

**APP202804 – EDN (Ethanedinitrile)**

Further comment from the

### **Tauranga Moana Fumigation Action Group (TMFAG)**

in response to new information as supplied by STIMBR prior to the hearing and the post-hearing expert conferencing.

TMFAG maintains its original submission position wanting the EPA to decline the application and request:

1. That more comprehensive studies are undertaken on human health effects, environmental effects (including aquatic toxicity), and the potential for the substance to act as a bacteria mutagen.
2. That the EPA implements a more appropriate approach to national regulation (considering the failings for methyl bromide regulation at a Local Government level).
3. Any importation approval should be conditional on the development of an offsite fumigation facility, and require scrubbing of all log stacks following fumigation.

### **TOLERABLE EXPOSURE LIMITS**

TMFAG notes the expert conferencing discussion (evidence and reports) on Tolerable Exposure Limits amplified the lack of knowledge on the health effects of ethanedinitrile (EDN) and of consequence there can be little confidence in even the EPA recommended TEL.

The attempt by Dr Jonas, with support by industry toxicologist consultants Heydens and Pemberton to malign the aged Lewis study (1984) and provide lower safety values, by using industry (notably Monsanto) supplied research and industry derived guidelines, does nothing to provide confidence in their evidence. It further exacerbated the difficulty in determining how serious, and at what levels, EDN exposure health effects might be, acute, sub-chronic and chronic.

Dr Deyo for the EPA was also very limited by the lack of conclusive and independent research available, and correctly took a more precautionary approach, although not as strong as some other international agencies, and

still without enough evidence to support confidence in his final recommendations.

TMFAG does not believe that the EPA has enough information to determine safety levels for chronic exposure to EDN, and that **the EPA should decline the application.**

The EPA EDN Staff Report (14.9) acknowledged uncertainty regarding the risks of EDN to human health, yet considered the benefits of the substance outweigh the risks of the substance to the environment if used in accordance with the appropriate controls and requirements.

TMFAG is aware that guidelines for risk assessment are antiquated and has concerns about the matrix that the EPA staff may have used in determining benefit over risks, especially when the risks are known to be at least serious. Economic benefit is not meant to override human safety, and there may be legal implications, considering the purpose of the Hazardous Substances and New Organisms Act (HSNO) and the statutory functions of the EPA.

If the EPA DMC is of a mind to accept the Staff Report suggesting controls and requirements may mitigate risk, TMFAG wishes to remind everyone involved of the continued non-compliance for decades, to this day, by fumigators in New Zealand, and that deaths and illness have been attributed to other similarly hazardous fumigants.

**TMFAG requests, that in the event of approval of Draslovka's application for importation, manufacture and use of EDN, that exposure limits are set significantly higher than currently suggested, and for genuine precaution, at a level that necessitates the use of scrubbing/recapture.**

## **AIR CONCENTRATION DISPERSION MODELLING**

TMFAG was unable to provide an expert for the conferencing due to cost, and as lay expertise was not deemed acceptable could not participate.

TMFAG notes the expert conferencing discussion and reports on air concentration dispersion modelling again show the limits of information the EPA has to draw on to make an informed decision, unless **declining the application, or ensuring recapture/scrubbing of EDN fumigant from purpose-built fumigation facilities.**

Air modelling for discharge of fumigants is fundamentally flawed due to the dynamic nature of the wharf topography and meteorological conditions.

The experts accepted by the EPA for conferencing, Dr Bruce Graham and Mr Dennis Hlinka, in their Joint Witness Statement corroborate TMFAG's view about uncertainties with dispersion modelling on several points, e.g.

(TMFAG highlighting)

***"...It is not possible to accurately quantify the uncertainties involved in most assessments.***

***The non-uniform and short-term nature of the releases from log fumigations will introduce additional uncertainties in the modelling results. This will only be of limited concern when considering 1-hour and 24-hour averages because of the 'smoothing' effect of the time-averaging. It would be more of a concern if the modelling was to be used for assessing potential exposures over periods of say 15 minutes.***

Agreement/Disagreement:

***Dr Graham and Mr Hlinka agree that there will be uncertainties in the modelling results which cannot be quantified. ..."***

TMFAG believes that this fundamental flaw and the uncertainty expressed about log pile heights, volumes, and use of averaging in the experts statement, shows a lack of precaution by the experts. A precautionary model should be using worst possible loadings, heights, volumes etc., not relying on some inbuilt conservatism in a model that is agreed to have unquantified uncertainties. Modelling is highly limited in protection of workers and community, with the inherent uncertainties showing the need for recapture/scrubbing of fumigant discharges.

