

ZIWI REPSONSES TO COMMISSIONERS' QUESTIONS

Paragraph Ref	Question	Response
Tom Coughlan		
9	What is the anticipated date when operations in Napier will commence?	<i>The start of the transition is planned for July, then it is expected to take several months to transition operations from Boeing Place to Napier. The intention is to close operations in Boeing Place as soon as possible, but there is no set date on that while we go through the transition to Napier. The one year consent term provides a necessary contingency.</i>
20	You refer to other sources of odour in the local industrial area. Do any of these sources emit odour of a similar character to the odour discharged from Ziwi?	<p>Yes,</p> <p><i>Animal feed storage</i> <i>Food ingredients manufacturing.</i> <i>Food Manufacturing</i> <i>Asphalt Manufacturing</i> <i>Combinations of the above.</i></p> <p><i>Odours from all the above sources do not necessarily have the same character as odour from Ziwi, but they are often mistaken by the public as odour from Ziwi.</i></p>
8	<p>Please explain the reasons for opting for total odour containment and treatment via chemical scrubber at the Awatoto site (as discussed briefly in Ms Ryan's review).</p> <p>Why was an odour scrubber not proposed for the new plant?</p>	<p><i>An odour scrubber is the option chosen for the new plant. The only difference is scale and the treatment agent.</i></p> <p><i>It made sense to use Ozone as the treatment agent at Boeing place, as the best practicable option, as the generator is in place which enables ozone to be applied to the driers directly as well as the scrubber. We chose not to put the ventilation of the building through the scrubber as the scale would have been inappropriate for the short term requirement for the mitigation.</i></p>

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Roger Cudmore		
48	Is that "long-term odour effects" (or chronic odour) assessment technique relevant given the 12-month maximum duration now sought by Ziwi?	<i>Yes, the full extent of chronic effects may take a year or more to fully develop, but an increase in stress or decrease following a change in odour exposure levels can occur after 3 to 4 months.</i>
93	Are those key operating parameters currently contained in the recommended conditions?	<i>I would defer this to Mr Haselhoff expertise, but key operating parameters were detailed in the Interim odour management plan, the development of which I oversaw and drew on Mr Haselhoff's experience with ozone systems.</i>
21	<p>Have fugitive odours discharged via the two 15m high vents now been reduced to the extent anticipated?</p> <p>Has any testing been undertaken to verify the odour emission rate from the vents?</p> <p>Do you expect that a 2000 OU/s emission limit for both vents (as modelled) could be met?</p>	<p><i>Yes, based on the ambient odour levels that I have observed and reported this summer.</i></p> <p><i>No, the cumulative effect of these with scrubber emissions have been assessed via downwind assessments only.</i></p> <p><i>Yes, now the dryers are much better ventilated, and their seals have been improved via maintenance in 2021.</i></p>
33	<p>You estimate an odour emission rate from the driers in the order of 12,000OU/s, based on monitoring of emissions from the scrubber treating two driers in August 2021.</p> <p>Does this indicate that there may be difficulties in complying with the</p>	<i>The scrubber has had further adjustments made by Mr Haselhoff, and testing in March will all four dryers has indicated the system is operating with a discharge rate of around the 10,000 OU/s.</i>

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	<p>proposed 10,000OU/s emission limit for the drier discharge, or has the scrubber been optimised further?</p>	
46	<p>You note that frequent exposure to low to moderate intensity odour can cause a chronic nuisance effect.</p> <p>Please explain how this differs from an “objectionable or offensive” odour effect arising from repeated exposure.</p> <p>Is there any difference in practice?</p>	<p><i>It is very different in my view and it is an error of decision makers, and practitioners to suggest that long term exposure to sub-objectionable level odour can eventually equate to an objection or offensive odour. It does nevertheless can culminate in stress levels and annoyance within a community that is more than minor. But this is very different to an episode of odour that a Court would deem to be objectionable or offensive, having to the FIDOL associated with that event, and potentially prosecuting the discharger.</i></p> <p><i>Yes, a very important difference. There are no examples of Criminal charges being laid against a person or company within the District Court system for causing sub-objectionable odour events over time. Causing objectionable or offensive odour can be a criminal offense with serious punishments for parties who are guilty – but such prosecutions invariably link to events of objectionable odour and the assessment FIDOL factors associated with that.</i></p> <p><i>It may be useful to read my wider thoughts on this matter and what I propose as a solution here:</i></p> <p>https://rmla.org.nz/2020/10/28/proposed-approach-for-management-of-chronic-odour-exposures-in-new-zealand/</p> <p><i>To be clear, causing significant levels of stress due to ongoing low intensity odour events does justify companies being required to instigate odour discharge reduction measures, and ultimately prosecution for not implementing measures that have been agreed to or imposed via a consent order. But that does not require criminality of a party’s actions to be confirmed at the outset.</i></p>

