

For sites of low generation potential, which consistently record low concentrations of soil gas under worst case conditions, a limited programme of monitoring (in terms of both frequency and duration) is likely to be appropriate. However, for those sites where high or variable concentrations are recorded, extended periods of monitoring and possibly the installation of additional gas monitoring wells may be necessary. Using this philosophy a matrix has been developed that will aid in determining an appropriate number of gas monitoring visits (see Tables 5.5a and 5.5b).

Table 5.5a

Typical/Idealised periods of monitoring (after Wilson et al, 2005)

		Generation potential of source				
		Very low	Low	Moderate	High	Very high
Sensitivity of development	Low (commercial)	1 month	2 months	3 months	6 months	12 months
	Moderate (flats)	2 months	3 months	6 months	12 months	24 months
	High (residential with gardens)	3 months ¹	6 months	6 months	12 ¹ months	24 months

Table 5.5b

Typical/Idealised frequency of monitoring (after Wilson et al, 2005)³

		Generation potential of source				
		Very low	Low	Moderate	High	Very high
Sensitivity of development	Low (commercial)	4	6	6	12	12
	Moderate (flats)	6	6	9	12	24
	High (residential with gardens)	6 ¹	9	12	24 ¹	24

Note

- 1 NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).
- 2 There is no industry consent over "high", "medium" or "low" generation potential of source.
- 3 At least two sets of readings should be at low and falling atmospheric pressure (but not restricted to periods below <1000 mb) known as worst case conditions. Historical data can be used as part of the data set (Table 5.5b).

Not all sites will require gas monitoring for the period frequency indicated in Tables 5.5a and 5.5b. Depending on specific circumstances, additional readings may be required. However, this would need to be confirmed with demonstrable evidence. NHBC's publication, *Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present* recommends that extended period of monitoring and possibly the installation of additional gas monitoring wells may be needed on sites where consistently record high or variable concentration (Boyle and Witherington 2007).

It should be noted that during longer periods of monitoring, once the temporal pattern of gas emission is established, monitoring frequency can be decreased unless specified threshold concentrations are detected (see Chapter 7).

Consideration should be given to the equilibrium of the soil gas regime while assessing monitoring data. It is recommended that newly-installed monitoring wells are left for 24 hours to allow the soil gas to reach equilibrium. It is recognised that some soil gas regimes could take considerably long to reach equilibrium (eg low generation, low permeability situations). Interpretation of any initial readings should be based on the long-term data.