A Socio-Environmental History of Water in the Karoo c.1762-2012, with specific focus on Prince Albert and Williston.

Nina Kruger

Thesis presented in fulfilment of the requirements for the degree of Master of Arts (History) in the Faculty of Arts and Social Sciences at Stellenbosch University

Supervisor: Prof. Sandra S. Swart

March 2013

Declaration

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that the reproduction and publication thereof by Stellenbosch University will not infringe on any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Signature: ..M Kruger.....

Date: ..19 February 2013.....

Abstract

This study examines the history of water in two small Karoo towns. The main argument of the thesis is that the availability of and access to water has played influential roles in the development of Williston and Prince Albert. The ambitions of this thesis are three-fold: firstly, the approach is socio-environmental history and therefore it provides insight into the environmental as well as the social history of the resource in each region. It consciously reflects on the notion of power and explores the manner in which access to water was racialised by authorities in each town. Secondly, this thesis provides insight into the technological and legislative water supply and development of sanitation at both settlements, which is outlined in a broader national development to contextualise the local trajectories. Thirdly, through personal narratives it offers an ethnographic analysis of mind-sets such as fatalism and hopefulness in the face of extreme climatic conditions are examined. The experiences of the socially marginalised and underrepresented are intended to challenge the whiggish celebration of anthropogenic ascendancy over nature in the historiography.

Opsomming

Hierdie studie ondersoek die geskiedenis van water in twee klein Karoo dorpies. The hoof argument van die tesis is dat die beskikbaarheid van en toegang tot water bepalende rolle gespeel het in die ontwikkeling van Williston en Prins Albert. Die doelstellings van hierdie tesis is drievoudig: eerstens, is die benadering sosio-omgewingsgeskiedenis en verskaf dit dus insig oor die omgewings- sowel as die sosiale geskiedenis van hierdie natuurlike hulpbron in elke streek. Hierdie werk weerspieël doelbewus die idee van mag en ondersoek die wyse waarop toegang tot water deur die dorpsowerhede rasbevooroordeeld was. Tweedens, verskaf hierdie tesis insig oor die water toevoer en die ontwikkeling van sanitêre geriewe in beide nedersettings, waarna die plaaslike ontwikkeling gesien word binne `n breër nasionale konteks. Derdens word daar deur middel van persoonlike vertellings gekyk na die opkoms van etnografiese ingesteldhede soos fatalisme en hoop wanneer uiterste klimaatstoestande in die gesig gestaar word. Die ervaringe van die sosiaal gemarginaliseerde en die onderverteenwoordigde groepe word uitgelig ten einde die liberale viering van antropogeniese dominasie oor die natuur uit te daag.

Acknowledgements

Writing this thesis has been the biggest challenge of my life and it would not have been possible to complete it without support along the way. Firstly, I would like to express my deepest gratitude towards my supervisor, Sandra Swart. She pushed me to my limits, made me a priority throughout the year and put a great deal of energy, wisdom and thought into my work. Thank you. Without your guidance and support, I would never have believed in myself to make it this far.

This thesis would be lacking if it were not for the interviewees who gave so freely of their time, shared their memories and took an interest in my work. Thank you.

Thank you to my fellow HFM'ers (near and far) for all your advice and comments. Thank you for allowing me to be part of this wonderful group.

To my friends who are spread across the globe - for all your text messages, phone calls, treats, and series to keep me sane, thank you.

Thank you to my parents, Jan and Nell Kruger – your critical eyes greatly improved the language and style of my work. Thank you also to all my family for the unending motivation and for keeping me grounded. Thank you for having faith in my abilities.

I dedicate my work to my parents and the late J. H. Swart – for their love of the Karoo.

Table of Contents

Table of Illustrations

Chapter One:

"Mainstreaming" Water History – Historiography and Methodology

This thesis examines the history of water in two South African towns: Prince Albert, in the Western Cape and Williston in the Northern Cape. A key contention is that although both towns are located within the Great Karoo the availability of water historically has been strikingly different and played an influential role in the development of the two settlements. The proximity of the two towns is emphasised in the map below.

Map 1.1: Williston and Prince Albert within South Africa.[1]

Simply put – although the subsequent chapters will explore the more nuanced differences, the relationship with water is predicated on its availability and predictability in Prince Albert as opposed to its unpredictability and scarcity in Williston. This draws on Donald Worster's seminal *Rivers of Empire*, in which he puts forth a key argument which this thesis also aims to explore within the South African context:

> "It has shaped institutions, destroyed cities, set limits to expansion, brought feast and famine, carried goods to market, washed away sickness, divided nations, inspired the worship and beseeching of gods, given philosophers a metaphor for existence, and

[1] Available online at: http://mapsof.net/map/south-africa-blank-locator-map (Accessed 16 October 2012).

> disposed of garbage. To write history without putting any water in it is to leave out a large part of the story".[2]

Water histories have generally fallen under the sub-discipline of environmental history, with a focus on the natural environment and the manner in which human beings have impacted *on* and were in return impacted *by* their environmental context. As this chapter will explain, however, this thesis is also concerned with social history – particularly elements of the identities and lived realities of residents of both Karoo towns. This thesis is thus located within the specific and embryonic historiographical lens self-defined as socio-environmental history, as delineated by Nancy Jacobs and Sandra Swart. While the approach as explicitly defined is recent, it has long roots – indeed as early as the 1930s and 1940s P. J. van der Merwe and C.W. de Kiewiet incorporated both elements strongly.[3] Thus it is not the bringing together that is new¸ but rather the conscious articulation of the bringing together. This is significant for the reflexive utility of the dual-weighted nomenclature: the essential purpose of both schools has been "to show that the history of those at the bottom has been suppressed, their voices ignored and their agency unrecognized".[4] Environmental history addresses the role and place of nature in everyday human life. It studies the interactions between society and the nonhuman world. Social history is implemented for "the strong emphasis it offers on how power operates through differences embedded in class, race, gender and generation," which provides a framework for analysis.[5] Therefore, the conscious combination implicit in the socio-environmental approach incorporates elements of both schools, and particularly brings to the fore the close examination of power.[6]

Jacobs foregrounded power in researching the history of irrigation and water management in the Kuruman Valley, which is situated on the border of the Northern Cape and North-West Province in South Africa. She looked at the period between c. 1800 and 1962 and provides an account of how the local inhabitants were steadily driven away from the eyes of local springs and thereby cut off from water supplies until they were eventually forced, due to the

---

[2] Donald Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (New York: Oxford University Press, 1985), 19.
[3] P. J. van der Merwe, *Studies oor die Mobiliteit van die Pioniersbevolking aan die Kaap* (Cape Town, Nasionale Pers, 1938); P. J. van der Merwe, *Die Trekboer in die Geskiedenis van die Kaapkolonie, 1657-1842* (Cape Town, Nasionale Pers, 1945) and C. W. de Kiewiet, *A History of South Africa: Social and Economic* (Oxford: Clarendon, 1941).
[4] N. Jacobs, *Environment, Power, and Injustice: A South African History* (Cambridge: Cambridge University Press, 2003), 16.
[5] S. Swart, *Riding High: Horses, Humans and History in South Africa* (Johannesburg: Wits University Press, 2010), viii.
[6] Swart, *Riding High*, 7.

circumstances, to either leave the Kuruman area permanently or become submissive to the new white residents.[7] Her work also considers the way in which the development of a system of irrigation from 1818 onwards influenced agricultural production within the community.[8] Similarly, this thesis is also concerned with the history of irrigation and water management albeit in a different region within South Africa. This thesis also identifies with the social approach advocated whereby the experiences of the marginalised are brought to the fore, which is more closely explored below.

This chapter introduces the central argument of this thesis and locates it in the broader historiography of environmental history and more specifically water history. It then focuses on southern African research and discusses the approaches of the two influential historiographical schools. Finally, the chapter also delineates water legislation in South Africa from 1652 through to the National Water Act of 1998 in order to offer a macro-context in which micro-developments may be explained.

1.1. Environmental History

As Phia Steyn has argued in her assessment of South African environmental historiography, several factors impacted on the adoption of an American-style "green revolution" or environmental movement. The late introduction of television to South Africans to bear witness to the environmental crises and the isolation of South Africa in the international political sphere because of the Apartheid regime led to it being ignored by the general public as well as professional historians within South Africa.[9] However, as noted above there were a few historians who dealt with various matters that impacted on the South African environment, both directly as well as indirectly. Nevertheless, very few historians allowed the environment to take the central role within their research, as has become the accepted rule for environmental history as it is known presently.[10]

---

[7] Johann Tempelhoff, "Recent Trends in South African Water Historiography", *The Journal for Transdisciplinary Research in South Africa*, (4), (1), July 2008, 286.
[8] Phia Steyn, "The Greening of our Past? An Assessment of South African Environmental Historiography". Available online at: http://www.h-net.org/~environ/historiography/safrica.htm (Accessed 7 March 2012).
[9] For a recent assessment see Sandra Swart, *Report on South African Environmental History*, June 2012. This report draws largely on a piece in Albert Grundlingh, Christopher Saunders, Sandra Swart and Howard Phillips, "Environment, Heritage, Resistance and Health: Newer Historiographical directions", in Robert Ross, Anne Mager and Bill Nasson (eds.), *The Cambridge History of South Africa, 2*, (Cambridge: Cambridge University Press, 2011).
[10] Steyn, "The Greening of our Past? An Assessment of South African Environmental Historiography".

A Historical Geography of South Africa by N. C. Pollock and Swanzie Agnew served as an environmental history well-ahead of its time when it was published during the early 1960s.[11] John D. Omer-Cooper used environmental issues as a contributing factor in accounting for the Mfecane.[12] South African environmental history, however, seems to have really taken off during the early 1980s with historians such as Jeff Guy, William Beinart, Peter Delius and Stanley Trapido, who all made the environment part of their analysis of bigger historiographical issues.[13] Jeff Peires, Kevin Shillington and Timothy Keegan also included historical explorations and explanations of environmental issues in their work from the early to mid-1980s.[14] Democracy in 1994 has ushered in a period of increased historiographical diversity, which is reflected in specialist journals such as *Environmental History* and *Environment and History*. *The South African Historical Journal* and *The Journal of Southern African Studies* have also published special issues dealing with environmental history and have regular environmental offerings. There is also *The Journal for Transdisciplinary Research in South Africa*, which was started in 2005 and has included environment related articles in many issues.[15]

Worster, who was at the forefront of the development of environmental history in the United States of America, maintains that the sub-discipline rejects the typical assumption that human experiences and human life has been free from natural constraints, that human beings are a completely disconnected species and that the ecological effects of past actions can be ignored.[16] While in the past few years the popularity of environmental history has grown immensely, environmental historiography in South African can in no way be compared, in volume or in scope, with that of American environmental history.[17]

---

[11] N. C. Pollock and Swanzie Agnew, *A Historical Geography of South Africa* (London: Longmans, 1963).
[12] John D. Omer-Cooper,*The Zulu Aftermath: A 19th Century Revolution in Bantu Africa* (Ewanston: North-West University Press, 1966).
[13] Jeff Guy, *The Destruction of the Zulu Kingdom* (Johannesburg: Ravan Press, 1982); William Beinart, *The Political Economy of Pondoland, 1860-1930* (Cambridge: Cambridge University Press, 1982); Peter Delius, *The Land Belongs to Us: The Pedi Colony, the Boers and the British in the 19th century Transvaal* (Johannesburg: Ravan Press, 1983); William Beinart; Peter Delius and Stanley Trapido (eds.), *Putting a Plough to the Ground: Accumulation and Disposession in Rural South Africa, 1850-1930* (Johannesburg, Ravan Press, 1986).
[14] Jeff Peires, *The House of Phalo: A History of the Xhosa People in the days of their Independence* (Johannesburg: Ravan Press, 1981); Kevin Shillington, *The Colonization of the Southern Tswana, 1870-1900* (Braamfontein: Ravan Press, 1985); Timothy Keegan, *Rural Transformations in Industrializing South Africa: The Southern Highveld to 1914* (Braamfontein: Ravan Press, 1986).
[15] For example: *The Journal of Southern African Studies*, (26), (4), 2000, Special Issue: African Environments: Past and Present.
[16] Donald Worster, "Transformations of the Earth: Toward an Agroecological Perspective in History", *The Journal of American History*, (76), (4), March 1990, 1089.
[17] Steyn, "The Greening of our Past? An Assessment of South African Environmental Historiography".

This thesis is concerned with problems such as the supply of water as they were faced and subsequently responded to within the villages of Prince Albert and Williston. However, as was mentioned above, the approach of this thesis is socio-environmental and is therefore not solely focused on environmental history.

While the history of water has featured in various different forms and under a variety of names for a long period of time, the more recent and current research on water, specifically within the sphere of history, is a product of the 1960s when Rachel Carson's pioneering study, entitled *Silent Spring*, played an important role in bringing environmental affairs to the fore in work within the United States of America.[18] By the 1970s Environmental Studies began to appear as a discipline and Roderick Nash coined the term "environmental history" in 1972.[19] The development and advancement of water history continued and by the early 1980s, themes of water history featured within modern research and a number of excellent works appeared at the time, most notable for water historians was Worster's *Rivers of Empire*. As assessed by Carruthers, Worster's work studied the evolution of irrigation in the American West from the mid-nineteenth century and traced it through to the twentieth century by which time the continued use of widespread irrigation had become a great concern due to the scarcity of resources within the arid areas of the country.[20] Worster also published on the Dust Bowl in the Great Plains of the United States of America that occurred during the 1930s. In his research on droughts Vetter argued that this environmental catastrophe resulted in "the displacement of some 3, 5 million people and the loss of several billion tons of topsoil".[21] These works were influential in bringing environmental issues to the fore in historical research and advocating the spread of the environmental movement[22].

In a manner similar to Steyn, Johann Tempelhoff has published on recent trends in South African water historiography, stating specifically that there had been an increasing international interest in water history during the preceding years. He believes this to be the result of a variety of international water initiatives that have been launched since the end of

[18] Rachel Carson, *Silent Spring* (New York: Houghton Mifflin, 1962).
[19] Carruthers, "Africa: Histories, Ecologies and Societies", 379.
[20] Tempelhoff, "Recent Trends in South African Water Historiography", 276-277.
[21] S. Vetter, "Drought, Change and Resilience in South Africa's Arid and Semi-Arid Rangelands", *South African Journal of Science*, (105), January/February 2009, 29.
[22] Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979).

the Second World War, which culminated by the 1990s in major water projects, such as those of the World Water Council and the Global Water Partnership.[23]

1.2 Water History within South Africa

A major focus within the environmental historiography of South Africa has been the exploitation as well as the conservation of natural resources, but water has been largely ignored in favour of other extracted resources like gold, diamonds, coal and petroleum.[24] Indeed, as Steyn observed, given the insufficient water resources within the country as well as the impact this has had on farming and other industries within the country, it is surprising how little has been written about water use in the history of South Africa as a whole.[25] Tempelhoff has defined "water history" as "the study of human culture and its interaction with the environment, specifically in the spatial context of the hydrosphere, atmosphere and biosphere, in an effort to locate evidence of change that can be interpreted and analysed from observations of past, present and anticipated future trends".[26] This thesis prefers a more "fluid" approach and illustrates how water history focuses on human interaction with different spheres of the environment in order to illustrate change over time. This thesis is focussed on the water histories of two small Karoo towns and the manner in which the availability of water influenced the development of the two settlements.

Water history in South Africa is still a young development. However, Tempelhoff has shown that ever since the late 1960s there has been a determined effort among a small number of academics within the country to promote scientific research within the field of water studies, which resulted in the Water Research Act of 1971. This act aimed "to provide for the promotion of research in connection with water affairs; for that purpose to establish a Water Research Commission and a Water Research Fund; and to provide for matters incidental

[23] Tempelhoff, "Recent Trends in South African Water Historiography", 273-274.
[24] Russel Ally, "War and Gold – the Bank of England, the London Gold Market and South Africa's Gold, 1914-1919", *Journal of Southern African Studies*, (17), (2), June 1991, 222-238; David Yudelman and Alan Jeeves, "New Labour Frontiers for Old: Black Migrants to South African gold mines, 1920-1951", *Journal of Southern African Studies*, (13), (1), October 1986, 101-124; Tim Hughes, "Conflict Diamonds and the Kimberley Process: Mission Accomplished – or mission impossible?", *South African Journal of International Affairs*, (13), (2), December 2006, 115-130; Shumirai Nyota and Fortune Sibanda, "Digging for Diamonds, Wielding New Words: A Linguistic Perspective on Zimbabwe's "Blood Diamonds", *Journal of Southern African Studies*, (38), (1), March 2012, 129-144; Michael Singer, "Towards a Different Kind of Beauty: Responses to Coal-based Pollution in the Witbank Coalfield between 1903 and 1948", *Journal of Southern African Studies*, (37), (2), June 2011, 281-296 and Cyril I. Obi, "The Petroleum Industry: A Paradox or (sp) oiler of development?", *Journal of Contemporary African Studies*, (28), (4), October 2010, 443-457.
[25] Steyn, "The Greening of our Past? An Assessment of South African Environmental Historiography".
[26] Tempelhoff, "Recent Trends in South African Water Historiography", 275.

thereto".[27] Since the 1990s, however, there have been various developments, as will be discussed below.

