Your reference :
Our reference : EF14/22877; DOC15/112609-01
Contact : Mr Allan Adams; (02) 6332 7610

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27 May 2015

Dear Mr Byrne

EPA review of EIS Small Stock Abattoir and continued operation for Blayney SeaLink Cold Store Complex (SSD 6594)

I refer to your letter dated 7 April 2015 inviting the Environment Protection Authority (EPA) to comment on the Environmental Impact Statement (EIS) for the proposed Blayney Export Meats Small Stock Abattoir and continued operation for Blayney SeaLink Cold Store Complex (SSD 6594), at 137 Newbridge Road, Blayney, including advice on recommended conditions of consent. The Environment Protection Authority (EPA) has completed its review of the EIS and provides the following comments.

ODOUR

Odour modelling

The EPA was first notified of the proposed development on 13 February 2014; at this time the EPA provided key advice to the proponent to ensure any modelling of odours utilised goat specific odour data. On 1 October 2014, the EPA attended and provided comments at a planning focus meeting that the preliminary odour impact assessment utilised cattle and sheep odour data to predict the odour impacts. During October 2014, the EPA was in contact with the consultants (SLR) regarding the sampling of goat specific odour and confirming the use of the Australian Standard [AS/NZS 4323.3:2001 (OM-7)] was required to be used for stationary source emissions. On 10 December 2014 the EPA concluded the review of the draft EIS and provided comments to the Department of Planning and Environment (DPE) that the revised modelling using goat specific odour data was not correctly estimated and likely leading to an underestimation of impacts on the surrounding environment. The final EIS has included a revised odour criterion.

The Air Quality Impact Assessment (AQIA) has been carried out generally in accordance with EPA guidance in "Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales". It presents a level 2 assessment of emissions requiring worst case input data (rather than site-specific data) as defined in the EPA's guidance material – *Technical framework: Assessment and management of odour from stationary sources in NSW (November 2006)*. However, further information and clarification is needed regarding estimation of odour from the holding pen.

A review of the AQIA has determined that insufficient detail has been provided regarding the procedure to generate odour emissions from the observations. From the EPA's technical review of the odour sampling and modelling there is uncertainty over the calculation used to determine the odour fluxes. The substantial difference (more than forty times) in flux when calculated for the outdoor pen as compared to the shed

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show that either the method should not be used or the data are incorrect. The EPA therefore requests that additional information be provided regarding the calculation of odour concentration for use in the dispersion modelling and a justification for any choice of odour concentration data used in the event the odour concentrations are substantially different and the lower odour concentration data is chosen.

The EPA also notes that the proposal to exchange the air in the shed every four hours is a low ventilation rate, reflecting the relatively low exit velocity for the stack.

Additionally the proponent must demonstrate an understanding of the odour risk of their facility, including additional feasible odour mitigation measures that could be implemented should odour impacts occur should the abattoir be approved and become operational.

- Detail of the odour modelling review is provided in Attachment 1.

ODOUR ASSESSMENT

In response to the requirement to review the draft and publicly exhibited EIS the EPA undertook several field assessments on goat holding and processing facilities. This work was carried out in north-western NSW and Queensland between Friday 21 – Monday 24 November 2014 and Sunday 3 May – Thursday 7 May 2015. The EPA undertook these odour assessments to better understand goat odour in order to review the EIS with the benefit of some practical experience in the field.

The EPA would like to highlight that the two odour surveys of a goat abattoir in Queensland were unannounced and no contact was made with the operator until they were completed.

The odour surveys were completed by two (2) EPA Authorised Officers. The odour was assessed by referring to the VDI 3882 Odour Intensity Categories – seven-point intensity scale (VD 3882–2: 1994 Olfactometry; Determination of Odour Intensity). The odour intensities observed during each survey were categorised as qualitative intensity levels according to the standard. The odour was also assessed with reference to Section 129 of the *Protection of the Environment Operations Act 1997* – Emission of odours from premises licensed for scheduled activities. As such, odours were ranked as *offensive* or not as per Section 129.

During the field surveys time was devoted to characterising and understanding the odour generated by goats and the odours associated with goat livestock holding and processing facilities. A key priority of the field surveys was to isolate and characterise the various odour streams associated with goats. Being able to differentiate between the odour from goats themselves, treatment ponds and manure would ensure certainty when ranking the intensity levels in the field and utilising the data to assess a modern goat processing facility minus a rendering facility, treatment ponds, manure stockpiles, or death pits etc. At the conclusion of odour surveys, the owner/manager was contacted to discuss the livestock holding / processing facility and to carry out a detailed inspection of the site to document each odour source.

