispersion and increase the uncertainty of the modelling results.

The odour emissions have been modelled without controls despite the AQIA stating that some odour control will be implemented. However, the Applicant has not identified the actual odour controls that will be installed at the facility. As there is uncertainty in results in modelled odour, the Applicant should propose best practise odour control. The AQIA should include a description of the actual proposed odour control system, the control efficiency and that best practice controls have been chosen. Additionally, the AQIA should include in the assessment how the facility actually intends to operate, in order to evaluate the risk of the proposal, including the efficiency of the controls and achievable emissions. The Applicant should also consider the odour risk of the proposal and additional feasible mitigation measures that could be implemented if the facility emits offensive odour after it is operational.

The EPA requires the following information:

ii. Details of the best practise odour control system that will be installed at the facility, the control efficiency and odour emission rates and revise the odour modelling that accounts for the odour control system that will be implemented; and

iii. Evaluation of the risk of odour impacts and discusses additional mitigation measures that could be implemented if odour becomes an issue after the facility becomes operational.

Contaminated Land

n) Contaminated Land

The information in the Draft Preliminary and Detailed Contamination Assessment reports are inadequate for the EPA to determine whether to recommend conditions of approval.

The Draft Preliminary and Detailed Contamination Assessment reports identified the potential for hydrocarbon contamination in groundwater. Hydrocarbon storage trench was excavated to around 5-6 metres below ground level (mbgl), which is beneath the water table (~2.4 mbgl). It is possible that any cracks in the concrete lining of this trench could have allowed contamination to seep directly into the water table.

The Environmental Site Assessment report assessed groundwater for heavy metals only. There was no justification why other contaminants (hydrocarbons) were not analysed, a figure that shows the location of the wells in relation to the site was not provided and there was no assessment of quality assurance/quality control. Groundwater contamination was not adequately assessed. Hence, the nature and extent of contamination has not yet been fully characterised.

The RAP provided needs to be updated when the nature and extent of contamination on-site has been fully characterised.

Given that the nature and extent of contamination has not yet been fully characterised and that remediation is required to make the site suitable for the proposed use, it is recommended a NSW EPA accredited site auditor is engaged throughout the duration of works to ensure any work required in relation to contamination is appropriately managed.

The EPA requires the following information:

i. *A detailed site assessment report that includes an appropriate assessment of groundwater contamination. The report should include adequate assessment of soil and groundwater contamination to determine the nature and extent of contamination. The Detailed Site Investigation Report(s) must be prepared in accordance with guidelines made or approved under section 105 of the Contaminated Land Management Act 1997; and*

ii. *A Section B Site Audit Statement or an interim audit advice from a NSW accredited site auditor certifying:*
   - *the appropriateness of the contamination assessment reports prepared,*
   - *that the nature and extent of contamination have been determined, and*
   - *whether the site can be made suitable for the proposed use subject to the Remedial Action Plan submitted as part of the proposal.*

In preparing this information, the applicant should be aware of the following:

- The processes outlined in State Environmental Planning Policy 55 - Remediation of Land (SEPP55) be followed in order to assess the suitability of the land and any remediation required in relation to the proposed use.
- The Applicant must ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site so as to result in significant contamination [note that this would render the Applicant the 'person responsible' for the contamination under section 6(2) of Contaminated Land Management Act (CLM Act)].
- The EPA should be notified under section 60 of the CLM Act for any contamination identified which meets the triggers in the Guidelines for the Duty to Report Contamination
- The EPA recommends use of "certified consultants". Please note that the EPA's Contaminated Land Consultant Certification Policy (https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/clm/18520-contaminated-land-consultant-certification-policy.pdf?la=en&hash=D56233C4833022719BCE0F40F870C19DC273A1F7) supports the development and implementation of nationally consistent certification schemes in Australia, and encourages the use of certified consultants by the community and industry. Note that the EPA requires all reports submitted to the EPA to comply with the requirements of the CLM Act to be prepared, or reviewed and approved, by a certified consultant.

Waste management

o) Waste – details of proposed operations are lacking

The EIS provides an overview on the proposed operations at the RRF. However, the information provided is unclear and additional information is required to demonstrate that all waste received is appropriately inspected, stored and processed to prevent cross contamination of waste streams and contaminates spreading within or outside of the RRF.

