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Comments from Enviro NZ Services Ltd to the Fast-track Panel for the National Green Steel Application FTA-2506-1074

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Enviro NZ has the following comments and suggested revisions to the National Green Steel application draft conditions.

The application was accepted and processed under the Fast Track Act based on the construction and operation of a structural steel manufacturing plant to develop a business focused on manufacturing structural steel using recycled steel sourced from across New Zealand. Therefore, it is recommended that conditions require the development of the structural steel manufacturing plant and the ancillary activities (shredding operation and shredder floc monofill) contemporaneously. Conditions should not allow the development of the ancillary activities only, as they would not provide the claimed regional and national benefits.

Authorisation for earthworks and overburden placement
Condition 7(s) - *A procedure for liaising with Enviro NZ to ensure the construction and operation of Green Steel does not diminish or inhibit Enviro NZ's access along Hampton Downs Road to its landfill*;

The word "construction" added to clarify that it covers the construction activity which is more likely to disrupt traffic access to the landfill.

Authorisation for Stormwater Discharge
Condition 8 (2nd b) - *A programme for regular monitoring and inspection of the stormwater management system, in particular the stormwater management devices so that flood attenuation volumes are maintained and any potential scour and erosion effects downstream of the stormwater outlet structures, including details of monitoring and inspection frequency;*

The above amendment is required to ensure there is adequate operating capacity in the stormwater pond for flood events. Condition 8 (2nd c) only looks at sediment removal rather than managing operating volumes so this aspect should be added to 8 (2nd b).

Authorisation for Air Discharges

Condition 6 - add to AQMP *must contain, but not be limited to*:

- *The acceptance criteria for scrap steel materials, which must not accept radioactive materials and materials that could give rise to a fire or emissions of hazardous air pollutants, including free liquids (including chemicals or oils), lead, mercury, lithium-ion batteries, chlorinated plastic, asbestos, wood and putrescible materials (collectively referred to as Specified Materials).*
- *The methods for monitoring of the scrap piles for materials likely to cause a fire, including lithium-ion batteries.*

The above amendment is required to provide a mechanism to reduce/prevent fires in the scrap metal piles and shredder facility. The current AQMP condition makes no specific mention of fire prevention which is critical given the nature of the business and its potential impacts on the landfill and surrounding area.

Conditions 13 and 14 limit the discharge of particulates by limiting PM_{10} only and there is no limit or testing requirement for dioxins.

In respect of particulates, Appendix 6 to legal memorandum 25.11.25 states "AQCNZ has reviewed the NZ Steel consent conditions and notes that there are similar requirements for particulate matter, with PM_{10} proposed for Green Steel and TSP and $PM_{2.5}$ required for NZ Steel."

However, the proposed consent conditions do not include monitoring of $PM_{2.5}$. In New Zealand, while PM_{10} (coarse particles) has traditionally been the primary, regulated air quality indicator, monitoring is shifting toward $PM_{2.5}$ (fine particles), driven by updated health evidence indicating that smaller particles pose a greater, more direct risk to human health. $PM_{2.5}$ penetrates deeper into the lungs, making it a stronger indicator of health risks. Waikato Regional Councils own website support this:

> "while PM_{10} levels pose a risk to human health, it is now well established that the finer particle range, referred to as $PM_{2.5}$ (particulate matter less than 2.5 micrometres in size) provides better evidence of effects on human health and is more indicative of the problem source, which is combustion related."

Monitoring of PM_{10} alone will not support effective management of those particles known to present the most significant risk to human health – fine particles of <2.5 micrometres in size. Including within the consent conditions relating to acceptable $PM_{2.5}$ levels supports compliance with current air quality standards.

In respect of dioxins, scrap feed into EAF from commercial and domestic sources inherently includes chlorinated compounds such as polyvinyl chloride, coatings and paint etc that can promote formation of polychlorinated dibenzo-p-dioxins and dibenzofurans

(PCDD/Fs).[1] PCDD/Fs are highly toxic, persistent organic pollutants (POPs) formed as unwanted by-products of combustion and industrial processes.

While the same memorandum states, "The proposed facility will recycle scrap steel finished products, including beams, channels, angles and bars commonly used in construction and manufacturing" it is not clear how these will be segregated so that painted, plastic or coatings (again inherent in such finished products) are excluded from the raw feed into the plant.

