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Contact:		T. Harvey
Our Ref:		P1907434JC01V02
Pages:		8 + attachments
cc.		

03/05/2021

Outline Planning Consultants
Attn: Gary Peacock

By email

Dear Gary,

RE: NSW EPA AND DPIE REQUEST FOR ADDITIONAL INFORMATION – PROPOSED RESOURCE RECOVERY FACILITY (RRF), 16 TORRENS ROAD, GUNNEDAH

Martens have reviewed the request for additional information (RFI) provided by NSW Department of Planning, Industry and Environment (NSW DPIE), NSW Environment Protection Agency (NSW EPA) and Gunnedah Shire Council (GSC), and provide the following response and additional detail:

1.0 Description of Development

The following works are proposed to support the proposed RRF:

- Sediment and erosion control works.
- Demolition of existing dwelling, demountable, fences associated with dwelling, and shed. Existing fuel tanks to be relocated offsite.
- Earthworks (refer to Section 2.0 for further details).
- Drainage works (refer to Section 3.0 for further details).
- Fire fighting system and fire water runoff management works (refer to Section 4.0 for further details).
- Leachate management works (refer to Section 5.0 for further details).
- Pavement and carpark works (refer to Section 6.0 for further details).
- Construction of unloading and processing shed
- Construction of waste storage bays.
- Installation of incoming and outgoing weighbridges.
- Installation of wheel bath and rumble grid.

Refer to Attachment A (ref: P1907434PS01) for concept civil works plans.

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2.0 Earthworks

NSW DPIE Comment

Provide a detailed description of all proposed demolition and construction works, including confirming whether any excavation works are proposed (e.g. footings for buildings, weighbridges and upgrades to stormwater infrastructure).

MA Response

Earthworks are proposed to regrade the stockpile areas, shed and circulation driveways in order to direct surface flows within the RRF into the appropriate leachate management and stormwater systems.

Refer to Attachment A, drawing C100 and C500 (ref: P1907434PS01-C100 and C500) for grading and cut-fill plans.

Detailed pavement boxing, pipe trenching, excavation, top soil stripping and bulking factors have not been considered at this stage. Approximately additional 1000m^3 excavation will be required for the proposed OSD and leachate storage tanks above the volumes noted within the table on drawing C500.

3.0 Drainage Works

NSW EPA Comment

The EPA understands that the site will contain two sediment basins and two on-site detention tanks. It is also understood the sediment basin will overflow to the on-site detention tanks which will then discharge into the council stormwater system. The sediment basins should be designed, constructed, operated and maintained in accordance with Managing Urban Stormwater: Soils and Construction Volume 1, 4th Edition (LANDCOM, 2004).

GSC Comment

Additional details are required in regard to how the development will prevent the discharge of pollutants from the site. How will spills and particulates transported in stormwater be contained onsite to prevent the discharge to Council's stormwater network or into natural water course?

Stormwater is to be managed within the site with no effluent or polluted water to be permitted to Council's stormwater network or permitted to leave the site. All stormwater works are to comply with the relevant Australia Standards.

A S68 approval under Local Government Act 1993 is required for stormwater discharge, with a condition to this affect being imposed prior to the issue of a Construction Certificate.

Provision of onsite stormwater detention tanks for capture with roofwater and reuse on landscaping.

MA Response

A concept stormwater system proposed for the site has been designed in accordance with AS3500.3. Full details of the proposed stormwater conveyance and retention system and

associated stormwater quality improvement devices (SQID) are provided in the Concept Stormwater Management Plan Report and Plans(ref: P1907434JR03V03 and P1907434PS01).

Roofwater will be collected by the proposed rainwater tanks and reused internally for non portable uses such as toilet flushing. Surface runoff from the site will be conveyed to the proposed on-site sediment basins prior to reuse or discharge from the site to meet the water quality objectives. In summary, the proposed stormwater system includes:

- Pit and pipe network.
- Overland flow paths.
- Rainwater tanks.
- Sedimentation basins.
- On-site detention basins.
- Gross Pollutant traps (GPTs).
- Oil and grit separators (Humeceptor).

The proposed on-site basins collect runoffs from the site, allowing sediments to settle to the base of the basin. Sediment collected in the basin will be removed on a regularly basis. This system significantly reduces offsite migration of sediment laden stormwater.

The proposed sediment basins have been designed and sized in accordance with Landcom (2004). Basins are to be constructed, operated and maintained in accordance with Landcom (2004).

Wastewater generated from the wheel wash is collected in the wash out pits before entering the sediment basins. These shall be designed at detailed design stage of the development.

4.0 Site Fire Fighting System and Fire Water Runoff Management

NSW DPIE Comment

Plans show the height of the open storage bays as 4.5m with the indicative stockpile height as 3.5m. However, the EIS describes stockpiles as being less than 4m. To comply with the Fire Safety Guideline the stockpiles must be 1m below the height of the wall.

