ENVIRONMENTAL MONITORING EQUIPMENT

Geotech

A subsidiary of LANDTEC

About Geotech

What makes Geotech different?

Geotech is committed to delivering application driven product development and providing the latest technology in the environmental monitoring market for our customers.

Geotech is the market-leading manufacturer and supplier of portable and fixed landfill gas and biogas analysers. Gas analysis is only part of a full range of environmental monitoring equipment that Geotech can supply, including QED AP pumps for liquid removal and level control. Around the world Geotech gas analysers are rapidly becoming even more important with a growing focus on renewable energy from gas produced in anaerobic digestion and landfill gas.

Geotech provides full support

Geotech offers a total support package to all our customers, supporting you from the moment you first contact Geotech. This support is continued through on site demonstrations and field trials, to supply of our products and via training, ongoing servicing and technical support. This is backed up with our in-house dedicated and experienced technical, service and customer support teams.

Geotech products are market leaders

Geotech manufactures equipment in the UK to the highest quality, working to a wide range of industry standards so customers can expect top reliability and complete peace of mind. Current standards we have achieved and have led the market in are: ISO17025 calibration, ATEX certification on portable gas analysers and MCERTS on our GA2000 Plus.

Geotech is an international supplier

Geotech has a network of established distributors overseas and works closely with them to supply and support users of Geotech equipment through a global network. From Spain to China, we pride ourselves on providing high quality local support and easy access to our product range for our overseas customers. As well as full technical and product support, a number of these distributors can offer local servicing.

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Landfill

Two million man-hours on landfill gas analysis

Portable landfill gas analysers from Leamington Spa are at work every day throughout the UK and around the world. Geotech has been making its current range since 2007 and previous ranges since the early 1990s, over twenty years ago[1]. They are at work in their thousands in the UK, USA, Asia, Europe, and Africa; quite simply in most countries. A calculation of the number in work and usage estimates, gives annual global usage of Geotech landfill gas analysers of more than two million man-hours per year. So, working well to save time and money is essential.

Recent enhancements to the GA2000 platform include a GPS module, which confirms the exact position of a borehole and stores the GPS data with the gas readings. This data is to legal-evidence quality. This can help ensure the repeatability essential for QA and for environmental agencies' investigations, consultancy site audit or analysis in landfill or remediation. In some countries, landfill gas analyser GPS capability is demanded or becoming required and in New Zealand it is already mandatory. Beyond vitally important compliance the GPS facility offers a potentially even bigger financial gain. It can help landfill technicians, or those new to a site, to quickly locate each borehole even if hidden in grass and bushes. Anyone can use it. New users can be as quick as site-experienced technicians. This saves time. With two million man-hours of use every year, small savings can make a big difference.

GPS-enabled landfill gas analyser saves time and ensures repeatability

Borehole coordinates in the analyser's GPS, when downloaded to a PC with the Geotech Gas Analyser Manager (GAM) program, enable the site and locations to be displayed on a Google Earth™ map in moments and at no additional cost. This can further assist new users, ensure accurate and repeatable quality and can help save time and money.

Before GPS arrived the GA2000 Plus and GEM2000 Plus became the first portable landfill gas analysers to give accurate readings in the presence of hydrogen (H2), with H2 compensated carbon monoxide (CO) measurement technology. This was followed with another first in 2008 with MCERTS in the UK to meet Environment Agency standards.

What now seems unremarkable is in fact completely remarkable. Essentially these accurate landfill gas analysers, which can work safely in explosive atmospheres, enable landfill operator technicians to accurately measure and analyse some 50-100 boreholes a day to meet with environmental compliance targets. The GEM2000 version enables technicians to balance landfill gas fields and maximise waste-to-energy financial returns. This can also help them meet the demands of a growing global market for renewable energy, CDM[2] and carbon credits.

These analysers are in-field calibrated by users with bottles of gas of known concentration and they store the borehole and calibration readings ready for data recording or transfer into PCs. It was to meet these specifications, and many others, that Geotech introduced the GA2000 in 1999. Naturally, such a precision piece of portable measuring equipment must also meet the basic requirements. It has, as it must, robust design, an easy-to-read backlit screen, a key pad which can be operated by gloved hands in freezing weather and internal rechargeable batteries, which last a full day to complete the rigorous gas monitoring routines on evermore demanding sites.

Many GA2000 landfill gas analysers are in use 52 weeks a year, so the necessary back-to-factory service and factory re-calibration is completed within the Geotech back-to-user-in-seven-days target. This is completed to rigorous ISO17025 accreditation standards further confirming accuracy and quality to legal audit standards. More... www.geotech.co.uk

Geotech GA2000 & GEM2000 landfill gas analysers are in use globally.

