

## Case Study

# Determination of organic contaminants in soil



### Customer: Ecological Institute of Binzhou University, China

The customer maintains a key ecological-environmental laboratory in the Yellow River Delta, which is also called the Ecological-Environmental Research Centre in the Yellow River Delta and Analytical Testing Centre. The customer is mainly engaged in soil research in the Yellow River area, which provides important information for protecting the ecosystem and the environment.

### Application: Determination of organic contaminants in soils

Different kinds of TPH, PCBs, and POPs have to be analyzed in different soils. To increase the number of samples and to reduce the extraction time and cost, the extraction of the sample is done in parallel. The goal is to evaluate the contaminants in soils and restore highly polluted soils, in order to ensure ecological and environmental safety in area.

### Equipment: SpeedExtractor E-916

The E-916 is revolutionizing the sample extraction process in time and recovery. Thanks to high temperatures and pressure, solvent extraction can be undertaken very efficiently in a short time compared to classical method. The customer used to work with glassware parts for extraction, which took 8 – 10 hours. The parallel concept of the SpeedExtractor is very useful to the customer. So far, the customer has performed TPH extraction from soil, and the parameters are as follows: Solvent: Dichloromethane, Temperature: 100 °C, Pressure: 100 bar / Cycles: 2; hold time: 5 min; discharge time: 2 min / Flush with solvent: 2 min; flush with gas: 2 min

### Benefit / Conclusion:

After implementing the E-916, extraction was speeded up and provides higher recovery rates than the classical method. Also, the screen displays the status of the extraction process, which makes it very convenient for the customer to observe the whole process. Finally the Speed-Extractor Record™ can show the operational status of the E-916 and generate reports. So it provides better information to the customer monitoring the researched soils.

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*“Providing 6 parallel extractions and high speed, the E-916 makes our work in the laboratory easier and decreases our working pressure. Also, it is much easier to determine the optimum parameters for different extracts in a short time.”*

Dr. Xie Wen Jun, position Director, Centre of Analytical Testing

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