

## MEMORANDUM

**To:** Joanna Gilroy, Consents Officer  
Environment Southland

**From:** Sarah Smith

**Date:** 22 January 2015

**Subject:** Matters Addressed from Pre-application review – Alliance Lorneville air quality reports

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Dear Jo

Further to our Memorandum of 17 September 2015, please find outlined below a summary as to whether the issues raised in the pre-application review have been addressed. As per the previous Memorandum, we have listed our comments under each report (appendix) reviewed.

### A. GOLDER BASELINE ODOUR SURVEY (APPENDIX F)

#### Issues Raised – Have they been addressed or do they need further clarification or assessment?

- *On page 3 of the report, it states:*

*"The four most significant sources of odour at the site include the following:.."*

*Are there other odour and particular, other significant odour sources on the site that are not discussed in the report?*

**Addressed? Yes.** The report has been reworded to clarify the odour sources that could potentially cause off-site effects.

- *Section 2 - why are the stockyard odours not expected to persist far from the source? The report does not confirm this statement.*

**Addressed? Yes.** Further details have been provided in the report to address why odours are not expected to persist far from source.

- *Section 2 - the report mentions ammonia as a possible discharge from the stockyards and fellmongery, yet ammonia-type odours are generally only attributed to fellmongery discharges in the report.*

**Addressed? Yes.** Further details have been provided in the report to address why ammonia-type odours are expected to remain within the site boundary.

- *There is little detail on the characteristics of the rendering and soup stock odours, compared with details provided on typical odours from the other sources in Section 2.*

**Addressed? Yes,** further details on these characteristics has been provided in the report.

- *Is an "offal/meaty" odour more characteristic of odour emissions from soup stock rather than rendering?*

**Addressed? Yes.** Further details are included in the report to describe the characteristic odours from rendering and soup stock areas on the site.

- *On page 6 of the report, what is the source of the factor used to adjust the VDI value guideline value? Is this a New Zealand-specific factor?*

**Addressed? Yes.** Further explanation has been provided in the report to clarify the factor for adjusting VDI values and how they are applied in a New Zealand context.

- *Looking at Figures 3 and 4, it appears that no residences west or WSW of the Alliance site were surveyed in either 2013 or 2014. A clearer explanation as to why no residences in this area were surveyed would be beneficial.*

**Addressed? Yes.** Further detail was provided in the report to explain this.

- *In Figure 9, it appears that windy weather conditions when odour was experienced has increased from 2013 to 2014 surveys, yet there is no discussion of this in the accompanying text (even though it has the second highest percentage of respondents).*

**Addressed? Yes.** Further explanation was provided in the report to clarify this.

- *It is noted in the report (p13, p15) that respondents often attribute fellmongery odours to rendering. Where is the justification for this statement?*

**Addressed? Yes.** Further explanation was provided in the report to clarify why respondents attribute fellmongery odours to rendering.

- *On page 13 of the report, it is stated that:*

*"This increased bias towards rendering odour descriptions in 2014 was expected given the greater attention to surveying respondents living to the east of the site in 2014 compared with 2013."*

*Clarification of this statement would be useful.*

**Addressed? Yes.** Further explanation was provided in the report to clarify why the increased bias occurred.

- *On page 25 of the report, an outlier in Group E is discussed. The report indicates that this receptor may not be representative of the group, given they have been living at the location for a short period of time and are possibly more sensitive to odours than other members of Group E.*

*It could be conversely argued that the existing receptors in Group E have been desensitised to the odours from Alliance, and that the newest receptor is more representative of a typical response.*

**Addressed? Yes.** Further explanation was provided in the report which outlines established residents ability to still detect odours whilst becoming more tolerant of odour impacts.

## **B. GOLDER REPORT ON PROCESS ODOUR MITIGATION (APPENDIX G)**

### **Issues Raised – Have they been addressed or do they need further clarification or assessment?**

- *The potential for future changes to land use in the land to the east of the Alliance plant (which is currently used as a buffer) should be addressed. Given that a long consent term is likely to be sought, any future changes in the sensitivity of the land east of the plant is relevant and should be addressed. This is particularly important as the presence of the buffer is relied on as a mitigation measure.*

**Addressed? No.** The use of the land as a buffer is specifically noted in the report as a key mitigation measure for various site emissions with odour potential (stockyards, soup stock, meal processing, fellmongery), so the potential for future land use changes needs to be addressed, particularly in light of the long consent term applied for (35 years).

- *What is the frequency of stockyard cleaning? The report does not specify this.*

**Addressed? Yes.** The frequency of stockyard cleaning details are specified in report.

- *How and when is the ambient ammonia concentration routinely measured in the stockyards? Is there a limit imposed on ambient ammonia concentrations measured in the stockyards?*

**Addressed? Yes.** Stockyard ammonia measurement details are specified in the report.

- *Section 2 on soup stock emissions states that this source is unlikely to cause off-site odour effects. But in the 2014 background odour report, the soup stock area is noted as being a significant odour source on the site.*

*The soup stock discharge is noted as being a possible off-site odour source for odours detected in Group C (p23 of the background odour report). Soup stock odours are also raised as a possible alternative source of meaty/offal odours, rather than rendering (p25 of the background odour report).*

*Given the comments in the background odour report, does further consideration need to be given to additional controls on the soup stock odour emissions?*

**Addressed? Yes.** Further details on the character of the soup stock emissions was provided that supports the statement that additional odour control is not required.