1 - This followed a bungalow explosion near Loscoe landfill March '86, which began the industry need for robust gas analysis equipment. Source: www.landfill-gas.com

2 - CDM = Clean Development Mechanism

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Case Study 1

Remediation

Norfolk County Council tackle groundwater contamination with low-flow

Geotechs low-flow groundwater analysis equipment has enabled quick and easy access to samples at 2m intervals down a 28m screen in deep boreholes. Elizabeth Guilford of Norfolk County Council hired the low-flow kit from Geotech and used it on a Norfolk CC landfill site where leachate contamination of groundwater was suspected. Samples taken at 2m intervals close to the level of the suspected contamination, and at 5m intervals at greater depth in the borehole, determined the distribution of contaminants and identified definite zoning. One set of readings showed that general samples from one borehole matched the average of the peak and baseline readings.

Groundwater contamination resulting from historic landfill operations was observed in long screen boreholes installed close to the landfill boundary. It was suspected that this contamination, indicated by elevated chloride concentrations, was heavily zoned. Low flow sampling allowed Norfolk CC to identify this vertical zoning and quantify the maximum chloride concentrations that were observed.

After setting up at a borehole, operators lowered the low-flow bladder pump to the required depth and ran the pump using the multi-parameter flow cell until electrical

conductivity had stabilised. They then took samples. The bladder pump was then lowered another 2, then 5 metres and the next samples taken after the parameters had stabilised.

Geotech low-flow groundwater analysis kit

Elizabeth Guilford said, “Once we got the kit going it gave us the samples much more easily and quickly than we were expecting or than with any other method. In fact without low flow we would probably have had to use more methods such as geophysics or complex packer testing. We had heard about the low flow kit and decided to try it for an unusual use and it did a great job.”

Elizabeth Guilford is a Hydrogeologist in the Closed Landfill Team, Norfolk County Council.

Anaerobic digestion

Continuous monitoring for McCains CHP

McCain’s covered anaerobic treatment lagoon, the size of two football pitches, produces methane for burning or flaring from 77,000 cubic metres of wastewater rich in potato starch. The anaerobic lagoon is the first stage in McCain’s wastewater treatment process. It removes most of the COD and BOD ahead of subsequent treatment stages including a polishing plant before discharge. The lagoon’s cover keeps out oxygen and enables collection of methane destined for burning in the combined heat and power (CHP) gas engine to produce electricity. Currently, McCain is burning its own biogas in its steam-producing boilers to reduce its use of natural gas. Its renewable energy in the CHP engine will provide about ten percent of the factory’s annual electricity needs.

McCain Foods corporate affairs director, Bill Bartlett, said “The Geotech static gas analyser is here to analyse gas quality as it is drawn off before and after a hydrogen sulphide scrubber. The analyser readings will measure scrubber performance and protect our gas engine. If H2S levels exceed pre-set limits, the McCain control systems will respond automatically to the analyser’s signals and divert gas to flare and avoid compromising the engine.”

The use of anaerobic digesters is being promoted to the European food-processing industry by national governments as a means both of reducing CO2 emissions and of improving water conservation. A digester not only produces useable biogas and reduces the volume and odour of solid waste, it also greatly reduces the presence of pathogens and viruses – so that the remaining wastewater can be filtered, cleaned and pumped safely back into river systems. The McCain covered lagoon transforms passive venting of biogas to atmosphere from earlier open-top biodegradation lagoons and halts release of the powerful greenhouse gas, methane. Instead it turns it in to a valuable energy-from-wastewater commodity.

As the anaerobic digester produces its biogas, the Geotech static gas analyser is set to produce five readings. It automatically measures four extracted gases: methane, carbon dioxide, low-level oxygen and highly corrosive hydrogen sulphide before they enter a scrubber. It will then measure the H2S after scrubbing. For each of the five channels, changes in a 4-20mA current relate to calibrated increases or decreases in the concentration of each gas.

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McCain's systems receive the signals, measured at 10-minute intervals, enabling the company to achieve on-line, real-time continuous monitoring of: -

- Methane content c.65 sixty-five percent, from which McCain can calculate gas calorific value
- CHP gas engine protection from high H2S levels
- Hydrogen sulphide scrubber performance
- Protection from dangerous oxygen levels

By measuring O2 and being aware of the lower explosive limit and diverting to flare if O2 ever reached dangerous levels, the system can shut the flare and maintain safety and protection.

Wind power - as well

In August 2007, McCain introduced wind turbines at its Whittlesey plant in a groundbreaking drive to lower its carbon footprint and move its operations towards a sustainable future. Its wastewater lagoon will make further progress towards that aim as it offsets electricity demand. Within the heart of the gas producing lagoon's information and control systems is a Geotech gas analyser doing its job dependably, reliably and economically.

Continuous gas analysis

LFG pumping trials with AFS

Assessing the value of landfill gas and advising on its optimum use is one of the specialist services of Coventry-based landfill experts, Automatic Flare Systems (AFS).

AFS uses its mobile flare skid for landfill gas pumping trials to analyse the quantity and composition of landfill gas. Mounted on the skid is a Geotech GA3000 static gas analyser, which monitors the untreated gases downstream from knockout pots before going onward to a flare.

