



HydroSentinel™ –

**A total solution to remote monitoring
and process control**

Applications for HydroSentinel™

The following are some typical applications for the deployment of HydroSentinel™ technology -

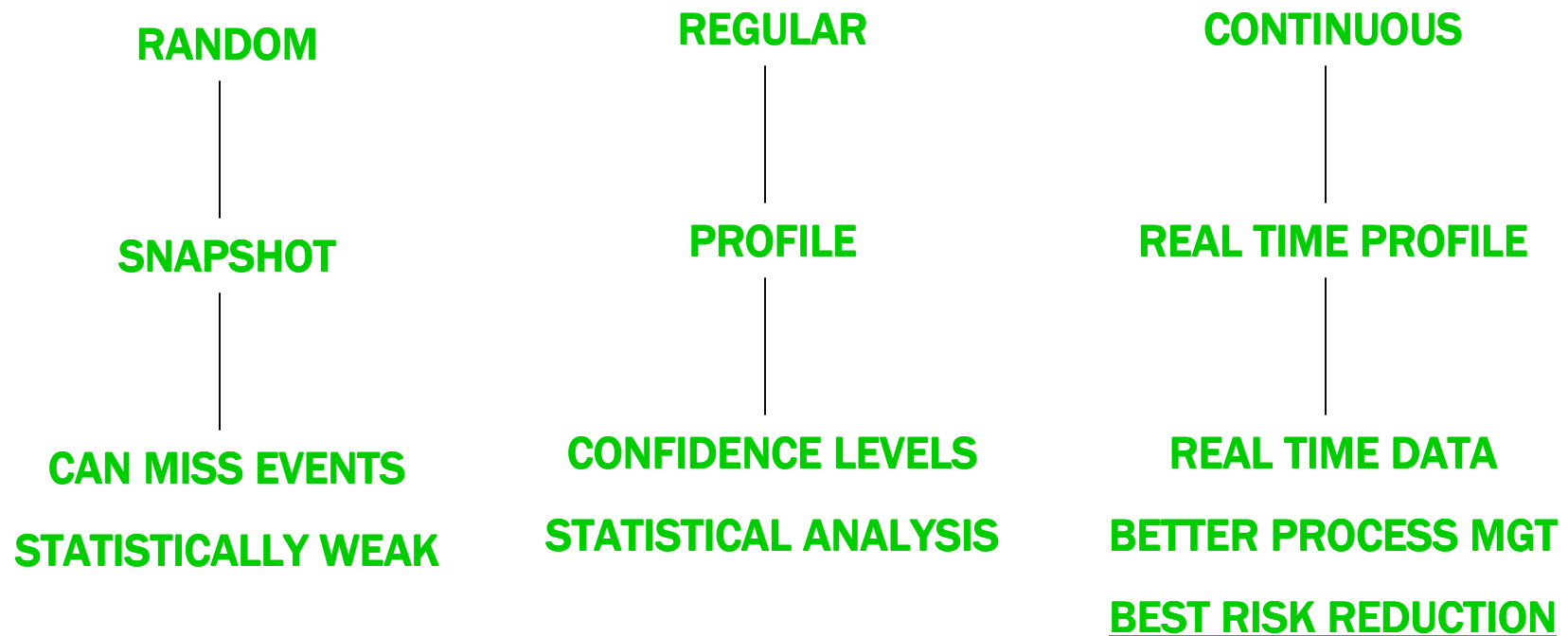
- Environmental auditing for Licence Compliance
- Prevent accidental discharge of pollutants to the environment
- Monitor Industrial Trade Waste Discharges to Sewers
- Provide Monitoring & Process Control of Remote Plant

HydroSentinel™ is essentially a Risk Management Tool for Asset & Process Management

“If you can’t monitor it, you can’t manage it”

Brian Loton, BHP CEO, circa 1990

Comparison of Data Acquisition Methods for Dynamic Gas & Liquid Streams



Gas Analysis System

Gasses:

1. Oxygen
2. Carbon Monoxide
3. Chlorine
4. Carbon Dioxide
5. Sulphur Dioxide/Trioxide
6. Hydrocarbons (e.g methane)
7. Oxides of Nitrogen (NOx)
8. Hydrogen
9. Ozone
10. SOx
11. Lower Explosive Limits (LEL)
12. Hydrogen Sulphide

