



**Early Warning of Micro-
Contaminants in Water with
Automatic Real-time Sampling**

www.predect.se



PREDECT Introduction

Predect is a Swedish Cleantech company focused on applied research, development and marketing of Early Warning Systems for real-time detection of micro-contaminants in water, which enable Online Water Protection.

Predect's Early Warning System immediately alerts responsible management and/or authorities so immediate corrective action may be taken. It also enables you to follow water quality over time, analyse environmental impact and record the performance of your treatment process.

Predect's Online Water Protection systems detect micro-contaminants as they occur in real-time and automatically takes a water sample for further analysis. This enables immediate action, avoids costly contamination and provides the means to optimise the water treatment process.

PREDECT – Our mission is to deliver safe water

Clean drinking water, our most precious and essential resource, is quickly becoming humanity's most endangered resource. 97% of the water on the Earth is salt water, and only 3% is fresh water of which slightly over two thirds is frozen in glaciers and polar ice caps, according to USGS (United States Geological Survey). Globally, an estimated 1.1 billion people lack consistent access to safe water.

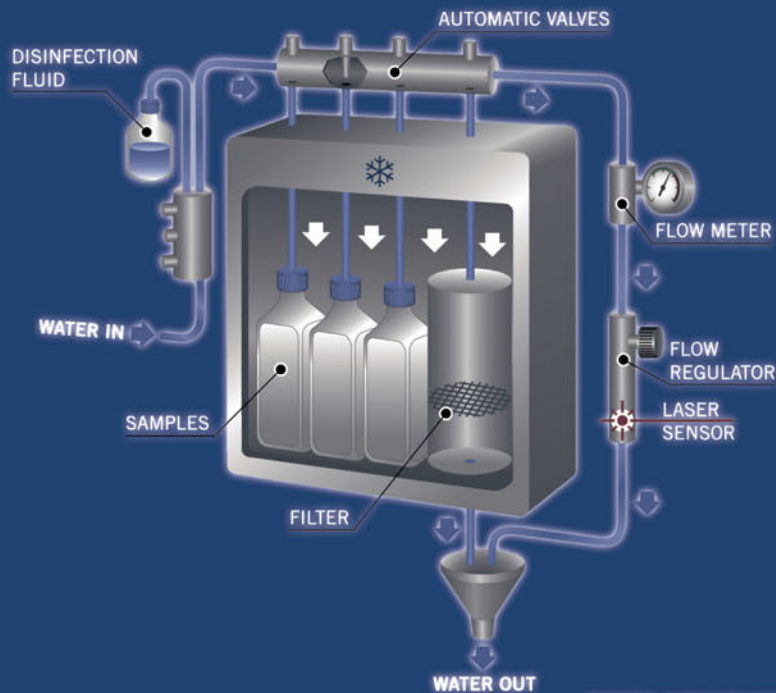
At current water consumption rates, the United Nations Population Fund predicts that by the year 2025, over 60% of the world's population will live in areas where safe water is scarce. Furthermore, according to the World Health Organization, 1.6 million persons die every year due to contaminated water; most of these casualties are children. This demonstrates the growing need to develop sustainable and environmentally friendly technologies to clean and manage our water systems.



PREDECT Principle – water analysis

The Predect systems are based on the principle that water is unique at every site concerned. The system will profile and record the unique “fingerprint” of the water. With the “fingerprint” as a reference, a dynamic threshold value (THV) is calculated.

A sophisticated laser sensor, scanning the water passing by, is used to detect micro-particles in the water. Organic and non-organic particles are detected. Using proprietary algorithms and the THV, relevant contamination is detected in real-time.



