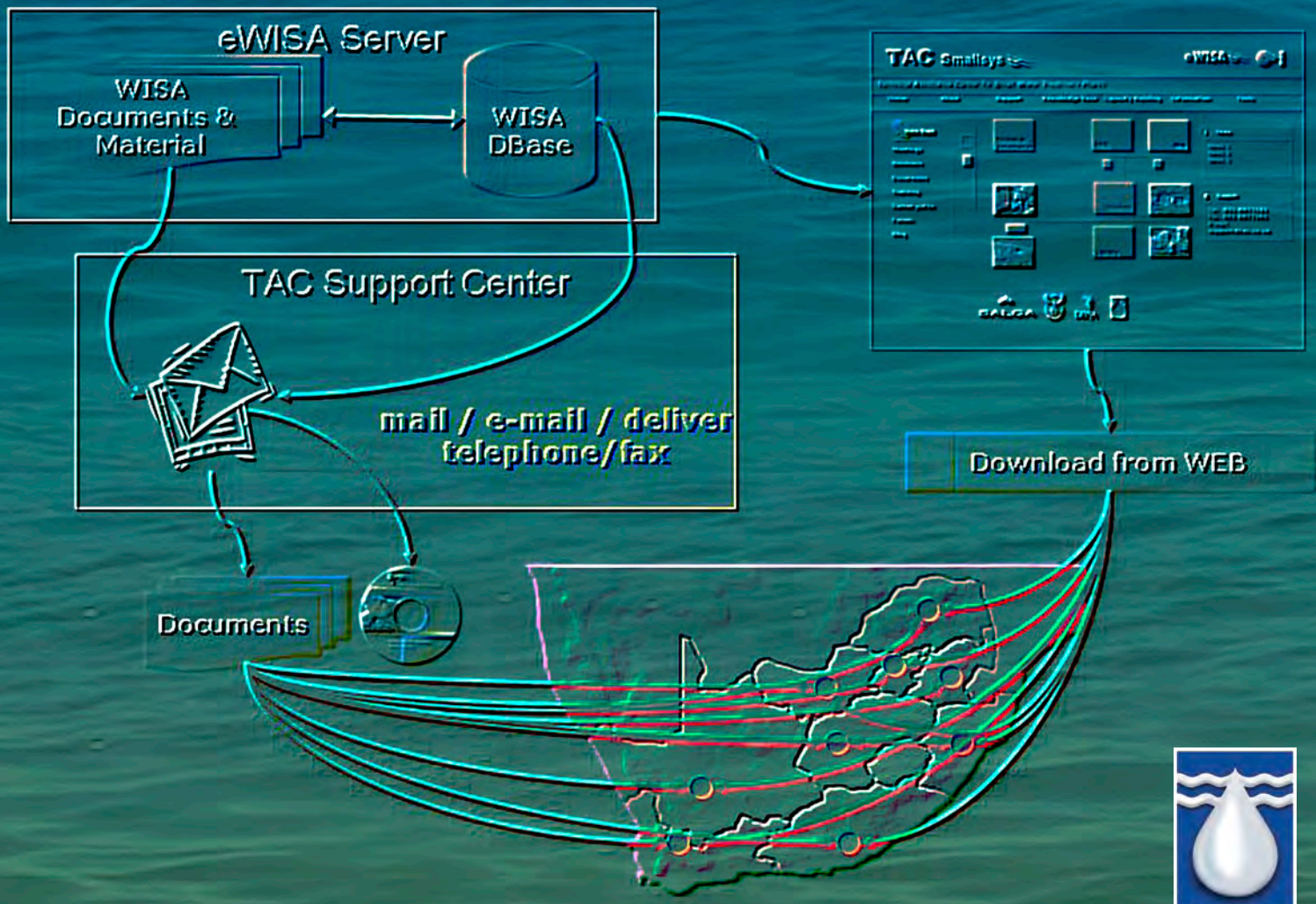
The Establishment and Piloting of the TECHNICAL ASSISTANCE CENTRE for Small Water and Wastewater Treatment Plants

CD Swartz



WATER RESEARCH COMMISSION

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The Establishment and Piloting of the Technical Assistance Centre for Small Water and Wastewater Treatment Plants

Report to the
Water Research Commission

by

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EXECUTIVE SUMMARY

The Technical Assistance Centre (TAC) for small water and wastewater treatment plants was established to provide technical (but also non-technical) support to water services providers (WSPs) experiencing challenges with their water and wastewater treatment plants.

During the initial establishment stages of the TAC, it was decided that the establishment, piloting and roll-out of the Centre be phased over two years, during which time specific implementation tasks would be performed to ensure progress against milestone and planning budget.

This report provides an overview of the establishment and piloting of the TAC, consisting of a description of the structure, mission, aims and activities of the TAC. It also provides feedback on piloting of the TAC that was performed in the Eastern Cape and Western Cape provinces. Included is an overview of generic challenges common to many of the treatment plants in the provinces. Conclusions are presented on the establishment and piloting of the Centre, and recommendations for future structuring and support activities by the TAC.

Launch of the Centre

An inaugural workshop on establishment of the Technical Assistance Centre for Small Water and Wastewater Treatment Plants was arranged by Chris Swartz Eng and was held at the Development Bank of Southern Africa (DBSA) on 18 September 2007. All institutions and individuals interested in the establishment of the Centre were invited to this workshop. Presentations were made by Chris Swartz, DWAF, the WRC, DBSA and WISA on the need for technical assistance, and proposed structures for the Centre. The workshop was attended by most of the role players active in this sector and lively discussions took place after the presentations, where suggestions and proposals were given on a framework for the Centre, and how it should proceed to a formal launch at the WISA 2008 Conference at Sun City in May 2008. During December 2007, DWAF made a presentation on the TAC to the Water Services Sector Leadership Group (WSSLG), and the presentation was well received by the group, requesting DWAF and TAC to proceed with the launch at Sun City.

The formal launch of the Technical Assistance Centre took place during a workshop at WISA 2008 at Sun City on 25 May 2008. During the launch, to which all WSAs, WSPs and role players in the water sector were invited, the structure and activities of the TAC were presented. This included presentations by the TAC champion Chris Swartz, Dr Marlene van der Merwe Botha, DWAF, WRC and DBSA. Inputs were solicited from the workshop attendees, in particular on representation and structure needs on regional level, and the work plan presented for the first year's activities of the Centre.

The workshop was well attended by representatives from DWAF, Water Boards, Local Authorities and Funding Organisations. The outcome of the workshop was a request that the activities of the TAC should commence without delay to address the huge need in the sector for this support centre, and that pilot projects will be undertaken in the first year of the Centre in the Eastern Cape Province (where major challenges exist) and the Western Cape Province (as parallel best practice support). Funding is provided by DWAF, the WRC and DBSA.

Functions and Activities

The functions and activities of the Technical Assistance Centre are listed below.

Technical assistance to water and wastewater treatment plants

Provide both pro-active and reactive hands-on support and assistance to small water and wastewater treatment systems experiencing challenges with compliance.

Knowledge and Information transfer

Act in an advisory capacity and facilitate knowledge and information transfer on technical, training and capacity building aspects regarding small water and wastewater treatment plants.

Give Advice

Fulfil an advisory role in all aspects of the provision of safe water to, and treatment of wastewater from, the rural and urban small and poor communities using small water systems.

Develop Competence and Standards

Assist in the development of professional competence and the best practical performance standards for small water systems at both national and regional level.

Exchange Information

Facilitate the exchange of information among those working in the field of small water systems.

Facilitate Communication

Act as a two-way communication and knowledge transfer channel between Government and the people receiving water from small systems, as well as managers and operations staff of these systems.

Plant Optimisation

Provide assistance with optimisation of treatment processes and identification of upgrading and expansion needs of small water and wastewater treatment plants.

Management and Funding

Provide advice on management issues and funding possibilities.

Research

Initiate and formulate the undertaking of research and any other activities required to further the interests of the poor and small communities receiving water from small water systems.

Smalsys Database

Operate and maintain a database on small water systems.

Supplier and Consultant Database

Operate and maintain a database of suppliers and consultants active in the small water systems sector.

Legislation and Regulatory Updates

Provide information on trends, both nationally and internationally, in rural water supply and small water treatment systems and technologies, as well as legislation and regulatory updates.

Website

Operate and maintain a website as a means of knowledge exchange and communication.

Needs Assessment

Identify the requirements of the users of small water systems.

Monitoring, Evaluation and Certification Assistance

Advise and assist in the monitoring, evaluation and certification of small water systems.

Piloting of the Technical Assistance Centre

During the launch of the TAC at the Water Institute of southern Africa (WISA) Biennial Conference that was held at Sun City in May 2008, it was decided that the Centre should be piloted in two provinces prior to national roll-out, in order to establish the exact requirements of the water sector for technical support, and to adjust the objectives and activities of the TAC as may be required from the sector. It was proposed that the piloting be performed in the Eastern Cape and the Western Cape, the former being one of the provinces where major challenges are experienced, and the latter done in parallel as a province where best practices are found, and which could be applied to the assistance activities in the Eastern Cape.

The piloting commenced with two meetings that were held in East London and in Bellville during the period February/March 2009.

Conclusions

One of the main challenges of the TAC to date has been the lack of support by other initiatives for the Centre. It was especially difficult for the TAC to establish where it fits in with the overall support strategies in the water sector, and consequently how to coordinate its activities to achieve most value for the municipalities, where the needs for technical support are huge. This lack of coordination has made planning of the TAC support activities challenging.

The role of the TAC in assisting with addressing problems at municipal water and wastewater treatment plants has not been promoted by the authorities, which would have resulted in integration of the Centre with other support initiatives in the water sector, and ultimately more effectively addressing the challenges at specific high-risk areas in the country. This includes lack of support of assistance offered by the TAC in helping municipalities to prepare for Blue Drop assessments. The support of SALGA could also not be solicited.

A specific negative aspect resulting from the above was that the municipalities do not perceive the TAC as being a support initiative endorsed by the authorities (due to the lack of visible support in communications), but rather a drive by a private enterprise (perhaps seen as receiving low-level support by the authorities). As such, widespread buy-in by the municipalities and appropriate role players in the municipalities could not be accomplished. As a result of lack of demonstrated acceptance by DWA and DBSA, the TAC did not have the perceived “legitimacy” that it needed to ensure buy-in from the municipalities.

The main focus of the TAC during Phases 2 and 3 has been on marketing of the services of the Centre and to obtain requests for assistance from the municipalities in the two provinces, which would assist in assisting those treatment plants in greatest need. Activities of the Centre were also aimed at pro-actively addressing the needs at the pilot municipalities (as well as other municipalities where the need for assistance is apparent).

Whilst the marketing of the TAC has reached all the targeted audience in the Eastern Cape and the Western Cape (DWA Regions, Provincial Government, DBSA, WSAs and WSPs) and is considered to be successful in reaching its objectives, the addressing of problems that were identified at the water and wastewater treatment plants were seriously hampered by the fact that the DWA funding allocated to the TAC was not available for spending from early on in the financial year, and that no specific support projects for the highest priority cases could therefore be undertaken. This was in particular a major drawback for the TAC work in Ukhahlamba District Municipality, where specific plans were drawn up for the Senqu LM, but could not commence because the DWA funding was not accessible.

The funding only became available again in November 2009, after which meetings were set up in early December with DWA National and the regional offices of the two provinces to discuss action

plans for the respective provinces. Further meetings were planned for January 2010 after the holiday break, but due to unavailability of DWA Eastern Cape personnel, the meeting in East London was rescheduled to early February, to a date to be advised by DWA WSSD. During January, the TAC was involved in planning meetings of assessments of the Berg River catchment area wastewater treatment plants, the assessments being carried out by the UK/SA cooperation initiative *Partners for Water and Sanitation (PAWS)*. Discussions were held with the two specialist engineers from Anglian Water on how the TAC could continue with implementation of the technical needs identified during the assessments by PAWS for the municipalities involved (Drakenstein; Stellenbosch; Berg River, Witzenberg and Saldanha). Proposed activities by the TAC were presented and discussed at the feedback meeting during the end of January, and action plans presented. These action plans were also presented to the TAC Leadership Group at a meeting in Pretoria during the following week.

During the period November 2009 to February 2010, the TAC also focused on providing assistance to municipalities on preparing for the Blue Drop assessments in February. This was done not only for the pilot municipalities in the Western Cape, but also for other municipalities in Western Cape, and notably also for the Murraysburg DMA. In the Eastern Cape this Blue Drop assistance to WSAs and WSPs were provided by Dr Machiel Steynberg.

Further work in progress and piloting actions

During January 2010, while the TAC was engaged in providing assistance with Blue Drop preparations in the two provinces, Work Plans were drawn up by the TAC to address the needs in the pilot municipalities on a priority basis. In the Eastern Cape, Dr Steynberg has already worked in the Ukhahlamba District Municipality for a considerable period of time, and is therefore well familiar with the technical needs at the water and wastewater treatment plants under jurisdiction of the WSA and WSPs, notably the Senqu Local Municipality. As such, the plans for Lady Grey were drawn up to address the highest priorities for technical assistance, for which it was considered that a full analysis of the town's water system would be required as basis for any subsequent upgrading and refurbishments. At the same time, the drawing up of an asset register to facilitate development of a proper Asset Management Plan was considered a high priority for the water supply and wastewater treatment systems in Senqu. Ukhahlamba District Municipality had already acquired a licence for the Municipal Assistant information management system, and it was proposed that the TAC facilitate the process of populating the system by WAM Technology (especially on asset register items), while at the same time providing training for the WSA and WSP personnel that will act as champions for this powerful program, and will be responsible for the management of the system and updating of information.

Also in the Eastern Cape, it was pointed out by the DWA Regional Office that the Mthatha Wastewater Treatment Plant was in dire need of intervention and upgrading, and the TAC was requested to provide technical assistance at this WSP as may be required. The KDM Local

Municipality is also one of the TAC's pilot municipalities in the Eastern Cape (selected jointly by DWA Eastern Cape and Amatola Water during the first TAC meeting in the province in 2009), and therefore considered a high priority. As a start for the work during the remainder of the 2009/2010 financial year, it was proposed that the upgrading activities at this plant be investigated and all available information be consolidated, especially in view of the fact that a number of different departments and institutions were involved in the interventions. This would allow the TAC to make meaningful technical contributions during the upgrading process, rather than embarking on uncoordinated assistance. The potential assistance of the TAC in drawing up monitoring programs and facilitation of training were amongst the assistance spheres considered and proposed.

In the Western Cape, discussions were held with DWA Western Cape during and after the PAWS feedback meeting on how the TAC could assist with addressing not only the needs that were identified during PAWS assessment fortnight, but also to wastewater treatment plants in other catchment areas, notably the Olifant-Doorns and Breede River Catchment Areas. A list of plants to be addressed on a priority basis by the TAC was therefore drawn up by Ms Wilna Kloppers and her colleagues, which were included in the Work Plan for 2009/2010. To fast track this work, professional engineers were contracted by the TAC to undertake the assessments and provide assessment reports on short notice, to be completed within the 2009/2010 financial year. Assistance with improving the compliance of water treatment plants in the Western Cape was based on information exchange with DWA personnel during the Blue Drop Assessment sessions that were held in George and Cape Town early in February, which provided a deeper insight into the shortcomings and lack of capacity at many of the municipalities, especially those with more rural characteristics. Again, the assistance was planned to be provided on a priority basis, based on the knowledge of the TAC coordinator of the treatment plants and municipalities within the province, and through discussions with technical personnel (technicians and supervisors).

Unfortunately, DWA Water Services Sector Development indicated that the financial systems of the Department requires a long period for processing of end of the financial year project finance reconciliations, and that no further new work should be undertaken this year. This includes all the work that was proposed by the TAC coordinators, which they felt confident would be achievable, given the professional capabilities of the consultants contracted to perform the assessment and information gathering in a fast-track mode.

It is therefore proposed that, in concluding the activities of the TAC for Phases 2 and 3, that the proposed intervention work and technical support contained in the Work Plan be undertaken as a high priority early in the new financial year, so as to maintain the momentum of these initiatives and the cooperation and goodwill of all the role players, municipal managers and personnel, and consultants that are ready to perform the work.

The proposed Work Plan for the first quarter of the new financial year (i.e. April-June 2010) is attached.

Recommendations

At the end of the first year of the piloting of the Technical Assistance Centre, the following recommendations are made towards further strategic planning for future implementation of support services offered by the Centre:

a. The original concept of and strategic planning for the TAC focused on the support for small water treatment systems, which arose from various needs assessments that were carried out at small treatment plants in the country (Swartz, Momba and others). During the formative stages of the Centre, requests were made that small wastewater treatment plants also be included in the proposed support services of the TAC. Still later, it was requested that the focus should not only be on small treatment plants, but that it should also include the medium-sized to larger plants, as these plants in many instances also experienced the same problems as the small treatment plants. The scope of work therefore expanded considerably during the stages of initial establishment of the Centre, at which time discussions were held regarding the structure, aims and proposed activities.

   Coupled with the lack of support and guidance from other technical and non-technical assistance initiatives in the sector, it became challenging to manage the Centre as a private sector initiative, which is largely dependent on the inputs, human resources and logistical support from, especially, the authorities and their regional offices. To ensure successful operation and management of a technical assistance centre with this scope of work therefore requires direct managerial inputs and guidance on an on-going basis by the main funding authority (in this case DWA), to allow consistent alignment within their strategic planning of support services in the water sector.

   It is consequently recommended that a detailed strategic planning session be arranged to which all the role-players and stake-holders in the municipal water and wastewater treatment support sector are invited, to formulate strategic plans for coordinated overall support services throughout the country, and in particular the role and scope of work of the Technical Assistance Centre. The strategic plan should be a 5-year plan.

b. There appear to be many support services and technical assistance to WSAs and WSPs in the Eastern Cape, but these initiatives have to date not been coordinated properly and there is no coherence in the project activities and intervention actions in most instances. Again, as regulating authority, DWA should fulfill this role of coordinating the support efforts by forming task groups and fora, and make sure that all the role players in the geographical area (and nationally from the stake-holder side) are invited to these meetings and information sessions. This will allow all the parties to be aware of the status, progress and planning for intervention and assistance to the municipalities, and also allow them the opportunity to make suggestions and offer assistance where appropriate.

It is therefore recommended that the DWA in the Eastern Cape take the leading role of coordinating all support services and interventions, and coordinate and facilitate all the inputs by the supporting group, of which the Technical Assistance Centre is one.

c. For the strategic planning session eluded to in 8.1 above, a full-day workshop is proposed. This workshop should be hosted by the DBSA (as part of their water sector strategy), and all the role-players and stake-holders be invited. The presence of the decision-makers and strategic management leaders of DWA at this workshop will be crucial towards ensuring successful and sustainable intervention and turn-around strategies for water and wastewater treatment plants in the country.

d. The aims, objectives, deliverables, products, time schedules and priorities should be drawn up by the main funding organisation (DWA, DBSA, SALGA or other), who should also perform the project management to ensure that the TAC is managed according to the required aims and time schedules of the project. Attention should be given to efficient budgeting, communication and shaping it to provide unique services in the water sector. The TAC should operate on a different paradigm than any of the other existing support initiatives.

e. The strategic plan should contain intervention plans on a regional basis in the prioritised regions. These intervention projects should then be set out on tender for companies/consulting engineers/institutions to tender on for carrying out the interventions within the scope of work/terms of reference. All funding should be from a central fund managed by a suitably appointed institution.

f. All pro-active technical assistance actions should be carried as follows:

ASSESSMENT

(assess technical and managerial challenges)

(use the Diagnostic Tool in the TAC Toolbox)

↓

PRIORITIZATION AND RESEARCH

(prioritize challenges and research critical issues)

↓

PLANNING AND BUDGETING

(estimate resources needed to meet challenges and budget/rate inputs)

(use the TAC Toolbox)

↓

IMPLEMENTATION

(provide support for implementation of needed changes)

g. The field of providing support initiatives and interventions is a highly competitive market, and the treatment plants requiring the assistance should always be the highest priority when planning and undertaking support actions. More working together will provide more solutions and value for the persons experiencing the problems.

