

HAVANT BOROUGH COUNCIL

Town & Country Planning Act 1990

Consultation on Planning Application

MEMORANDUM

From:	Environmental Health	To:	Development Control
Our Ref:	CONS/24/01167	Your Ref:	APP/23/00127
EH Case Officer Extn:	44 6677	Date:	17 July 2024
DC Case Officer:	Kayleigh Taylor		
DC Case Officer Extn:	3 744		
Application Number:	APP/23/00127		
Site Address:	4 Marples Way, Havant, PO9 1NX		
Proposed Development:	Site Address: Wartsila 4 Marples Way, Havant, PO9 1NX Proposed Development: Retrospective application for erection and operation of dust extraction system.		

Observations / Comments:

I have now found opportunity to review the revised Alkali Environmental Air Quality Assessment, Ref: AQ1047 05/04/2024 ('the 2024 AQA').

The report is an update of previous versions, and so supersedes previously submitted documents ('the 2023 AQA'). The purpose of the update is to action the Councils request for consideration of the discharge emission as a directional source, as built. However, opportunity has also been taken to update the model against 2024 background pollutant concentration estimates, and to present a refined operational hours modelled scenario in addition to the very conservative 24/7/365 scenario previously presented.

Key points I would highlight;

- The report has not addressed prior comments about measurement uncertainty. Sensitivity analysis (scenario testing) addresses operational hours and stack orientation only. Those prior comments remain applicable. The effect would be to challenge the modeller's intention to estimate the impact of the worst-case emissions scenario – we have no empirical basis on which to assess the relative importance of expected variance in the reference emission against the operational hours accounted for.
- The report has not engaged with previous comments about the appropriate screening values/assessment levels to consider, and makes all comparisons against EA permitting guidance. Compliance with EA H1 (permitting) screening criteria is not accepted to be sufficient to demonstrate compliance with applicable planning policy. The report references-, but has not made any attempt to apply-, the IAQM 2017 guidance as a measure of significance.
- The emission source has been considered as a directional 'jet source', in response to HBC's request. It is acknowledged that ADMS limitations mean that the assessment cannot account for the principal building mass, and is consequently limited to a 'free field' assessment. The report presents this limitation as producing a significantly conservative assessment. I would disagree on the basis that building surface friction and the effective air turbulence at building corners/edges/ridges will impact dispersion & dilution. Whilst a free-field assessment might result in a greater area of impact (conservative), it is likely to produce a more favourable result for receptors close to the principal buildings – not

representing a worst case for the receptors that are our 'policy risk drivers'. Reference to the spatial-plots presented in the Appendix A are interpreted to support this view.

- Sections 3.4 & 3.6 modify the conceptual model underlying the estimates presented in (what I would call the-) 'central estimate'; the results presented in the main report body. This appears to reduce the operating hours accounted for (expected to reduce the process contribution estimates) and also to increase the efflux velocity (and consequentially, the volumetric emissions – expected to increase the process contribution estimates). The reason for these amendments has not been explained.
- It is noted that sensitivity scenario 1 should in principle correspond to the central estimate presented in the 2023 AQA, but the respective estimates differ substantially – typically by at least an order of magnitude. The report does not address this difference. It is unclear whether the conceptual model modifications highlighted in the point above are sufficient to produce the noted difference, but would I suspect that one of the presented assessments is in error. This ambiguity undermines confidence in the assessments presented in these reports as, in principle, it leaves open the possibility that the unaddressed variance may be accounted for in an error that has carried through to all of the 4 scenario's presented in the 2024 AQA.
- The Modelling uncertainty section establishes that the report is aiming only to compare the output to EQS's defined in table 1, which relate solely to the PM₁₀ fraction. The report has not addressed the concerns raised at the outset that the measured TPM in reality does not represent a typical primary emission, being a post-filtration fraction that will be biased toward the smaller end of the size range. This makes the PM_{2.5} standards more relevant to the applicable planning policy.
- Comparing the outputs between estimates modelled assuming a vertical stack and those modelled as a horizontal / directional discharge; a vertical discharge would be expected to result in around -37% process contribution to fine-particulate exposures at the worst affected properties, relative to the 'as built' configuration.

