



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



REVIEW, EVALUATION AND OPTIMISATION OF THE SOUTH AFRICAN WATER RESOURCES MONITORING NETWORK

Network Inventory

VOLUME 2: MAP BOOK

DRAFT

MARCH 2015



Obtainable from

Chief Directorate: Water Information Management

Department: Water and Sanitation

Private Bag X313

PRETORIA

0001

PREFACE

The Department of Water and Sanitation (DWS) is the custodian of ten national monitoring programmes. The overall aim of this project is to undertake an evaluation of each monitoring network, in its present condition, and to redesign and realign the network based on scientific analysis and the strategic and management objectives of DWS and of the country as a whole. The water resources monitoring network will be optimised to ensure sustainable, relevant and up-to-date data of an acceptable quality

This Network Inventory Task focussed on the production of maps to illustrate the spatial distribution of the existing monitoring stations for these ten monitoring programmes. The deliverable from this Network Inventory task, together the User Requirements Task will be used to identify shortcomings in the current networks.

The metadata from each of the ten monitoring networks was analysed and descriptive labels were developed for each station to describe the temporal information (record period), open/closed, completeness, etc.

This task was undertaken by a team of specialists, one for each of the following categories of data:

- Surface water quantity.*
- Surface water quality.*
- Groundwater levels and quality.*
- Biophysical Data*
- Hydro-meteorology*

This was followed by the development of five thematic maps with information on the spatial distribution of these ten monitoring points per new Water Management Area (WMA) have been compiled. Even though other institutions in South Africa are also collecting surface water, groundwater, Hydro-meteorological, water quality, eco-health, mostly for their own interests and applications, only the Hydro-meteorological networks of ARC and SAWS data were included on these maps since these data are used daily by DWS. Due to an abundance of groundwater stations in a number of WMA's, station numbers, rather than the detailed developed labels, were adopted for labelling the groundwater maps. The detailed groundwater labels are included as Appendix A.

The thematic Maps produced per nine WMA's are as follows:

A2-size maps were developed for the nine new WMAs per data category, as follows:

- 1) Limpopo WMA*
- 2) Olifants WMA*
- 3) Inkomati-Usuthu WMA*
- 4) Pongola-Mtamvuna WMA*
- 5) Vaal WMA*
- 6) Orange WMA*
- 7) Mzimvubu-Tsitskamma WMA*
- 8) Breede-Gouritz WMA*
- 9) Berg-Olifants WMA.*

Other products developed as part of this Task are data catalogues and Google Earth KMZ-coverages which are very useful to the DWS, external users and to the project team during the new network design.

Subsequent to the completion of the Network Inventory and User Requirements tasks, the Data integrity assessment task will continue to determine the quality of the available data.

Table of Contents

WMA 1 Limpopo

- Figure 1.1: WMA 1 - Limpopo: Surface Water Quantity Monitoring Stations
- Figure 1.2: WMA 1 - Limpopo: Surface Water Quality Monitoring Stations
- Figure 1.3: WMA 1 - Limpopo: Groundwater Level and Quality Monitoring Stations
- Figure 1.4: WMA 1 - Limpopo: Biophysical Monitoring Stations
- Figure 1.5: WMA 1 - Limpopo: Hydro-meteorological Monitoring Stations

WMA 2 Olifants

- Figure 2.1: WMA 2 - Olifants: Surface Water Quantity Monitoring Stations
- Figure 2.2: WMA 2 - Olifants: Surface Water Quality Monitoring Stations
- Figure 2.3: WMA 2 - Olifants: Groundwater Level and Quality Monitoring Stations
- Figure 2.4: WMA 2 - Olifants: Biophysical Monitoring Stations
- Figure 2.5: WMA 2 - Olifants: Hydro-meteorological Monitoring Stations

WMA 3 Inkomati-Usuthu

- Figure 3.1: WMA 3 - Inkomati-Usuthu: Surface Water Quantity Monitoring Stations
- Figure 3.2: WMA 3 - Inkomati-Usuthu: Surface Water Quality Monitoring Stations
- Figure 3.3: WMA 3 - Inkomati-Usuthu: Groundwater Level and Quality Monitoring Stations
- Figure 3.4: WMA 3 - Inkomati-Usuthu: Biophysical Monitoring Stations
- Figure 3.5: WMA 3 - Inkomati-Usuthu: Hydro-meteorological Monitoring Stations

WMA 4 Pongola-Mtamvuna

- Figure 4.1: WMA 4 - Pongola-Mtamvuna: Surface Water Quantity Monitoring Stations
- Figure 4.2: WMA 4 - Pongola-Mtamvuna: Surface Water Quality Monitoring Stations
- Figure 4.3: WMA 4 - Pongola-Mtamvuna: Groundwater Level and Quality Monitoring Stations
- Figure 4.4: WMA 4 - Pongola-Mtamvuna: Biophysical Monitoring Stations
- Figure 4.5: WMA 4 - Pongola-Mtamvuna: Hydro-meteorological Monitoring Stations

WMA 5 Vaal

- Figure 5.1: WMA 5 - Vaal: Surface Water Quantity Monitoring Stations
- Figure 5.2: WMA 5 - Vaal: Surface Water Quality Monitoring Stations
- Figure 5.3a: WMA 5 - Vaal: Groundwater Level and Quality Monitoring Stations

Figure 5.3b: WMA 5 - Vaal: Groundwater Level and Quality Monitoring Stations

Figure 5.4: WMA 5 - Vaal: Biophysical Monitoring Stations

Figure 5.5: WMA 5 - Vaal: Hydro-meteorological Monitoring Stations

WMA 6 Orange

Figure 6.1: WMA 6 - Orange: Surface Water Quantity Monitoring Stations

Figure 6.2: WMA 6 - Orange: Surface Water Quality Monitoring Stations

Figure 6.3a: WMA 6 - Orange: Groundwater Level and Quality Monitoring Stations

Figure 6.3b: WMA 6 - Orange: Groundwater Level and Quality Monitoring Stations

Figure 6.4: WMA 6 - Orange: Biophysical Monitoring Stations

Figure 6.5: WMA 6 - Orange: Hydro-meteorological Monitoring Stations

WMA 7 Mzimvubu-Tsitsikamma

Figure 7.1: WMA 7 - Mzimvubu-Tsitsikamma: Surface Water Quantity Monitoring Stations

Figure 7.2: WMA 7 - Mzimvubu-Tsitsikamma: Surface Water Quality Monitoring Stations

Figure 7.3: WMA 7 - Mzimvubu-Tsitsikamma: Groundwater Level and Quality Monitoring Stations

Figure 7.4: WMA 7 - Mzimvubu-Tsitsikamma: Biophysical Monitoring Stations

Figure 7.5: WMA 7 - Mzimvubu-Tsitsikamma: Hydro-meteorological Monitoring Stations

