

Hy Gain Feeds Pty Ltd

Odour Audit



Environment
Protection
Authority Victoria

Chris Bydder Principal Expert – Odour

October 2018

1. Site Inspection

On 26 September 2018 at 1000 hours EPA's Principal Expert Odour inspected the Officer premises of Hy Gain Feeds Pty Ltd at 10 Hickson Road, accompanied by EPA and VPA staff and a site representative.

Observed a cold SSE wind that was holding flags in a horizontal position indicating a moderate breeze of approximately 20 km/h in accordance with the Beaufort wind scale.

Was advised by a site representative that the site has three main product lines and associated plants including;

- Textured feed (texture mill) heated by infra-red cookers resembling toasted muesli
- Extruded feed (extrusion mill) steamed (gas boiler fired) and formed into square pieces
- Pellet feed (peptising mill) steamed (gas boiler fired) and formed into pellets.

Damaged pit cover, recommended drain cassettes.

Observed some rubbish odour close to skip bins in the middle of the site

Observed raised dust with wind gusts from the un-paved north east corner of the site

Observed a strong odour with grain/toast character inside the textured feed mill

Observe either point source capture or extraction hoods installed across the plant.

Noted that the capture system was ducted to cyclones (to the west of the mill) and/or baghouses (to the east of the textured feed mill).

Observed a strong odour with grain/toast character in the yard to the west of the plant, noted that it was similar to the odour inside the textured feed mill

Noted that five stacks servicing the cyclones on the western side of the textured feed mill were all several metres below roof height.

Noted that the grain unloading area was exposed to the elements and that when unloading grain clouds of dust were generated by this activity.

Noted that the vents servicing the two bag houses on the eastern side of the plant all several metres below roof height.

Was advised by a site representative that the baghouses service the product screening/sieving part of the textured feed mill.

Was advised by a site representative that the textured feed mill was the oldest plant on site (built in the late 1990's)

Observed a strong odour with porridge characteristics in the pellet feed mill.

Observed all plant was ducted or had extraction hoods removing dust from inside the pellet feed mill.

Observed that one of the two stacks servicing the extraction system on the north side of the pellet feed mill was fitted with a silencer and was several meters shorter than roof level.

Observed that the second stack extended approximately 2 metres above roof level.

Observed that both stacks were at the exit of cyclones.

Observed a strong odour with cereal/grain characteristics in the extruded feed mill

Observed majority of plant was ducted directly into a dust extraction system with the exception of an area of plant where extruded feed was conveyed upwards to a drier.

Observed an extraction hood taking steam from above the extruded feed conveyer was vented directly to atmosphere through the roof.

Observed fugitive emissions of grain/cereal/toast odours at locations around open doors at the three mills.

Was advised by a site representative that the premises will be operating a second shift (i.e. 24/7) in a few weeks.

Was advised by a site representative that contractors conduct Methyl bromide fumigation of incoming grain loads from overseas for quarantine purposes

Off Site Odour Assessment

Observed no odour up wind at the southern and western boundary of the premises

Observed a strong odour with grain/cereal characteristics on the corner of Officer Road and the train line directly downwind of the Hy Gain facility (110 me downwind of the facility)

Noted that the odour has the same characteristics to odour observed on site.

Observed a strong odour with grain/cereal characteristics in a residential area at corner of Primrose Avenue and Heathcote Grove, Officer (611 metres downwind of the facility)

Observed the same odour while travelling 100 metres west along a bike path extending in that direction from Primrose Avenue (500 – 600 metres downwind from the facility)

Measured that the plume extended 611 metres from the Hy Gain Facility, a graphical representation off off-site plume measurement is in the Appendix to this report).

Advice

The extraction system in operation in the three mills, while effective at removing dust from waste gas streams inside the plant are too short to allow for effective dispersion of odour from the premises. Because of this and associated fugitive emissions strong odour was observed up to 611 metres down wind of the premises.

The plume observed on the 26/9/2018 is generally representative of emissions from the site given that operating conditions were typical at the site with moderate wind speed and dispersion in effect. Given this, an approximate frequency of exposure at given areas in the PSP can be predicted taking in local wind distribution patterns.

EPA Powers

The site is not a scheduled premises under the Environment Protection (Scheduled Premises Regulations) 2017. In addition, EPA is not in the position to serve notices on the site as now although there is odour off-site, we have received no reports and therefore cannot gather evidence to satisfy the offensiveness of the odour.

Hedonic tone, offensiveness and odour psychology

On the subject of the offensiveness of the odour, all we can confirm is that the odour is off-site it is strong and has a grain, porridge, cereal or toast like odour. While you could describe these odours as “pleasant” and they would have a positive hedonic tone this does not mean that they may cause offence to some of the population, especially if they were subject to prolonged or frequent regular exposure in their homes.

Site specific variation of the separation distance.

More work needs to be done quantifying, characterising and potentially modelling odour emissions from the site to properly inform on an appropriate buffer. There is not enough evidence to reduce the default buffer of 250 m as specified in the EPA publication 1518 (Recommended Separation Distances for Industrial Residual Air Emissions – Guideline) table 4: Criteria for Site Specific Variation (reproduced below).

Table 4: Criteria for site-specific variation

Criteria	Explanation
Transitioning of the industry	Existing industry has formally indicated that it will transition out of an area and over a specified timeframe.
Plant equipment and operation	The industrial plant and equipment have an exceptionally high standard of emission control technology.
Environmental risk assessment	An environmental risk assessment of IRAEs has been completed that demonstrates a variation is justified.
Size of the plant	The plant is significantly smaller or larger than comparable industries.
Topography or meteorology	There are exceptional topographic or meteorological characteristics which will affect dispersion of IRAEs.
Likelihood of IRAEs	Particular IRAEs are either highly likely or highly unlikely to occur.

1. We know at the present time this industry is not transitioning, indeed it is increasing hours of operation and throughput.
2. The site has good operations and plant but its stacks are currently too short and don't allow for complete dispersion of odour.
3. The environmental risk is low for this site, but we haven't got enough information on the frequency and

distribution of odour sources from the premises.

4. The plant is neither larger or smaller than typical industry of this type.
5. The topography is generally flat, and it could be argued that given the age of the wind data and that it only covers one year we don't know enough about prevailing winds in the area.
6. The likelihood of IRAE's are high as far as odour is concerned, indeed odour emissions from the plant observed on the inspection could be considered routine continuous emissions.

Summary of Advice.

1. Odour impacts from the subject site extend as far as approximately 611 metres from the envelope of sources.
2. These emissions are expected to be routine and continuous for the site and will be easily smelled in the proposed development areas.
3. Stacks could be modified to increase dispersion of these emissions but there is no regulative power to enforce this currently.
4. There is no evidence to support site specific variation of the 250-m default buffer.

APPENDIX: Plume Map 26 September 2018

