Atmospheric
Chemistry
and Physics

Supplement of

Estimating the size of a methane emission point source at different scales: from local to landscape

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Supplementary Material Section 1

The standard deviation of the lateral (σ_y, m) and vertical (σ_z, m) mixing ratio distribution calculated from the stability class of the air (Pasquill, 1974).

Stability Class	Day			Night	
Wind Speed (m s^{-1})	Strong	Mod	Light	Overcast	Clear
2	a	a	b		
3	b	b	c	e	f
4	b	c	c	d	e
5	c	c	d	d	d
6	c	d	d	d	d

	sigz	
Stability Class	a	b
A	0.0002539	2.089
B	0.04936	1.114
C	0.1154	0.9109
DD	0.7368	0.5642
DN	1.297	0.4421
E	0.9204	0.4805
F	1.505	0.3662

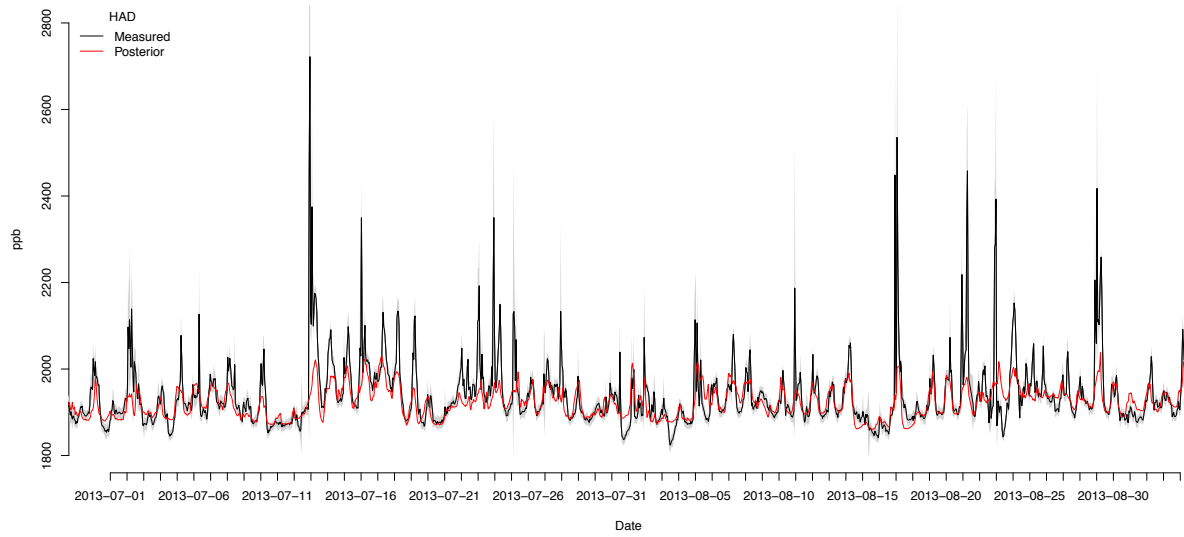|	sigy	
Stability Class	c	d
A	0.495	0.873
B	0.31	0.897
C	0.197	0.908
DD	0.122	0.916
DN	0.122	0.916
E	0.0934	0.912
F	0.0625	0.911