WMA 8 Breede-Gouritz

Figure 8.1: WMA 8 - Breede-Gouritz: Surface Water Quantity Monitoring Stations

Figure 8.2: WMA 8 - Breede-Gouritz: Surface Water Quality Monitoring Stations

Figure 8.3: WMA 8 - Breede-Gouritz: Groundwater Level and Quality Monitoring Stations

Figure 8.4: WMA 8 - Breede-Gouritz: Biophysical Monitoring Stations

Figure 8.5: WMA 8 - Breede-Gouritz: Hydro-meteorological Monitoring Stations

WMA 9 Berg-Olifants

Figure 9.1: WMA 9 - Berg-Olifants: Surface Water Quantity Monitoring Stations

Figure 9.2: WMA 9 - Berg-Olifants: Surface Water Quality Monitoring Stations

Figure 9.3: WMA 9 - Berg-Olifants: Groundwater Level and Quality Monitoring Stations

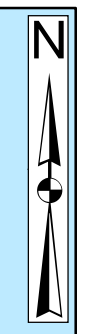
Figure 9.4: WMA 9 - Berg-Olifants: Biophysical Monitoring Stations

Figure 9.5: WMA 9 - Berg-Olifants: Hydro-meteorological Monitoring Stations

Appendix A

Detailed Groundwater Level and Quality Monitoring Station Labels

WMA 4:
Pongola-Mtamvuna



Legend

Surface Water Quantity Stations

- River Flow
- Canal Flows
- Dam Volume
- Tidal Stations
- Groundwater Eyes
- Closed
- Rivers
- Dams
- Primary Catchment Boundaries
- Secondary Catchment Boundaries
- Quaternary Catchment Boundaries
- Water Management Area

Mean Annual Runoff

- 0 - 2.5 mm
- 2.5 - 5 mm
- 5 - 10 mm
- 10 - 20 mm
- 20 - 50 mm
- 50 - 100 mm
- 100 - 200 mm
- 200 - 500 mm
- > 500 mm

LABEL KEY

Status: O = Open
C996 = Closed (since 1996)

Station Number: A2H083-Rf-O-34yr-0%-1945

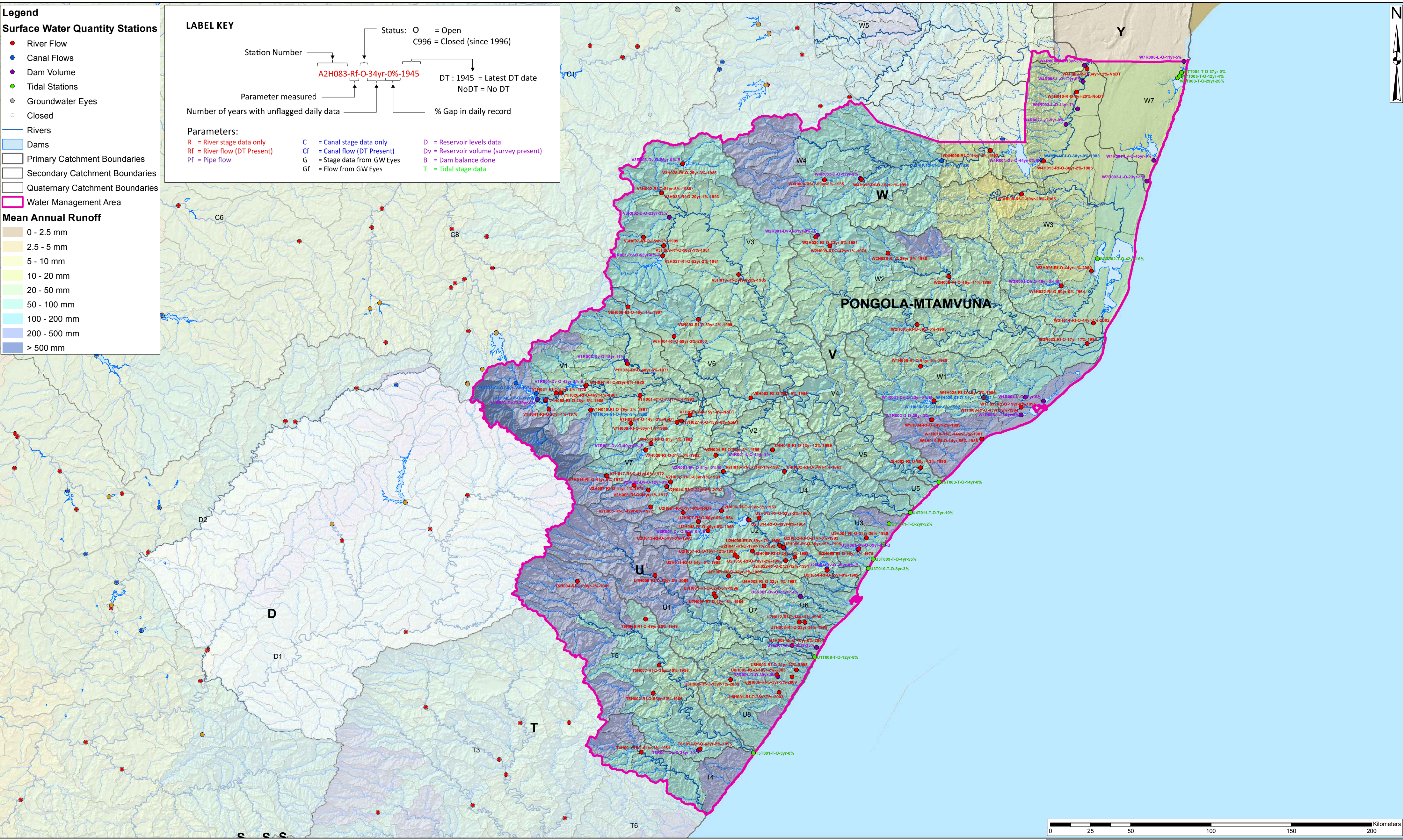
Parameter measured: Rf (River flow), DT (Latest DT date), NoDT (No DT)

Number of years with unflagged daily data: 34yr

% Gap in daily record: 0%

Parameters:

- R = River stage data only
- Rf = River flow (DT Present)
- PF = Pipe flow
- C = Canal stage data only
- Cf = Canal flow (DT Present)
- Gf = Flow from GW Eyes
- D = Reservoir levels data
- Dv = Reservoir volume (survey present)
- B = Dam balance done
- T = Tidal stage data



Project Title: **Review, Evaluation and Optimisation of the South African Water Resources Monitoring Network**

Map Title: **WMA 4 - Pongola-Mtamvuna: Surface Water Quantity Monitoring Stations**

Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies.