ACKNOWLEDGEMENTS

The research in this report emanated from a project funded by the Water Research Commission and entitled:
"The Establishment and Piloting of the Technical Assistance Centre for Small Water and Wastewater Treatment Plants".

The Leadership Group of the Technical Assistance Centre consisted of the following persons:

TAC Leadership Group:	
Dr Valerie Naidoo	WRC
Dr Jo Burgess	WRC
Mr Junior Potloane	WISA (proposed as successor to Mr Wally Mayne)
Dr Marlene van der Merwe-Botha	WISA / Water Group
Mr Dennis Mtsweni	DWAF
Messrs Mike Marler/Godfrey Mwiinga	DBSA
Ms Juliet Mwale/Ms H Cele	WIN-SA
Ms Verena Meyer	DWAF (proposed)
Mr William Moraka	SALGA (proposed)
Mr Chris Swartz (Coordinator)	Chris Swartz Water Utilization Engineers

The financing of the project by the Water Research Commission and the contribution of the members of the Steering Committee is acknowledged gratefully.

The project was only possible with the co-operation of a number of individuals and institutions. The author therefore wishes to record his sincere thanks to all these individuals and institutions for their interest in and support of the centre, and for their valuable inputs in the planning workshops and regular meetings that were held.

The Establishment and Piloting of the Technical Assistance Centre for Small Water and Wastewater Treatment Plants

CONTENTS

1. INTRODUCTION

2. ESTABLISHMENT OF THE TECHNICAL ASSISTANCE CENTRE

2.1 THE NEED FOR A TECHNICAL ASSISTANCE CENTRE
2.2 THE TAC: A JOINT INITIATIVE
2.3 LAUNCH OF THE CENTRE
2.4 OBJECTIVES
2.5 STRUCTURE OF THE TAC
2.6 FUNCTIONS AND ACTIVITIES
2.7 TAC CALL CENTRE AND WEBSITE

3. MARKETING OF THE TECHNICAL ASSISTANCE CENTRE

3.1 NATIONAL
3.2 WESTERN CAPE
3.3 EASTERN CAPE

4. TAC NETWORK OF PROFESSIONALS

4.1 INTRODUCTION: KEY ROLE PLAYERS AND STAKEHOLDERS
4.2 EASTERN CAPE
4.3 WESTERN CAPE

5. DATABASES OF WATER AND WASTEWATER TREATMENT PLANTS, CONSULTING ENGINEERS AND SUPPLIERS IN THE EASTERN CAPE AND WESTERN CAPE

5.1 INTRODUCTION
5.2 DATABASES OF WATER AND WASTEWATER TREATMENT PLANTS
5.3 DATABASE OF CONSULTING ENGINEERS AND SUPPLIERS

6. PILOTING OF THE TECHNICAL ASSISTANCE CENTRE

6.1 EASTERN CAPE
6.2 WESTERN CAPE

7. CONCLUSIONS

8. RECOMMENDATIONS

Appendices on Accompanying CD

Appendix A: TAC Promotional Presentation to Municipalities 2009
Appendix B: TAC Information Document
Appendix C: TAC One-Pager 2009
Appendix D: TAC Information Document for Amatola Water October 2009
Appendix E: TAC Article in LGS Bulletin Issue 6 October 2009
Appendix F: TAC: A Support Initiative for the Municipal Sector
Appendix G: TAC Presentation PAWS Berg River Workshop Jan 2010
Appendix H: WRC National Database of Water Treatment Plants
Appendix I: TAC Overview Assessment Forms
Appendix J: TAC Subscription Forms
Appendix K: TAC Database of Water and Wastewater Treatment Plants in the Eastern Cape
Appendix K1: Supplement – Overview of TAC Eastern Cape Pilot Municipalities
Appendix L: TAC Database of Water and Wastewater Treatment Plants in the Western Cape
Appendix L1: Supplement – Overview of TAC Western Cape Pilot Municipalities
Appendix M: TAC Database of Consulting Engineers and Suppliers in the Eastern Cape and Western Cape
Appendix N: TAC Information on Consulting Engineers and Suppliers in the Eastern Cape
Appendix O: TAC Information on Consulting Engineers and Suppliers in the Western Cape
Appendix P: Blue Drop Report for Eastern Cape May 2009
Appendix Q: Blue Drop Report for Western Cape May 2009
Appendix R: Checklist TAC assistance to Prince Albert Municipality to meet the minimum requirements for Blue Drop certification
Appendix S: Murraysburg Municipality Water Safety Plan Executive Summary
Appendix T: Mthatha Status January 2010
Appendix U: TAC Pilot Project Work Programme 2010

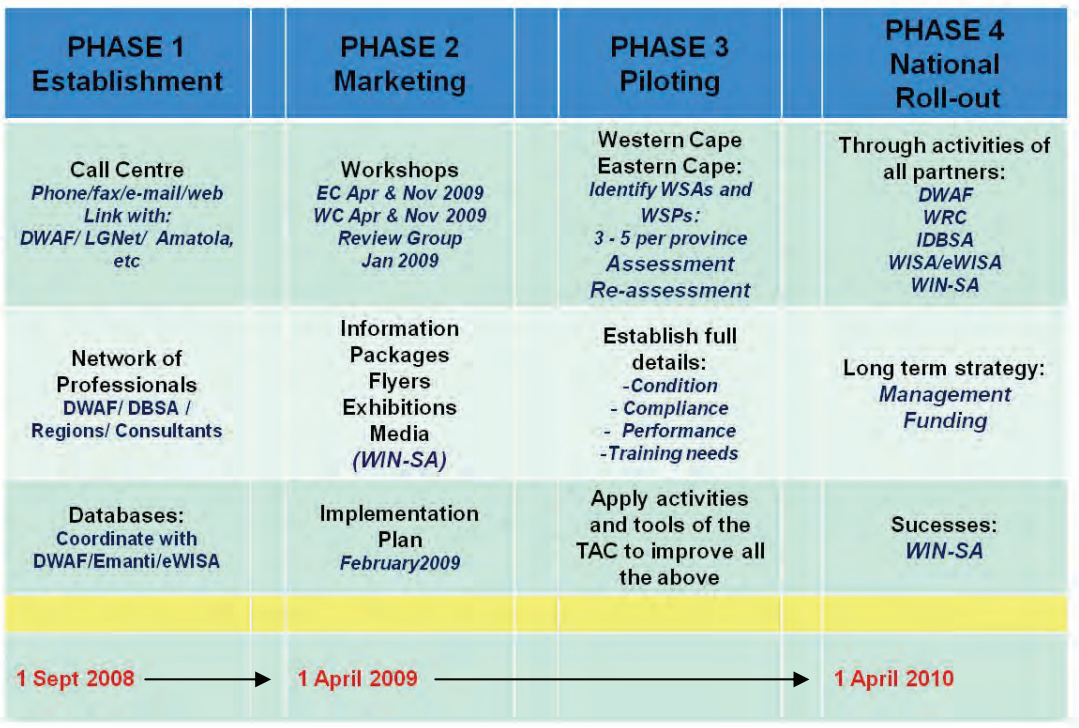
The Establishment and Piloting of the Technical Assistance Centre in the Eastern Cape and the Western Cape

1. INTRODUCTION

The Technical Assistance Centre (TAC) for small water and wastewater treatment plants was established to provide technical (but also non-technical) support to water services providers (WSPs) experiencing challenges with their water and wastewater treatment plants.

During the initial establishment stages of the TAC, it was decided that the establishment, piloting and roll-out of the Centre be phased over two years, during which time specific implementation tasks would be performed to ensure progress against milestone and planning budget.

The implementation was planned to be performed over four phases. These phases are indicated in the diagram below:



This Final Report provides an overview of the establishment and piloting of the TAC, consisting of a description of the structure, mission, aims and activities of the TAC. It also provides feedback on piloting of the TAC that was performed in the Eastern Cape and Western Cape provinces. Included is an overview of generic challenges common to many of the treatment plants in the provinces. Conclusions are presented on the establishment and piloting of the Centre, and recommendations made for future structuring and support activities by the TAC.

2. ESTABLISHMENT OF THE TECHNICAL ASSISTANCE CENTRE

2.1 THE NEED FOR A TECHNICAL ASSISTANCE CENTRE

There currently exists a serious and acute need in South Africa to provide assistance to small water and wastewater treatment plants for proper and efficient operation and maintenance of these systems, to ensure compliance and sustainability in this important water sector.

In various local studies of small water and wastewater treatment plants, it was found that most of these treatment plants experienced substantial challenges in complying with regulatory standards and operating on a sustainable basis. These challenges are in particular acute in rural areas, and include lack of capacity, poor operation and maintenance, lack of management involvement, commitment and resources, as well as a general lack of knowledge and understanding of the importance of effective water and wastewater treatment. This is due to a number of both technical and human factors (*soft issues – capacity needs*). Operation, maintenance and technical support can therefore often not be provided effectively by the service providers themselves, and there is a need for external technical and management assistance to these Water Service Providers and Water Supply Authorities.

This report gives an overview of the establishment of a Technical Assistance Centre for municipal water and wastewater treatment support in South Africa, with specific reference to the piloting that was done in the Eastern Cape and Western Cape.

2.2 THE TAC: A JOINT INITIATIVE

In order to address these serious challenges that are currently experienced with the compliance and sustainability of the small water and wastewater treatment systems in the country, it was proposed that a ***Technical Assistance Centre*** be established. This should be a collaborative effort between the Department: Water Affairs and Forestry (DWAF), the Water Institute of Southern Africa (WISA)(implementing agent of DWAF), the Water Research Commission (WRC), the Development Bank of Southern Africa (DBSA), and the South African Local Government Association (SALGA).

A number of initiatives by these institutions to support and provide assistance to small water and wastewater treatment systems are in place, amongst which the DWAF support and regulatory functions, eWISA, WISA's specialist divisions, the WRC's thrusts on Water *Supply and Treatment Technology* and *Wastewater and Effluent Treatment*, the Water Information Network of South Africa (WIN-SA), the DBSA's Local Government Resource Centre (LGRC) / LG Net, and SALGA's Water Services Provider Network (WSPN).

2.3 LAUNCH OF THE CENTRE

An inaugural workshop on establishment of the Technical Assistance Centre for Small Water and Wastewater Treatment Plants was arranged by Chris Swartz Eng and was held at the Development Bank of southern Africa (DBSA) on 18 September 2007. All institutions and individuals interested in the establishment of the Centre were invited to this workshop. Presentations were made by Chris Swartz, DWAF, the WRC, DBSA and WISA on the need for technical assistance, and proposed structures for the Centre. The workshop was attended by most of the role players active in this sector and lively discussions took place after the presentations, where suggestions and proposals were given on a framework for the Centre, and how it should proceed to a formal launch at the WISA 2008 Conference at Sun City in May 2008. During December 2007, DWAF (Mr Leonardo Manus) made a presentation on the TAC to the Water Services Sector Leadership Group (WSSLG), and the presentation was well received by the group, requesting DWAF and TAC to proceed with the launch at Sun City.

The formal launch of the Technical Assistance Centre took place during a workshop at WISA 2008 at Sun City on 25 May 2008. During the launch, to which all WSAs, WSPs and role players in the water sector were invited, the structure and activities of the TAC were presented. This included presentations by the TAC champion Chris Swartz, Dr Marlene van der Merwe Botha, DWAF, WRC and DBSA. Inputs were solicited from the workshop attendees, in particular on representation and structure needs on regional level, and the work plan presented for the first year's activities of the Centre.

The workshop was well attended by representatives from DWAF, Water Boards, Local Authorities and Funding Organisations. The outcome of the workshop was a request that the activities of the TAC should commence without delay to address the huge need in the sector for this support centre, and that pilot projects will be undertaken in the first year of the Centre in the Eastern Cape Province (where major challenges exist) and the Western Cape Province (as parallel best practice support). Funding is provided by DWAF, the WRC and DBSA.

2.4 OBJECTIVES

The main objective of the Centre is to identify the requirements of the owners of small water and wastewater treatment systems, and to advise and assist in the monitoring, evaluation, optimisation and upgrading of these systems.

The specific aims of the TAC are as follows:

- Provide both pro-active and reactive hands-on support and assistance to water and wastewater treatment systems experiencing challenges with compliance and service delivery.
- Assist WSAs and WSPs to obtain Blue Drop and Green Drop Certification, through

addressing all the needs to meet the various criteria (personnel; reporting; compliance; treatment capacity)

- Identify further requirements and needs of water and wastewater treatment systems, and apply the TAC Tools to advise and assist in the monitoring, evaluation, optimisation and upgrading of these systems.
- Provide information, action plans and solutions to Water Service Authorities (WSAs) and Water Service Providers (WSPs) experiencing problems with their water and wastewater treatment plants.

Reactive support was to be done through a Call Centre and website (see Section 7 of this report) that was established to provide rapid and effective information, action plans and solutions to Water Service Authorities (WSAs) and Water Service Providers (WSPs) experiencing problems with their water and wastewater treatment plants. This includes on-site assistance by water and wastewater treatment professionals and technical support personnel where required. At present, WSAs, WSPs and owners of water treatment plants do not know where they can obtain information or assistance.

TAC Mission Statement

To improve the performance and compliance of water and wastewater treatment systems in South Africa by providing technical support and assistance, training facilitation, information and knowledge transfer, and identification of management and technical needs, thereby ensuring sustainability of these systems and ultimately a better quality of life for all people served by these small water systems

The TAC endeavoured to be:

- an easily accessible and reliable advisory centre to address water and wastewater treatment problems of WSAs and WSPs
- a source of information and knowledge, through eWISA, WRC, WIN-SA, DBASE and SALGA, to optimise and improve plant performance and compliance
- regional technical support service providers, in all provinces, that can provide on-site assistance at treatment plants
- a crucially important facility for the users of decentralised water and wastewater treatment systems and technologies, which is currently a worldwide trend

The TAC was not meant to be:

- a regulatory enforcement agent, but will ensure effective information flow to and from DWAF on regulatory matters
- a facility providing independent consultation services, but will be accountable to the TAC Steering Committee and DWAF in performing its functions

The TAC could:

- coordinate its technical assistance functions with eWQMS and DWAF support initiatives to municipal water and wastewater treatment plants
- assist DWAF to prioritise treatment plants requiring technical assistance
- assist DWAF with on-site advice and action plans during visits to identified plants
- follow up remedial actions at treatment plants and provide feedback to DWAF regional offices through regular meetings, to ensure actual implementation and improvement

The TAC specifically aims at not only addressing the symptoms of problems that are experienced at water and wastewater treatment plants, but primarily and specifically the underlying problems that leads to these symptoms manifesting themselves. All the underlying problems relate to either inadequate staffing (poor operation, maintenance and management) or poor condition of equipment and infrastructure.

2.5 STRUCTURE OF THE TAC

During the workshop at the DBSA in September 2007, a Working Group and Reference Group were appointed. These founding groups consisted of the following:

Working Group:	
Mr Chris Swartz	Chris Swartz Water Utilisation Engineers
Dr Gerhard Offringa	WRC
Mr Wally Mayne	WISA
Dr Marlene van der Merwe-Botha	WISA / Water Group
Mr Leonardo Manus	DWAF
Mr Mike Marler	DBSA
Mr William Moraka	SALGA (proposed)

Reference Group:	
Dr Heidi Snyman	WRC
Mr Xola Bomela	Amatola Water
Mr Gordon Borain	Umgeni Water
Mr Vic van Vuuren	Lepelle Northern Water
Mr Daniel Lentle	Rand Water
Prof Larry Obi	UNISA
Mr Deon Nel	Biwater
Dr Machiel Steynberg	IQC
Mr Kenny Charles	CSIR
Mr Philip de Souza	Emanti Management
Mr Evan Painting	SSI

During the course of planning of the TAC and proposals for funding during 2008, further champions were co-opted onto the Working Group, while other group members had changed office and their successors appointed to the group. The title of ***Working Group*** was also changed to ***Leadership Group***.

The current Leadership Group (March 2009) of the Technical Assistance Centre consists of the following representation:

TAC Leadership Group:	
Mr Chris Swartz (Coordinator)	Chris Swartz Water Utilization Engineers
Dr Valerie Naidoo	WRC
Dr Jo Burgess	WRC
Mr Junior Potloane	WISA
Dr Marlene van der Merwe-Botha	WISA / Water Group
Mr Dennis Mtsweni	DWAF
Mr Mike Marler	DBSA
Ms Juliet Mwale/Ms H Cele	WIN-SA
Ms Verena Meyer	DWAF (proposed)
Mr William Moraka	SALGA (proposed)

2.6 FUNCTIONS AND ACTIVITIES

The functions and activities of the Technical Assistance Centre are listed below.

Activity 1: Technical assistance to water and wastewater treatment plants

Provide both pro-active and reactive hands-on support and assistance to small water and wastewater treatment systems experiencing challenges with compliance.

Activity 2: Knowledge and Information transfer

Act in an advisory capacity and facilitate knowledge and information transfer on technical, training and capacity building aspects regarding small water and wastewater treatment plants.

Activity 3: Give Advice

Fulfil an advisory role in all aspects of the provision of safe water to, and treatment of wastewater from, the rural and urban small and poor communities using small water systems.

Activity 4: Develop Competence and Standards

Assist in the development of professional competence and the best practical performance standards for small water systems at both national and regional level.

Activity 5: Exchange Information

Facilitate the exchange of information among those working in the field of small water systems.

Activity 6: Facilitate Communication

Act as a two-way communication and knowledge transfer channel between Government and the people receiving water from small systems, as well as managers and operations staff of these systems.

Activity 7: Plant Optimisation

Provide assistance with optimisation of treatment processes and identification of upgrading and expansion needs of small water and wastewater treatment plants.

Activity 8: Management and Funding

Provide advice on management issues and funding possibilities.

Activity 9: Research

Initiate and formulate the undertaking of research and any other activities required to further the interests of the poor and small communities receiving water from small water systems.

Activity 10:Smalsys Database

Operate and maintain a database on small water systems.

Activity 11: Supplier and Consultant Database

Operate and maintain a database of suppliers and consultants active in the small water systems sector.

Activity 12: Legislation and Regulatory Updates

Provide information on trends, both nationally and internationally, in rural water supply and small water treatment systems and technologies, as well as legislation and regulatory updates.

Activity 13:Website

Operate and maintain a website as a means of knowledge exchange and communication.

Activity 14:Needs Assessment

Identify the requirements of the users of small water systems.

