



**Environment,
Climate Change
& Water**

Your reference:
Our reference: DOC10/49549
Contact: Trevor Wilson 9995 5907

Felicity Greenway
Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001

EMAIL & STANDARD POST

Dear Ms Greenway

**Review of Environmental Assessment for Proposed Increase to the Volume of Waste
Received at the Woodlawn Bioreactor – Woodlawn Expansion Project - Project No. 10_0012
Part 3A Environment Planning & Assessment Act (1979)**

I refer to your letter of 17 September 2010 to the Department of Environment, Climate Change and Water ("DECCW") regarding the Woodlawn Expansion Project (Project No: MP 10_0012), being the proposed annual increase to the volume of waste received at the Woodlawn Bioreactor and the Crisps Creek Intermodal Facility both located at Tarago, NSW and extending the hours of operations by Veolia Environmental Services ("the Proponent").

Please note that, although the Environment Protection Authority ("EPA") is now a part of DECCW, certain statutory functions and powers continue to be exercised in the name of the EPA.

Veolia Environmental Services has provided an environmental assessment titled "Woodlawn Expansion Project" dated August 2010 ("the EA") to the NSW Department of Planning under the provisions of part 3A of the *Environmental Planning and Assessment Act, 1997*. The EA outlines a proposal to increase the volume of waste received at the Woodlawn Bioreactor (Lot 19 in DP827588 and Lots 25, 30, 88 and 91 in DP754919) from 500,000 tonnes per annum to 1.13 million tonnes per annum; increase the volume of waste received at the Crisps Creek Intermodal Facility (Lot 1 DP 1045652) from 780,000 tonnes per annum to 1.18 Mtpa per annum and extending the hours of operation at Woodlawn Bioreactor and the Crisps Creek Intermodal Facility to 6am to 10pm ("the Proposal").

It should be noted that if planning approval is granted the Proponent will need to make a separate application to DECCW to vary the existing environment protection licence No. 11436 for Woodlawn Bioreactor and No. 11455 for Crisps Creek Intermodal Facility. Both licences are held by Veolia Environmental Services (Australia) Pty Ltd.

DECCW has undertaken a review of the EA and determined that certain aspects of the Proposal have not been satisfactorily addressed, including air emissions, odours, local traffic noise impacts and resource recovery issues.

DECCW may include additional conditions on any Environment Protection Licence issued in relation to the proposal to take into account the further studies required to adequately assess noise and air impacts and for the purposes of resource recovery.

Noise modelling indicates that both Woodlawn Bioreactor and the Crisps Creek Intermodal Facility will comply with noise criteria for residential receivers, other than for a number of residences that are owned by the Proponent.

However, the noise impact assessment ("NIA") has not been undertaken in accordance with DECCW's *Environmental Criteria for Road Traffic Noise* ("ECRTN") and the NIA has only considered daytime traffic noise impacts. More detailed comments on noise are provided in **Attachment A**.

The air quality impact assessment ("AQIA") for the Proposal was generally conducted in accordance with DECCW's approved methods. The AQIA does not predict any exceedences of DECCW's TSP and PM₁₀ air quality impact assessment criteria or the project-specific odour impact assessment criteria. However, DECCW is aware that the Woodlawn Bioreactor has been a subject of a number of odour complaints from the public since starting operations and in addition DECCW inspections have identified potential odour sources on the site. More detailed comments on air issues are provided in **Attachment A**.

DECCW notes that clause 123(a) of the *SEPP (Infrastructure) 2007* now requires assessment of whether there is a suitable level of recovery of waste so that the amount of waste is minimised before it is placed in the landfill. While this aspect has been discussed in the EA, there is a lack of detail in relation to how this will be undertaken in the future. The operation of an Alternative Waste Technology plant ("AWT") on the Woodlawn precinct is already approved (*Project Approval DA 06_0239*), but is yet to be constructed and no timetable for construction has been provided in the Proposal. The Proposal has included the proposed AWT in the assessments for noise and air impacts, however it does not appear to include the AWT in the described waste disposal process.