Provide a stockpile management plan including details of the location of all proposed stockpiles, their height and an indication of the type of waste or product to be stored. The plan should include internal and external stockpiles and should clearly show there is suitable access for firefighting equipment.

Provide a plan showing the location of all proposed fire hydrants noting these must be more than 10m from stockpiles and accessible for firefighters entering the site.

Provide details of all sprinkler and hydrant systems including flow rate and capacity and details of the smoke exhaust system.

Provide details of the measures to contain fire water run-off noting that in addition to four hydrants there is a requirement for a sprinkler system.

MA Response

The proposed site fire fighting system is to be designed in accordance with NSW Fire and Rescue (October 2019) *Fire Safety Guideline – Fire safety in waste facilities* and Australian Standard 2419.1 (2017) at detailed design stage of the development.

Martens have completed a conceptual design for the proposed RRF which complies with the above guidelines and standards and addresses the RFI as follows:

1. Site fire fighting system shall be connected to Council potable water supply mains located in the Torrens Road and Allgayer Drive road reserves. Site internal water supply main shall be a ring main configuration to avoid dead ends where feasible. Hydrants shall be placed such that they are not closer than 10 m from any stockpiles and shall be accessible from site hardstand areas to allow for a firefighting vehicle to access the hydrant. Sizing of the internal firefighting water supply main shall be undertaken at detailed design stage of the development. A conceptual layout showing position of proposed site hydrants is provided in Attachment A, drawing F300 (ref: P1907434PS01-F300).

2. Review of AS 2419.1 (2017) has determined that for each lot 2 hydrants operating simultaneously at 10 L/s shall be required based on yard area of less than 9,000 m^2. This equates to a requirement of 20 L/s (144 kL/hour) for fire hydrants on each lot.

3. In addition, the unloading and processing sheds on Lot 2 are required to have a sprinkler system installed to Australian Standard 2118.1 (2017). Review of AS 2118.1 (2017) shows that the proposed RRF would be classified as an 'Ordinary Hazard 3 (OH3)' and therefore requires 18 sprinklers operating simultaneously at 1 L/s/sprinkler (18 L/s total or 64.8 kL/hr).

4. Smoke exhaust system for the buildings on Lot 2 shall be required in accordance with Section 7.8 of the Australian Standards and NSW Fire and Rescue (October 2017) guidelines. These shall be designed at detailed design stage of the development.

5. Specific measures to contain fire water runoff shall include:

    a. Automated and manually operated valves on all outlets from site OSD tanks to retain fire water within tanks and prevent offsite movement of fire water to Council's stormwater drainage network.

    b. Bunds to be provided around yard areas (in the form of trafficable humps). These shall provide an above ground storage volume of the order of 600 kL on Lot 1 and 500 kL on Lot 2 (subject to final site grading and height of bunds). Combined with OSD tank volumes, this shall provide of the order of 1.5 ML of fire water storage on site.

    c. Bunds shall also be provided within site buildings to contain firewater. The minimum volume to be contained in each building shall be 130 kL (based on 2 hour operation of 18 sprinklers at 1 L/s/sprinkler in accordance with AS 2118.1 (2017)).

    The above elements are noted in Attachment A, drawings E100 and E200 (ref: P1907434PS01-E100 and E200).

Following fire events at the site, the site operator would be required to transfer fire water and all water used to clean site OSD tanks, stormwater network and surfaces via pumpout tanker to a suitable offsite wastewater treatment facility.

5.0 Leachate Management System

NSW EPA Comment

The EPA notes that leachate will be collected in two leachate storage tanks, however, no details of the sizing of tanks or adjacent sumps have been provided. Only limited information has been provided on the leachate collection system and any leachate barrier systems. The EPA requires that any leachate barrier system is at least 1000 mm thick and meets an in situ hydraulic conductivity of 1 x 10-9 metres/second. The EPA recommends that the proponent provide the proposed capacity of the leachate tanks and sumps, as well as expected flow rates to the leachate tanks and sumps. Flow rates should be provided for normal conditions as well as wet weather events. The EPA also recommends that the proponent provide additional information on the design of the leachate barrier system.

MA Response

Site leachate management system has been designed in accordance with Section 2 of the NSW EPA (2016) *Environmental Guidelines – Solid Waste Landfills* guideline on the advice of Mr Daniel Stokes of the NSW EPA. Specifically, the leachate management system is designed to contain:

1. Direct rainfall falling onto exposed site stockpile areas.

2. In addition to the above, leachate storages include a dedicated volume designed to contain the 1 in 25 year Average Recurrence Interval 24 hour design storm event for Gunnedah.

A summary of the leachate storage requirements based on the monthly water balance is provided in Table 1 below.

Table 1: Summary of leachate storage tanks.

