



# Application Article 207

## PhoCheck+ PID – Ideal Detection for Soil and Water VOCs

**Product:** PhoCheck+ 3000

**Application:** Soil and Water VOC contamination

**Customers:** Environmental and Rescue Services



### Overview

Ecomatic has recently demonstrated to the Estonian Environmental and Rescue Board the capabilities of PhoCheck+ for fast, effective determination of VOCs in soil and water. Two road incidents involving fuel oil contaminating land with VOCs, provided suitable detection conditions for PhoCheck+ PID technology.

### Detecting VOCs in Soil

In the first incident in North-East of Estonia, an Oil Tanker overturned spilling its 3 tonnes of fuel oil, polluting several hundred square metres of soil. Eduard Vanamoelder, Gas Detection Manager, Ecomatic Ltd passed through the scene to find a dedicated team of on-side road engineers working to eradicate all remains of oil contamination. It was evident however, that no instrumentation was being used to monitor the VOCs present. Equipped with a PhoCheck+ 3000, Eduard offered the instrument to measure oil residues within the soil.

Set with gasoline vapours as its target gas, PhoCheck+ detected oil levels ranging from 3 to 33ppm across the contaminated area.



*Eduard Vanamoelder of Ecomatic measuring soil contamination levels at scene of Oil Tanker spill*

The measurement readings were then downloaded and sent to the local Environmental and Rescue Service for review.

### Detecting VOCs in Water

The second incident involved an oil spill from a car where fuel oil had leaked into a nearby ditch and stream. The flow of water caused the oil to travel some distance away from the scene, making fast detection crucial to stop the spread of further contamination. PhoCheck+ 3000 was used to quickly find the pollution within the stream, allowing the Environmental and Rescue Services to build a ditch and obstruct further contamination.

### The Outcome

After the two cases, Ecomatic were invited by the local Rescue board to further demonstrate the advanced capabilities of PhoCheck+ for its future use for soil and water contamination applications.



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PhoCheck+ encompasses an in-built highly sensitive patent photoionisation detector (PID). With a dynamic detection range capable of 1 ppb up to 10,000 ppm, PhoCheck+ is the only PID on the market able to detect VOCs at such low thresholds and explosive limits.

PhoCheck+ is a fully upgradeable instrument enabling the user to upgrade from the basic PhoCheck+ 1000Ex, all the way up to the revolutionary PhoCheck+ 5000Ex.

## Features include:

- Detection range of ppb to 10,000 ppm
- Unique 'fence electrode' technology for humidity compensation
- Intrinsically safe for use in flammable areas
- Rapid response and recovery for fast detection
- 250+ pre-programmed gases and gas mixtures
- Icon driven menu for the removal of language barriers
- Choice of two viewing modes - large numbers or a real time graph
- View stored reading graphically on screen for an overview of results
- Continuously data-logs every second for truly traceable results
- Health and Safety mode for STEL and TWA monitoring
- Data upload and download to a PC via IRDA for analysis with easy to use software

## Typical applications include:

- STEL and TWA monitoring
- Atmosphere monitoring
- Landfill surveillance
- Emergency first response
- HazMat/WMD
- Confined space entry
- Environmental clean-up
- Head space monitoring
- Arson investigation
- Petrochemical
- Leak detection
- Industrial painting



## Typical gases detected include:

- Volatile Organic Compounds (VOC's)
- Ammonia
- Benzene
- Ethylene
- Isobutanol
- Gasoline vapours
- Jet fuel
- Liquefied petroleum gas
- Butane
- Acetaldehyde

For more information on the Ion Science range of PhoCheck+ detectors contact Ion Science Ltd.

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