

**Before a Decision-Making Committee
Of the Environmental Protection Authority**

APP203660

Under the Hazardous Substances and New
Organisms Act 1996

In the matter of the modified reassessment of methyl
bromide

By **Stakeholders in Methyl Bromide
Reduction Inc**

Applicant

25TH MEMORANDUM OF COUNSEL FOR THE APPLICANT

29 JANUARY 2021

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STIMBR COMMENTS ON UPDATED MODELLING

Introduction

1. By Direction & Minute WGT027 the Decision-making Committee (**DMC**) asked parties to review and comment on the additional air dispersion modelling in the Todoroski Air Sciences (**TAS**) report dated 1 December 2020 (**TAS Report**). This memorandum comprises STIMBR's comments on that modelling.
2. The TAS Report responds to Directions & Minutes WGT023 and WGT024, in which the DMC sought additional information to inform its deliberations. This included requests for information or assessment of the following points:
 - (a) The wind speed or conditions in which ventilation should be delayed. In particular the DMC requested that this information address the effects of unstable, no or low wind conditions and their impact on methyl bromide dispersion.
 - (b) The buffer zones which would be required to ensure that the 1-Hour TEL is met under the dispersion occurring in these scenarios, based on the 99.9th percentiles.

The TAS Report

3. The TAS Report considers the impact of wind conditions in relation to one of the modelled log-stack fumigation scenarios (Scenario 2), assessing that:
 - (a) weather conditions during ventilation are a key factor affecting the degree of potential impact,¹
 - (b) ventilation events occurring during low wind speeds (<2m/s) are more likely to result in greater impacts for log stack fumigations,² and
 - (c) a higher degree of caution should be applied for log stack ventilation when windspeeds in any direction are below 2m/s.³

¹ Page 14, 2nd paragraph.

² Page 14, 3rd paragraph.

³ Page 14, 4th paragraph.

4. In relation to ship-hold fumigations the TAS Report is less conclusive, due to the range of weather conditions that might occur over a potential 10-hour ventilation period. Despite this, TAS assessed that ship holds have in common with log stacks that weather conditions during ventilation are a key factor affecting the degree of potential impact. TAS considered there may be value in the fumigator evaluating whether ventilation activities can be adjusted according to weather conditions to minimise impacts.

STIMBR's approach

5. STIMBR has obtained assistance from David Sullivan (SEC) and Cathy Nieuwenhuijsen (Golder) in the review of the TAS Report and the formulation of comments. Mr Sullivan and Ms Nieuwenhuijsen were both members of the expert panel convened by the DMC to provide guidance on air dispersion modelling.
6. In particular, STIMBR requested Mr Sullivan and Ms Nieuwenhuijsen to advise whether they supported the assessments from the TAS Report summarised above; and whether they could provide any additional guidance for potential controls based on the new modelling work.

STIMBR's comments

7. The modelling now available to the DMC supports competing conclusions regarding compliance with the 1-Hour TEL. TAS's model supports a conclusion that in certain low-wind or no-wind conditions (i.e. when the wind falls below 2m/s) the 1-Hour TEL may be breached. SEC's model supports the opposite conclusion: as covered in Mr Sullivan's evidence at the hearing, the SEC model did not identify any breaches of the 1-Hour TEL, despite accounting for all possible wind conditions, including low wind or no wind.
8. On this basis, there is no consensus between the experts that a control delaying ventilation in low wind or no wind conditions is necessary to ensure compliance with the 1-Hour TEL.
9. However, as covered in SEC's and Golder's further reports accompanying this memorandum, both Mr Sullivan and Ms Nieuwenhuijsen support a restriction on ventilating in wind speeds below 1m/s. STIMBR understands this is not to address a modelled breach of the 1-Hour TEL, but rather to add

additional conservatism to account for the fact that the modelling results can be unreliable in wind speeds less than 0.5m/s.

10. STIMBR has considered collectively the latest reports from TAS, SEC and Golder, and consistent with those reports STIMBR supports a low/no wind control, requiring ventilation to be delayed in certain wind speeds. While STIMBR continues to rely on the advice of its experts, it is prepared to support a control which uses 2m/s as the relevant wind speed threshold (but no greater figure), as this is the most conservative position and may potentially avoid the DMC having to determine whether there is any meaningful difference between setting a control at 1m/s or 2m/s.
11. STIMBR observes that all the modelling and expert assessments have been based on the situation at Port of Tauranga. However, it is axiomatic that the highest concentrations of exposures will occur in the calmest conditions, and to that extent if the DMC decides that a low wind speed control is appropriate, then it can apply to all fumigation locations (i.e. Northport and Port of Napier in addition to Port of Tauranga) without further refinement.
12. If the DMC decides to impose a control restricting ventilation in wind speeds below 2m/s, this also avoids any need to develop new buffer zone controls: if the risk of breaching the 1-Hour TEL only arises at wind speeds below 2m/s, and if ventilation is prohibited in those conditions, then there is no need for additional buffer zone controls to cover those conditions.
13. In addition to the matters covered above, the SEC and Golder reports (attached) contain additional information and analysis. In particular, both SEC and Golder have considered additional ways to formulate controls taking account of meteorological conditions. These build upon, and in part rely upon, the TAS Report. STIMBR makes no comment on that additional information, given the role of this memorandum is to comment on the TAS modelling; but is providing the SEC and Golder reports to the DMC in full, so that the DMC may consider the additional material if that is useful in the formulation of controls.


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29 January 2021