Tempelhoff heads the Research Group for the Cultural Dynamics of Water at North-West University, which is a transdisciplinary group that focuses on human interaction with the hydrosphere.[28] Water research involves a variety of government departments, statutory bodies, industries as well as universities. The National Institute for Water Research (NWRI), which forms part of the Council for Scientific and Industrial Research (CSIR) carries out a great deal of water research within South Africa.[29]

With regards to secondary literature, Tempelhoff produced a book on the Rand Water Board dating from 1903 to 2003. His work continues by outlining the major accomplishment of the organization within the first quarter of the 20th century, which encompassed the opening of the Vaal River Barrage, as was described above. By 1993 the water mains of Rand Water covered a distance of more than 2510 kilometres and some of these pipes had been laid as early as 1907. Tempelhoff concluded by stating that "the story of Rand Water is the story of the search for sustainable water resources in one of Africa's major regions of economic growth and development".[30] This whiggish institutional history sets the foundation for comparative water histories between different organizations as well as the private as opposed to the public management of water.

In 2005 Tempelhoff offered a historiographical exploration of water history. He maintained that an international movement existed which researched the development of sanitation as well as water infrastructure, which is illustrated by the work of Harri Mäki, as will be explored below.[31] In 2007 Tempelhoff and Johann Haarhoff undertook research on the water supply to the Witwatersrand between 1924 and 2003, in which they argued that the supply of sufficient water to the region to meet an ever-increasing demand was a remarkable achievement, without perhaps probing the social history behind it. He omits the exploration of power – who it benefitted and what it cost the socially marginal. This study relates to the

[27] The Water Research Act 34 of 1971.
[28] Swart, *Report on South African Environmental History*, 6-7.
[29] G. G. Cillie, P. Coombs and P. E. Odendaal, "Water Pollution Research in South Africa", *Journal (Water Pollution Control Federation)*, (51), (3), Part 1 March 1979, 458.
[30] Johann Tempelhoff, *The Substance of Ubiquity: Rand Water 1903-2003* (Vanderbijlpark: Keio Publishers, 2003), 73-77, 98, 481 and 606-607.
[31] Johann Tempelhoff, "`n Historiografiese Verkenning van Watergeskiedenis", *Koers*, (70), (3), 2005, 487.

whiggish institutional history he wrote of the Rand Water Board, as was discussed above.[32] This thesis consciously includes a reflection on power and a critical look at what the consequences were on the socially marginalised, as opposed to placing emphasis on the successes and achievements of institutions. Tempelhoff published a case study on the Vaal River Barrage during 2009, in which he argued that when Rand Water took the Barrage into its use in 1923 it was with the intention to use this storage facility for extracting potable water for the Witwatersrand. Shortly thereafter, the Vaal Dam, a more comprehensive storage facility was built and therefore before the end of the 1930s the Vaal River Barrage had become a receptacle for polluted water that could be used as secondary water by the local industries within the Vaal Triangle.[33] Tempelhoff, Gouws and Motloung recently studied the catchment of the *Groot Marico* River in the North-West Province of South Africa, describing the area as a highly desirable region of land for human settlement. They argued that in order for all residents to appreciate the river as a resource needing protection, residents must be "taught" to be responsible.[34]

Tempelhoff, along with his colleagues, have adopted an approach to water history that is both statist and institutionalist. He relies on official documentation, archival materials as well as the private archives or document collections of an organization, such as the Rand Water Board, in order to present a top-down perspective. Another proponent of this approach is Harri Mäki, who presented a comparative history of urban water supply, health and sanitation in four South African cities, namely Cape Town, Grahamstown, Durban and Johannesburg. He explored the establishment of each town, considered early legislation regarding public health and traced the development of local water supplies as well as the introduction of sanitary facilities. His work serves as a foundation from which a variety of comparative water histories can originate, specifically on smaller towns as opposed to the three major cities featured.[35]

In contrast to Tempelhoff and Mäki, Robert Shell and Leonard Guelke researched the relationship of people to both water and land between 1652 and 1780. They showed that by

[32] J. W. N. Tempelhoff and Johannes Haarhoff, "Water Supply to the Witwatersrand (Gauteng) 1924-2003", *Journal for Contemporary History*, (32), (2), December 2007, 113.
[33] Johann W. N. Tempelhoff, "Civil Society and Sanitation Hydropolitics: A Case Study of South Africa's Vaal River Barrage", *Physics and Chemistry of the Earth*, (34), 2009, 174.
[34] Johann Tempelhoff, Claudia Gouws and Sysman Motloung, "The River as Artefact: Interpreting the Groot Marico and its People in the 21st Century", *Ympäristöhistoria Finnish Journal of Environmental History*, (1), 2012, 26.
[35] Harri Mäki, *Water, Sanitation and Health: The Development of The Environmental Services in four South African cities, 1840-1920* (Tampere: Juvenes Print, 2008).

acquiring control over and access to scarce surface water resources, European settlers disrupted Khoikhoi patterns of life and effectively ruined their societies. The article maintains that though the Khoikhoi left certain water sites unattended, their actions could not be interpreted as a lack of appreciation for the value of the resource, but rather that the idea of individuals gaining exclusive control of land or water was an unfamiliar concept to their way of life.[36] Therefore, dissimilar to the approach described above, their approach is revisionist and explicitly social history in the sense that they do not simply choose to rely on official documentation but rather explore the experiences of the marginalised and often underrepresented. Another proponent of the social approach to water history is Lance Van Sittert, who explored water divination and the underground water rush in the Cape from 1891 to 1910. He maintained that the lack of a reliable water supply in the latter half of the nineteenth century severely limited agricultural development within the Cape Colony.[37] His findings are more closely explored in Chapters Three and Five.

Elize Van Eeden worked in partnership with natural scientists, activists as well as journalists on the dewatering of sinkholes in the Carletonville area of Gauteng Province.[38] The water shortages these residents were faced with as well as the conditions of the sinkholes greatly changed agricultural patterns and eventually forced a number of farmers in the district to sell their properties and to relocate to areas which were not as close to mining activities.[39] Kobus du Pisani and Saroné van Niekerk undertook a study into the water resources and water management in the Bahurutshe heartland, which is located in the North-West Province. Water shortages are a reality with which the local people have lived for some time and they concluded that the prevention of the long-term deterioration of the groundwater system is crucial.[40] The social approach towards the writing of water history, as delineated by the works described above, is concerned with the lived experiences of parts of society who are often excluded from society.

---

[36] Leonard Guelke and Robert Shell, "Landscape of Conquest: Frontier Water Alienation and Khoikhoi Strategies of Survival, 1652-1780", *the Journal of Southern African Studies*, (18), (4), December 1992, 803-805.
[37] Lance van Sittert, "The Supernatural State: Water Divining and the Cape Underground Water Rush, 1891-1910," *Journal of Social History*, (37), (4), 2004, 916.
[38] Tempelhoff, "Recent Trends in South African Water Historiography", 289.
[39] Steyn, "The Greening of our Past? An Assessment of South African Environmental Historiography". Elize S. van Eeden, Braam de Villiers, Herman Strydom and Leslie Stoch, "Effects of Dewatering and Sinkholes on People and Environment – An Analysis of the Carletonville area in Gauteng, South Africa", *Historia*, (48), (1), May 2003, 95-96.
[40] Saroné Van Niekerk and Kobus du Pisani, "Water Resources and Water Management in the Bahurutshe Heartland", *Water SA*, (32), (3), July 2006, 448-450.

The concept of Hydropolitics was first introduced by John Waterbury with his work on the Nile River in the Middle East and has since also become a popular field of research for water historians.[41] The Zimbabwean historian, Muchaparara Musemwa, who works in South Africa, recently produced research results in this field in an article on water resources within Bulawayo between 1980 and 1994.[42] Musemwa maintains that local conflict played itself out over water supplies in Bulawayo, the second largest city in Zimbabwe. Within a decade post-independence, Zimbabwe experienced three major droughts and the impact of these droughts was particularly severe on the urban poor as well as the overall economy of Bulawayo due to its location in a semi-arid zone. He concludes by stating that no long term solution has been provided and the city's determination for a sufficient and reliable water supply continues to be haunted by past politics as well as the discrimination experienced at the hands of the central government.[43]

Motlatsi Thabane studied the forced relocation of residents of the Mohale Dam Area following the introduction of the Lesotho Highlands Water Scheme. The Lesotho Highlands Water Treaty with South Africa was signed in October 1986. The signing of the Treaty was followed by a series of feasibility studies on the manner in which the construction of dams and related infrastructure was going to affect people and the environment in the designated areas. Both governments argued that the sacrifices these communities made were in the interests of the nation as a whole and therefore considered noble. However, Thabane maintains that these justifications did not remove the affected communities' feeling that the project concerned had no relevance to their lives and that those who would benefit from the project were not ones with which they identified themselves.[44] Similarly, Oscar Mwangi undertook a case study of the Lesotho Highlands Water Project and described the project as one of the most wide-ranging engineering projects of its kind in the world. He highlights how the project displaced more people in Lesotho to make room for dams and reservoirs than the actual number of jobs created. He argues that the reduction of arable farming as well as grazing lands within the highlands area is a threat to human security in that it has diminished access to resources and also negatively influenced food security, which in turn lead to hunger and starvation. Finally, the reimbursement promised to the exiled residents, has not

[41] John Waterbury, *Hydropolitics of the Nile Valley* (New York: Syracuse University Press, 1979).
[42] Tempelhoff, "Recent Trends in South African Water Historiography", 291.
[43] Muchaparara Musemwa, "Disciplining a Dissident City: Hydropolitics in the City of Bulawayo, Matabeleland, Zimbabwe, 1980-1994", *Journal of Southern African Studies*, (32), (2), June 2006, 239 and 253.
[44] Motlatsi Thabane, "Shifts from Old to New Social and Ecological Environments in the Lesotho Highlands Water Scheme: Relocating Residents of the Mohale Dam Area", *Journal of Southern African Studies*, (26), (4), Special Issue: African Environments: Past and Present, December 200, 633-634 and 636.

materialized thus far.[45] Therefore, the approach of these three historians working on local African countries has also been social in the manner that marginalised experiences were brought to the fore.

The approach of this thesis is slightly different, in consciously approaching water from a socio-environmental perspective – trying to give serious weight to both endeavours – in the manner of Swart and Jacobs – helps "mainstream" the importance of water historiographically.

A number of international journals exist that are solely devoted to advocating water history: *The International Journal of Water*, *The International Journal of Water Resources Development*, which covers all aspects of water development in both industrialized and third world countries as well as *the Journal of Water Resources Planning and Management*. *Water International Journal* is the official journal of the International Water Resources Association, which was founded in 1972. *Water History* is an interdisciplinary forum for discussing the relationship between humankind and water. *wH20* is an online, open-access journal for women and water issues across the globe. Within the continent of Africa there is the *African Water Journal*, while locally in South Africa there is only *Water SA*, which is a scientific publication focussing on science, technology, engineering and policy. Therefore, local forums for publication on water history are not yet firmly established and research is instead presented in journals such as *the Journal of Southern African Studies* and *the South African Historical Journal*, which is the publication of the South African Historical Society. These forums have been of significant importance in this thesis through the provision of both national as well as international works dealing with similar themes and advocating new approaches to the writing of water history.

1.3 Methodology

This thesis relied predominantly on archival material to form the foundation of the research. Material was gathered from the Cape Town Archival Repository as well as the National Archives in Pretoria. The majority of the archival material collected is presented in the third and fourth chapters, which was supplemented with secondary sources as well as oral interviews in order to provide a more comprehensive narrative, which could be understood within a greater South African perspective. The fifth chapter relied mostly on oral interviews

[45] Oscar Mwangi, "Hydropolitics, Ecocide and Human Security in Lesotho: A Case Study of the Lesotho Highlands Water Project", *Journal of Southern African Studies*, (33), (1), March 2007, 3 and 14-15.

in order to present a very personal history based on the lived experiences of local residents in each town. Fieldwork was undertaken during April 2012 where a week was spent in Williston and Prince Albert respectively, conducting interviews and exploring each town.

The second chapter drew only from secondary sources in order to set the historical context, explaining the tale of each settlement. Many of the sources drawn from were written by local residents and are, as such, not academic publications. No published academic work or research on the history of Prince Albert currently exists, while the only research on Williston was presented by Robert Otto Herbst in his exploration of the Rhenish Missionary Society and their involvement in the Kareeberg area during the nineteenth century.[46] This thesis also drew on water legislation, the historical management of which was influential in creating the infrastructure to which modern management practices have been forced to adapt.

1.4 Water Law in South Africa to 1812

While it is impossible to gain access to pre-colonial water laws, the approach of the first pre-colonial peoples of southern Africa towards water use is illustrated in the work of Guelke and Shell: due to the commonly low and often unreliable seasonal rainfall, permanent sources of fresh water was insufficient. Therefore the various groups of Khoikhoi pastoralists practised an extensive form of transhumance in order to secure a livelihood for themselves. With their sheep and cattle, they followed the seasonal rains and set up their *kraal i*n different places, which allowed them to effectively utilise the resources of their wide-ranging terrain. This lifestyle allowed the *veld* ample time to regenerate itself prior to the Khoikhoi reusing it. Thus, while these pre-colonial peoples may have left their territories with water sources unattended, during particular times of the year, their actions do not indicate any lack of appreciation for the value of the resource.[47]

When Jan van Riebeeck and the Dutch East India Company arrived in 1652 and established a permanent refreshment station at the Cape of Good Hope, formal water law was established for the first time within South Africa. The *Vereenigde Oost-Indische Compagnie* (VOC) governed through their Council of Policy and enforced very strict control over both water and

[46] Robert Otto Herbst, *Die Rynse Sendinggenootskap en Grondkwessies in die Kareeberggrensgebied in die Neentiende Eeu, met spesifieke verwysing na die Amandelboomsending* (DPhil Thesis, Stellenbosch University, 2004).
[47] Leonard Guelke and Robert Shell, "Landscape of Conquest: Frontier Water Alienation and Khoikhoi Strategies of Survival, 1652-1780", *Journal of Southern African Studies*, (18), (4), December 1992, 804-805.

land within the Cape Colony, choosing only to lease land to farmers and rarely granting them permanent tenure.[48]

These water rights were developed by the Dutch settlers from laws which originated in ancient Rome and had been adapted for the Netherlands, where an abundance of water exists. In the Netherlands, authorities were concerned with the drainage and removal of surplus water in order to reclaim land. This made it inevitable that legislation concerning the management of water would need to be adapted for use within South Africa; however, this only occurred much later.[49]

In classical Roman law water was classified as *res extra commercium* or non-negotiable things, which could also not be privately owned. A river could not be owned privately, however, the bank of a river could be privately owned by riparian owners. The owners of riparian land could not prevent members of the public from obtaining access to and making use of water from the river.[50]

This distinction was maintained in Roman-Dutch law, however, in a somewhat changed form. While water in navigable streams was classified as *res publicae* or general property, non-navigable streams as well as spring water on land was considered to be at the disposal of the owner of the property. In other words, water in navigable streams was available to all who had access to the stream. The State, as *dominus fluminis* or custodian, had the right to control and regulate the use of water in navigable streams. This principle that water in navigable streams was general property, but controlled by the state as custodian, formed part of the Roman-Dutch law that was received in the Cape during the 17th and 18th centuries.[51]

The general principles of both classical Roman as well as Roman-Dutch common law dictate that flowing water is an object of common interest to all members of the public. However, only rivers with a strong and sustained flow were classified as public water. Those rivers in which water dried up during seasons of low rainfall were considered to be private. The water

---

[48] K. M. Findlater; N. Funke; R. Adler and A. Turton, *South Africa's Hydropolitical History: Actors, Actions, Roles and Responsibilities*. CSIR Parliamentary Grant Report. NRE No. CSIR/NRE/IR/WR/2007/0064/A. CSIR: Pretoria, 7.

[49] R. Bate and R. Tren, *The Cost of Free Water: The Global Problem of Water Misallocation and the case of South Africa* (Johannesburg: The Free Market Foundation, 2002), 66.

[50] G. J. Pienaar and E. Van der Schyff, "The History, Development and Allocation of Water Rights in South Africa", in J. W. N. Tempelhoff (ed.), *African Water Histories: Transdisciplinary Approaches* (Gauteng: Corals Publishers, 2005), 264.