The EPA requires the following information:

i. *Details of how waste material will be transported to and within each of the recycling facilities at the RRF. For example; the EIS states that trucks will transport package food waste material to the Package Food Recycling Plant (PFRP) however there is no truck entrance to the PFRP;*

ii. *The location of controls such as bunding. For example, the EIS refers to a bunded hazardous waste unloading and inspection area however the location is not specified in the EIS;*

iii. *More detail on the design and operation of the RRF (including each of the recycling facilities within the RRF) to ensure it demonstrates that all waste received is appropriately inspected, stored and processed to prevent cross contamination of waste streams and contaminates spreading within or outside of the RRF.*

p) Waste –procedures for non-compliant waste

The Waste Management Plan includes a 'non-conforming waste procedure' that provides general steps to manage non-compliant waste. However, the procedure is not comprehensive and does not demonstrate how all potential non-compliant waste such as unexpected hazardous waste, chemical substances which may arise from the proposed mining and industrial waste sources will be managed.

The EPA requires the following information:

i. *Further detail in the procedure for dealing with wastes not permitted to be accepted at the Premises;*
ii. *Information on the potential or likely contaminants from each waste type to be received at the RRF;*
iii. *Detailed information on non-compliant waste requiring special handling will be managed; and*
iv. *Information on the location and capacity of contamination waste storage areas.*

q) Drilling mud waste - details of proposed process are lacking

The proposed operation includes the recovery of engineering fill from drilling mud. Limited information has been provided on how the material will be processed for the EPA to assess potential risks and impacts.

The EIS states dewatered solids will be transferred from the drill mud centrifuge into a hook lift bin and then moved to the dewatered drill mud storage area for sampling and testing. However, the EIS does not provide details of the centrifuge process proposed to receive the drill mud, or the handling and management of dewatered solids resulting from this process.

Further information on the drill mud process is required to assess if appropriate controls are in place to manage risks and impacts from potential spills, leaks and discharges; drying of the treated drill mud and the cleaning of trucks at the Premises.

The EPA requires the following information:

i. *Further details of the drill mud process, an assessment of potential associated risks and proposed management measures;*
ii. *Information on the destination of the liquid component recovered from the drilling mud, including discussions or agreements that may have been made in relation to trade waste.*
iii. *Information on the cleaning of tanker trucks used for transporting drill mud including the location of the truck wash area, bunding and any other infrastructure associated with the truck wash.*

r) Drilling mud waste – resource recovery order and exemption

Limited information has been provided to demonstrate compliance with *the treated drilling mud order and exemption 2014*.

In the definition of drilling mud within *the treated drilling mud order and exemption 2014* it states drilling mud does not include material generated by drilling through contaminated soils, acid sulphate soils (ASS) or potential acid sulphate soils (PASS).

The EPA requires more information on how the applicant will meet the requirements of the treated drilling mud order and exemption 2014, including;

- *how it will prevent the receipt of contaminated material, how will identify receipt of contaminated material, and*
- *how the receipt of contaminated drilling mud waste will be identified, removed and stored.*

s) Hazardous waste – classification of waste to be received and produced

The EIS does not provide comprehensive classification information for the waste to be received and produced at the HWRF.

The EIS refers to the HWRF as receiving and processing the following quantity, type and classification of wastes:

- 500 tpa of drained oil filters, rages and adsorbent material, as general solid waste (GSW)
- 500 tpa of containers and drums of controlled waste residue, as a category 1 trackable solid waste (N100)
- 12,000 tpa of contaminated soils, as a category 1 trackable solid waste (N120)
- 500 tpa of lead acid batteries, as a category 1 trackable solid waste (D220)
- 6,000 tpa of waste mineral oils, as category 1 trackable solid waste (J100)
- 300 tpa of oil water/coolant/etc, as category 1 trackable liquid waste (J120)
- 1 tpa of batteries (Li-ion/NiCad/etc), as general solid waste (non-putrescible)
- 50 tpa of fluoro tubes, as general solid waste (non-putrescible)
- 200 tpa of Gyproc, as general solid waste (non-putrescible)
- 50 tpa of used fire extinguishers and pressure vessels/rams/etc, as general solid waste (non-putrescible)
- 50 tpa of residual solvents/thinners/paints, as category 1 trackable liquid waste (J100), and
- 50 tpa of e-waste, as general solid waste (non-putrescible).