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52	Have the suggested Odour Hour frequency targets of less than 5% for industrial areas and 2% for residential areas been applied to other assessments in NZ?	<p>Yes, I have used these values, or similar over the last five years examples include:</p> <ul style="list-style-type: none"> ▪ The assessment of reverse sensitivity effects from chronic and acute odour exposure from and agrichemical sprays impacting on highway service center customers. ENV-2015-AKL-000122. ▪ Survey of Ambient Odour Levels, Rendering and Wastewater Treatment Facilities, Tuakau Proteins Ltd. Golder Report 1783650_7403-007-R-Rev0, September 2020. ▪ Tegel Christchurch Poultry Processing Plant Discharges to Air – Air Quality Impact Assessment, Tokin & Taylor, Job No. 1003371, April 2019. <p>1. Note: Tonkin & Taylor used 15% and 10% hours of recognisable odour as criteria adopted from Verein Deutscher Ingenieure (VDI) 3940 Part 1 and 2). Although the method for assessing odour hours was different.</p> <ul style="list-style-type: none"> ▪ Resource Consent Application and Assessment of Effects on the Environment - Application for Air Discharge Permit - Southern Proteins Limited, Washdyke, Timaru, Southern Proteins Ltd. Golder Report, 19118618-7403-004-Rev0, July 2019. ▪ Baseline odour survey, Alliance Lorneville, Golder Report 1378104044-014-R-Rev1-030, October 2015.
34	What odour emission testing regime is proposed to confirm ongoing compliance with the emission limits?	<p>This is not proposed or considered justified unless there is reason to trigger this type of testing. Instead, on-going and frequent assessment of ambient odour levels, as proposed, is considered to an effective monitoring approach and any change in higher recorded odour levels and/or confirmation of this by BOPRC would be reasons to instigate a measurement programme on</p>

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	<p>Are quantitative odour monitoring results now available for the drier and vent discharges?</p>	<p><i>scrubber odour discharge rate by olfactometric measurements.</i></p> <p><i>Dryer exhaust air odour discharges has intensity and character ratings of the discharge from January 2022 and there has been odour emission testing in March 2022.</i></p> <p><i>Fugitive odour has been monitored via an intensive surveying of ambient odour intensity against the VDI scale and characters during December to 28 February 2022.</i></p>
Dirk Haselhoff		
22	<p>What are the key parameters relating to scrubber operation that should be specified in consent conditions?</p> <p>Are any changes to the recommended conditions appropriate to address this?</p>	<p><i>These do not need to be specified in consent conditions unless desired, as already occurring. Undertake routine operations as outlined by Ozone Technologies to Zivi and preventive maintenance at the recommended intervals.</i></p> <p><i>No. This is already being followed under good management practice within Zivi and in cooperation with the Ozone Technologies maintenance programs.</i></p>
-	<p>How robust is the ozone scrubber system?</p> <p>Have there been any breakdowns or issues to date?</p> <p>What is the response time for attending to any issues?</p>	<p><i>The scrubber is fabricated in 316 stainless and very robust. The Tellerite media is PVDF (Kynar) rated as pipework to 120°C well above temperatures encountered in this environment. PVDF is very stable in oxidising environments and will have a long-life span, PVDF was held for 10 years at 302°F (150°C), and following measurements indicated no thermal or oxidative breakdown occurred. The induction fan is coated steel, expected life span of up to 5 + years. The electrical components are housed in an industrial compliant weatherproof enclosure and suitable for a heavy industry fully compliant with NZ industry standards. All instruments are manufactured in Germany and are recognised among the best available in the market.</i></p> <p><i>No. Physical ozone delivery mechanism was increased in size 16th March to</i></p>

