

**SUPPORT TO THE CONTINUATION OF THE WATER RECONCILIATION STRATEGY
FOR THE WESTERN CAPE WATER SUPPLY SYSTEM**

ADMINISTRATIVE AND TECHNICAL SUPPORT GROUP MEETING #5

DATE: 4 SEPTEMBER 2014 TIME: 8H30 – 13H30
VENUE: WORLEYPARSONS, BELLVILLE – BOARDROOM
CHAIR: ISA THOMPSON, DWS D:NWP

ATTENDEES:

NAME		AFFILIATION	
Isa Thompson	IT	DWS D:NWRP	Study Manager
Anneke Schreuder	ASch	DWS RO Bellville	Berg WMA
Derril Daniels	DD	DWS RO Bellville	Berg WMA
Neels du Buisson	NdB	DWS RO Bellville	Berg WMA
Simphiwe Mashicila	SM	DWS RO Bellville	Programme Manager RBIG
Wilna Kloppers	WK	DWS RO Bellville	Resource Protection
Nicolette Vermaak	VM	DWS RO Bellville	Groundwater
Mike Smart	MS	DWS RO Bellville	Hydrogeology
Ziyanda Ncoko	ZN	DWS RO Bellville	
Elaine Ontong	EO	DWS RO Bellville	
Barry Wood	BW	City of Cape Town	Bulk Water
Paul Rhode	PR	City of Cape Town	Bulk Water
Zolile Basholo	ZB	City of Cape Town	WC/WDM
Collin Mubadiro	CM	City of Cape Town	WC/WDM
Rowena Hay	RH	Umvoto Africa	Study Director
Kornelius Riemann	KR	Umvoto Africa	Study Leader
Jaco Human	JH	Worley Parsons	Team Leader
Gerrit van Zyl	GvZ	Consultant	PSP team member
Kate Robey	KaR	Council of Geoscience	
Gideon Tredoux	GT	CSIR/Council of Geoscience	

APOLOGIES:

NAME		AFFILIATION	
Fanus Fourie	FF	DWS D:WRPS	Groundwater
Bertrand van Zyl	BvZ	DWS D:NWRI	
Thembi Masilela	TM	DWS RO Bellville	D: Water Sector Support
Ashia Petersen	AP	DWS RO Bellville	
Penina Sihlali	PS	DWS RO Bellville	RBIG
Zolile Simawo	ZS	DWS RO Bellville	
Catherine Bill	CB	D:EA&DP	Planning

MINUTES

ITEM	DETAIL	ACTION	TIME
1	Welcome and Introduction IT welcomed everybody to the fifth ATSG meeting.		
2	Attendance and Apologies		
2.1	Attendance and Apologies The attendance at the meeting, as listed above, was noted in the attendance register. Apologies were noted (see above). The attendance register is attached (Appendix A).		
3	Minutes of ATSG #4		
3.1	The minutes of the ATSG meeting #4 of 19 May 2014 were accepted with the following change: - Attendance register: Position of Neels du Buisson is DWA RO Bellville, Berg WMA. IT noted that the Department of Water Affairs is now called Department of Water and Sanitation (DWS). She requested that the affiliations of all officials are changed on the distribution list and the forthcoming minutes.	PSP	
3.2	IT signed the approved minutes. A scanned version of the signed minutes will be made available for the project website. Matters arising All matters arising from the minutes have been addressed or will be covered under the agenda items.	PSP	Sept '14
4	Draft Status Report KR presented an overview of the current situation and trends with respect to water consumption from the WCWSS (see attached notes). KR confirmed that the current version of the Status Report distributed to ATSG members prior to the meeting did include the available data on domestic and industrial use. The discussion confirmed that there was no double accounting in the West Coast DM usage figures, as the consumption from Withoogte WTW and from Swartland WTW are recorded separately. ASch noted that Piketberg wish to increase their supply (currently only use 1 million m ³ /a).		