© Copyright

Scale 1:1 500 000
(When page size is: A2 landscape)

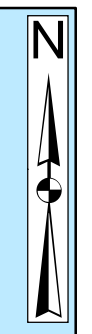
Projection: Geographic
Datum: Hartbeesthoek 1994

Compiled By: LC Gallagher
GIS QC By: M Storie - PGP 0124
Approved By: E van Niekerk
Date Saved: 2015/03/16
Project Number: 60326707
Map Ref: SW_Quantity_Pongla_Mtamvuna_A2L.mxd
Revision: 01

Figure 4.1

Sources:
DWS: Water Information Management
Water Resources of South Africa 2005 (WRC)





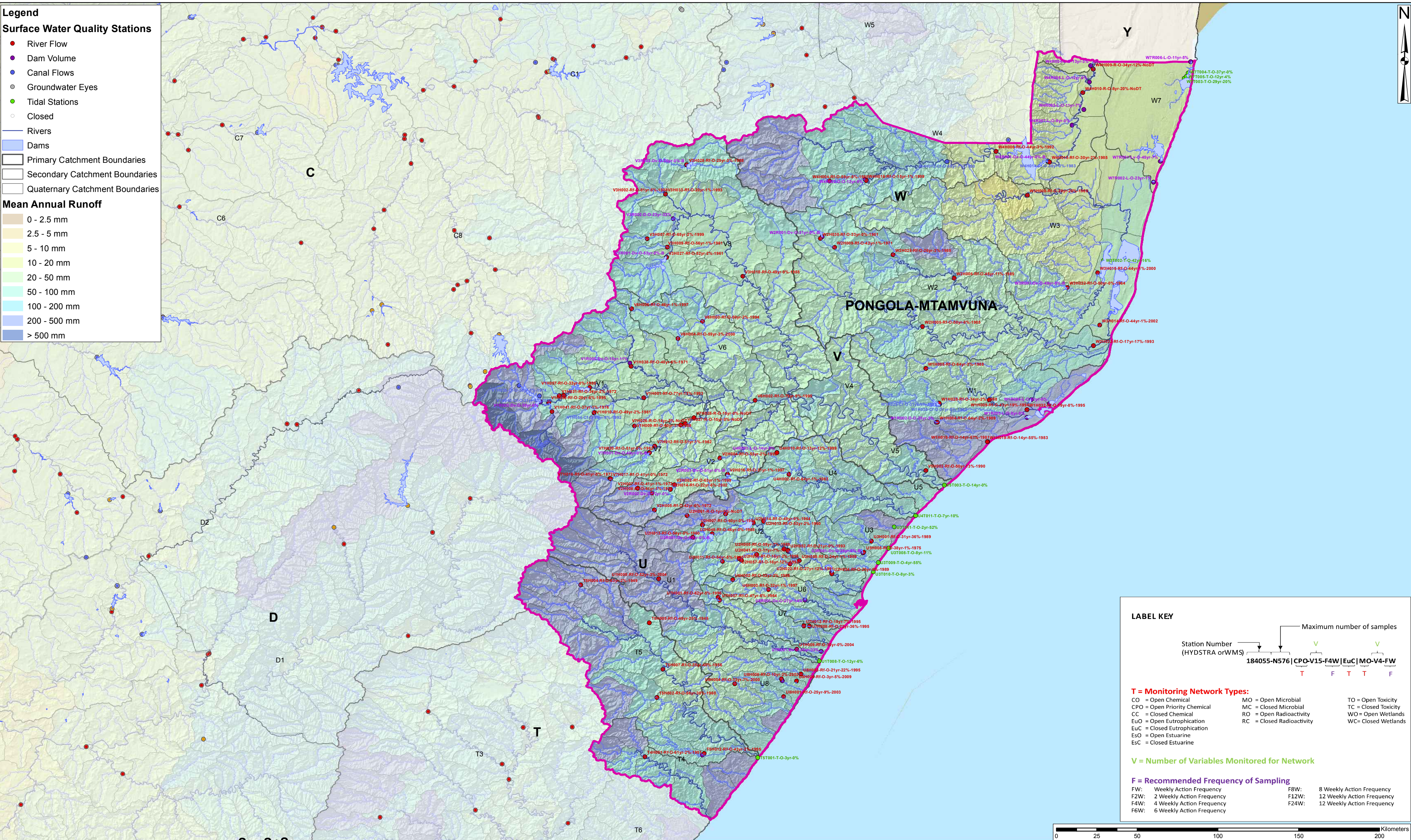
Legend

Surface Water Quality Stations

- River Flow
- Dam Volume
- Canal Flows
- Groundwater Eyes
- Tidal Stations
- Closed
- Rivers
- Dams
- Primary Catchment Boundaries
- Secondary Catchment Boundaries
- Quaternary Catchment Boundaries

Mean Annual Runoff

- 0 - 2.5 mm
- 2.5 - 5 mm
- 5 - 10 mm
- 10 - 20 mm
- 20 - 50 mm
- 50 - 100 mm
- 100 - 200 mm
- 200 - 500 mm
- > 500 mm



LABEL KEY

Station Number (HYDSTRA or WMS) → Maximum number of samples

184055-N576 | CPO-V15-F4W | EuC | MO-V4-FW

T F T T F

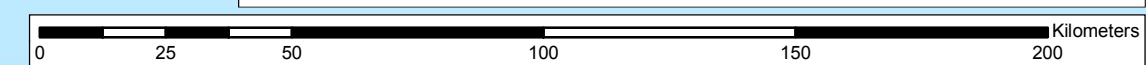
T = Monitoring Network Types:

- CO = Open Chemical
- CPO = Open Priority Chemical
- CC = Closed Chemical
- EuC = Open Eutrophication
- EsO = Open Estuarine
- EsC = Closed Estuarine
- MO = Open Microbial
- MC = Closed Microbial
- RO = Open Radioactivity
- RC = Closed Radioactivity
- TO = Open Toxicity
- TC = Closed Toxicity
- WO = Open Wetlands
- WC = Closed Wetlands

V = Number of Variables Monitored for Network

F = Recommended Frequency of Sampling

- FW: Weekly Action Frequency
- F2W: 2 Weekly Action Frequency
- F4W: 4 Weekly Action Frequency
- F6W: 6 Weekly Action Frequency
- F8W: 8 Weekly Action Frequency
- F12W: 12 Weekly Action Frequency
- F24W: 12 Weekly Action Frequency