Dust:

- Most Particulates

Vapours:

- Hydrocarbons
- Humidity



Liquid Analysis System

Liquid Analysers:

Specialising in:-

- Raw and Treated Sewerage
- Industrial/Trade Wastewater
- Leachate Ponds
- Effluent Streams
- Rivers and Dams
- Water Tables
- Water/wastewater Flow
- Irrigation Systems

Probes Include:

| | |
|--------------|--------------|
| pH | ORP |
| DO | Resistivity |
| Turbidity | Oil in Water |
| Conductivity | Temperature |

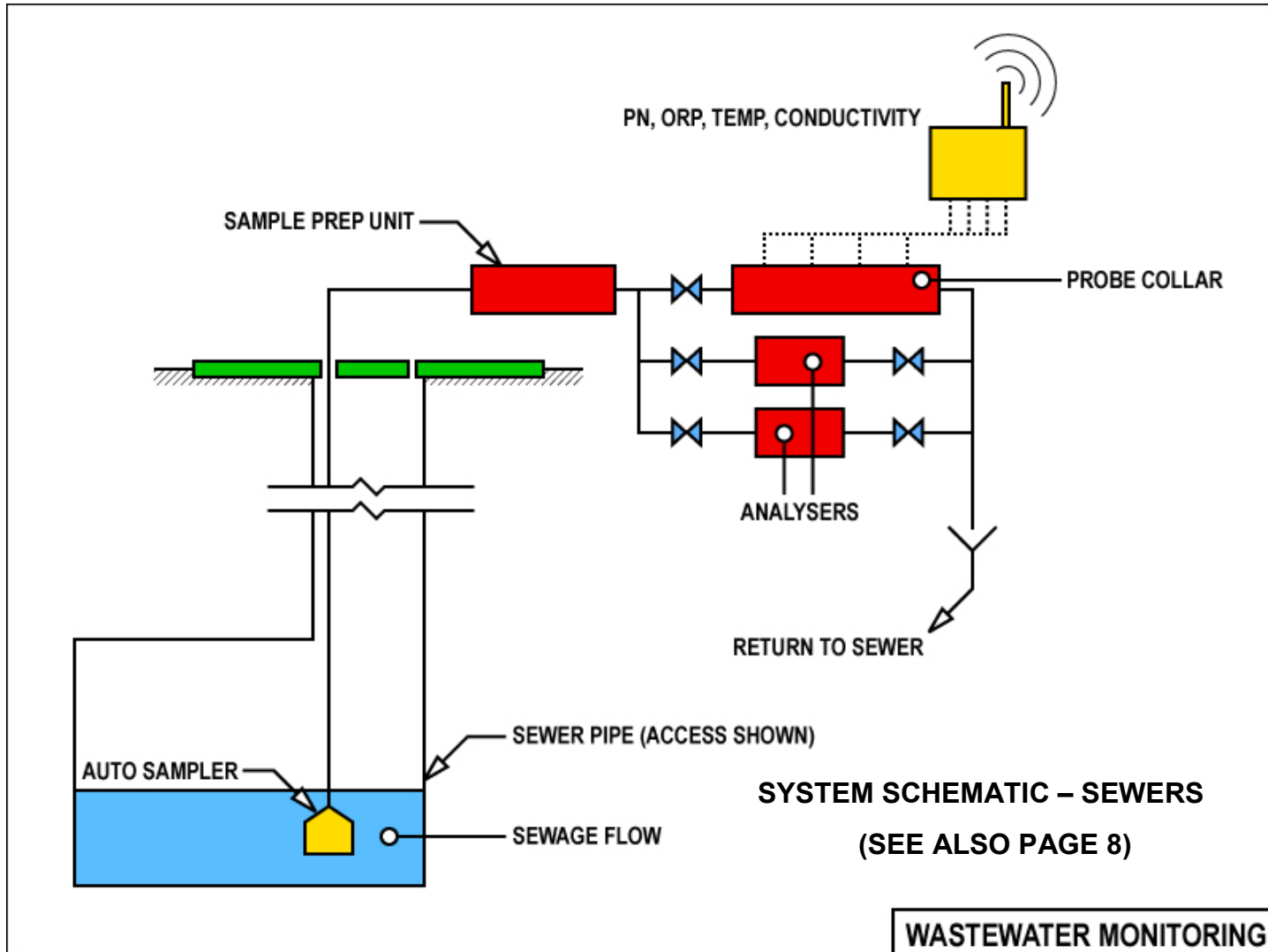


Bulletin Notice: (May 2009)

HydroSentinel™ has now been configured to carry out remote automated sampling and analysis for Chemical Oxygen Demand (COD), Oil-in-Water analysis.