The EIS describes the waste to be received and processed at the HWRF based on either, but not both:

- the wastes classes defined in clause 49 of Schedule 1 of the *Protection of the Environment Operations Act 1997*, used for waste management and disposal. Also listed in the NSW *Waste Classification Guidelines Part 1: Classifying Waste*; or
- the waste categories defined in Schedule 1 of the *Protection of the Environment Operations (Waste) Regulation 2014*, used for waste transport and tracking.

Information on the waste classification for management, disposal and transport (tracking and licensing) is needed to:

- determine what legislative requirements will apply to the proposal and ancillary activities; or
- ensure and demonstrate the proposal will meet all relevant legislative requirements.

The EPA requires an amended EIS that clearly identifies and presents waste classification information for all waste types proposed to be received and produced, including classification information for both waste management/disposal purposes and waste transport purposes.

t) Liquid waste – management and waste tank storage

The RRF will receive a range of trackable liquid wastes including:

- waste mineral oils (6,000 tpa);
- oily water/coolant etc (300 tpa); and
- residual solvents/thinner/paints (50 tpa).

The liquid waste and fuel storage facilities at the RRF are summarised in the EIS (Appendix E, Table 4.3) and are:

- Tank 1 and Tank 2: waste oil (54,000 and 67,000 l);
- Tank 3 and Tank 4: oily water/coolant (both 20,000 l);
- Tank 5: Fuel/AdBlue for refuelling vehicles and equipment (60,000 l);
- Tank 6: Liquid food waste from packaged food recycling plant (20,000 l); and
- Tank 7: Drill mud liquid storage tank (50,000 l).

Containers of trackable liquid waste will be unloaded in a bunded area for assessment, classification and then decanting into holding tanks on-site. The tanks will be periodically emptied, and the aggregated liquid waste transported in specialised containers or tanker trucks for off-site recycling or treatment. The floor plant for liquid waste storage is stated to be prepared in accordance with the *Australian Code for the Transport of Dangerous Goods by Road & Rail* (2020) to ensure no incompatible chemicals are stored with each other.

The EIS refers to Figure 3.4 (Appendix E) to provide an overview for the storage arrangements of waste materials in the HWRF, however details of the actual storage are not provided in this figure, and thus it is not possible to confirm the proposed plant, such as tanks, required for the HWRF.

In addition, the EIS states (Appendix E, Section 4.3.3) drill mud on receival will be pumped into a bunded 50,000 litres drill mud holding tank, while post treatment dewatering drill mud liquid will be pumped to (presumably) another a 50,000 litre holding tank for testing prior to offsite transport. However, only one 50,000 litre tank for drill mud liquid is included in Section 4.4 of Appendix E of the EIS.

The EIS includes very brief information (Appendix E, Section 4.10) on incident management with respect to spills only. In addition, Table 5.1 (Appendix E) summarises proposed control measures and safeguards, however the information provided is at a high level and focuses more on control measure goals and management level/administrative response.

The EIS (Appendix E) does not provide detailed information on:

- the processes and plant that will be used to manage the decanting, conveying and transfer of liquid waste between tanks, containers and other storage; and
- the controls that will be implemented to address leaks, spills or discharge of liquid waste; and
- the controls that will be implemented to address odour emissions, including from the handling and storage of liquid waste such as waste oil, oily water, residual solvents thinners and paints, and drill mud, noting each will or may contain hydrocarbons.

The EPA requires the following information:

i. Detailed information to clarify drill mud and liquid waste storage and infrastructure requirements; and

ii. Clear identification and justification of controls to be implemented to mitigate risks associated with waste activities, and in particular liquid waste handling and storage.

u) Refuse-derived fuel (RDF) – management and energy from waste

It is proposed that 31,000 tonnes per annum of commercial and industrial (C&I) and construction and demolition (C&D) wastes will be received at the RRF. Of that 31,000 tonnes received; 17,500

tonnes would be allowed for energy recovery under the *NSW Energy from Waste Policy Statement* (Policy Statement).

The allowable percentages for different waste sources are given in Table 1 of the Policy Statement for the residual wastes that cannot be re-used, reprocessed or recycled (part 1 of the Policy Statement). While the term 'residual' is not defined in the Policy Statement, it is not intended that those maximums apply to the whole of the waste stream received. To do so would undoubtedly violate the waste hierarchy in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*, referenced in figure 1 of Appendix E of the EIS.

