

**BEFORE INDEPENDENT HEARING COMMISSIONERS**

**UNDER** The Resource Management Act 1991  
(RMA)

**IN THE MATTER** of the Christchurch District Plan

**AND**

**IN THE MATTER** of Plan Change 14 (PC14) – Housing and  
Business Choice

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**SUBMISSIONS OF COUNSEL FOR RAVENSDOWN LIMITED**

**(SUBMITTER 243)**

**15 NOVEMBER 2023**

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## MAY IT PLEASE THE COMMISSIONERS

### *Introduction*

- 1 Ravensdown Limited (**Ravensdown**) made a written submission on PC14.
- 2 Ravensdown owns and operates the Christchurch Works at 312 Main South Road, Hornby. This site has been used for manufacturing fertiliser since 1922. The Christchurch Works constitute heavy industry and are a major physical resource that must be sustainably managed under the RMA. The primary activities at the Christchurch Works are the manufacturing of sulphuric acid and subsequently of superphosphate. Superphosphate is an essential nutrient input that assists New Zealand's primary sector produce food to fuel our economy.
- 3 The history of the Christchurch Works and some more detail on its operations, and the overall activities of Ravensdown, are provided in **Peter Hay**'s evidence. Mr Hay is the Works Manager of the Christchurch Works.
- 4 The Christchurch Works are located on land zoned Industrial Heavy (**IHZ**) in the District Plan.
- 5 Residential activity occurs immediately across Main South Road from the Christchurch Works.
- 6 The manufacturing activities at the Christchurch Works inevitably and unavoidably involve the discharge of contaminants to air. Those discharges are carefully managed and tightly controlled in accordance with the conditions of an air discharge permit<sup>1</sup> issued by Environment Canterbury. The purpose of those controls is to ensure (amongst other things) that adjacent residents are not exposed to excessive or unreasonable air discharge effects – both in terms of health and amenity.
- 7 Air discharge effects are proportionate to the concentrations of contaminants in air at the point of receipt. Concentrations of contaminants from industrial discharges are generally higher close to the point of discharge and reduce with distance as a function of mixing. In this context, as explained by **Richard Chilton** in his evidence, distance from the point of discharge must be understood in 3 dimensions. That is why major industrial discharges to air tend to be from elevated stacks. Elevated points of discharge generally enable more rapid mixing of the discharge (and therefore dilution) and enable lower concentrations of

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<sup>1</sup> CRC080001 – this consent was granted in 2010 and expires in 2030

contaminants to be achieved at nearby sensitive receptors (like residences) located at or close to ground level.

- 8 If residential activities are allowed to establish higher in elevation and therefore closer to the points of discharge the result may be that insufficient mixing of air is available to achieve appropriate dilution of contaminants. There are two related consequences that need to be addressed in this regard in order to ensure that sustainable management is promoted:
  - a. Intensification in residential activity enabled by PC14 should not result in exposure to airborne contaminants from industry at concentrations that may give rise to adverse health effects or significant reductions in residential amenity – that’s not consistent with the outcomes anticipated in residential zones; and
  - b. To the extent that PC14 enables greater exposure of residents and residential buildings to airborne contaminants from industry (in this case Ravensdown) a reverse sensitivity<sup>2</sup> issue may result – that’s not consistent with the outcomes anticipated for in-zone industrial activities.

*The planning issue in context*

- 9 PC14 proposes that the existing residential area directly across Main South Road from the Christchurch Works:
  - a. Is within a High Density Residential Zone;
  - b. Is within a Town Centre Intensification Precinct; and
  - c. Is provided with an approximate 40m Industrial Interface area immediately adjacent to Main South Road as a qualifying matter (**RII-QM**).
- 10 Ravensdown’s concern is that in this residential area the intensification of residential activity enabled by PC14 (as proposed) does not take into account the lawful air discharges from the Christchurch Works. As proposed, PC14 would enable much higher residential development much closer to the places where Ravensdown’s air discharges occur – the acid plant and superphosphate manufacturing stack exit points.

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<sup>2</sup> “Reverse sensitivity occurs when sensitive activities, such as residential properties, are allowed to locate where they may be adversely affected by existing industrial or noxious activities. This has the adverse effect of limiting the ability of the industry or noxious activity to operate efficiently and with long-term certainty. Allowing sensitive activities to establish in close proximity to existing industry can potentially result in adverse effects on the health, safety or amenity values of people, as well as potentially adversely affecting the economic and safe operations of industries.” Ministry for the Environment Good Practice Guides

- 11 The consequence would be that, without modification to the current proposal, residents and residential properties may be exposed to unreasonable levels of airborne contaminants and Ravensdown may be exposed to reverse sensitivity effects. Technical evidence on this possible outcome, including relevant air dispersion modelling, is provided by **Richard Chilton**, an air quality expert. I understand that the Council has not engaged an air quality expert, and I am not aware of any other relevant air quality evidence on this topic that is before the Commissioners.
- 12 It is clear from the relevant section 42A report<sup>3</sup> that in developing the RII-QM Council's planning team has considered how industrial noise could affect more intensive residential development, but that no consideration has been given to air discharges, despite this being raised in Ravensdown's written submission.
- 13 This omission in the development of PC14 is demonstrated in proposed Objective 14.2.12 which identifies noise as the only issue to be addressed when considering the compatibility of more intensive residential development with industrial activity. While noise is a real issue, it is not the only issue.
- 14 While the section 42A report does not address Ravensdown's concern, Council appears to have now engaged with the issue, as demonstrated by Ms Ratka's rebuttal evidence<sup>4</sup>, which responds to the expert air quality evidence provided by **Mr Chilton** and **Ms Jane Whyte**'s planning evidence. Ms Ratka concludes her discussion of the Ravensdown evidence by saying at paragraph 38:

*In my view there could be merit in pursuing an air discharge buffer, restricting intensification, should the Panel be satisfied that enabling high intensity residential development opposite the Ravensdown operations would result in undue health, safety and amenity effects on occupants of the enabled high density development, and reverse sensitivity effects on the heavy industrial activity.*

- 15 Mr Chilton concludes from his modelling of SO<sub>2</sub> and fluoride discharges to air from the Ravensdown site that within an enlarged buffer area (240m back from Main South Road instead of the 40m proposed) contaminant concentrations are unlikely to have a significant impact up to 4 storeys. Above that height the concentrations increase markedly, to the extent that he considers they would likely impact on Ravensdown's ability to manage the air quality effects of its activities to an acceptable level. There is no expert evidence that contradicts these conclusions, and no challenge to Mr Chilton's evidence by the Council.