Activity 15:Monitoring, Evaluation and Certification Assistance

Advise and assist in the monitoring, evaluation and certification of small water systems.

2.7 TAC CALL CENTRE AND WEBSITE

2.7.1 Call Centre

The Call Centre is a one-stop centre providing rapid response to enquiries and calls from treatment plant owners, managers and personnel. The Centre is coordinated and managed by the TAC Coordinator (Chris Swartz), and all communications to and from subscribers (individuals and institutions) making use of the services of the Centre (by telephone, facsimile, e-mail) is done through the Centre Hub operated by the Coordinator. Enquiries regarding requirements for treatment plant optimisation or addressing specific problems are logged and addressed by the Centre personnel. Where additional consultation or site visits are required, the site is visited by one of the Centre Regional Water Professionals in the Eastern Cape and Western Cape, or contracted roving technicians.

For enquiries related to the development of treatment or monitoring processes and system operation, maintenance and management, it is established what work has already been done and what information is available on the topic, and this is forwarded to the enquirer, or appropriate references are given. Specific new research or development needs are forwarded to the WRC for inclusion in their strategic research planning process.

A website for the Smalsys TAC was designed by eWISA and has prominent links to and from the websites of eWISA, DWAF, WRC, DBSA and SALGA. The website allows access to all the activities of the Centre and relevant information on eWISA, as well as access to the Call Centre for discussions and information requests.

2.7.2 Advantages of sharing the eWISA web infrastructure and software

The TAC information platform and website resides on the dedicated eWISA server:

This has the following advantages:

- Existing information (Fact sheets, literature, technical web pages, legislation, etc.) will be available from the date of implementation.
- Already developed modules (blog, forum, spatial maps, literature search functions, etc.) is shared, which accelerates the implementation and limit development costs.
- All relevant new information and data which are continuously added to eWISA is available on the TAC system.

- The TAC also benefits from any new developments on eWISA which are of mutual interest and importance.
- The administration and technical support of the web server and database are shared and it is not necessary for TAC to appoint staff for these functions. (**Hardware monitoring, Hardware Swop Out, Backup**)
- WISA signed a Memorandum of Understanding with WIN-SA to share resources for the WIN-SA/WRC dissemination of information via the eWISA web site.
- Sustainability of this development is ensured as WISA (Water Institute of Southern Africa) is the owner of eWISA.

2.7.3 Development of the TAC Web site

The TAC Web interface was developed as a dedicated support web application, which allows the TAC to monitor support issues and also allows users to access the knowledge base which is shared with eWISA.

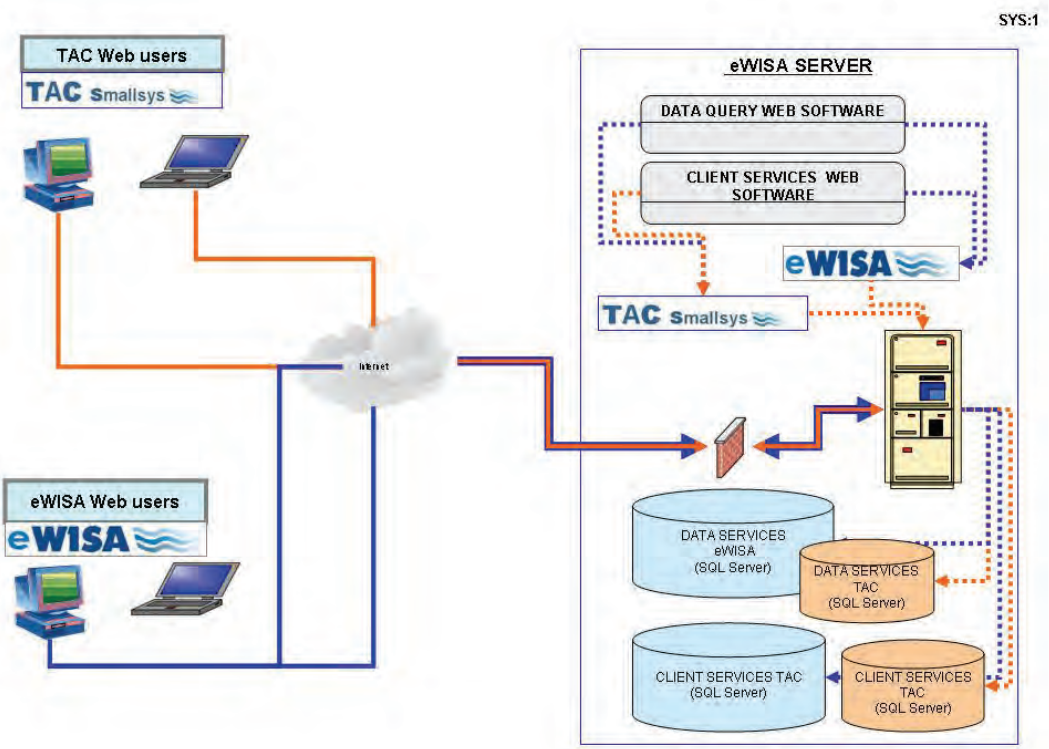
Existing procedures, modules and techniques developed for eWISA are utilized for the optimum development of the TAC web site, in order to:

- Minimize development costs
- Eliminate setup cost of web infrastructure
- Eliminate setup of web maintenance
- Almost ‘immediate’ implementation with populated sections
- Prevent duplication and fragmentation of developments, initiatives and information sources in the water sector.

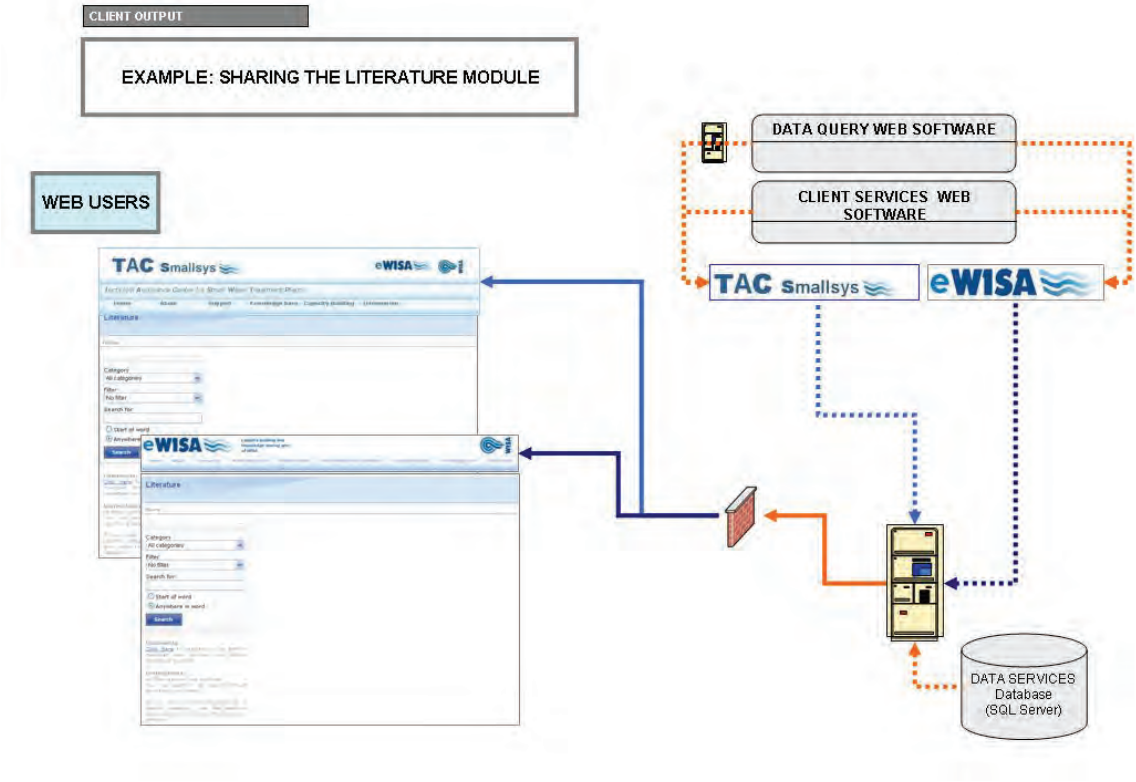
An illustration of an initial draft home page and the main functions of TAC are illustrated below. Direct links between eWISA and TAC will be established and a ‘theme’ will be maintained in order to enhance a ‘water information’ knowledge center.

WAMTechnology cc (eWISA developer for WISA) has developed programming standards based on experience and industry best practices. By default, most WAMTechnology-developed software is compatible with both MS Access and MS SQL Server/MSDE.

The sharing of the eWISA server/applications is illustrated in the figure below:


SYS:1
TAC Web users
TAC Smallsys
eWISA Web users
eWISA
Internet
eWISA SERVER
DATA QUERY WEB SOFTWARE
CLIENT SERVICES WEB SOFTWARE
eWISA
TAC Smallsys
DATA SERVICES eWISA (SQL Server)
DATA SERVICES TAC (SQL Server)
CLIENT SERVICES TAC (SQL Server)
CLIENT SERVICES TAC (SQL Server)

Sharing specific modules is illustrated below:



The main menu of the TAC website contains the following modules:

- Home page
- About (background information on the TAC)
- Technology and Process Information
- Technical Assistance Tools
- Training and Skills Development
- Pilot Project
- Contact Us

The Technical Assistance Tools that will be available on the website or to which links will be provided, will comprise (but not be limited to) the following:

- O&M Guidelines for Small Water Systems
- Training Toolbox for Small Water Treatment Plants
- Operational Information Tool
- Diagnostic Tool for Compliance Evaluation and Improvement
- Emergency Treatment Procedures
- Field Guides for Inspection of Water and Wastewater Treatment Plants
- Illustrated Guides for Basic Water and Wastewater Treatment
- Water Safety Plans

- Scoring System for Small Water Systems
- Evaluation of Waste Stabilisation Ponds
- Guidelines for Packaged Design Wastewater Treatment Plants
- Manual for Design of Small Wastewater Treatment Plants
- O&M Guide for Wastewater Treatment Systems (UP)
- Algal Ponds Systems

3. MARKETING OF THE TECHNICAL ASSISTANCE CENTRE

Marketing and exposure of the TAC were given high priority by the project team so as to ensure that the role players and stakeholders in the water sector are aware of the activities and capabilities of the TAC in providing technical support to WSPs and WSAs in water and wastewater treatment. Marketing was done through articles in newsletters and handing out of information packages to water care supervisors, managers and process controllers.

3.1 NATIONAL

3.1.1 Water Information Network South Africa (WIN-SA)

WIN-SA has an important role in the TAC, and has been attending the Leadership Group Meetings of the Centre.

WIN-SA suggested that at the end of the piloting, wide exposure of the Case Studies (at some of the pilot municipalities in the Western Cape and Eastern Cape) should be provided to the water sector. This was to be done by WIN-SA who will also provide the funding for performing this exposure, including all documentation (as part of "*The Learning Journey*"). The aim is also for the role players in these WSAs to share their experiences (one-on-one or representatives of all groups together).

3.1.2 DWA Newsletters

An article on the TAC will appear in the October 2009 issue (Issue 6) of the DWA internal newsletter entitled *LGS Internal Bulletin*, which are distributed to all personnel within the Local Government Support sector of the Department. The aim of publishing this article in the bulletin is to make all the DWA personnel involved in providing support to municipalities aware of the existence and activities of the TAC, in order to ensure that the Department relay their enquiries (own and from municipalities) on technical assistance matters to the Centre as a first stop facility to address and coordinate specific support to WSPs and WSAs. The article contains detailed information on the establishment, launch, objectives, activities and piloting of the TAC.

A copy of the article appears in the appendices to the report.

3.1.3 Call Centre and Website

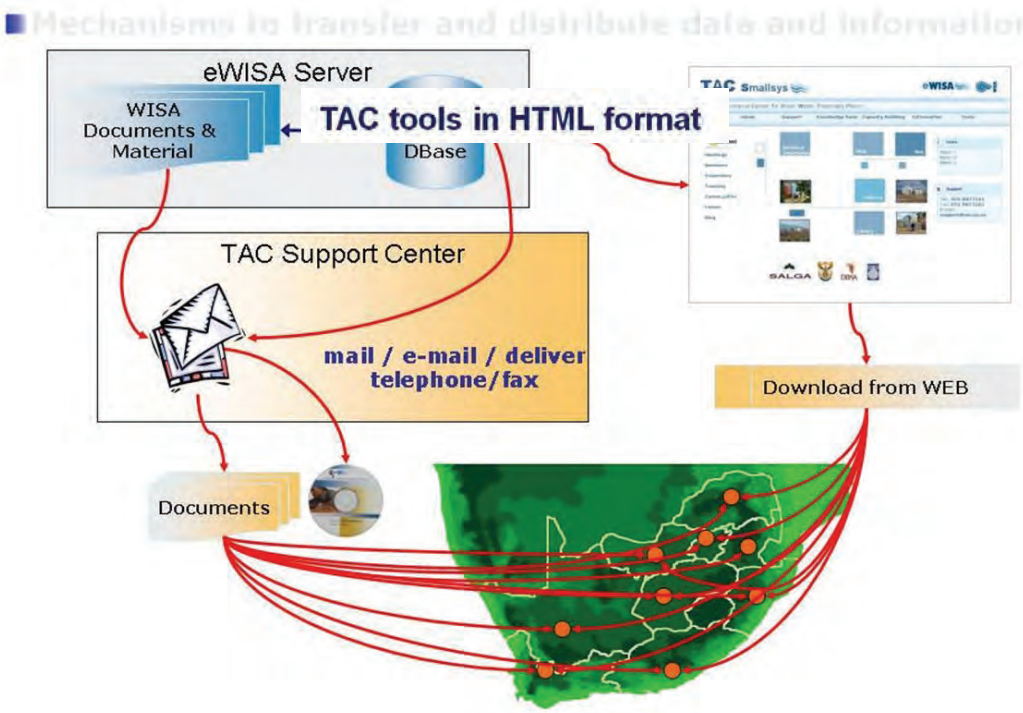
a. Call Centre

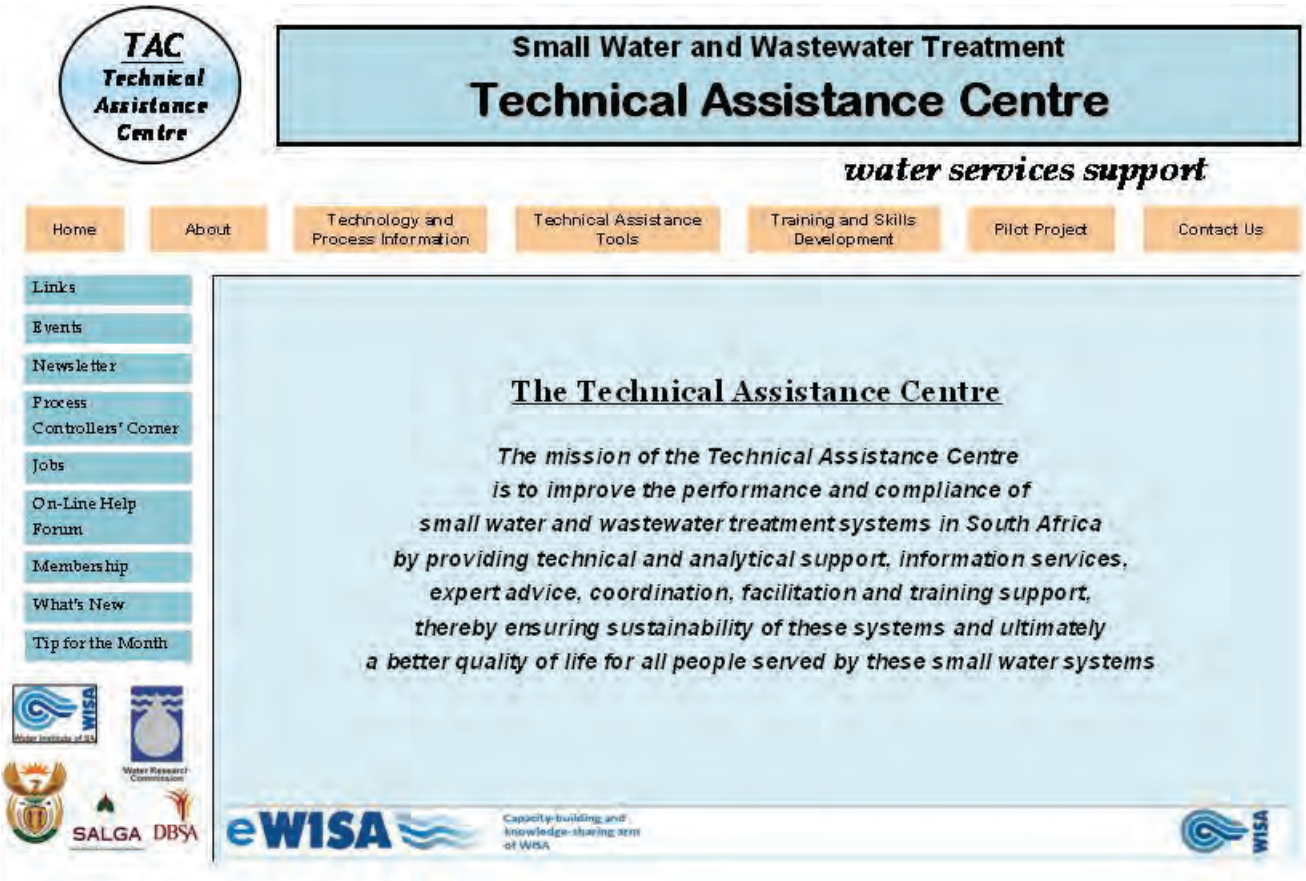
The Call Centre is a one-stop centre providing rapid response to enquiries and calls from treatment plant owners, managers and personnel. The Centre is coordinated and managed by the TAC Coordinator (Chris Swartz), and all communications to and from subscribers (individuals and institutions) making use of the services of the Centre (by telephone, facsimile, e-mail) is done through the Centre Hub operated by the Coordinator. Enquiries regarding requirements for treatment plant optimisation or addressing specific problems are logged and addressed by the Centre personnel. Where additional consultation or site visits are required, the site would be visited by one of the Centre Regional Water Professionals in the Eastern Cape and Western Cape, or contracted roving technicians.

For enquiries related to the development of treatment or monitoring processes and system operation, maintenance and management, it is established what work has already been done and what information is available on the topic, and this is forwarded to the enquirer, or appropriate references are given.

b. Website

A website for the Smalsys TAC was designed by eWISA and has prominent links to and from the websites of eWISA, DWAF, WRC, DBSA and SALGA. The website allows access to all the activities of the Centre and relevant information on eWISA, as well as access to the Call Centre for discussions and information requests.


