



ASSESSMENT REPORT

Section 75W Modification

Teys Australia Beef Abattoir, Bomen, Wagga Wagga (DA 220-07-2002-i MOD 7) Biofilter Replacement

1. BACKGROUND

This report is an assessment of a request to modify the Development Consent for the Teys Australia (formerly Cargill) beef abattoir (DA 220-07-2002-i). The request has been lodged by Teys Australia Southern Property Pty Ltd (the Proponent), pursuant to section 75W of the *Environmental Planning and Assessment Act 1979* (the EP&A Act). The request seeks to construct a new biofilter to manage air emissions from the abattoir and demolish the existing biofilter on the site.

2. SUBJECT SITE

The site is located in the Bomen Business Park, within the suburb of Bomen, in the Wagga Wagga Local Government Area (LGA) (**Figure 1**). Surrounding land uses include industrial operations including a waste oil refinery, bulk fuel depot and the Wagga Wagga livestock marketing centre.

The site is irregular in shape and is approximately 115.8 hectares in area. Bomen Road bound the site to the north, Dampier Street, the Main Southern railway and rural residential properties are to the east and the city of Wagga Wagga is located approximately five kilometres to the south. Unaffiliated rural residential properties and the recently partially rezoned area of Cartwrights Hill are to the west. The site is legally described as lots 1, 2 and 4 in DP 700113, Lot 6 in DP 614169, Lot 11 in DP 814225, Lot 1 in DP 840624 and Lot 1 in DP 823346.

The Bomen abattoir was established in around 1947-50 to process cattle into finished beef products for domestic consumption and for export. The site currently operates under a Ministerial consent that permits the abattoir to process up to 1,600 head of cattle per day. The site currently operates below this limit and processes approximately 1,275 head of cattle per day.

Teys Australia currently operates the site. Teys Australia is a 50/50 partnership between the Teys Family and Cargill Foods Australia Pty Ltd which has owned the facility since 1991.

The site is zoned IN1 General Industrial under the *Wagga Wagga Local Environmental Plan 2010* (LEP). The existing and proposed modifications to the abattoir are classified as a livestock processing industry, which is permissible as an innominate use under the IN1 General Industrial zone of the LEP.

The proposed new biofilter would be located adjacent to the existing biofilter on Lot 1 in DP840624 (**Figure 2**).