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	<p>General discussion included whether estuarine requirements and downstream irrigators or domestic use are to be included in the system volumes. For example in the Lower Berg area, the estuarine requirements are accounted for in the Reserve for the Berg River Dam, while irrigation requirements downstream of the Voëlvlei Dam are included in the agricultural allocation. It appears that the irrigation usage downstream of Theewaterskloof Dam is included in the domestic allocations. This needs to be clarified with Aurecon.</p> <p>It was decided that the water abstraction from the Berg River for Piketberg, Paarl and Wellington should be included in the total usage from the system in order to assess which users impact on the system. The water supply to Paarl and Wellington from the Wemmershoek Dam is already included as part of the CCT water requirements.</p> <p>KR will liaise with Anton Sparks of Aurecon, who is updating the WRYM, to establish whether the 2.1 million m³/a that Paarl has access to from the Berg River is included in the model or not and what difference it makes.</p> <p>IT noted that all dams built prior to the Berg Water Project did not include provision for the Reserve in the yield analysis and in their operating rules. However, in future this would need to be the case; e.g. for the Voëlvlei Augmentation Scheme. GvZ noted that IFR and Reserve releases are often utilised by the agricultural sector when in need.</p> <p>More specific discussion included anticipated 2014/15 summer requirement and supply; agricultural use and water use efficiency, potential increased requirements in the Saldanha area, impact of WC WDM success in CCT and general comments on Water Requirement Scenarios.</p> <p>Requirement and supply</p> <p>PR noted that the summer water requirement is declining (see WC WDM below). KR noted that it appears from the water balance data that the CCT's supply from its own sources dropped from about 14 million m³/a to 8 million m³/a. He especially noted a significant decrease in usage from the Atlantis Aquifer. Since the deficit would need to be supplied from Voëlvlei, the actual reduction in water requirement from the WCWSS between 2012/13 and 2014/15 could have been greater than reflected. PR undertook to check the figures and deconstruct them into individual sources especially from CCT own sources. IT noted that the flexibility that the CCT has in the reticulation system to change the supply source is a significant contribution to resilience that other cities/towns often do not have.</p> <p>In general predictions re available water require accurate weather data and climate modelling. The general concern was expressed about the lack of sufficient monitoring for an Early Warning System (EWS) for climate change and impacts thereof. This concern extended to the deterioration in the SAWS monitoring stations which state of repair is now reduced to the 1920 status of only about 1000 active rainfall monitoring stations in good repair viz. reduced by more than half.</p> <p>Two overriding issues are the lack of weather stations in high mountain catchments of particular relevance to the Western Cape and that the SAWS predictive capacity caters for the regional scale</p>	<p>JH</p> <p>KR</p> <p>PR</p>	

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	<p>rather than the local dam catchment scale.</p> <p>It was agreed to undertake a trend-analysis of previous rainfall records, including DWS weather stations at their dams, ARC weather stations of the agricultural community, CCT weather stations from the TMG Aquifer monitoring, and others, to inform a possible update of the WRYM with respect to the impact of climate change.</p> <p>Agricultural Use and Water Use Efficiency</p> <p>The DWS WC Hydro Section (Frans Mouski) is considering constructing a gauging weir on the Lower Berg River to facilitate establishing a water balance with respect to the uptake of releases by the agricultural sector. A PSP will soon be appointed to undertake the EIA.</p> <p>New draft regulations will ensure that all agricultural use is monitored especially if abstracted directly from a river. This could be achieved via telemetric relay of when pumps are switched on/off (capacity of pumps will allow calculation of flows and volumes). This will further support decisions regarding timing of dam releases to minimise unnecessary loss to the ocean and to improve the management of releases for IFR and the Reserve.</p> <p>KR noted that systems for measuring water use efficiency in agriculture are currently championed by Paul Herbst/Jannie Fourie (DWS D:WUE); the improvement in monitoring and timing of releases will support this; as will the planned filling in of water use efficiency accounting reports by the WUAs and irrigation boards. The team got feedback from the Winelands WUA, indicating very low losses of only 2%, and from the Zonderend WUA, which assumed a 25% loss between supply and on-field use, but do not have measurements to support this.</p> <p>WCDM</p> <p>The City has a successful record in implementing WC/WDM so much so that it is negatively impacting revenue. There is a long term change reflected in declining summer water usage. IT suggested that it will be increasingly important to increase the number of people who pay for water to offset the loss in revenue because of successful WC WDM; this was preferable to increasing water usage only to increase income.</p> <p>Water Requirement Scenarios</p> <p>KR proposed that the water requirement scenarios, as used in the October 2013 Status Report, remain in place for scenario planning. He noted that the additional water requirements from the planned industrial development in the Saldanha area will not increase the total water requirements significantly and can be considered under the high-growth scenario. This was agreed.</p> <p>IT noted that the increase in Green Buildings initiative could impact on the water requirement scenarios in the future. PR noted that the CCT uses the lower 2% growth curve for their planning as this influences payments and timing thereof to TCTA. The study still uses the 3.38% high-growth curve for planning purposes.</p> <p>Successful WC/WDM measures have ensured that the first new water augmentation intervention is only needed by end 2022 (change from end 2013 in 2005) but the impact of the WesCape</p>	<p>KR</p>	