The *Waste Avoidance and Resource Recovery Strategy 2007*, details targets for waste diversion and recovery in NSW and aims to increase the recovery of materials from the major waste streams such as municipal waste, commercial and industrial (C&I) and construction and demolition (C&D) waste. More detailed comments on resource recovery issues are provided in **Attachment A**.

DECCW notes that there is a lack of detail as to whether the Proposal is going to replace all previous planning approvals or will work in conjunction with the original development consent (DA No. 31-02-99). The original development consent has conditions pertaining to environmental and other aspects of the original concept for Woodlawn and DECCW wishes to ensure that these consent conditions would continue if the Proposal is approved.

The NSW Office of Water will be providing comments separately on the groundwater aspects of the Proposal.

DECCW notes that the NSW Department of Planning is the relevant authority for determination of the proposal. Should the Proposal be approved by the Department of Planning, DECCW recommends that this should be conditional on the proponent installing and operating works for the recovery of waste at the site and completing further studies on noise and air impacts prior to the increased volume and extended hours being allowed to commence. These recommendations are outlined in **Attachment A**. Should the Proposal be approved, DECCW's recommended conditions of approval have been provided in **Attachment B**.

If you have any further questions regarding this matter or wish to meet with DECCW officers to discuss this matter please do not hesitate to contact Trevor Wilson on (02) 9995 5907.

Yours sincerely

 4.11.10

ROB HOGAN
Manager Waste Operations
Environment Protection and Regulation

Attachment A: Comments on the Environmental Assessment
Attachment B: Recommended Conditions of Approval.

ATTACHMENT A

Review of Environmental Assessment for Woodlawn Expansion Project Veolia Environmental Services - Project No. 10_0012

DETAILED COMMENTS ON THE ENVIRONMENTAL ASSESSMENT

The Proposal

The Proposal relates to two sites: the Woodlawn Bioreactor and the Crisps Creek Intermodal Facility as depicted in Figure 2.1 in the EA. These facilities are some 5-6km apart. In summary, the Proposal seeks to:

1. Increase Woodlawn Bioreactor annual receiving capacity from 500,000 tpa to 1.13 Mtpa;
2. Increase Crisps Creek Intermodal Facility annual capacity from 780,000 tpa to 1.18 Mtpa;
3. Increase operating hours of the bioreactor from 6am - 7pm to 6am – 10pm;
4. Increase operating hours of the Crisps Creel Intermodal Facility from 6am-6pm to 6am–10pm (noting that train unloading will not occur between 6am to 7am).

Air Emissions- Air Quality

The air quality impact assessment ("AQIA") provided by the Proponent for the Proposal advised that there will be no exceedence of DECCW's TSP and PM₁₀ air quality impact assessment criteria or the project-specific odour impact assessment criteria. The AQIA was based on the proposed increase in annual waste disposal and the approved, but yet unbuilt, AWT plant.

DECCW has identified some issues with the air quality impact assessments (see points 1 and 2 below), however, given the low impacts predicted in the assessment, resolution of these issues is unlikely to significantly increase concentration predictions but should be clarified by the Proponent nonetheless.

1. Discharges to air associated with Landfill Gas Engines (LGEs)

The proposed expansion would require 23 additional LGEs for which the AQIA has assessed PM10 emissions. The AQIA however does not evaluate emissions of VOCs, Nitrogen Oxides, and Carbon Monoxides from the engines. These gaseous pollutants of concern are critical indicators of engine performance. Table 1 below lists the *POEO (Clean Air) Regulation 2010* emission limits that would apply to the additional LGEs.

Based on the information provided in the AQIA, DECCW is unable to assess if the additional LGEs to be included in the expanded facility will meet these emission requirements. The proponent is requested to provide manufacturer's specifications for the LGEs and confirm that they will comply with the limits in Table 1 below. If necessary, the proponent must outline the measures that would be taken to comply with the emission limit requirements of the *POEO (Clean Air) Regulation 2010*.

Table 1 Emission limits applicable to the additional landfill gas engines (LGEs), as per the *POEO Clean Air Regulation (2010)*.