[51] Hubert Thompson, *Water Law: A Practical Approach to Resource Management and the Provision of Services* (Cape Town, Juta, 2006), 29.

was considered to belong to whoever abstracted it when the river flowed. Similarly, groundwater was deemed to be the property of the landowners. The important distinction between public and private water was that the former was subject to common use. Common use entailed the right to navigation, to abstraction for human use as well as for irrigation purposes. Those landowners who had riparian properties had limited irrigation rights on the land, since the drawing of water from a public river or stream was strictly regulated by common law in order to prevent prejudicial use.[52]

From 1652 through to the middle of the 18th century, the government regulated water use through a series of orders known as *placcaets*.[53] The exercise of control over public rivers began with a proclamation in 1655 whereby the use of river water for laundry purposes was prohibited in order to avoid pollution. A further proclamation was passed in 1661 which gave priority use of water for the Company gardens and mills as well as for the flushing of Cape Town's open drains.[54]

In 1682 and 1685, respectively, the VOC established the courts of the *landdrost* and *heemraden*. The *landdrosten* were positions of political, judicial and military authority, who were required to preside over minor disputes in conjunction with the *heemraden*, which comprised council of prominent local citizens who were charged with the administration of towns and smaller districts. These two bodies were tasked, for more than a century, with the settlement of water and land disputes, where these did not directly impact on the greater interests of the Cape Colony as a whole. The method of appointment of local citizens to the *heemraden* was such that rich, white, land-owning citizens of influence were a great deal more likely than others to occupy positions of power. They were also far more likely to both make and maintain policies that furthered their own goals and those of their peers. Dutch rule came to an end in 1806 and the new British government introduced an extended process of water, land as well as institutional reform. A system of permanent land tenure was introduced in 1812 to replace the leasehold system of the previous Dutch authorities.[55]

1.5 Water and Health Management: 1827-1906

While the Cape was under British rule, the riparian principle applied, which entailed that all owners of land alongside rivers had common rights to the water within those rivers. The

[52] Bate and Tren, *The Cost of Free Water*, 66.
[53] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 8.
[54] Thompson, *Water Law*, 34.
[55] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 8.

courts of the *landdrosten* and *heemraden* remained operational until 1827 when they were replaced by a system of magistrates and civil commissioners. While these new bodies had similar functions, they were not given the same amount of power as the Dutch courts. The Supreme Court was established in 1828 and up until 1848 had the statutory mandate to make decisions regarding the appropriation of water and the settlement of disputes concerning both land and water.[56]

In 1875 Parliament established the position of a hydraulic engineer, who was tasked with the provision of surveying and planning support to private water resource enterprises as well as the assessment of the hydrological and irrigation potential of the Cape colony as well as the viability of government-funded projects. The discovery of diamonds in 1867 and of gold in 1886 prompted both the creation and enormous growth of Kimberley and Johannesburg respectively. In order to satisfy the demand for water in these mining towns, the local councils entered into agreements with private companies to provide water as well as sanitary facilities. The Rand Water Board was established by the Transvaal government in 1903 so as to better manage the scarce water resources on the Witwatersrand, which was faced with fast-paced development and expansion at the time.[57]

Therefore, while the rules pertaining to water and its use were not always clear during the 19th century and variable court interpretations continually altered the rules, the rising incidence of disputes about shared streams following the South African War (1899-1902) required the codification of water law. The Right of Passage of Water Act from 1876 and the Irrigation Act from 1877 were the first steps towards official water legislation within the Cape Colony. The former act allowed the holder of legal water rights from any water source to lead water over the property of another. The purpose of the Irrigation Act of 1877 was not to define and control water rights, but to enable better administration of the resource. The Act set conditions for the establishment of irrigation districts and set out the wide-ranging responsibilities of new irrigation boards. These irrigation boards could make by-laws and regulations as well as take action against polluters or excess abstractors. Such a board could be convened at the request of riparian owners, because thereafter it had authority over the

[56] Thompson, *Water Law*, 37.
[57] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 11-12.

provision of water within the service area. This meant that a group of landowners, by constituting an irrigation board, had control over water allocation in a designated area.[58]

The first general Public Health Bill was introduced into the parliament of the Cape Colony in 1878. It was debated and reported on by a Select Committee, but was withdrawn at the end of the following parliamentary session. The provision of this Bill was for the local governing bodies, such as Municipalities and Divisional Councils, to have increased powers for sanitary improvement, and to enable them to appoint sanitary inspectors with powers to search and eradicate all public health nuisances. The first Public Health Act of the Cape Colony was finally passed in 1883. This happened in response to a smallpox epidemic that raged on the diamond fields for ten months without check because of the pressure from the mine-magnates to deny its existence. This legislation formed the basis for subsequent South African public health legislation.[59]

The Water Act of 1899 established water courts for the first time, which were specifically created in order to adjudicate over disputes and claims for and between private entities. While the legislation described pertained to the Cape Colony, elsewhere in the country measures for the administration of water was also being passed. The Transvaal Irrigation Act of 1908 created measures for the administration of water and methods for its conservation and use. The Natal Colony passed two Irrigation Acts towards the end of the 19th century to promote irrigation, while the Orange Free State retained common water law until the formation of the Union of South Africa. An Irrigation Congress met in 1909 to bring together representatives from all four governments with those from agricultural unions, irrigation boards and other interested parties, including irrigation professionals.[60]

1.6 Water Legislation in the Union of South Africa: 1912-1998

The first attempt to embody all water law into one act was made in 1906, which formed the basis for the ground-breaking Irrigation and Conservation of Waters Act, which was introduced shortly after the 1910 Union of South Africa.[61]

The Irrigation and Conservation of Waters Act 1912 established the Department of Irrigation in order to promote as well as govern irrigation within South Africa, and to promote oversight

[58] Bate and Tren, *The Cost of Free Water*, 71.
[59] Mäki, *Water, Sanitation and Health*, 25.
[60] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 14.
[61] Thompson, *Water Law*, 55.

of the irrigation districts and irrigation board. The Act made an important distinction between public and private water. It was based on the principle that spring water on land, as well as any water flowing over land, could be used by and belonged as private water to the landowners. This was with the provision that the water should also be available to lower-lying landowners if the water flowed over their land as well. Water in public streams was regarded as public water and the use thereof was regulated by further rules within the Act. There were three characteristics to public rivers: firstly, it had to be a natural stream of water. Secondly, it flowed in a known and defined channel. Finally, it was fit for common use for irrigation. In general, priority was given to primary use for people and livestock; secondary use was for irrigation purposes, which was given preference over tertiary use for industry. All rivers that lacked a fixed channel or that were not suitable for common use for irrigation water were classified as private water and not subject to any regulations pertaining to the Act.[62]

Control over water development led to the establishment of a single national Irrigation Department. The department had various functions including preparing plans for irrigation schemes and giving advice to private irrigation schemes and related administration. Local control continued to be exercised by irrigation boards with their function of constructing and maintaining engineering works for the storage and diversion of water and its fair distribution among riparian owners. The 1912 act also clarified the distinction between river boards and irrigation boards. While river boards exercised control over the natural sources of supply and supervised distribution according to pre-existing rights, irrigation boards were constituted to create new sources of supply and to effect an equitable distribution of the irrigation water made available.[63]

Furthermore, every irrigation district was to have an irrigation board. An irrigation board was to comprise of three members or a multiple thereof, but not exceeding nine. An irrigation board was granted the power to purchase, construct as well as maintain such reservoirs and channels or other irrigation and drainage works as it may deem necessary for the proper irrigation of irrigable areas within its district or for the drainage of land therein. The irrigation board was charged with the duty of maintaining all such works and of obtaining as well as conserving the supply of water, therefore also arranging for an equitable distribution of any water both stored as well as diverted by such works. An irrigation board was also allowed to

[62] Bate and Tren, *The Cost of Free Water*, 75.
[63] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 15.

levy rates, to be called irrigation rates, which were levied upon every definable piece of land and payable by the owner of the land. Finally, an irrigation board was also allowed to make by-laws prescribing the manner of regulating the flow of water in and the distribution from and use of water in the board's channels and other works, the closing of such channels at certain times and seasons, whether for the purpose of repairs or for the benefit of the adjoining lands or for any other reason.[64]

Legislation governing public health was also changing at this time following the experience of Cape Town and the rest of South Africa during the Spanish Influenza epidemic of 1918. Important changes in the local Public Health Bill came before Parliament in 1919, but these had been drafted before the epidemic. This milestone in South African medical history created an autonomous Department of Public Health with its own Minister and for the first time put public health on a well-organized footing in the Union.[65]

The plight of destitute whites was of great concern to Parliamentarians in the early 1930s as the Depression wrought havoc on the South African economy, which drove a number of water resource projects. This included the Vaal River Development Scheme and the Vaal Dam, irrigation projects on the Orange River as well as dams in the Orange River Basin. The Department of Labour managed the labour force, ensuring that the objective of employment for destitute whites, especially single white men, met with success.[66]

The 1956 Water Act created the Department of Water Affairs, replacing the Department of Irrigation and expanding its mandate to include the management of all water resources in South Africa. It placed increased emphasis on industrial use and required better control of water quality as a result.[67] The principle of government control was also systematically widened in order to regulate all water resources. The alienation of water rights to any person or its conveyance for use to any other property was prohibited unless there was official ministerial approval. The primary aim of the drafters of the Act in declaring a state water control area was to gain absolute control over public water which was not being used. The idea was to ensure that all the water made available by the state water schemes was being

[64] C. G. Hall, *Water Rights in South Africa* (Oxford: Oxford University Press, 1947), 158, 161, 164 and 166-167.
[65] Mäki, *Water, Sanitation and Health,* 28. The Spanish Influenza epidemic is seen as the worst natural disaster in South African history. "In little over six weeks between October and November 1918 some 300,000 South Africans succumbed to the outbreak". From Howard Phillips, "Why did it happen? Religious and Lay Explanations of the Spanish Flu Epidemic of 1918 in South Africa", *Kronos*, (12), 1987, 72.
[66] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 17.
[67] Thompson, *Water Law*, 66.

used beneficially. Private water was considered to be all water which naturally rose or fell on any land, or that was not capable of common use for irrigation. It included spring water, rain water, drainage water, water from private streams and underground water. Water could be owned, used or wasted, but not alienated.[68]

Therefore, "foreshadowed by the slow demise of the London Missionary Society (LMS) settlement scheme in the early 20th century, water became a tool of Apartheid, providing privileged access to white, land-owning South Africans".[69] This is reflected in the commissioning of the H.F. Verwoerd Dam in 1972. The multi-purpose dam is the largest reservoir in South Africa and while it provided drinking water to municipalities as well as a recreational supply, it also served to create hydropower, flood control as well as the provision of irrigation water. Another product of this high-modern age was the Kariba Dam on the Zambezi river. The Lesotho Highlands Water Project, as was introduced earlier in this chapter, illustrates the manner in which state power captured water resources for the benefit of narrow social ends. To place the development of water infrastructure during the Apartheid era in perspective, between 1920 and 1940 the number of large dams within South Africa doubled from 50 to 100. Over the 40 year period thereafter, however, this number increased to 500. Therefore, while water was being harnessed to the needs of an industrializing and urbanising Apartheid South Africa, it was systematically being denied to the vast majority of the people living in this country.[70]

The situation was only altered in 1997 with the introduction of the Water Services Act and the National Water Act of 1998, following the demise of the Apartheid National Party and the introduction of a democracy within South Africa under the African National Congress. The main purpose of the Water Services Act is "to provide for the rights of access to basic water supply and basic sanitation".[71] The purpose of the noteworthy National Water Act is "to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled".[72] It recognised that water is a scarce and unevenly distributed national resource; it belongs to all people; the aim of water resource management is to achieve sustainable use of water for the benefit of all water users and that the protection of water

[68] Bate and Tren, *The Cost of Free Water*, 82-84.
[69] Findlater, Funke, Adler and Turton, *South Africa's Hydropolitical History,* 19.
[70] Larry A. Swatuk, "The State and Water Resources Development through the Lens of History: A South African Case Study", *Water Alternatives*, (3), (3), 2010, 530-531.
[71] The Water Services Act 108 of 1997.
[72] The National Water Act 36 of 1998.

resources is vital. Emphasis was also placed on the need for the integrated management of all aspects of water resources.[73]

The Act abolished the previous distinction between public and private water, as was explained above. The Minister of Water Affairs and Forestry was appointed to act as trustee of the nation's water resources and he or she is to ensure that water is protected, used, developed, conserved, managed and controlled to the benefit of all people in South Africa. Therefore, no individual has an exclusive right to the use of water and water resources are national assets managed by state authorities. The National Water Court replaced the Water Courts with a Water Tribunal through which affected parties can appeal against decisions made by regulatory bodies. [74]

One of the main objectives of the National Water Act was to reform the water dispensation from private water rights based on riparian ownership and the ownership of land to one based on government allocation of water by balancing the demand for and the availability of water. The government is obliged to take positive action and must strive to ensure that the nation's water resources are to be protected, used, developed, managed and controlled in ways to meet basic human needs of both present and future generations. Furthermore, the government must promote equitable access to water; attempt to redress results of past racial discrimination; promote efficient, sustainable and beneficial use of water in the public interest; and facilitate both social as well as economic development. Furthermore, the principle that everyone is entitled to sufficient water for domestic purposes is firmly entrenched in the National Water Act and although piped water for domestic purposes is still not available for every household or individual within 200 meters of his or her house or shelter, the National Water Act contains the basic guidelines to obtain these targets within the South African legislative framework.[75] The National Water Act required Irrigation Boards to transform into Water Users Associations, which will be explored more closely in Chapter Four with specific reference to Prince Albert.

1.7 Chapter Layout

Chapter Two, "Prince Albert and Williston: The Tale of Two Towns from c.1762 to the present", provides a historical overview of the development of each town from when it was

[73] The National Water Act 36 of 1998.
[74] Thompson, *Water Law*, 603.
[75] Pienaar and Van der Schyff: "The Public Management of Water Resources in South Africa," 3-5 and 8.

founded. It outlines the socio-economic trajectory each town followed, and explains the sources of their domestic water supplies. Chapter Three, *"White Water?* – Race, Class and the State in Williston Sanitation, Irrigation and Water c.1870 to 1983", discusses the history of water supply within this dry Karoo town and also outlines the slow introduction of sanitary facilities into the infrastructure of the town. Racialised access to water is a prominent theme that emerges within this chapter and runs, like a river, throughout the rest of this thesis. Chapter Four, "Two Streams: The History of the Public and Private Management of Water in Prince Albert, c.1870 to 1998", outlines the tension between the public and private management of the water supply within Prince Albert. This chapter explores the unique furrow culture that characterised the town of Prince Albert and also explores the impact of the 1998 National Water Act on the management of the resource. Chapter Five, "*Dit is nou droog, maar dit sal weer reën* – An Intimate History of Water", draws on Ginzburg's notion of micro-history by exploring the personal reminiscences of local residents from each town in order to gain a realistic understanding of their sentiments *towards* and experiences *of* water. The final chapter is a conclusion, which draws together the core arguments of each chapter.

1.8 Conclusion

This chapter introduced the topic of this research as the socio-environmental history of water in the Karoo, with specific focus on the towns of Williston and Prince Albert. It also outlined the origins and traced the development of environmental history as well as water history, both internationally and locally. Specific emphasis was placed on the two historiographical schools that have dominated the sphere of water history and the particular approach of this thesis, as a combination of both approaches, was explained. The methodology was explained in terms of the lack of academic research that exists on either of the two towns and therefore highlights the lacuna this research aims to fill. Finally, this chapter also explored the history of water legislation within the country since 1652 in order to explain the broader context for the detailed histories that follow.

Chapter Two:

Prince Albert and Williston: The Tale of Two Towns c.1762 to the present

Present-day Williston is a dry, dusty and dilapidated Karoo village. Its only outstanding feature is a sandstone Dutch Reformed Church, which forms the focal point of the town. Indeed, the Church came first and the town developed around it. Many of the houses are owned by farmers in the district, who purchased a *dorpshuis* for those weekends or nights they wished to overnight in the town. These weekends or events are most often linked to the calendar of the Dutch Reformed Church, which continues to play a pivotal role in the lives of locals. This has had the effect that the town appears deserted, for the most part, during the week and on those weekends where no noteworthy events appear on the Church calendar. This is compounded by the fact that those families who can afford to, choose to send their children to boarding school elsewhere, such as Paul Roos in Stellenbosch. These "town houses" have the additional function that they can be taken over as retirement homes once fathers decide to hand control of their farms over to their sons. More importantly, however, they give farmers a say in the affairs of the town and district, without them having to permanently reside there.[1] Williston has a little community garden of succulents, which testifies to the lack of water in the region and the need to adjust horticultural expectations accordingly. Along the main road, commemoratively named Lutz Street after the missionary who first settled in the district, there is a restaurant, a petrol station, a supermarket, a Standard Bank, a meat co-op as well as a modest museum. The town is blessed with a number of liquor stores. The remains of the railway station are visible; however, the building has become a type of refuge for the socially marginal. It is littered with empty bottles and the railway tracks are entirely overgrown.

Prince Albert, on the other hand, is a destination haven for both local middle-class South Africans as well as international tourists. It boasts that it "has evolved as one of the most characteristic and perhaps the most uniquely endowed of Karoo towns".[2] It has a variety of coffee shops, restaurants, art galleries, antique stores and an impressive museum on its main road, fittingly named Church Street. The town started its own monthly publication, entitled

[1] J. Butler, "Afrikaner Women and the Creation of an Ethnicity in a Small South African Town, 1902-1950" in L. Vail (ed), *The Creation of Tribalism in South Africa* (California: University of California Press, 1991), 59.
[2] Prince Albert Cultural Foundation, *Prince Albert: Proposal for Protected Status as a Provincial Heritage Site*, (Draft Document), July 2006, 3.

The Prince Albert Friend, in 1912. Saturday mornings the town comes alive at its weekly market, which was established in 1855,[3] where residents sell their produce, ranging from homemade lemonade, authentic French pastries, pancakes to brick-a-brack. Gordon *koppie*, commemoratively named after Robert Gordon who commanded the VOC troops during the British invasion of the Cape and is remembered as a pioneer within South Africa, is located directly behind the town and provides a panoramic view of the town as well as the entrance to the Swartberg Pass, which remains a magnificent marvel to all. Prince Albert nurtures ambitions towards being a protected provincial Heritage Site. It is argued that the town "is rich in architecture of different types and has an active farming component with smallholdings, extensive farmlands, agricultural buildings and dams".[4] Though many of the houses in the town simply serve as second or weekend homes, the town still has a large number of permanent sophisticated and cultural inhabitants who are committed to Prince Albert and its legacy. Their commitment is evident in the impressive town museum and also in the knowledge they hold about the history of the town, its surroundings and its people, reflected both in the oral interviews conducted as well as their literature about the town.

Image 2.1: Williston Station at Present and Image 2.2: A View of Prince Albert from Gordon *Koppie*.[5]

This chapter sets the groundwork of the thesis by delineating the history of Prince Albert and Williston respectively, from their inception during the latter half of the 18th century through to the present. As this chapter will show, early settlement at both villages occurred for similar reasons, yet the development of each town reveals a strikingly different narrative. It is the intention of this thesis to argue that it was the differential access to water that lies at the heart of these different trajectories.

[3] Available online at: www.patourism.co.za (Accessed 17 August 2012).
[4] Prince Albert Cultural Foundation, *Prince Albert*, 3.
[5] Images from personal collection.