- *It would be appropriate to perform an annual check on the hydrolyser exhaust gas extraction to the boiler (as per the check on the blood exhaust gas extraction), as this is the primary method of control for hydrolyser emissions.*

**Addressed? No.** The report does not propose an annual check on extraction. As it is unlikely that the hydrolyser is a major source of off-site odour, but given the hydrolyser emission control is via extraction to the boiler gas stream, we would suggest that this be incorporated into condition conditions.

- *Is the resource consent application also going to cover discharges to air from the second hydrolyser? Given the length of consent term likely to be applied for, and that the report indicates a second hydrolyser installation is possible in the future, it would be prudent to cover emissions from this unit in the application.*

**Addressed? Yes.** The report states that there are no current plans to install an additional hydrolyser so we assume that the current consent application does not cover any emissions from the proposed unit.

Given the consent term applied for (35 years), it would be prudent to confirm with the applicant that this is the case.

- *Section 5.2 states that the blood non-condensables stream can be odorous if the blood being processed is more than one day old. Conversely, Section 5.3 states that standard practice is to process blood within one day. How often is blood that is more than one day old processed?*

**Addressed? Yes.** The report provides further detail as to the age of blood being processed.

- *The report indicates that the meal room and loadout areas are the only direct discharges now occurring from the rendering plant. However, in the background odour report, odours directly attributed to rendering are noted as being detected beyond the boundary. Where would these odours be coming from, given the low level of direct odour discharges from the rendering plant?*

**Addressed? Unclear.** In the background odour report, rendering odours are described as having a neutral, meal-type (blood and bone) character. The background odour report indicates that some sulphide-type odours could be mistakenly being attributed to rendering, rather than fellmongery (indicated as the actual source). However, the report doesn't mention meal-type odours as an odour descriptor; rather, it uses a descriptor of "rendering/cooking".

- *The report suggests a biofilter bed pH of 5 or higher. This is lower than the range typically recommended in literature (ideal bed range between pH 6 - 8). Please comment.*

**Addressed? Yes.** An advisory note on biofilter bed pH has been added to Table 3 (page 16) in the report to clarify this issue.

- *The report proposes an annual downwind observation of rendering plant odours. The 2014 background odour report indicates that odours attributed to rendering may in fact be from fellmongery operations. Given this, will it be difficult to differentiate between odours from rendering and fellmongery operations during the annual downwind observation?*

**Addressed? Yes.** It was indicated in report that suitably experienced assessors should be able to distinguish rendering and fellmongery odours (irrespective of some respondents in the surrounding community attributing fellmongery odours to rendering).

- *There are several buildings in the area around the fellmongery (other than the fellmongery building itself). Were the potential influences on fellmongery odour emissions due to downwash effects from these other buildings considered as part of the modelling of fellmongery odour emissions?*

**Addressed? Yes.** The appended fellmongery modelling report now indicates that downwash effects from other buildings were taken into account during the fellmongery emissions modelling.

- *Examination of Figures 1 and 2 in the fellmongery odour assessment indicates that a building to the south-west of the fellmongery has a predicted odour impact > 8 OU/second. The discussion of modelling results does not appear to include this predicted effect.*

**Addressed? Yes.** Further explanation provided in the appended modelling report.

## **C. GOLDER REPORT ON BACKGROUND AIR QUALITY (APPENDIX E)**

### **Issues Raised – Have they been addressed or do they need further clarification or assessment?**

- *Clarification is needed as to the comparability of the  $PM_{10}$  results from the two periods, given that two different methods were used for monitoring.*

**Addressed? Yes.** Clarification provided in the report that confirms the results from both methods used are comparable.

- *The wind directions given in the table presented in Appendix B indicate that, on some days, an easterly wind direction was present which could have potentially resulted in the boiler emissions influencing the measured  $PM_{10}$  value. Was this taken into account when the data was assessed?*

**Addressed? Yes.** Clarification provided in the report that explains why boiler emissions would have a minor effect on the results.

- *The report states that the aim of the 2013 monitoring was to assess if there was significant urban contributions to local  $PM_{10}$  levels, particularly during winter. The report concludes that there was no significant contribution from urban sources, but there is no discussion in the analysis section to support this conclusion.*

**Addressed? Yes**, as further clarification was provided in the report.

- *Both NZTA NO<sub>2</sub> monitoring sites lie within the Invercargill urban area – one is in a residential area (Background site) and the other is in the CBD, in a retail/commercial area (State Highway site). Given the landuses around both monitoring sites, results from either site would not be representative of rural NO<sub>2</sub> concentrations (as would be experienced at the Lorneville site).*

**Addressed? Yes**, as further clarification was provided in the report to demonstrate that the use of the NZTA data was conservative.

- *The Ohaupo monitoring data would not be representative of rural SO<sub>2</sub> concentrations (as would be found at Lorneville), given the monitoring site is located next to a state highway (SH3) in an urban area.*

**Addressed? Yes**, as further clarification was provided in the report to demonstrate that the use of the data was justified.

- *The ambient SO<sub>2</sub> monitoring at both Edendale and Clandeboye was conducted during the dairy processing season. Given that, the monitoring results would have been influenced by boiler emissions at both sites.*

**Addressed? Yes**, as further clarification was provided in the report as to the use of the data.

Regards,

Sarah Smith