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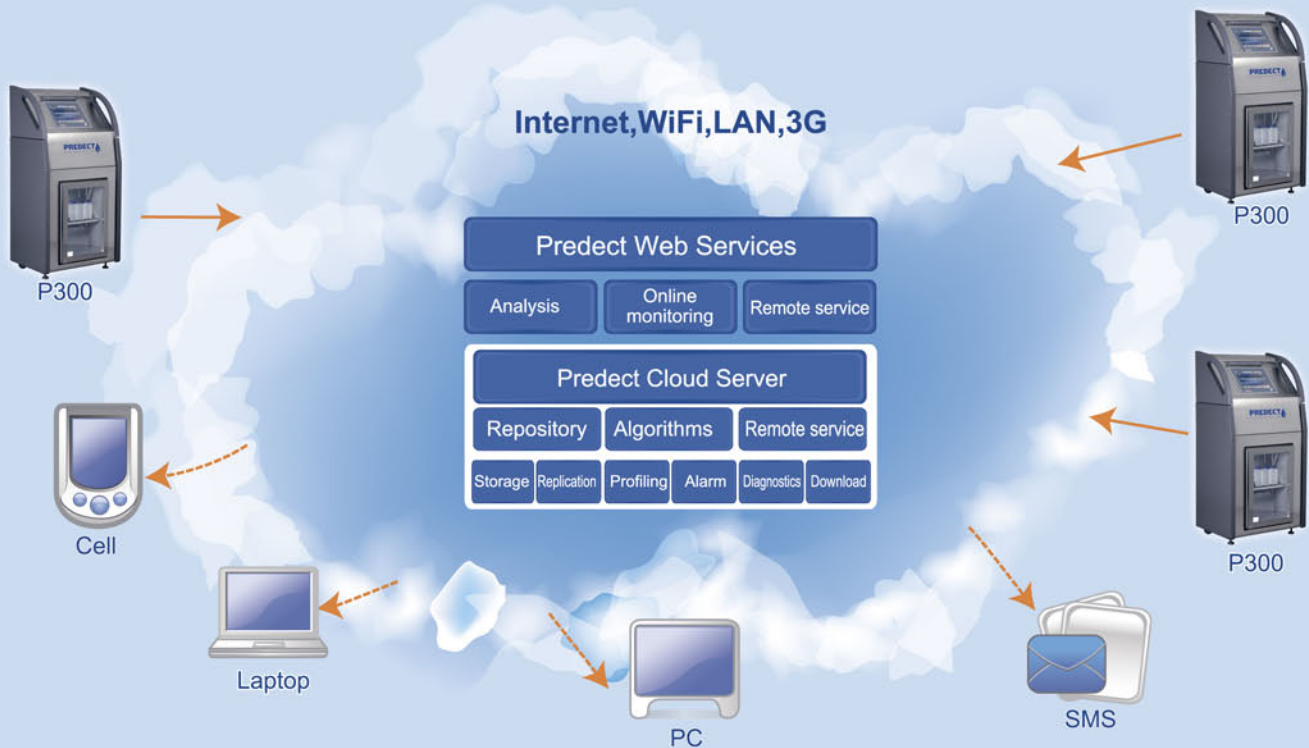
PREDECT Our water information principle

The Predect systems are based on the principle of data mining. Huge amounts of data over time, when systematically analysed with sophisticated tools, contain otherwise hidden information.

External sensors and parameters, such as pH, chlorine, oil etc. and even rainfall, temperature and humidity etc., can easily be integrated with the proprietary software algorithms, adding to the resolution of the "fingerprint". Consequently, contamination could even be predicted.



The collection of data from one or several systems, brought together with communication technology and further analysed, will give you an excellent overview and new insights in your water treatment process. The information is easily accessed via Internet, combining the strength of real-time monitoring and availability.





- **P300**

The P300 is built to monitor drinking water and detect micro-contamination in real-time. The P300 is installed on the pipeline after the water treatment process and is independent of the volume of water produced.

Furthermore, the P300 can be used to automatically control and adjust the treatment process itself e.g. minimizing the use of chemicals such as chlorine.

P300			
Detection range	Particle size 1 – 25 µm	Output/Input	Analogue/Digital (SCADA compatible), RS232, USB, Ethernet, GPRS/3G, VPN-tunnel
Sensor life time	No less than 30,000 hours	Alarm	Water sample ID, time and date. Visual and audio (optional). SMS and LAN (optional).
Sensor calibration	Annually or depending on water quality. JIS B 9225	Power	220/240 V AC with UPS backup
Display	LCD 12". Waveforms, numeric and text.	Material	Vital parts in contact with water comply with SS EN 1.4436
Measuring mode	Real-time.	Size (w*d*h)/Weight	600 x 400 x 1,500 mm / 120 Kg
Water sampling	Manually, scheduled or automatically when the THV is exceeded.	Operating temperature	5 – 50 °C
Water flow	3 litres/minute. Max 5 Bar.	Humidity	5 – 80 RH & non-condensing
Water sampling	4 bottles and 1 filter for large volumes	Water temperature	2 - 70 °C
Cooling chamber	Temperature regulated 3 – 15 °C.		



