Odour Modelling

Dynamic odour emissions modelling software for wastewater treatment systems

The Problem

Odours, from both municipal and industrial wastewater treatment works, are responsible for a large number of complaints each year. In an increasingly litigious environment this poses the threat of legal action by the public. It is important therefore that operators of these treatment facilities demonstrate due diligence by assessing the potential for odour generation and preparing strategies for its mitigation.

The Approach

The most widely used approach is emission and dispersion modelling which provides a rapid and powerful tool for predicting the dispersion of odours from wastewater treatment plants and the likely concentrations at the site boundary.

Meaningful odour modelling requires the accurate collection and processing of data at two stages:

- Odour generation and emissions monitoring
- Atmospheric dispersion modelling

Odour generation is calculated from a combination of parameters such as the odour potential of individual sources and substances and from on-site odour monitoring.

The Service

BHR Group offers a focused service covering all aspects of odour and air dispersion modelling.

Our team of expert staff has extensive experience and technical understanding of a large number of air pollution problems, covering a wide range of industrial sectors including wastewater and sludge treatment.

The team has access to both industry-wide government-approved software, and proven bespoke packages developed specifically for water industry odour modelling.

Steps 1: Emissions Modelling

Long-term and short-term predictions are undertaken of emissions from:

- point (stack)
- line (pipes, traffic)
- area (plant complexes)
- volume (tanks) sources.

Step 2: Air Dispersion

Air dispersion modelling studies are undertaken using state-of-the-art dispersion models e.g. the UK ODOURsim® and US EPA ISC/AERMOD models for a range of emission, topographical and meteorological scenarios.

Step 3: Conclusions

The results are compared with recommended air quality standards and guidelines and odour detection thresholds. Quantitative risk assessments of the predicted results can also be undertaken.

Output Pathway

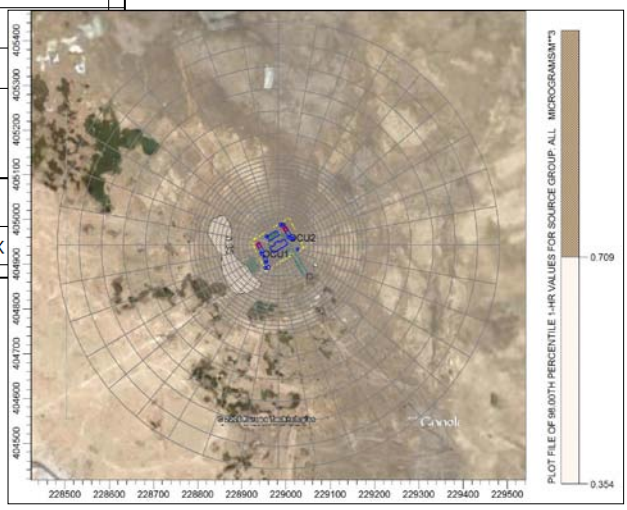
Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
ALL	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Threshold Violation Files (MAXIFILE)

Path for MAXIFILES: doha1.AD

Averaging Period	Source Group ID	Treshhold Value	File Unit (Optional)	File Name
1	ALL	7.00		QATARPS1TH.MAX



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