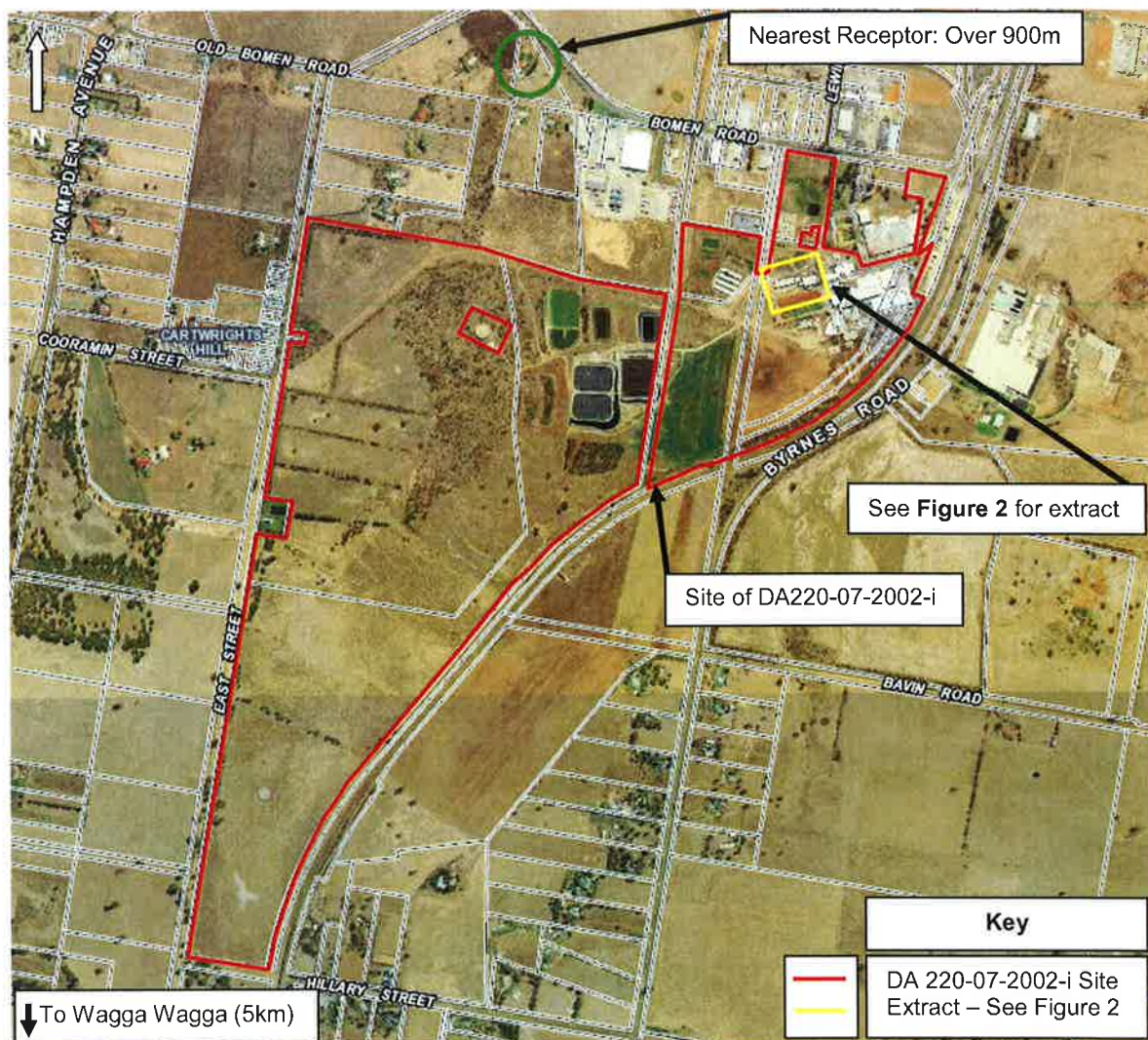


Figure 1: Site Context

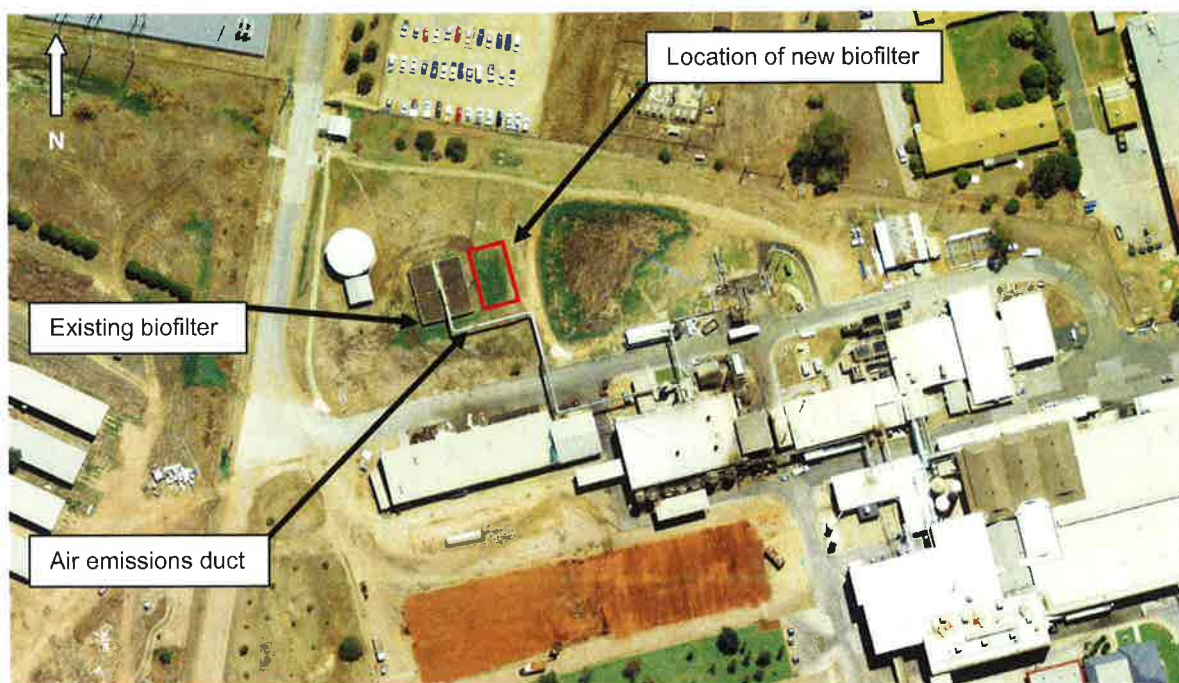


Figure 2: Existing Biofilter and location of new Biofilter

3. PROPOSED MODIFICATION AND JUSTIFICATION

On 26 October 2015, the Proponent lodged a modification request and an Environmental Assessment (EA) with the Department of Planning and Environment (the Department) seeking to modify the existing consent to:

- construct and operate a new biofilter; and
- demolish the existing biofilter on the site.

The Proponent has advised that the reinforced concrete blocks that the existing biofilter is built from have corroded beyond repair and a replacement is required to provide a reliable method of odour reduction from abattoir air emissions. The Proponent has also advised that construction of the biofilter would take approximately four weeks with construction traffic accessing the site from the northwest gate off Bomen Road. The proposed biofilter design is shown in **Figure 3** below.



Figure 3: Example of a biofilter of similar design proposed at the Tey's Abattoir (Source: EA)

4. STATUTORY CONTEXT

4.1 Modification of Minister's Consent

Under Clause 8J(8)(b) of the *Environmental Planning and Assessment Regulation 2000*, a development consent granted by the Minister for Planning under *State Environmental Planning Policy No 34 – Major Employment Generating Development* is to be modified under section 75W of the EP&A Act.

The Department is satisfied that the proposed changes to the biofilter arrangement on-site constitute a modification to the original development consent and are within the scope of section 75W of the EP&A Act as:

- the primary function and purpose of the approved development would not change as a result of the proposed modification; and
- the environmental impacts associated with the development remain unchanged with those previously assessed, and can be appropriately managed through the existing or modified conditions of approval.

Accordingly, the Department considers that the modification request can be assessed and determined under section 75W of the EP&A Act.

4.2 Approval Authority

On 16 February 2015, the then Minister for Planning delegated responsibility for the determination of section 75W modification requests to Managers and Directors who report to the Executive Director, Key Sites and Industry Assessments where:

- the relevant local Council has not made an objection; and
