



TMG AQUIFER FEASIBILITY STUDY AND PILOT PROJECT: EXPLORATORY PHASE EIA PROCESS

MINUTES OF FIRST PUBLIC MEETING Huguenot Community Hall, Paarl, 5 May 2004

ATTENDANCE:

Attendees:

M Wilmot (MTO Forestry)
G Tong (Drakenstein Municipality)
W de Lung (Department of Agriculture)
G Malherbe (Palmiet River Irrigation Board)
H Blignaut (Drakenstein Municipality)
WD Bourbon-Leftley (Berg River Irrigation Board)
H van der Merwe (Spruitrivier Besproeiings Vereniging)
WJ Knaggs (Drakenstein Municipality)
J Richards (SAFM)
JH Smit (Spruitrivier Besproeiings Vereniging)
AWL Stuart (Dundarach Poultry Farm)
EC Malan (Bo Bergrivier Irrigation Board)

Study Team:

Proponent

Rodney Bishop (City of Cape Town: Bulkwater) RB

TMG Aquifer Alliance

Doreen Februarie (Nosipho Consultancy)	DF
Duma Mningiswa (Nosipho Consultancy)	DM
Karen Shippey (Ninham Shand)	KS
Penelope Jones (Ninham Shand)	PLJ
Alan Shelly (Ninham Shand)	AS
Chris Hartnady (Umvoto)	CH

Apologies: none

1 Welcome and Introduction

DF welcomed everyone and outlined the process to be followed during the course of the meeting. She indicated that she would facilitate the meeting and briefly introduced the study team.

DF presented the proposed agenda for the meeting as follows:

- Welcome & Introduction
- Background to the Study (RB)
- Introduction to Hydrogeology and TMG Aquifer (CH)
- The EIA Process (KS)
- General Discussion



- The Way Forward
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DF then outlined the rules of the meeting and gave an overview of the facilitator's role and the participants' role in the public meeting.

2 Presentation on Background to the Study ~ Rodney Bishop

RB provided a background to the TMG Aquifer study, including water demand management options currently being implemented and other schemes being investigated (Appendix A).

3 Presentation on Hydrogeology and TMG Aquifer ~ Chris Hartnady

CH provided an introduction to hydrogeology and the TMG aquifer (Appendix B).

- 3.1 J Richards queried how many borehole sites there would be during the exploratory phase.

CH responded that approval from the Department of Environmental Affairs and Development Planning (DEA&DP) would be sought for approximately 25 to 30 sites, although only 10 to 12 boreholes would be drilled.

- 3.2 An attendee queried how long it took to drill down to a depth of 800m at the Citrusdal site shown in CH's presentation.

CH responded that the drill rig was on site for approximately 2 years, but the actual drilling time was only 2 to 3 months.

- 3.3 G Malherbe queried whether the water was recharged when removed, or if it left a space such as when oil is extracted from rocks.

CH responded that the aquifers are recharged (filled up) each winter and that water continues to flow out of it throughout the summer, mainly through springs. He stated that if all the high recharge areas are taken into account there could be as much as 100 million m³ going into the aquifer each year. This is the same sort of volume as Skuifraam Dam will hold.

- 3.4 A Stuart stated that when groundwater is abstracted in one place, invariably someone gets cut off from their existing supply. He queried what would be done if boreholes dry up and how this would be compensated for.

CH responded that the current focus of the study is to drill boreholes for monitoring purposes, not to abstract water. Most of the existing boreholes in the areas near the target sites have been recorded in surveys (hydro-census). Automatic data loggers can be used to record the water level fluctuation over the next 2 years in order to establish a baseline record of natural fluctuation. Thereafter, during the pilot study, many of the exploratory holes will be used for monitoring to assist in showing the radius of influence of abstraction, including the direction and rate at which water flows underground. Computer models will be generated and monitoring systems used to calibrate and verify the impact. The authorities and the City of Cape Town will have to determine at which point abstraction should be halted.

- 3.5 A Stuart noted that when pumping starts, the water supply in other boreholes may be cut off permanently. This is of particular concern to farmers with livestock, who would then have to find alternative sources urgently.

CH responded that this Environmental Impact Assessment (EIA) process is specifically focussed on the footprint impacts associated with exploratory drilling, not abstraction. The following EIA in the Pilot Phase will investigate the impacts of abstraction.

- 3.6 KS noted that there are both unconfined and confined aquifers in the region, and most of the boreholes will be drilled into the confined aquifer.