Air impurity	100 percentile concentration limit
Volatile Organic Compounds (VOCs)	40 mg/m³
Carbon Monoxides (CO)	125 mg/m³
Nitrogen dioxide (NO ₂) or Nitric oxide (NO) or both, as NO ₂ equivalent	450 mg/m³

2. Modelling of TSP and PM10 emissions

Issues were identified in the assessment of particulate emissions. While it appears that these would not impact the overall outcome of the particulate assessment significantly, **the Proponent should confirm that this is indeed the case.**

a). Inclusion of dozer emissions in the inventory

It appears that dozers, which have one of the highest particulate emission rates, have not been included in the particulate emissions inventory (Appendix C). **The Proponent should clarify if this source has been accounted for and, if necessary, revise the modelling of particulates.**

b). Overestimation of particulate impacts

Appendix C of the AQIA lists PM10 and TSP emission rates in mg/s, where as the modelling input files use the same values in g/s. **The proponent should revise the modelling to include the correct emission rates.**

DECCW recommends that prior to commencement of the Proposal; the Proponent must clarify points 1 and 2 above and undertake remodelling as appropriate to ensure the Proposal's AQIA modelling is accurate. This could take the form of a condition in the project approval (see condition No. 7 in Attachment B).

Air Emissions- Odour

The odour impacts of two scenarios were assessed: existing (including the approved AWT) and proposed increase in rate of waste disposal. The AQIA shows that the increase in rate of waste disposal will only marginally increase odour impacts at the nearest sensitive receptors. Additionally, predicted odour impacts at the only private residential area in the vicinity will be less than 2 OU.

DECCW notes that while the odour impact assessment in the AQIA has not shown an exceedence of the odour assessment criteria, DECCW is aware that the Woodlawn Bioreactor has been the subject of a number of odour complaints from the public since starting operations, and in addition DECCW inspections have identified potential odour sources on the site.

DECCW's review of the odour impact assessment in the AQIA has identified several factors that could potentially result in under-prediction of odour impacts from the Woodland Bioreactor facility as follows.

3. Waste experiencing leachate recirculation

Waste experiencing leachate recirculation has not been included as an odour source in Table 11 of the AQIA. It is not clear if odour monitoring of this activity has been carried out or if the area associated with this activity is accounted for in the odour emissions inventory.

Also, under the increase of waste disposal scenario, the sizes of active waste tipping and intermediate waste cover increase by factors of 3 and 10 respectively, but for waste experiencing leachate recirculation, the base-case and expansion scenarios use a constant area of 2 ha for the assessment. For effective waste management, it would be expected that with increase in waste area, the area exposed to leachate recirculation would also increase. This increased odour source should be factored into the odour assessment for the Proposal.

4. Specific Odour Emission Rates (SOER)

The SOER values cannot be verified based on the information provided. The proponent should provide all assumptions and raw data or sampling reports that have been used to derive the emission rates in Tables 10 and 11 of the AQIA to the DECCW for assessment. Furthermore, it is not clear if the modelling accounts for increases in SOER due to wet weather. This should be clarified and accounted for in odour modelling in respect to the Proposal.

5. Modelling of volume sources

The proposed AWT storage areas are presented in Table 12 of the AQIA as volume sources, but have been excluded as volume sources from the CALPUFF emissions input file. This should be included into the modelling of odour for the Proposal.

6. The odour emissions inventory for modelling of area sources is not clear

The CALPUFF emissions input file lists several area sources, most of which are discussed in the report, supported with their respective SOER values. However the origins and definitions of the area sources labelled WR3, WR2, WR4, WR4_2, WR5, and WR5_2 are not clear from the report. The compilation of the odour emissions inventory should list all sources modelled, including the assumptions used for each source, in order to clarify the origins and definitions of all area sources detailed in the Proposal.

DECCW recommends that prior to commencement of the Proposal, the Proponent develop and implement a program of odour reduction measures to manage the existing odour issues and address points 3 to 6 above. This could take the form of a condition in the project approval (see conditions 9 to 11 in Attachment B).

Noise

DECCW has reviewed the Noise Impact Assessment (NIA) in the Environmental Assessment – Woodlawn Expansion Project – Volume 1 – Main Report August 2010 prepared by URS and Appendix G, Noise Impact Assessment – Woodlawn Expansion Project, July 2010 prepared by Heggies Pty Ltd (NIA).