- **WIS**

The Predect Water Information System (WIS) is built to centralize monitoring and analysis of the water treatment process for one or several P300. The WIS is an optional web service hosted by Predect.

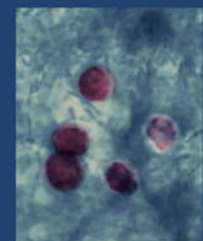
- **Service contracts**

The Predect service contracts are provided to warrant detection of micro-contamination. Three levels are offered to fit your competence and capacity.

	Preventive	Plus	Partner
Calibration of sensors	√	√	√
Technical support by phone	√	√	√
Application support by phone		√	√
Preventive service	√	√	√
Corrective service		√	√
Maintenance kit	√	√	√
Cleaning kit	√	√	√
Spare parts (selected)			√
Once a year services			
Technical training			√
User training		√	√
Adjust alarm levels			√
Water profiling			√
Software updates	√	√	√
Functionality upgrade discount (15%)			√
Accessories & spare parts discount (15%)			√
Remote service		√	√

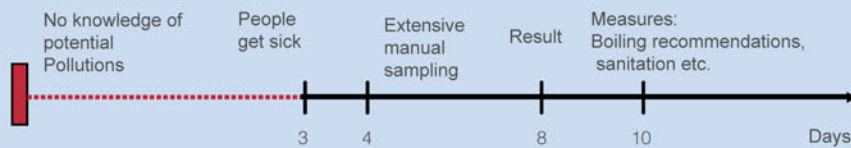


E-coli



Cryptosporidium

Detect pollutions the traditional way...



... or with Predict's real-time system:



- **Predict**

1. **Follow your unique water profile** by a bespoke finger printing process that will give you accurate alerts.
2. **Save your local environment and your running costs** by optimizing the treatment process with our data.
3. **Thrive on a future proof solution** built expandable and open to external sensors.

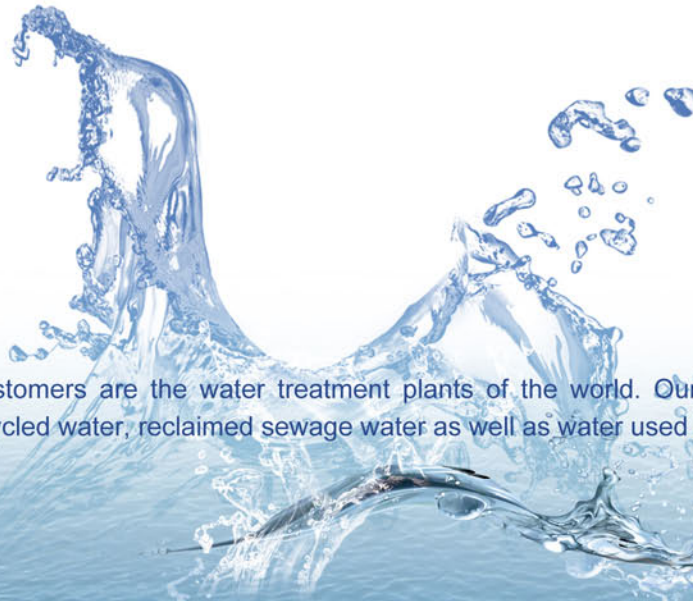
- **Detect**

1. **Avoid outbreaks** by a real-time detection 24/7 that will give you an early warning.
2. **Analyse relevant samples** by automatic sampling at detected contamination.
3. **Gain a good overview** by remote access of water quality data, which is easily available via Internet.

Online Water Protection = Early Warning and Relevant Sampling

If micro-contaminant levels spike, traditional sampling methods will likely not even record the event, or even less likely, sample the water in question. At the heart of Predect Online Water Protection System is its early warning capacity together with instant sampling. Costly contamination may be avoided and adequate disinfection methods may be applied to minimize the use of chemicals such as chlorine.

Predect establishes a new standard for Online Water Protection.



Predect's main customers are the water treatment plants of the world. Our products cover raw water, drinking water, recycled water, reclaimed sewage water as well as water used in industrial production.

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