CH added that the City's main focus was to drill into the deeper aquifer, which is sealed off from the shallower aquifers, and to monitor the rate of flow into this aquifer. Abstraction may be kilometres in distance from existing usage. Drilling will mainly be below the Cedarberg shale, which is fairly impermeable. It is not expected that there is a direct connection with shallower aquifers. Where there is major faulting in certain areas, there might be transfer of water between the deep and shallow aquifers.

KS noted that the City has asked the team to take a cautious approach. She stated that there are good theories and models in place, but these cannot be verified until exploratory drilling takes place. Abstraction will only occur during the Pilot Phase. During the Pilot Phase, the system will be tested and monitored to obtain information over the years.

- 3.7 EC Malan raised the concern that the real impacts will only be detected when large volumes are abstracted after this project. Monitoring the abstraction of small volumes of water during the pilot phase may not show the real impacts of commercial abstraction.

CH responded that 3-5 million m³/ year is a relatively small amount. He said that 20-30 million m³ is abstracted in the Sandveld without any scientific monitoring.

- 3.8 An attendee noted that a further 100 million m³ would be abstracted for the Western Cape and queried whether drilling boreholes was worth the great financial and environmental cost.

CH noted that the Pilot Phase would evaluate the financial feasibility of abstracting water. AS added that relative to the Berg Water Project, the unit reference value for the TMG Aquifer shows that it is financially competitive.

- 3.9 J Smit raised the concern that whatever is abstracted from below, needs to be recharged from above and queried why the issue of precipitation had not been addressed. If we continue to have dry years, there will still be a water shortage since the water has to be recharged from rainfall and other sources. If the City is concerned about water supply they should build a multitude of small dams.

CH responded that the TMG Aquifer is effectively a large underground dam, without the problems of evaporation and salinisation associated with surface dams. He noted that the aquifer has been storing the water for tens of thousands of years. The water at The Baths, for example, is approximately 2000 years old.

- 3.10 RB stated that the City has initiated a number of studies and proposes conjunctive use (using groundwater and surface water together) of these resources to minimise ecological impacts. The various sources will be

investigated in an integrated manner. Currently groundwater is being used beneficially by farmers. The weather cycle must also be considered as there is an opportunity of using the aquifer as an underground reservoir. At certain periods of the year, the aquifer may be utilised extensively and then allowed to recharge. The aim is now to investigate the feasibility of using the aquifer, rather than just abstracting. He noted that although the article in the Cape Times in March 2004 had implied that the TMG Aquifer study was a desperate attempt by the City to obtain water, this was not the case. The City is undertaking future planning and it has the time now to investigate a variety of options.

- 3.11 J Smit noted that the year 2012 is not far off and queried whether the City should perhaps have a more realistic approach and utilise methods such as desalination. He stated that since Cape Town is next to the sea, it makes sense to desalinate.

RB responded that the City is investigating other options such as desalination very seriously as part of other water resource studies.

- 3.12 An attendee queried whether grey water could be used to water gardens. RB responded that a variety of options had been considered, each of which was ranked and prioritized in the Integrated Water Resource Study. He noted that water demand management initiatives included the reuse of grey water and that the treatment of wastewater is very expensive. KS added that all of the options identified by the City were still 'on the table' and would be investigated, but the focus of this study is on the feasibility of utilising the TMG Aquifer.

- 3.13 W Bourbon-Leftley raised the concern that the holes drilled now might eventually be used for bulk water supply, and that high levels of abstraction would affect the rivers and streams in the area. He stated that the City should be seeking water further afield.

CH stated that there is a wellfield approximately 5km from Citrusdal called Boschkloof, which yielded 60l/ second for 3-4 months after which it dried up. For the TMG Aquifer, there would most likely be conjunctive use with periods of pumping of 4-6 months. Surface water and groundwater would be used such as to minimise evaporation and maximise recharge in winter. He added that bulk water supply pumping cannot be undertaken during the Exploratory Phase since the boreholes would not be large enough and would not be licensed for abstraction. For bulk water supply abstraction to occur, the holes would have to be redrilled with a larger drill.

4 Presentation on the EIA Process ~ Karen Shippey

KS provided an overview of the EIA Process (Appendix C).

5 General Discussion

There was no further discussion.

6 Way Forward and Closure

DF thanked the attendees for attending the public meeting and for the comments and questions raised. She then briefly presented the way forward, indicating that the next step was the compilation and lodging of a Draft Scoping Report. She stated that all registered I&APs would be notified of the lodging of the report and that minutes of the public meeting would be circulated to all attendees.

KS indicated that documents relating to the study, including the Draft Scoping Report, would be posted on the website in adobe acrobat format.

There being no further discussion, the meeting was closed at approximately 20h25.