Managing Director at AFS, Steve Willacy, said "We want continuous landfill gas monitoring and analysis and use a data logger to record the results from the gas analyser." The data is auto downloaded to a web page so AFS can inspect it without going to site. At the end of the 12-week pumping trial, AFS produces a site assessment report with daily gas readings, gas curves and an assessment of gas quality, types of gases and volume. "We can then advise on how the gas can be best used for power generation, as vehicle fuel, converted to methanol or to biomethane to replace fossil-sourced natural gas - or if no value, how best to flare it."

"We had been using another supplier's gas analysis equipment for about ten years and had been talking to Geotech about them producing a static gas analyser which suited our operations. With input from us and others, Geotech developed the GA3000 using its existing proven equipment, technology and know-how. The GA3000 is doing exactly what we need it to do," said Steve Willacy.

Since completing its latest pumping trial in Scotland, the AFS mobile flare and analysis skid with its GA3000 has been moved to Stornoway on the Isle of Lewis to carry out a pumping trial there. While the GA3000 is working away on a remote Scottish island and its data is being inspected in Coventry, AFS is taking delivery of its next larger Geotech automated extraction monitoring system (AEMS), with six gas channels for six supply sources, for an export client.

Biogas

Monitoring sewage sludge AD for Southern Water

To check sludge in AD, Southern Water uses portable biogas analysers specially developed for AD biogas and based on proven methane and associated gas analysis equipment from Geotech. Southern Water has an important routine; every single day it checks the health of its sewage sludge anaerobic digesters on eighteen sites across Hampshire, IoW, Sussex and Kent. There, each day Southern Water treats and recycles 1,400 million litres of wastewater from nearly two million households at 373 treatment works from its 21,500-kilometre sewer network. With that huge responsibility this utility company, like any other, needs to ensure the security of its sewage sludge digesters working at their optimum. Central to achieving that is Southern Water's 'Best Practice for the Operation of Sludge Digesters'. It produced this document to ensure industry best practice operating routines are carried out at each site. They include daily analysis of pH/alkalinity, volatile fatty acids (VFAs) and biogas composition.

For biogas analysis Southern Water uses fourteen Geotech Biogas Check portable biogas analysers. They measure methane (CH4), hydrogen sulphide (H2S), oxygen (02) and carbon dioxide (CO2). Southern Water checks each digester is healthy, producing over sixty percent CH4, the minimum for its CHP engines to run and generate electricity. The CHPs have a 1000ppm maximum for H2S. Above that, H2S may damage CHP engines.

Southern Water selected the simple-to-operate Biogas Check as their field instrument for anaerobic digester biogas analysis, for which it was designed. ATEX certified for use in potentially explosive atmospheres, the field-proven technology enables consistent collection of data for improved analysis and accurate reporting. User-configurable operation measures concentrations of CH4, CO2, O2 and H2S. An optional temperature probe measures gas temperatures. All readings are stored including in-field calibration results. On-board rechargeable batteries last ten hours.

The components used by Geotech in its gas analysers are tried, tested and proven for use in demanding conditions on biogas and landfill sites around the world on a daily basis. One key Geotech design standard was that 'anyone can pick up a Biogas Check and use it without opening the manual'. They can and they do, globally. Biogas Check user languages include English, Spanish, French, Italian and German with metric or imperial readouts on its crystal-clear screen. In any language, anywhere in the world, keeping sludge AD working is the same objective for all operators.

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N20

G210 verifies piped medical gases

Consultation with medical gas quality controllers (QCs) to optimise specification has lead to, "A major improvement in portable instrumentation for the analysis of medical gases," according to Ed Doyle QC (MGPS). He reported in the August 2010 issue of the Medical Gas Association (www.mga.org.uk) newsletter on his experience with the new Geotech G210 N2O medical gas analyser.

In his summary, Doyle concludes, "The G210 is small, light, and has good stability with improved linearity on all ranges. A key improvement has been the addition of data logging capability which facilitates testing of medical air plant and oxygen concentrators. The instrument has a fast re-charge with excellent battery life. The use of Li-Ion cells should end the problem of the memory effect that occurred with the NiCad cells employed in [the previous model] the FP99. The lower running costs of the G210 mean that anyone switching to this instrument from the FP99 will quickly recover their costs and make significant savings over the lifetime of the instrument… which will quickly pay for itself."

Doyle cites the requested and included key features as; Improved stability and linearity with no external pods as all sensors are housed within the body of the instrument, simultaneous measurement of carbon dioxide and nitrous oxide, automatic data logging with user selectable time intervals for testing air plant, oxygen concentrators and ambient air in plant rooms. He refers to; excellent longer battery life with a battery level indicator on the main display, USB connectivity for downloading data and for software upgrades for the analyser. He commends annual, rather than six monthly, calibration to minimize instrument downtime and lower calibration cost, and new 'zero calibration' for carbon dioxide, a feature missing from the earlier FP99 model. A big benefit is the smaller instrument size,

Up and running quickly

He said, "I found that I was able to use the basic features of the G210 within minutes of opening the box. With many more functions and options than the FP99, the menu structure is correspondingly deeper and more complex. However, it is no more difficult to navigate than the average mobile phone menu tree and I was up and running very quickly without more than a few quick references to the detailed user manual.