EDG is currently working with specialist probe manufacturers to configure the new development in nano-technology products being developed in analytical systems. For further information on heavy metal analysis, et al, please contact the company via info@envirodynegroup.com.

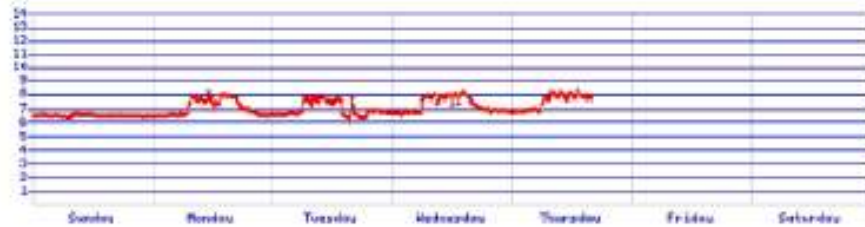
HydroSentinel™



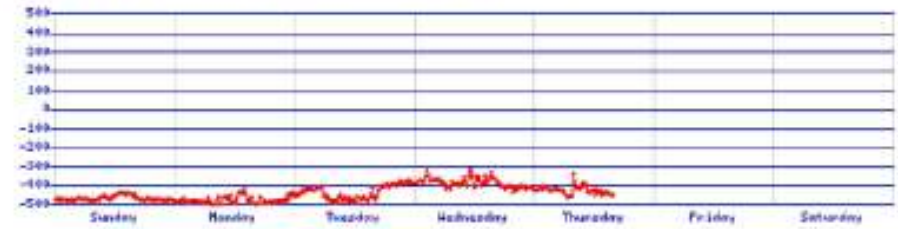
Graphs indicating Real Time Data Collection from a Sewage Pump Station Wetwell

Beginning Sun Feb 6, 2005

pH (Acidity - Alkalinity)



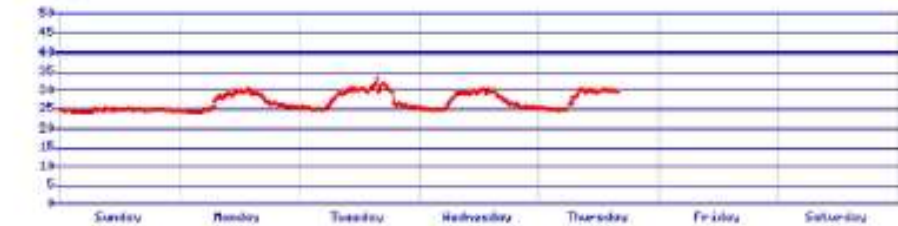
ORP mV (Oxidation Reduction Potential)