2.1 The People and Geography of the Great Karoo

The first inhabitants of the Great Karoo were the pastoralist 'Hottentot' (*Khoikhoi, Khoekhoe, Khoenkhoen*) and the hunter-gatherer 'Bushmen' (*San, Soaqua, Sonqua, Sono-qua*). These communities coexisted in the western and southern Cape regions. The Khoikhoi were extensively spread, however, always ensured that they had access to water while access to soil and sufficient grazing land was limited.[6] The San lived from the animals which they hunted with bows and arrows, snares and traps as well as the wild-collected food, such as roots, fruit, wild vegetable, lizards, termites and locusts. It was only in the early 1700s that white settlers started trekking away from the Cape, where they initially settled, into the interior of the country. The western and southern Cape, and parts of the semi-arid Karoo had been conquered by 1772; its Khoisan population, which represented both the Khoikhoi and the San, was devastated by war, displacement and disease.[7]

Prior to 1700 the Xhosa society was restricted solely to the land east of the Fish River, in the area known as the Transkei. Between 1779 and 1877 nine Frontier Wars were fought between the British forces and the Xhosa. This led to displacement as several small clans of Xhosa relocated to the Karoo. Several factors, such as continuous warfare, social turmoil as well as the decimation of many cattle herds due to a contagious lung disease during the 1850s, led to the gradual weakening of the Xhosa society**.** Their position, however, was solidified when the prophesies of a 14-year old girl, called Nongquwuse, led to tragedy and left the overall resistance to colonialism shattered. She called on her nation to kill all of their cattle and burn their crops, in the belief that the ancestors would rise up and assist them in driving the British into the ocean and thereafter return the sacrificed cattle. All of their crops were destroyed and some 400 000 cattle were slaughtered. The result was a devastating famine in which more than 40 000 Xhosa starved to death.[8] Similarly to the Xhosa society, the first inhabitants of the Great Karoo, as all subsequent settlers and *trekboers*, settled around water sources in the arid region in order to survive, however, due to their semi-nomadic existence they did not deplete the environment of its resources and were able to live comfortably without suffering

[6] Andrew Smith, 'Environmental Limitations on Prehistoric Pastoralism in Africa", *The African Archaeological Review*, (2), 1984, 99-111.
[7] W. Beinart, *The Rise of Conservationism* (New York: Oxford University Press 2003), 28.
[8] H. Bradford, "Women, Gender and Colonialism: Rethinking the History of the British Cape Colony and its Frontier Zones, c. 1806-70," *The Journal of African History*, (37), (3), 1996, 360.

from widespread scarcity. This was because resource areas were not the exclusive property or territory of one particular community, prior to the arrival of the *trekboers*.[9]

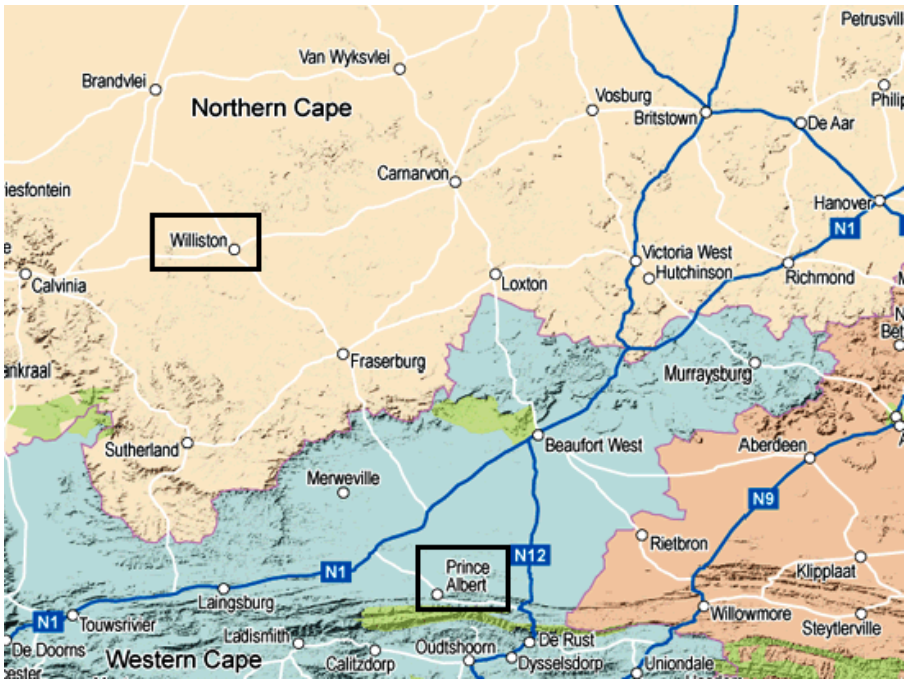
The region which these early inhabitants occupied first, now referred to as the Great Karoo, is located in the south against the Swartberg and Witteberg mountain ranges and in the west against the Swartruggens, Cederberg and Bokkeveldberg. The northern boundary is comprised of the Great Escarpment, which consists of the Roggeveld, Komsberg, Nuweveld, Camdeboo and Sneeuberg ranges. The boundary in the east is debatable; however, it is generally regarded as the Great Fish River. The derivation of the term Karoo is from a Khoi word tellingly translated as 'hard' or 'dry'. The Great Karoo itself is divided by the Kleinroggeveld ranges. In the western region, rivers flow northeast from the Tanqua and Doring rivers into the mighty Olifants River, which later flows into the Atlantic Ocean. In the eastern region of the Karoo, rivers flow southwards through the Cape Fold Mountains where they eventually reach the Indian Ocean. The average altitude in the Great Karoo region ranges from 300 to 1200 meters above sea level and some of the most obvious geographical features of the region are the extended areas of soil erosion and the large tracts of topsoil, which have already washed away due to grazing practices. The Great Karoo divides the winter and summer rainfall regions of South Africa. The region receives most of its rainfall during autumn; however, it varies from one year to the next and also between the different areas. It averages at less than 100mm in the west and more than 250mm in the east per annum. Rainfall figures for Williston and Prince Albert respectively are explored more closely below and also in the third and fourth chapters. Plant life has adapted to the harsh conditions of the region and comprises primarily hardy plants that are able to survive the long periods of drought and are able to grow in the stony soil. During summer months temperatures soar, while during winter the temperatures often fall below freezing point with presence of frost.[10]

There are several 'karoos' within the Great Karoo, specifically eleven sub-regions: Firstly, there is the Western Karoo, which includes the towns of Worcester, De Doorns and Matroosberg. Secondly, the Koup Karoo, which comprises the area against the Swartberg and Witteberg ranges in the south thereafter stretching towards Touws River in the west, to Rietbron in the east and as far north as Nelspoort. Other towns within this region, and

[9] Nigel Penn, *The Forgotten Frontier: Colonist and Khoisan on the Cape's Northern Frontier in the 18th Century* (Cape Town: Double Storey, 2005), 18.
[10] Leon Yell, *The Great Karoo* (Cape Town: Struik, 2008), 10-11.

connected by the N1, include the historic village of Matjiesfontein, Laingsburg, Beaufort West and Prince Albert. Thirdly, there is the Koup-Camdeboo Karoo, which includes the towns of Willowmore and Steytlerville. Fourthly, there is the Camdeboo, which boasts Graaff-Reinett. This region also includes Nieu-Bethesda, Aberdeen as well as the Valley of Desolation. The fifth region is the Eastern Karoo, which lies between and around the towns of Cradock and Somerset-East. This region also encompasses the Mountain Zebra National Park. The sixth region is the Eastern Upper Karoo of which the Gariep Dam, formerly the H.F Verwoerd Dam, forms the north-eastern boundary. The seventh region is referred to as the Central Upper Karoo, which connects the town of Richmond to the three Sisters in the southeast and Hanover in the northeast. The eighth region is the Western Upper Karoo where a triangle is formed by Williston, Fraserburg and Carnarvon. The ninth region is the Hantam Karoo, which encompasses the area surrounding Calvinia and the adjacent Hantamsberg. The tenth region is the Tanqua-Ceres Karoo of which the southern part is known as the Ceres or Bokkeveld Karoo. Lastly, there is the Moordenaars-Roggeveld Karoo, which runs almost parallel with the Koringplaas River.[11]

Map 2.1: A Portion of the Great Karoo highlighting Prince Albert and Williston.[12]



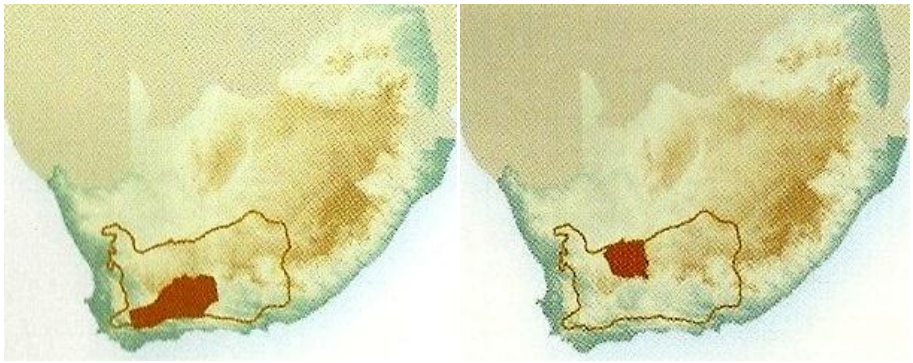
Droughts are a natural and characteristic phenomenon in the Karoo and do not only impact on vegetation, but as this thesis will explore also on the farming community and domestic life.[13]

[11] Yell, *The Great Karoo*, 14-16.
[12] Available online from www.mapstudio.co.za (Accessed 5 June 2012).

This is exacerbated by the fact that the Karoo is a vast region largely devoid of surface water. Therefore, groundwater has become a crucial, and often exploited, water source in these arid areas. It is the major source of supply for drinking, washing as well as irrigation water, however, boreholes are not infinite in their supply and tend to either run dry or become saline with time.[14] Artificial groundwater recharge methods are more closely explored with specific reference to each town below as well as in the two following chapters.

The present-day Northern Cape is the largest province in the country, occupying 30% of total land area of South Africa. The province does, however, have the smallest population with less than 1 million people in 2005, approximately 300 000 households. The environment of the region is characteristically dry, a semi-arid area which is periodically affected by severe droughts and floods. Rainfall in the north-east is almost 500mm per annum, however, a dramatically low 65mm in the extreme west. Water resources are poor, with rivers being characterised by irregular flows and punctuated by episodes of flooding. This has resulted in local inhabitants being entirely dependent on groundwater.[15]

Map 2.2: The shaded sections show the Koup Karoo and Map 2.3: the Upper Western Karoo.[16]



The sheer size of the Great Karoo region has meant that it has never been administered as a single coherent entity, according to its own specific needs. Since the 1870s, a certain amount of modernization has largely passed these areas by due to their isolation as well as the lack of financial prosperity in certain areas. Subsequently, the structure of small towns still bears the impression of the mid-19th century as opposed to the more modern technology used

[13] J. Booysen and D. I. Roswell, "The Drought Problem in the Karoo Areas," *Proceedings of the Annual Congresses of the Grassland Society of Southern Africa*, (18), (1), 1983, 40.
[14] K. J. Esler, S. J. Milton and R. J. Dean (eds.), *Karoo Veld: Ecology and Management* (Pretoria: Briza Publications, 2006), 8-9.
[15] Department of Water Affairs and Forestry: Status of the Water Sector in the Northern Cape, Achievements and Challenges, Northern Cape Water Summit August 2005. Available online at: www.dwaf.gov.za/Documents/Other/WS/NcapeWaterSummitAug05a.pdf.
[16] Yell, *The Great Karoo*, 68 and 200.

elsewhere. These areas now face major development changes, which must be seen in the context of possible global warming on arid areas, which are likely to become even more arid in the future and therefore have widespread effects on the livelihoods of many and the poverty of the region.[17]

2.2 From *Kweekvallei* to Prince Albert

In 1703 the first grazing permits were issued to *trekboers*, which allowed them to take livestock beyond the already settled region of the Cape for a certain period annually.[18] Consequently, the impulse to disperse further and deeper into the interior and away from the confines of the Cape was relentless and in 1713, the system of grazing permits was withdrawn in favour of 'loan farms'. This was largely due to the preference these Boers had developed "for the ownership of wide open spaces, with farms well scattered for winter and summer grazing".[19] These loan farms were approximately 2420 hectare in size and were granted in return for *recognitiegeld*, a form of tax. Following the introduction of this new system, *trekboers* spread outward from the Cape Peninsula in order to find loan farms according to their needs. "They penetrated the interior with their Khoi retainers along three main lines of advance: up the Hex River Pass into the Great Karoo; or into the Little Karoo or through the south-western districts to Mossel Bay, beyond which the Kaaimans river gorge made a coastal advance impossible".[20] By the late 1740s the relentless spread of the *trekboers* in search of grazing and other resources, such as water, brought them to the region of the Swartberg, at which point the Cape government made a new batch of loan farms available in the district.[21] The system of the 'loan farm' remained the preferred system of colonial land possession throughout the eighteenth century and had important implications for all societies since "such a system implied private ownership. Land thus became a commodity".[22] This stood in contrast to the Khoikhoi and San custom of the time whereby the land as well as the resources upon it were considered to be communal property as opposed to individual ownership.

[17] The Arid Areas Programme, Available Online at: http://www.aridareas.co.za (Accessed on 29 July 2012).
[18] *Trekboers* were semi-nomadic pastoralists, who moved in search of grazing, pastures and other resources. They later settled on these 'loan farms'.
[19] T. R. H. Davenport, *South Africa: A Modern History* (Hong Kong: MacMillan Press, 1978), 22.
[20] Davenport, *South Africa: A Modern History*, 22.
[21] J. Maguire, "The Early Inhabitants of the Region", in *Prince Albert: Landmark Events, Colourful Characters and the Lifestyle of an Historic Karoo Town* (Cape Town: Formsxpress, 2005), 14-15.
[22] Penn, *The Forgotten Frontier*, 43.

In 1703 Matthys de Beer, a Swedish agriculturalist and wagon maker with Dutch roots, and the ancestor of all the De Beer families in Southern Africa, landed in Cape Town. He married Hilletjie Smit two years later and settled in Stellenbosch.[23] Zacharias de Beer was one of three sons of Matthys de Beer. By 1756 grazing and agricultural lands around Stellenbosch and Drakenstein were becoming scarce; consequently Zacharias and his two brothers, Matthys and Johannes, saw a brighter future in crossing the mountains and made their way into the interior of the country.[24] In 1762 the first loan farms in the district of Prince Albert were registered. Among these were *Kweekvallei*, *Weltevrede*, *Frischgewaagd is Halb Gewonne* (loosely translated as 'a good start is half the battle won')[25], *Damascus, Scholtzkloof, Baviaanskloof* as well as a few others in the Prince Albert Valley, formerly known as *Die Gang*. In February 1762 Zacharias de Beer secured a lease for one year and his farm, then described as *De Queeckvalleij*, was acquired to rest and pasture livestock.[26] His brother Matthys decided to trek further to the Swart River, located on the further side of the Gamka River, where he farmed until 1768. The other brother, Johannes, secured a grazing permit for *Frischgewaagd*, located behind the Swartberg Mountains. The farm was in his name until 1780.[27] The brothers De Beer were productive. Zacharias, in particular, transformed his farm from what he perceived to be a desolate wilderness into a productive entity. The water supply for Prince Albert and the origin of the source is more closely explored below.

Through the system of loan farms, *trekboers* were able to settle near each fountain, stream, river, well and pasture all over the Karoo region and northwards as far as the Orange River[28], emphasising water as being the decisive factor in terms of settlement. The founder of Prince Albert, Zacharias de Beer, died on 6 February 1777 at the age of 58.[29] His farm was later sold by Samuel de Beer, a son of Zacharias, to two brothers, Gert and Stephanus Botma. The two brothers later subdivided the farm[30] and it is on this farm that the present Prince Albert stands.

---

[23] Yell, *The Great Karoo*, 83.
[24] D. Thomas, "Kweekvallei and Zacharias de Beer's legacy", in *Prince Albert: Landmark Events, Colourful Characters and the Lifestyle of an Historic Karoo Town*, 19.
[25] Yell, *The Great Karoo*, 83.
[26] Thomas, "Kweekvallei and Zacharias de Beer's legacy", 19.
[27] Prince Albert Cultural Foundation, *Prince Albert*, 5.
[28] Maguire, "The Early Inhabitants of the Region", 15.
[29] F. Haak, *Prince Albert aan die Voet van die Swartberge: Geskiedeniskalendar 1762-1995* (Prince Albert: Fransie Pienaar Museum, 1996), 4.
[30] Haak, *Prince Albert aan die Voet van die Swartberge*, 5.