The Proposal relates to two sites: the Woodlawn Bioreactor and the Crisps Creek Intermodal Facility as depicted in Figure 2.1 in the EA. These facilities are some 5-6km apart. The NIA identifies nearest residential receivers to the Woodlawn Bioreactor as generally located to the west, while the most exposed receiver to the Crisps Creek Intermodal Facility is to the north.

DECCW's *NSW Industrial Noise Policy* ("INP") is the current whole of government guideline used to assess noise from industrial facilities. The INP allows for the establishment of 'project specific noise levels' that are essentially noise assessment criteria that should be sought to be achieved through the application of feasible and reasonable noise mitigation measures. In the case of the current project application, the PSNL is LAeq,15minutes (day,evening,night) 35dB(A), which represents the lowest intrusive criteria able to be derived from the INP.

Noise modelling undertaken by Heggies (EA, Appendix G) indicates that a level of 35dB(A) is able to be satisfied at residential receivers, other than a number of residences that are owned by Veolia, for each of the project areas. The geographical separation of the project areas, and location of non-Proponent owned residences suggests little likelihood of cumulative impacts from the Woodlawn Bioreactor and Crisps Creek Intermodal Facility. On this basis, noise from premises based activities (i.e. noise from activities within the defined project areas) would not appear to preclude approval of the project.

Cumulative Noise from the Woodlawn Eco-Precinct

Currently the "Woodlawn Eco-Precinct" ("WEP") supports the Woodlawn Bioreactor and the Crisps Creek Intermodal Facility activities. However, as indicated above, there are other currently approved, but not yet commenced activities including the AWT and Woodlawn Wind Farm. It is likely that a person, not associated with the (WEP), would associate activities on the site as a single entity. However, as there will be various planning approvals regulating the activities, each activity will have specific noise limits associated with it. Even if each activity is assigned the most stringent intrusive noise limit from the INP of 35dB(A), there is the potential for cumulative noise emissions from combined activities to exceed LAeq,15minutes 35dB(A), even if each activity is complying with its individual limit.

Therefore there is a need for cumulative noise impacts for current, approved and potentially proposed activities on the WEP to be considered. This may be difficult to achieve using planning instruments, or environment protection licences, that relate to distinct activities on the WEP.

DECCW recommends that DoP examine whether the current project application / approval could be used to apply a cumulative noise criteria to all activities on the Woodlawn Eco-Precinct, other than the wind farm, of LAeq,15minutes 35dB(A). This could possibly take the form of a condition in the project approval, or perhaps a Statement of Commitment (SoC) from the proponent to seek to ensure that all activities do not result in a noise level exceeding LAeq,15minutes 35dB(A) at residential receivers not owned by the proponent.

Road Transport Noise

The NIA has appropriately adopted road traffic noise assessment criteria from the former EPA publication, 'Environmental Criteria for Road Traffic Noise'. The criteria for 'arterial / sub arterial roads' (LAeq,15hours 60dB(A)) has been adopted for Bungendore Road and 'collector road' (LAeq,1hr 60dB(A)) for Collector Road. The NIA has assessed potential road traffic noise impacts for the townships of Tarago and Bungendore, and the nearest residential receivers for the route between the CCIMF and Woodlawn Bioreactor. The NIA states that the traffic volumes considered have taken into account movements associated with the Woodlawn Bioreactor, AWT, Regional Waste Modification (Goulburn, Palerang, Queanbeyan & Bega Councils) and Additional Regional Waste (Yass, Upper Lachlan, Eurobodalla and ACT).

The assessment has not been undertaken in accordance with the *Environmental Criteria for Road Traffic Noise* ("ECRTN") as it only presents the contribution noise from project related traffic, as opposed to total traffic noise, and the increase in existing traffic noise levels from the proposal. Additionally, the 1 hour predictions are based on average hourly movements whereas the ECRTN requires consideration of the highest tenth percentile hourly A-weighted Leq. Whilst the latter is not considered significant given that receivers on Collector Road are proponent owned, **it is recommended that both matters be raised with a view to the proponent addressing them in response to submissions.**

Additionally, the NIA has only considered daytime traffic noise impacts which are appropriate given the operating hours of the Crisps Creek Intermodal Facility. However, direct road transport of waste from surrounding councils, if arriving at the Woodlawn Bioreactor at 7am, may impact nearby residents during 'night time' which is from 10pm to 7am.