"The instrument is easy to calibrate and because of the improved linearity and stability it requires less-frequent calibration. This further improves running costs by reducing the use of expensive calibration gases. I find that the G210 gives good reproducibility in the readings obtained when alternating between different gases. The instrument also gives good reproducibility over time. For example, if I check the instrument against fresh ambient air and perform a similar check maybe five or six hours later without re-calibrating in the interval, I usually find that the readings are almost unchanged."

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CO2

Pfizer double-checks CO2 incubators with portable gas analyser

Pfizer quality checks 25 medical incubators with a Geotech G100 CO2 incubator gas analyser to confirm CO2 environments are as required – taking just two minutes for each. The medical incubators, kept at 37 degrees Celsius and five percent carbon dioxide (CO2), are manufacturer-fitted to regulate themselves and display their environments. “Now we can double check and every month we do a QC check to be sure the CO2 is at five percent,” said Tim Stroud, associate scientist at Pfizer in Sandwich, Kent.

Using the G100, supplied by GEM Scientific, Pfizer found some variations of up to three percent in CO2 concentration, mainly as a result of frequent opening and closing of incubator doors. Identifying this led to fine-tuning and ensured target CO2 concentrations were maintained.

With checks initially made every two weeks, the G100 confirmed Pfizer’s 25 incubators are all performing as set up and verifies CO2 concentrations are as displayed on the front. Soon the fortnightly checks will be made monthly as repeated readings confirm each incubator’s performance. “Checking an incubator by attaching the G100 to a sample port only takes a couple of minutes so we can do all 25 within an hour,” said Tim Stroud.

“We keep notes and a log of the readings on a spreadsheet so we can track how each incubator is performing over time. If we repeatedly had to adjust the level it may indicate that there was something for an engineer to attend to on the incubator,” he said. “What prompted us to buy the G100 was some variable data we had been getting from an experiment, which we thought could be due to fluctuating CO2 concentrations and we wanted to determine if that was the case. We are also able to show colleagues, when checking any ‘strange’ experimental results, if the incubator environment was as required at the time of running their experiment,” he confirmed.

Using a portable independent incubator gas analyser is new to Tim Stroud’s department who said, “Using the G100 is very easy, so is calibration and is simply explained in the user manual.” Currently calibration is done using ambient air but Pfizer plans in future to use canisters of five percent CO2 calibration gas.

The Geotech G100 CO2 Incubator portable gas analyser with built in moisture removal for increased stability can optionally measure oxygen (O2), humidity and top and bottom temperatures simultaneously with twin temperature probes. The G100 can also download via a USB PC/Internet cable.

Monitoring equipment

GA5000

Landfill gas analyser

The GA5000 portable landfill gas analyser is easy to use and calibrate, benefiting from our market leading reliability and helping you to standardise monitoring routines, whilst supporting environmental legislation compliance. For use on landfill, remediation and brownfield sites.

FEATURES AND BENEFITS

- Atex certified to zone 1
- 6 gas capability, including CH4, CO2, O2, H2S, CO
- Optional internal low flow
- Accuracy "best in class" +/- 0.5% after calibration
- GPS capability
- Upgrade options
- 3 year warranty
- UKAS17025 calibration standard

GA5000

Landfill gas analyser with H2 compensated CO

The GA5000 (H2 compensated CO reading) utilises technology to give more reliable readings for carbon monoxide (CO), helping determine the presence of fires on landfill.

FEATURES AND BENEFITS

- Atex certified to zone 1
- 6 gas capability, including CH4, CO2, O2, H2S, CO
- H2 compensated CO reading
- User event log
- Accuracy "best in class" +/- 0.5% after calibration
- GPS capability
- -10 to +50 deg C operating range
- 4000 readings stored

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GEM5000

Gas extraction analyser

The GEM5000 is an easy to read analyser designed to aid balancing the gas field, maximise power output and ultimately maximise revenue from CH4 extraction on waste to energy sites.

FEATURES AND BENEFITS

- Atex certified to zone 1
- 6 gas capability, including CH4, CO2, O2, H2S, CO
- Accuracy "best in class" +/- 0.5% after calibration
- Static and differential flow
- Gas flow in scfm and m3/h
- Power output in KW or BTU
- -10 to +50 deg C operating range
- Upgrade options

Biogas 5000

Anaerobic digestion gas analyser

The Biogas 5000 is easy to use, calibrate and configure and enables consistent collection of data for improved analysis and accurate reporting, whilst helping to check the digester process is running efficiently. Measures gas composition on farm waste projects, food processing plants and waste water treatment facilities.