Project Title:	Review, Evaluation and Optimisation of the South African Water Resources Monitoring Network		Scale 1:1 500 000 (When page size is: A2 landscape)	Figure 4.2
Map Title:	WMA 4 - Pongola-Mtamvuna: Surface Water Quality Monitoring Stations		Projection: Geographic Datum: Hartebeesthoek 1994	
Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies.			Compiled By: LC Gallagher GIS QC By: M Storie - PGP 0124 Approved By: E Van Niekerk Date Saved: 2015/03/17 Project Number: 60326707 Map Ref: SW_Quality_Pongla_Mtamvuna_A2L.mxd Revision: 01	Sources: DWS: Water Information Management Water Resources of South Africa 2005 (WRC)
© Copyright				





Legend

Quality Stations

- Rainfall Open
- Rainfall Closed
- Groundwater

Groundwater Levels Stations

- Open
- Closed

Rivers

Primary Catchment Boundaries

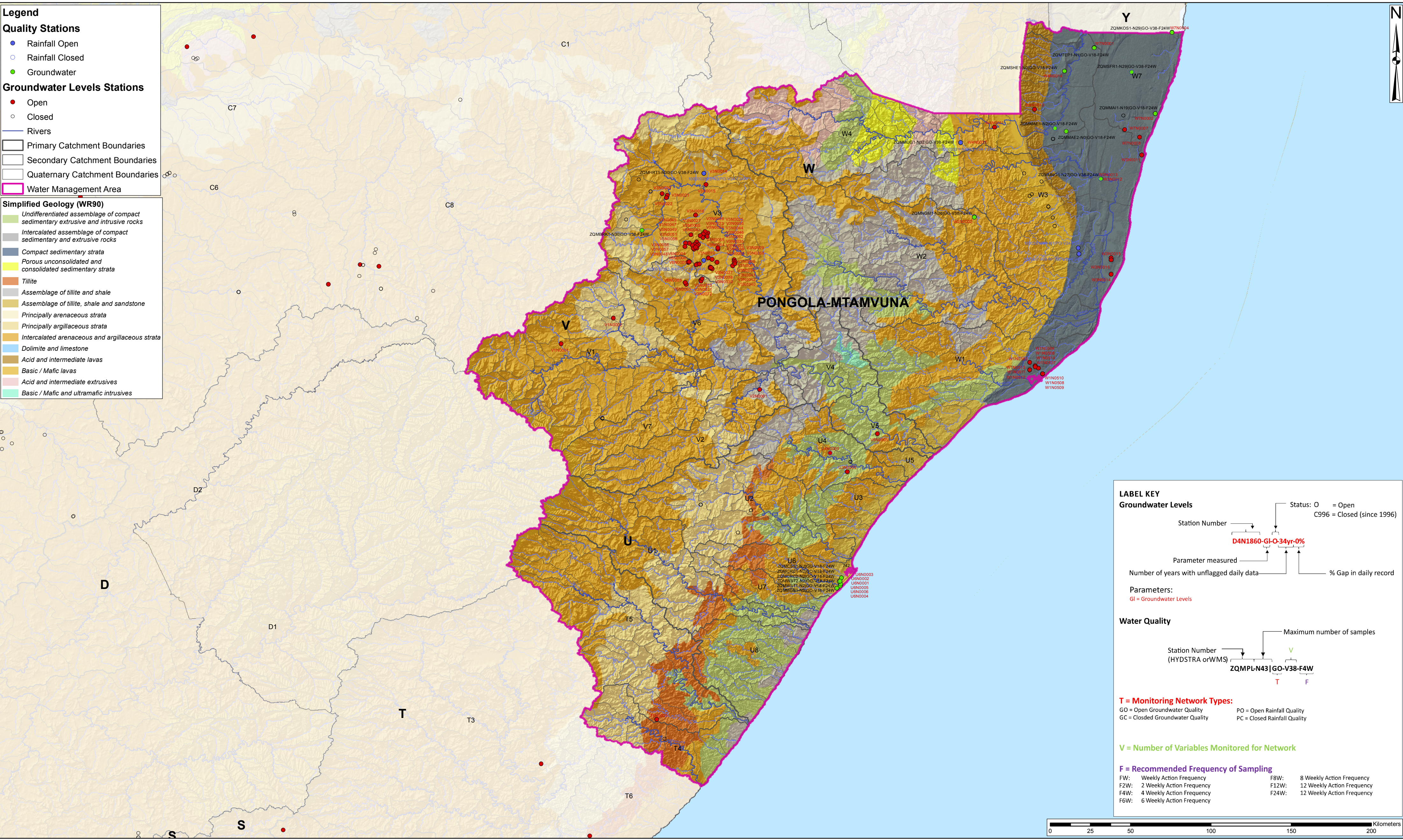
Secondary Catchment Boundaries

Quaternary Catchment Boundaries

Water Management Area

Simplified Geology (WR90)

- Undifferentiated assemblage of compact sedimentary extrusive and intrusive rocks
- Intercalated assemblage of compact sedimentary and extrusive rocks
- Compact sedimentary strata
- Porous unconsolidated and consolidated sedimentary strata
- Tillite
- Assemblage of tillite and shale
- Assemblage of tillite, shale and sandstone
- Principally arenaceous strata
- Principally argillaceous strata
- Intercalated arenaceous and argillaceous strata
- Dolomite and limestone
- Acid and intermediate lavas
- Basic / Mafic lavas
- Acid and intermediate extrusives
- Basic / Mafic and ultramafic intrusives



LABEL KEY

Groundwater Levels

Station Number: **D4N1860-GI-O-34yr-0%**

Parameter measured: GI = Groundwater Levels

Number of years with unflagged daily data: 34

% Gap in daily record: 0%

Status: O = Open, C996 = Closed (since 1996)

Water Quality

Station Number (HYDSTRA or WMS): **ZQMPL-N43 | GO-V38-F4W**

Maximum number of samples: 4 (V, T, F)

T = Monitoring Network Types:

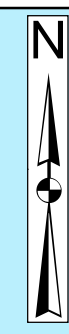
- GO = Open Groundwater Quality
- GC = Closed Groundwater Quality
- PO = Open Rainfall Quality
- PC = Closed Rainfall Quality