DECCW recommends that prior to commencement of any additional waste transport from local council areas to Woodlawn Bioreactor being undertaken, an assessment of night time road transport is undertaken, or measures adopted to ensure that night time road transport movements do not occur. This could take the form of a condition in the project approval (see condition No. 12 in Attachment B).

Rail Noise

It is noted that the NIA does not include an assessment of noise impacts associated with increase rail movements on the NSW Rail Network. DECCW notes that the DGRs did not require such an assessment, and as a consequence potential impacts associated with increased rail movements have not been assessed. However, the conditions of development consent (DA-31-12-99) currently allow the Crisps Creek Intermodal Facility to receive two trains a day, six days a week which what is proposed in the EA. The Crisps Creek Intermodal Facility currently receives one train movement a day.

Waste Avoidance and Resource recovery

Clause 123(a) of the *SEPP (Infrastructure) 2007* now requires assessment of proposals to determine whether there is a suitable level of recovery of waste so that the amount of waste is minimised before it is placed in the landfill.

DECCW notes that an AWT on the Woodlawn precinct is already approved (*Project Approval DA 06_0239*), but is yet to be constructed and no timetable for construction has been provided in the Proposal. While this aspect has been discussed in the EA, the Proposal doesn't clearly identify how the Proponent is currently addressing resource recovery at the Woodlawn Bioreactor or how this will be undertaken in the future.

In relation to the measures that would be appropriate for assessing how a proposal meets the 'suitable level of recovery' component of the *SEPP (Infrastructure) 2007*, DECCW notes that one of the key outcomes identified in the *Waste Avoidance and Resource Recovery Strategy 2007* is "increasing recovery and use of secondary materials" which provides resource recovery targets for various waste streams (see Table 2 below).

Table 2: NSW Waste Recovery Targets for 2014

WASTE STREAM	Recovery target
Municipal waste	66% recovery by 2014
C&I – commercial and industrial waste	63% recovery by 2014
C&D – construction and demolition waste	76% recovery by 2014

Should the Proposal be approved, DECCW notes that the volume of waste able to be received at Woodlawn would make up a significant proportion of the mixed municipal waste generated in the Sydney Region. Such an outcome could have an impact on landfill and AWT prices across Sydney, with possible adverse implications for levels of resource recovery.

DECCW recommends that prior to project approval, the Proponent must:

- a. Provide details of resource recovery associated with the Proposal in order to fulfil the requirements of the *SEPP (Infrastructure) 2007*, including how the Proposal is contributing to the NSW Waste recovery targets in a manner commensurate with its scale.**
- b. Provide an analysis of the economic impact of the Proposal on the gate prices of landfilling in the Greater Sydney Region and on resource recovery and resource recovery facilities in the Greater Sydney Region.**

Current Proposal and Existing Planning Approvals

The Proposal is for land on Lot 19 in DP827588, Lots 25, 30, 88 and 91 in DP754919 and Lot 1 DP 1045652 which is only a part of the same land identified in the previous planning consent for the Woodlawn Bioreactor DA No. 31-02-99 (issued 30 November 2000) being land on Lots 5-6 in DP830765, Lots 8-9 in DP534616, Lot 19 in DP827588, Lots 14, 25, 30, 70, 86, 88, 91, and 92 in DP754919, part of the land comprising Lot 10 in DP703260 and part of the land comprising Lot 3 in DP754894.

DECCW understands that the Project Approval DA 06_0239 relating to the approved AWT to the west of the Woodlawn Bioreactor is not proposed to be superseded by the Proposal. Additionally, Development Consent DA-250-10-2004-I provides for the development of a wind farm. Therefore there is likely to be a number of planning approvals relevant to activities being undertaken within the overall Woodlawn area (see Figure 2.1 in the EA).

There is a lack of detail as to whether the Proposal is to replace all previous planning approvals or will work in conjunction with the previous Woodlawn development consent (DA No. 31-02-99). The

original development consent for the Woodlawn Bioreactor has conditions pertaining to many aspects of the original concept for Woodlawn including requirements for flora and fauna (condition No. 153) and rehabilitation of the site and tailings dams (conditions 20, 21 and 22).