ITEM	DETAIL	ACTION	TIME
	<p>development near Atlantis is yet to be detailed and included. It is important that the CCT and DWS consider decisions in 2015 about which schemes to implement and in what sequence.</p> <p>PR noted that the CCT has limited capital available for new schemes and that other water infrastructure (e.g. services upgrade) is prioritised.</p> <p>Saldanha Economic Development</p> <p>KR summarised the water requirement scenarios for the economic development in the Saldanha area, based on the Green Cape data.</p> <p>The main limitation to water supply is the reticulation infrastructure capacity rather than a resource limitation. The Withoogte Treatment Plant and local storage capacity would need to be increased if additional water from the Voëlvlei Dam and or Voëlvlei Augmentation Option were made available. The further development of the Langebaan Road Aquifer would be an additional local source. If these sources were used there would be no need for desalination.</p> <p>There has been no abstraction from the Langebaan Road Aquifer since April 2013 and this well field as well as the Elandsfontein well field are recovering well. The significant increase in use from the Withoogte Treatment Plant (i.e. water from the WC WSS) can be partly explained with the stoppage of abstraction from the Langebaan Road Aquifer.</p> <p>IT noted that the situation summary supported the rehabilitation of the Langebaan Road Aquifer system, especially in light of the anticipated increase in water requirements from the Saldanha area.</p> <p>IT stated that the flexibility of the water distribution network within the WCWSS was a strategic risk management issue. It was agreed that the PSP will scope a short desk top study to establish possible bottle-necks and limitations in the supply network, which could impact on the resilience of supply for selected towns/areas and limit the possible uptake of future augmentation options. KR indicated that there is budget available for the study on this project.</p>	Umvoto	
5	<p>Progress with current studies: CCT</p> <p>A discussion on the water-energy nexus as being an increasingly strategic issue ensued. It was noted that it was important to include the impact of electrical supply and cost thereof on the various proposed interventions, especially high electricity use interventions as required for water re-use and sea-water desalinisation.</p> <p>BW noted that the CCT is evaluating the opportunities for mini turbine electrical generation from its own pipelines that could supply to the grid or at least supply its own installations. At present 4 sites run off the grid and plans are underway for Steenbras to supply hydroelectricity to the grid.</p> <p>IT emphasized that it is increasingly necessary for cost-effective resource management that the urban authorities cater for both micro, community and commercial electrical supply in their economic models.</p>		

