Case Study
Remote Landfill Monitoring

A landfill in the Midwest was closed and sealed in the 70's but due to the potential levels of Methane gassing off the landfill, plus the homes built in proximity of the landfill, there was a need to improve the gas monitoring at the site. A membrane separates the perimeter of the landfill from the residential structures, and vent wells on the landfill side of the membrane still show some levels of Methane release. A specification was designed by a local engineering firm for a Methane detection and remediation system to be installed at the site to avoid methane gas build-up near the residences.

Sierra Monitor and their local representative worked with the system integrator who won the bid and to specify the Sierra Monitor products for the site. Project consisted of a combination of Catalytic Bead and Infrared sensors connected to a Sentry Gas Risk Management System. The project required installing catalytic bead sensors in vent risers close to homes while IR sensors are used in vents closer to the landfill. The theory being that Methane will migrate slowly and the IR sensors may see some low levels of Methane continuously while the Catalytic Bead Sensors should only see gas if any other part of the system fails. A network of permeable tubes, connected to a blower allow the extraction of Methane in the subsurface if an alarm is detected. The original design called for a simple auto dialer to be used to notify personnel that an alarm was reached and the remediation blower was running. Someone would then have to visit the site to verify what is really going on.

The proposal Sierra Monitor made was to incorporate a Sentry WebServer with the Sentry Controller to allow for remote investigation of the site conditions with any off-the-shelf web browser. The SMC team proposed that significant savings can be achieved by allowing an individual to view the gas monitoring information remotely, and not requiring someone drive to the site. Additional savings were demonstrated utilizing the sensor multiplexing capability of Sentry reducing the installation costs of long individual wire runs. Sentry provided the ultimate solution meeting the gas detection requirements as well as the remote site monitoring the user desired. The local regulatory agency was equally impressed upon demonstration of the system. “This is simply amazing, the WebServer provides the ability of remote oversight of landfills that we have desired for quite some time.”

The auto dialer still calls someone to alert them of a gas condition, but this person now just has to dial into the site computer to investigate the gas detection system for what well had detected the gas event. Incorporation all of the gas detection information into a central data system also allows the custodians of the site to profile any Methane migration over time. This can be valuable historical information that allows someone to manage the site better. Solutions such as this may provide the template of future gas monitoring of Landfill sites to meet the needs of the EPA’s Landfill Methane Outreach Program.