FEATURES AND BENEFITS

- Atex certified to zone 1
- Measures CH4, CO2 and O2 as standard
- H2S measurement up to 10,000ppm
- Accuracy "best in class" +/- 0.5% after calibration
- Different language options
- 3 year warranty
- -10 to +50 deg C operating range
- UKAS17025 calibration standard

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GAS MONITORING ANALYSERS

TDL-500

Methane detection using tunable diode laser technology

The TDL-500 is a high performance methane detector offering total selectivity to methane with sensitivity to 1ppm.

FEATURES AND BENEFITS
- Detect methane leaks with high precision
- Highly accurate
- ATEX certified
- No flame, no hydrogen cylinder
- Fast response times – reduced monitoring time
- GPS logging addition as an option
- Stable and repeatable

GAZTOX ™

Personal gas protection

Depending on the type of sensor fitted this single gas detector measures hazardous concentrations of oxygen (O2), or toxic gases such as hydrogen sulphide (H2S), carbon monoxide (CO) and sulphur dioxide (SO2). The GAZTOX is an essential tool for on-site personal safety.

FEATURES AND BENEFITS
- Highly accurate
- ATEX certified to zone 1
- Easy to use
- Audio alarm 95db
- Rugged and lightweight

AEMS

Multipoint continuous gas analysis

The AEMS is designed to offer a complete bespoke system for remote gas analysis concentrations on landfill sites, biogas projects and other methane recovery operations.

FEATURES AND BENEFITS
- CH4, CO2, O2 measurement
- H2S and CO measurement options
- Remote data access and system diagnostics / reconfiguration
- Minimise downtime - Hot Swap service scheme
- Interface with control systems and other onsite devices (e.g. flow meter)
- Onsite installation and training
- Fully auditable data trail for compliance and carbon credit verification
- Multi-point sampling option
- Auto-calibration option

See www.geotech.co.uk/aems.php for full details.

GA3000

Single point continuous gas analysis

The GA3000 is designed to offer a cost-effective system for continuous analysis of gas concentrations on landfill sites, biogas projects and other methane recovery operations.

FEATURES AND BENEFITS
- CH4, CO2, O2 measurement
- H2S measurement option with auto-purge
- Minimise downtime – Hot Swap service scheme
- Interface with control systems
- Easy and quick to install
- 4-20mA output communications
- User calibration options
- Gas conditioning as standard
- ATEX certification

See www.geotech.co.uk/GA3000.php for full details.

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Accu-Flo thermal mass flow meter

Continuous gas flow measurement

The Accu-Flo meter provides robust, high-performance continuous flow measurement for use in landfill gas and biogas projects.

FEATURES AND BENEFITS

- Direct mass flow measurement
- High accuracy and repeatability
- Calibration self-check – built in diagnostics for factory approved field calibration check
- Negligible pressure drop
- Low cost of ownership
- 5 year factory calibration
- ATEX certification

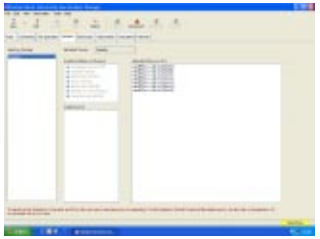
Gas Analyser Manager

Software for portable gas analysers

Gas Analyser Manager enables users to maximise the operation of their gas analyser, enabling direct communication with the unit. It features a simple upload and download facility and is fully compatible with the latest Microsoft™ operating systems.

FEATURES AND BENEFITS

- Easy to view and operate
- ID set-up for boreholes
- Create ID-specific questions and site questions
- Secure data trail
- Download Event Log (option)
- Set up GPS (option)



AEMS Data Centre

Remote data acquisition software

Software application for remote download of all data gathered by AEMS. Gathered data can be downloaded from any location worldwide with an internet connection.

FEATURES AND BENEFITS

- Remote data download
- Email and SMS alerts
- Download in CSV and XML formats
- Monitor site performance remotely
- Easy to use
- Stay aware of on-site issues

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Standard Dipmeter

Basic groundwater level monitoring

The Standard Dipmeter is a lightweight water level measuring instrument used for routine groundwater monitoring. The Standard Dipmeter is the economical option for water level monitoring.

FEATURES AND BENEFITS
- Cost effective
- Reliable and simple operation
- Suitable for wide range of applications
- 30m, 60m, 100m (other sizes available)

Super Dipmeter

Level monitoring in harsh environments

Designed for use in aggressive and dirty environments, the Super Dipmeter offers a polyethylene coated steel tape with graduations to the millimetre. Easy to read markings mean that increased accuracy of level monitoring can be achieved.

FEATURES AND BENEFITS
- Graduations in millimetres
- Durable steel tape
- Variable sensitivity
- Temperature option available

ATEX Dipmeter

Safe level monitoring

The ATEX certified Dipmeter is a high precision water level measuring instrument, specifically designed for use in harsh environments. The unit allows level detection in a wide range of water conductivities and applications where water levels rapidly change.