V = Number of Variables Monitored for Network

F = Recommended Frequency of Sampling

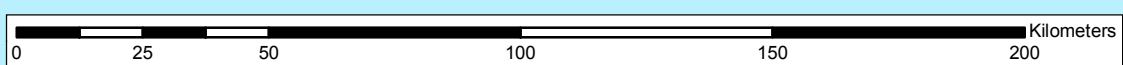
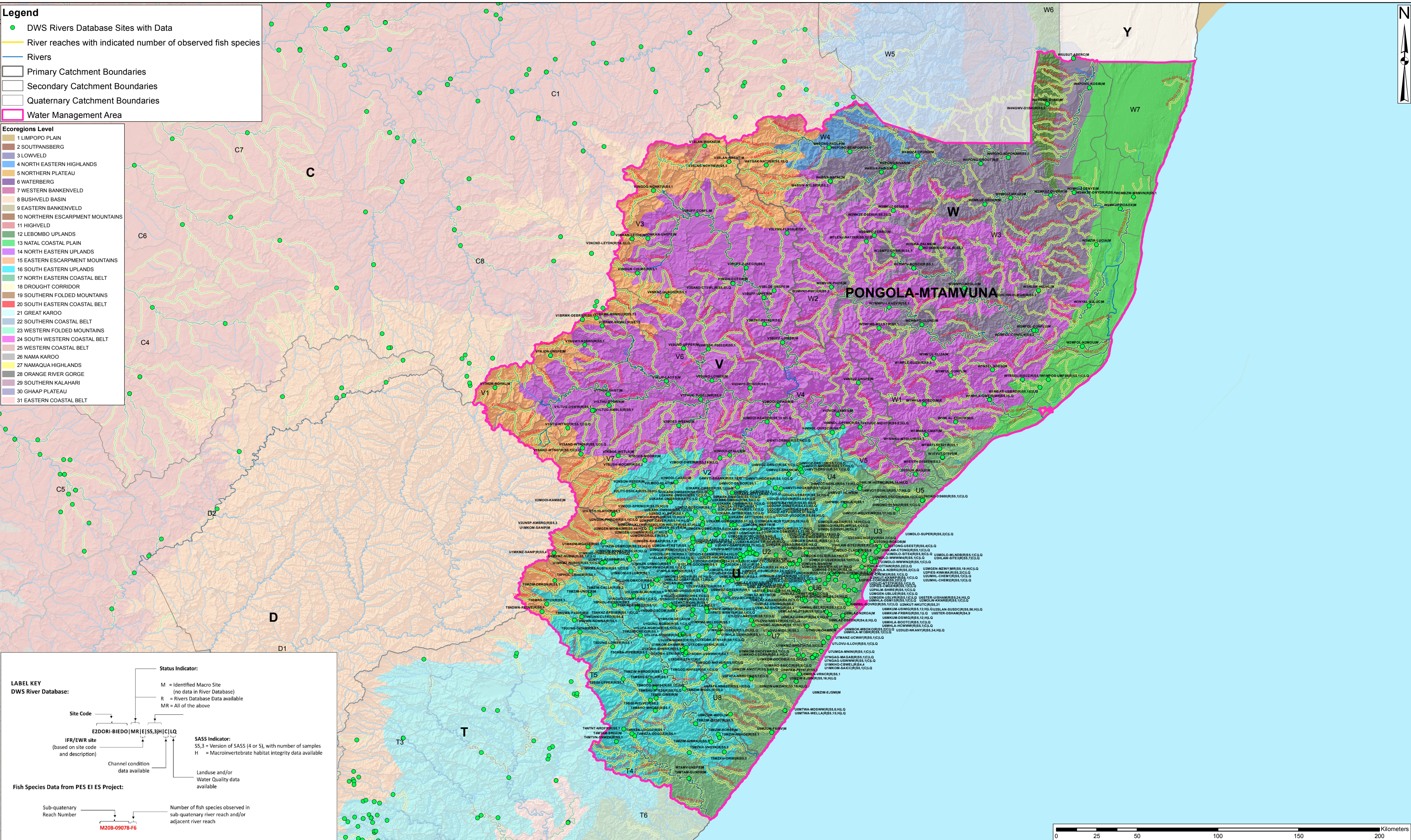
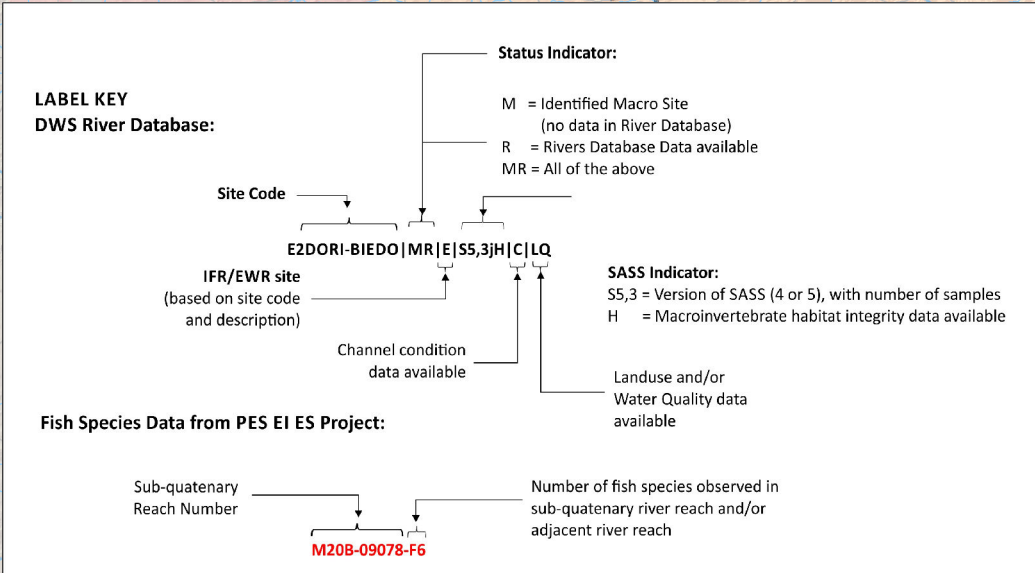
FW: Weekly Action Frequency	F8W: 8 Weekly Action Frequency
F2W: 2 Weekly Action Frequency	F12W: 12 Weekly Action Frequency
F4W: 4 Weekly Action Frequency	F24W: 12 Weekly Action Frequency
F6W: 6 Weekly Action Frequency	

Project Title: Review, Evaluation and Optimisation of the South African Water Resources Monitoring Network	Scale 1:1 500 000 (When page size is: A2 landscape)	Figure 4.3
Map Title: WMA 4 - Pongola-Mtamvuna: Groundwater Quality and Water Level Monitoring Stations	Projection: Geographic Datum: Hartbeesthoek 1994	Sources: DWS: Water Information Management Water Resources of South Africa 2005 (WRC)
Compiled By: LC Gallagher GIS QC By: M Storie - PGP 0124 Approved By: E Van Niekerk Date Saved: 2015/03/16 Project Number: 60326707 Map Ref: GWQuality_Pongola_Mtamvuna_A2L.mxd Revision: 01	© Copyright	
Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies.		



