Table NSZD-1. Method Comparison Table

Consideration	Gradient	Passive Flux Trap	Dynamic Closed Chamber	Biogenic Heat Monitoring[1]
Best for sites with:	Vadose zones >5 feet with existing vapor probes or wells screened across water table	Variable effects of soil respiration on O_2 and CO_2 flux	• Geospatially uniform background gas flux[2] • Need for high resolution assessment of spatial variability	• Deep LNAPL impacts • Impervious ground covers • Need for thorough accounting of temporal variations
Invasiveness – physical	High, for new probes	Low, shallow installation	Low, shallow installation	Low, in well measurements High, buried probe installation
Field labor intensity	High	Low	Moderate	• High for installation • Low for routine data acquisition
Instantaneous or time-averaged measurement?	Instantaneous	Time-averaged (short-term)	Both (if sampling over long term)	Both
Method of background correction	Background flux monitoring or estimate from empirical relationship	^{14}C correction	Background CO_2 efflux or ^{14}C correction[2]	Temperature measurements at a background location
Spatial coverage/data density	Low	Moderate	High	Low
Real-time data	Yes, using field gas analyzer	No	Yes	Yes
Laboratory analysis	Optional	Yes	No	No
Relative one-time implementation cost	$$$ ($-$$ with existing probes & field analyzer)	$$	$	$-$$, in well measurements $$$, buried probe method (which becomes more cost-effective when used for long-term monitoring)

[1] Biogenic heat monitoring methods are varied and continue to evolve. Users interested in biogenic heat monitoring methods are encouraged to assess the latest developments.

[2] The uniform background gas flux is not a requirement when a ^{14}C correction is applied. The ^{14}C correction method, when used in combination with DCC, is considered a method in development (API 2017).