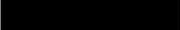
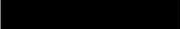
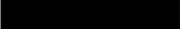
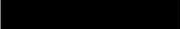
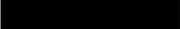


Technical Note

Project name **Angus Substantial Variation**
Project no. **1620016373**
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Prepared by 
Checked by 
Approved by 

Operation Noise from the SAFF and PAC at Angus Fire, Bentham

Date 05/09/2025

1 Introduction

Angus Fire are seeking to operate a treatment process involving Surface Active Foam Fractionation (SAFF) and Powdered Activated Carbon (PAC) at their site at Station Rd, Bentham, Lancaster LA2 7NA.

Since there could be some associated noise with the plant, the Environment Agency has requested Angus Fire ***'Demonstrate that noise from operation of the SAFF plant, PAC plant and any associated activities, such as traffic movements transporting IBCs, will not cause any adverse impact at local receptors particularly during nighttime operation.'***

This Technical Note outlines details of the plant, considers existing noise levels at the nearest receptor, and provides an estimation of noise from these processes.

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2 Location

Figure 1 identifies the location of the PAC and SAFF plant.

The SAFF unit is within an enclosure to the south of the site, and as seen in Figure 2. This plant will operate continuously during the standard working week for Angus Fire (6am Monday to 5pm Friday).

The PAC plant is located within an existing building and is shown in Figure 3. The system includes an air hammer on the PAC dosing unit, located inside the building and next to the PAC mixing chamber. It is understood to be the noisiest part of this system, but only operates in exceptional circumstances (where the PAC has not dosed under gravity after 3 unsuccessful attempts).

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The nearest noise sensitive receptor to the scheme is approximately 65m to the southwest of the SAFF enclosure, on Duke Street. Figure 4 presents a snip from Google Maps to identify the location of this receptor.

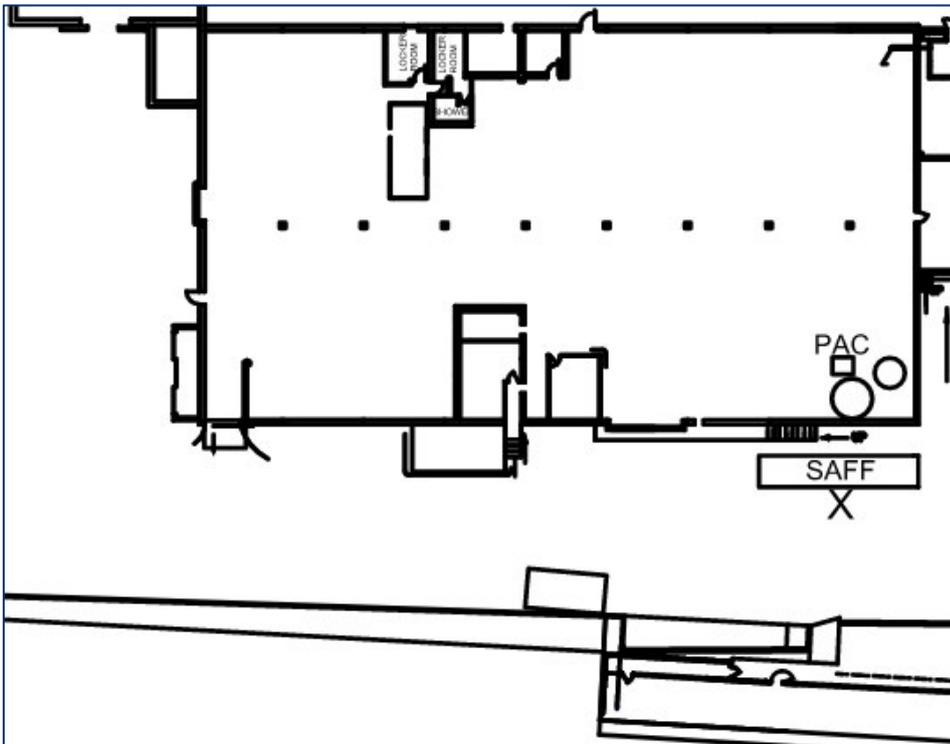


Figure 1 – Location of the SAFF and PAC Plant



Figure 2 – SAFF Enclosure



Figure 3 – PAC



Figure 4 – Location of closest receptor

3 Noise Measurements

Figure 5 identifies the measurement locations taken by staff at Angus Fire with the Institute of Acoustics (IOA) Competence in Workplace Noise Assessment training.