Notwithstanding the points above, I have applied the IAQM 2017 guidance to the greatest-modelled-impact, using a range of available air quality assessment levels (AQUAL's), for TPM = PM₁₀, TPM as PM₁₀, and TPM = PM_{2.5}. These comparisons yield significance judgements ranging from 'Negligible' to 'Moderate' as PM₁₀ and 'Negligible' to 'Substantial' for PM_{2.5}.

The reason for the range of results for PM_{2.5} is the number of available AQUAL's, with 3 statutory limit- and two guideline- values available. The most appropriate value for comparison is considered to be the Environmental Improvement Plan interim target PM_{2.5} value of 12 µg/m³. This is to be achieved by 2028, and is appropriate given near-term applicability and the wording of NPPF'23 para 192 (*'Planning...decisions should... contribute towards compliance with...national objectives for pollutants'*).

Against the interim objective, results from the 2024 AQA return a significance judgement between 'Slight' & 'Moderate', depending on means of comparison (i.e. whether we assume the post-filtration emission particle-size distribution corresponds to- or differs- from that typical of a primary PM₁₀ fraction, and which modelling scenario is under consideration).

Against the (related, statutory-) limit value which is to be achieved in 2040, the 2024 AQA returns a significance judgement of 'Moderate' to 'Substantial'. Whilst this initial comparison has been made against current background levels, it may be calculated that the ambient average background level would need to fall below 7.55 µg/m³ by 2040 in order to improve the judgement range to 'Slight' to 'Moderate'. It is not expected that background levels will fall this far given the local context.

The significance descriptions referred to above apply to around 9 existing residences, based upon the results presented.

I would highlight that the hours of operation accounted are probably very much a worst case,

but conversely, that there is an uncertain degree of variability in the real-world emissions relative to the measured reference emission. I would also highlight that the IAQM guidance considers any result of 'moderate' or greater to be a 'significant' 'result; but at the same time allowing for a significant result in a limited area to be considered 'not-significant' following reasoned professional judgement.

In this case, the number of impacted properties is fairly small, but is not limited to a single property. The assessment is in some respects conservative (hours), but in other respects is at best uncertain, and arguably more likely than not to have failed to capture the worst-case process emissions as the reference emission. With reference to the substantial (order-of-magnitude-) differences between results presented (within the respective 2023 & 2024 AQA's, for apparently equivalent scenario's); differences in reference emissions might have a substantial impact upon the modelling results. Any impact would be expected to be proportionate across all scenario's that otherwise vary only in terms of operational hours & emission orientation.

Conclusions & Recommendations

The results of the revised assessment have substantially revised-up the process contribution under all scenario's. Broadly as expected, considering the plant emission as a horizontal jet source returns less-favourable estimates than does the vertical emission scenario's. This is expected to be compounded-, rather than mitigated-, by building effects that could not be accounted for in the model.

No existing/in-force statutory limits are breached as a result of the addition of development emissions. The same is likely to be true in 2028, when the interim target is to be met, although at this time exposure at the nearest receptor is expected to be around 92% of the target level, with the process contributing around 7.5% of the total pollutant exposure at the worst affected location (modelled). This contribution could in principle be reduced to around 5% through modification of the existing installation to discharge vertically.

The limit value which applies in 2040 is more challenging, with overall (PEC) compliance being less certain, and with the development process contributing a more significant proportion to local exposures. It should be borne in mind that the 2040 limit value is still double the current health-based guideline, above which it cannot be said that we can expect no harm to be likely to arise.

For the policy reasons previously outlined, I believe there to be support for seeking to secure an optimisation of the existing emission to reduce exposures.

Considering all of the available mitigation options (tertiary abatement, upgrading filtration, modifying the plant exhaust, or limiting operational hours in various ways), it is considered that modification of the exhaust stack to discharge vertically would probably represent the best balance – it is a passive measure that once complete requires no further management or monitoring, is unlikely to pose any planning enforcement issues, and is likely to represent reduced-cost relative to other physical abatement solutions.

Whether this needs to be sought ahead of determination, or whether it may be secured as condition of a positive determination will be a planning judgement. I would be able to support a positive determination under either approach.

If you would like to discuss condition wording, or a discussion about planning balance – please do let me know.

Mr. Jonathan Driver
Environmental Control Officer