- a political donation disclosure statement has not been made; and
- there are no public submissions in the nature of objections.

The modification request complies with the terms of the delegation as Wagga Wagga City Council (Council) raised no objection, a political donation disclosure has not been made and no public submissions by way of objection were received. Therefore, the Director, Industry Assessments may determine the modification request under the Instrument of Delegation.

4.3 Consultation

The modification request was made publicly available on the Department's website on 29 October 2015. Given the minor nature of the modification request, it was not exhibited by any other means.

Notwithstanding, the Department invited comment from Council and the Environment Protection Authority (EPA). The comments received are summarised below. No public submissions were received.

Council raised no objection to the modification request and requested that a condition of consent be included requiring that any waste from the proposed works is disposed of in a legal manner at a licensed waste facility. Council also noted that the Proponent intends to operate the existing fans at a higher speed and requested that the operation shall not cause any additional impacts to off-site receptors.

EPA raised no objection to the modification request and noted that it supports the request subject to the implementation of the measures outlined in the EA. The EPA also noted that the current Environment Protection Licence (EPL) conditions are sufficient to regulate the proposed activity and no additional conditions under the EPL are proposed.

5. ASSESSMENT

The Department has considered the following in its assessment of the modification request:

- the EA, revised plans and amended stormwater management plan provided to support the proposed modification (**Appendix B**);
- all submissions received by the Department (**Appendix C**); and
- previous assessment reports for the original development application and previous modifications.

Based on the above, the Department considers the key issue for assessment is odour. Other minor issues are assessed in **Table 1** within this report.

5.1 Odour

Odour emissions have been an ongoing issue for the abattoir facility as a whole. The main odour emitting sources include the rendering plant roof vents and wastewater treatment. Previous modifications to the project sought to address odour impacts from the facility's wastewater system.

