

Greenstar shows Irish flare in gas analysis

Greenstar is using portable gas analysers to good effect on its landfill sites in Ireland, maintaining best practice in environmental management

Greenstar's award-winning KTK landfill site in Kilcullen, Co. Kildare, is unusual in Ireland in that it has three gas engines feeding electricity to the grid and two flares.

In Ireland, while flaring is common, engines are not. The flares are run in tandem with engines so that if an engine is ramped down for repair or service, the flare ramps up automatically. All are supplied by 122 landfill gas wells, balanced to optimise methane concentration with portable gas analysers.

This site is operated to ensure compliance with strict standards through an environmental management system that won a CIWM Green Apple award for environmental best practice, and in 2005 the site achieved ISO1400 accreditation. Portable gas analysers are used by Greenstar for three parts of its site operation and management – gas loss troubleshooting, field balancing and assessing new gas wells.

Kilcullen's gas engines automatically measure the key combustion gases – methane and oxygen. If landfill gas is being lost, it is shown on flare trends. And a small loss, as little as 2%, can result in unpleasant odours and lost revenue. Gas loss may be caused by a pipe disconnected or blocked by a condensate build up caused by a pressure reduction from a leak.

A GA2000 portable landfill gas analyser from Geotechnical Instruments – supplied by CSL – is used to check gas quality, suction pressure and flow. As the site operator moves from the engines and follows the junctions



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towards the trouble spot in the over-ground pipes, they know they are getting nearer to the fault if the CH₄ reading falls and the O₂ reading rises.

Balancing act

Every two to three weeks, the site operator completes a full balancing and measures the CH₄, CO₂, O₂, H₂S concentration in all 122 gas wells with the GA2000. The well balancing produces the optimum 50% CH₄ for engine combustion. If a CH₄ reading is low, the well is turned down. But if CH₄ concentration rises to 53%, the operator increases output. When Greenstar drills new wells, it also uses the GA2000 to measure gas levels.

In addition to its Kilcullen landfill site, Greenstar owns and operates three

other EPA-licensed landfills – Knockharley in Co. Meath, Ballynagran in Co. Wicklow and Connaught Regional Residual in Co. Galway.

The company has applications with the EPA and relevant local authorities for three other residual landfill developments. The EPA also uses CSL-supplied Geotech portable gas analysis units for landfill site compliance monitoring.

Greenstar has opted for the GA2000 system on its sites in Kildare, Galway and Wicklo. And it uses a GA2000 Plus to analyse five gases, with hydrogen compensated CO cells, on its Kildare site. This landfill operator makes good use of technical support from CSL.

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