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		<p><i>better withstand combined exhaust flows and subsequently the system is performing well and as designed.</i></p> <p><i>Dependent on what the issue is. Typically, no more than a call to our office or myself that may also require the Ziwi electrician to attend. Their response time is typically less than an hour. Ozone Technologies are a 24/7 business available at all times as we also service municipal water treatment systems and many other industries. A major failure should be rectified within 24hr typically as Ozone Technologies hold or has access to most parts.</i></p>
29	<p>You state that the drier exhaust flow can exceed the scrubber design when all 4 driers are at full exhaust flow and the scrubber operates outside design flows. Is monitoring proposed to prevent this? Should this be addressed via a consent condition or the management plan?</p>	<p><i>Although the design flow specifications are at the maximum when all four driers are running it has been clearly demonstrated that odour scrubbing remains efficient. The ozone pre-oxidation in the driers is the primary treatment and we can consider that the scrubber is the polishing stage. Further, as outlined above on the 16th March ten days after submitting my evidence the ozone delivery mechanism was modified to better cope with the exhaust flows. I understand that subsequent measurements have shown the system to be operating in a compliant manner.</i></p>
Deanne Barretto		
19	<p>By way of a letter from Ziwi counsel dated 22 September 2021, Ziwi formally amended its application so that the consent duration sought was no more than one calendar year from the date of granting of consent <u>or whenever Ziwi vacated the Mount Maunganui site, whichever is the earlier.</u></p> <p>Has Ziwi resiled from the underlined text?</p>	<p><i>Ziwi has not resiled from its position as stated in the memorandum from Legal Counsel. However, noting the point made by Mr Coughlan in his response to the Panel's question on Paragraph 9 of his evidence above, it is important for there to be sufficient time to make the transition from the Mount Maunganui site to the new site in Napier. In my view, it is important that the condition pertaining to the consent duration (Condition 9.1) is clearly worded, so I would suggest that it remains as set out in paragraph 92 of my evidence stating, "This consent shall expire 12 months from the grant of consent.", but with a note that states:</i></p> <p><i>"If Ziwi fully completes its move from the Site earlier than 12 months from</i></p>

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		<p><i>consent being granted, it will notify the Council that the resource consent is no longer being exercised."</i></p>
25	<p>The Section 42A Report references Rule AIR-R15(18) of PC13. You reference Rule AQ R2(r) of PC13.</p> <p>Why is that?</p>	<p><i>It appears there has been a small error and the rule referenced in my evidence should be to 'AQ R21(r)' of PC13, as was referenced in the AEE report submitted to Council.</i></p> <p><i>To answer your question, however, I confirm this is a minor oversight of the correct rule reference, which has changed since the AEE was lodged. Rule AQ R21(r) was sighted in the AEE based on the version of PC13 available at that time, being the Appeals Version 9.3 and dated February 2020. Under this version, resource consent is required for the discharge of contaminants into air from pet food manufacture by the application of heat, as a discretionary activity pursuant to Rule AQ R21(r). However, this version is incorrectly referenced in my evidence with respect to the rule under which Zivi is seeking a resource consent.</i></p> <p><i>The reference to the same rule above has since changed with the latest version of PC13 being Version 10 and dated November 2020. The rule referenced in the s42 Report is from this version. Therefore, my evidence should correctly reference Rule AIR-15(18) of Version 10 of PC13, under which resource consent is required for the discharge of contaminants into air from pet food manufacture by the application of heat, as a discretionary activity.</i></p> <p><i>I note that the change in numbering between Version 9.3 of PC13 used for the AEE and the latest Version 10 of PC13, also applies to the objectives and policies relevant to Zivi's application. The objectives and policies in my evidence are correctly referenced and assessed under Version 10 of PC13.</i></p>