The modification seeks approval to construct a new biofilter on-site to facilitate the ongoing management of air emissions from the operation of the abattoir and demolish the existing biofilter after commissioning the new biofilter. As discussed in **Section 3** above, the structure of the existing biofilter is beginning to corrode and is required to be replaced.

The existing biofilter receives air emissions via an integrated capture system from the:

- blood dryer;
- rotary screen;
- tallow boiling vent, tallow polisher and tallow tanks;
- fugitive condenser.

The existing biofilter has a surface area of 288 m², a filter depth of 1.4 m and a loading rate of 122 m³/m²/h. The existing biofilter was designed with a flow capacity of 35,000 m³/h.

The proposed biofilter would receive the same air emissions collected by the capture system by realigning the existing ventilation duct from the rendering plant building.

The proposed biofilter consists of three open front cells with an active surface area of 246 m² (excluding batters), a filter medium depth of 1.8 m and a loading rate of 180 m³/m²/h. While the surface area of the proposed biofilter is 42 m² less than the existing biofilter, the proposed design has a loading rate 58 m³/m²/h greater than the existing biofilter. The proposed biofilter would also have an improved design capacity of 44,300 m³/h, an increase of 9,300 m³/h over the current biofilter.

As a result of the increased treatment capacity of the proposed biofilter, the Proponent intends to operate the fans in the odour treatment system at a higher rate to improve odour capture from the rendering building and therefore treat a higher volume of air emissions. The Proponent has advised that the existing humidifier scrubber unit has adequate capacity to handle any increase in airflow and would result in improved cooling of the biofilter. The proposed biofilter would also be fitted with an overhead water drip system that would complement the existing humidifier and provide additional moisture on the filter medium during warmer weather.

Following the installation of the new biofilter, the Proponent has advised that a few days are required to allow the micro-organisms responsible for treating air emissions to develop on the filter medium. This may result in increased odours being emitted from the site during the changeover process. The Proponent has advised that initial odour removal during the start-up of the new biofilter would be 50-80% increasing up to 95-100% after a few weeks.

The Department notes that existing conditions of consent require the abattoir to meet a project specific odour performance criterion of 4 OU/m³ and the offensive odour provisions under s129 of the *Protection of the Environment Operations Act 1997*. Existing condition 7.4f) requires the preparation and implementation of an odour management plan as part of the current Operation Environmental Management Plan.

Instead of providing odour modelling of the proposed new biofilter to demonstrate the anticipated odour impacts, the Proponent provided dispersion modelling undertaken in 2013. The Proponent commissioned The Odour Unit Pty Ltd to undertake this dispersion modelling, which addressed all abattoir odour emission sources under prevailing atmospheric conditions, including the existing biofilter (**Figure 4**). This modelling included the odour impacts of the existing biofilter and concluded that:

- when considering all odour emission sources, the operation complied with the project specific 4 OU limit at the nearest residence (white contour); and
- the existing biofilter contributed the least to the cumulative odour emissions of the abattoir (green contour).

As the existing biofilter is a minor contributing factor to the cumulative odour emissions at the abattoir, it is anticipated that the proposed biofilter, under proper operation, will equal or better the odour outcomes at the site.