Mechanisms to transfer and distribute data and information
eWISA Server
WISA Documents & Material
DBase
TAC tools in HTML format
TAC Support Center
mail / e-mail / deliver
telephone/fax
Download from WEB
Documents


TAC
Technical Assistance Centre
Small Water and Wastewater Treatment
Technical Assistance Centre
water services support
Home
About
Technology and Process Information
Technical Assistance Tools
Training and Skills Development
Pilot Project
Contact Us
Links
Events
Newsletter
Process Controllers' Corner
Jobs
On-Line Help Forum
Membership
What's New
Tip for the Month
The Technical Assistance Centre
The mission of the Technical Assistance Centre
is to improve the performance and compliance of
small water and wastewater treatment systems in South Africa
by providing technical and analytical support, information services,
expert advice, coordination, facilitation and training support,
thereby ensuring sustainability of these systems and ultimately
a better quality of life for all people served by these small water systems
SALGA
DBSA
eWISA

3.1.4 Information Packages

Information packages were compiled and are handed out at workshop and presentations on the TAC, and during visits to water and wastewater treatment plants.

The information packages consist of a folder with TAC logos and contact information on the folder, and inserts with information sheets, printout of presentations and subscription (registration forms). Business cards and stickers with contact information are also included in the folders.

The lay-out of the folders are shown below.

3.2 WESTERN CAPE

3.2.1 Workshop: Slanghoek, Worcester

A Western Cape workshop for the TAC was held at Slanghoek near Worcester on 28 May 2009. The objective of the workshop was to assemble all the technical water care personnel (engineers, managers and supervisors) of the municipalities in the Western Cape to present and discuss the support and assistance functions presented by the TAC. In particular, the attendees were presented with the information packages and registration forms to subscribe to the TAC. Opportunities were provided for questions regarding the methodology of support provided by the TAC. The workshop attendees were also asked to discuss the main problems experienced at their water and wastewater treatment plants, and in which way they would expect the TAC to give them assistance to address these problems and challenges. These discussions are summarised in Section 4 of this report.

The workshop was presented in collaboration with DWA National who also provided guidelines and demonstrations of how to prepare forms for authorisation of their wastewater treatment plants. The DWA coordinator for this part of the workshop was Karlien de Villiers, and the DWA regional office representative was Wilna Kloppers. Lee Boyd also gave a presentation on guidelines on package designed wastewater treatment plants (the results of a recent WRC project on wastewater treatment package plants).

The programme of the workshop is presented below. The workshop was attended by 63 persons who represented all 24 of the municipalities in the Western Cape.

Western Cape Technical Assistance Workshop on Municipal Support and Authorisation for Water and Wastewater Treatment

Thursday 28 May 2009

Slanghoek Mountain Resort, Worcester

Session 1: Technical Assistance Centre

09:00-12:30

Welcome	CD Swartz / DWAF Western Cape
Aims of the Workshop	CD Swartz
Overview of the Technical Assistance Centre	CD Swartz
Presentation of Information Packs to municipalities	All
Question and Answer Session	All
Tea Break	
Subscription to the Technical Assistance Centre	All
How to use the TAC Call Centre	CD Swartz
How to use the TAC Website	CD Swartz
How requests for assistance will be handled	CD Swartz
Training and Career Path Development	E Rossouw / DWAF
Process Controllers Association	E Rossouw
Question and Answer Session	All
Discussion of needs for technical support	All
Discussion of problems and enquiries	All
Logging and discussion of treatment plant information	All

Lunch Break
12:30-13:00

Session 2: Authorisation of Municipal Wastewater Treatment Works

13:00-16:30

Welcome	Chairperson
Purpose of the workshop	Chairperson / K Makhubele
A need for authorization	Chairperson / K Makhubele
Questions	All
Unpacking the license application forms	T Rasiuba
Questions	All
Break	
Aide MeMoire – Water Quality Management Report:	
Part 1: Administrative Information and brief Project Description	M Munzhelele
Part 2 : Description of the Environment	M Makgolane
Part 3 : Water Supply	M Makgolane
Part 4 : Description of Reticulation System	M Makgolane
Part 5 : Description of Sewage Treatment Works and Classification	K de Villiers
Part 6: Water and Materials Balance Diagram	K Makhubele
Part 7: Management Systems and Pollution Prevention Methods	K Makhubele
Part 8: Disposal of Solid Waste and Sludges	K de Villiers
Part 9: Final Waste Disposal Evaluation	K Makhubele
Part 10: Recommendations from other Interested Parties	M Munzhelele
Questions	All
Guideline for Inspections at WWTWs	K de Villiers/ L Boyd
Guideline on Package Designed Biological Wastewater Treatment Plants	L Boyd
Closure	

3.2.2 Development Bank of Southern Africa

A presentation on the TAC was given to the Western Cape DBSA deployees to local authorities' monthly meeting that was held in Stellenbosch on 21 May 2009. The specific aim was to inform the Siyenza Manje engineers in the Western Cape of the support role in the water field provided by the TAC, and request them to participate in carrying out these functions by liaising closely with the TAC personnel. Because these Siyenza Manje engineers are deployed at those municipalities where most challenges are experienced, they can play a major role in facilitating the communication between the municipalities, the TAC and DWA.

The engineers undertook to provide this support. This is also being pursued through requests by the TAC to the DBSA main office in Midrand.

The attendee list at the workshop is presented below.

Western Cape Experts & YPs – Deployment info Contact List		
Name	**Area of Deployment**	**Technical/Financial/Planning**
Chilton, Paul	West Coast Dm (shared service to Matsikama)	Project Manager/ Technical Expert
Nico Smit	Cederberg (shared service to Matsikama/Bergriver)	Financial Expert
Francois Wust	Cederberg (on shared service to Matsikama/Bergriver)	Planning Expert
Micheal Tsekoa	Cederberg: PSP	Technical: PSP
Cobus Louw	Cederberg/Bergriver/Witzenberg Project Manager	Technical: PSP Project Manager
Nqabisa Amelia Gwelana	*Cederberg*	*Young Professional-Finance*
Phemelo Majeni	*Cederberg (Currently deployed to Service Provider for design exposure in Steelenbosh)*	*Young Professional:Technical*
Thato Motaung	*Cederberg*	*Young Professional:Technical*
Sakhiwo Nobanda	*Cederberg*	*Young Professional:Technical*
Nozuko Majola	*Cape Winelands DM*	*Young Professional:Finance*
Michelle Du Plooy	*Cape WInelands DM*	*Young Professional:Finance*
De Villiers, Gregory	Breedevalley	Project Manager/ Technical Expert
Chris Koch	Witzenberg LM	Technical: PSP
Name	**Area of Deployment**	**Technical/Financial/Planning**
Sudley Stone	Breede River	*Young Professional:Planning*
Yuri Levendal	Ceres LM	*Young Professional:Technical*
Jacques Jansen van Rensburg	WItzenburg	*Young Professional:Planning*
Wilson, Peter	District Municipality	Financial Expert
Marius Brand	Theewaterskloof (shared service to Swellendam LM)	Project Manager/ Technical Expert
Olga Louw	*Theewaterskloof*	*Young Professional-Planner*
Batandwa Mbanjwa	*Theewaterskloof*	*Young Professional:Technical*
Unathi Mfundo Kwezi	*Theewaterskloof*	*Young Professional:Technical*
Preshane Chandaka	Grabouw	Project Manager/ Technical Expert
Dawid Vermeulen	Eden District Municipality	Project Manager/ Technical Expert

Heinrich Mettler	Eden District Municipality	Junior Project Manager: Technical
Gysbert Van Der Westhuizen	Eden District Municipality	Financial Expert
Astryd Ludt	Eden District Municipality	Young Professional: Finance
Thandeka Langfoot	*Eden District Municipality*	*Young Professional-Technical*
Hugh Sussens	Kannaland	Project Manager/Technical Expert
Johan Wiese	Hessequa	Project Manager/Technical Expert
Zanda Van rooyen	Hessequa	Financial Expert
Charles September	*Oudtshoorn*	*YP:Finance*
Audrey Cloete	*Oudtshoorn*	*Young Professional-Finance*
Bjorn Metembo	*Oudtshoorn*	*YP:Finance*
John Kruyt	Oudtshoorn	Financial Expert
Goosen, Carel	Oudtshoorn	Financial Expert
Chapman, Dean	DLGH- WC	Project Manager/ Technical Expert
Celdri De Wet	DPLG-WC	Town Planning: Expert
Rene Whiteman	DLGH-WC	Town Planning: Expert
Pieter Bell	DLGH- WC	Financial Expert
Mhangabezi Fojela	DLGH-WC (deployed to Service Provider for construction exposure)	Young Professional-Technical
Sandiswa Sineli	DLGH-WC (deployed to Service Provider for construction exposure)	Young Professional-Technical
Leslie Whiteman	DWAF	Project Manager/ Technical Expert
Andile Ngunduze	DWAF (deployed to Service Provider for construction exposure)	Young Professional-Civil Engineering

3.2.3 Provincial Government of the Western Cape

Presentations on the TAC and in particular the pilot project being done in the Western Cape were presented at two monthly Municipal Infrastructure Grant (MIG) meetings that were held in Worcester on 21 July and 24 August 2009. These presentations were made on request of and on behalf of the DWA Western Cape regional office. The presentations also focused on Blue Drop and Green Drop requirements from Western Cape WSPs, and how the TAC can assist the municipalities in meeting the criteria and preparing for the next assessments in February 2009.

The MIG meetings are attended by all the Technical Directors (Town Engineers) of all the municipalities, as well as the DBSA personnel deployed to those LMs and DM, where applicable (Siyenza Manje programme). Discussions after the presentations centered around the sepcific ways in which the TAC will assist the water and wastewater treatment plants, what the Water Safety Plans entails, how the funding mechanisms of the TAC works, and, in much detail, what the training opportunities are for process controllers in the province. The TAC Coordinator pointed out that a number of initiatives are currently being pursued in the Western Cape to facilitate the different levels of training, and that the TAC

has taken the initiative (on request from the DWA Western Cape regional office) to establish a Western Cape Water Training Forum that will meet on a monthly basis to discuss the coordination of training initiatives.

During the August meeting, the DWA Deputy Director: Water Sector Support Western Cape Mr Simphiwe Mashicila indicated that the DWA Western Cape will also be putting out tenders within the next two months for Skills Development Training with funds made available by the LGSETA. An amount of R 18 million has been made available for water sector training over the next three years, of which R 3 million has been allocated for the current financial year (2009/2010). The exact nature of the tenders and appointments were not yet known at that stage.

3.2.4 WISA Southern Cape Water Care Division

A presentation of the TAC support initiatives and actions to municipalities was given to the WISA Southern Cape Water Care Division quarterly meeting that was held in Sedgefield on 28 August 2009. The meeting was attended by all supervisors, senior process controllers and process controllers working at municipal water and wastewater treatment plants in the Southern Cape (from Swellendam to Plettenberg Bay, and including the Klein Karoo). Again, the main focus of the presentation was on the Blue Drop Green Drop requirements, and how the TAC can assist municipalities with meeting the minimum requirements for the next assessment which will take place during February 2010.

This Water Care Division has been very active over the last decade, and arranges regular meetings and excursions to water and wastewater treatment plants. Informing them of the way that the TAC can assist them to improve the operation and maintenance of their water and wastewater treatment plants will have the advantage of preparing for the upcoming assessments in a structured manner to ensure that all the management plans and information systems will be in place in good time before the assessments.

3.2.5 Partners for Water and Sanitation (PAWS)

Partners for Water and Sanitation is a collaborative initiative between South Africa and the United Kingdom in the fields of water supply and sanitation. As part of the collaboration, wastewater treatment specialists from Anglian Water have done assessments of wastewater treatment plants in Gauteng during March of 2009, with the view of facilitating the intervention actions that followed on the risk-related assessments that were performed by Dr Marlene van der Merwe-Botha. Later on in 2009, two DWA employees also undertook a study visit to the UK to obtain first-hand information on how the wastewater treatment plants are operated and maintained, and how to conduct plant inspections and draw up assessment reports.

During December 2009, planning commenced for the follow-up visit by the two Anglian Water specialists, this time for assessment of wastewater treatment plants discharging to the Berg River in the Western Cape (plants of the Drakenstein, Stellenbosch, Berg River, Witzenberg and Saldanha Municipalities). A Workshop was held with all the stake-holders and role-players involved in or affected by the wastewater discharge of these works into the Berg River, and at which the two wastewater treatment engineers were also present. Amongst the stake-holders at the meeting was Mr Rashid Khan, DWA Western Cape, Leonardo Manus, DWA Regulation, personnel from DWA National and Western Cape Region, Municipalities, Department of Agriculture, and, of-course, the Technical Assistance Centre.

On discussion of how the assessment by PAWS would be followed up by action plans for support and upgrading, the TAC featured prominently as the Centre that will coordinate direct technical support. Further discussions between the TAC and PAWS engineers and coordinator were held after the workshop.

At the end of January, a feedback workshop was held at DWA in Bellville, at which presentations were made by the wastewater specialists on their findings of the assessments that they undertook. One-on-one meetings with the respective municipalities and PAWS were also held, during which specific issues were discussed. During the workshop, the TAC Coordinator also made a presentation on how the TAC can assist with implementation of the actions required for addressing the problems and shortcomings. The presentation is provided in ***Appendix G*** of this report.

3.3 EASTERN CAPE

3.3.1 Workshop: Blue Lagoon Hotel, East London

The TAC Eastern Cape Workshop was held at the Blue Lagoon Hotel in East London on 15 September 2009. All role-players in the water sector in the Eastern Cape were invited, and the workshop was attended by 42 delegates, which included representatives from

- DWA Water Sector Development (Pretoria)
- DWA Eastern Cape Regional Offices (East London, Mthatha, Port Elizabeth)
- DBSA
- Amatola Water
- Local Municipalities
- District Municipalities
- Water Sector Service Providers (*e.g.* WSSA)

Presentations were given by DWA National, DWA Regional Office (Eastern Cape) and Amatola Water, as well as by Chris Swartz and Dr Machiel Steynberg (TAC Provincial Leader for the Western Cape).

The programme for the workshop appears below.

Eastern Cape Technical Assistance Workshop
on Municipal Support for Water and Wastewater Treatment

Tuesday 15 September 2009
Blue Lagoon Hotel, East London
Session 1: 10:00-12:30

Welcome	Chris Swartz / DWA Eastern Cape
Aims of the Workshop / DWA Water Sector Development	Chris Swartz / WRC / DWA
Overview of the Technical Assistance Centre	Chris Swartz
Amatola Water: Municipal Support	Mr X Bomela, Acting CEO
Department Water Affairs Eastern Cape	Mr A Lucas / Mr N Lawry
Training and Capacity Building	Chris Swartz / Dr M Steynberg
Discussion Session	All

Lunch Break and Networking
12:30-13:00

Session 2: 13:00-15:30

Pilot Study: Senqu LM (Ukhahlamba DM)	Dr M Steynberg / Role Players
Discussion Session	All / WIN-SA
Break	
Presentation of TAC Information Packs to municipalities	All / WRC / WIN-SA
Subscription to the Technical Assistance Centre	All
Eastern Cape Municipalities: Discussion of Water and Wastewater Treatment Situation and Needs	Municipalities

Lively discussions were held on the need for assistance and support with water and wastewater treatment in the Eastern Cape. Ukhahlamba DM, and Senqu LM in particular, was highlighted as an example of where serious challenges are experienced with implementing technical assistance due to institutional and political issues in and between the WSA (Ukhahlamba DM) and the WSP (Senqu LM). This is discussed further in section 6.1.6 below.

4. TAC NETWORK OF PROFESSIONALS

4.1 INTRODUCTION: KEY ROLE PLAYERS AND STAKEHOLDERS

This task consisted of the identification of water professionals (to give advice, provide consultation and facilitate technical work where and when required) nationally, and specifically in the Eastern Cape and the Western Cape as pilot provinces for the Technical Assistance Centre (TAC). These professionals will be contracted to identify, and address where relevant, problems through trouble-shooting and problem-solving. Identification of and addressing training needs will be a specific focus point of the Centre.

Institutions and individuals that were contacted, or to which the TAC presentations were made, who are involved through their required inputs in the activities of the TAC (pilot provinces; professionals), are the following:

Working Group:

Mr Chris Swartz	Chris Swartz Water Utilization Engineers
Dr Gerhard Offringa	WRC (now GO Water Management)
Dr Marlene van der Merwe-Botha	WISA / Water Group
Mr Leonardo Manus	DWA
Mr Mike Marler	DBSA

Ms Ditshego Magoro	WIN-SA
Mr William Moraka	SALGA

Reference Group:

Dr Heidi Snyman	WRC
Mr Xola Bomela	Amatola Water
Mr Gordon Borain	Umgeni Water
Mr Vic van Vuuren	Lepelle Northern Water
Mr Daniel Lentle	Rand Water
Mr Jan Pietersen	Midvaal Water
Prof Larry Obi	UNISA
Dr Machiel Steynberg	IQC
Mr Kenny Charles	CSIR
Mr Philip de Souza	Emanti Management
Mr Evan Painting	SSI

During the course of planning of the TAC and proposals for funding during 2008, further champions were co-opted onto the Working Group, while other group members had changed office and their successors appointed to the group. The title of ***Working Group*** was also changed to ***Leadership Group***.

The current Leadership Group (May 2009) of the Technical Assistance Centre consists of the following representation:

TAC Leadership Group:

Mr Chris Swartz (Coordinator)	Chris Swartz Water Utilization Engineers
Dr Valerie Naidoo	WRC
Dr Jo Burgess	WRC
Mr Junior Potloane	WISA
Dr Marlene van der Merwe-Botha	WISA / Water Group
Mr Dennis Mtsweni	DWA
Mr Leonardo Manus (Ms Mariette Swart)	DWA
Mr Godfrey Mwiinga	DBSA
Mr Mike Marler	DBSA
Ms Ditshego Magoro	WIN-SA
Ms Verena Meyer	DWA
Mr William Moraka	SALGA

Chris Swartz Water Utilization Engineers

Mr Chris Swartz (Coordinator: Technical Assistance Centre)

Water Research Commission

Dr Valerie Naidoo

Dr Jo Burgess

Dr Heidi Snyman

Department of Water and Environmental Affairs (national)

Mr Dennis Mtsweni (TAC Champion)	Water Sector Support
Ms Modiegi Sethusha	Director: Sector Development
Mr Leonardo Manus	Regulation
Ms Mariette Swart	Regulation
Mr Fred van Zyl	Planning and Information
Mr Allistair Wensley	Planning and Information
Ms Jenny Evans	Water Sector Support
Mr Thomas Meso	Transfers
Mr Francois de Kock	Transfers
Ms Verena Meyer	Training Academy

Development Bank of southern Africa

Mr Mike Marler

Mr Godfrey Mwiinga

Mr Nigel Lowe

Prof Ola Basari

Mr Rudi Botha

WISA

Mr Junior Potloane	Chief Executive

Water Boards: Umgeni Water, KwaZulu-Natal

Mr Peter Thompson

Mr Rachi Rajagopaul

CSIR

Dr Jac Wilsenach	Stellenbosch
Mr Kenny Charles(consultant)	Durban

Consultants

Dr Gerhard Offringa	Western Cape
Dr Machiel Steynberg	Eastern Cape
Mr Gareth McConkey	Western Cape

Academic

Mr Melvin Philips	CPUT
Mr Ronald Mambwe	CPUT
Prof Maggy Momba	TUT
Mr Pieter Kotze	TUT

Consulting Engineers

Aurecon (Cape Town / Port Elizabeth)

Stewart Scott International (SSI) (Cape Town / George / Knysna / Port Elizabeth)

WEC-Consult (Cape Town)

Kwezi V3 (KV3) (Bellville / Cape Town / East London)

4.2 EASTERN CAPE

4.2.1 Department of Water Affairs: Eastern Cape Region

Department of Water Affairs Eastern Cape Region			
Name	**Telephone**	**Mobile phone**	**e-mail**
Andrew Lucas	043 604 5400	082 802 8564	lucasa@dwaf.gov.za
Neville Lawry	043 604 5400 043 701 0376	082 809 5501	lawryn@dwaf.gov.za
Bongani Matomela			MatomeB@dwaf.gov.za
Landile Jack		082 887 6458	jackl@dwaf.gov.za
Rudzani Mashamba	043 2010260	082 8828303	mashambarz@dwaf.gov.za
Mbuyi Mgca	047 532 4148	082 887 6138	mgcan@dwaf.gov.za
Pieter Retief	041 586 4884	082 887 6293	retiefp@dwaf.gov.za
Matana Ntsika	043 701 0375	073 0229332	matana@dwaf.gov.za
Mohamed Lwazi	043 701 0269	083 503 6404	mohamed@dwaf.gov.za
Vien Kooverji			kooverv@dwaf.gov.za

4.2.2 Amatola Water

Amatola Water			
Name	**Telephone**	**Mobile phone**	**e-mail**
Xola Bomela	043 707 3780	083 62 99823	xbomela@amatolawater.co.za
Craig Thompson	043 707 3712	082 550 6868	cthompson@amatolawater.co.za
Andre Dyer	043 707 3735	083 320 5261	adyer@amatolawater.co.za
Maurice Durrheim	043 745 2081	083 650 9723	mdurrheim@amatolawater.co.za
Sieg Rousseau			srousseau@amatolawater.co.za
Chris Nair			cnair@amatolawater.co.za

4.2.3 WSSA

Background:

WSSA is a South African company with over 20 years of track record specializing in the field of sustainable management, operation and maintenance of water and wastewater systems, both within the municipal and industrial/mining sectors.