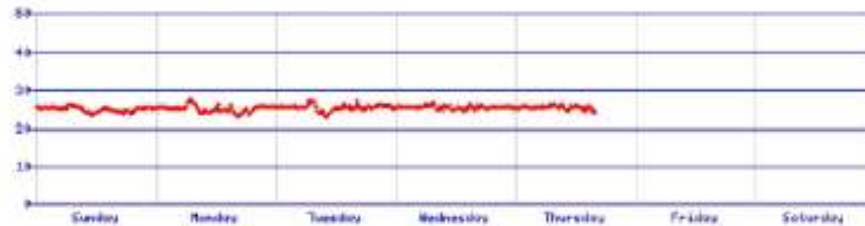
Conductivity mS



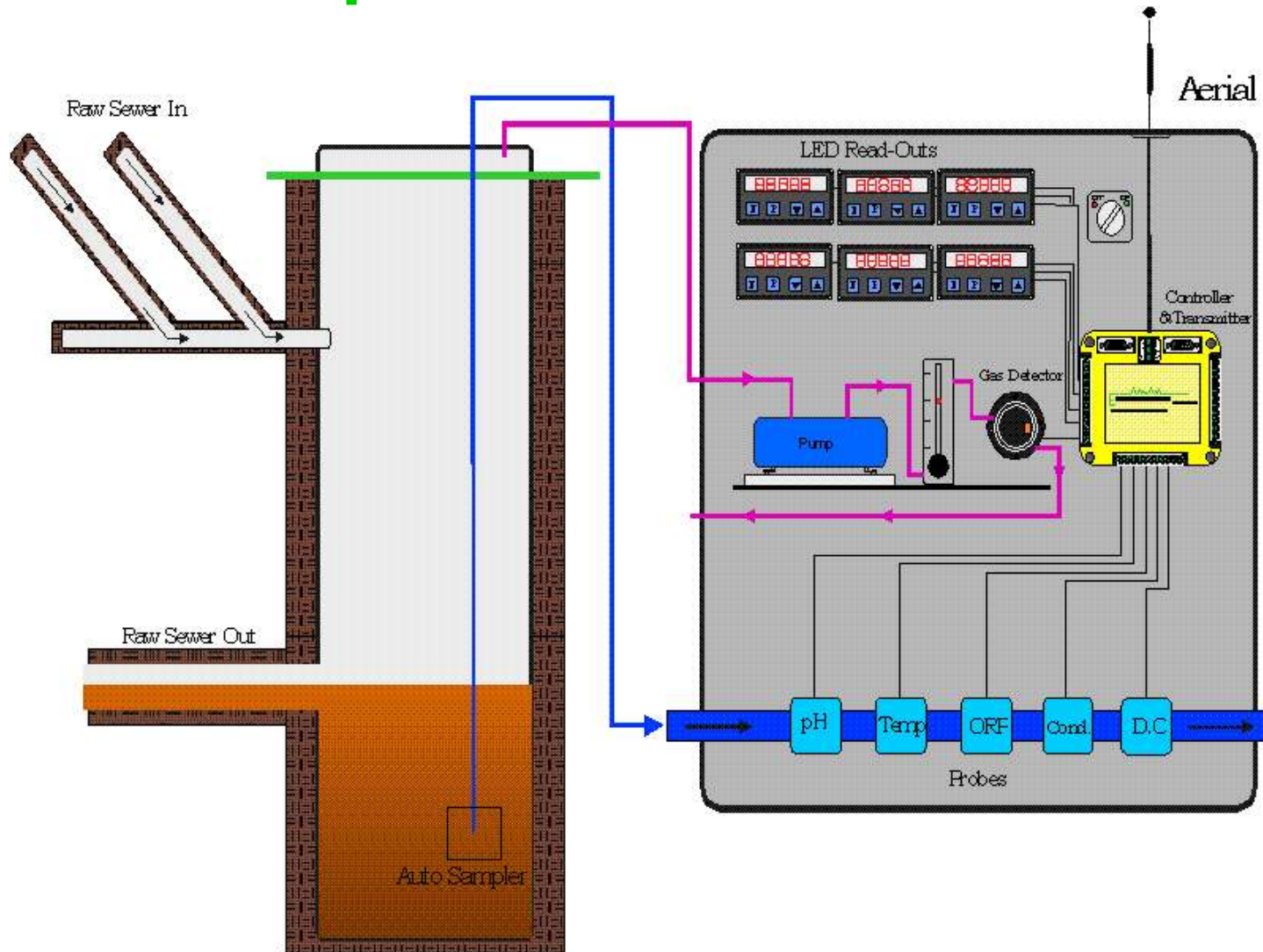
Temperature °C



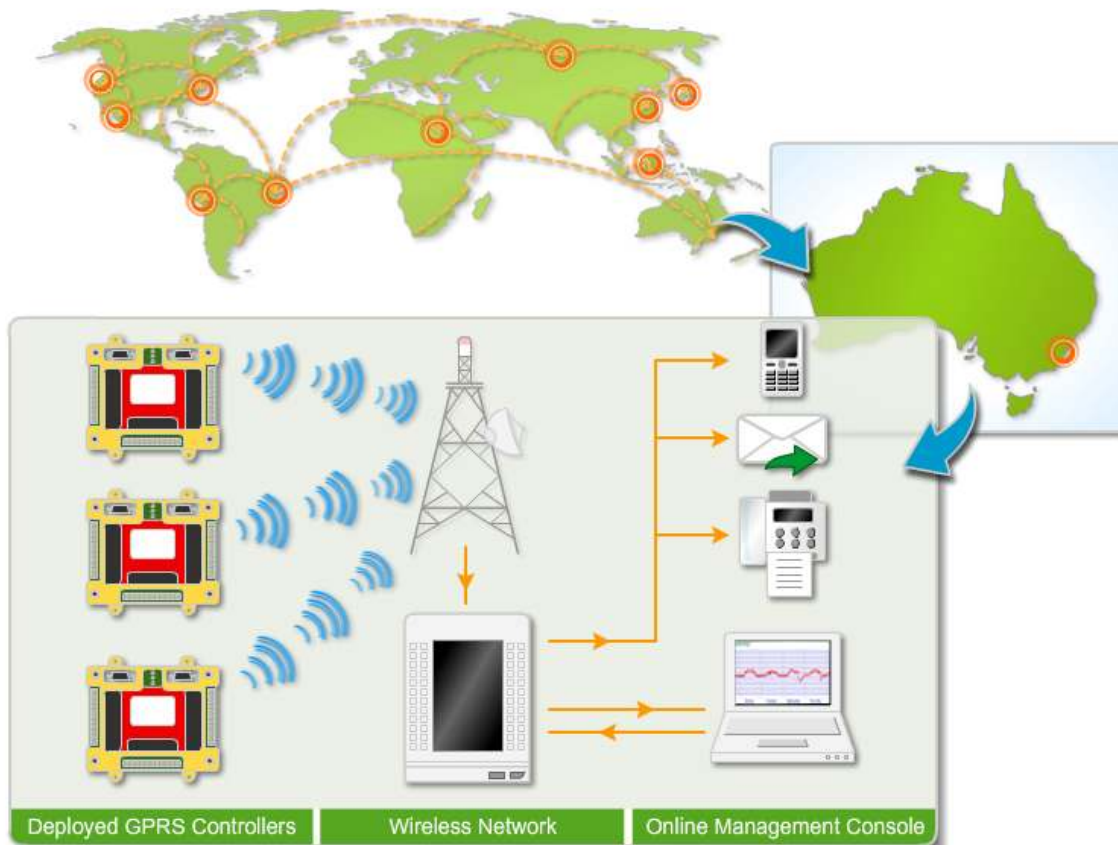
H₂S ppm (Hydrogen Sulphide)



Sewer Pump Station Plant Schematic



