INTRODUCTION
When I was asked whether Gijima Occupational Hygiene and Environmental Services would be interested in writing an article on the basics related to “What to expect from an occupational hygiene survey?” my mind wondered back to the annual SAIOH conference of 2011 at Lesedi village, for which the theme was; “Back to the basics”. To me, repeated requests to address the basics show that they will remain forever relevant.

I have always been a huge supporter of, and advocate for, understanding the basics. Not only understanding them, but also practicing them till they become part of your being and your culture, and a habit. Only then can you advance to more complex aspects of whatever you are studying or practicing (trust me – you will then understand the complex issues much better). That is exactly why SAIOH has a hierarchy of levels of certification, and why one can only advance from one to the next after proving competency.

The most basic aspect of the discipline and practice of occupational hygiene is its purpose which is to control exposure to workplace stressors in such ways that exposed employees do not suffer or develop significant adverse health effects resulting from exposure. Every occupational hygiene survey must answer that very basic question: does it assist one in the adequate control of exposure to a given occupational stressor? If not, the survey has failed and the resulting report has no purpose.

THE OCCUPATIONAL HYGIENE SURVEY
Objective of an occupational hygiene survey
Every survey should have an objective or objectives (i.e. it can address more than one element). But it must, at least, address the most important objective of occupational hygiene, which is to control exposures. Additional objectives may include assessing legal compliance, etc.

Occupational hygiene surveys must be executed according to a plan
Every survey should have a well-defined and executed survey, or sampling plan. The criteria for this plan can be summarised with the phrase “representative of normal”. The plan must demonstrate that:

• Measurement results are representative of a group’s (defined HEG’s or SEG’s) exposure levels; these must either be based on the highest exposed individual or a statistically representative random sample of employees in the group.

• Environmental conditions must be “normal”; if they are not normal, sufficient information must be recorded to enable discussion of how prevailing environmental conditions might have influenced the results.

• Operational conditions must be representative of “normal” – average production rates must prevail, control measures must operate at “normal” level of efficiency, etc. The details of all such normal conditions or upset conditions, and how they might have influenced the results, must also be recorded.

• Sampling durations must be representative (by at least 80%) of exposure durations/work shifts. If they are not, the reasons for deviating from this rule, and how this deviation might have influenced the representativity of the results, must be discussed in the report.
Demand quality and professionalism

Only accepted, validated methods should be used for all measurements and sampling (NIOSH, OSHA, HSE, etc.). From 1 October 2014, the Occupational Hygiene Service Provider/AIA must be SANAS-accredited in sampling and measurement methods relating to noise, hazardous chemical substances, lead, asbestos, extraction ventilation systems and hazardous biological substances control-measure efficiency testing. External service providers to the AIA, such as analytical laboratories, should also be SANAS accredited (SANS/ISO 17020) for the analytical techniques they apply. Some of the advantages of SANAS accreditation are that the client need not be concerned about aspects such as:

• Does the Occupational Hygiene Service Provider/AIA work according to a Quality Management System?
• Are the correct procedures followed for sample handling and storage?
• Is there a chain of custody/traceability procedures?
• Are the measurements valid, regarding equipment validation and calibration validity?
• Is there an appropriate data management system?
• Are the personnel appropriately qualified and competent?

THE OCCUPATIONAL HYGIENE REPORT

An occupational hygiene report is much more than a statement (copy and paste) of basic legal requirements with a table of results

For ease of demonstrating compliance, survey results should be presented in table format, listing measurement results and standards, and appropriate contextual information such as the name of the person conducting the measurements, conditions during the working activity, and presence or absence of control measures.

Occupational hygiene reports must reflect professionalism by following an appropriate structure, such as a standard scientific report format, and should contain the information listed in Box 1.

BOX 1. COMPONENTS OF AN OCCUPATIONAL HYGIENE REPORT

- Front page
- Statement page
- Executive summary
- Contents page
- Introduction
- Aims and objectives/purpose (optional)
- Acknowledgements
- Process description
- Description of hazards
- Relevant legislation
- Evaluation criteria/standards and limits

- Strategy and methods of sampling and analysis
- Results
- Discussion and observations
- Conclusions
- Recommendations and suggested action plan
- Tables, figures, maps, histograms, photographs as appropriate
- References
- Appendices

The Conclusion of the report must:

• address the initial objectives of the survey
• state whether or not there is compliance, or report the level of risk faced by the exposed individuals
• be clear and concise (no “could be”, “maybes”, “ifs” or “buts”)

The most important section of the report is the Recommendations. Even if the results and conclusion clearly demonstrate that there is no “over-exposure” or that there is a “low risk”, there is always room for improvement. As we know, there is no such thing as a true “no risk” exposure level, and the best exposure measurement is still only a good exposure estimate. Good “Recommendations” will:

• describe the changes and improvements to existing control measures that are required, and/or new initiatives that need to be implemented (including design specifications, where possible)
• be listed in order of priority (also considering the hierarchy of control)
• be detailed, specific and practicable – with no regurgitated, generic mumbo-jumbo

Few things reflect poor quality more than offering recommendations that are impractical or inappropriate.

The report should contain as many control options as possible for every exposure condition. This does not mean that they need all be implemented. They must, however, all be scrutinised according to the “reasonably practicable” principle, by the employer or client (and not the Occupational Hygiene Service Provider/AIA). The Occupational Hygiene Service Provider/AIA should not limit the number or extent of control options recommended, according to what he/she thinks is reasonably practicable.

Although an occupational hygiene report is a comprehensive professional document, it must be simple enough to be understood by a layperson, yet detailed enough to be useful to the risk manager, engineer, occupational medical practitioner and others.

Reports must be written using correct, professional terms and words, grammar and terminology, and let us never forget the A,B, C of occupational hygiene survey reports:

• Accuracy: the report that arrives 6 months after the survey was conducted and when conditions and personnel may have changed, will be of little use
• Brevity: keep it brief and to the point
• Clarity: keep it simple, avoid technical jargon, consider readership and emphasise what needs to be done to improve health and safety (recommendations, recommendations …recommendations)

FINAL WORD ON WHAT TO EXPECT . . .

A meticulous occupational hygiene survey, executed by a skilled professional or Occupational Hygiene Service Provider, is expensive. As with most things in life, including occupational hygiene, you must expect to get what you pay for.