In response to the 'expert witnesses' question:

***Are the EDN releases during the fumigation phase likely to cause any significant adverse effects?***

they conclude;

***Both experts agree that the EDN releases during the fumigation phase are unlikely to make any significant contribution to the potential adverse effects from the overall fumigation operation.***

TMFAG has previously pointed out the unintended and relatively instantaneous release of log stack fumigations by tarpaulin tearing or other misadventure. It appears that the expert witnesses overlooked the very real risk to bystanders and community from these inadvertent but well documented events which appear to occur at every log fumigation facility every year. Note methyl bromide annual reports to the EPA.

**TMFAG requests that instantaneous and short time, e.g. 10 minute, exposure limits be set should approval be granted, to ensure compliance be met using properly designed fumigation facilities.**

### **NEW INFORMATION PRIOR TO HEARING**

Stakeholders in Methyl Bromide Reduction Inc (STIMBR) provided new information relating to odour following experimental EDN fumigation of *Pinus radiata* logs.

The conclusion of their new information showed that the cause and components of the odour were not determined. The conclusion was speculative, and rather than be precautionary STIMBR suggests a cost-benefit argument to avoid resolving the technical issues that might allow determination.

STIMBRs Conclusion:

(TMFAG highlighting)

*The identification of compound(s) which contribute towards the odour of *P. radiata* logs fumigated with EDN is **technically difficult to determine** (as analytical techniques do not currently exist) and at low concentrations is **subjective** (as it is dependent on the sensitivity of olfactory receptors). Given that EDN and HCN have a distinctive almond smell, it is highly **unlikely** that these compounds are involved in the reported odour of logs post fumigation. Taking into consideration the toxicity of EDN and HCN and all the other likely compounds and variables (including wood composition, moisture, temperature etc.), it is extremely **unlikely** that the odor is harmful. The cost of pursuing **possibly elusive** fractions within the volatile finger print **would need to be considered against the derived benefits.***

TMFAG and the other NGO submitter have long observed STIMBR's reliance on cost benefit arguments to avoid industry responsibility in ensuring safety for

workers, community and environment which would be very possible by using available recapture technology. The very existence of STIMBR is predicated on such avoidance by log exporters.

TMFAG is a community group concerned about the activities of log fumigators and follows a line up of community and NGO groups concerned with the risks of toxic fumigation, in particular methyl bromide, beginning with the deaths of at least six Nelson port workers from motor neurone disease. All had been exposed to methyl bromide fumigation discharges although the cause of their illness and subsequent deaths was not proven.

All those involved with subsequent hearings, applications and assessments acknowledge the toxicity of the fumigants, whether it be methyl bromide, phosphine, or now EDN, however economics and cost benefit matrices are used to support industry profits over worker, community and environmental health. TMFAG want that changed, with decisions to support safety first.

## **STAFF REPORT**

The Staff Report's Overall evaluation and recommendation concluded with uncertainty and noting the insufficient information available to set appropriate requirements and controls to mitigate the risks of EDN:

(TMFAG highlighting)

*14.9 It is considered that the benefits of the substance outweigh the risks of the substance to the environment, if used in accordance with the appropriate controls and requirements. However **some uncertainty remains regarding the risks of the substance to human health.***

*14.10 There is **uncertainty regarding whether WorkSafe would require scrubbing to occur at the end of a fumigation, how this might affect the risks of using EDN, and thus the controls and requirements that would be applied to manage the residual risks.***

*14.11 At present **there is insufficient information to be assured that WorkSafe and the EPA will be able to set the most appropriate requirements and controls to mitigate the risks of EDN.** Therefore, it is recommended that additional information is sought from the applicant and any other appropriate parties, so that sufficient information is available to support the setting of appropriate controls and requirements.*

Tauranga Moana Fumigation Action Group (TMFAG) has considered the expert witnesses conferencing reports, the STIMBR odour report, and the EPA's decision that the science memorandum and EPA staff report documents do not need to be updated.

TMFAG agrees with the Staff Report that there is uncertainty regarding the risks of EDN to human health, although wish to emphasise that EDN and some of its metabolites are extremely toxic.

TMFAG agrees with the Staff Report that, ***“There is uncertainty regarding whether WorkSafe would require scrubbing to occur at the end of a fumigation, how this might affect the risks of using EDN, and thus the controls and requirements that would be applied to manage the residual risks,”*** and ***“At present there is insufficient information to be assured that WorkSafe and the EPA will be able to set the most appropriate requirements and controls to mitigate the risks of EDN.”***

TMFAG again requests that, on the balance of uncertainty and insufficient information, the application be declined, and in the event of approval by the EPA, any controls are stringent enough to necessitate fumigation to occur in a purpose built facility with recapture/scrubbing.

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For

Tauranga Moana Fumigation Action Group