Further, the study referenced by AQCNZ refers to a study completed in 2004 (*Merz S K, et al)*[2]. This study is 22 years old and refers to the only EAF in NZ at the time, a 50-year-old furnace that was scrapped in 2014/15. The EAF about to be commissioned at New Zealand Steel in May 2026 has been recently consented with conditions for dioxin discharge and monitoring. We consider it appropriate to include conditions requiring monitoring of dioxins. Further, we do not consider the condition imposed on NZ Steel to be onerous as it is monitoring once every 5 years for dioxins subject to outcomes.

It is suggested that the following conditions are added in relation to $PM_{2.5}$ and dioxins:

Without limiting the generality of Conditions 13 and 14 and the requirement to minimise discharges as far as practicable in Condition 5, discharges of harmful air pollutants from the EAF Baghouse discharge stack must not exceed the following discharge limits (averaged across three representative samples taken in accordance with the below Condition and emission concentrations (in mg/m³) corrected to 'standard conditions' of 0°C, 101.325 kPa, and a dry gas basis):

- ***Fine Filterable Particulate Matter less than 2.5µm in diameter ($PM_{2.5}$):*** *5 mg/m³ and 3.3 kg/hr calculated as a daily average.*
- ***Dioxin:*** *0.1 ng WHO-TEQ/m3*

Undertake emissions testing on the EAF Baghouse discharge stack to provide information and determine compliance with Condition XX (discharge limits). These tests must:

a) Be conducted during process conditions that are representative of the maximum normal emissions.
b) Comprise not less than three separate representative samples for each source and each stack testing round.
c) Be undertaken utilising US EPA Method 201A for PM_{10} & $PM_{2.5}$ for particulates and US EPA Method 23 for dioxins and furans.
d) Correct the emission concentration results to 273.15°K, 101.325 kPa and a dry gas basis.
e) Be carried out by companies with appropriate independent accreditation for the methods required for testing at the Site, unless agreed otherwise with the Council.

[1] Qiuting Yang, Lili Yang, Jia Shen, Yuanping Yang, Minxiang Wang, Xiaoyun Liu, Xuejing Shen, Changliang Li, Jia Xu, Fengfeng Li, Da Li, Guorui Liu, Minghui Zheng, Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/Fs) emissions from electric arc furnaces for steelmaking, Emerging Contaminants, Volume 6, 2020, Pages 330-336, ISSN 2405-6650

[2] Merz S K, et al Dioxin and Furan Emissions to Air from Secondary Metallurgical Processes in New Zealand: Volume One. Ministry for the Environment, New Zealand, April 2004

f) *Be undertaken at accessible stack sampling points that are constructed and maintained in accordance with the above testing standards.*

g) *Be reported as part of the Annual Air Quality Report.*

h) *Be undertaken in accordance with the following schedule:*

- *Size Speciated Fine Filterable Particulate Matter less than 2.5µm in diameter (PM2.5): – Within 3 months of commissioning of the furnace, 6 months following commissioning, and every 6 months thereafter (i.e. twice yearly).*
- *Dioxins and furans – Within 3 months of commissioning of the furnace, 12 months following commissioning, and once per five years every year thereafter.*

Advice Note: Council's certification of an alternate method for source emissions testing will be based on a demonstrated advantage or equivalence of the method over the specified method for the accuracy and precision of results.

Authorisation for Monofill Activities

Condition 15 - this condition should also apply to the shredding process as this is where fires are more likely. Amend as follows for Conditions 15-17 or include a separate Fire Management Plan condition for the shredding process.

At least 30 working days prior to the commencement of the scrap yard and shredding facility and disposal activities at the monofills, the Consent Holder shall prepare and submit to the WRC a Fire Management Plan (Fire MP). The Fire MP and...

Condition 16 - *The Fire MP shall demonstrate how the risks of fire associated with the operation of the scrap yard and shredding facility and the construction, operation, and closure of the monofills will be avoided, remedied, or mitigated, and how fire events will be safely and effectively managed should they occur.*

Condition 17 (b) - Add another clause similar to this, as follows: *Procedures for screening, handling, storage and shredding of scrap to minimise fire risk.*

Resource Consent for Activities Under the Waikato District Plan

Condition 52 - *Stormwater systems must be designed, constructed and maintained in a manner that minimises erosion and maintains the Hampton Downs Road carriageway.*

Enviro NZ welcomes any questions from the panel with regards to the above matters or, should it wish to understand any points in greater depth.

Laurence Dolan

Environmental Manager