WSSA can draw on the vast R&D, expertise and technical assistance of Suez Environnement, a world leading supplier of water services.

Activities:

WSSA masters the entire water cycle, and performs the following work:

- feasibility studies and design
- assessments and audits
- project management and turnkey solutions
- refurbishments and extensions
- operations and maintenance
- outsourcing
- quality monitoring and laboratory services
- full customer cycle management

- capacity building
- technical assistance

In partnership with municipalities, WSSA is a provider of specialized services in bulk water treatment, water and wastewater reticulation, wastewater treatment, rural water and sanitation supply, metering, billing, call centers, utilities management, crisis management, support services, etc.

WSSA also provides accredited laboratory and training services.

Employees: 1800

Parent Company: Mea Aqua SA

Designation	Candidates	Location/site	Qualification/Experience	Contact person	Contact details
Operations Manager	K Wilson	East London	PrTech +15 Yrs	K Wilson	043-7262828
Operations Manager	David Pillay	Kokstad	NHD T4 QS + 15 yrs	D Pillay	037-7275811
Process Engineer / Operations Manager	A Mbelu	Queenstown	BSC + 10 years	A Mbelu	045-8381697
Contract Manager	F Buwa	Queenstown	NHD T3 + municipal engineering 20yrs	F Buwa	045-8395274
Civil Engineer	A Jerrard	Queenstown	BSc Civil Eng (Hons) + 30 years	K Derbyshire	043-7262828
Specialist / Civil Engineer	K Derbyshire	East London	PR Eng/MBA +20 Yrs	K Derbyshire	043-7262828
Process Engineer	Z Mbatani	East London	Diploma + 30 years	K Derbyshire	043-7262828
Plant Manager	N Tomson	Queenstown	N3 Water Care + 20 years	A Mbelu	045-8381697
Networks Manager / Project Manager	G Maritz	Queenstown	B Comm Management + NTC 3	A Mbelu	045-8381697
Networks Manager / Project Manager	A Barraud	Queenstown	NTC 3 Plumbing	A Mbelu	045-8381697
Networks Manager / Project Manager	V Buthelezi	Kokstad	N6 Civil Engineering	D Pillay	039-7275811
SHEQ Manager	H Pretorius	East London	Trade +20 Yrs	K Derbyshire	043-7262828
Maintenance Manager	R Pottas	Queenstown	Trade +15 Yrs	A Mbelu	045-8381697
Training Manager / Process Support	D Walker	East London	N3 Water Care / Waste Water	K Derbyshire	043-7262828
Millwright	C Lombard	Queenstown	Trade +10 Yrs	A Mbelu	045-8381697
Millwright	S Nqece	Queenstown	NTC 6 + 10 years	A Mbelu	045-8381697
Millwright	F Jackson	Kokstad	NTC 3 + 30 years	D Pillay	039-7275811

Electrician	G Vetner	Kokstad	NTC 4 + 15 years	D Pillay	039-7275811
Electrician	D Biggs	East London	N3 Electrical + 15 years	K Derbyshire	043-7262828
Technicians	M Ceza	East London	N4 Mechanical Engineering + 10 years	K Derbyshire	043-7262828
Technicians	M Satsha	Queenstown	National Diploma Civil Eng. + 5 years	F Buwa	045-8395274
Technicians	D Verdoes	Queenstown	NTC Mechanical Technology + 10 years	F Buwa	045-8395274
Supervisor	A Kotze	Queenstown	NTC3 + 10 years	A Mbelu	045-8381699
Plant/Network Supervisor	D Pagel	Stutterheim	Matric + 10 years	K Wilson	043-7262828
Network Supervisor	D Kepeyi	Queenstown	Plumber + 32 years experience	A Mbelu	045-8381699
Network Supervisor	B Bosch	Queenstown	Plumber + 9 years experience	A Mbelu	045-8381699
Network Supervisor	T Yamiso	Queenstown	Plumber + 9 years experience	A Mbelu	045-8381699
WTW Plant/Process Supervisor	S Mkhize	Queenstown	N3 Water care	A Mbelu	045-8381699
WWTW Plant/Process Supervisor	P Julius	Queenstown	Matric + N3 Water Care	A Mbelu	045-8381699
Fitter	J Bester	Queenstown	N4 Electrical + 5 years	A Mbelu	045-8381699
Artisans/Plumbers	K van Heerden	Queenstown	Plumber	A Mbelu	045-8381699
Artisans/Plumbers	V Caralse	Queenstown	Plumber	A Mbelu	045-8381699
Artisans/Plumbers	D Telfer	Queenstown	Plumber	A Mbelu	045-8381699
Artisans/Plumbers	S Mqoqi	Queenstown	Plumber	A Mbelu	045-8381699
Artisans/Plumbers – Jetting	E Locke	Queenstown	10 years experience	A Mbelu	045-8381699

4.2.4 Aqua Agri Solution

Aqua Agri Solution (AAS) is a multi-disciplinary CC, where managers, engineers and technologists are involved in a broad range of water related issues, project management, mechanical and civil engineering covering the complete needs in the field of water and sewer purification, and infrastructure.

AAS is driven by quality, service and customer satisfaction throughout Southern Africa by virtue of its local presence and association with local top quality associates.

AAS was established in South Africa in November 2004 by the merging of a water treatment consultant, water treatment chemical specialist, sewer treatment specialist and water

treatment system operation and maintenance specialists. AAS further are associated with a large civil contractor and project management specialists. With the mentioned merging, AAS has combined more than 80 years of water treatment experience within AAS.

Technical Expertise:

The company operates in three divisions, each of which offers comprehensive services through the complete project life cycle:

Consultation Division – here the expertise lies in the full range of mechanical, civil, process and structural engineering for all water and sewer treatment disciplines.

Services include:

- Detailed plant and process assessments
- Water treatment, supply and pumping
- Instrumentation and process control
- Mechanical, civil and infrastructure
- Irrigation Systems
- Project management
- Feasibility Studies – Water and Sewer Treatment
- Maintenance – Water treatment plants, pumps and other rotating equipment
- Water quality monitoring and laboratory services
- Water Demand Management
- Water Services Planning
- Water treatment skills assessments and skills development

Operation and Maintenance Division expertise lies in the operations and maintenance of all potable and sewer water treatment plants:

Services include:

- Operate and maintain of all water treatment plants
- Optimization of treatment plants
- Refurbishment of all water treatment plants
- Upgrade and expansions to water treatment plants
- Infrastructure development and maintenance
- Water and sewer treatment training for operators and plant managers
- Water balances and loss management
- Water quality monitoring and laboratory services
- Maintenance all rotating machines, pumps, etc.

Water Treatment Chemical Supply Division services include water analysis, chemical dosing optimization, and supply of water treatment chemicals:

Expertise includes:

- Water Analysis & Quality Control– chemical and bacteriological
- Chemical Dosing optimization
- Chemical Supply
- Chemical Cost analysis
- Inventory control system
- Chemical dosing systems
- Potable water disinfection chemicals and systems

Aqua Agri Solutions Staff:

AAS currently employs a total of 20 full time employees including 2 engineers, 1x microbiologist, 3 x water technologists, 1 x Mechanical Artisan, 4 x drivers, 5 x admin personnel, 5 x general assistants and contracted teams of water treatment plant operators and maintenance personnel.

Executive:

Member (Technical):	Johan Opperman 083 501 0646 051 433 4748 e-mail: johano@vodamail.co.za
Logistics Manager	Koot Kruger 082 825 8349 051 433 4748 e-mail: kootk@vodamail.co.za
Member (Financial)	Alma Kruger 051 433 4748 e-mail: aas@shisas.com
Member (Technical):	Johan van der Poel 0836515392 e-mail: johanvdp@vodamail.co.za

Technical:

Free State, Northern Cape, North West:	Johan Opperman 083 501 0646 051 435 4291 e-mail: johano@vodamail.co.za
	Giel van der Walt 082 821 9333 058 303 9625 e-mail: aquachem@isat.co.za
Free State, Northern Cape, North West	Koot Kruger 082 825 8349 051 435 4291 e-mail: aas@shisas.com
Eastern Cape:	Johan van der Poel 083 651 5392 e-mail: johanvdp@vodamail.co.za
Sewage Treatment:	Albert van Vuuren 082 442 8175 e-mail: avanvuuren@csir.co.za

4.2.5 LL&L Water Care

This water care company operates in the Tsitsikamma area of the Eastern Cape and was established in 2001.

The company consists of Messrs A Loots, D Loots and co-workers.

The following activities are performed by the company for clients in their area of operation:

a. Process monitoring of Water and Waste Water Treatment Works
b. Formal and informal staff training, accredited assessor.
c. Chemical and Bacteriological water analysis on drinking water and sewage effluent
d. Compiling Works Operations Manuals
e. Processing of water use licences
f. Small Water and Waste Water Treatment Works design and construction

Staff (3 personnel)

Partner 1: More than 30 years experience in Water and Waste Water Treatment, Class V DWAF Plant Operator

Partner 2: 14 years experience, Class V DWAF Plant Operator, ESETA Accredited Assessor

Partner 3: PhD (Biochemistry)

Laboratory

Perform chemical and bacteriological analysis on water and waste water

Contact details

A Loots 082 786 3686

D Loots 082 469 6757

andreloots@aerosat.co.za

4.3 WESTERN CAPE

4.3.1 Department of Water Affairs: Western Cape Region

Department of Water Affairs Western Cape Region			
Name	**Telephone**	**Mobile phone**	**e-mail**
Simphiwe Mashicila	021 950 7127	082 805 6039	mashics@dwaf.gov.za
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Tony Brutus	021 950 7159		brutust@dwaf.gov.za
Leslie Whiteman	021 950 7284	073 765 5114	lesliew@dbsa.org
Larry Ferguson	021 950 7100	082 808 9889	fergusl@dwaf.gov.za
Wilna Klopper	021 950 7100	082 807 6191	wilna@dwaf.gov.za
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Melissa Lintnaar-Strauss	021 950 7100		melissa@dwaf.gov.za
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Zanele Mupariwa	021 950 7100		bilam@dwaf.gov.za
Patrick van Coller	021 950 7134		pat@dwaf.gov.za
SM Mabathe	021 950 7100		mabathe@dwaf.gov.za

Busiswa Bele	021 950 7237	082 881 9608	beleb@dwaf.gov.za
Solomon Makate	021 952 0728	083 950 7280	makates@dwaf.gov.za
Leon Nomjila	021 950 7100	083 609 4157	nomjila@dwaf.gov.za
Nolitha Zuzani	021 950 7100		zuzaniz@dwaf.gov.za

4.3.2 Development Bank of Southern Africa (Siyenza Manje) : Western Cape

DBSA: Western Cape Experts and Young Professionals Deployment Information Contact List									
Experts			Young Professionals						
Technical	Planning		Techn.YP	Planning YP		Name	Area of Deployment	Technical/ Planning	Telephone
West Coast District Municipality									
1						Chilton, Paul	West Coast Dm (shared service to Matsikama)	Project Manager/ Technical Expert	082 338 6977
	1					Francois Wust	Cederberg (on shared service to Matsikama / Bergriver)	Planning Expert	082 373 0225
1						Micheal Tsekoa	Cederberg: PSP	Technical: PSP	083 445 4477
1						Cobus Louw	Cederberg / Bergriver / Witzenberg Project Manager	Technical: PSP Project Manager	082 493 3263
			1			Phemelo Majeni	Cederberg (Currently deployed to Service Provider for design exposure in Steelenbosh)	Young Professional:Technical	082 352 3047
			1			Thato Motaung	Cederberg	Young Professional:Technical	072 540 0436
			1			Sakhiwo Nobanda	Cederberg	Young Professional:Technical	073 291 1581
Cape Winelands District Municipality									
1						De Villiers, Gregory	Breedevalley	Project Manager/ Technical Expert	074 100 3399
1						Chris Koch	Witzenberg LM	Technical: PSP	
			1			Yuri Levendal	Ceres LM	Young Professional:Technical	

				1		Jacques Jansen van Rensburg	WItzenburg	Young Professional:Planning	
Overberg District Municipality									
1						Marius Brand	Theewaterskloof (shared service to Swellendam LM)	Project Manager/ Technical Expert	082 4114 969
				1		Olga Louw	Theewaterskloof	Young Professional-Planner	072 550 9411
			1			Batandwa Mbanjwa	Theewaterskloof	Young Professional:Technical	082 544 7950
			1			Unathi Mfundo Kwezi	Theewaterskloof	Young Professional:Technical	073 870 1798
						Preshane Chandaka	Grabouw	Project Manager/ Technical Expert	082 589 7302
Eden District Municipality									
1						Dawid Vermeulen	Eden District Municipality	Project Manager/ Technical Expert	083 259 1433
1						Heinrich Mettler	Eden District Municipality	Junior Project Manager: Technical	079 494 3108
			1			Thandeka Langfoot	Eden District Municipality	Young Professional-Technical	082 6905870
1						Hugh Sussens	Kannaland	Project Manager/Technical Expert	082 308 5693
1						Johan Wiese	Hessequa	Project Manager/Technical Expert	082 452 2107
Department of Local Government & Housing(Provincial Deployees)									
1						Dean Chapman	DLGH- WC	Project Manager/ Technical Expert	083 7785 008
	1					Celdri De Wet	DPLG-WC	Town Planning: Expert	082 807 0310
	1					Rene Whiteman	DLGH-WC	Town Planning: Expert	071 929 7724
			1			Mhangabezi Fojela	DLGH-WC (deployed to Service Provider for construction exposure)	Young Professional-Technical	083 887 9781
			1			Sandiswa Sineli	DLGH-WC (deployed to Service Provider for construction exposure)	Young Professional-Technical	078 679 9241
Department of Water Affairs & Forestry- WC(DWAF Provincial deployees)									
1						Leslie Whiteman	DWAF	Project Manager/ Technical Expert	073 765 5114
			1			Andile Ngunduze	DWAF (deployed to Service Provider for construction exposure)	Young Professional-Civil Engineering	083 766 8643

4.3.3 Department of Local Government: Western Cape Provincial Administration

Department of Local Government Western Cape Provincial Administration			
Name	**Telephone**	**Mobile phone**	**e-mail**
Leon Eksteen	021 483 3154	083 320 8915	leksteen@pgwc.gov.za
Sai Pieterse			
Izak Toerien	021 483 3486	083 320 5816	itoerien@pgwc.gov.za
Colin Pritchard	021 483 3973	086 695 7532	cpritcha@pgwc.gov.za
Zofia Rokita	021 483 4422	083 320 5549	zrokita@pgwc.gov.za
Neil Kirsten	021 483 4463	083 320 7874	Nkirsten@pgwc.gov.za
Alejandro Cruz	071 368 8353	021 483 4200	acruz@pgwc.gov.za
Linton Martin	072 556 8241	021 483 5968	Lmartin@pgwc.gov.za
Dean Chapman	083 778 5008	021 483 4191	deanc@dbsa.org
Nelson Perez Gamez		021 483 3152	nperezga@pgwc.gov.za
Ediberto Lopez Martinez		021 483 3489	elopezch@pgwc.gov.za
Juan Luis Perez Boza		021 483 3155	jperezbo@pgwc.gov.za

4.3.4 Overberg Water, Western Cape

Mr Dries Potgieter	Tel: 028 214 1209	potgieterd@overbergwater.co.za
Mr Danie Theron	Tel: 028 722 8000	danie@overbergwater.co.za
Mr Sydney Armoed	Tel: 028 214 1209	armoedsj@overbergwater.co.za

5. DATABASES OF WATER AND WASTEWATER TREATMENT PLANTS, CONSULTING ENGINEERS AND SUPPLIERS IN THE EASTERN CAPE AND WESTERN CAPE

5.1 INTRODUCTION

In order to facilitate access to information that is required for the operation and management of the Technical Assistance Centre (TAC), a number of databases were developed in the piloting phase of the project. These databases include:

- TAC Network of Water Professionals in the Eastern Cape and Western Cape
- TAC Database of Consulting Engineers, Consultants and Suppliers in the EC and WC
- TAC Database of Water and Wastewater Treatment Plants: Eastern Cape
- TAC Database of Water and Wastewater Treatment Plants: Western Cape.

5.2 DATABASES OF WATER AND WASTEWATER TREATMENT PLANTS

In a recent WRC project on water treatment technology selection, a database was compiled of water treatment plants in the country. This database was complemented by drawing up overview assessment forms and subscription forms for the municipalities in the Eastern Cape and the Western Cape. Information was also obtained from the Department of Water Affairs Eastern Cape Region on the status of water and wastewater treatment plants in that province, and from the DWA reports on Base Information for Risk Based Targeted Regulation. For the Western Cape, the project leader also had access to additional water and wastewater treatment plant information that was captured in a database for the Provincial Administration of the Western Cape (PAWC). Appropriate information from all these sources was subsequently compiled into databases for water and wastewater treatment plant in the Eastern Cape and Western Cape (two separate databases). The water and wastewater treatment plants are on different sheets in the Excel Workbooks.