HydroSentinel™ TELEMETRY SYSTEM



Telemetry allows duplex operation – I.e, data retrieval and process control

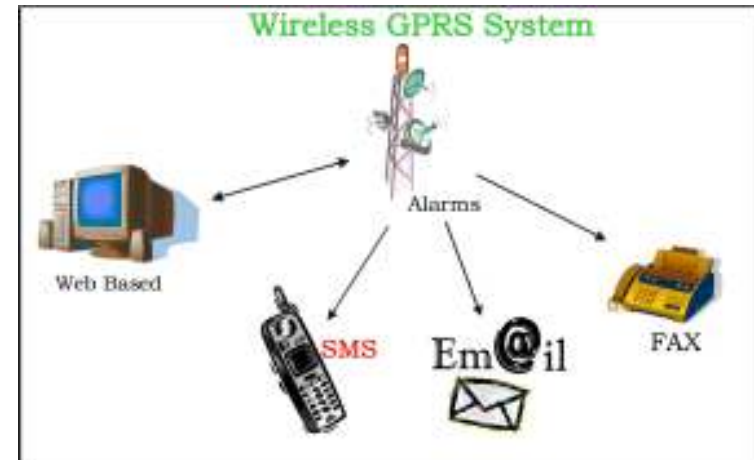
Wireless - based on existing GSM/GPRS infrastructure

