

Technology improves laboratory efficiency

In 2010, Midvaal Water Company, Scientific Services invested in a Laboratory Information Management System. **Debbie Besseling** finds out more about the turnaround in the department's operations.

According to Shalene Janse van Rensburg, chief analyst: Client Services, until 2009 Scientific Services made use of a process that included manually documenting the information relating to samples submitted by clients in a sample reception book. At that stage the test reports were drawn up in an Excel spreadsheet. "The manual system was time consuming and restricting. Information regarding client details, laboratory methods, analyst performance and finances were handled separately by different application programmes. Midvaal Water wanted to improve the service to its clients by having more information readily available, as well as minimising the possibility of errors," says Janse van Rensburg.

After thorough research and many visits to other laboratories, Midvaal Water went out on tender and after the selection process the tender to implement a Laboratory Information Management System (LIMS) was awarded to Technology Systems Integration (TSI) in April 2009.

Janse van Rensburg comments: "We wanted to be able to alter and develop our LIMS in order to suit us, and not the other way around. The methods and procedures carried out in the laboratory have been developed over many years and work according to our specific requirements, with the exception that [previously] it was done manually."

SPECIFIC SYSTEM REQUIREMENTS

Midvaal Water's specific system requirements were detailed in a user requirement document that was made available to companies that wanted to tender. The specific requirements included:

- access to the LIMS
- backup of the system
- business administration functions
- an interface with existing and future laboratory instruments

- performance appraisals
- the possibility to draw up quotations
- quality control
- reporting of various results in various forms
- sample registration
- the maintenance of a client database.

Commenting on the choice of system, Janse van Rensburg says that there are several off-the-shelf systems available on the market. However, not only are they costly, but their design to provide a one-size-fits-all solution means such systems not user-specific for particular applications. "For us, the TSI system was a product which had all the main components and could be developed and altered to adapt to our system and meet our unique requirements. One of the advantages of LabInfo was the web-based system that required a lot less hardware."

CHANGING BUSINESS PROCESSES

The LabInfo system was implemented at Midvaal Water in January 2010. The system is mostly utilised to register samples, enter results and generate test reports for clients. "We can now easily manage

our method information, which includes pricing, compiling quotations, maintaining the client database, importing data on the BDS, generating various management reports and complying with SANAS requirements where applicable," says Janse van Rensburg.

Discussing the benefits of the system and the positive effect it has had on the service levels of the laboratory, Janse van Rensburg says that although the core operations of the laboratory have remained the same, the manual work is now done using the LabInfo system. For example, previously the requested tests were indicated in the sample reception book and each analyst had to access the book to view details of the work to be done. Laboratory stations have now been created, where each analyst can generate a work schedule report on the computer in their laboratory.

With LabInfo, various aspects of Scientific Services have been integrated into one system. Selected persons in the Operations and Finance departments now have access to the system and are able to obtain information directly from the system. Another



From left: Jan Pietersen, head: Scientific Services, Shalene Janse van Rensburg, chief analyst: Client Services and Germarié van Zyl, LIMS administrator

Services offered by Midvaal Water Scientific Services:

- Chemical and microbiological testing
- Sampling
- Evaluation and interpretation of results
- Consultation on water utilisation and suitability
- All-hours staff available for urgent, unscheduled samples

system has recently been implemented whereby information from LabInfo is imported to the administration system, which automates the invoicing process. Other functions include a facility to import data from the system into the Blue Drop System, which is utilised for Midvaal Water and other clients.

CHALLENGES

Neill Rosenthal, senior systems developer for TSI, says although the LabInfo system had its beginnings in water laboratories, this is the company's first project for a commercial water lab. A number of new functions, such as price lists and quotations, were to be added. "The system was enhanced to provide some specific performance measurement information required

by Midvaal Water. This was also our first implementation for a SANAS-accredited laboratory," he comments.

The management of data played an important part in the implementation of the system. Before it was put into use, data was being managed in a variety of spreadsheets and so it was difficult to manage and control, and consolidated reports took very long to compile.

"Now that LabInfo has been implemented, data is stored in a central database, from where a variety of reports are easily generated. Users have to log on to the system and then have access to those parts of the system that are relevant to their roles," says Rosenthal.

LABORATORY SERVICES

Midvaal Water Scientific Services is made up of 21 team members. Scientific Services consists of metal, carbon, microbiology, algae, physical and chemical, nutrient and ion laboratories. The samples received range from drinking water, bottled water, borehole substances, sewage effluent

and sludge, mine effluents, milk and solutions, through to environmental and prosecution samples.

SYSTEM OUTPUT

Final results from the system are submitted to clients in a formal test report, which is in pdf format and complies with the requirements of SANAS, a feature that is of great importance to clients. There are also Excel reports available for clients who wish to work with the data, and other formats are available for clients on request. From the large database, the system is able to produce reports that can assist with the management of turnaround time, cost-efficiency and personnel efficiency, all of which determine and enhance productivity.

ONGOING SUPPORT

"TSI offers Support Central, which is specifically set up for each client. This allows us to log support requests and follow up until a job is completed. This has proven to be very effective as all communication regarding a certain job is monitored, traceable and available," concludes Janse van Rensburg. **35**