The TAC Databases of Water and Wastewater Treatment Plants comprises the following data fields:

- District Municipality
- Local Municipality
- Name of Wastewater Treatment Plant
- Capacity
- Legal Status (Authorization/Licence No/Permit No)
- Number of Supervisors (and Class) currently employed
- Number of Process Controllers (and Class) currently employed

- Risk Rating Score or Blue Drop Score
- Performance, condition and challenges

5.3 DATABASE OF CONSULTING ENGINEERS AND SUPPLIERS

A database was designed and populated with details of consultants and suppliers active in the field of water and wastewater treatment and management in the two pilot provinces. The information contained in this database will be used to forward to Centre clients a list of consultants and suppliers in their geographic area, whom they can contact when the enquiry requires more detailed investigations and/or site visits.

The database provides a summary of all the consulting engineers and companies with contact details in the two provinces, as well as separate word documents with more information on the consulting engineering firms and suppliers in the Eastern Cape and Western Cape respectively.

6. PILOTING OF THE TECHNICAL ASSISTANCE CENTRE

During the launch of the TAC at the Water Institute of southern Africa (WISA) Biennial Conference that was held at Sun City in May 2008, it was decided that the Centre should be piloted in two provinces prior to national roll-out, in order to establish the exact requirements of the water sector for technical support, and to adjust the objectives and activities of the TAC as may be required from the sector. It was proposed that the piloting be performed in the Eastern Cape and the Western Cape, the former being one of the provinces where major challenges are experienced, and the latter done in parallel as a province where best practices are found, and which could be applied to the assistance activities in the Eastern Cape.

The piloting commenced with two meetings that were held in East London and in Bellville during the period February/March 2009.

6.1 Eastern Cape

The first piloting meeting of the TAC in the Eastern Cape was held on 26 February 2009 at Amatola Water in East London, and was attended by the following role players and stake-holders:

Mr Xola Bomela	Amatola Water
Mr Dennis Mtsweni	Department Water Affairs and Forestry (DWAF, Pta)
Mr Andrew Lucas	DWAF Eastern Cape
Ms Rudzani Moshamba	DWAF Eastern Cape
Mr Landile Jack	DWAF Eastern Cape
Mr Andre Dyer	Amatola Water

Mr Pieter Retief	DWAF Eastern Cape
Ms Mbuyi Mgca	DWAF Eastern Cape
Mr Maurice Durrheim	Amatola Water
Mr Matana Ntsika	DWAF Eastern Cape
Mr Mohamed Lwazi	DWAF Eastern Cape
Mr Chris Swartz	Technical Assistance Centre (TAC) (minutes)

Apologies were received from:

Mr Craig Thompson	Amatola Water
Dr Valerie Naidoo	Water Research Commission (WRC)
Dr Jo Burgess	WRC
Mr Mike Marler	Development Bank of Southern Africa (DBSA)

An overview of the establishment of the TAC was also presented at this meeting, which included the aims, objectives and structure of the Centre. It also presented the TAC's activities and functions, proposed implementation plan and action plans, and overview of TAC developed tools. It also included an overview of progress to date, and the work plan for 2009. As was the case at the Western Cape meeting, specific attention was given to application of the Centre's activities and facilities to municipalities in the Eastern Cape. The presentation was forwarded to all the attendees of the meeting.

The TAC Implementation Plan was also presented to the meeting (*cf* page 16 of this report).

6.1.1 Selection of Pilot Municipalities in the Eastern Cape

The TAC Coordinator proposed five WSPs in the Eastern Cape as pilot municipalities for the TAC, and asked the meeting for their comments and to propose other WSPs, where applicable. Considerable (very valuable) discussion ensued, after which consensus was reached on the identified plants, which now form the pilot WSPs in the Eastern Cape for the TAC. At these WSPs, the treatment plants will be assessed, TAC functions applied and re-assessed to determine the impact of the TAC on ailing water and wastewater treatment plants.

The pilot WSPs in the Eastern Cape and their towns (where applicable) are as follows:

a.	**Sengu Local Municipality (Ukhahlamba District Municipality)**
	Lady Grey, Barkly East, Sterkspruit, Rhodes, Rossouw and Herschel
b.	**Koukamma Local Municipality (Cacadu District Municipality)**
	Kareedouw, Joubertina, Krakeel, Louterwater, and Misgund

c. **King Sabata Dalindyebo Local Municipality (OR Tambo DM)**

Mthatha and Mqanduli

d. **Storms River Non-Municipal Treatment Plants**

- Department of Public Works (one plant) – SANParks (one plant)

6.1.2 Baseline Assessments: Eastern Cape

The assessments in the Eastern Cape also included evaluation of performance, condition, personnel aspects, monitoring programmes, asset management, and training needs.

Municipalities that were visited and the treatment plants assessed are the Koukamma Local Municipality in the Langkloof (part of Cacadu DM) and the Senqu Local Municipality (Ukhahlamba DM), which is considered a "hot point" and where considerable work is being and has been done. Because of the magnitude of the problems that are experienced there, specific focus was also given to Senqu by the TAC.

The TAC representative in the Eastern Cape, Dr Machiel Steynberg, is personally involved in providing assistance under auspices of the TAC to the towns in the Senqu Municipality, and in particular Barkly East and Lady Grey.

Visits to and baseline assessments at Koukamma were also performed during the period March to June 2009, whilst the assistance and support to Senqu has commenced in February 2009 and is on-going.

A list was also drawn up of needs and challenges these three municipalities, and in particular Senqu, based on the visits to the pilot municipalities and discussions with technical and engineering personnel. These needs will be addressed in order to improve the performance and condition of the treatment plants, and are being prioritised as far as possible. The list of challenges and discussions appear presented in Section 6 of this report.

6.1.3 TAC support functions in the Eastern Cape

In the Eastern Cape, TAC support as contained in the implementation plan also entails the application of the Centre resources, facilities and tools to improve the overall performance of the treatment plants of the pilot. This includes visits to the various treatment plants and providing training on the operation and maintenance of the water and wastewater treatment plants, in particular on implementation of the TAC tools to improve the compliance and condition of the plants. Application of the TAC tools will be done in the same way as in the Western Cape, but learning from the experience gained in the Western Cape how this could be done most effectively.

Dr Steynberg has also provided the managers and supervisors of Ukhahlamba District Municipality with the Small Water and Wastewater Treatment System Tool Boxes for application at their water and wastewater treatment plants, especially those within the Senqu LM where major problems with operation and maintenance, and hence compliance, are experienced.

Very important in the Eastern Cape is also the assessment of operating personnel (human resources) capacity, availability and training needs for the treatment plants, and facilitation of training and skills development, and providing the technical directorate and municipal manager with proposed water care human resources development needs proposals.

6.1.4 Overview of TAC Eastern Cape pilot municipalities: Wastewater and Water Treatment

An overview of the status of pilot municipalities in the Eastern Cape is provided in Appendix K on the enclosed CD.

A summary of water and wastewater treatment works in the Eastern Cape that were identified as needing support as a high priority, are given below.

Wastewater Treatment

Base Information for Targeted Risk-Based Regulation: Status Report (DWA, June 2009)

Overview:

The Mthatha WWTW is located in the King Sabatha Dalindyebo LM area. The works was commissioned during 1978 but needs to be upgraded. A DWA Techncial Report (August 2008) reports that the WWTW is in a poor functionality condition due to:

- No grit removal is taking place, and solids (screenings) removal need optimisation;
- Critical repairs to sludge withdrawn facilities not addressed – the pipe between the primary settling tanks (PST) and anaerobic digesters are broken and no sludge can be withdrawn;
- As result, PSTs are filling up with sludge and floatation and scum formation are already signifying poor primary treatment constraints;
- Scum/scrub functions at PSTs not taking place and bridges are not functional;
- Anaerobic digesters are not functioning;
- No sludge removal from humus tanks (secondary settling) as result of pump stations flooded and mechanical-electrical equipment not functional;
- Biofilters are not optimally functioning with end-caps removed, biofilter arms distribution impaired, poor flow distribution (indicating poor process control), and blockages / short-circuiting of sewage;
- Drying beds not used, as result of non-existent sludge management practices;
- Disinfection (chorine dosing) equipment not functional

- Gradual filling up of oxidation ponds with sludge, starting with pond 1 of 5 ponds that is operated in series;
- Sampling and monitoring of wastewater processes and effluent takes place once a month;
- As with the connector sewer inspections, visible signs of drinking water leakage in 3 areas of the WWTW were verified, one leak resulting in the complete flooding of the humus pump station.

The upgrading involves an activated sludge plant with a design capacity of 25 Ml/d. Combined with the existing works, the upgraded/expanded works will have a design capacity of 37 Ml/d. It is estimated that an approximate flow of 30 Ml/day should reach the works. The additional capacity would cater for future developments in Mthatha, but has not been verified against a spatial development plan, or taking cognizance of any specific developments or impact from water losses or stormwater infiltration.

Technology:
Biofilter (trickling filter)

Design capacity:
The existing wastewater treatment works (WWTW) has a 12 Ml/day design capacity. Currently, it is estimated that approximately 20 Ml/day sewage does NOT reach the WWTW, as result of losses from the network and pump stations. Flow to WWTW is measured at 18 Ml/day, which means that the works is operated well above its designed hydraulic capacity. The WWTW is in a poor functionality condition. The plant is over capacitated, 16 out of 17 pump stations are not working, but a contractor is on site working on some of the pump stations. The WSA is planning to upgrade the works as soon as funding becomes available.

Legislative Aspects:
- License status: Exemption number 1964B
- Class works: Class C
- Coordinates: 31°34'33.65"S-28°47'47.59"E
- Staff/expertise required according to law: The staff requirements for a Class C treatment works, based on the DWA regulations Schedule IV & III, is as follows:

Works Class	Operator Per Shift	Supervision	Operations And Maintenance Support Services Requirements
C	Class III	Class V	These personnel must be available at all times but may be in-house or outsourced: • electrician • fitter • instrumentation technician

- Staff/expertise actual on site:

Criteria	Operators / Process Controller	Superintendent/ Plant Manager	Operations & Maintenance
Employed	1	0	• electrician
Class	Class III	Class V	

Qualification (*if not classed*)	n/a	n/a	• fitter • instrumentation technician
Gap			
Vacant	0	1	0
Position	Class II	Class V	
Class (*required*)	III (*per shift*)	V (*per shift*)	

Effluent quality against standards/specifications:

This monitoring data received from DWA is for the period 2007 and 2008. The lack of consistent and regular monitoring of this plant considering its size should be of great concern especially as it serves a major city in old former Transkei. There is a plan to upgrade the Works when funding becomes available. The plant is operating at its design capacity and may well be exceeding its design capacity due to the mechanical failures and problems encountered at the respective pump stations. The situation at the plant 8 months down the line at June 2009 may be far worse if the current status reflected below has not yet been remedied. The plant is overloaded as indicated by the regular failure events for SS, COD and Ammonia. There also may be process control problems experienced at the plant as well, i.e. the nitrification process (Ammonia and Nitrates) and disinfection process (E. coli and Faecal Coliform) – the latter showing compliance in last couple of months. Effluent is not reaching the plant making its way to the Mthatha River.

The following table listed the funding needs of Mthata and was extracted from the OR Tambo Sewer Status Report, September 2009.

Phase	Description	Required Amount	Funding available
1	Emergency intervention: repair non functional works at treatment plant including Sidwadwa pipe bridge	R1 500 000.00	R1 500 000.00
2	Upgrade treatment plant to 20 Ml per day	R13 500 000.00	R13 500 000.00
3	Repair and upgrade outfall sewer lines, 3 pump stations, manholes and manhole covers	R10 000 000.00	R10 000 000.00
4	Upgrade/refurbishment of 5 pump stations	R5 000 000.00	R5 000 000.00
5	Upgrade/refurbishment of 6 pump stations	R6 500 000.00	R0.00
6	Construction of Northern outfall sewer	R100 000 000.00	R0.00
7	New inlet works, anaerobic pond and chlorination facility	R30 000 000.00	R0.00
8	1 x aeration basin/reactor and 1 x clarifier	R25 000 000.00	R0.00
9	1 x aeration basin/reactor and 1 x clarifiers	R45 000 000.00	R0.00

10	Additional module or new works	R200 000 000.00	R0.00
11	Replace existing old sewer network/reticulation	R85 500 000.00	R0.00
	Provision for bulk sewer for future development	R43 000 000.00	R0.00

At the first TAC meeting that was held in the East London in 2009, DWA Eastern Cape identified Mthatha as one of the municipalities where they wanted the TAC to provide technical support. Because of non-availability of DWA funding to the TAC for the largest part of 2009, plans to provide this support could only commence in December 2009 during a TAC meeting that was held with Mr Bongani Matomela and DWA National in Bellville. During this meeting, Mr Matomela supported the proposed involvement of the TAC in the support work at Mthatha, but that he would first liaise with the Task Group involved in this project. No indications were given at the time that planning for interventions at Mthatha was alreay in place and some of the work had already commenced.

With no further feedback to TAC forthcoming from DWA or the Task Group, the TAC, in consulation with Dr Steynberg, pro-actively included Mthatha in the work programme for the TAC for the first quarter of 2010. It was considered that as a first step, consolidation of all support plans and reports should be performed to obtain the holistic perspective and that the areas where the TAC could make meaningful inputs, could be identified. In compiling the action points for the TAC consolidation information, however, it became clear that work at this high-priority site was already well underway. The TAC could still provide support, especially on assistance with drawing up monitoring programmes, management programmes and facilitating training, as required in the overall project planning. However, this would require requests by the Task Team to the TAC to perform this work, and in particular the support by DWA Eastern Cape (Mr Matomela). This would have to be persued in the new financial year, as DWA National indicated that it should not be undertaken before end of the current financial year (see 2.1.6 below).

Water Treatment

Status as in 2009 according to Blue Drop Assessments

Mthatha Town and Suburbs obtained a Blue Drop Score of **37%**, and a DWQ Compliance of **83%**.

6.1.5 Ukhahlamba District Municipality

a. Introduction

On 25 March 2008 the concept of the TAC was introduced by Dr M Steynberg at the Water Managers Meeting of the Ukhahlamba District Municipality in Barkley East. The meeting

supported the TAC initiative but requested that the TAC should focus on Lady Grey and not the whole Senqu Local Municipality.

On 15 April 2009 a presentation was made to Rob Crozier (Technical Manager: Senque) in Lady Grey, who welcomed the TAC initiative. He recommended that the same presentation should be made to the Senqu Council. He also recommended that a water awareness / appreciation session should be held with the council at the same time.

Rob Crozier requested a letter from Ukhahlamba District Municipality, informing Senqu Council of this initiative and requesting an opportunity to present the activities to standing Technical Committee. This letter was send to them by Ukhahlamba District Municipality on 23 April 2009. No response from Senqu on this letter has been received to date.

b. Assessment

Introduction

The Lady Grey waste water works was visited on 14 April 2009. A new series of oxidation ponds have been completed recently. The old oxidation pond system is presently receiving the bucket system waste. Water from the old ponds is pumped to the new ponds.

The waste water ponds were previously audited in August 2003 by WSSA and Eastern Cape Water Treatment.

Findings and recommendations

The New Works:

- No flow meter at the inlet of the works. It is also not clear whether the waste water from the old ponds are introduced to the head of the new works.
- Solids are not removed from the ponds and are not properly discarded.
- Weeds in the ponds as well as between the concrete slabs should be removed.
- Fence not sufficient and damaged during the recent floods
- Concrete slabs on the ground wall are “moving”.
- Recent floods caused serious erosion problems

Old oxidation ponds

- The old ponds are overgrown with weeds.
- It was not possible to audit any of the infrastructure due to the bad housekeeping at the site.

During Dr Steynberg's visit to Lady Grey on 15 April 2009, he used the opportunity to assess the waste water works (see section 4.1.2) as well as the drinking water works. Given that Ukhahlamba District Municipality has already initiated the replacement of the drinking water works no formal assessment of the present works was done.

However, during his discussions with officials and the attendance of the mentioned meetings it became evident the provision of technical assistance will only contribute in the short term to improved water quality. The following has to be addressed:

- No formal institutional arrangements exist between Ukhaklamba District Municipality and Senqu Local Municipality. The proposed Service Level Agreement (SLA) from Ukhahlamba DM was rejected by Senqu.

- Senior officials do not understand the water business, the technical requirements for an efficient water system and the paramount importance of water and waste water quality.

- There seems not only to be a staff shortage but also a lack of competence, i.e. technical knowledge, the ability to apply and the passion for water.

- The above issues culminate in bad housekeeping of infrastructure and non-performance plants and systems. No or limited maintenance is done.

c. Assistance provided

Ukhahlamba DM has initiated the replacement of the drinking water plant by approaching the original supplier of the plant, Sud-Chenmie. Given the urgency to replace the plant, this approach allows them not to go to tender. Ukhahlamba DM asked Dr Steynberg to assist with the evaluation of the proposal. He subsequently had discussions with the supplier who up to now did not include the technical criteria into the quotation.

d. Suggested support activities

For sustainable water quality the following needs attention:

- Attitude towards the importance of good quality water and related infrastructure for community health and sustainable growth.

- Implementation of a SLA between Ukhahlamba DM and Senqu LM.

- Proper guidance on the management of such a SLA and the measurement of performance in terms of the SLA.

- Distribution and reticulation infrastructure assessment (meters, pipes, valves, reservoirs, water losses,etc.)

- How to use water demand management to improve water quality.

- Training with the regards to budgeting and spending.

- Training regarding assessing funds from other sources.

- Compilation and application of maintenance and operations manuals

- Technical training of staff on how to operate infrastructure

- Training on the process control and logging of information

e. The road ahead

Although Senqu was eager to accept the assistance of the TAC they are slow to respond on the request to have a meeting with the standing Technical Committee. This issue is followed up in an attempt to get the other issues going.

In an attempt to obtain direct involvement of Mr Bongani Matomela in the support actions of the TAC, a meeting was held with him and DWA National TAC champions in Bellville in December 2009. Dr Steynberg also attended this meeting. During the meeting, the approaches to be followed regarding TAC support at Ukhahlamba were discussed, and Dr Steynberg gave an overview of the work they are engaged with in the DM. He specifically pointed out what the barriers are towards achieving improvement in the condition and performance of the wastewater treatment plants, and service delivery in general. The main barriers are:

- Lack of involvement of all role players
- Lack of sufficient funding to implement proposed intervention measures
- Long procurement process and delays

Mr Matomela suggested that the DWA Eastern Cape Regional Office take the leading role in the Ukhahlamba interventions, and that the TAC then be requested by DWA to provide assistance for required technical support identified by DWA. This suggestion was supported

by the TAC, as it became clear that pro-active "push" by the TAC to improve the conditions and performance at the DM was not showing meaningful progress. Mr Matomela proposed to set up meetings with all role players in the DM and that the TAC would make a presentation on how the Centre can provide technical and managerial assistance. This meeting was delayed to late in February due to unavailability of DWA to have this meeting earlier.

In the interim, through consultation with Dr Steynberg, a work programme was drawn up by the TAC for support actions to be performed in Ukhahlamba DM and Mthatha before the end of the DWA financial year, which would have resulted in "low-cost, high impact" intervention and perceived results. Unfortunately, DWA National indicated that it did not support the expenditure on the proposed work program due to the fact that invoicing for the work (implying completion of the work) already had to be submitted during the last week of February, and that they did not want to take the risk of work not being completed in time. This was rather unfortunate as the consultants and sub-consultants were already in place and ready to complete the work within the original time frame up to the end of March.

