

Chapter Eight - Future Work and Prospects

Further work will need to focus upon:

- Understanding system and sensor behavior for a wider range of pollutant compounds.
- Increasing the sensitivity of the system – possibly by concentrating the pollutants in either the liquid or gas phase or by modifying the sampling protocol to enable sensor recognition at lower concentration levels.
- Develop a time-series analysis protocol to enable real-time monitoring of the intake waters.
- Establishing pollution alarm limits, within the bounds of acceptable system variation, for a range of taste and odour compounds using the statistical significance procedure.

Information and knowledge gained during this study could be useful to many process monitoring applications. There are a number of potential applications within a potable water treatment works;

- Monitoring of raw supply waters for inlet protection and/or as part of a process quality strategy
- To monitor changes in water quality within the treatment plant, before or after key processes such as GAC bed (detecting for breakthrough compounds after treatment).
- Before any biological treatment where, once detected, an abnormal occurrence could be diverted to holding tanks to prevent any unstable bio-systems being damaged.

- At the works outlet to ensure the quality of effluent is constant.
- In the distribution system to monitor the quality of the water before it reaches the consumer.

In a progressively legislative driven environment industries are required to be more aware and vigilant of the quality and uniformity of their effluent/product streams. The electronic nose and flow-cell apparatus could be applied to monitor many diverse needs.