FEATURES AND BENEFITS
- ATEX certified to zone 1
- Variable sensitivity
- Easy maintenance
- 30m, 60m, 100m ,150m and 200m.

Dipper Log

Continuous level monitoring

The Dipper Log is a low cost data logger for continuously monitoring water levels and temperature in wells, boreholes and open bodies of water. Its small size allows the Dipper Log to be used in well diameters as small as 3/4 of an inch (20mm). The dipperLog is a durable and reliable groundwater data logger.

FEATURES AND BENEFITS
- Long term groundwater level monitoring
- Temperature monitoring
- Remote data acquisition
- Automatic level adjustment
- Dipper wave for remote monitoring

Oil Water Interface Meter

LNAPL and DNAPL Detection

The ATEX certified oil water interface meter offers reliable, accurate and safe thickness detection of floating and sinking hydrocarbon products in groundwater (LNAPL and DNAPL). The oil water interface meter is extremely easy to use and is supplied with a carry bag to protect the unit.

FEATURES AND BENEFITS

- ATEX certified to zone 0
- Accurate measurement
- Simple operation
- Portable and lightweight
- Sealed electronics
- 13mm narrow diameter probe
- Audio/Visual signals

AutoPump® - AP2, AP3, AP4

Automatic positive air displacement pump

The ATEX certified AP Autopump® family of pumps were developed to specifically handle unique pumping needs for landfill and groundwater remediation sites. It provides a perfect solution for applications requiring liquid recovery from narrow diameter wells. Pumps are supplied in top and bottom filling versions.

FEATURES AND BENEFITS

- ATEX certified to zone 0
- Small diameter option
- Flow rate from 8.8 lpm to 60lpm
- Original design - 22 yrs worldwide use
- Reliable and durable - low maintenance
- Easy installation and operation

Slider side wall riser pump

Horizontal liquid pumping

The Slider pump is a positive air displacement pump capable of pumping liquids at near horizontal applications. Complete with level control the Slider pump is able to automatically control leachate levels in up-slope risers.

FEATURES AND BENEFITS

- Stainless steel and Qtal construction
- Angled valve assemblies
- 60m lift capability
- Can be installed in near horizontal applications
- High leachate removal capability

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Bailers

Easi-bail disposable samplers

The easi-ball disposable bailers allow a simple grab sample of groundwater or leachate for analysis. Pre-cleaned and sealed, the bailers eliminate cross-contamination concerns. Available in boxes of 24, they are the ideal quick and simple liquid sampling tool. Re-usable Teflon bailers are also available.

FEATURES AND BENEFITS
- Low cost
- Simple and easy to use
- Eliminate cross-contamination (disposable option)
- Teflon or polyethylene construction
- Weighted versions available

Quick Filter®

In-line filters for liquid sample filtration

The in-line filter 0.45 and 1.0 micron sized sample filters provide a fast, effective and simple way to filter ground water samples in the field. The filter assembly saves laboratory time and costs, especially when undertaking metals analysis.

FEATURES AND BENEFITS
- Quick and simple operation
- Ideal for metals analysis
- Cost effective
- Reduced laboratory costs
- 60psi pressure rated
- Transfer vessel available

Compressor

Portable air compressor.

Lightweight and portable, the petrol compressor is ideal for supplying air power at remote locations. Suitable for use with our range of MicroPurge® equipment, this compressor allows air supply to the MP10.

FEATURES AND BENEFITS
- Lightweight
- Simple to operate
- Portable
- Remote air supply

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Well Wizard®

Bladder pumps for groundwater sampling

Well Wizard® offers the best in dedicated low flow sampling. Teflon bladder, simple displacement technology continuously ensures 100% sample integrity.

FEATURES AND BENEFITS
- No cross-contamination
- Proven technology
- 10 Year bladder warranty
- Ideal for trace component sampling
- Simple and easy to operate
- Field serviceable

SamplePro

Portable low-flow sampling pumps

The SamplePro MicroPurge® pump is the first pump system developed specifically to bring the advantages of low-flow sampling to portable pumps. With narrow diameters available, this means difficult to access wells are no longer a problem. Utilising controller and flow cell technology the SamplePro range can provide all the benefits of Well Wizard® technology in a portable system.

FEATURES AND BENEFITS
- Stainless steel construction
- Lightweight
- 19mm (3/4") Diameter and larger
- Rugged and portable
- Easy decontamination
- Minimal cross contamination
- Field serviceable
- Minimal sample disturbance
- Polyethylene or Teflon bladder available.

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MicroPurge® MP10

Low-flow groundwater sampling controller

The MP10 allows full digital control of low flow sampling equipment. User friendly controls enable precise and accurate sample collection from one location to the next.