The following key outcomes from the field assessment are listed below:

- Offensive odour from approximately 200 wild / rangeland goats was detected at 120 metres (m) downwind from holding facilities;

- Offensive odour was detected on two occasions at 500 m downwind from a goat holding and processing facility, it was established after the assessment that 2,500 to 3,000 wild / rangeland goats were present at the facility

- There appears to be a correlation between the amount of goats held and the distance offensive odour can be detected from a location;
- Offensive odour from approximately 2,500 to 3,000 wild / rangeland goats was unable to be detected at a distance of 1 Kilometre (Km) due to landscape access constraints; and,
- Wild and rangeland goats themselves have an inherent "offensive" odour.

NOISE

The noise assessment for the proposed abattoir and truck movements to and from the abattoir has been completed in accordance with the Industrial Noise Policy (INP) and road traffic guidelines. The project specific noise limit and the modelling of noise appear to be based on data and assumptions that seem reasonable, based on a desk top review only.

In the adequacy review, the EPA required (1) clarification on the repeatability of the road traffic noise levels in Table 32, which seemed low; (2) clarification on the combination of meteorological conditions put into CONCAWE prediction model to obtain G Class Stability conditions; and (3) confirmation from animal welfare agencies that animals delivered at night can remain on trucks or include unloading noise during the night-time period. The EPA notes that the same predicted road traffic noise levels as the draft EIS are presented in the final. The final EIS contains a new table that clarifies the combination of meteorological conditions used in the CONCAWE model: essentially equivalent to F stability category and 2 m per second wind. No confirmation was provided that animals delivered at night would remain on trucks until 6am.

Q-FEVER

The EPA identified the risk of Q-fever from the bacterial pathogen (*Coxiella burnetii*) due to goats in particular being known to carry *C. burnetii*. The EPA identified the risk of *C. burnetii* spreading via goat hair due to the known propensity for goats to shed quantities of hair, particularly in times of stress, i.e., during transport and yard work. During the field assessments of goat odour, the EPA officers observed large quantities of goat hair lining the floor of livestock trucks following transport of goats to the abattoir. The bacteria can be spread via urine, faeces, milk, birth fluids and placenta. Ticks can also carry and spread the bacteria via faeces and infected tick faeces deposited on goat hair can remain viable for approximately 2-years (EPA reference O-Neill J., (1997). Q-fever Information Kit for the Australian Meat Industry (*Meat and Livestock Australia* 4–7).

The EPA is aware that the final EIS was referred to NSW Health for comment. The EPA previously recommended the issue of Q-fever be addressed and resolved to the satisfaction of NSW Health. As such, the DPE needs to be guided by NSW Health as to whether the risk of Q-fever has been adequately addressed.

With regards to the biological treatment of effluent (p.37) a membrane bioreactor is proposed to treat the wastewater. The pore size of the membrane filtration fibres will be 0.1 microns to capture the small cell variant of *C. burnetii* (at 0.2-0.4 microns in diameter) to ensure the bacteria does not pass through the fibre wall and into the filtrate. The EIS proposes to discharge the waste sludge to a licensed landfill facility. The EPA is currently in communication with the Department of Primary Industries (DPI) to assess the risk and determine a management procedure for the waste sludge likely to be enriched with Q-fever bacteria.

ALTERNATIVE LOCATION/S

The proximity of the proposed abattoir to the township of Blayney is of concern and the EPA is of the view the EIS does not adequately address alternative locations.

The EPA acknowledges the benefits to the proponent of the proposed location of the abattoir to the proponents existing freezer facility with the desired export accreditation, as well as access to the new Cadia Valley Operations (CVO) pipeline to dispose of treated wastewater.

However, the EPA is of the view that issues of odour, noise and the risk of Q-fever from goats both at the abattoir and from the transport of goats through town are all genuine risks associated with the abattoir based on the proposed location.

In the review of the draft EIS the EPA requested that alternative locations be explored. The EPA acknowledges the proponents proposal to dispose of wastewater via the CVO pipeline. However, the EIS states that due to engineering constraints, this can only occur at the start of the pipeline. The EPA is not satisfied that due to differential pressure along the pipeline the option is eliminated. The EPA therefore requests a more detailed investigation to explore all engineering options to utilise a valve system etc. that allows a junction to be installed in the CVO pipe to allow for water from a secondary pipe to flow into the CVO pipe.

With regards to availability of freezer storage, the EPA acknowledges that being able to utilise the storage facilities at Blayney SeaLink prior to shipping is a convenient option. However, the EPA is of the view that an alternative location needs to be considered for an appropriately sized freezer to allow for short-term storage of meat before transport to Blayney SeaLink. In the event that a detailed engineering option completely eliminates options to install a junction in the CVO pipeline at a location other than the start; with a more isolated location the proponent could explore options to treat wastewater with traditional best-practice treatment ponds and propose options to irrigate to land.

An alternative that explores other locations along the CVO pipeline corridor between Blayney and Cadia should be considered that is more remote from Blayney which would overcome the odour, noise and Q-fever risks and therefore ensure the long term environmental sustainability and regulatory compliance of the abattoir. At such a location, refrigerated transport could be used to transfer the goat meat to the proponents existing freezer facility at Blayney without any risk of odour, noise or Q-fever impacting the community of Blayney.