At the DWA meeting that was then held at Ukhahlamba DM (and to which the TAC coordinator was not invited), it was pointed out that the TAC support work is still required in the DM, but that the DWA National would have to re-secure the original funding, as it could not be automatically carried over to the next financial year.

In a recent project overview in *Water, Sewage and Effluent* (March 2010), it was indicated that interventions and support work are provided on a number of priority areas in Ukhahlamba. Dr Steynberg indicated that the TAC can provide meaningful support of these actions, as well as its original proposed work programme, but unless this is recognised by and requested by DWA Eastern Cape (Mr Matomela in particular), support by the TAC in this *hot-spot* area will not be successful.

6.1.6 Overall challenges in the Eastern Cape

Challenges identified and discussed, and proposed solutions, at the TAC Eastern Cape Workshop held on 18 September 2009

Attendee 1

Challenges

- Municipalities do not have political commitment in understanding water issues.
- There should sufficient budgeting for water related issues, especially for day-to-day operations and maintenance.
- Competent staff should be appointed, irrespective of EE targets.

Proposed Solutions/Supportive Actions

- Intensify awareness and commitment campaigns with Political Heads.
- Municipal Finance management Act (MFMA) needs to be changed to make sure water related functions are ring-fenced, inclusive of revenue.
- Through appointment of competent staff, managers will have the ability to mentor and coach young professionals and trainees for the future.

Attendee 2

Challenges

- Institutional arrangements and capacity building is crucial.
- Lack of control systems.
- Infrastructure age identification.

Attendee 3

Challenges

- Bad state of both types of treatment works (water and wastewater treatment)
- Infrastructure problems – infrastructure old

Proposed Solutions/Supportive Actions

- DWA to work closely with municipalities on addressing refurbishment needs.
- Five year plans or programs should be drawn up together with DWA & DPLG.

Attendee 4

Challenges

- Get politics out of the job.
- Get middle management to accept responsibility. Train them.
- Access to money for people/organizations who can support municipalities.

Attendee 5

Challenges

- Better O & M plans and implementation.
- Proper Asset Management plans.
- Safety plans (for water treatment plants).
- Blue and Green Drop certification.

Proposed Solutions/Supportive Actions

- TAC visiting the WSP and WSA to help with implementing the above mentioned challenges.
- After assisting WSAs and WSPs, the TAC should do assessments after an agreed time frame.

Attendee 6

Challenges

- Old process controllers that have experience in the sector, but lack formal training and qualifications.
- Rural schemes/plants cannot attract young process controllers who have the necessary training and qualifications.
- Lack of training/understanding of how monitoring equipment works, and the calibration of these instruments.

Proposed Solutions/Supportive Actions

- Establishment of process controllers network, where there can be exchange of information. In this way knowledge and information can be shared.
- Attractive packages and growth opportunities need to be identified and communicated so that the process controllers could have an idea of what future plans are available.
- Asset management training to plant managers and operators.

Attendee 7

Challenges

- Lack of competent staff.
- Lack of competent supervisors.
- Outdated equipment/lack of resources.

Proposed Solutions/Supportive Actions

- Training and continuous competence assessment programs.
- Hire people with skills, knowledge and qualifications.
- Upgrade facilities and equipment.

Attendee 8

Challenges

- Councilors to be called to important technical meetings.
- Municipal managers to help to challenge the councilors on important problems.

Attendee 9

Challenges

- Lack of treatment of wastewater and sewage in the villages/rural areas.
- Poor quality of raw water being treated.
- Under-qualified/lack of staff.

Proposed Solutions/Supportive Actions

- Proper sewage treatment systems needed.
- When the above is done the quality of the raw water source will improve, because there'll be less sewage going into rivers.
- Train of staff/get qualified staff.

Attendee 10

Challenges

- Poor communication.
- Lack of funding.
- Lack of proper Asset Management programs.

Proposed Solutions/Supportive Actions

- Adherence to protocols.
- Increase funding and salaries by inflation percentages.
- Implement preventative maintenance programs.

Attendee 11

Challenges

- Institutional competence is lacking.
- Budget limitations.
- Organogram is not friendly to WSA/WSP relation – it should be shared by the Local Municipality.

Proposed Solutions/Supportive Actions

- Ring fence WATSAN (water and sanitation) income and expenditure.
- Establish WSP institutional arrangements.
- Water demand management and loss control, and the need to pay for what they use.

Attendee 12

Challenges

- Poor planning.
- Lack of Leadership.
- Operation and maintenance of water services infrastructure.

Proposed Solutions/Supportive Actions

- Employ right people who have planning and strategic management skills and background.
- Provide leadership development programs (paradigm shift), and set standards for appointing people to leadership positions.
- Get skilled personnel to manage and supervise the water services function in municipalities.

Attendee 13

Challenges

- Skills shortage.
- Dilapidated infrastructure.
- Incompetent service providers.

Proposed Solutions/Supportive Actions

- Prioritize training of scarce skills.

- DWA to assist in full refurbishment or replacement of old infrastructure.
- CIDB should play a part in training the service providers.

Attendee 14

Challenges

- Priorities.
- Competence.
- Attitude.

Proposed Solutions/Supportive Actions

- Water must be the first priority.
- Training.
- Knowledge (if the employee knows what he/she must do, he/she will take responsibility).

Attendee 15

Challenges

- Professionalism.
- Motivation.
- Dedication.
- Responsibility.

Proposed Solutions/Supportive Actions

- Appointment of staff on merit.

Attendee 16

Challenges

- Political dependants like finance making decisions on technical issues that they have no technical ability to make.
- Lack of motivated staff: they see their appointment only as a job, and are not passionate about their work.
- No companion within the sector. Government entities are not measured regarding their performance/cost to operate/quality performance.

Proposed Solutions/Supportive Actions

- Competent staff. Better procurement policies. Managers should not be influenced politically.
- Staff employed must “want” to work for the company, and should therefore be passionate about their influence.

Attendee 17

Challenges

- Not able to draw up adequate asset registers for asset management, budgeting planned maintenance.

Proposed Solutions/Supportive Actions

- Procurement for low cost/high impact issues is very difficult to deal with. Supply chain management policy of municipality requires an open quotation for 7 days for purchases over R30k by open tender for more than R200k.

Attendee 18

Challenges

- Quality water services – this is considered not important enough or valued.
- Community/customer satisfaction to be the focus.

Proposed Solutions/Supportive Actions

- Leadership development into water services.
- Review delivery mechanisms, and find appropriate solutions. Do evaluations.

6.1.7 Blue Drop Green Drop in the Eastern Cape

Introduction

The Blue Drop performance of water services institutions in this province varied from surprisingly well to expectedly poor, but it was encouraging to note that two rural schemes obtained Blue Drop Status. Both main centres (Nelson Mandela and Buffalo City) did not obtain Blue Drop status but is progressing well in that direction if identified shortcomings will receive the required attention. However the water quality supplied by both these systems is well within the limits of the national standard.

The challenges in most of rural areas are of real concern noting the failures of the past that have been linked with the diarrhoea outbreaks. This means that the responsible authorities must give urgent attention to improve monitoring and disinfection (basic treatment) of rural water supplies in order to minimise the risk of further bacteriological failure.

One of the immediate concerns of the Department is the actual quality of water in Jansenville and Klipplaat under jurisdiction of Ikwezi Local Municipality, since recurring bacteriological failures have been noted.

Water Services Authorities that failed (or was unable) to present the Department with the required information for Blue Drop Certification assessment, are:

- Alfred Nzo District Municipality,
- Baviaans Local Municipality,
- Ikwezi Local Municipality,
- Kouga Local Municipality,
- Sundays River Local Municipality, and the

- Cacadu District Municipal Area.

The failure of these Water Services Authorities to adhere to the requirements of the Blue Drop Certification Programme necessitates that all systems under the jurisdiction of these Authorities be subjected to strict regulatory audits, publication of findings to follow. The Department will not use information available to them to assure the public in this report of the confidence it has in the DWQ managing abilities of these municipalities, all WSAs not assessed / audited will be classified with a Zero Blue Drop score.

At the moment the Department is unable to assure the public of the confidence it has in the DWQ managing abilities of these municipalities, since all of them are classified with Zero Blue Drop scores.

Blue Drop Certification 2009 Summary (Eastern Cape)

Percentage of Water Service Authorities assessed:	11 of 17 = **65%**
Provincial Average Blue Drop Score:	**54.33%** (assessed)
Provincial Average DWQ Compliance:	**91.6%**

A report on the Blue Drop scores that were obtained by the municipalities in the Eastern Cape appears in ***Appendix A***.

6.2 Western Cape

The first piloting meeting of the TAC in the Western Cape was held on 6 March 2009 at the DWA Western Cape Regional Office in Bellville. The following role players and stake-holders were present at the meeting:

Ms Melissa Lintnaar-Strauss	DWAF Western Cape
Mr Derek Verrier	DBSA
Mr Leslie Whiteman	DBSA, DWAF Western Cape
Ms Wilna Klopper	DWAF Western Cape
Ms Natasha Davis	DWAF Western Cape
Mr John Roberts	DWAF Western Cape
Mr Patrick van Coller	DWAF Western Cape
Mr Tony Brutus	DWAF Western Cape
Mr Larry Ferguson	DWAF Western Cape
Ms Samantha Saayman	DWAF Western Cape
Mr Warren Dreyer	DWAF Western Cape
Mr Carlo Abrahams	DWAF Western Cape
Ms Zanele Mupariwa	DWAF Western Cape

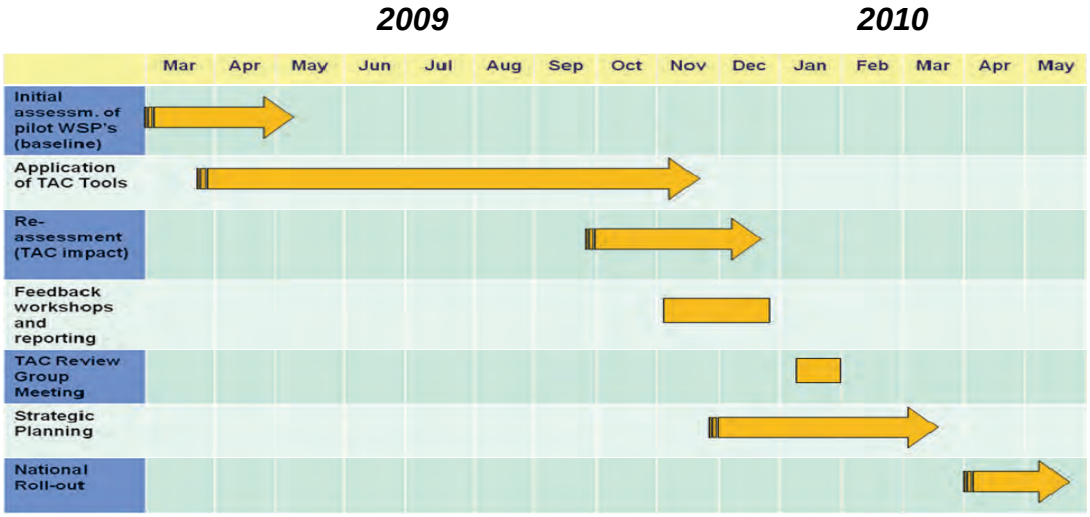
Mr SM Mabate	DWAF Western Cape
Mr Bele Busiswa	DWAF Western Cape
Mr Gareth McConkey	Jantech
Mr Melvin Philips	Cape Peninsula University of Technology
Dr Jac Wilsenach	CSIR
Dr Gerhard Offringa	GO Water Management
Mr Dennis Mtsweni	DWAF, Pretoria
Mr Chris Swartz	Technical Assistance Centre (TAC) (minutes)

Apologies were received from:

Mr Simphiwe Mashicila	DWAF Western Cape
Dr Valerie Naidoo	Water Research Commission (WRC)
Dr Jo Burgess	WRC
Mr Mike Marler	Development Bank of Southern Africa (DBSA)
Mr Godfrey Mwiinga	DBSA

An overview of the establishment of the TAC, the aims, objectives and structure of the Centre, its activities and functions, proposed implementation plan and action plans, overview of TAC Tools, and list of role players in the province were given in a presentation by the TAC coordinator. It included an overview of progress to date, and the work plan for 2009. In particular, the focus during the presentation was on application of the Centre's activities and facilities to municipalities in the Western Cape. The presentation was forwarded to all the attendees of the meeting.

The TAC Implementation Plan was presented to the meeting. It appeared in the first Close-Out Report to DWA, but are provided again here to contextualize the report.



6.2.1 Selection of Pilot Municipalities in the Western Cape

The TAC Coordinator proposed at the meeting five WSPs in the Western Cape as pilot municipalities for the TAC, and asked the meeting for their comments and to propose other

WSPs, where applicable. Considerable (very valuable) discussion ensued, after which consensus was reached on the identified plants, which subsequently form the WSPs whose treatment plants will be assessed, TAC functions applied and re-assessed to determine the impact of the TAC on ailing water and wastewater treatment plants.

The pilot WSPs and their towns are as follows:

a.	**Kannaland Local Municipality (Eden District Municipality)**
	Ladismith, Zoar, Calitzdorp, Vanwyksdorp
b.	**Cederberg Local Municipality (West Coast District Municipality)**
	Citrusdal, Clanwilliam, Graafwater, Lambertsbaai, Elandsbaai
c.	**Witzenberg Local Municipality (Cape Winelands DM)**
	Ceres, Tulbagh, Wolseley, Prince Alfred Hamlet, Op-die-Berg
d.	**Prince Albert Local Municipality (Central Karoo District Municipality)**
	Prince Albert, Klaarstroom, Leeugamka
e.	**Swellendam Local Municipality (Overberg District Municipality)**
	Swellendam, Suurbraak, Barrydale, Buffeljagsrivier

6.2.2 Baseline Assessments: Western Cape

Baseline assessment of the pilot WSP treatment plants (water and wastewater) comprised visits to the treatment plants and evaluating the compliance, performance, condition, staffing, monitoring programmes (process control and quality control), asset management, blue drop/green drop aspects, and training needs.

Visits to and baseline assessments of the pilot municipalities were performed during the period March to June 2009, and information on the condition and process controller information captured on baseline assessment forms. The information was also supplemented and checked with existing information from earlier DLG&H assessments that were performed in the province.

Permission has also been obtained from the five pilot municipalities in the Western Cape to obtain access to the information contained in the Municipal Assistant™ Information Management programme, and viewers were purchased for these municipalities. Information that is available from this programme consists of lists of assets with condition, age and purchase price (estimated where not available), personnel information and water quality data.

Based on the visits to the pilot municipalities and discussions with technical and engineering personnel, a list was drawn up of all the challenges and needs at each of these municipalities, which should be addressed in order to improve the performance and

condition of the treatment plants. These needs and challenges were prioritised as far as possible, and are presented in Section 6 of the report.

6.2.3 TAC support functions in the Western Cape

The second step in the TAC implementation plan in the pilot provinces entailed the application of the Centre resources, facilities and tools to improve the overall performance of the treatment plants of the identified WSPs. This comprised visits to the various treatment plants and providing training on the operation and maintenance of the water and wastewater treatment plants, in particular on implementation of the TAC tools to improve the compliance and condition of the plants.

The TAC tools that were applied at the treatment plants consisted of O&M guideline documents, operational spreadsheets to be implemented at the water treatment plants, assessment guides, diagnostic tools, procedures for drawing up water safety plans, etc. These tools were presented to all the municipalities at the TAC workshop that was presented at Slanghoek in May 2009. During earlier workshops in February Small Water Treatment System Tool Boxes were presented to the municipalities. Additional Tool Boxes were also provided to supervisors of the pilot municipalities.

An important aspect that was addressed during the implementation phase was the assessment of operating personnel (human resources) capacity, availability and training needs for the treatment plants. Based on this, assistance will be given to the WSPs in drafting career path plans for the operating personnel, and presenting this to the municipal manager in the form of reports and recommendations for training. This assistance with training to process controllers was further pursued in the province through the formation of a Western Cape Water Sector Training Forum, with the objective of coordinating all the water and wastewater training initiatives in the province. On request by the Department of Local Government and Housing (DLG&H) of the Western Cape Provincial Government, a proposal was drawn up for preparing Capacity Building Manuals for Municipal Water and Wastewater Treatment in the Western Cape. Two study sites were identified, viz. the Withoogte Water Treatment Plant (but later changed to the Stellenbosch Water Treatment Plant) for the capacity building [training] case study in the municipal drinking water treatment field, and the Paarl Wastewater Treatment Plant, for capacity building case study in municipal wastewater treatment. The proceedings of and action points arising from these Western Cape Water Sector Training Forum meetings are further discussed in Section 7.

At the Training Forum meetings, the importance of coordinating the activities of the TAC with other initiatives for intervention, upgrading, support or training in the province was emphasised.

Development Bank of Southern Africa

A presentation on the TAC was given to the Western Cape DBSA deployees to local authorities' monthly meeting that was held in Stellenbosch on 21 May 2009. The specific aim was to inform the Siyenza Manje engineers in the Western Cape of the support role in the water field provided by the TAC, and request them to participate in carrying out these functions by liaising closely with the TAC personnel. Because these Siyenza Manje engineers are deployed at those municipalities where most challenges are experienced, they can play a major role in facilitating the communication between the municipalities, the TAC and DWA.

The engineers undertook to provide this support. This is also being pursued through requests by the TAC to the DBSA main office in Midrand.

Provincial Government of the Western Cape

Presentations on the TAC and in particular the pilot project being done in the Western Cape were presented at two monthly Municipal Infrastructure Grant (MIG) meetings that were held in Worcester on 21 July and 24 August 2009. These presentations were made on request of and on behalf of the DWA Western Cape regional office. The presentations also focused on Blue Drop and Green Drop requirements from Western Cape WSPs, and how the TAC can assist the municipalities in meeting the criteria and preparing for the next assessments in February 2009.

The MIG meetings are attended by all the Technical Directors (Town Engineers) of all the municipalities, as well as the DBSA personnel deployed to those LMs and DM, where applicable (Siyenza Manje programme). Discussions after the presentations centered around the sepcific ways in which the TAC will assist the water and wastewater treatment plants, what the Water Safety Plans entails, how the funding mechanisms of the TAC works, and, in much detail, what the training opportunities are for process controllers in the province. The TAC Coordinator pointed out that a number of initiatives are currently being pursued in the Western Cape to facilitate the different levels of training, and that the TAC has taken the initiative (on request from the DWA Western Cape regional office) to establish a Western Cape Water Training Forum that will meet on a monthly basis to discuss the coordination of training initiatives.

During the August meeting, the DWA Deputy Director: Water Sector Support Western Cape Mr Simphiwe Mashicila indicated that the DWA Western Cape will also be putting out tenders within the next two months for Skills Development Training with funds made available by the LGSETA. An amount of R 18 million has been made available for water sector training over the next three years, of which R 3 million has been allocated for the

current financial year (2009/2010). The exact nature of the tenders and appointments were not yet known at that stage.

6.2.4 Western Cape TAC Working Group

It was proposed that a Western Cape TAC Working Group be established that will plan, implement, monitor and assess the activities of the TAC in the Western Cape, and that this Working Group will meet on a regular basis.