Parameter	Lot 1	Lot 2
Area of open-aired stockpiles draining to leachate tank (m^2)	900	539
Maximum monthly volume of leachate generated (kL)	50.9	30.5
Leachate generated by 1 in 25 year Average Recurrence Interval 24 hour rainfall event	100.1	60.0
Total leachate volume required (kL)	151.0	90.5

The above analysis assumed the following:

1. A monthly water balance was used to determine the likely volumes of leachate generated in accordance with NSW EPA (2016) guidelines and advice received.

2. Median monthly rainfall for Gunnedah Pool (Bureau of Meteorology station number 055023) was used due to the 144 year record and proximity to the site

(approximately 4 km to the south east). Total median yearly rainfall is 616.7 mm and the month with the highest median rainfall is December (60.8 mm).

3. It is assumed for the purposes of this analysis that leachate storage tanks are empty at the start of each month – as it is expected that leachate will be periodically transferred to an appropriate offsite wastewater management facility (either by pump-out or as trade waste to local sewer).

4. The 2016 Australian Rainfall and Runoff methodology on the Bureau of Meteorology's website (http://www.bom.gov.au/water/designRainfalls/) was used to determine the 1 in 25 year ARI 24 hour rainfall total for Gunnedah. This was calculated to be approximately 119.6 mm.

5. The volume of leachate generated by stockpiles and materials sorting processes within site buildings is assumed to be negligible.

From the above analyses, the estimated leachate tank volume required is 151 kL for Lot 1 and 90.5 kL for Lot 2 respectively. Refer to Attachment A, drawing E100 (ref: P1907434PS01-E100) for concept leachate management details.

6.0 Pavement and Onsite Parking

NSW DPIE Comment

Provide an assessment of stacking spaces available and how the site will avoid vehicles queuing in the public road network.

GSC Comment

Frontage along Torrens Road is to be constructed with kerb and gutter and road shoulder for the full frontage of the development site.

The development has not adequately addressed onsite parking demand for the lands proposed additional land use. Parking for this development should be in addition to existing parking requirements. Council requests that a detailed parking layout, complying with AS2890.1 be prepared and submitted as part of this development, accommodating the minimum number of spaces required onsite.

MA Response

All internal circulation driveways and parking areas are to be paved, and the existing access via Torrens Road to be upgraded to a concrete vehicular crossing. Pavement details to be provided at detailed design stage of the development.

Details of Torrens Road upgrade along the site frontage are to be provided at detailed design stage of the development.

Refer to Attachment A, drawing G400 (ref: P1907434PS01-G400) for the pavement plan.

The proposed staff carpark provides 27 parking spaces (including 2 handicap spaces) and is to be accessed via the existing vehicular access from Allgayer Drive. All parking spaces and aisles comply with AS2890.1 and AS2890.6.

Refer to Attachment A, drawing A300 (ref: P1907434PS01-A300) for details of staff carpark.

7.0 Swept Path Analysis

NSW DPIE Comment

Confirm the largest vehicle expected to enter the site and provide swept paths for this vehicle. Please provide swept path diagrams showing vehicles exiting the site onto Torrens Road.

GSC Comment

Internal driveways are to be sealed and extended to ensure that all vehicles can manoeuvre within the site, especially B-Doubles. The current swept path analysis plan for B double vehicles by Martens & Associates Pty Ltd, indicates manoeuvring is unable to be achieved within the indicated internal driveway.

Existing access to Torrens Road is to be upgraded to a concrete vehicle access in accordance with Council's Urban Design standard.

MA Response

Swept path analysis has been undertaken for the following design vehicles:

- B99.
- MRV.
- HRV.
- AV.
- B double.
- B triple.

All swept paths indicate that adequate manoeuvring is achieved within the site and demonstrate that all vehicles can enter and exit the site in a forward direction.

The entry driveway allows for a maximum number of the following queued large vehicles before the incoming weighbridge, while allowing a B triple to turn out of the site:

- 3 AVs.
- 2 B doubles.
- 2 B triples.

The B triple will need to wait for an incoming vehicle to enter the site before it can exit. All other vehicles can exit the site simultaneously with a vehicle turning into the site.

Refer to Attachment A, drawings GZ00 to GZ50 (ref: P1907434PS01-GZ00 to GZ50) for swept path plans.

8.0 Fencing

GSC Comment

Provide development plans which indicated the location and type of all fencing to be constructed as part of the development. Elevation plans are required for each fence type to identify potential visual impact and design.

Security fencing not addressed on development plans. Fencing is to be of a decorative nature from the lot frontages to the building line.

MA Response

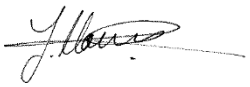
Security fencing to be provided in compliance with GSC DCP 2012, details to be provided at detailed design stage of the development.

All open storage bays to be fenced by 4.5m high concrete tilt panel wall with Colorbond cladding.

Please call our offices if you have any further queries regarding this matter.

For and on behalf of

MARTENS & ASSOCIATES PTY LTD



TERRY HARVEY
Senior Engineer / Project Manager

Attachment A – Concept Civil Works Plans