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How the Environment Agency Decides Where to Place Mobile Monitoring Facilities (MMFs)

The Environment Agency (EA) uses a range of factors to strategically place its mobile monitoring facilities (MMFs) for assessing odour and emission impacts. Their decisions aim to gather the most relevant data to assess environmental impact, address public concerns, and ensure the safety and integrity of their valuable equipment.

Here are the key considerations for placing an MMF:

- **Complaints and Public Feedback**: A primary driver for MMF deployment is the receipt of odour reports and complaints from the public. An MMF is often placed within residential areas where complaints have been received to directly monitor the impact on local communities.
- **Proximity to Sensitive Receptors:** The EA prioritises locations near sensitive receptors such as homes, schools, hospitals, and nursing homes, as these are areas where people spend time and expect a reasonable level of amenity.
- **Source of Emissions**: The unit is placed strategically to monitor emissions from suspected sources, such as landfills or industrial sites under EA regulation. As it's not possible to measure odour in the way the human nose detects it, we use methane (CH4) and hydrogen sulphide (H2S) as surrogates or alternatives for measuring odour pollution; they are major components of landfill gas.
- **Prevailing Wind Direction and Meteorological Conditions:** Understanding the typical wind patterns and other meteorological conditions (such as wind speed, temperature, and pressure) in an area is crucial. An MMF is equipped to monitor these conditions, as they significantly influence how odours and emissions disperse. This helps position the unit to capture emissions as they are carried by the wind from the source towards affected areas, and also aids in understanding fluctuations in concentrations. Local topography also plays a role in how odours and emissions disperse.
- **Accessibility and Practicalities:** An MMF requires a constant electrical supply and suitable hard standing for safe and stable deployment. The unit needs to be placed away from buildings to ensure the data collected is representative of ambient air quality, without interference from building structures.
- **Security:** MMFs contain expensive and sensitive equipment. Therefore, they are strategically placed in secure areas to prevent vandalism, theft, or tampering. This can involve utilising existing physical barriers, placing units where they are visible to the public or in areas with existing security measures, and avoiding isolated or poorly lit locations where the risk of incident is higher.
- **Long-Term Monitoring and Data Comparison:** In some cases, an MMF is kept at the same location for extended periods to enable year-on-year data comparison and to track trends in air quality, building a detailed picture of the local ambient air quality.

- **Specific Pollutants and Objectives**: The choice of monitoring equipment within an MMF depends on the specific pollutants of concern and the air quality standards or objectives the EA is trying to assess.

Data Utilisation and Reporting

The collected monitoring data is shared with relevant partners, including local authorities and public health bodies like the UK Health Security Agency (UKHSA). This data informs their assessments, including health risk assessments, and contributes to a collaborative understanding of environmental impacts.

It's important to note that initial raw data from an MMF may be indicative and subject to change. This data undergoes rigorous quality assurance checking and calibration processes, conducted using recognised standards and methodologies, to produce 'rectified data'. Rectified data is then formally published and used for detailed analysis and reporting. This ensures the accuracy and reliability of the information used for regulatory decisions and public health assessments.

The collected data is rigorously analysed and compared against established benchmarks, including the UK Air Quality Strategy (AQS) objectives, World Health Organisation (WHO) air quality guidelines, or health-based guidance values from the UK Health Security Agency (UKHSA). This comparison helps assess compliance and potential impacts.