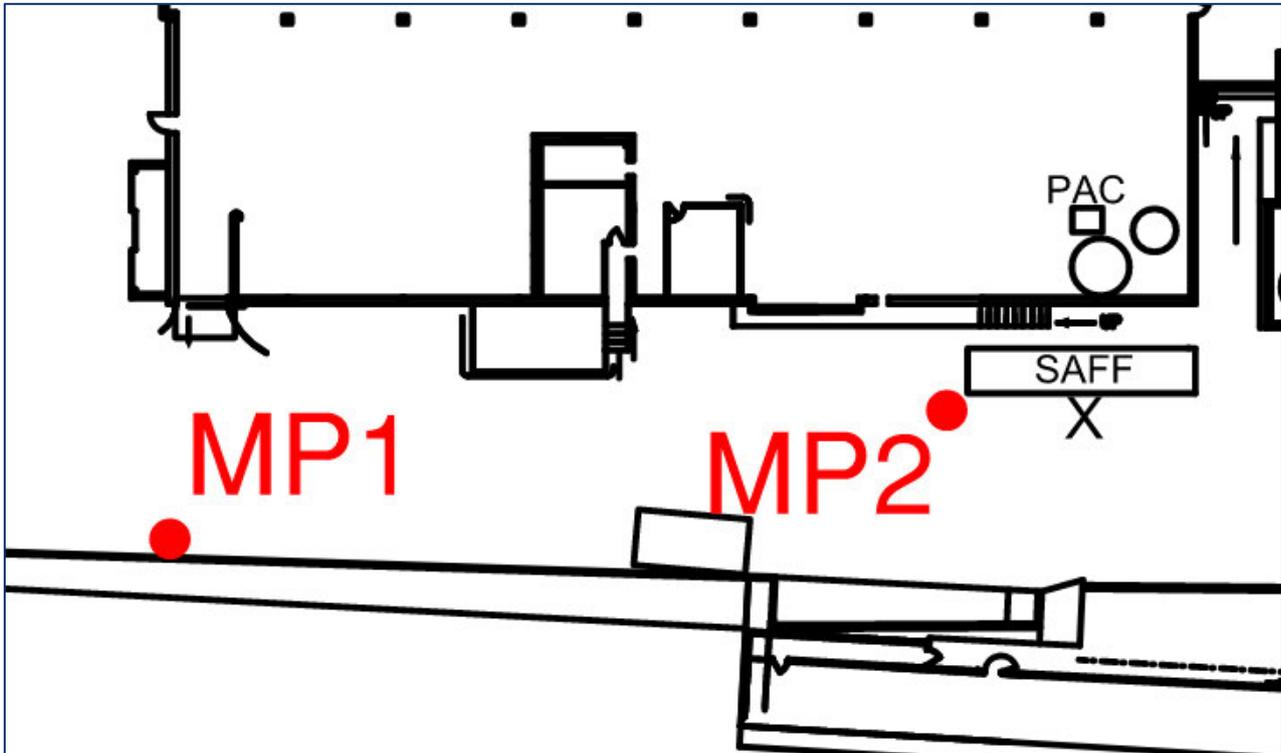


Figure 5 – Noise measurement locations

Measurements were taken using a Testo 815 Class 2 Sound Level Meter (less than 1 year old), which measures instantaneous sound pressure levels and has three switchable ranges. Measurements were taken using the A-weighted function of the meter.

At measurement position 1 (MP1) noise levels were sampled for a period of 10 minutes at 10:30 am with the site operating as normal. Sound pressure levels on the meter are understood to be between 32-35 dBA generally.

While the samples taken do not allow an analysis of background levels (L_{A90}) to be determined, they do indicate that overall noise levels at a location deemed representative of the nearest receptor are low. Where ambient noise levels are low, the relative background level will also be low and potentially within a few decibels of the ambient noise level.

At measurement position 2 (MP2), at the corner of the SAFF enclosure, noise levels were found to be 56 dBA at 1m from the enclosure. At this same location, the air hammer of the PAC unit was triggered inside the adjacent building and a noise level of 53 dBA was observed. This also applies when the window of the building is open, indicating that the SAFF is the dominant noise source of the two.

Vehicle movements and transport of Intermediate Bulk Containers (IBCs) are not expected during the night and would be infrequent during the day. As a result, these have not been considered.

4 Potential Noise Impact

Simplistically, a point source will reduce over distance by 6dB per doubling of the distance measured. For example, noise will reduce by 6dB at 2m compared to the 1m measurement position, and then a further 6dB at 4m.

At 65m from the measurement position, noise levels would reduce by 36dBA to around 20 dBA. The actual noise fall off is likely to be less given that measurements taken were in the near field but would be expected to be 23 -28 dBA with this considered.

Based on this high-level assessment of noise levels from the plant, the general indication is that noise from the SAFF and PAC plant would be below daytime ambient levels and could be below or equal to night-time noise levels if similar low ambient noise levels occur at night. When considered against BS4142¹ criteria, where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

5 Conclusion

The indication from the information received from Angus Fire is that the operation of the SAFF and PAC equipment is likely to be equal to or lower than existing noise levels and not expected to result in an adverse impact.

6 Limitations to this review

- This indicative review assumes the measurements taken are representative of normal conditions on site.
- The sound pressure levels provided are based on estimating the average sound pressure level from a fluctuating instantaneous reading display.
- It is assumed that night-time noise levels are similar to those measured during the day given how low these are for 10:30am. For context, 35 dBA is an acceptable average noise level inside a living room during the day. Therefore, 35 dBA outside is considered subjectively low.

¹ British Standard 4142:2014+A1:2019 Method for rating and assessing industrial and commercial sound' (BS4142)