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5.1	<p>Desalination feasibility study</p> <p>PR confirmed that the CCT is reviewing the draft reports and will give feedback and a presentation on the outcome of the desalination feasibility study at the upcoming SSC meeting.</p> <p>The report will include conceptual planning to meet the additional water requirements of the proposed WesCape development. The development scenario considered is a phased 150 ML/d supply at a time up to 450 ML/d. Further work is needed to evaluate optimal inlet/outlet size wrt the phasing options/final development requirements.</p> <p>In order to monitor inlet/outlet conditions and variations in sea water quality and to test pretreatment processes, a pilot plant to collect the necessary data will be constructed and be maintained for 18 – 24 months. Necessary permissions/agreements have been secured from the Koeberg Nuclear Plant management to use their seawater intake works.</p> <p>KR requested updated water requirement figures for the proposed WesCape development and the expected impact on overall CCT water requirements. At present there are 200 000 households planned to be established over 20 years, i.e. 10 000 households per year. BW will email Umvoto the council resolution detailing suspensive conditions imposed by the CCT on this development.</p> <p>KR noted that the time line for construction of the development would impact on the schedule of planned interventions and will be included in a scenario that can include the development along with a planned initiative to promote growth and industrial development in the Atlantis area.</p>		
5.2	<p>Water re-use feasibility study</p> <p>PR reported that the Preliminary Report will be available by the end of December 2014 and the Final Report by April 2015.</p> <p>CCT expects to be able to give an initial report back/presentation on possible re-use options at the upcoming SSC meeting. The final report by Aurecon confirming timelines and feasibility of water re-use will be presented in March/April 2015. It will include outcomes of studies on public perceptions and acceptance, currently undertaken by the CPUT as well as being informed by the Ethikweni (Durban City)/Umgenei Water experience.</p>		
5.3	<p>TMG Aquifer feasibility study</p> <p>The study brief has been amended to extend the exploration to a new target area identified in the Exploration Phase. This brief will include drilling of additional exploration boreholes, pump testing of selected boreholes and initiation of licence application. The CCT would engage with the DWS re the necessary licence application and use of existing dams and reticulation infrastructure for storage and transport of the TMG water. The Exploration Phase Study reports would be amended to propose feasibility of a formal supply scale scheme and are to be completed by end June 2017.</p> <p>The appointment process will require approval by Bid Adjudication Committee and City Manager. It is expected that this appointment can be confirmed during October 2014.</p>	CCT	Oct '14

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5.4	<p>Cape Flats Aquifer</p> <p>BW presented a summary feedback from a CFA workshop held on the 12th August 2014 (see minutes attached). He advised that the CCT Department of Water and Sanitation will initially convene a multi-disciplinary steering committee and establish their TOR to drive a committee to oversee and guide the initiative forward.</p> <p>IT advised that this study can support the first two meetings in an administrative and technical support role provided momentum is created by the CCT.</p> <p>ZB indicated that the CCT and the Provincial Department of Community Development could co-operate for example in studying the feasibility of local car washes being supplied by CFA water and rolled out in high traffic areas to support job creation, entrepreneurship and economic empowerment. Consideration need be given to water quality being a prime factor, which could necessitate the removal of salt and solids.</p> <p>It was agreed that the PSP will undertake a technical support study on mapping the water quality variations in the CFA and prepare a scoping study on cost effective means of treatment at local scale, dependent on the envisaged water use.</p> <p>IT requested that the CCT's and Provincial Departments of Economic and or Community Development attend the upcoming SSC meeting.</p>	<p>CCT</p> <p>PSP</p> <p>PSP</p>	
5.5	<p>Lourens River Diversion</p> <p>PR advised that the TOR for the Lourens River Diversion Feasibility Study will change to include flood management aspects. This resulted in additional team members and inputs from different departments and directorates being required which has delayed the tender process.</p>	<p>CCT</p>	
5.6	<p>Water Conservation and Water Demand Management</p> <p>ZB undertook to provide specific input regarding the anticipated vs actual savings in water requirements to KR for the Status Report finalization by the 26th September 2014.</p> <p>There are no new interventions planned; the current budget is R52 m for continuing with the current initiatives.</p> <p>BW advised that CCT do not plan to replace the Voëlvlei pipeline in the foreseeable future, but they will be ready to repair when it does burst, while also monitoring for leaks and doing planned pre-emptive maintenance. He advised that problems with pumps at the Voëlvlei works will be resolved by start of summer.</p> <p>ZB advised that the CCT will apply for a WULA to formalize its use of spring water. The CCT recognizes the need for spring protection and a monitoring regime to evaluate the impact of groundwater abstraction on springs in the city domain. RH suggested that the recommendations arising from the 2009 Berg WAAS study regarding springs in the TMG are considered.</p> <p>IT commended the CCT on its skill and commitment to WC/WDM, mentioning that it leads the country in this regard. The City's recognition that retaining and ensuring skilled and professional staff is a strategic issue, is commendable.</p>	<p>ZB</p>	<p>Sept '14</p>