In September of 1778 Robert Gordon visited *Kweekvallei* while accompanying Joachim von Plettenberg, then Governor of the Cape, on a tour of the interior and subsequently completed the well-known painting depicting the conditions of the time (Image 2.3)[31]: the farmstead in its cultivated and natural setting, which reflected the achievement of fifteen years of farming by Zacharias De Beer.[32] Robert Gordon was one of the country's most noteworthy pioneers. Originally of Scottish origin, his family had long been settled in Holland where he was born. In 1777 Gordon was appointed Captain at the Cape Garrison. He made a number of ground-breaking trips into the interior of the country and, very significantly, introduced the merino sheep to South Africa – "a breed that was singularly well-suited to the climate" of the Karoo.[33] Gordon's painting serves as the earliest visual representation of the town of Prince Albert and depicts the contrasting architectural styles of the Khoikhoi as opposed to the farm house of the De Beer family.[34]

Image 2.3: Robert Gordon's depiction of *Kweekvallei*, 1778.[35]

It is interesting to note that the 1762 terms and conditions of the *Kweekvallei* loan farm grant specifically state that the applicant, in this case Zacharias de Beer, was allowed to settle on the farm provided that he did not disrupt the lifestyles of anyone who already lived there.[36] Whether de Beer shared "his" land with the local Khoi and San inhabitants or drove them away, cannot be ascertained with any degree of certainty. However, as was the widespread

[31] Haak, *Prince Albert aan die Voet van die Swartberge*, 5.
[32] Prince Albert Cultural Foundation, *Prince Albert*, 5.
[33] Yell, *The Great Karoo*, 37.
[34] Haak, *Prince Albert aan die Voet van die Swartberge*, 7.
[35] Thomas, "Kweekvallei and Zacharias de Beer's legacy", 22.
[36] Maguire, "The Early Inhabitants of the Region", 15.

accepted practice of the time, the Khoi and San were most likely indentured, enslaved or voluntarily chose to leave the land and settle elsewhere to avoid being enslaved or share the land they believed to be their own.

Furthermore, the beginning of the iconic water furrows or *leivore* that came to characterise the town presently are already visible here leading water directly to the De Beer farmhouse. Since the first settlement in 1762, the layout of the village has been controlled by the contour of the water furrows and the economy of the region can be attributed to the reliable flow of water from the Swartberg as well as to the management of this resource.[37]

In 1814 the Cape colony was divided into seven districts, consisting of the Cape, Stellenbosch, Swellendam, Tulbagh, George, Uitenhage and Graaff Reinet. Four years later, on 27 November 1818, Lord Charles Somerset proclaimed a new district, known as Beaufort-West, consisting of the eastern part of Tulbagh and the Western part of Graaff Reinet.[38] Prince Albert formed part of this new district and the Dutch Reformed Church Congregation of the village remained part of this greater dominion for a further twenty-four years.

The community living at the foot of the Swartberg Mountains decided to break away from the Beaufort West congregation, which was too far away for habitual or comfortable commuting. They set their sights on *Kweekvallei* for a new parish.[39] On 24 November 1842 the Dutch-Reformed Congregation of the Swartberg region was approved by the Synod and a portion of the *Kweekvallei* farm was subsequently purchased for the purpose of erecting both a church as well as a parsonage. Both were completed in 1844. The growth of the town is reflected in the fact that by 1860 the first church was no longer adequate for the local population and therefore the construction of a second church was begun, which was completed early in 1865 and officially opened on 18 March 1865.[40]

The town was initially called Albertsburg, but on 31 July 1845 the name was formally changed to Prince Albert, five years after Queen Victoria's marriage to Prince Albert of Saxe-Coburg. The village achieved municipal status in 1902.[41]

---

[37] Thomas, "Kweekvallei and Zacharias de Beer's legacy", 25.
[38] E. Stockenstrom, *Gedenkboek van die Nederduitse Gereformeerde Gemeente te Prins Albert: `n Geskiedkundige Oorsig van sy Honderdjarige bestaan, 1842-1942* (Suid-Afrika: Nasionale Pers, 1942), 4.
[39] Yell, *The Great Karoo*, 84.
[40] Stockenstrom, *Gedenkboek van die Nederduitse Gereformeerde Gemeente te Prins Albert: `n Geskiedkundige Oorsig van sy Honderdjarige bestaan, 1842-1942*, 10.
[41] J. Penrith and C. Jansen, *Die Groot Karoo* (South Africa: Purnell, 1974), 18.

Another factor of importance is that of transport, specifically the railway line, which reached Eerste Rivier near Cape Town in early 1862, the first railway time-table was published. It provided details of the four trains that ran on weekdays and two on Sundays. Despite many initially refusing to take the risk, the line reached Stellenbosch in May 1862 "to be greeted by a thousand people on the platform".[42] During the 1870s and 1880s the advancement of the railway line was strongly opposed by anti-railway conferences where speakers proclaimed that the "iron horse" would put horse-breeders out of business and encroach on the property of many farmers. However, by the end of 1877 the line reached Touws River having conquered the Hex River Mountains and in 1880 the end of the line became Beaufort West.[43] On 11 August 1879 Fraserburg Road was reached, present-day Leeu-Gamka. This station is located very close to Prince Albert Road Station, which is the closest station to the town of Prince Albert. Passengers and post had to be transported by road between the station and the town itself.[44] Beaufort-West was reached at the start of the following year.[45] It is noteworthy to mention that "the regional importance of Prince Albert waned when it was bypassed by the railway line to Johannesburg and the main route to Graaff-Reinet".[46] However, as will be explored below, the town continued to flourish with the building of the Swartberg Pass.

On 1 November 1881 John Tassie began building the Swartberg Pass with one hundred and one Mozambiquan labourers from Delagoa Bay. Their numbers, however, decreased drastically and he struggled to recruit locally. On 13 June 1883, Thomas Bain took over the building of the pass after Tassie was declared insolvent.[47] He started construction in November 1883 with more than two hundred convicts.[48] The ruins of the stone houses where the convicts lived are still visible in the pass. The present-day Swartberg Pass is considered steeper on both sides than any other main road pass in the greater South Africa and remains

---

The Municipality of Cape Town was established on 3 March 1840, Durban on 15 May 1854 and Johannesburg in 1897, which reveal that this small Karoo town was not too far behind these major cities with its own status. From Harri Mäki, *Water, Sanitation and Health: The Development of the Environmental Services in four South African Cities, 1840-1920* (Tampere: Juvenes Print, 2008), 50, 118 and 169.

[42] L. G. Green, *Karoo: The Story of the Karoos of South Africa – the Great Karoo, the Little Karoo and the far corners of the North West Cape and Namaqualand* (Cape Town: Howard Timmins, 1955), 5.

[43] Green, *Karoo: The Story of the Karoos of South Africa* , 52-53.

[44] Yell, *The Great Karoo*, 85.

[45] B. Boonzaier, *Spore oor die Veld: `n Spoorwegsafari deur Suider-Afrika* (South Africa: JNC Boonzaier, 2008), 55.

[46] Thomas, "Kweekvallei and Zacharias de Beer's legacy", 22.

[47] Haak, *Prince Albert aan die Voet van die Swartberge*, 35.

[48] Prince Albert Cultural Foundation, *Prince Albert*, 38-39.

an incredible sight to behold in the Great Karoo, which is of great importance in bringing tourism to the region.[49]

2.3 *"The Lifeblood of the Village"*

Prince Albert has a reliable and consistent fresh water stream that derives from the Swartberg. It is used for irrigation as well as for drinking purposes. However, when the region was without rainfall for a long period, the perennial stream became weaker and therefore the municipality needed to develop additional functional boreholes at the foot of the mountains in order to supplement the water supply during these times. The reliable supply of oft-time snow-fed water from the local Dorps River is considered "the lifeblood of the village".[50]

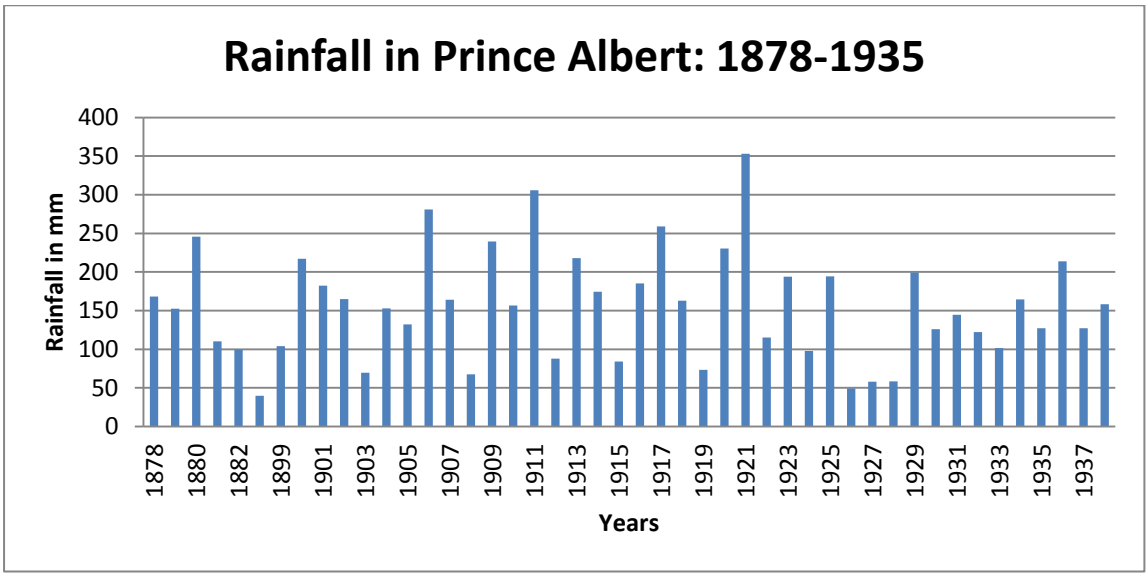
Rainfall data for Prince Albert dates back to 1878, with no data existing for the period between 1883 and 1897, and in the sixty year period graphically depicted below, several key observations can be made: the region received more than 350mm of annual rainfall only once, during 1921. In general the district appears to receive between 50 and 150 mm rainfall per annum. Furthermore, 1898 and 1926 are the only two years during which the region suffered tremendously receiving less than 50mm of annual rainfall, which is suggestive thereof that the region is not as plagued by droughts as certain other areas in the Great Karoo, which is explored below.

The town is characterised by a system of water furrows and sluices that lead the water directly to the homes and into the gardens of inhabitants. Furrow water is made use of for irrigation purposes. "Without the irrigation water system to sustain the town's farming activities and the consequent benefit to the resident farm labour pool, the town's economic vitality would decline".[51] The water for domestic purposes is collected in a tank in the *kloof* and carried in concrete pipes nearer to the town from where it is carried in distribution mains to the houses of local inhabitants.[52] As far as the furrow water is concerned, it is the responsibility of each water "owner" to ensure that he takes his weekly water turn(s) or *waterbeurt*, regardless of the time of day at which it occurs. The size of one's property determines the length of the water turn and therefore the amount of water. The timetable is

[49] Green, *Karoo: The Story of the Karoos of South Africa*, 106.
[50] J. Begg: "A Ramble through the Rocks of Swartberg", *Prince Albert Landmark Events, Colourful Characters and the Lifestyle of an Historic Karoo Town*, 91-92.
[51] Prince Albert Cultural Foundation, *Prince Albert*, 3.
[52] National Archives Repository (SAB), GES 670, 178/13, Sanitary Survey, 1922.

calculated very intricately to ensure each "owner" receives his full share, also taking into account run-off time.[53] An annual rate is charged for this water. The Irrigation Board is in charge of the weekly timetable whereby water allocation is managed. With the promulgation of the Water Act of 1998 the government and the Department of Water Affairs and Forestry set about to transform existing irrigation boards, subterranean water control boards and water boards into Water User Associations (WUAs). The WUAs were to recognise and encourage the active participation of the multiple users of water. Previously disadvantaged individuals and groups that form part of the water users within the jurisdiction of a WUA should become part of the management of the WUA. Despite this, the old irrigation boards, which essentially comprise irrigation farmers as members, continue to control water use and the maintenance of water supply systems in the present-day Prince Albert.[54] The Irrigation Board in Prince Albert comprises, for the most part, local farmers in the region, however, complaints do exist that not all local interests are represented by the Board, only those of well-established fruit farmers who supposedly wish to allocate the majority of the water to their orchards. These sentiments will be more closely explored in Chapters Four and Five.

Graph 2.1: Rainfall in Prince Albert from 1878-1935.[55]



In Prince Albert there are five registered dams, according to the Department of Water Affairs, which list Prince Albert as the closest town to their location. The first two are on the farm

[53] Interview with I.D. Vorster; 19 April 2012; conducted by N. Kruger (in person).
[54] G. Wellman, *Water, Land and Power: The Development of Water User Associations in South Africa*, A Surplus People Project Research Paper, May 2001. Available online at: www.spp.org.za/reports/Water_Users_Ass_Exec_Summary.pdf.
[55] Aggregated from data provided by The South African Weather Service. Personal Communication with Ms. Phumudzo Tharaga via email. 29 August 2012.

Angeliersbosch, with the one being located eighteen kilometres from the town and the other on the outskirts of the town. Both of these dams were completed during 1988 for the purpose of irrigation. The *Oukloofdam* is located seven kilometres from the town on a farm by the name of *Baviaanskloof* and was completed in 1931, also for the purpose of irrigation. Many of the farmers within the district of Prince Albert and the surrounding areas draw their irrigation water from this dam. The *Bergwater* dam is located twenty kilometres from the town on a portion of a farm named *Rosendal*. The dam was completed in 2001 for irrigation purposes. Finally, there is the *Gamkapoort* dam, which is located 40 kilometres from town and was completed in 1969 for the purposes of flood control by the Department of Water Affairs.[56] This is the biggest and by far the most well-known of all the registered dams within the district.

One of the main rivers within the district of Prince Albert is the Gamka River, which translates as "lion" from the Khoisan language. Its source is north of Beaufort West and the mouth is the Gourits River. It flows southwards towards the Gamkapoort dam, located near to the town of Prince Albert, as was described above. The Olifants River joins the Gamka River south of Calitzdorp; where together the two become the Gourits River. In the district of Prince Albert one also finds the Swart River and the Sand River, both of which later merge to form part of the Gamka River.

Artificial groundwater recharge can best be described as "the transfer of river or dam water underground into appropriate aquifers by means of infiltration basins or borehole injection".[57] This technology is winning increasing recognition in South Africa where many villages, towns and other agricultural enterprises are dependent on groundwater. As water consumption and demand increases, the pressure placed on aquifers increases and therefore different approaches have evolved whereby these underground supplies can be refilled before they should be depleted.[58] In 2008, the municipality of Prince Albert planned to inject water into one of its groundwater compartments at a rate of about 20 litres per second. This aquifer

[56] List of Registered Dams, *Department of Water Affairs and Forestry*, March 2010, Available online at: www.dwaf.co.za.
[57] M. Wills, "Artificial Recharge Gets Real", *The Water Wheel*, 2008, p. 38. Available online at: www.artificialrecharge.co.za/articles/WaterwheelJuly2008_printed.pdf.
[58] Artificial Recharge Newsletter No. 6, 2010. Available online at: www.dwaf.gov.za/Groundwater/Documents/GSNewsletter2010_6ArtificialRecharge.pdf.

had been historically over-pumped during summer months when the supply from the Swartberg was insufficient, as will be discussed in Chapters Four and Five.[59]

The environmental benefits of artificial groundwater recharge are minimal land use and a considerably reduced impact on the environment when compared to the building of a dam, but it also reduces abstraction of water from rivers and maintains groundwater supply at a safe level.[60] It is important to recognise that while artificial recharge cannot create additional water resources, it can provide cost-effective storage of surplus water and thereby increase the overall yield from the resource.[61]

While settlement at Prince Albert occurred due to the introduction of 'loan farms' and the desperation of *trekboers* to find suitable land on which to settle, the town of Williston, formerly known as Amandelboom, was first used as simply a stopover *en route* to greener pastures before it became a mission station, as will be discussed below.

2.4 From an *Amandelboom* to Williston

During 1768 Johan Abraham Nel, a burgher from Stellenbosch, and his family were in search of a suitable farm on which to settle. On 10 July of the same year, his wife gave birth to a baby boy and in commemoration of this occasion Nel planted an almond tree at a fountain near the *Zak* River (present-day Sak River). Though this overwhelmingly large tree never bore any almonds, it served as a type of oasis in the dry region of the Kareeberg and served as the reason for the village later becoming known as Amandelboom.[62]

During the 1840s a group of about seven hundred 'Bastaards'[63], were moving from one fountain to the next in the region to the west of the Kareeberg mountains. Many of these 'Bastaards' had known white fathers and coloured mothers, and due to being raised as Christians, they approached the Rhenish Missionaries at Wupperthal in the Cedarberg and asked for a missionary. By the end of 1845 J. H. Lutz accompanied by F. W. Beineke arrived in the region and decided to establish a missionary station near a strong fountain, known as

---

[59] Wills, "Artificial Recharge Gets Real", *The Water Wheel* 2008, 38.
[60] R. Murray, "Banking Water", *Imiesa Magazine*, June 2008. Available online at: www.artificialrecharge.co.za/articles/IMIESAmagazineJune2008_printed.pdf.
[61] M. Wills, "Artificial Recharge is a Genuine Solution: Storing Water in the Rocks is the Answer to some Big Water Supply Questions", *Martin Creamer's Engineering News*, December 2008. Available online at: www.artificialrecharge.co.za/articles/martincreamer_text.pdf.
[62] E. Van Schalkwyk, *Die Amandel Breek* Oop (Huguenot: Paarlse Drukpers, 1995), 4.
[63] The term 'Bastaard' distinguished people born of mixed relationships. The term describes a variety of people from different statuses. The meaning of the word has changed with time and with different attitudes. From Penn, *The Forgotten Frontier*, 20.

Rietfontein, alongside the Zak River.[64] The lush green pastures and ample water supply of which the Rhenish Missionaries had been told were nowhere to be seen and the springs had essentially all dried up. The two men with their footsore and starving oxen barely made it to Amandelboom and were therefore greeted upon arrival by a truly disappointing and grim scene.[65] The local 'Bastaards' built two small stone dwellings for the missionaries, who in turn laid out neat gardens with orchards of peach and fig trees.[66] This description stands in stark contrast to the community garden of succulents that characterises the present Dutch Reformed Church.