Provides data on liquid/gas analysis, condition monitoring & alarms

Accessible by authorised personnel from any computer

Advantages of HydroSentinel™ Systems

- Instant and continuous access to monitored data is available. Alternatively, data can be transmitted at selected times automatically to secure website if required for later retrieval.
- “Full Duplex” – you can remotely control plant operations.
- All data is transmitted ‘via cellular phone network’ & can be stored at a secure website if required.
- All data can be viewed in graph form for historical analysis.
- All alarms can be sent via SMS, Fax or Email.
- Cheaper than other systems due to its simplicity
- GPS tracking system can be fitted to mobile and stationary units



- **Reliable and Secure**
- **No wires for telemetry**
- **Alarm Conditions can be transmitted via fax/email/SMS**
- **Cost Effective**

GPRS COMPARED WITH OTHER TELEMETRY SYSTEMS

| | GPRS | Landline | SMS | GSM |
|--|------|----------|-----|-----|
| Instant Data On-Demand | ● | ● | ● | ● |
| Declining Costs with Scale | ● | ● | ● | ● |
| Distributed multi-user Access | ● | ● | ● | ● |
| Simple Historical Data Analysis | ● | ● | ● | ● |
| Mobile Installations | ● | ● | ● | ● |
| Remote Reprogram-ability | ● | ● | ● | ● |
| Simple Customization | ● | ● | ● | ● |
| Very high data requirements | ● | ● | ● | ● |