DECCW recommends that the issue of which development consents will continue and on what lands needs to be clarified by the Proponent. If the original development consent (DA No. 31-02-99) is to be replaced by the Proposal, prior to project approval, the following be undertaken:

- **a review and assessment of the Proponents compliance with consent conditions in development consent (DA No. 31-02-99); and**
- **a plan be prepared with timetable of actions to ensure the Proponent is in compliance with consent conditions in development consent (DA No. 31-02-99).**

ATTACHMENT B

Review of Environmental Assessment for Woodlawn Expansion Project Veolia Environmental Services - Project No. 10_0012

RECOMMENDED CONDITIONS IF APPROVED

Administrative conditions

The applicant must apply for a variation for environment protection licence No. 11436 for Woodlawn Bioreactor and No. 11455 for the Crisps Creek Intermodal Facility and receive approval from DECCW prior to commencing the activities outlined in the Proposal.

Waste in excess of the current approval must not be received and/or disposed of at the premises until DECCW has approved the variation of the environment protection licence which includes those activities outlined in the Proposal.

Noise limits

1. Noise generated at the Woodlawn Bioreactor premises¹ and Crisps Creek Intermodal Facility premises¹ in concert must not exceed the noise limits presented in the table below. The locations referred to in the table below are identified in Woodlawn Expansion Project, Environmental Assessment dated 9th August 2010, or except as otherwise noted in the table below.

		NOISE LIMITS dB(A)			
Locality	Location	Day	Evening	Night	
		L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)
All	Torokina	35	35	35	45
	Willeroo	35	35	35	45
	Bernallah	35	35	35	45
	Chinnery	35	35	35	45
	Any other residential premises not nominated above, existing at the time of project approval	35	35	35	45

1. As identified in Woodlawn Expansion Project, Environmental Assessment dated 9th August 2010, Figure 2.1.

2. For the purpose of condition 1;
 - Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holiday's.
 - Evening is defined as the period 6pm to 10pm.
 - Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holiday's.
3. The noise limits set out in condition 1 apply under all meteorological conditions except for any one of the following:
 - a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
 - b) Temperature inversion conditions up to 3°C/100m and wind speeds greater than 2 metres/second at 10 metres above ground level; or

c) Temperature inversion conditions greater than 3°C/100m.

4. For the purposes of determining the noise generated at the premises:

a) Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing, must be used;

b) The noise monitoring equipment used at a location must be placed in a position:

i. that is, where applicable:

- approximately on a location's property boundary that is closest to the premises, where any dwelling at the location is within 30 metres of the location's property boundary that is closest to the premises; or
- within 30 metre of a dwelling façade, but not closer than 3m, where any dwelling at a location is situated more than 30 metres from the location's property boundary that is closest to the premises; or

to determine compliance with the $L_{eq(15 \text{ minute})}$ noise limits in condition 1; or

ii. that is within 1 metre of a dwelling façade at a location to determine compliance with the $L_{A1(1 \text{ minute})}$ noise limits in condition 1; and

iii. that is:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by conditions 4(b)(i) or 4(b)(ii).

5. An exceedance will still occur where noise generated from the premises in excess of the appropriate limit specified in the condition 1 is detected:

- in an area at a location other than an area prescribed by conditions L6.5(b)(i) or 4(b)(ii); and/or
- at a point other than the most affected point at a location.

6. For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment

Air emissions

7. At least 6 months before commencing the Proposal, the proponent must submit an Air Emissions Report that provides:

- a) an assessment of the Landfill Gas Engines (LGEs) emissions against the requirements of the *POEO (Clean Air) Regulation 2010*;
- b) manufacturer's specifications for the LGEs;
- c) measures that would be taken to ensure that the facility will comply with the emission limit requirements of the *POEO (Clean Air) Regulation 2010*; and
- d) Clarification of points 1 and 2 outlined in Attachment A and, if necessary, revise the air modelling impact assessment for submission to the DECCW for review.

