



## TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

### THEMATIC AREA

**Water Quality and Health**

### TITLE

**Development and implementation of a robust framework for the management of Contaminants of Emerging Concern (CECs) in South Africa**

### Background and Rationale

Contaminants of Emerging Concern (CECs) represent synthetic or naturally occurring compounds, such as endocrine disrupting compounds, pharmaceuticals and personal care products, pesticides, as well as industrial chemicals. Previous research funded by the Water Research Commission and its partners has demonstrated that some of these compounds occur across the water cycle and can persist in the environment and bioaccumulate in organisms, thereby posing significant risks to both human health and ecological systems. Several engagements undertaken by the WRC have highlighted the need to create and implement a robust framework for the management of Contaminants of Emerging Concern (CECs) in South Africa. Therefore, this project aims to co-ordinate the research and capacity building activities as part of a robust framework for ensuring a more informed and prepared national response towards the management of CECs in water. This project involves bridging existing knowledge and data gaps on CECs in South African water systems, engaging with key stakeholders—such as government agencies, researchers, water utilities, and industry representatives—to incorporate diverse perspectives and practical insights on the presence of CECs in water. Furthermore, the project seeks to standardise analytical methods and strengthen the analytical capabilities of laboratories to enable routine monitoring and ultimately their regulation in water.

### Objectives

#### *General:*

To develop and implement a comprehensive, context-appropriate framework for the identification, assessment, monitoring, and regulation of Contaminants of Emerging Concern (CECs) in South Africa's water systems. This framework should address current knowledge gaps, institutional limitations, regulatory challenges, and public health risks associated with CECs, and pave way for the management of CECs in water in South Africa.

#### *Specific:*

The objectives of the project are to:

1. Develop and implement a stakeholder and knowledge/data management plan for the project.
2. Conduct a review of the CECs in water in South Africa and compile reports, factsheets and databases for upload onto the existing CECs Knowledge Hub.
3. Conduct a comparative analysis of existing regulatory and management frameworks in countries with advanced CEC programmes (e.g., EU, USA, Australia) and provide recommendations for the regulation of CECs in South Africa, considering relevant water quality management frameworks for public health, agriculture, and the environment.



4. Using robust prioritization frameworks or methodologies, development of a priority list of CECs in water for South Africa, accompanied by comprehensive fact sheets detailing their characteristics, risks, water quality guideline values (where available) and management solutions.
5. Conduct a comprehensive study on the capacity to monitor, assess risks, regulate, and manage CECs in water in South Africa. Based on this, establish and co-ordinate a network of partners and participating laboratories as part of the project plan.
6. Develop a compendium of standard methods for routine sampling, analysis and risk assessment of priority CECs, development of skills in advanced monitoring techniques, data management and reporting, and overall management of CECs in water in South Africa.
7. Develop and test the implementation of a robust, adaptable, and risk-based management framework for CECs, incorporating monitoring and data collection protocols, risk assessment methodologies, regulatory and policy interventions, as well as public awareness and stakeholder engagement strategies.
8. Compile a comprehensive final report with recommendations to sustain the management of CECs in water sources in South Africa using the developed framework.

**Deliverables:**

The deliverables below may be sub-divided by the proposers, if desired, into not more than three deliverables per financial year. The first-year deliverables may NOT include an advance – An Inception Report detailing the Project Plan and Management will be accepted. The final deliverable of the print-ready final report, valued at 20% of the Budget, is required.

- Inception report
- Annual progress report(s)
- Knowledge Dissemination, Education and Communication products – A budget of approximately 10% of the total project budget should be geared towards this work package. This should include stakeholder workshops, targeted events at national conferences, scientific journal outputs, a paper on the project and outcomes, and contribution to a CEC Knowledge Hub
- Final report

**Total Funds Available:**

R5 million over 5 years.

**Year 1: R800,000.00**

**Year 2: R1 000 000.00**

**Year 3: R1 000 000.00**

**Year 4: R1 200 000.00**

**Year 5: R1 000 000.00**