Lutz was born in Rheinbeck, Switzerland on 3 January 1812. On 6 May 1841 he was ordained as a missionary and departed to South Africa where he commenced his first post at Ebenhaezer. Beineke was not religious in his youth, but later applied to be trained as missionary; however, he was trained as a teachers-aid instead and came to South Africa in 1844.[67] Beineke received practical teaching from Lutz and was ordained a missionary in 1858 after which he departed to Ebenhaezer. In February 1875 Lutz retired and left the community of Amandelboom in the care of Peter Sterrenberg, who was born in 1831 in Oos-Friesland.[68]

The region was struck by a terrible drought in the 1850s which decimated the 'Bastaards' herds. Most of the inhabitants were forced to trek away from the region in a desperate attempt to save their remaining livestock. Those who remained lost practically all of their livestock. Even the most affluent 'Bastaards', who were previously the owners of thousands of livestock, had a mere thirty or forty left towards the end of the drought.[69] This indicates the severity and harshness of the conditions with which the territory was associated, which will be further explored below.

From 1860 onwards, many white settlers came into the Amandelboom area from Clanwilliam and subsequently drove the 'Bastaards' away.[70] The Land Beacons Act of 1865 made it impossible for them to continue occupying their different locations, since this Act required owners of the property to prove their ownership or to formally apply for ownership. In the

[64] Van Schalkwyk, *Die Amandel Breek Oop*, 7 and Green, *Karoo: The Story of the Karoos of South Africa*, 213.
[65] R. O. Herbst, *Die Rynse Sendinggenootskap en Grondkwessies in die Kareeberggrensgebied in die Neentiende Eeu – met spesifieke verwysing na die Amandelboomsending* (Stellenbosch University: DPhil Thesis, 2004), 55.
[66] Yell, *The Great Karoo*, 208.
[67] Van Schalkwyk, *Die Amandel Breek Oop*, 7.
[68] Van Schalkwyk, *Die Amandel Breek Oop*, 11.
[69] Herbst, *Die Rynse Sendinggenootskap en Grondkwessies in die Kareeberggrensgebied*, 53.
[70] Green, *Karoo: The Story of the Karoos of South Africa – the Great Karoo, the Little Karoo and the far corners of the North West Cape and Namaqualand*, 213.

event of their proof of ownership not being accepted or their application being unsuccessful, the Crown Land could be sold or rented to any interested party through means of formal application. Without protection from the government, these 'Bastaards' were powerless against the influence of those laying claim to their land.[71]

After the departure of most of the 'Bastaards' from Amandelboom during the 1860s, Lutz attempted to keep the Mission Station running until 1873, however, the high-point of its success was long gone. Those persons who remained were among the poorest of the poor for whom the option of moving away never truly existed. Shortly thereafter Amandelboom no longer fulfilled the requirements of a mission station and the decision was made by the Rhenish Missionary Society to discontinue their involvement in the region. After much disagreement between the Rhenish Missionary Society and the remaining inhabitants, the mission station was taken over by the Dutch Reformed Church in 1873. The town was laid out on the original Crown land farm, known as Amandelboom, which was 8200 morgen in extent. In 1883 the village was constituted a municipality, the town then being renamed Williston and thereby commemorating a Cape Government Official, the then Under Colonial Secretary, Hampden Willis.[72]

2.5 The End of the Line

With regards to the railway station in Williston, the Cape Parliament decided against a narrow railway line and rather approved a line with Cape width to Carnarvon. The first 77 kilometres between Hutchinson, located on the main line between the Cape and Johannesburg, and Pampoenpoort were completed on 1 May 1905, however, from there on the landscape became increasingly more difficult and it took longer to manoeuvre around the mountains. On 1 August 1906 inhabitants of Carnarvon welcomed the first train.[73] On 1 December 1915 the 136 kilometres between Carnarvon and Williston was completed. The consequence of the northern line, as well as branch lines, was that farmers were able, during times of drought to import supplementary feed supplies, send their animals to other regions for the duration of the drought and finally, after sufficient rainfall had broken the drought,

[71] Herbst, *Die Rynse Sendinggenootskap en Grondkwessies in die Kareeberggrensgebied*, 163.
[72] SAB, GES 692, 201/13, Inspection of Local Government Matters, 1910 and Herbst, *Die Rynse Sendinggenootskap en Grondkwessies in die Kareeberggrensgebied*, 247.
[73] Boonzaier, *Spore oor die Veld*, 159.

they could purchase new livestock and transport them to the Karoo.[74] As predicted, however, the line was never profitable and the South African Railway rather offered it as a service to remote communities in the Karoo. Tellingly, the line was officially closed in October 2001.[75]

During one of the worst droughts to have hit the region, in 1959 and 1960, discussed in Chapter Five, the Calvinia railway line came to the rescue of many farmers. Between September and December of 1959, 250 additional trains were arranged in order to transport 3 631 500 sheep to greener pastures. This railway line therefore, briefly, became the busiest in the country.[76]

Image 2.4: The laying of the cornerstone of the Dutch-Reformed Church in Williston, 1912.[77]

Williston received scant rainfall at the start of 1965 and consequently an informant's family, Dennis Vivier, were forced to send their sheep to Klipheuwel, close to Cape Town, for grazing. This serves as an example of how the commercial farmers in the region were forced to adapt to the conditions of the time and take the necessary steps in order to ensure the survival of their livestock. It is therefore evident that farming conditions have not always been convenient or easy for those farmers in the region and it was necessary to adjust to the environment in order to survive the severity of the climate.

---

[74] S. Archer, "Technology and Ecology in the Karoo: A Century of Windmills, Wire and Changing Farming Practice," in S. Dovers, R. Edgecombe and B. Guest (eds.), *South Africa's Environmental History: Cases and Comparisons* (Africa: David Philip Publishers, 2002), 133.

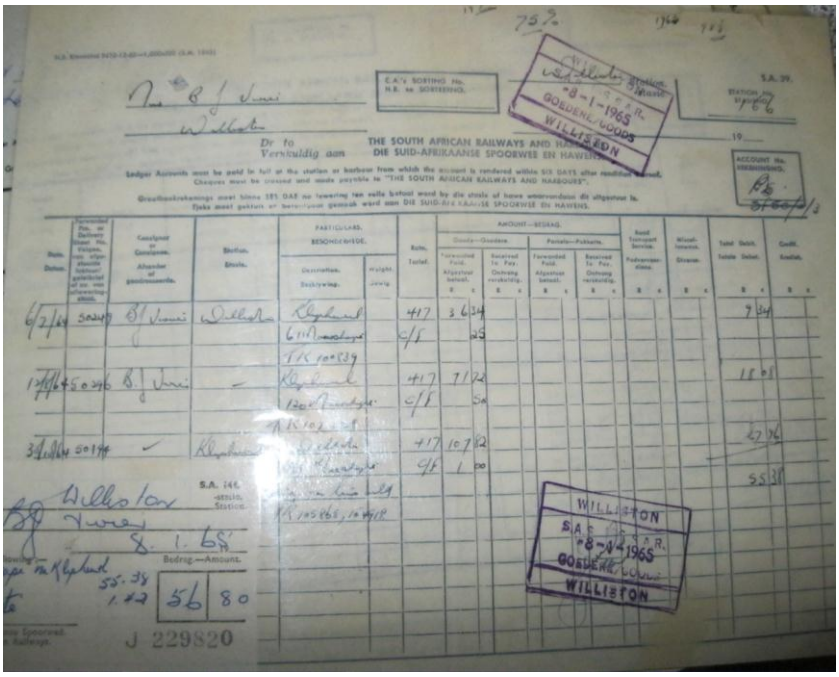
[75] The estimated cost of repairs, exceeding R3 million, also contributed towards this decision. Boonzaier, *Spore oor die Veld*, 160-164.

[76] Boonzaier, *Spore oor die Veld*, 166.

[77] D. A. Kotze, *Amandelboom staan in Bloei: Nederduitse Gereformeerde Kerk Williston, 1878-1978* (Williston: N.G. Gemeente, 1978), 22.
On 2 November 1912 the cornerstone for the present sandstone church was laid and the official opening took place on 31 October 1913. The stones were chiselled from a hill behind the local hospital.

However, a fierce attachment appears to have developed, discussed in greater detail in Chapter Five, and those who were raised in the area seldom leave and when they do tellingly, many eventually return at a later stage in life.[78] Farmers have had to face adaptations and develop an attitude open to adapt to the conditions of the time, as Chapter Three and Chapter five shows. Chapter Five also explores fatalism as a cultural response to unpredictable aridity.

Image 2.5: A Transport Form detailing B. J. Viviers (deceased father of informant) sending his sheep to *Klipheuwel*.[79]



2.6 The Sak River

In this region there are various rivers that characterize the dry landscape – the Fish, the Riet, the Renoster and the Sak. These rivers rise in the Roggeveld and Nuweveld mountains and wander northwards to join the Hartbees as well as the great Orange River. These rivers which periodically flood across the Williston, Calvinia and Kenhardt districts "often have no clearly defined channels and the maps detailing their course tends to vary, at least slightly, from one wet season to the next".[80] The main river of the Williston district, however, which originates in the Nuweveld Mountains northwest of Beaufort West, is the Sak River. It traverses part of the flat, sandy country through an area with scant rainfall and "winds like a hunting puff

[78] Interview with D. Viviers; 17 April 2012, conducted by N. Kruger (in person).
[79] Image from personal collection.
[80] Green, *Karoo: The Story of the Karoos of South Africa – the Great Karoo, the Little Karoo and the far corners of the North West Cape and Namaqualand*, 223.

adder across this tawny landscape".[81] Floodwater is used to grow cereals under the so-called *saaidam* system, roughly translated and understood as wheat field in a river bed: the grain being sown in valleys alongside the main stream bed. After the summer rains have passed, enough moisture remains in the soil for sowing, and the wheat grows and ripens without further rains or irrigation. Similar to the method of agriculture practised along the Nile River in Egypt, this particular use of floodwaters in South Africa is known mainly from the *Sak* River Valley.[82]

The present water supply in Williston is derived from a borehole located a few kilometres outside of and above the town. The supply is stored in a covered concrete reservoir on a *koppie* from where distribution pipes have been laid on to gravitate the water to the homes of inhabitants.[83] The management of this precious resource lies with the local municipality, which has ensured that post-apartheid, the facilities in the coloured "location" are of a similar standard to that of the rest of the town. Furthermore, as will be explored in Chapter Five, since 2001 the town has been equipped with solar panels, which were provided by the South African government. This has allowed for the introduction of hot water into many homes where they were not previously accustomed to this luxury.

Water is a scarce commodity in Williston, but this small town's municipality has been attracting attention for its unique approach to conserving groundwater. Some distance from the pump where the town's water supply originates, a slim u-shaped pipe projects above the ground. This is for the municipality's novel approach to artificial groundwater recharge, a concept that is increasingly attracting both local and international attention. This small town relies on groundwater for its domestic supply; however, abstraction over the years has been in excess of natural recharge. The aquifer is divided by an impermeable barrier and the levels in the adjacent compartment have not shown the same decline as is evident in the pumped compartment.[84] A groundwater transfer scheme has been constructed whereby water is pumped from the one compartment to the other.[85] The benefits of artificial recharge include

[81] C. Marais, "Waking up in Williston", *Karoo Space Magazine*, Available online at: http://www.karoospace.co.za/karoo-space-magazine/people/97-waking-up-in-williston.
[82] Yell, *The Great Karoo*, 202.
[83] SAB, GES 692, 201/13, Health Inspection, 1933.
[84] Department of Water Affairs, 2010. Strategy and Guideline Development for National Groundwater Planning Requirements. Water Banking: A Practical Guide to using Artificial Groundwater Recharge, dated November 2010, 10. Available online at: http://artificialrecharge.co.za/booklet/AR_booklet_13Jan2011.pdf.
[85] E. C. Murray and G. Tredoux: Artificial Recharge: A technology for Sustainable Water Resource Development. Water Research Commission Report No. 842/98, Pretoria, 1998. Input from Chris Esterhuyse, SRL Consulting Western Cape.

minimal loss of water to evaporation, relative safety from contamination and the availability of banked water in times of drought.[86] The introduction of artificial groundwater recharge comments on the fact that water has been a scarce commodity in the region throughout the history of Williston and therefore this is a type of preventative measure in order to secure a water supply for the future. These particular conditions and this history reveals that while there are a only a few commercial farmers within the division of Williston, they have been both forced to develop a culture of adaptability to the aridity of the region and been provided access to state-funded support in acquiring technology This will be more closely explored in Chapter Five.

The Karoo Hoogland Municipality is an amalgamation of the three towns of Fraserburg, Sutherland and Williston as well as the vast surrounding rural area.[87] The municipality comprises an area of approximately 34 000 square kilometres and falls within the area of jurisdiction of the Namakwa District Municipality. The municipality is the service provider of electricity in part of Williston and in the whole of Fraserburg. Eskom is the service provider in the other part of Williston and the town of Sutherland. All households in the municipal area have access to electricity and apparently, all households have access to water and receive 6 kilolitre per month free of charge.[88] However, as Chapter Five shows, this was not the case before and there has been a difficult trajectory in terms of this transition.

2.7 Comparative Conditions:

For the period between 1940 and 1970 Prince Albert was faced with less than 100 mm of annual rainfall on six occasions: 1951, 1958, 1966, 1968, 1969 and 1970. Similarly, Williston was faced with less than 100 mm of annual rainfall on eight occasions: 1945, 1951, 1952, 1957, 1959, 1960, 1962 and 1966. Both of the regions were therefore affected by drought in 1951 and 1966, which could be suggestive of widespread low rainfall for the Great Karoo. Prince Albert received more than 200 mm of rain four times within this period: 1941, 1952,

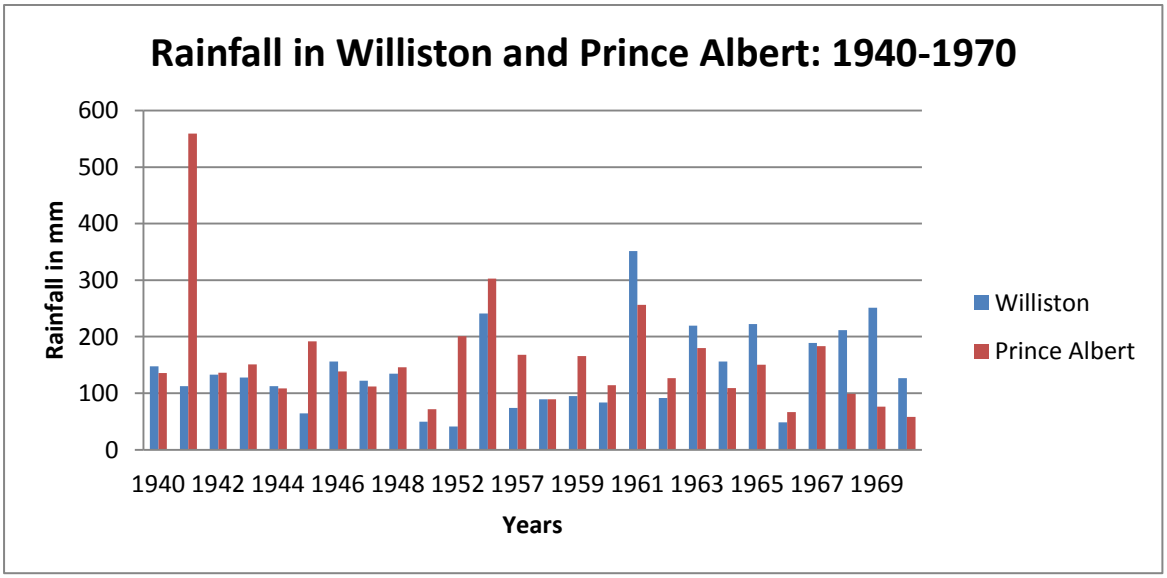
[86] P. Kotze: "Saving Water in a Big Way," *Farmers Weekly*, 8 August 2011. Available online at: http://www.farmersweekly.co.za/article.aspx?id=10230&h=Saving-water-in-a-big-way.

[87] It was recently announced that the SKA site will be located in a quiet Karoo region. The Square Kilometre Array (SKA) telescope is destined to be built in Africa and consists of two distinct components and operate independently, making it easy to separate and build on different sites. In South Africa, the SKA will be located on two farms purchased by the South African government in the area between Brandvlei, Carnarvon and Williston in the Karoo. It is a radio quiet zone, being in a remote area with a sparse population and no economic activity other than low density farming. From D. Erasmus: "A Giant Leap for Local Science", *Farmers Weekly*, 25 June 2012. Available online at: http://www.farmersweekly.co.za/article.aspx?id=24265&h=A-giant-leap-for-local-science).

[88] Annual Report on the Performance of the Karoo Hoogland Municipality for the 2008/2009 Financial Year. Available online at: www.karoohoogland.co.za/ANNUAL%20REPORT%2008%2009%20%20KHM.pdf.

1953 and 1961, while Williston received such rainfall figures on six occasions: 1953, 1961, 1963, 1965, 1968 and 1969. These figures coincide in 1953 and 1961, which is suggestive thereof that the entire Great Karoo received ample rainfall during this period. The Sak River of Williston flooded during this period and is closely discussed in Chapter Five. These figures indicate that Williston was prone to more erratic and unpredictable rainfall, while conditions in Prince Albert were more consistent and reliable during the period considered. While Prince Albert received an extreme 560 mm of rainfall in 1941, the remainder of the timeframe studied was relatively consistent. Williston received the lowest amount of rainfall between the two settlements in 1952, with a mere 41 mm of annual rainfall.