SUMMARY

The EPA has reviewed the final EIS and raised key concerns regarding the AQIA and the absence of potential alternative sites; the EPA has raised and passed on concerns regarding Q-fever to NSW Health.

Based on the EPA's technical review of the AQIA and the experience of the EPA authorised officers, the EPA has reason to maintain surrounding residents will potentially be impacted by offensive odours, and it is also possible this potential impact could extend to the Blayney township in unfavourable wind and temperature conditions.

The proponent has ruled out the need to consider any alternative locations due to claims of the need to "construct a chiller facility, undertake major electricity network upgrades, the need to find an alternative wastewater disposal option, and duplication of administration rendering the project unviable". However, the final EIS does not provide the details of any study on the advantages and disadvantages of any possible alternative locations (sites) with that currently proposed.

At the present stage the EPA does not support the development as it is currently proposed.

Should you have any further enquiries in relation to this matter please contact Mr Allan Adams at the Central West (Bathurst) Office of the EPA by telephoning (02) 6332 7610.

Yours sincerely

RICHARD WHYTE
Manager Central West
Environment Protection Authority

Attachment 1 – Blayney smallstock abattoir and cold store complex, review of Air Quality Impact Assessment

The air quality impact assessment does not adequately assess potential impacts on the air environment. Additional information is needed as set out below.

Additional information

Odour emission estimation

Odour from holding pen:

Odour emission from the holding pen is listed in table 21 (p56) and was estimated based on odour observations provided in appendix C. Appendix C provides the odour observations and calculated fluxes for both an outdoor pen (250 m^2, 1600 goats) and a shed (112 m^2, 300 goats). Odour samples from each were similar – the outdoor pen averaged 19.2 OU and the shed 20.8 OU. The fluxes calculated from these observations average 9625 ou·m^3/s for the outdoor pen and 233.3 ou·m^3/s for the shed. This lower value is used to calculate emissions from the proposed holding pen.

The approach used to generate odour emissions for dispersion modelling from these observations of goat odour needs to be detailed and justified. The flux calculation appears to follow the procedure for samples taken using an isolation flux chamber when the description suggests grab samples were taken.

Consideration of best practice odour mitigation measures

Odour control best practice is not discussed. Plant design includes "ventilation to a stack" from the holding pen. Section 7.5.8 sets out operational odour mitigation measures. These require proper operation of the facility and keeping an odour complaint logbook. Response to complaints of nuisance odour requires "immediately investigate any unusual odour source and take appropriate action to eliminate these". There is no discussion of actions available to mitigate unusual odour.

Facility design needs to cater for additional odour mitigation measures should offensive odour impacts occur once operational. The proponent must consider the risk of odour impacts occurring once operational and the feasibility of any additional mitigation measures should they need to be implemented. The proponent will ultimately be responsible for managing and minimising any impacts of the operation beyond its boundary and complying with Section 129 of the *Protection of the Environment Operations Act 1997* (POEO Act). It is therefore important that the proponent demonstrate to the EPA there is an understanding regarding the odour risk of their facility and their obligation to comply with Section 129 of the POEO Act.

Ventilation of the holding pen

The proposal plans to ventilate the holding pen so that air is exchanged about every four hours. This is a very low ventilation rate. EPA recommends the proponent review holding pen ventilation for the proposal.

Additional information

1. Possible impacts on Athol Gardens (function centre).

Detailed examination of possible impacts on the Athol Homestead Function Centre notes that there are 30 hours in the year modelled on which odour concentration is greater than 1.5 odour units. These higher concentrations occur:

> *"... typically evenings and overnight. These times are likely to coincide with the least amount of outdoor activity at the venue".*

The time-of-day for these 30 hours needs to be listed.
If odour emissions have been underestimated there is potential for significantly greater impacts at Athol Gardens in terms of odour frequency and/or magnitude. A more detailed analysis of predicted impacts at Athol Gardens is recommended.

2. Odour from manure

Odour from manure listed as SRC_2A in table 21 is based on observations from cattle yards. Justification is provided that odour emission rates from goat manure in not publically available in Australia. As stated in Attachment 2 below, the EPA undertook odour surveys from goat holding (goat depots) and processing facilities throughout north-western NSW and southern QLD, whereby access to goat manure for the purpose of collecting odour emissions rates is readily available.

3. Consideration of best practice odour mitigation measures

Odour control best practice is not discussed. Plant design includes "ventilation to a stack" from the holding pen. Section 7.5.8 sets out operational odour mitigation measures. These require proper operation of the facility and keeping an odour complaint logbook. Response to complaints of nuisance odour requires "immediately investigate any unusual odour source and take appropriate action to eliminate these". There is no discussion of actions potentially needed to arrest unusual odour.