Odour management

8. There shall be no offensive odour emitted from the premises, in accordance with Section 129 of the *Protection of the Environment Operations Act 1997* ("the POEO Act"), nor emissions to the atmosphere from the landfill that may adversely affect the health or amenity of the community.
9. Prior to commencement of the Proposal, the proponent must provide details to account for the following aspects of the odour modelling presented in the Environmental Assessment for the Proposal and submit, to the DECCW, a remodelled AQIA to account for the issues detailed in points a) to c) below:
 - a) **Waste experiencing leachate recirculation**
Waste experiencing leachate recirculation has not been included as an odour source in Table 11 of the air quality impact assessment (AQIA). The Proponent must clarify if odour monitoring of this activity has been carried out or if the area associated with this activity is accounted for in the odour emissions inventory.
 - b) **Specific Odour Emission Rates (SOER)**
The SOER values cannot be verified based on the information provided in the AQIA. The Proponent should provide all assumptions and raw data or sampling reports that have been used to derive the emission rates in Tables 10 and 11 of the AQIA. Further, it is not clear if the modelling accounts for increases in SOER due to wet weather. The Proponent must clarify if the air modelling accounts for increases in SOER due to wet weather.
 - c) **Modelling of volume sources**
The proposed AWT storage areas are presented in Table 12 of the AQIA as volume sources, but have been excluded as volume sources from the CALPUFF emissions input file. The Proponent must clarify if the AWT storage areas were excluded from the CALPUFF emission input file.
10. Prior to commencement of the Proposal, the proponent must develop and implement an Odour Remediation Plan at the Woodlawn Bioreactor facility in consultation with DECCW. This is to be achieved in two stages, as outlined below.

Stage 1 – Development of Odour Remediation Plan

At least 6 months prior to commencement of the Proposal, the proponent must develop and submit to DECCW a report that details items (a) – (e) set out below, to enable the development of an Odour Remediation Plan.

In developing the Odour Remediation Plan, the proponent must:

- a) identify based on existing source emissions sampling and modelling analysis data, the major sources of odours from the Woodlawn Bioreactor facility. This analysis must consider wet weather conditions and all raw sampling data used in this analysis must be provided;
- b) identify current management practices at the Woodlawn Bioreactor facility that may be contributing to the odour problems. This analysis should include, but not limited be to, the following sources:
 - i. All liquid storage areas
 - ii. Active fresh waste tipping areas
 - iii. Intermediate waste cover areas
 - iv. Aged waste areas
 - v. The recirculation of leachate onto waste in the void

- c) investigate if there is a need to install a site specific meteorological station or whether an existing site representative meteorological station can be used to assist in verifying complaints;
- d) conduct an odour mitigation study that reviews all practicable odour mitigation options for the major sources of odour identified in (a) and (b). The study must include a cost/benefit analysis of all practicable options that may be implemented at the Woodlawn Bioreactor facility;
- e) using the above results, identify management practices for the odour mitigation options in conjunction with the DECCW that would ensure compliance with s129 of the POEO Act.

Stage 2 – Implementation of Odour Remediation Plan

11. Prior to commencement of the Proposal, the proponent must undertake all the actions identified in point e) above within an agreed timeframe established in conjunction with DECCW.

Operating hours

NOTE: The Proposal details Woodlawn Bioreactor starting operations at 6am Monday to Saturday. The NIA has only considered daytime traffic noise impacts, with 'daytime' being 7am to 6pm on Monday to Saturday. This is appropriate given the operating hours of the Crisps Creek Intermodal Facility and that the residences between it and Woodlawn Bioreactor are all proponent owned. However, as Woodlawn Bioreactor is proposed to open at 6am Monday to Saturday, the direct road transport of waste from surrounding councils to Woodlawn Bioreactor before 7am, may impact nearby residents during the 'night time'.

12. DECCW recommends that prior to commencement of any additional waste transport to Woodlawn Bioreactor being undertaken from local councils, an assessment of night time road transport is undertaken in relation to the transport of waste from local council areas, or measures adopted to ensure that night time road transport movements do not occur. Otherwise DECCW recommends that the approved operating hours for the Woodlawn Bioreactor and the Crisps Creek Intermodal Facility should be consistent with the hours detailed in the Proposal.

'Night time' is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.