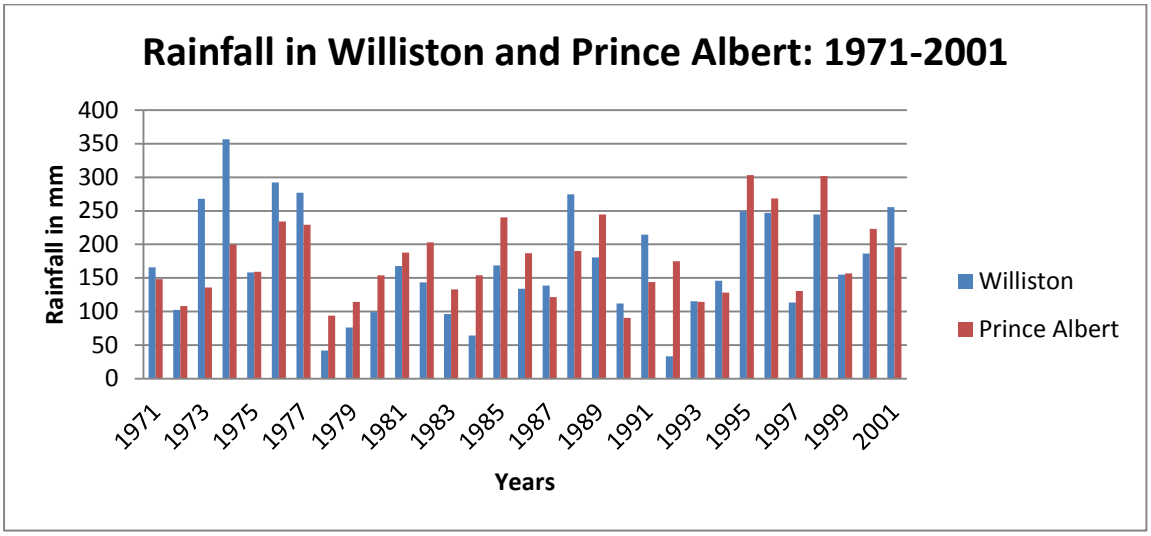
Graph 2.2: Rainfall in Williston and Prince Albert from 1940-1970.[89]



It is immediately noticeable in the period 1971 to 2001 that neither region received a major amount of rainfall, such as the 560mm, as was visible in the previous period. Williston received less than 100 mm of annual rainfall on six occasions: 1978, 1979, 1980, 1983, 1984 and 1992, while Prince Albert received less than 100 mm of annual rainfall on a mere two times: 1978 and 1990. Williston received more than 200 mm of rainfall in 1974, 1976, 1977, 1988, 1995, 1996, 1998 and 2001. Many of these years coincide with the years in which the Sak River flooded, as is outlined in Chapter Five. Prince Albert received more than 200 mm of rainfall in 1977, 1982, 1985, 1989, 1995, 1996 and 2000. Williston received the highest amount of rainfall between the two settlements in 1974 with 357 mm and also the lowest, with 33 mm in 1992, which comment on the extreme conditions faced within this region.

[89] Aggregated from data provided by The South African Weather Service. Personal Communication with Ms. Phumudzo Tharaga via email. 29 August 2012.

Graph 2.3: Rainfall in Williston and Prince Albert from 1971-2001.[90]



These graphs highlight that while Williston was prone to very low or very high rainfall figures at times and more frequently than Prince Albert. Prince Albert experienced more consistent and reliable conditions and therefore the region was not plagued by droughts or infrequent floods, as can be ascertained for Williston. The rainfall for Prince Albert was a great deal more constant, overall, with less sporadic increases and decreases. The data along with the narratives of the two towns allow for some conclusions to be drawn.

2.8 Conclusions

By delineating the tale of the two towns, a number of comparative conclusions can be drawn: though the residents in both Karoo towns are largely concerned with the Dutch Reformed Church and its calendar, it appears to be much less so in Prince Albert than in Williston. The population of Williston is Afrikaans, with the exception of literally one or two English inhabitants in the district. Prince Albert, on the other hand, has a well-established population of both languages and therefore events do not simply reflect either the Dutch Reformed or the Anglican Church calendars, but rather a more modern combination infiltrated with artists, writers and academics. However, having attended a Dutch Reformed Church Bazaar in each town, it is arguable that Communion weekends remain a prominent, meaningful and noteworthy event on the Church calendar for local inhabitants.

Finally, water in Prince Albert derives from the Swartberg, which flows into the local Dorps River, but also into the water furrows that provide irrigation to local residents as well as the

[90] Aggregated from data provided by The South African Weather Service. Personal Communication with Ms. Phumudzo Tharaga via email. 29 August 2012.

municipal mains. Additional boreholes were also introduced to supplement the supply as evidenced by the numerous windmills which abound in local gardens. The history of the region does not reveal any struggle in finding water sources or a scarcity of the resource within the region. There are several dams registered within the region as well as the major Gamka River, which provides a continuous and reliable flow of water to the greater Karoo region. Rainfall figures indicate no major or extended periods of drought. Williston, in comparison, is plagued in its history by the dry conditions of the region and the persistence of droughts. No major dams are registered within the division and the only river widely referred to is the Sak River, the flow of which is unreliable and unpredictable. As will be explored in the following chapter, the water supply has originated from boreholes for many years and finding a suitable supply proved problematic. Therefore, as this thesis will demonstrate, the availability of and access to water in Prince Albert played a crucial role in the development of the town, while the scarcity of the resource in Williston prevented similar advancement.

Chapter Three:

White Water? – Race, Class and the State in Williston Sanitation, Irrigation and Water c.1870 to 1983

Like a diminutive Nile River in Egypt and the Sudan, the Sak River is the sole river and riparian water source in the region of Williston. Just as with the Nile, the local inhabitants are able to take from it, however, they are not able to add to it since there are no tributaries and no sufficient rainfall within the region that would be able to compensate for the demands made upon the river. Thus, the inhabitants of the Nile Valley have had to master their river resource in order to maintain their shifting civilizations.[1] The Sak has been likened to the Nile, but Williston's inhabitants have not been able to rely on the Sak River to the same extent since it does not have a regular flow and floods as well as dries up irregularly.[2] This chapter draws primarily on archival material to delineate and then discuss the history of water use within Williston. It builds upon the argument from the previous chapter that water and access to water is key to understanding Williston's socio-economic development and helps explain why Williston has developed so differently to Prince Albert.

This chapter explores legislation from state and local authorities, the reasons for the legislation in a broader national context as well as the immediate local context and finally, examines the impact of the legislation with specific reference to race and class in order to reveal the reasons for Williston's lack of socio-economic development. The chapter argues that water has been of central importance to the town since the first settlement in 1768 and the lack of a sufficient source has been largely responsible for the lack of development and advancement in the town. This chapter also argues that access to the water was racialised and a certain amount of power was vested within those individuals who controlled access to the resource, which is captured in C.S. Lewis's "What we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as its instrument".[3]

---

[1] J. Waterbury, *Hydropolitics of the Nile Valley* (New York: Syracuse University, 1979), 7 and 12.
[2] C. Marais, "Waking up in Williston", *Karoo Space Magazine*, Available online at: http://www.karoospace.co.za/karoo-space-magazine/people/97-waking-up-in-williston and L. Yell, *The Great Karoo* (Cape Town: Struik Publishers, 2008), 202.
[3] As quoted in D. Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (New York: Oxford University Press, 1985), 50.

3.1 Windmills, Wire-fencing and Water Works: 1870s-1880s

This imbalance in power was reflected in unequal access to technology. Farming was radically altered both by the introduction of windmills to pump underground water, and the introduction of wire fencing, which allowed for the control of livestock grazing. Wind pumps were introduced into the arid western Karoo during the 1870s.[4] Vertical or tower windmills, with the rotor turning in a vertical plane, supposedly entered European countries from the Middle East after the Crusades. However, the windmill that so dramatically influenced farming in arid areas across the globe was the steel mill, which was developed in the United States of America during the latter half of the nineteenth century, to meet the needs of ranchers and railroads on the Great Plains. Windmills and wire fencing, however, were large investments for farmers, especially in poorer districts such as Williston, Calvinia and Carnarvon, since a new water point required a borehole, a wind pump, iron piping as well as various watering troughs.[5]

In 1875 the Cape government appointed John Gamble as Hydraulic Engineer.[6] Two years later, the government promulgated an Irrigation Act, which was made possible through the legislature of John X. Merriman, who was the Commissioner of Crown Lands and Public Works. The Irrigation Act allowed for the combined action by farmers to construct water storage works. The Act stimulated certain works; however the greater project of developing irrigation districts proved largely unsuccessful. Most farmers felt uncomfortable about taking major loans since the legislation dictated that irrigation repayments would take precedence over other debts. However, applications from "the dry, largely Afrikaner, northern Cape district of Calvinia were refused on the grounds that they were too indebted already or that they were the 'holder of unproductive farms".[7] During the late 1870s, in his capacity as state hydraulic engineer, Gamble introduced government drilling machines. However, during the recession years of the early 1880s there was limited demand for the service, mainly since farmers did not want to be charged regardless of whether or not the borehole found a

[4] S. Archer, "Technology and Ecology in the Karoo: A Century of Windmills, Wire and Changing Farming Practice," in S. Dovers; R. Edgecombe and B. Guest (eds.), *South Africa's Environmental History: Cases and Comparisons* (Africa: David Philip Publishers, 2002), 112 and 120.
[5] A windmill was needed that would have a "good low-speed torque for starting, be able to keep on running in relatively light winds, face those winds from any direction and cease to operate if the wind became too strong". Archer, "Technology and Ecology in the Karoo", 122-124.
[6] A hydraulic engineer is concerned with the flow and conveyance of fluids, mainly water and sewage.
[7] William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock and the Environment 1770-1950* (New York: Oxford University Press, 2003), 159-160.

sufficient supply. Therefore, the introduction of government boring failed at this point and both the equipment as well as the drilling foreman returned to England.[8]

As was the case with other new technologies, such as the introduction of the railway described in the previous chapter, borehole drilling and windmills too were regarded with considerable suspicion. By no means every borehole where drilling took place was successful; the water discovered was at times considered too brackish[9], too limited in supply for purposes of irrigation or inconveniently located. Drilling foremen were accused by farmers of emptying dams through boreholes. Farmers also misled drilling teams: "in the northern Cape they were told that water could always be struck by what are known as *aars*, a well-defined line of bushes called "water bushes". Furthermore, divining rods were also invoked as a means of finding a suitable water supply.[10] Most districts in the Karoo had, arguably still have, their own *waterwyser* or diviner whose willow twig was used to point to the streams running beneath the surface.[11] Boreholes were considered of particular importance in the Northern Cape where porous soil dictated a lack of suitable sites for dams to be built.[12] In his work on water divination, Van Sittert explains that the water diviner or *waterwyser* was an old presence on the colonial landscape and that the practice of these *waterwysers* was based on the theory that groundwater flows in underground veins or *aars*, which could be successfully detected on the surface through the medium of a wooden twig.[13]

In the 1880s the Cape government took the initiative of building a dam, on behalf of farmers, at Van Wyk's *Vlei*, in the arid district of Carnarvon, neighbouring Williston. The area had long since been troubled by drought distress, however, the project was met with various problems: the region's rainfall was insufficient to fill the dam; the dam had been built too shallow, which meant that evaporation rates were extremely high and finally, the project was beset by salinization from the start. Therefore, while considered an engineering success, the

[8] Beinart, *The Rise of Conservation in South Africa*, 171.
[9] Brackish water is water that has more salinity than fresh water, but not quite as much as seawater. It may occur in brackish fossil aquifers. It is hostile to the growth of most plant species and without proper management, it is also damaging to the environment.
[10] Beinart, *The Rise of Conservation in South Africa*, 171.
[11] L. G. Green, *Karoo The Story of the Karoos of South Africa – the Great Karoo, the Little Karoo and the far corners of the North West Cape and Namaqualand* (Cape Town: Howard Timmins, 1955), 178.
Water diviners are explored more closely in Chapter Five.
[12] Beinart, *The Rise of Conservation in South Africa,* 171.
[13] Lance van Sittert, "The Supernatural State: Water Divining and the Cape Underground Water Rush, 1891-1910", *Journal of Social History*, (37), (4), 2004, 925-926.

reservoir was a commercial disaster.[14] For the most part, however, local landowners in farming areas continued to make provision for themselves instead of relying on assistance from the state. Small dams of earth were relatively inexpensive and easy to construct for these reluctant farmers. Therefore, in essence, irrigation tended to be dominated by small-scale private enterprises involving direct diversion of water through rudimentary means.[15] Van Sittert explains that the seasonal nature of the rivers and the huge silt loads often brought by unimaginable floods, made dam building a high-risk investment which many debt-laden farmers, such as those of the Northern Cape, were neither willing nor able to undertake. Their irrigation needs were, therefore, limited to "makeshift *Boer* dams".[16] The shortage of water was a problem not only within the district of Williston and therefore conservation methods were implemented through national legislation, as will be discussed below.

3.2 The Public Health Amendment Act of 1897

The Public Health Amendment Act of 1897 was issued by the Cape Parliament and the Colonial Secretary was responsible for its passage. [17] The Act was intended for the use of local authorities to control and maintain matters of public health within their districts. It also saw the creation of a Public Health Department in the Cape Colony for the first time.[18] The Act dictated that "no person shall keep any dwelling, or other premises or part of any dwelling or other premises, in an uncleanly, dilapidated or other state, or any yard, drain, ditch, pond or pool in an uncleanly or other state, so as to be a nuisance or injurious or dangerous to health. Furthermore, no person shall dispose any night-soil[19] on any premises except in a proper sanitary convenience approved by the local authority. Finally, no person shall occupy any dwelling not provided with a proper sanitary convenience".[20] This Act placed the responsibility of providing proper sanitary conveniences on local authorities and as will be shown with Williston, this duty was often not upheld within the town, with specific

[14] K. M. Findlater; N. Funke; R. Adler and A. Turton, *South Africa's Hydropolitical History: Actors, Actions, Roles and Responsibilities*. CSIR Parliamentary Grant Report. NRE No. CSIR/NRE/IR/WR/2007/0064/A. CSIR: Pretoria, 2007.
[15] Larry A. Swatuk, "The State and Water Resources Development through the Lens of History: A South African Case Study", *Water Alternatives*, (3), (3), 2010, 527.
[16] Van Sittert, 'The Supernatural State", 916.
[17] The Colonial Secretary was the title of a senior civil servant, the second most important official in a colony, after the Prime Minister.
[18] Harri Mäki, *Water, Sanitation and Health: The Development of the Environmental Services in four South African Cities, 1840-1920* (Tampere: Juvenes Print, 2008), 27.
[19] Night soil is a euphemism for human excrement collected at night from cesspools and privies. It was sometimes used as fertilizer. The excrement in the pail was often covered with soil and this may have contributed to the second half of the term.
[20] Cape Town Archives Repository (KAB), CO 7711, 1487, Model Regulations under the Seventh Section of the Public Health Amendment Act, 1897.

reference to the so-called 'location', meaning the coloured community, also known by the older name Amandelboom. Furthermore, properties and dwellings were not maintained in accordance with these conditions since the facilities for refuse removal were in many instances not provided by authorities and therefore the responsibility rested with individual householders, similar to Prince Albert as will be discussed in the following chapter.

The Act also stated that no person was to deposit any night-soil, rubbish or manure on any streets or common areas that could be seen as a risk to the public health of the residents within the village. Removals were to be done using a vessel or cart, which had a cover that would prevent the escape of any contents. It was also dictated that no person was to allow any offensive liquid to run from his premises and pollute either the street or any water sources.[21] With regards to water and local water supply, the Act dictated that "no person shall cause or allow to flow or drain or any infectious, offensive or noxious matter or thing into any spring, stream, watercourse, water furrow, reservoir, dam, well, tank or other receptacle or conduit for water which the public have to use for drinking purposes".[22] Furthermore, no person was to allow any animal to pollute the water which the local inhabitants had to use for drinking purposes. Finally, no person was to use water meant for drinking for washing purposes, whether for clothing, utensils or other articles.[23] These strict regulations, however, were neither obeyed nor strictly enforced within the district of Williston, a town where the water supply has always been a concern. Certain water sources were used out of sheer convenience with no regard for the health risks, such as contamination, arguably due to ignorance or even desperation on the part of the local communities. This affirms the argument that water has been of central importance to the region since the town was founded and also that the lack of a sufficient supply held the town back from the advancement and development it could have undergone if a reliable source had been discovered during these early, formative years.

The Act concluded by stating that "the local authority shall cause frequent and systematic inspection to be made...of all lands or premises whereon any nuisance or danger to the public health is likely to exist and of all sources of water supply".[24] Yet, Williston only appointed a

[21] KAB, CO 7711, 1487, Model Regulations under the Seventh Section of the Public Health Amendment Act, 1897.
[22] KAB, CO 7711, 1487, Model Regulations under the Seventh Section of the Public Health Amendment Act, 1897.
[23] KAB, CO 7711, 1487, Model Regulations under the Seventh Section of the Public Health Amendment Act, 1897.
[24] KAB, CO 7711, 1487, Model Regulations under the Seventh Section of the Public Health Amendment Act, 1897.

health office in 1945, which highlights that the local authorities did not enforce national legislation strictly within their division.

The Public Health Amendment Act set the tone for the type of relationship that the state expected to exist between local inhabitants and their immediate surroundings, as opposed to the reality of what conditions were actually like in order to serve the needs of residents as well as the local authority as far as matters of sanitation and the local water supply were concerned.

3.3 Water Supply, Sanitation and Settlements: 1900-1910

On 1 September 1900 the Municipality of Williston gave official notice to the public of certain bylaws that had been passed under the Public Health Amendment Act of 1897, for the purposes of the protection "from pollution any water which the public have to use for drinking purposes".[25] This serves as the earliest recorded mention of water with specific and direct reference to the town of Williston in the archives. It is significant for the importance and emphasis placed on protecting water, which highlights the importance already placed on the resource at such an early stage and also foreshadows the continued significance attached to the protection of the resource.

