



*dedicated to solving problems*

## **products** ///

- Algae Control
- Ammonia
- Calibration
- Chlorine
- Conductivity
- Cooling Tower Monitoring
- Dissolved Oxygen
- Interface Level
- Nitrate/Nitrite
- Odour FOG Control
- pH/ORP
- Self Cleaning Filters
- Sludge Blanket Level
- SRT Control
- Suspended Solids
- TOC/COD
- Turbidity

**Royce Water Technologies P/L**  
ABN 21 110 057 399

**Queensland**  
Ph 0428 57 1234  
Fax (07) 3857 1236

**NSW**  
Ph 0408 079 073  
Fax (02) 9629 7472

**Victoria**  
Ph 0439 337 247  
Fax. (03) 9886 3025

[www.roycewater.com.au](http://www.roycewater.com.au)

## **/// ChemScan Online & Real-Time Water & Waste Water Analyzers**

### **Why Choose Chemscan?**

We hear a lot of complaints in this business. Almost everyone involved with the design, operation or maintenance of water and wastewater treatment plants has had some experience with on-line analyzers and, unfortunately, many of these experiences are not good ones. That is why we say that our biggest competitor is the negative impression left by other analyzers and why we set out, right from the start, to change these impressions through the performance of our company and our products. We call it the "moral high ground" and it is the fundamental thing that sets us apart from other analyzer manufacturers. Here are some other things:

### **On-Line Focus**

We specialize in the design and manufacture of instruments for the automatic analysis of liquid samples from one or more sample points in a process. We do not make instruments for laboratory analysis applications (although our instruments are sometimes located in a laboratory.) Why is this a strength? Because we are never tempted to repackage a laboratory instrument or to automate an analytical procedure that was originally designed for use in the laboratory, by experts. We design all of our instruments and every analytical procedure specifically for use in process applications, by personnel who are not professional chemists and have very little time to devote to instrument adjustment and calibration.

### **Specific Products**

When we started ASA in 1995 we offered one general purpose ChemScan® Process Analyzer and added several accessory items designed to extend the capability of our basic general purpose product. This gave us a wide range of capabilities, but not a wide range of prices. Starting in 1998 we have four basic ChemScan® models, each priced to reflect the individual capabilities of the product. Many chemical and optical parameters are able to be detected by these ChemScan® Process Analyzers, which means that our four models are equivalent to the dozens of products offered by other manufacturers. Accessory items are available for sample handling from up to eight remote sample points and for sample conditioning prior to analysis if necessary. Systems can be

provided that range from simple analysis of a single parameter at one sample point on the one extreme to complex automatic extraction, filtration and analysis of samples from multiple sample points for multiple parameters on the other extreme.

### **Application Engineering**

We do not simply sell an analyzer for detection of a specific parameter. We sell systems that are expected to be a tool for the monitoring and control of a specific water treatment, wastewater treatment or industrial process. This means that we participate in the engineering for the project. We maintain an in house staff, with expertise in analytical chemistry, water treatment processes and wastewater treatment processes. We recommend sample points, parameters, analysis intervals and mechanical details based on our experience at dozens of facilities. We provide information for engineering plans and specifications. And we can provide services for each application that range from recommendation of a specific analyzer to the design and supply of complete process analysis stations and systems.

### **Simplified Reagents**

Other analyzers that use visible light absorbance to detect the concentration of a specific chemical will use a simple one wavelength measurement made after a series of physical and chemical sample preparation steps. These analyzers use multiple reagents, some highly toxic, in order to eliminate interference and create visible tight absorbance that is proportionate to the specific chemical in order to simplify the final detection step. ChemScan® is different. We detect 256 wavelengths of light absorbance information from a sample in the ultraviolet and visible wavelength ranges and we use special chemometric analysis techniques to process this information. In effect, the statistical and mathematical information processing performed by ChemScan® can be used to eliminate much of the physical and chemical sample preparation performed by the other analyzers. This means that many parameters can be detected by ChemScan® without the use of any reagents while other parameters will use benign reagents and simplified sample preparation compared to other analyzers.



### ***Multiple Parameter Analysis***

One big advantage from the detection of a 256 wavelength absorbance signature is the amount of information contained in the signature, which is typically contributed from multiple chemicals in the sample. While others might think that absorbance from many chemicals would present a problem for the analysis of any chemical, each chemical tends to have its own unique absorbance signature. We can use this information to compensate for interference when analyzing a single chemical and, since the sample signature is the starting point for all analysis, use the same information to analyze for other chemicals in the sample. Specific ChemScan® analyzers can detect one, two, four or eight individual parameters. When a combination of techniques are used, the primary analysis parameters are analyzed first, followed by one or more secondary analysis procedures.

### ***Site Specific Calibration and Training***

We think one of our biggest advantages is the on site calibration and training services we provide with our analyzers. We inspect the installation work to make sure that all connections are correct and that the analyzer functions properly. Then we calibrate the analyzer to match the results from the on-site laboratory or other comparison method. Finally, we provide training to site personnel for operation and maintenance of the analyzer. Other manufacturers provide service through their local sales offices. Some do not provide any on site service. Their customers get an instruction book and a telephone number to call when a problem turns up. We think our way is better.

### ***Automatic Zero and Clean***

All ChemScan® analyzers are designed to perform automatic zeroing and cleaning. Deionized water is used as the zero standard, while dilute acid or bleach is the typical cleaning solution. Zero and clean intervals are operator selectable from the analyzer menu.

### ***Low Maintenance***

ChemScan® analyzers require only a few hours each month for maintenance, including the time required for preparation of reagents. Very little time is required for calibration verification or adjustment and no time is required for recalibration. Customers who have studied the issue tell us that ChemScan® requires less maintenance than any other chemical analyzer in their facility.

### ***Reliable Operation***

Reliability is the most important attribute for a process analyzer particularly if the output from the analyzer is going to be used as data for operation or adjustment of a treatment process. If the analyzer fails or produces inaccurate results, the process results can fall out of control. All ChemScan® analyzers and sample analysis systems are designed to provide reliable operation, even in extreme operating environments.

### ***Value***

OK, we know that we cost more than some other analyzers, probably most other analyzers. Some companies are basically in the proprietary reagent business and can afford to give away the analyzer in exchange for an annuity in the form of reagent sales. (In order to afford to do this, do you think that these proprietary reagents are going to be economically priced?) Some companies seem to believe that a low price for the analyzer is everything. They are gambling that the reliability of their products will not be questioned and that the operation and maintenance costs for their products will not be considered. Here is our simple suggestion: check references, compare specifications, gather information and select an analyzer system based on the lowest cost of ownership for the analyzer system over a reasonable period of time, say five or ten years. Every customer we know who has done this has selected ChemScan® as the system with the lowest overall cost of ownership.