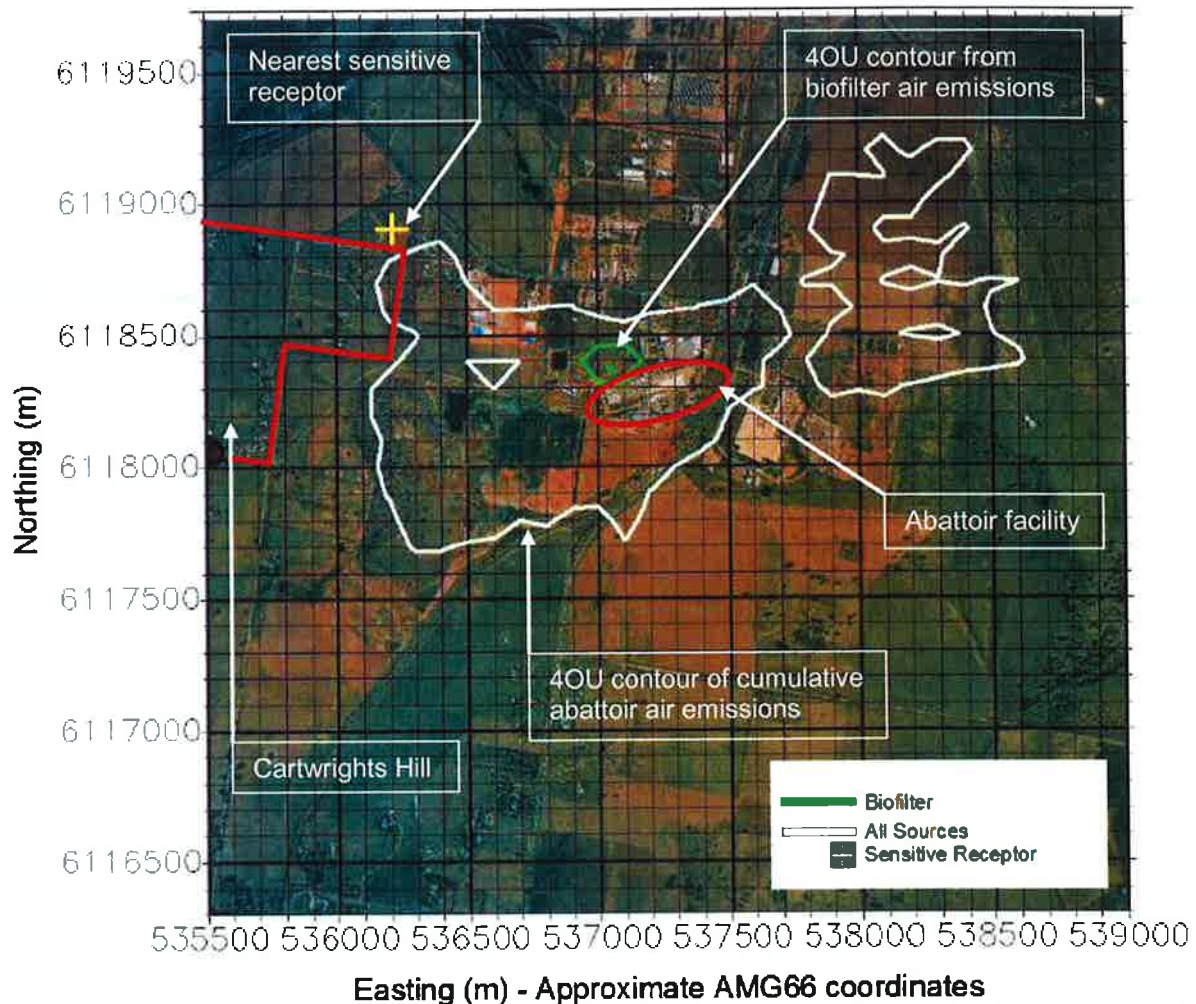


Figure 4: Odour emissions from key sources at 99th percentile frequency based on 2013 modelling (Source: EA)

*Note: The green boundary represents a reading of 4 OU from biofilter air emissions while the white boundary represents 4 OU from the cumulative air emissions from the abattoir.

Council raised no objection regarding odour impacts from the proposed biofilter, however it raised concern regarding other aspects of the modification, which are addressed in **Table 1** overleaf.

The EPA raised no objection to the modification request and noted that it is able to support the proposal subject to the implementation of the measures outlined in the EA.

Given that the existing biofilter is beginning to indicate structural failure, the Department is satisfied that it needs to be replaced and that the proposed biofilter would provide a reliable, ongoing method to manage the captured air emissions from the abattoir.

With respect to the potential odour impacts that may occur during the start-up of the new biofilter, the Department considers that these potential impacts are acceptable given that they would be short-term in nature and in light of the need to maintain a reliable, long term odour management measure as part of the overall abattoir operation.

The Department is satisfied that the existing odour management plan as required by Condition 7.4 provides sufficient measures to identify, manage and monitor odour impacts. Notwithstanding, to ensure that the proposed biofilter achieves the performance criterion established under DA 220-07-2002-i, the Department has recommended a new condition (Condition 7.6) requiring the Proponent to undertake an odour assessment to verify the

odour performance of the replacement biofilter once it is operating under normal operational circumstances and address any issues identified. The Department has also recommended a second new condition (Condition 7.5) requiring the Proponent to notify nearby residents a minimum of five days prior to the commissioning of the new biofilter and the diversion of air emissions for treatment.