- Legend**
- DWS Rivers Database Sites with Data
 - River reaches with indicated number of observed fish species
 - Rivers
 - Primary Catchment Boundaries
 - Secondary Catchment Boundaries
 - Quaternary Catchment Boundaries
 - Water Management Area

- Ecoregions Level**
- LIMPOPO PLAIN
 - SOUTPANSBERG
 - LOWVELD
 - NORTH EASTERN HIGHLANDS
 - NORTHERN PLATEAU
 - WATERBERG
 - WESTERN BANKENVELD
 - BUSHVELD BASIN
 - EASTERN BANKENVELD
 - NORTHERN ESCARPMENT MOUNTAINS
 - HIGHVELD
 - LEBOMBO UPLANDS
 - NATAL COASTAL PLAIN
 - NORTH EASTERN UPLANDS
 - EASTERN ESCARPMENT MOUNTAINS
 - SOUTH EASTERN UPLANDS
 - NORTH EASTERN COASTAL BELT
 - DROUGHT CORRIDOR
 - SOUTHERN FOLDED MOUNTAINS
 - SOUTH EASTERN COASTAL BELT
 - GREAT KAROO
 - SOUTHERN COASTAL BELT
 - WESTERN FOLDED MOUNTAINS
 - SOUTH WESTERN COASTAL BELT
 - WESTERN COASTAL BELT
 - NAMA KAROO
 - NAMAQUA HIGHLANDS
 - ORANGE RIVER GORGE
 - SOUTHERN KALAHARI
 - GHAAP PLATEAU
 - EASTERN COASTAL BELT



Project Title: Review, Evaluation and Optimisation of the South African Water Resources Monitoring Network		Scale 1:1 500 000 (When page size is: A2 landscape)		Figure 4.4	
Map Title: WMA 4 - Pongla-Mtamvuna: Biophysical Monitoring Stations		Projection: Geographic Datum: Hartebeesthoek 1994		Sources: DWS: Water Information Management Water Resources of South Africa 2005 (WRC) Desktop PES, EI + ES (DWS, 2014)	
Whist every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies.		Compiled By: LC Gallagher GIS QC By: M Storie - PGP 0124 Approved By: E van Niekerk Date Saved: 2015/03/17 Project Number: 60326707 Map Ref: Biophysical_Pongla_Mtamvuna_A2L.mxd Revision: 01		© Copyright	





Legend

DWS Climate Stations

- Open (Green circle)
- Closed (White circle)

ARC Meteorological Stations

- Open (Data Post - 2010) (Purple triangle)
- Closed (White triangle)

SAWS Rainfall Stations

- Open (Orange square)
- Closed (White square)

Rivers (Blue line)

Dams (Blue rectangle)

SAWS Sector (Pink outline)

Primary Catchment Boundaries (Black outline)

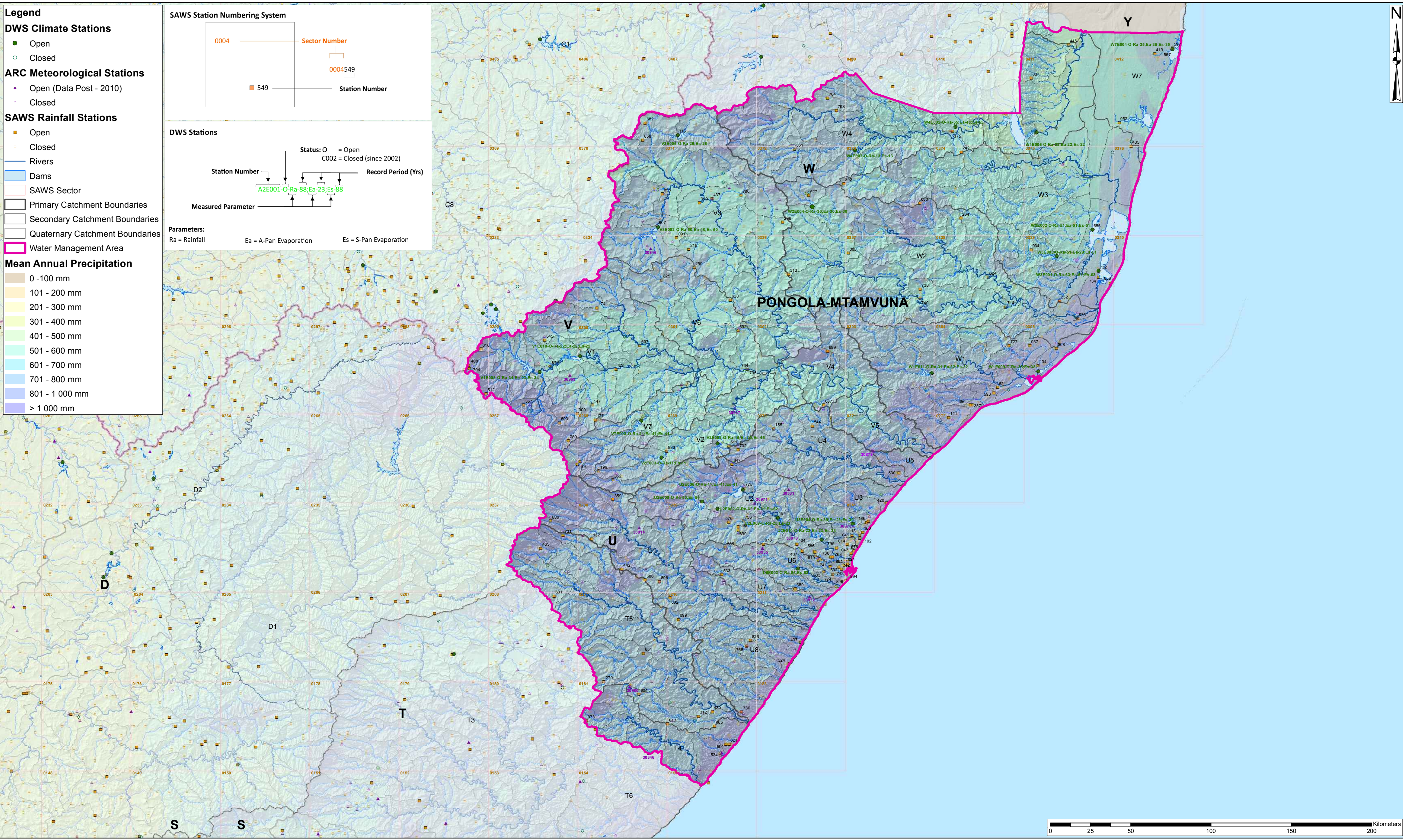
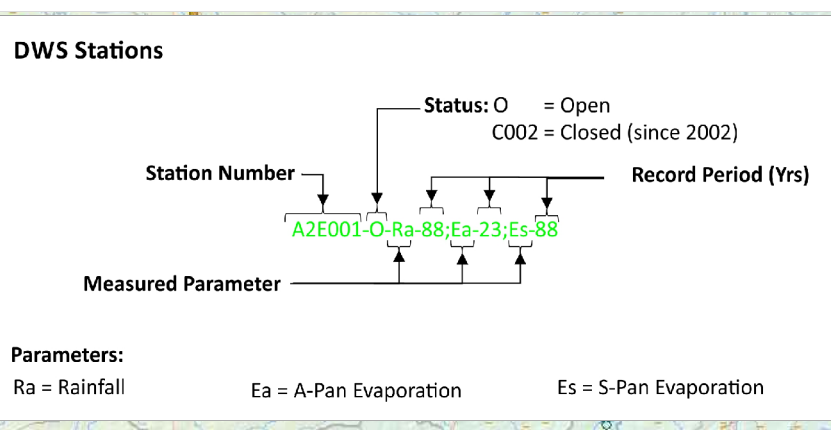
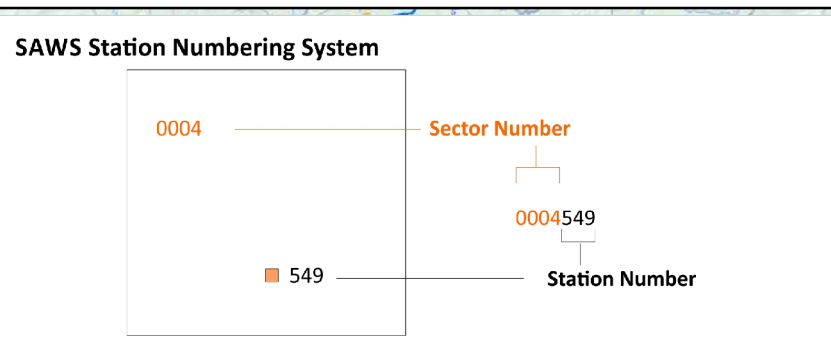
Secondary Catchment Boundaries (Grey outline)

