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SWDWP EfW CHP Facility – Expert opinion concerning tonality in waste treatment plants in general

Dear Mr. Spohr,

Our client MVV is planning a new EfW facility in Plymouth, United Kingdom. For this facility Müller-BBM has made a first assessment of the noise emitted by all expected main sound sources of the plant. Furthermore, we designed a detailed sound propagation model to calculate the noise immission at the receptor points in the neighbourhood of the facility.

Müller-BBM is one of the major engineering consultants in Germany and renowned especially for technical consultancy in the field of sound and vibration. Among others, our clients are corporate groups in the energy sector, heavy industry, car industry or chemicals industry. We make a lot of assessments for power plants of all kinds of fuels like coal, oil, natural gas, waste or biomass. In addition, we are highly experienced in measuring both the sound emission and immission of single sound sources in power plants as well as of the whole facilities.

Tonality, caused by single sound sources of a facility, rarely leads to complaints in its neighbourhood if it is taken into account properly. To avoid this problem, detailed acoustical know-how of a typical waste treatment plant and especially its components is important.

Most sound sources of a power plant are broadband, for example axial cooling fans, radial fans (like ID fans or FD fans), fans for ventilation of buildings, all kinds of pumps or turbines and electric generators.

In *ISO 1996-1:2003, Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures* in Table A.1 (Typical level adjustments based on sound source category and time of day, Industry) industrial sound sources are listed with a typical level adjustment of 0 dB. According to our experience, this level adjustment corresponds to typical industrial facilities as long as an avoidance of tonality is taken into account in the phase of basic engineering as well as in the phase of detailed engineering, and if engineering comes along with acoustical consultancy.

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For the EfW facility in Plymouth, we have not observed any sound source which contains a distinguishable, discrete, continuous note according to BS 4142: 1997, when sound protection measures will be implemented as they are recommended in the noise assessment.

For the actual state of planning and based on our experience, complaints caused by tonality are not to be expected.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Jochen Sperber', written in a cursive style.

Dipl.-Ing. Jochen Sperber