Overall, the Department is satisfied that odour impacts are acceptable and can be appropriately managed through the recommended and existing conditions.

Table 1: Assessment of Other Issues

Issue	Consideration	Recommended Conditions
<i>Air Quality – Particulate Matter</i>	<ul style="list-style-type: none"> • Demolition and construction works and associated equipment will emit gaseous and particle emissions during construction and demolition. • Existing conditions of consent that includes a dust management plan currently manage dust and particulate emission impacts at the abattoir. • Dust emissions will be negligible as the modification site is confined to a small area within the overall site and construction and demolition works would occur over a short period of time (approximately four weeks). • The EPA raised no objection to the modification request and no concerns regarding particulate emissions. • Therefore, the Department considers that no additional adverse air quality impacts in excess of that previously assessed will occur as a result of the modification request. • The Department's assessment concludes that existing conditions of consent are capable of managing dust and particulate emissions from the modification request. 	<ul style="list-style-type: none"> • Manage through existing conditions of consent.
<i>Stormwater Management</i>	<ul style="list-style-type: none"> • Existing conditions and management measures are in place to manage stormwater on-site. • The area of proposed works is located within an existing stormwater catchment on-site, which is connected to a first-flush stormwater management system which receives stormwater for the overall stormwater management system on-site. • As with the existing biofilter, the proposed biofilter would be open to rainfall and would allow water to pass through the filter medium into drains which would convey water into the existing stormwater management system. • The concrete pad of the existing biofilter is proposed to be retained to be used as a maintenance area for the proposed biofilter and would remain connected to the existing stormwater system. This would result in a small increase in hardstand areas, relative to the area of the site. • Notwithstanding, the Department considers that the existing stormwater management system can handle the minor increase in stormwater run-off from the retained hardstand. • The Department's assessment concludes that stormwater impacts from the modification are negligible and can be managed through the existing conditions of consent. 	<ul style="list-style-type: none"> • Manage through existing conditions of consent.
<i>Traffic and transport</i>	<ul style="list-style-type: none"> • Construction traffic consisting of heavy and oversized vehicles would enter the site via the existing access to the west of the modification area, off Bomen Road. This access is currently used for livestock deliveries and dispatch of finished beef products. • The Proponent has advised that construction traffic would average less than one movement per day over the estimated 	<ul style="list-style-type: none"> • Manage through existing conditions of consent.

	<p>four week construction period.</p> <ul style="list-style-type: none"> • Approximately 28 heavy vehicles currently access the site from the proposed construction access per day from Monday to Friday during normal site operations. • No changes to operational traffic from the proposed biofilter are anticipated. • The Department notes that existing conditions of consent and management measures are in place to manage construction and operational traffic at the abattoir and the regional road network and that the proposed construction access can accommodate construction traffic for the duration of the proposed works (approximately four weeks). • The Department's assessment concludes that the proposed works would have negligible impacts on the existing traffic volumes on-site and along the local road network, and that construction traffic can be adequately managed through the existing conditions of consent. 	
Solid waste	<ul style="list-style-type: none"> • The Proponent has advised that the only solid waste from the proposed biofilter would be the replacement of 440m³ of woodchip filter medium every three to five years. This would be disposed of via landfill or reused as erosion control at a local quarry. • Construction waste would also be disposed of via landfill. • Demolition waste from the existing biofilter would be disposed of or recycled at a local quarry or recycling centre. • Council requested that woodchip waste from the biofilter is disposed of at a licensed facility, or if it is proposed for reuse, that the material be tested and classified to determine it is suitable for its intended use. • The disposal of the filter medium has been undertaken for the existing biofilter under conditions 5.29 to 5.32 and managed under the Waste Management Plan required under existing condition 7.4f). This waste stream is classified as General Waste (Non - Putrescible) Wood Waste under the <i>Waste Classification Guidelines, DECC 2009</i>. • The EPA raised no issues with the proposed solid waste management measures. • The Department is satisfied that existing conditions and management measures are capable of managing the construction, demolition and operational waste arising from the modification request. • The Department's assessment concludes that solid waste from the operation of the proposed biofilter can be adequately managed through existing conditions of consent. 	<ul style="list-style-type: none"> • Manage through existing conditions of consent and Waste Management Plan.
Noise	<ul style="list-style-type: none"> • The EA was supported by noise monitoring previously undertaken in 2006 and 2007. • Noise is expected from the demolition of the existing biofilter and construction of the proposed biofilter. However, these activities are expected to occur over a relatively short time frame, within an anticipated construction period of four weeks. • The nearest residential receptor to the site of the proposed works is over 900 metres to the west (Figure 1). • The loudest piece of noise generating construction equipment would emit 43 dB(A) at 1,000 metres from the emission source. This noise level complies with the <i>DECC Interim Construction Noise Guideline 2009</i>. • Operational noise would originate from the new biofilter and potentially the operation of extractor fans at an increased flow rate. 	<ul style="list-style-type: none"> • Manage through existing conditions of consent.