Quaternary Catchment Boundaries (Light grey outline)

Water Management Area (Magenta outline)

Mean Annual Precipitation

- 0 - 100 mm (Lightest yellow)
- 101 - 200 mm (Yellow)
- 201 - 300 mm (Light green)
- 301 - 400 mm (Green)
- 401 - 500 mm (Light blue)
- 501 - 600 mm (Blue)
- 601 - 700 mm (Dark blue)
- 701 - 800 mm (Very dark blue)
- 801 - 1 000 mm (Purple)
- > 1 000 mm (Darkest purple)



Project Title: Review, Evaluation and Optimisation of the South African Water Resources Monitoring Network		Scale 1:1 500 000 (When page size is: A2 landscape)	Figure 4.5
Map Title: WMA 4 - Pongola-Mtamvuna: Hydro-meteorological Monitoring Stations		Projection: Geographic Datum: Hartbeesthoek 1994	
Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies.		Compiled By: LC Gallagher GIS QC By: M Storie - PGP 0124 Approved By: E Van Niekerk Date Saved: 2015/03/16 Project Number: 60326707 Map Ref: CMN_Pongola_Mtamvuna_A2L.mxd Revision: 01	Sources: DWS: Water Information Management Water Resources of South Africa 2005 (WRC) Agricultural Research Council (ARC)
© Copyright			