FEATURES AND BENEFITS
- Compact and rugged
- Portable and Lightweight
- Easy menu driven operation
- Improved water samples
- Low volume purging
- Pneumatically operated - safe

MicroPurge® MP20

Low-flow groundwater flow cell

Exclusive PurgeScan™ technology allows optimisation of sample. When used in conjunction with the MP10, the MP20 provides an extremely capable method of water sampling utilising low flow methods. Purge scan technology of six water parameters monitored at the same time in one unit.

FEATURES AND BENEFITS
- Automatic data storage
- Lightweight and easy to operate
- Weatherproof
- Highly accurate water samples
- Displays water quality parameters
- Reduced sampling time

Aquaread AP900

Multi parameter water quality monitor

The reader is rugged, waterproof and small enough to fit in the palm of your hand. The Aquaprobe™ is available in various models capable of monitoring up to 11 parameters, offering marine grade aluminium and stainless steel for use in harsh environments. The Aquaread is fast, accurate and easy to calibrate.

FEATURES AND BENEFITS
- Reader IP67 waterproof rated.
- GPS receiver for spot data storage
- Easy data download
- Flow cell option
- Monitors up to 11 parameters
- 42mm diameter probe

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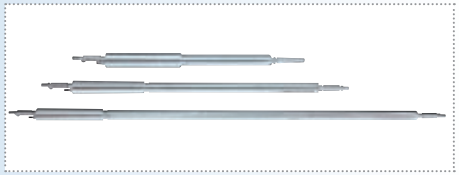
SOS/SPG Genie

Active skimmer pump

When used in conjunction with either a surface mounted or in-well Genie pump, the passive skimmer becomes an active automatic recovery system. Units are suitable for use in most fuels. The Genie automatic pump and the SOS and SPG skimmers offer a reliable and durable system design for free phase remediation projects. The Genie pump also offers DNAPL pumping when used with a screened intake.

FEATURES AND BENEFITS

- ATEX certified to zone 0
- Automatic operation without controllers or timers
- Operates at depths up to 60m
- Product-only pumping
- Fits in 50mm ID well or larger
- Air driven – no contact between air and liquid
- Durable construction
- Range of lengths available



SOS/SPG

Passive skimmer pumps

These have been designed for product only (LNAPL) recovery applications in sites where active pumping systems are not applicable.

FEATURES AND BENEFITS

- ATEX Certified Zone 0
- Oileophilic hydrophobic screen
- Removes product to a sheen
- Simple to install and use
- Product only removal
- Passive skimming requires no pumps

Air Stripper

VOC removal

The EZ-Stacker is a low profile air stripper used to remove volatile organic compounds (VOCs) from groundwater. The unique design of the EZ-Stacker and EZ-Tray stripper results in VOC removal rates up to 99.9%. The EZ-Tray air strippers are available in configurations with 4 or 6 trays, with flow rates from 4 lpm up to a maximum of 757 lpm.

FEATURES AND BENEFITS

- Multiple configurations
- Meets wide range of applications
- Up to 99.9% VOC removal
- Highly efficient
- Significant O&M cost reduction

Oil Water Separator

Onsite oil removal kit

The high capacity, low maintenance and cost-effective oil water separators utilise a highly efficient coalescing media pack. The separators are fully automatic, involve no moving parts and supplied for flows up to 60 lpm. Constructed from fibreglass with a chemically resistant interior gelcoat. Lids are lockable.

FEATURES AND BENEFITS

- Fully automatic
- Removable lockable lid
- Built-in sludge chamber
- Simple maintenance and operation
- Up to 60 lpm

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G100
Incubator analyser

CO2 analyser specifically designed to monitor CO2 for the verification of incubators in the research, pharmaceutical, IVF and medical markets.

FEATURES AND BENEFITS
- Verifies CO2 levels on incubators
- CO2 range 0-20%
- 2 x temperature readings option
- Optional O2 and humidity
- Data storage and download available
- Applications in IVF, laboratories, research and medical

G110
General CO2/brewing

With a full range of CO2 measurement up to 100%, these analysers allows the user the flexibility to use in a wide range of applications including gas blend quality in pubs and breweries.

FEATURES AND BENEFITS
- 0-100% CO2
- Optional O2, humidity and temperature
- Data storage and download

G150
IAQ/illegal immigrant detector

This portable analyser can be used for a variety of applications including; air quality and comfort conditions in schools and offices, general IAQ environmental site audits and R+D. Also used to detect illegal immigrants at border crossings.

FEATURES AND BENEFITS
- 0-10,000ppm CO2 range
- Optional O2, humidity and temperature
- Data storage and download

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G200
Personal exposure analyser

Used to measure background or personal levels of N2O exposure. It calculates the time weighted average (TWA) and gives instant results when downloaded onto the ADM software package. Used in hospital waiting rooms, theatres, x-ray depts. and dental and vet practises.

FEATURES AND BENEFITS
- 0-1,000ppm N2O
- Alarms
- Background or personal monitoring mode.