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<sup>3</sup> Planning Officer's Report of Brittany Ratka – Qualifying matters relating to Industrial Interface, Significant and Other Trees, and Natural Hazards, 11 August 2023 at 2.2.8b on page 11. The only technical evidence considered relates to noise

<sup>4</sup> Statement of Rebuttal Evidence of Brittany Olivia Ratka on behalf of Christchurch City Council dated 9 October 2023 at paragraphs 32 - 38

It is important to understand that SO<sub>2</sub> is associated with human health effects, and fluoride is responsible for causing glass clouding – an amenity effect.

- 16 I submit the Panel can therefore be satisfied that enabling unconstrained high intensity residential development by building up opposite the Christchurch Works would result in undue health, safety and amenity effects on occupants of the enabled high density development, and reverse sensitivity effects on Ravensdown’s lawful activity.

*A site-specific problem*

- 17 The planning issue identified by Ravensdown, and now acknowledged by Council, is unique to the specific context of the Ravensdown site and activity, and its close proximity to the residential zone on the other side of Main South Road.
- 18 As Ms Whyte discusses in her evidence, the situation at Main South Road is unusual because the IHZ within which Ravensdown operates is immediately adjacent to a residential zone.
- 19 There is no IGZ operating as a buffer between in-zone heavy industry and sensitive residential activity. Having regard to Policy 16.2.1.3 which describes the range of industrial zones in the District Plan and their different purposes, Main South Road is an outlier, and the lack of physical separation between heavy industry and residential living activities needs careful management. Policy 16.2.1.3(a)(ii) acknowledges that activities provided for in the IHZ require separation from more sensitive activities and Policy 16.2.1.3(a)(i) notes that one of the purposes of the IGZ is to provide a buffer between residential areas and the IHZ. In this part of Christchurch the anticipated separation does not exist.
- 20 PC14’s purpose is not to address this historical anomaly. Rather, the purpose is to fulfil Council’s responsibilities to implement and give effect to the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 and the National Policy Statement on Urban Development 2020.
- 21 As noted by counsel for the Council in opening submissions<sup>5</sup>, Christchurch necessarily addressed many of the urban development issues that now confront other New Zealand cities as part of planning for recovery from the Canterbury earthquakes. Counsel for the Council submit that Christchurch already has in its District Plan “at least sufficient development capacity<sup>6</sup> to meet expected demand for housing and for business land over the medium to long-term”.

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<sup>5</sup> Opening Legal Submissions for Christchurch City Council, Strategic Overview Hearing, 3 October 2023

<sup>6</sup> NPS-UD Policy 2

- 22 On that basis I submit the reasonable use of qualifying matters to put some restrictions around intensification is unlikely to result in the purpose of PC14 being frustrated.
- 23 PC14 impacts widely across Christchurch, and the use of a qualifying matter to manage the interface between residential development and lawful air discharges from the Ravensdown site by controlling upwards development over a small area close to the Christchurch Works is unlikely to have any impact on Christchurch’s ability to meet expected housing demand in the medium to long-term.

*The solution*

- 24 PC14 already proposes a qualifying matter to manage the interface between intensified residential areas and industrial areas. This is the RII-QM. The RII-QM is primarily aimed at managing the effects of industrial noise on residential activity, and restricts permitted residential activity to 7 metres or two storeys within identified areas. Adjacent to the Christchurch Works PC14 proposes the RII-QM will apply over a narrow 40m strip immediately adjacent to Main South Road<sup>7</sup>.
- 25 While that narrow strip may be sufficient for noise management purposes, as Mr Chilton’s evidence demonstrates, it is not large enough to manage air quality effects at this industrial/residential interface.
- 26 The solution is to expand the RII-QM area shown on Planning Map 37 to 240m in depth as proposed in Ms Whyte’s evidence<sup>8</sup>.
- 27 Ms Whyte also proposes amendments to Objective 14.2.12 and Policy 14.2.12.1 to recognise that the management of the residential/industrial interface is not just about noise. Ms Ratka would prefer that a new objective and policy were written to specifically address the air quality interface issue, but does not tackle the drafting exercise in her rebuttal evidence. I submit either approach could be made to work, and the choice comes down to drafting preference. I express no particular view on that. I note that counsel for the Council have sought and been granted leave to cross examine Ms Whyte, and I anticipate this will be a topic they will explore.
- 28 I submit no issues of scope arise should the Panel be minded to adopt the solutions identified by Ms Whyte.
- 29 Ravensdown’s submission is supported by expert evidence from:
- a. Richard Chilton – air quality

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<sup>7</sup> Planning Map 37

<sup>8</sup> Evidence of Jane Whyte, page 19

b. Jane Whyte – planning

30 Non-expert evidence is provided by Peter Hay, Works Manager of the Christchurch Works.

A handwritten signature in blue ink, appearing to read 'S Christensen', written in a cursive style.

Stephen Christensen

**Counsel for Ravensdown Limited**

15 November 2023