APPENDIX A:
Detailed Groundwater Level and Quality
Monitoring Station Labels

WMA 4: Pongola-Mtamvuna

WMA 4 - Pongola-Mtamvuna: Groundwater Level and Quality Monitoring Stations

Station	Name	Catchment	Province	Label
W3N0011	Sodwana Bay	W32	KZN	W3N0011-GI-O-13yrs-1%
W7N0002	Mabibi	W70A	KZN	W7N0002-GI-O-14yrs-1%
W7N0004	Kosibay Border Post	W70A	KZN	W7N0004-GI-O-6yrs-38%
W7N0007	No.14 Ptn Mabaso Game Reserve	W70A	KZN	W7N0007-GI-O-10yrs-0%
W7N0008	No.14 Ptn Mbazwana Forest	W70A	KZN	W7N0008-GI-O-10yrs-2%
W4N0014	Shemula	W43B	KZN	W4N0014-GI-O-6yrs-0%
W7N0001	Tembe Stateland	W70	KZN	W7N0001-GI-O-15yrs-7%
W4N0013	Uphande Primary School	W45A	KZN	W4N0013-GI-O-13yrs-0%
W4N0011	Leeukop Game Reserve	W44D	KZN	W4N0011-GI-O-13yrs-0%
W4N0017	Bosveld - Magudu Game Reserve	W44	KZN	W4N0017-GI-O-4yrs-5%
W3N0012	Ozabeni	W32B	KZN	W3N0012-GI-O-4yrs-0%
W3N0013	Ozabeni - Lower Mkuze (Natal Nater.Con.)	W32B	KZN	W3N0013-GI-O-4yrs-6%
V3N0014	Hartebeestspuit	V32	KZN	V3N0014-GI-O-4yrs-18%
V3N0015	Vaalbank	V32	KZN	V3N0015-GI-O-10yrs-0%
V3N0020	Newcastle Star 3	V31J	KZN	V3N0020-GI-O-1yrs-0%
V3N0021	Newcastle Star 1	V31K	KZN	V3N0021-GI-O-1yrs-0%
V3N0022	Newcastle Star 2	V31K	KZN	V3N0022-GI-O-1yrs-0%
V3N0016	Drangan	V32	KZN	V3N0016-GI-O-10yrs-0%
W3N0014	St.Lucia State Land Ptn Boma Weather Station	W32H	KZN	W3N0014-GI-O-6yrs-7%
W3N0015	Stateland Ptn Cape Vidal	W32H	KZN	W3N0015-GI-O-9yrs-0%
W3N0016	State Land Ptn Mfabeni Forest	W32H	KZN	W3N0016-GI-O-9yrs-0%
V3N0023	Nonsana 1	V32D	KZN	V3N0023-GI-O-1yrs-0%
V3N0024	Nonsana 3	V32D	KZN	V3N0024-GI-O-1yrs-0%
V3N0026	Old Bulwer 1	V32D	KZN	V3N0026-GI-O-1yrs-0%
V3N0027	Old Bulwer 2	V32D	KZN	V3N0027-GI-O-1yrs-0%
W2N0002	Ebukhalini C.P. School	W22K	KZN	W2N0002-GI-O-5yrs-0%
V3N0025	Nonsana 2	V32D	KZN	V3N0025-GI-O-1yrs-0%
V3N0029	Marine Dewars 2	V32E	KZN	V3N0029-GI-O-1yrs-0%
V3N0032	NNC 1	V32E	KZN	V3N0032-GI-O-1yrs-0%
V3N0034	Dudley Wallsend 2 in Dundee	V32E	KZN	V3N0034-GI-O-1yrs-0%
V3N0035	Dudley Wallsend 3	V32E	KZN	V3N0035-GI-O-1yrs-0%
V3N0036	Redstar 1	V32E	KZN	V3N0036-GI-O-1yrs-0%
V3N0037	Redstar 2	V32E	KZN	V3N0037-GI-O-1yrs-0%
V3N0038	Redstar 3	V32E	KZN	V3N0038-GI-O-1yrs-0%
V3N0039	Redstar 4	V32E	KZN	V3N0039-GI-O-1yrs-0%
V3N0040	Bannockburn 1	V32E	KZN	V3N0040-GI-O-1yrs-0%
V3N0041	Bannockburn 2	V32E	KZN	V3N0041-GI-O-1yrs-0%
V3N0042	Bannockburn 3	V32E	KZN	V3N0042-GI-O-1yrs-0%
V3N0043	NNC4	V32E	KZN	V3N0043-GI-O-1yrs-0%
V3N0044	NNC4	V32E	KZN	V3N0044-GI-O-1yrs-0%
V3N0045	NNC 3	V32E	KZN	V3N0045-GI-O-1yrs-0%
V3N0046	NNC 3	V32E	KZN	V3N0046-GI-O-1yrs-0%
V3N0047	NNC 3	V32E	KZN	V3N0047-GI-O-1yrs-0%
V3N0048	St. Georges 1	V32E	KZN	V3N0048-GI-O-1yrs-0%
V3N0049	St. Georges 2	V32E	KZN	V3N0049-GI-O-1yrs-0%
V3N0050	NNC 2	V32E	KZN	V3N0050-GI-O-1yrs-0%
V3N0051	NNC 2	V32E	KZN	V3N0051-GI-O-1yrs-0%
V3N0052	NNC 2	V32E	KZN	V3N0052-GI-O-1yrs-0%
V3N0054	Gladstone 2	V32E	KZN	V3N0054-GI-O-1yrs-0%
V3N0055	Gladstone 3	V32E	KZN	V3N0055-GI-O-1yrs-0%
V3N0056	Hatting Spruit 1	V32E	KZN	V3N0056-GI-O-1yrs-0%
V3N0057	Hatting Spruit 2	V32E	KZN	V3N0057-GI-O-1yrs-0%
V3N0058	Hatting Spruit	V32E	KZN	V3N0058-GI-O-1yrs-0%
V3N0059	Corby Rock 1	V32E	KZN	V3N0059-GI-O-1yrs-0%
V3N0060	Corby Rock 2	V32E	KZN	V3N0060-GI-O-1yrs-0%
V3N0061	corby Rock 3	V32E	KZN	V3N0061-GI-O-1yrs-0%
V3N0065	Kliprand 3	V32E	KZN	V3N0065-GI-O-1yrs-0%
V3N0068	Talana 3	V32E	KZN	V3N0068-GI-O-1yrs-0%
V3N0070	Avoca 2	V32E	KZN	V3N0070-GI-O-1yrs-0%
V3N0071	Indumeni 1	V31E	KZN	V3N0071-GI-O-1yrs-0%
V3N0072	Indumeni 2	V32E	KZN	V3N0072-GI-O-1yrs-0%
V3N0073	Indumeni 3	V32E	KZN	V3N0073-GI-O-1yrs-0%
V6N0001	Malungisa 1 VILLAGE IN DUNDEE	V60D	KZN	V6N0001-GI-O-1yrs-0%
V6N0003	Malungisa 3	V60D	KZN	V6N0003-GI-O-1yrs-0%

WMA 4 - Pongola-Mtamvuna: Groundwater Level and Quality Monitoring Stations

Station	Name	Catchment	Province	Label
V6N0004	Northfield 1	V60D	KZN	V6N0004-GI-O-1yrs-0%
V6N0005	Northfield 2	V60D	KZN	V6N0005-GI-O-1yrs-0%
V6N0006	Northfield 3	V60D	KZN	V6N0006-GI-O-1yrs-0%
V1N0002	Walkers Hoek	V12C	KZN	V1N0002-GI-O-7yrs-0%
W1N0504	Bantu Reserve No.6 Ptn Birdswood	W12J	KZN	W1N0504-GI-O-10yrs-1%
W1N0506	Bantu Reserve No.6 Ptn Birdswood	W12J	KZN	W1N0506-GI-O-10yrs-0%
W1N0507	Bantu Reserve No.6 Ptn Birdswood	W12J	KZN	W1N0507-GI-O-10yrs-0%
W1N0508	Bantu Reserve No.6 Ptn Meerensee	W12J	KZN	W1N0508-GI-O-10yrs-1%
W1N0509	Bantu Reserve No.6 Ptn Meerensee	W12J	KZN	W1N0509-GI-O-10yrs-0%
W1N0510	Bantu Reserve No.6 Ptn Meerensee	W12J	KZN	W1N0510-GI-O-10yrs-0%
W1N0514	Bantu Reserve No.6 Ptn Veldvlei	W12J	KZN	W1N0514-GI-O-10yrs-0%
W1N0503	K31 10905 Ptn Aquadene	W12H	KZN	W1N0503-GI-O-10yrs-1%
V1N0001	Klipplaats Fontein	V11L	KZN	V1N0001-GI-O-7yrs-0%
W1N0511	Unizulu Science Centre(A)	W12F	KZN	W1N0511-GI-O-15yrs-1%
W1N0512	Unizulu Science Centre(B)	W12F	KZN	W1N0512-GI-O-10yrs-0%
W1N0513	Unizulu Science Centre(C)	W12F	KZN	W1N0513-GI-O-10yrs-0%
V2N0001	Etembeni Mission Ptn Dangazela Mabaso	V20	KZN	V2N0001-GI-O-10yrs-4%
V5N0001	Umvoti	V50	KZN	V5N0001-GI-O-10yrs-0%
U4N0001	Umvoti	U40E	KZN	U4N0001-GI-O-10yrs-1%
U3N0003	Umvoti	U40H	KZN	U3N0003-GI-O-10yrs-0%
U6N0003	Clairwood High School	U60F	KZN	U6N0003-GI-O-10yrs-0%
U6N0001	Clairwood Race Course A	U60D	KZN	U6N0001-GI-O-16yrs-2%
U6N0002	Clairwood Race Course B2	U60D	KZN	U6N0002-GI-O-7yrs-0%
U6N0005	Merement Ptn Southern Works B	U60D	KZN	U6N0005-GI-O-15yrs-2%
U6N0006	Southern Works A	U60D	KZN	U6N0006-GI-O-16yrs-0%
U6N0004	Durban ptn. Airport Market Garden	U60E	KZN	U6N0004-GI-O-15yrs-0%
T5N0001	No.2 Ptn Gangala	T52	KZN	T5N0001-GI-O-1yrs-0%