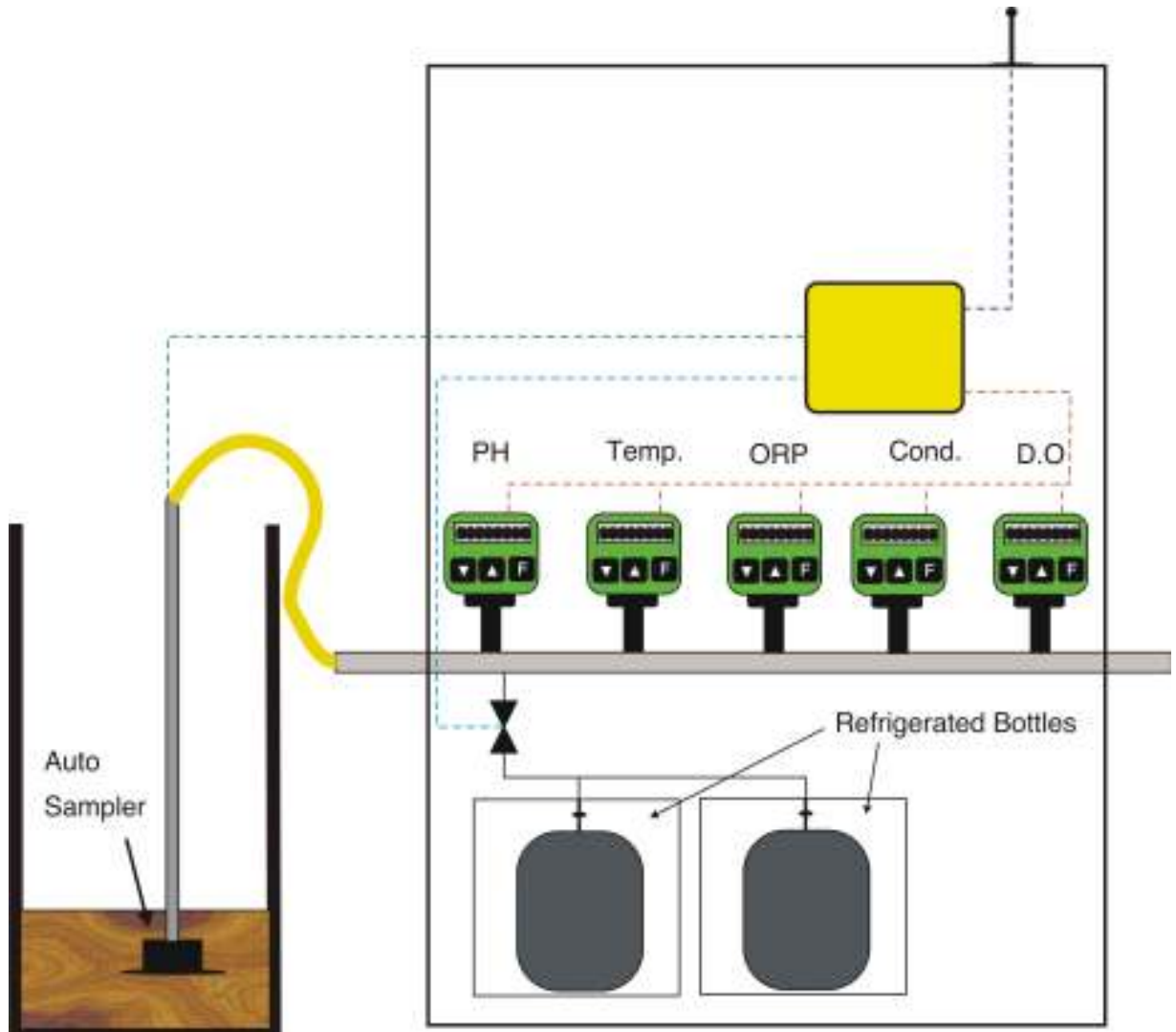
HydroSentinel™ in Action

Sequence:

- Parameter beyond specified limit
- Collection of Samples
- Warning/Alert
- Action by client & regulator

Features:

- Patented self cleaning systems to maintain analyser integrity
- (Not shown) patented sample preparation system available if required



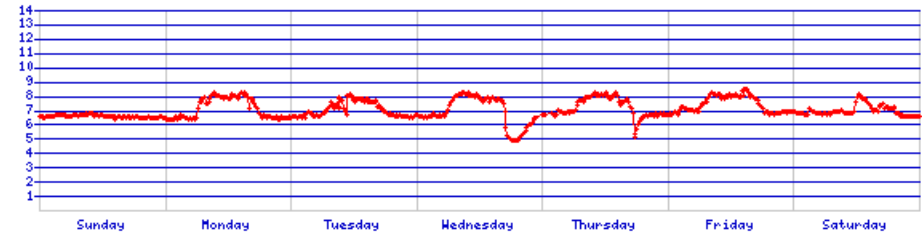
Sewer Pump Station Site

pH shift could trigger an alert or sample collection

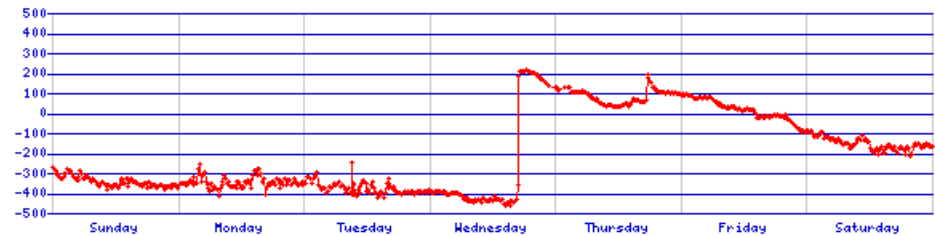
pH shift response backed up by other parameters (ORP & Conductivity) indicating a discharge of acidic waste liquids with aerated (fresh) water containing salts

Temperature cyclic 5 days/week – indicating possible industrial high temp water discharge to sewer