	<ul style="list-style-type: none"> • The region surrounding the site has several sources of road and rail traffic noise including Byrnes Road, Olympic Highway and the Main Southern Railway. • Council raised concern regarding the operational noise from operating the abattoirs extraction fan at a higher speed. • The Proponent has advised that the extraction fan would generate 82 dB(A) at maximum running speed and 70 dB(A) at normal speed when measured at the fan location. • Operational noise from the proposed biofilter at the nearest receptor would be approximately 22 dB(A) and would be further mitigated by the existing sources of road traffic and rail noise and the local topography. • The Department's assessment concludes that any noise impacts of the proposed works and operation of the proposed biofilter would be negligible and can be managed by existing conditions of consent. 	
<i>Erosion and Sediment Control</i>	<ul style="list-style-type: none"> • Existing conditions of approval address construction and operational erosion and sediment control. • The proposed biofilter is located in a flat, existing catchment of approximately 4,000 m², adjacent to the existing save-all stormwater management system. • Excavation for the proposed biofilter would be less than one metre deep and existing kerbs and guttering exists along the internal site roads that would prevent the ingress of any water flows onto the biofilter site. • Construction would take place over a short period of time, approximately four weeks, and the probability of a significant storm event would be low. • The Department considers that existing conditions of consent are capable of adequately managing any potential erosion and sedimentation impacts as a result of the minor excavation and demolition works of the modification request. 	<ul style="list-style-type: none"> • Manage through existing conditions.
<i>Visual Impact</i>	<ul style="list-style-type: none"> • The Department is satisfied that the visual impacts of the proposed modifications would be minor given that the proposed biofilter has a profile of 1.8 metres, which is lower than existing abattoir structures' is located within the development site; and would be shielded by existing buildings and trees on-site. • The Department's assessment concludes that the visual impacts of the proposed works are negligible and can be managed through existing conditions of consent. 	<ul style="list-style-type: none"> • Manage through existing conditions of consent.

6. CONCLUSION

The Department has assessed the modification request and considered the submissions received from Council and the EPA. The modification request seeks to construct a new biofilter with an updated design to manage and treat air emissions from abattoir operations.

The proposed biofilter incorporates an improved design with a greater treatment capacity and would facilitate easier replacement of the woodchip biofilter medium every three to five years. Furthermore, the addition of a water drip system would allow the filter medium to be kept moist during warmer weather, improving odour treatment throughout the year.

While it is anticipated that an increase in odour emissions will occur whilst the micro-organisms in the new biofilter mature, these impacts would be short term in nature. Emissions from the proposed biofilter would fall to operational levels after a few weeks of commissioning of the new biofilter.

The Department is satisfied that as construction and demolition works would occur over a short period of time of approximately four weeks, impacts from the proposed works would be negligible and would be managed by existing conditions of consent.


On this basis, the Department's assessment concludes that the short term increase in odour impacts are acceptable as the new biofilter will provide an improved, reliable, long term method for the treatment of odorous emissions from the abattoir. The Department's assessment also concludes that with the exception of verification of the odour performance of the proposed biofilter, the existing conditions of consent are capable of managing construction and demolition works and that they will not produce any additional adverse impacts to environmental or residential amenity.

7. RECOMMENDATION

Under delegation of the Minister for Planning, it is recommended that the Director, Industry Assessments:

- **consider** the findings of this report;
- **approve** DA 220-07-2002-i MOD 7 under section 75W of the *Environmental Planning and Assessment Act 1979* by;
- **signing** the Instrument of Modification at **Appendix A**.

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