The following persons were provisionally nominated for the Western Cape Working Group:

Chris Swartz	Gerhard Offringa
Wilna Kloppers	Melissa Lintnaar-Strauss
Natasha Davis	Leslie Whiteman
Larry Ferguson	Zanele Mupariwa
Samantha Saayman	Warren Dreyer
Carlo Abrahams	

6.2.5 Overview of TAC Western Cape pilot municipalities: Wastewater and Water Treatment

An overview of the status of pilot municipalities in the Western Cape is provided in Appendix L on the enclosed CD.

6.2.6 Murraysburg DMA

Late in 2009, a request was received from Dr Marlene van der Merwe-Botha to provide support to the Murraysburg DMA (under jurisdiction of the Central Karoo District Municipality) due to perceived problems with water supply and wastewater treatment in the town.

Visits were therefore paid to the Murraysburg DMA Manager in Beaufort West, Mr Jannie Neethling, during which time the aims and objectives of the TAC were explained, and discussions held on how the TAC could assist the DMA to improve their service delivery and prepare for the Blue Drop assessments.

All relevant information was supplied to Mr Neethling, and during subsequent visits the criteria of the Blue Drop were workshopped with detailed explanation of the requirements per criteria. Discussions were also held on drawing up the Water Safety and Security Plan (WSSP) for Murraysburg.

The WSSP were drawn up for Murraysburg with direct inputs by Mr Neethling and his colleagues, and provided to the Blue Drop Asssesment team in George.

Further assistance to Murraysburg, which also comprises the implementation of the recommendations made in the WSSP, is in progress.

6.2.7 Overall challenges in the Western Cape

Although the level of service delivery in the Western Cape is higher than in the other provinces, serious challenges nonetheless exist in the province with municipal water supply and sanitation (water and wastewater treatment services), especially at the smaller municipalities and the rural and remote towns. Even at some of the larger municipalities, numerous problems occur, which is often not only technically related, but in many instances may be traced back to poor management. It is the mission of the TAC not to assist primarily with addressing the symptoms of the problems that are encountered, but with the underlying causes of the problems, shortcomings and challenges.

The most serious problem remains lack of capacity. This comprises lack of operational capacity (longer term problems are the limited number of persons interested in making water treatment process controller a career), lack of capacity to provide maintenance support and implement preventative maintenance programmes, lack of management capabilities and, especially, accountability, and also lack of political will to provide the necessary financial and moral support to the water sections within the municipalities.

Many of the problems that were encountered during the baseline assessments in the pilot municipalities are generic in nature and applies to many of the water and wastewater treatment plants, and/or the municipalities in general. A number of the more important ones are listed below:

Water Treatment and Wastewater Treatment:

Flow measurement

No inflow measurement is performed (or outflow in the case of wastewater treatment plants), which makes it impossible to loadings (hydraulic and organic for WWTWs), calculate chemical dosages for pH adjustment, coagulation and disinfection, and recycle ratios. Overdosing or underdosing is therefore common at many water treatment plants, while at wastewater treatment plants overloading often causes problems.

Internal Monitoring

There is a serious lack of proper treatment plant and individual unit process monitoring; not even basic monitoring. Record-keeping is done on sheets of paper or is non-existent.

Important data such as chemical dosages, filtration rates (water), sludge concentrations and dissolved oxygen levels (wastewater) and flow rates, is mostly not available. Process controllers rely on their experience and the instructions given to them by suppliers in managing the plants and its processes.

The lack of laboratory facilities on-site at treatment plants also has serious consequences. This implies that basic, routine tests (for example, pH, DO, and chlorine residuals) cannot be performed, which are necessary for the optimum operation of the plant for the production of compliant product water or wastewater.

Process control and quality control

Poor control of chemical dosages, DO levels and the chlorination process remain a cause of serious concern. Many process controllers still do not know what the purpose of the dosing of chlorine is, or what the consequence is of not dosing the disinfectant to the final water, even after attending courses or on-the-job training.

Maintenance

One of the most important underlying causes of poor infrastructure condition and breakdowns is the lack of proper maintenance programs (preventative maintenance is seldom conducted). It also leads to poor quality water or final effluent being produced when equipment fails. The reason for this is poor financial management from management (using maintenance funds for other purposes). Repairs and replacement of worn and defective parts and equipment are, in large, not done in on time.

Unskilled operating personnel

Personnel expected to operate the treatment plants are in many instances untrained and unskilled, and simply shown which operational practices to perform by their colleagues on the treatment plant. This leads to situations where dosages (coagulant and/or disinfectant) are not controlled correctly (or at all!), leading to poor quality final water leaving the treatment plant to the consumers. The same applies for the control of sludge concentrations (MLSS) and DO levels on sewage treatment plants. Training is not always possible due to the low educational qualifications and movement of staff between departments.

Supervisors

The supervisors often have little or no training in water treatment. This results in poor control of the operating staff.

Budgeting

Poor or inadequate budgeting for the operation and maintenance of treatment plants is responsible for a significant proportion of incidences of poor plant performances. Money budgeted for important aspects in water and wastewater treatment, such as for chemicals

and in particular, chlorine, should not be allowed to be used for any other purpose. The underlying reasons for these problems are poor budget estimations and forecasts.

Supervision

Poor supervision is done at the treatment plants (generally), especially at the more remote plants in the small towns. The plants are consequently not operated and managed properly, resulting in poor performance and poor operational practices (not being on the treatment plant at all times; allowing unauthorised persons on the treatment plant).

Communication

Poor communication is one of the major problems in the water and wastewater treatment field at municipalities. It has an adverse effect on plant operation and ultimately plant performance. Supervisors do not communicate properly with the process controllers, and do not listen to the problems that the PCs communicate to them. Poor communication invariably leads to poor attitude, and is very counter-productive.

Availability of treatment equipment

Treatment and monitoring equipment which is required for even basic tasks are not always available, making the task of the process controllers extremely difficult. In other cases, where the required equipment is available, the process controllers and general workers do not know how to operate it, as they have never received the necessary training for this purpose.

Availability of chemicals

A common problem remains to be the fact that chemicals are not ordered on time, which results in shortages at the treatment plant as well as performing treatment without chemicals (which is a major health concern in the case of chlorine gas).

Housekeeping

Even general housekeeping, tidiness and cleanliness are not practised, which directly points to poor operational practices as well. There is little pride taken by some operators resulting in the plants being unkempt.

Safety measures

In general, security and safety at most of the plants is poor. The regular (monthly) safety meetings appear to be not in place anymore. This leads to reluctance from treatment plant personnel to perform certain tasks in which these items are essential (*e.g.* mouth mask and gloves when handling lime powder).

Other problems/shortcomings:

- breakdowns hampered by procurement delays.
- no operational manuals or design information available
- high staff turnover; lack of laboratory facilities
- plant overloaded and upgrading not forthcoming
- design inadequacies are not improved
- not sufficient corrosion protection

6.2.8 Blue Drop Green Drop in the Western Cape

Introduction

Generally the municipalities in the Western Cape complied rather well with the requirements for the Blue Drop Certification programme during assessments and audits. However, the few low scoring authorities will be placed under close surveillance with the objective of ensuring improvement.

Water Services Authorities that failed (or was unable) to present the Department with the required information for Blue Drop Certification assessment, are:

- Hessequa Local Municipality,
- Oudtshoorn Local Municipality, and
- Swellendam Local Municipality

The failure of these Water Services Authorities to adhere to the requirements of the Blue Drop Certification Programme necessitates that all systems under the jurisdiction of these Authorities be subjected to strict regulatory audits, publication of findings to follow. The Department will not use information available to them to assure the public in this report of the confidence it has in the DWQ managing abilities of these municipalities, all WSAs not assessed / audited will be classified with a Zero Blue Drop score.

At the moment the Department is unable to assure the public of the confidence it has in the DWQ managing abilities of these municipalities, since all of them are classified with Zero Blue Drop scores.

Blue Drop Certification 2009 Summary (Western Cape)

Percentage of Water Service Authorities assessed: 22 of 30 = **90.64%**

Provincial Average Blue Drop Score: **60.32%**

Provincial Average DWQ Compliance: **91%**

7. CONCLUSIONS

One of the main challenges of the TAC to date has been the lack of support by other initiatives for the Centre. It was especially difficult for the TAC to establish where it fits in with the overall support strategies in the water sector, and consequently how to coordinate its activities to achieve most value for the municipalities, where the needs for technical support are huge. This lack of coordination has made planning of the TAC support activities challenging.

The role of the TAC in assisting with addressing problems at municipal water and wastewater treatment plants has not been promoted by the authorities, which would have resulted in integration of the Centre with other support initiatives in the water sector, and ultimately more effectively addressing the challenges at specific high-risk areas in the country. This includes lack of support of assistance offered by the TAC in helping municipalities to prepare for Blue Drop assessments.

A specific negative aspect resulting from the above was that the municipalities do not perceive the TAC as being a support initiative endorsed by the authorities (due to the lack of visible support in communications), but rather a drive by a private enterprise (perhaps seen as receiving low-level support by the authorities). As such, widespread buy-in by the municipalities and appropriate role players in the municipalities could not be accomplished. As a result of lack of demonstrated acceptance by DWA and DBSA, the TAC did not have the perceived “legitimacy” that it needed to ensure buy-in from the municipalities.

The main focus of the TAC during Phases 2 and 3 has been on marketing of the services of the Centre and to obtain requests for assistance from the municipalities in the two provinces, which would assist in assisting those treatment plants in greatest need. Activities of the Centre were also aimed at pro-actively addressing the needs at the pilot municipalities (as well as other municipalities where the need for assistance is apparent).

Whilst the marketing of the TAC has reached all the targeted audience in the Eastern Cape and the Western Cape (DWA Regions, Provincial Government, DBSA, WSAs and WSPs) and is considered to be successful in reaching its objectives, the addressing of problems that were identified at the water and wastewater treatment plants were seriously hampered by the fact that the DWA funding allocated to the TAC was not available for spending from early on in the financial year, and that no specific support projects for the highest priority cases could therefore be undertaken. This was in particular a major drawback for the TAC work in Ukhahlamba District Municipality, where specific plans were drawn up for the Senqu LM, but could not commence because the DWA funding was not accessible.

The funding only became available again in November 2009, after which meetings were set up in early December with DWA National and the regional offices of the two provinces to discuss action

plans for the respective provinces. Further meetings were planned for January 2010 after the holiday break, but due to unavailability of DWA Eastern Cape personnel, the meeting in East London was rescheduled to early February, to a date to be advised by DWA WSSD. During January, the TAC was involved in planning meetings of assessments of the Berg River catchment area wastewater treatment plants, the assessments being carried out by the UK/SA cooperation initiative *Partners for Water and Sanitation (PAWS)*. Discussions were held with the two specialist engineers from Anglian Water on how the TAC could continue with implementation of the technical needs identified during the assessments by PAWS for the municipalities involved (Drakenstein; Stellenbosch; Berg River, Witzenberg and Saldanha). Proposed activities by the TAC were presented and discussed at the feedback meeting during the end of January, and action plans presented. These action plans were also presented to the TAC Leadership Group at a meeting in Pretoria during the following week.

During the period November 2009 to February 2010, the TAC also focused on providing assistance to municipalities on preparing for the Blue Drop assessments in February. This was done not only for the pilot municipalities in the Western Cape, but also for other municipalities in Western Cape, and notably also for the Murraysburg DMA. In the Eastern Cape this Blue Drop assistance to WSAs and WSPs were provided by Dr Machiel Steynberg.

Further work in progress and piloting actions

During January 2010, while the TAC was engaged in providing assistance with Blue Drop preparations in the two provinces, Work Plans were drawn up by the TAC to address the needs in the pilot municipalities on a priority basis. In the Eastern Cape, Dr Steynberg has already worked in the Ukhahlamba District Municipality for a considerable period of time, and is therefore well familiar with the technical needs at the water and wastewater treatment plants under jurisdiction of the WSA and WSPs, notably the Senqu Local Municipality. As such, the plans for Lady Grey were drawn up to address the highest priorities for technical assistance, for which it was considered that a full analysis of the town's water system would be required as basis for any subsequent upgrading and refurbishments. At the same time, the drawing up of an asset register to facilitate development of a proper Asset Management Plan was considered a high priority for the water supply and wastewater treatment systems in Senqu. Ukhahlamba District Municipality had already acquired a licence for the Municipal Assistant information management system, and it was proposed that the TAC facilitate the process of populating the system by WAM Technology (especially on asset register items), while at the same time providing training for the WSA and WSP personnel that will act as champions for this powerful program, and will be responsible for the management of the system and updating of information.

Also in the Eastern Cape, it was pointed out by the DWA Regional Office that the Mthatha Wastewater Treatment Plant was in dire need of intervention and upgrading, and the TAC was requested to provide technical assistance at this WSP as may be required. The KDM Local

Municipality is also one of the TAC's pilot municipalities in the Eastern Cape (selected jointly by DWA Eastern Cape and Amatola Water during the first TAC meeting in the province in 2009), and therefore considered a high priority. As a start for the work during the remainder of the 2009/2010 financial year, it was proposed that the upgrading activities at this plant be investigated and all available information be consolidated, especially in view of the fact that a number of different departments and institutions were involved in the interventions. This would allow the TAC to make meaningful technical contributions during the upgrading process, rather than embarking on uncoordinated assistance. The potential assistance of the TAC in drawing up monitoring programs and facilitation of training were amongst the assistance spheres considered and proposed. See ***Appendix T***.

In the Western Cape, discussions were held with DWA Western Cape during and after the PAWS feedback meeting on how the TAC could assist with addressing not only the needs that were identified during PAWS assessment fortnight, but also to wastewater treatment plants in other catchment areas, notably the Olifant-Doorns and Breede River Catchment Areas. A list of plants to be addressed on a priority basis by the TAC was therefore drawn up by Ms Wilna Kloppers and her colleagues, which were included in the Work Plan for 2009/2010. To fast track this work, professional engineers were contracted by the TAC to undertake the assessments and provide assessment reports on short notice, to be completed within the 2009/2010 financial year. Assistance with improving the compliance of water treatment plants in the Western Cape was based on information exchange with DWA personnel during the Blue Drop Assessment sessions that were held in George and Cape Town early in February, which provided a deeper insight into the shortcomings and lack of capacity at many of the municipalities, especially those with more rural characteristics. Again, the assistance was planned to be provided on a priority basis, based on the knowledge of the TAC coordinator of the treatment plants and municipalities within the province, and through discussions with technical personnel (technicians and supervisors).

Unfortunately, DWA Water Services Sector Development indicated that the financial systems of the Department requires a long period for processing of end of the financial year project finance reconciliations, and that no further new work should be undertaken this year. This includes all the work that was proposed by the TAC coordinators, which they felt confident would be achievable, given the professional capabilities of the consultants contracted to perform the assessment and information gathering in a fast-track mode.

It was therefore proposed that, in concluding the activities of the TAC for Phases 2 and 3, that the proposed intervention work and technical support contained in the Work Plan be undertaken as a high priority early in the new financial year, so as to maintain the momentum of these initiatives and the cooperation and goodwill of all the role players, municipal managers and personnel, and consultants that are ready to perform the work.

Should any other support initiatives be forthcoming from DWA or DBSA, the TAC will be available to provide guidance in view of its experience and insights in this regard.

The proposed Work Plan that was drawn up for the first quarter of the new DWA financial year (i.e April-June 2010), is attached in ***Appendix U***.

8. RECOMMENDATIONS

At the end of the first year of the piloting of the Technical Assistance Centre, the following recommendations are made towards further strategic planning for future implementation of support services offered by the Centre:

8.1 The original concept of and strategic planning for the TAC focused on the support for small water treatment systems, which arose from various needs assessments that were carried out at small treatment plants in the country (Swartz, Momba and others). During the formative stages of the Centre, requests were made that small wastewater treatment plants also be included in the proposed support services of the TAC. Still later, it was requested that the focus should not only be on small treatment plants, but that it should also include the medium-sized to larger plants, as these plants in many instances also experienced the same problems as the small treatment plants. The scope of work therefore expanded considerably during the stages of initial establishment of the Centre, at which time discussions were held regarding the structure, aims and proposed activities.

Coupled with the lack of support and guidance from other technical and non-technical assistance initiatives in the sector, it became challenging to manage the Centre as a private sector initiative, which is largely dependent on the inputs, human resources and logistical support from, especially, the authorities and their regional offices. To ensure successful operation and management of a technical assistance centre with this scope of work therefore requires direct managerial inputs and guidance on an on-going basis by the main funding authority (in this case DWA), to allow consistent alignment within their strategic planning of support services in the water sector.

It is consequently recommended that a detailed strategic planning session be arranged to which all the role-players and stake-holders in the municipal water and wastewater treatment support sector are invited, to formulate strategic plans for coordinated overall support services throughout the country, and in particular the role and scope of work of the Technical Assistance Centre. The strategic plan should be a 5-year plan.

8.2 There appear to be many support services and technical assistance to WSAs and WSPs in the Eastern Cape, but these initiatives have to date not been coordinated properly and there is no coherence in the project activities and intervention actions in most instances.

Again, as regulating authority, DWA should fulfill this role of coordinating the support efforts by forming task groups and fora, and make sure that all the role players in the geographical area (and nationally from the stake-holder side) are invited to these meetings and information sessions. This will allow all the parties to be aware of the status, progress and planning for intervention and assistance to the municipalities, and also allow them the opportunity to make suggestions and offer assistance where appropriate.

It is therefore recommended that the DWA in the Eastern Cape take the leading role of coordinating all support services and interventions, and coordinate and facilitate all the inputs by the supporting group, of which the Technical Assistance Centre is one.

8.3 For the strategic planning session eluded to in 8.1 above, a full-day workshop is proposed. This workshop should be hosted by the DBSA (as part of their water sector strategy), and all the role-players and stake-holders be invited. The presence of the decision-makers and strategic management leaders of DWA at this workshop will be crucial towards ensuring successful and sustainable intervention and turn-around strategies for water and wastewater treatment plants in the country.

8.4 The aims, objectives, deliverables, products, time schedules and priorities should be drawn up by the main funding organisation (DWA, DBSA, SALGA or other), who should also perform the project management to ensure that the TAC is managed according to the required aims and time schedules of the project. Attention should be given to efficient budgeting, communication and shaping it to provide unique services in the water sector. The TAC should operate on a different paradigm than any of the other existing support initiatives.

8.5 The strategic plan should contain intervention plans on a regional basis in the prioritised regions. These intervention projects should then be set out on tender for companies/consulting engineers/institutions to tender on for carrying out the interventions within the scope of work/terms of reference. All funding should be from a central fund managed by a suitably appointed institution.

8.6 All pro-active technical assistance actions should be carried as follows:

ASSESSMENT

(assess technical and managerial challenges)

(use the Diagnostic Tool in the TAC Toolbox)

PRIORITIZATION AND RESEARCH

(prioritize challenges and research critical issues)

PLANNING AND BUDGETING

(estimate resources needed to meet challenges and budget/rate inputs)

(use the TAC Toolbox)

IMPLEMENTATION

(provide support for implementation of needed changes)

8.7 The field of providing support initiatives and interventions is a highly competitive market, and the treatment plants requiring the assistance should always be the highest priority when planning and undertaking support actions. More working together will provide more solutions and value for the persons experiencing the problems.

Important:

"Truly troubled and distressed systems are the responsibility of the DWA and not the focus of the TAC".

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