

CMT Systems for the LUST Market

U.S. LUST Market

- 150,000 LUST sites
- Strong political and economic incentives to close LUST sites
 - End expensive long-term monitoring
 - Redevelopment



Growing Interest in Multilevel Monitoring at LUST Sites in the U.S.

- Conventional wells yield biased samples due to compositing (blending)
- Ambient flow in conventional wells can cross-contaminate aquifers

Multilevel monitoring wells solve the above problems, yielding accurate depth-discrete samples and preventing ambient flow in the well.

More complete and accurate data sets quickly identify LUST sites which pose a threat to downgradient receptors and those that can be closed with no further action.

Advantages and disadvantages of four multilevel sampling methods that are used at LUST sites

| Description | Advantages | Disadvantages |
|------------------------|--|---|
| Diffusion Bag Samplers | <ul style="list-style-type: none"> • Low cost • Can collect many samples from a single well • Compatible with all gasoline constituents except MTBE, TBA, and ethanol | <ul style="list-style-type: none"> • Data worthless if there is ambient vertical flow in the well • Samples water in the well, not in the aquifer |
| Nested Wells | <ul style="list-style-type: none"> • Standard materials • Many contractors available to install • Many sampling options | <ul style="list-style-type: none"> • Often poor well seals • Prohibited or discouraged in many areas • Large annular space increases purge time |
| 3-Well Cluster | <ul style="list-style-type: none"> • Standard materials, abundance of contractors • Good annular seals between zones • Many sampling options • Highest quality samples | <ul style="list-style-type: none"> • Increased drilling costs • Increased permit fees in some areas |
| 3-Channel CMT | <ul style="list-style-type: none"> • Good annular seals prevent vertical groundwater movement and cross contamination • Possibly lowest cost | <ul style="list-style-type: none"> • Fewer sampling options available. • Long purge times if micro-purge not used. • Positive sample bias if sampled incorrectly |