

## RS DYNAMICS

## **Science for Homeland Safety**



# Soil and Groundwater Contamination Survey

Fast and cost-effective in-situ mapping of hydrocarbons and other organic contaminants in the subsurface environment with a small and compact PID/IR device



- In-situ measurement of organic and other contaminants with selective analyses of Methane, Petroleum Hydrocarbons, CO2, O2, H2S, N2O, atmospheric pressure, sampling vacuum, soil temperature with indication of soil porosity
- Automatic monitoring station option, capable to operate in the network of remotely controlled stations
- Fully integrated automatic GPS data-logger
- Independent automatic monitoring station operation
- Built-in powerful computer, graphic screen, sampling pump, internal rechargeable batteries for whole day operation
- and much more....
- 10 in-situ simultaneously measured values at each station in less than
  1 minute
- ECOPROBE 5 system especially designed for in-situ Soil Contamination Survey/Mapping, bio-remediation monitoring and head-space underground water contamination measurement
- Advanced computer data evaluation and remote control (wire or Internet) software included
- · Capacity to measure more than 200 stations within one day



## **» BASIC APPLICATIONS**

- Detection, delineation and monitoring of hydrocarbon and other organic contamination of soils and/or water table from fuel spills
- Fast and convenient monitoring of UST and pipe-lines for leakage
- Waste dumps & agricultural waste measurement
- · Monitoring of contaminant plume migration
- Monitoring of in-situ bio-remediation processes
- Detection and monitoring of Methane effluence over closed coal mines
- Detection and monitoring of gaseous toxins in industrial plants and agriculture
- Detection and monitoring of contaminant effluents from various fittings sealing in chemical/petrochemical industry. Meets EPA 21 standards.
- · Air pollution monitoring

## Specifications

## *ECOPROBE 5*

**ECOPROBE 5** is the highly sensitive, portable multi-function analytical system which provides optimum power & flexibility for efficient, low-cost Soil Contamination Surveys / Toxic Gas Monitoring with the following features:

- Simultaneous in-situ measurement of using the time integrated photo-ionization analyzer (PID) and 6-channel selective infra-red analyzer (IR).
- Automatic re-zeroing before each measurement ensures perfect baseline stability and high accuracy of the resulting values.
- Ruggedized, light-weight and compact of strong construction making it entirely suitable for the field environment.
- · Easy to read graphic display, user-friendly operating system & data acquisition software.
- Real time correction of measured values for soil porosity, atmospheric / pumping pressure and temperature.
- Automatic Monitoring Station Mode. Automatic logging of all measured data.
- A powerful surface data logging system for transparent and fast 3-D graphic visualization.
- Fully integrated automatic GPS Position Logger (up to centimeter accuracy) is referenced to the WDS 84 coordinate system and also supports surface format "in meters" for un-demanding operator navigation.
- An integral user calibration facility provides on-site fast calibration and advanced whole dynamic range calibration.
- USB/RS232 interface with Win 7-10 ECOPROBE\_VIEW software, providing data transfer, graphic data acquisition and data spreadsheet for 3-D graphic outputs.
- Reliable Oxygen reading.

Automatic date/time record for all stored data, built in adjustable acoustic alarm for all measured values.

#### » PID

- · [Photo-ionization analyzer] measures total level of volatile organic compounds (VOCs) and other toxic gases including chlorinated hydrocarbons to sub-ppb levels with the following characteristics:
- Detection limit: 2 ranges-0.1 ppm/1 ppb
- 0.5 ppb zero stability (using automatic zeroing procedure)
- Interchangeable Ion Lamps 9.6/10.6/10.2/11.7 eV (lamps optional)
- Response time: 0.08 sec; Sampling rate: 10 samples/sec.
- ppb resolution, choice of peak or integrated values
- Indication of soil porosity/permeability
- · Internal automatic calibration for quantitative vapor phase determination for about 200 com-
- Zero response for Methane (Methane measured separately by IR unit)
- Large dynamic range (0.1 ppb to 4000 ppm), fast response
- Ion lamp 10.6/10.2 eV (other energy levels are optional)
- ppm or mg/m³ (ppb or mg/m³) output

#### » IR

- [Infra-red analyzer] comprises 7 independent channels for selective analyses of Methane, Petroleum Hydrocarbons, CO2, N2O, H2S, reference channel with ppm resolution and the following characteristics:
- Methane: 0-500 000 ppm, detection limit 200 ppm
- Petroleum Hydrocarbons: 0-500 000 ppm, detection limit 200 ppm
- Carbon Dioxide: 0-500 000 ppm, detection limit 50ppm
- · Reference Channel
- Ranges of other channels optional/selectable
- Response time: 0.5 sec; Sampling rate: 10 samples/sec
- ppm or mg/m³ output

### » Other readings

- Oxygen, O-100 %
- Soil temperature: deg. F,C; (+/-0.1C, resolution 0.01C)
- Sampled gas temperature: deg. F, C
- Ambient pressure / sampling vacuum (mbar, Torr, psi, kPa), accuracy 0.1%, resolution 0.01%



- Dimensions: 105 x 260 x 170 mm (including handle), weight: 3 kg
- Shipping Weight: 13 kg (incl. probes, calibration kit, accessories)
- Power Supply: internal rechargeable battery
- Memory Capacity: about 100 000 measurements
- Output: RS 232 cable or infra-red interface
- Data Format: ASCII, EXCEL, GRAPHER, SURFER or user programmable format
- Display: full graphic back-lite LCD
- Keyboard Input: multi-function sealed keys
- Operating System: Win 9x/NT4.0 / 2000 compatible
- Internal Air Pump: membrane vacuum pump with programmable speed 0.25 4
- Automatic calibration of all measuring channels

Locally distributed by:

#### RS DYNAMICS® LLC

Technopark Zurich Technoparkstrasse 1, 8005 Zurich Switzerland e-mail: info@rsdynamics.com Internet: www.rsdynamics.com

#### RS DYNAMICS® Ltd.

Starochodovska 1359/76 CZ - 149 00 Prague 4 EU - Czech Republic e-mail: info@rsdynamics.com Internet: www.rsdynamics.com