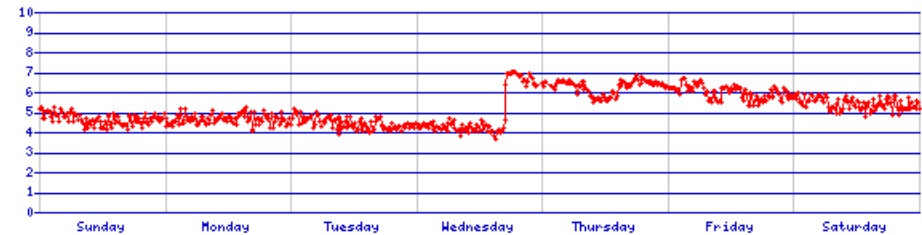
pH



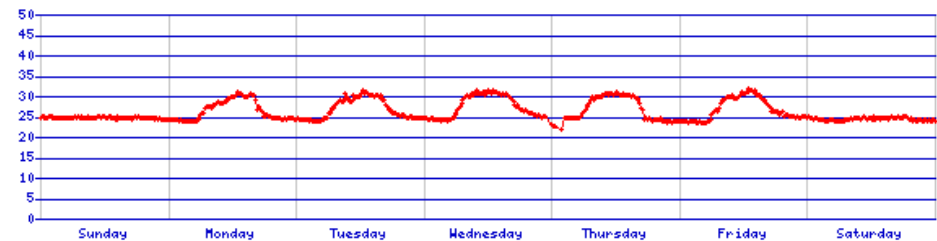
ORP



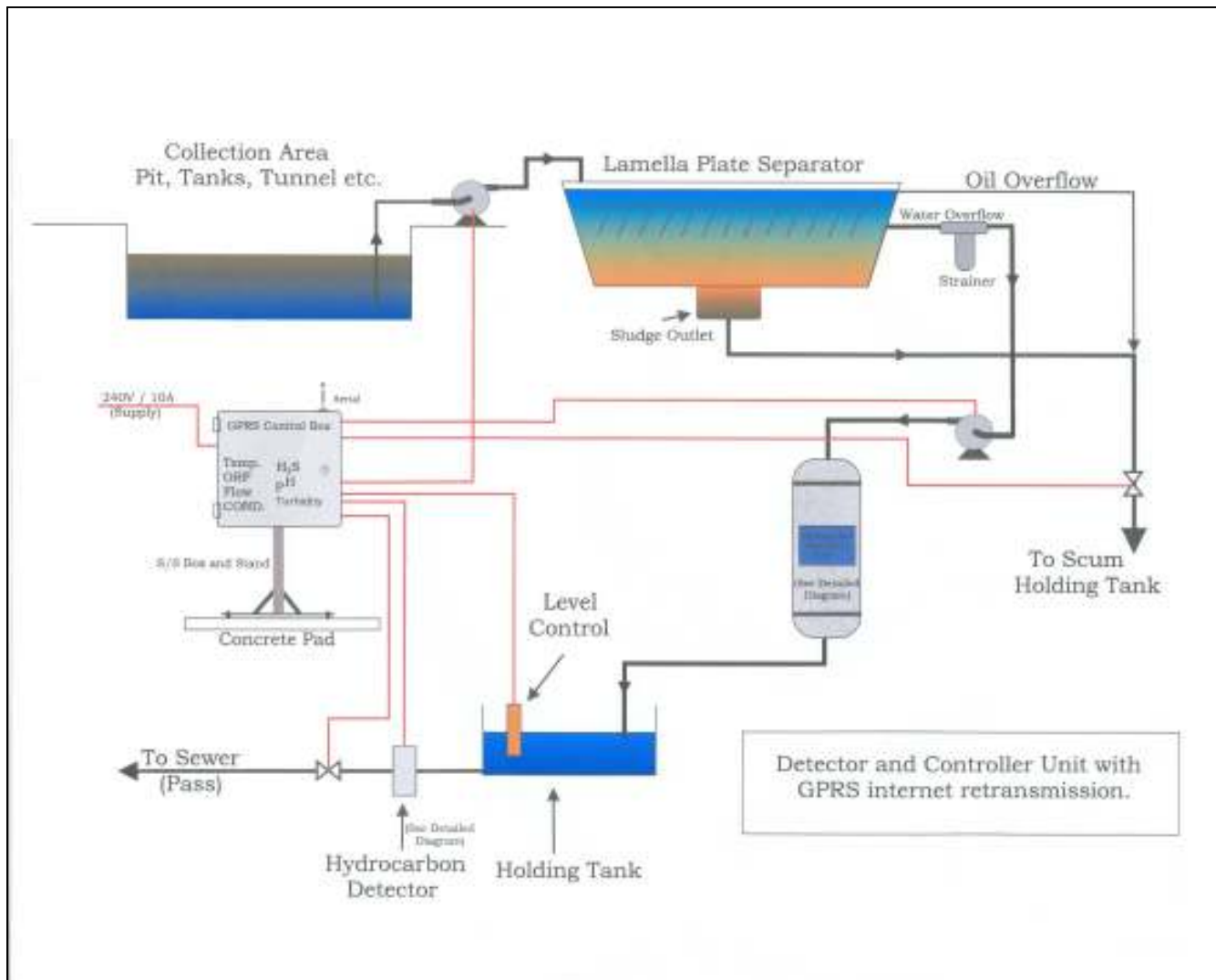
Con.



Temp



Industrial Application for HydroSentinel™



Application of online automatic analyser for an electroplating works treating collected contaminated water before licensed release to the sewer