23. QUALITY CONTROL AND ASSURANCE

To ensure that your RHP results are reliably comparable over time and between sites, it is vital that ***biomonitoring and data collection be performed in a consistent and standardised way***. It is no use having a brilliantly designed RHP programme, if the information being gathered is unreliable. Quality control and quality assurance (QC/QA) are the procedures which ensure that ***set standards are maintained*** throughout your programme.

The QC/QA is very important as persistent undetected errors that occur at the biomonitoring stage, could ultimately distort the interpretation of the perceived ecological trends and condition of a catchment. Preferably all aspects of the RHP process (programme design and implementation, sampling, recording of results, data capture, analysis and reporting) should be subjected to periodic audits (inspections) and quality control measures.

Quality control an assurance ***should begin with your RHP programme design*** and ***implementation plan***. To make sure that your programme is realistically designed and incorporates all important aspects, it should be reviewed by the NCT. Once this has been successfully achieved, standards and procedures need to be set for the different aspects of your programme.

Some RHP aspects for QC/QA include:

- **$** Equipment checks
- **$** Biomonitoring sampling techniques
- **$** Identification proficiency (invertebrates, fish, riparian vegetation)
- **$** Recording of results on standard forms
- **$** Adherence to RHP index methodology
- **$** Coverage of Monitoring and Reference sites
- **$** Adherence to biomonitoring frequencies
- **$** Data capturing on computer
- **$** Maintenance of data
- **$** Analysis of information
- **$** Presentation of information
- **$** Reporting methods
- **$** Remedial actions by management.

The auditing of biomonitoring sampling techniques and use of instruments can be done by random spot checks in the field. Auditing of invertebrate identifications can be done by preserving whole samples and bringing these back to the laboratory for analysis. The results obtained can then be compared to the field based results. This should be done preferably by either a central auditor or one of the members of the PIT with biomonitoring experience. Occasional checks on the accuracy of the recording of results on the database are also recommended. We are all human, so occasional mistakes can be expected!

NOTE:
A Proficiency Testing Scheme (PTS) has been developed by Umgeni Water to test the SASS identifying ability of SASS practitioners countrywide. Once practitioners have qualified, then their data collected will be flagged as "validated" on the national Rivers Database. A similar system could be devised for fish identification.

Auditing may also be done during the process of analysing your RHP results for the detection of environmental

trends. Due to the discriminatory nature of data analysis, major anomalies during data capture can be detected and checked. Follow up investigations can then be made to ascertain where the error crept in.

NOTE:
It is very important that QC/QA should not be seen as a policing exercise. It should rather be a process of enhancing the performance and proficiency of all personnel, from the PMT to the provincial champion.

For more information on QC/QA, see report by Chris Dickens on the RHP website and Procedures for Provincial Implementation. Chapter 3. Quality Control and Assurance by Rob Palmer.