



# Air Quality Information System (AQIS) for Gauteng

## DEFINING BEST PRACTICE

**Presented by Mr. Phillip Kganyago (GDACE)**

Co-authors: Ms. Rina Taviv (CSIR)

Ms. O. Ilemobade (GDACE)

NACA Conference-October 2006



## Contents of the presentation

- Introduction on legal requirements
- Background on situation in Gauteng Province
- Functions of an AQIS
- Review of AQIS components
- Data management protocol for Gauteng
- Identified gaps and way forward



## Introduction

- The National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004) –need for national framework.
- The national framework will include the norms and standards for air quality information management.
- NAQIS (National Air Quality Information System) is a tool for the achievement of the AQA implementation.





## Background (situation in Gauteng)

- A variety of institutions are involved in air quality monitoring and management, but there was no co-ordination of the monitoring efforts
- Information is fragmented and not easily accessible
- Pilot project was initiated by DEAT (next presentation)



## Functions of an AQIS (Gauteng)

- Co-ordination of monitoring (next slide)
- Data collation, storing and archiving
- Data validation and interpretation
- Reporting
- Data distribution
- Support for AQ management decisions
- Decision support tool for EIA applications
- Air quality information base



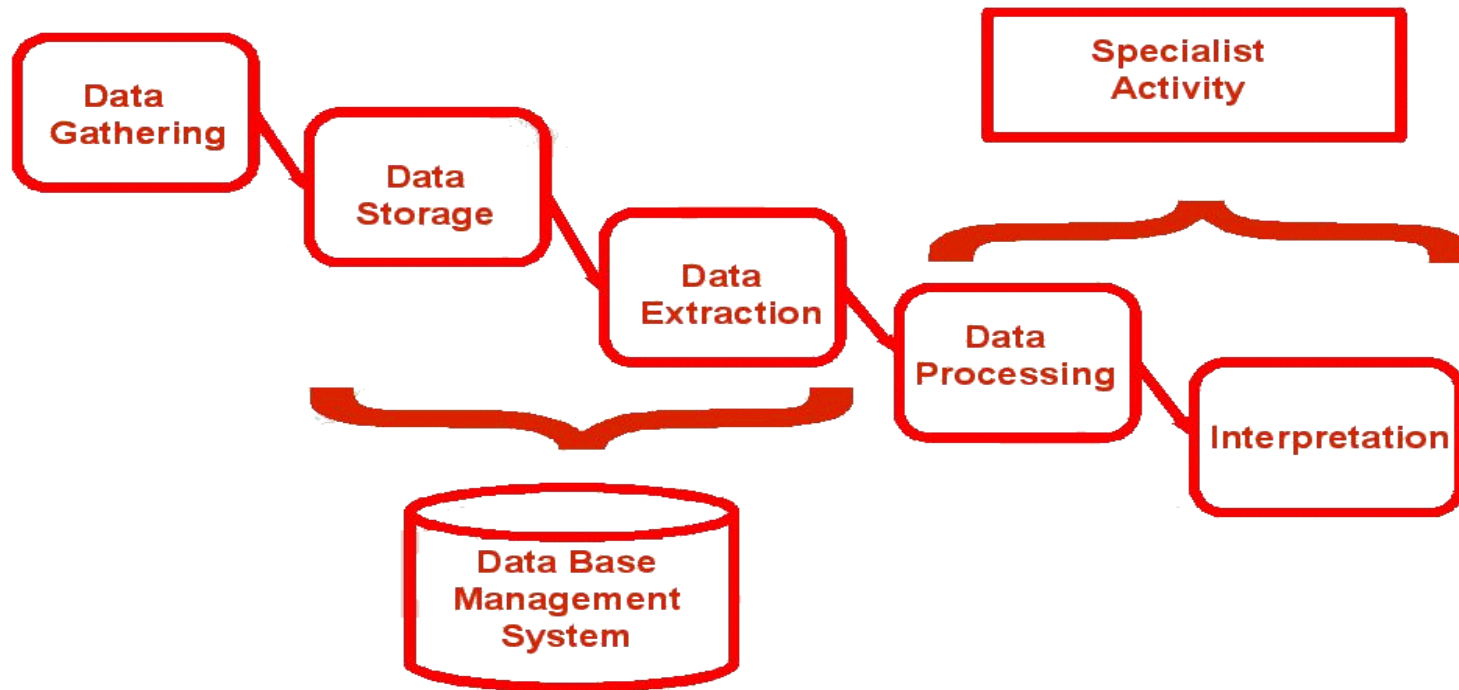
## Monitoring network

- Establish the objectives of the network
- Identify parameters to monitor
- Establish a comprehensive monitoring methodology
- Select monitoring sites
- Ensure consistent QC/QA and data validation protocols.





# Traditional data management





## Responsibilities of monitoring agencies

**Quality control (QC)** - activities done at the site by the respective agencies to ensure that the site operates according to Standard Operation Procedures (including SOPs specific for monitoring equipment, precision checks and internal calibration).

**Quality assurance (QA)** refers to activities done by others to ensure that quality control is practiced, e.g. site auditing and external calibration.

**Data management and reporting** refers to activities by monitoring agency or external experts to collate, validate, store and report monitoring data (must be compatible with provincial data management).





## Data Management protocol

- Describes raw data manipulation and processing once data has been downloaded from a monitoring equipment or received from monitoring agency.
  - Adjustments based on calibration results, errors correction and outlier removals (must be flagged and commented on).
  - Examine and flag missing data
  - Average to predetermined intervals (e.g. suitable for compliance analysis with standards)
  - Store in pre-determined format (labelling, units and periods are critical).
  - Archive data (back up both raw and processed data at centralised storage area)



## Gaps and way forward

- Analyse user requirements
- Prepare comprehensive network description (including detailed site description and GIS layers)
- Finalise reporting formats
- Define and implement standard validation protocol
- Agree on data sharing and distribution
- Develop interpretation methods