ITEM	DETAIL	ACTION	TIME
<p>6</p> <p>6.1</p> <p>6.2</p> <p>6.3</p> <p>6.4</p> <p>6.5</p>	<p>Progress with current studies: DWS</p> <p>Surface water schemes</p> <p>JH stated that no appointment for the EIA regarding the Voëlvei Augmentation Scheme was made.</p> <p>Langebaan Road Aquifer Artificial Recharge scheme</p> <p>The study into Artificial Recharge of the Langebaan Road Aquifer will proceed subject to the outcome of the final meeting between the DWS and the CSIR.</p> <p>Real-time Decision Support System</p> <p>IT again requested a presentation of the system at the next SSC meeting. She enquired whether feedback from the August 2014 technical meeting for this study was included in the updated Status Report. KR will follow up with Jenny Pashkin.</p> <p>Annual Drought Operating Rules</p> <p>Nothing further to report. Decision date is 1 November.</p> <p>Berg River water quality</p> <p>KR reported that the geospatial analysis of water quality variations and contamination risks in the Berg Basin was underway. The study would be completed early in 2015.</p>	<p>KR</p>	
<p>7</p> <p>7.1</p>	<p>In-Situ Iron Removal – Atlantis Wellfield</p> <p>Kate Robey of the Council for Geoscience (CGS) presented the results of her MSc thesis on the treatment of biofouling in boreholes. The results are promising and could be applied throughout the Atlantis well field.</p> <p>GT noted that until there was over abstraction of the Atlantis well field there was no biofouling in the well field boreholes or in the aquifer. He advised that with commitment from the CCT the real and perceived problems can be resolved and full production restored.</p>		
<p>8</p> <p>8.1</p> <p>8.2</p>	<p>Communication</p> <p>Status Report</p> <p>KR undertook to include all input from WK on the Berg River Water Quality Studies as well as the revised water usage figures and additional comments received by the 26th September 2014 in the final version of the Status Report to be distributed to SSC members in first week of October.</p> <p>Stellenbosch Municipality is still not submitting their Water Balance data. SM and DD undertake to support the team to obtain the relevant data.</p> <p>Media Release</p> <p>IT requested that a media release be drafted based on the draft Status Report. This can be prepared after the ATSG meeting and sent out to the SSC members prior to the SSC meeting.</p>	<p>WK/PR/KR</p> <p>PSP</p>	<p>Sept '14</p> <p>Sep '14</p>

ITEM	DETAIL	ACTION	TIME
9	<p>Next meeting of ATSG and Closure</p> <p>The date for the next SSC meeting was confirmed as:</p> <ul style="list-style-type: none"> • 15 October 2014 <p>No date for the next meeting of the ATSG was set but subsequently a date was set for 08:30 on the 26th November 2014.</p> <p>IT closed the meeting at 13:00.</p> <p>It was followed by an informal general discussion on how the CCT can follow up on the CFA Sustainable Groundwater Management Initiative.</p>	<p>PSP</p> <p>PSP</p>	

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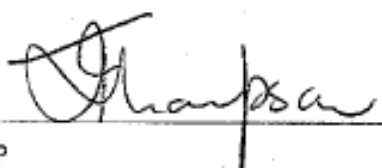


Umvoto Africa

26/11/2014

Date

SIGNATURE DEPARTMENT OF WATER AND SANITATION



D: NWRP

26/11/2014

Date

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Isa Thompson	IT	DWS D:NWRP	Study Manager
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Pieter Viljoen	PV	DWS D:WRPS	Water Quality
Jenny Pashkin	JP	DWS D:WRPS	Systems Operation
Nosipho Sombane	NS	DWS D:WUE	
Thembi Masilela	TM	DWS RO Bellville	D: Water Sector Support
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ATTACHMENTS:

- Presentation by K Riemann