G210
Piped medical gas analyser

Designed specifically for verifying the gas quality of N2O and O2 in hospital gas pipes, it also measures for contamination in the sample.

FEATURES AND BENEFITS
- 0-100% N2O and O2 range
- Ppm CO2 and CO
- Data storage and download

ADM Software
Download software for G100 and G200 range

Allows user to store, graph and compare data for analysis.

CO2 AND N2O ANALYSERS

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Diveair 2

Diving gas verification analyser

This analyser is used to measure the O2 quality of compressed air used to fill gas cylinders for underwater diving operations. It can also measure possible contaminations including CO, CO2 and VOC. Used by naval diving teams, diving schools and emergency services.

FEATURES AND BENEFITS

- O2 0-25%
- CO2 0-5000ppm, VOC 0-20ppm and CO 0-50ppm
- Onsite verification of diving gas quality
- Data storage and download
- Approved by US Navy

Hyperbaric analyser

Monitoring CO2 in high pressure enviroments

Used for measuring CO2 and O2 under hyperbaric conditions up to 6bar absolute. Used in navy submarines, decompression chambers and offshore exploration.

FEATURES AND BENEFITS

- CO2 0-25,000ppm SEV
- O2 0-25% pressure compensated
- Approved by US Navy

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Geotech support

Service

Geotech is continually looking for ways to improve and provide better solutions to our customers. In line with this commitment, all GA instruments are calibrated and tested in one of our two state of the art, DSEAR compliant calibration facilities and the first in our industry to be awarded UKAS/ISO17025 status. The use of the calibration systems allows us to deal effectively and efficiently with ever increasing instrument volumes.

The calibration process is optimised to the highest attainable technical standards, along with using fully certified and traceable calibration gases (to national standards). Geotech's dedicated service team of fully trained engineers and technicians remain committed to quality, customer satisfaction and delivering a world class service to our customers.

Contact: service@geotech.co.uk

Technical support

Our dedicated Technical Support team has over 40 years' experience of dealing with our portfolio of products. They are on hand to assist and support you with technical issues and troubleshooting in relation to your equipment. We have a section of our website covering some of the FAQs (Frequently Asked Questions) associated with our main product ranges, which we hope you find useful.

The team strongly values the feedback received from customers as it helps to grow and develop our understanding of day-to-day usage of our products in the field, and inputs valuable data as we look to improve our equipment.

Technical Support works closely with our Service, Sales, Production and NPI teams to ensure we remain able to support your current and future instrumentation needs. In addition to this, they are regularly involved in project-based activities associated with our suite of products that sees them travel to sites locally and worldwide to assist our customers.

Contact: technical@geotech.co.uk

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Sales support

Our dedicated Customer Support Team aims to make your Geotech experience as smooth as possible. We look after your order from initial receipt until you recieve the equipment and understand how important it is for you to have all the information you may need.

We send acknowledgements for all orders we receive and are always available if you need to contact us about your order. Our in-house ordering software and customer database allow us to respond quickly to any questions you have regarding the sales process. Our Customer Support team is also able to advise on stock levels, lead-times and product pricing.

Contact: sales@geotech.co.uk

Training

Geotech offers hands-on bespoke training days for all customers on our ATEX certified range of landfill gas analysers and pneumatic Autopumps. Training days can be tailored to suit your requirements and we can meet the needs of first time users, refresher courses or advanced monitoring techniques.

Gas analyser training days can cover all aspects of operation of the gas analyser, including technology used, taking a reading, best user practise, data handling, GAM software, and any FAQs that you may have. Autopump training will provide the customer with the knowledge they need to maintain their pumps, best operating and installation techniques and technical aspects to ensure optimum efficiency and best results out in the field.

All training days can be held at a location near our offices in Leamington Spa or at your location.

Contact: sales@geotech.co.uk

Website: www.geotech.co.uk

Our website is designed for you the customer. It has been set up to provide you not only with product and market information, but also:

Customer registration
Track your account with updates on invoices and service status of your gas analysers.

Product information
Access to the latest data sheets, operating manuals and technical information.

Latest news
New products, the latest legislation affecting our industry and other relevant topics.

FAQs
Covering our main products and provided by our technical team.

Geotech TV
This area has a range of videos we have produced to support and demonstrate our products to you to help with areas such as calibration of gas analysers.

Request more information
On quotes, products and contact details. Our aim is to give you access to up to date and relevant information across all aspects of the industry and applications Geotech products are being used in.

If there is more you would like to see, let us know, contact: sales@geotech.co.uk

Social Media
Twitter - **@GeotechUK** is our name on Twitter and we are using it to provide up-to-the minute news on new products and what's going on at Geotech. Come and follow us to find out.

LinkedIn - **Geotech** have a company page on LinkedIn which can help you identify and get in touch with key contacts at Geotech who have their own individual profiles. All the employees listed on there would be happy to hear from you and see how we can help you.

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For a list of Geotech's distributors see www.geotech.co.uk/distributors

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