Supplementary Material Section 2

Figure SM2.1 An example of the time-series of observations, background values and posterior enhancement as calculated by the InTEM model from July 2013 to August 2013 for the measurement site in Haddenham, Cambridgeshire.
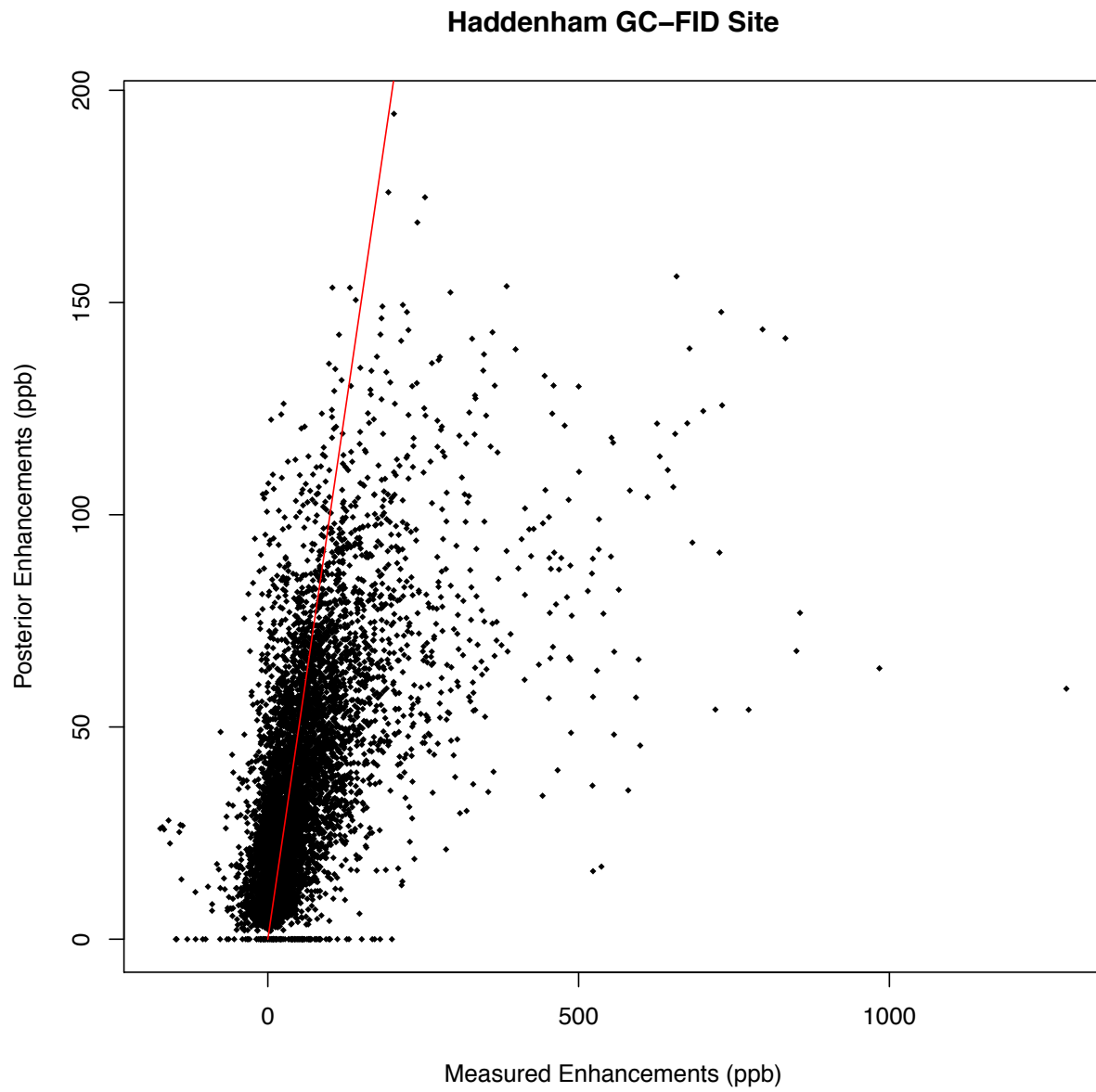
Haddenham GC–FID Site

Figure SM2.2 Scatterplot of posterior enhancements vs. observed enhancements as calculated by the InTEM model for the Haddenham, Cambridgeshire.
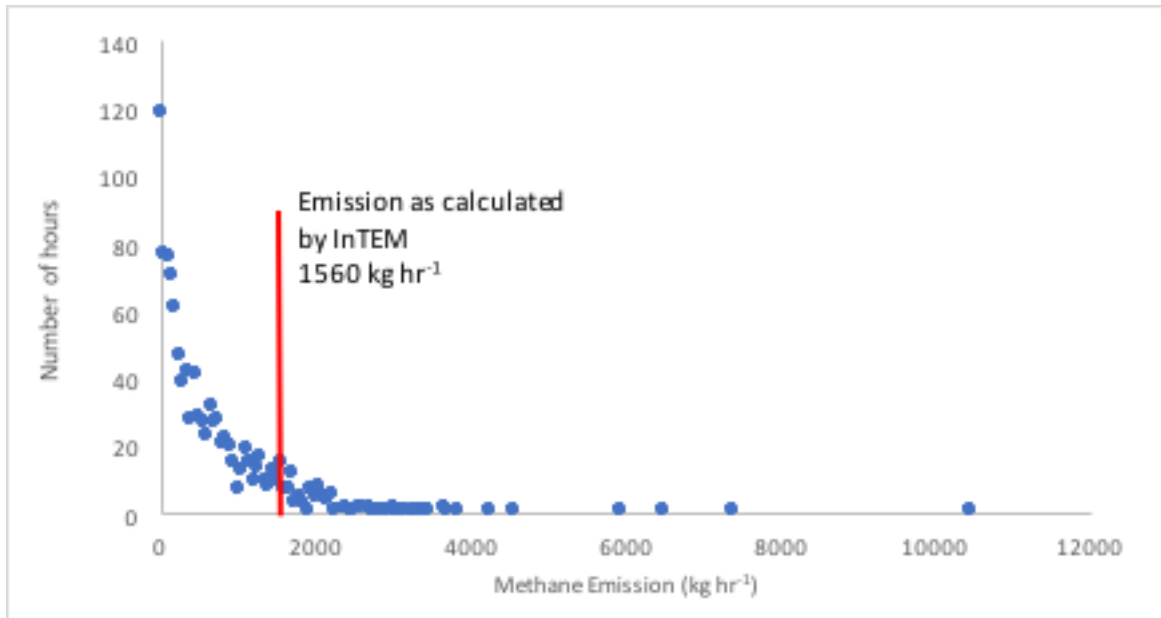
Figure SM2.3 Distribution of hourly methane emissions from the landfill as calculated using the Gaussian Plume model using methane concentration data collected at Haddenham church. The data includes emission estimates from July 2012 to July 2014. The red line represents the emission from the landfill as calculated by the InTEM model.