The source of such a substantial volume of C&I and C&D waste with a suitable calorific value is also unclear, given that 'shredded wood', 'plastics' and 'paper and carboard' are each listed as separate 'products' produced by the Materials Recycling Facility (MRF).

The EPA requires the following information:

i. *More information on the waste streams to be received at the facility for recovery of RDF, including specifications, suppliers and upstream management procedures (to support waste specifications and controls for non-conforming wastes). In order to give the EPA confidence that the Proposal is suitable and that a market does exist for RDF, the Applicant should develop specifications for the RDF product;*
ii. *A detailed contingency plan for how you plan to manage stockpiles of recovered RDF as a result of low market demand;*
iii. *Information on how you will comply with specific export and transport requirements for RDF;*
iv. *Further information on how RDF recovered from the RRF for the purpose of feedstock for thermal treatment at an energy recovery facility will meet the criteria outlined in Table 1 of the Policy Statement; and*
v. *Details of proposed potential recipients licensed to receive non-standard fuels.*

2. Other considerations

a) Groundwater monitoring and well locations

Monitoring wells have been proposed down gradient at the boundary of the project site. Two wells proposed on 21F would be useful for detecting metal concentrations prior to off-site migration. The proposed well of MW7, based on provided maps, looks to be positioned over the top of an existing infiltration dam on 21D and may need a change in location.

b) Contaminated soil – resource recovery

The EIS states that up to 12,000 tonnes per annum of 'contaminated soils' will be 'manufactured' and supplied as a 'recovered product'. It is inferred that this is the contaminated soil mentioned in the HWRF section of the EIS (section 2.8), indicating a non-trivial degree of contamination. There is no detail regarding what types of contaminants will be accepted, or how the contaminated soils will be remediated. Furthermore, the treated soils must be validated prior to supply for resource recovery.

There is no general resource recovery order (Recovery Order) and resource recovery exemption (Recovery Exemption) relating to treated contaminated soils. If the applicant wishes to pursue this line of resource recovery they must apply for and obtain an order and exemption specific to their operations for this waste stream. Note that it would not be lawful to supply treated soils for resource recovery under *The 'continuous process' recovered fines order 2014* or *The 'batch process' recovered fines order 2014*.

If the intention is to supply the material to third parties for treatment this should be made clear, and 'contaminated soils' should be removed from the list of 'recovered products'.

Depending on what type of contaminated soils the Applicant is proposing to treat, additional managing controls may be required.

c) Package food – resource recovery

The proposed operation includes the recovery of package food waste material.

It is a general condition of *the liquid food waste order 2014* and *the solid food waste order 2014* that on or before the supply of liquid food waste and solid food waste, the generator must ensure that the material:

- does not include grease trap waste or animal waste; and
- is not corrosive.

Note: the definition of grease trap waste, animal waste and corrosive food waste is defined in *the liquid food waste order 2014*, the *solid food waste order 2014* and *the compost order 2016*.

d) Recover fines – resource recovery

The 'continuous process' recovered fines order and exemption 2014 and *the 'batch process' recovered fines order and exemption 2014* are currently under review and will likely be revised in the coming year.

e) Shredded wood – resource recovery

Section 2.3 of the EIS indicates that 'shredded wood' will be produced at the Materials Recycling Facility (MRF) and is listed separately to RDF. Later in the EIS, section 6.3. indicates that it is intended to supply 'timber/wood mulch' for re-use under the mulch order 2016. The material received at the Garden Organics Primary Processing Plant (GOPPP) is described separately, so the EPA infers that the shredded timber from the MRF is that which is to be supplied under the mulch order 2016.

The mulch order 2016 does not permit the inclusion of any engineered wood products, preservative treated or coated wood residues, as they are defined in that order. Furthermore, any 'urban wood residues' included in the mulch must be received via a separated material stream. It would be near impossible and extremely labour-intensive for the applicant to conclusively demonstrate this because there are so many different waste sources that would be received at an MRF facility.

It would be more practicable for the Applicant to apply for an obtain a specific order and exemption for this waste stream. This may include mandated quality assurance/quality control procedures, as well as sampling and testing requirements.