An extract from the health report by the District Surgeon[26] in June 1904 explained that the water supply for the village derived from two sources: firstly, a borehole, which was located outside of and above the village. This source supplied a sufficient amount of water, which was considered to be of a high quality since it could in no way be contaminated due to the water being obtained at a depth of 32 feet. The second source was an open well, which was entirely overgrown and liable to a great deal of contamination from a variety of different sources It was located 400 meters from the village and was preferred by the water-carriers, since it meant carrying the water for about half the distance as opposed to the borehole. The water of this open well was intended for horses, washing and irrigation; however, on account of its proximity to the village it was used by the majority for household purposes, such as cooking, consumption and bathing.[27] This stands in direct violation of the Public Health

[25] KAB, CO 7711, 1487, Model Regulations under the Seventh Section of the Public Health Amendment Act, 1897.
[26] District Surgeons were general medical health practitioners appointed by the state.
[27] KAB, MOH 173, L30C, A copy of an extract from the District Surgeon's Health Report for the half-year ended June 1904.

Amendment Act, as was described above, whereby a clear distinction was drawn between water for human consumption and water for animals.

Furthermore, the report also commented on how there was no organised arrangement for the collection of night-soil, slop-water[28], household or other refuse. Individual households acted idiosyncratically on an *ad hoc* basis. The report also made reference to the coloured 'location'[29] and that it was severely overcrowded therefore quite unfit for human habitation. The building material of which their dwellings comprised entailed paraffin tins, old sacking, reeds as well as bushes.[30] This extract also highlights a direct violation of the Public Health Amendment Act which dictated that premises and dwellings were not to be dangerous to the health of inhabitants.

While the first indirect mention of water closets in Williston appears in June 1904, the metropolitan area of Cape Town received its first water closets in 1814 when four were ordered by the Governor for the Government House. However, they did not become a standard feature within households until the latter half of the nineteenth century.[31]

The above described material presents opposing views of what was intended by national authorities in terms of Public Health, as opposed to the manner in which legislation was enforced by the local authorities in Williston. It can therefore be argued that the type of relationship the state expected to exist in small villages with specific reference to water and sanitation did not exist in Williston, which ultimately contributed to the manner in which the village came to be seen by others and the way in which it developed as opposed to Prince Albert, which will be discussed in the following chapter. This was largely due to the fact that Prince Albert had a reliable water supply, while local authorities in Williston battled to find a sufficient supply to maintain the domestic supply in the town.

---

[28] "Slop-water" was a term used to describe waste water from a kitchen or bathroom and sometimes a chamber pot, all of which had to be emptied by hand.

[29] The term refers to the separate area of the town where the coloured inhabitants resided. The term 'location' continues to be used in Williston presently to refer to differentiate between the housing areas of the two dominant communities of the town: the whites and the coloureds.
In South Africa, the fear of epidemics roused and rationalized efforts by national authorities to create municipal locations from the 1870s onwards, which culminated in The Native Reserve Locations Act of 1902. It called for government authorities to establish locations on the outskirts of urban areas and to compel residence therein. From M. Swanson, "The Sanitation Syndrome: Bubonic Plague and Urban Native Policy in the Cape Colony, 1900-1909," in *the Journal of African History*, (18), (3), 1977, 390-400.

[30] KAB, MOH 173, L30C, A copy of an extract from the District Surgeon's Health Report for the half-year ended June 1904.

[31] Mäki, *Water, Sanitation and Health*, 32.

In December 1904 the Williston Municipality approached the Commissioner of Public Works for the construction of a reservoir and for carrying out certain irrigation works within the village. "The object is to bring the water in pipes from a strong wall. The water is then to be conducted for a distance of 720 feet to a rise immediately above the town where a reservoir is to be built from where a short pipe will take the water to the centre of the town where a siphon pump[32] is to be fixed".[33] A government engineer undertook a visit to the town and his subsequent report recommended a sanction to the loan requested and an approval of the plans in question, as described above. This reservoir was located on a *koppie*, or hill, outside of and above the town of Williston itself. (It continues to be used presently to store the water supply for the domestic needs of the town.)

In June 1905 the loan was approved and granted to the Williston Municipality under the Local Works Loan Act. The loan of £331 was issued and repayable within a period of 25 years.[34] In November 1905 the Assistant Resident Magistrate in Williston responded to the health report, as was described above, explaining that pipes were being laid on from the covered water and the water brought to a reservoir, under construction at the time, from where the water was to be carried away as needed by local inhabitants.[35] It is uncertain whether the different communities had equal access to this supply; however, the descriptions of the 'location' that follow would suggest that they did not. This correspondence is suggestive thereof that the provision of a pure and clean water supply to the inhabitants of Williston was of great importance to the local authorities and that they wished to improve the existing water infrastructure so as to ensure that it was not liable to any source of contamination, but that it would also preserve the maximum amount of water available within the division, which contributes to the argument that a lack of water held the village back from development. It also emphasises the reliance of the local municipality on the state to provide the funding whereby these necessary improvements could be made. The funding was not available within the poor district itself.

[32] A siphon pump refers to a tube in an inverted U-shape which causes a liquid to flow uphill, above the surface of a reservoir and without pumps. It is powered by the fall of the liquid as it flows down the rube under the pull of gravity and is then discharged at a lower level than the surface of the reservoir.
[33] KAB, PWD 2/6/3, C3, Letter from Williston to the Commissioner of Public Works, 21 December 1904 and a letter from Lewis Mansergh to John X. Merriman, 6 December 1906.
[34] KAB, T 959, 7240, Letter from the Under Colonial Secretary to the Assistant Treasurer, 30 December 1905.
[35] KAB, MOH 173, L30C, Letter from the Assistant Resident Magistrate in Williston to the Medical Officer of Health for the Colony, 7 November 1905.

Various new regulations for the village of Williston were framed at the start of 1906: with regards to the water supply for household purposes, all water was placed under the control of a functionary to be appointed by the Council with the title of Superintendent of Waterworks. Furthermore, every owner of a house or dwelling situated within the local municipality and which did not already have a private water-leading to the property from the municipal main, was allowed to make such an application. The water supplied was to be paid for separately, according to the tariff applicable at the time.[36] This is the only reference made to a Superintendent of Waterworks, which suggests that the position did not last and that the duties and responsibilities were simply reabsorbed into the local governing body.

The Magistrate in Williston contacted the neighbouring Magistrate of Fraserburg in March 1907 commenting on the insanitary conditions of the village. He explained that firstly, just next to the village, was a small hill the side of which was littered with rubbish and human excrement, causing a very offensive smell at times. It was argued that this area was used by the occupants of houses in the immediate vicinity as an open air water-closet. Secondly, many of the houses in the village were without pail closets and therefore occupants had to relieve themselves in public places. Finally, he was unable to find any regulations which provided for the regular clearance of night-soil, with the result that the pails were emptied only when the occupier of the house considered it necessary. It is mentioned that not a single pail closet was found within the 'location'.[37] This letter of complaint reveals a great deal about the sanitary conditions of the time: the widespread use of pail closets was evidently not yet considered of the utmost importance and perhaps not accepted by all in the district. Most likely for this reason, no regulations existed, or were actively enforced, regarding the clearance of night-soil since no regulations appears to have existed to enforce the presence of closets in every dwelling or on every property. The observation that no pail closets were found within the 'location' is suggestive of the racialization of both water as well as sanitary facilities that occurred throughout the history of the town of Williston.

The above extract can be compared with conditions in Cape Town dating from the 1830s and 1840s, which revealed that the town was filthy and that conditions for poorer classes were exceptionally difficult. They often lived in cramped and overcrowded conditions. Sanitation

[36] KAB, MOH 173, L30C, New Regulations for the Village of Williston, 27 February 1906.
[37] KAB, MOH 173, L30C, A letter from the Assistant Resident Magistrate in Williston to the Assistant Resident Magistrate in Fraserburg, 21 March 1907 and a letter from the Medical Officer of Health for the Colony to the Civil Commissioner in Fraserburg, 5 October 1907.

was non-existent, which translated into a lack of means for the disposal of human waste, which was subsequently often left to putrefy in backyards or within public streets.[38]

In 1908 the Acting Secretary for the Interior reported on public health and sanitary matters in the District of Williston. He stated that the supply was considered satisfactory, both as regards quantity and quality. The Council was urged to provide suitable accommodation to each of the blocks of *Nachtmaal* rooms.[39] In July 1908 the Medical Officer of Health for the Colony wrote to the Superintendent General of Education about the schooling conditions within Williston: while the white children were privileged with a large, airy, well-ventilated school-room, the coloured children received their schooling in their church. What was considered disgraceful was that neither the church not the school had any sanitary arrangements and therefore the urgent recommendation was made that it needed to be remedied without delay. There was also no water supply at either facility. It took almost two years before feedback was received that latrines were being erected for the white children at their school and that arrangements had been made for drinking water. No details were furnished with regards to either the provision of drinking water or sanitary conveniences for the coloured children at their church.[40] This suggests that the local authorities were focused on spending their resources towards the improvement of infrastructure only for the white inhabitants of the region and did not consider it necessary to provide coloured children with a basic resource such as water for consumption.

These letters indicate that under the early segregationist state, the two communities had very different access to resources, not only with the provisions more commonly discussed by historians, such as land, housing and schooling, but also water. Indeed, access to water was racialised and classed, at times denied or severely limited. As was discussed above, once the facilities had been improved to a level of satisfaction, for the white children, the case was closed and despite the initial concerns of the Medical Officer of Health for the Colony, the matter was resolved as far as all authorities, both local and state, were concerned and it was not raised in correspondence again thereafter. This can be linked to the main argument of the

[38] Mäki, *Water, Sanitation and Health*, 34-35.
[39] The *Nachtmaal* rooms refers to accommodation within the town of Williston, in this instance, that was provided to farmers within the district and their families on those weekends where a Communion service took place in the local Dutch-Reformed Church and the need existed for these locals to overnight within the town since the distance to travel from their farm was too far and time-consuming to undertake on the day. These Communion services were also often accompanied by other events over the weekend and therefore a trip would be undertaken to partake in all activities.
[40] National Archives of South Africa (SAB), GES 692, 201/13, A letter from the Medical Officer of Health for the Colony to the Superintendent General of Education, 1 July 1908 and also 28 February 1910.

chapter that water lies at the core of socio-economic development within Williston and played a major role in the limited advancement of the town.

3.4 Latrines and Land: 1910-1913

The Medical Officer of Health for the Colony also corresponded with the Williston Municipality at the end of February 1910 to transmit certain extracts from a health report for the previous year. While the water supply remained adequate, a plea was made for the laying of pipes to each dwelling in order for there to be no stint in its use. The system at the time entailed the collection of water by barrel or bucket from the storehouse. The water supply was described as being the same for the inhabitants of the 'location' as for the whites, however, they were located a considerable distance from the storehouse and were therefore unable to make use of the resource to the same extent. Furthermore, it is stated that no latrines had been provided in the 'location' and consequently the veldt in the vicinity was being used indiscriminately.[41] This reiterates the argument above that two communities within the division of Williston did not have the same access to water or sanitary facilities, and often times the experiences of the coloured community were unfair and unjust in comparison to the white inhabitants of the town.

In September 1910 an inspection of local government matters in Williston was completed, which resulted in a detailed report of the five sources where the water supply originated from: firstly, a large dam above the village, which was constructed as a relief work in 1882. This dam had apparently only contained water twice since its construction. Secondly, there was a well in the floor of the dam. The water was of excellent quality, there was no source of pollution and its supply was considered ample for domestic requirements. Thirdly, there was a borehole located near the well, which was fitted with a hand pump. Completely separate from the well, it too provided an inexhaustible supply. The fourth and fifth sources were open wells below the dam from which water was used for washing as well as watering cattle.[42]

This report underlines that Williston's long history of struggling to find water sources that provided a sufficient supply, both in terms of quality and quantity and therefore the need arose to draw water from five different sources for a variety of purposes in order to ensure that the supply was ample for local requirements. This is furthered by the administration

[41] SAB, GES 692, 201/13, A letter from the Medical Officer of Health for the Colony to the Assistant Resident Magistrate in Williston commenting on the Health Report of the District Surgeon for 1909, 28 February 1910.
[42] SAB, GES 692, 201/13, An Inspection of Local Government Matters by the Assistant Medical Officer of Health for the Colony, 3 September 1910.

report of the Assistant Resident Magistrate in Williston from 1910, in which it was stated that the district, which was essentially pastoral, had suffered severely from drought during the previous year and therefore little advance had been made with regards to population growth as well as material resources. The local population was nomadic and therefore it was difficult to state with any degree of certainty the number of inhabitants, however, the report did not provide any specific amount of people. Significantly, it was stated that for a number of years local farmers had been drilling for water and that the value of land become greatly enhanced where permanent water was struck, however, a reliable source was not found very often.[43]

Several water regulations were passed for Williston in 1912: "the owner of every erf or portion of an erf with any building or buildings thereon was subject to a water charge of £4 per annum for 100 gallons supplied to him during a period of 24 hours for domestic purposes only. The Council was allowed to grant a supply of water free of charge to any church or school or purely charitable institution". Furthermore, the Council was required to carry out the removal and disposal of night-soil either by its own employees or by a contractor. This was to be carried out at least once a week. The removal of all household refuse was to be carried out twice a week. Finally, the Council was also responsible for the removal and disposal of slop-water at least six times a week.[44] This happened much earlier than was the case in Prince Albert, as will be seen in the following chapter.

In the official documentation reference is only made to a "him" receiving water. In keeping with the legal discourse of the time, the owner or head of the household was therefore automatically assumed to be male. Furthermore, the water supplied is considered to be supplied to "him", thereby making the head of the household the owner of the water, ironically, since the domestic activities for which water was used at the time would have been considered the responsibility of a female, such as cooking, cleaning and bathing. Finally, these regulations are significant in that they are the first to detail the price at which water was provided to local inhabitants. It also reveals that the responsibilities for the removal of night-soil, slop-water and all household refuse were transferred to the local authorities as opposed to householders, which, as was described above, was the case previously. This is suggestive thereof that the manner in which the environment had been polluted due to the *ad hoc* actions of individuals required local authorities to intervene and regulate the situation, which

[43] SAB, GES 692, 201/13, Administration Report by the Assistant Resident Magistrate in Williston, 1910.
[44] SAB, GES 692, 201/13, Water Regulations framed under Ordinance 10 of 1912.

proclaims the broader message of the state for the provision of adequate sanitation nationwide.

The start of 1913 saw the Director of Irrigation correspond with the Provincial Secretary regarding a water scheme proposed by the local authorities in Williston. They desired the construction of a weir[45] roughly eight feet high with a furrow on the right bank of the river (assumed to be the Sak River, since it is the only river in the immediate vicinity of the town), twelve feet wide for the first six miles and thereafter nine feet wide until its end. The area irrigable through this scheme was estimated at 600 morgen.[46] In May the following year. Williston municipality made direct contact with the Provincial Secretary regarding the water scheme, pleading for an alternative scheme since the present supply was derived from a well and the yield was not nearly sufficient to meet the requirements of local residents per pumping day. A reply was received that a loan from government funds could not be granted at the time.[47] At the start of August 1915 local authorities explained that the Union Government had granted them 78 lots of land at the start of the previous year, with the understanding that the proceeds of these sales would be devoted to the construction of such permanent works as may be necessary subsequently. The lots had since been sold and realized a profit of £200. The proceeds of which had already been used towards carrying out the proposed water scheme, as was described above. A loan of £1500 was later requested to complete the works, which was eventually approved in November 1918 with a redemption period of twenty years.[48] This correspondence highlights the desperation of local residents to find a sufficient water source and to build the necessary infrastructure to improve the water supply within the region in order to relieve the pressure of scarcity within an already dry region, which adds to the argument that water has been of central importance to the region since the town was founded.

The Secretary for the Interior contacted the Williston Town Clerk during June 1913, noting that, while the sanitary accommodations of dwellings was considered fairly good, the

[45] A weir is a barrier across a river, which takes the form of a barrier across a river which causes water to pool behind the structure, not unlike a dam, and allows water to flow over the top.
[46] A morgen was a unit of measurement in Germany, the Netherlands, Poland and the Dutch Colonies, including South Africa. The size of a morgen varies from 0.2 to 1 hectare.
[47] KAB, PAS 2/496, L33A/L/2, Letter from the Director of Irrigation to the Provincial Secretary, 24 February 1913 and a letter from the Secretary for the Municipality of Williston to the Provincial Secretary, 20 May 1914.
[48] KAB, PAS 2/496, L33A/L/2, Letter from the Director of Irrigation to the Provincial Secretary, 12 October 1914; Letter from the Provincial Secretary to the Town Clerk in Williston, 8 December 1914 and a letter from the Provincial Secretary to the Town Clerk in Williston, 11 August 1915 and a letter also dated 19 November 1918.

'*Nachtmaal* rooms' were inadequate and while it did not matter too much for men, it was very inconvenient for women and young girls. However, local authorities argued that even if pail closets were provided, they would not be used, without providing any reasoning for this reluctance. This is countered with an argument that at any rate people ought to be given the opportunity of using pail closets and almost certainly the female portion of '*Nachtmaal* visitors' would use them even if the males chose not to. This is an interesting reflection of the gendered nature of perceived sanitation needs. In September local authorities responded by stating that the rooms would be furnished with proper sanitary conveniences.[49] It is evident in the correspondence that the local municipal council of Williston did not consider it of great importance to provide sanitary facilities of any kind to those farmers and their families who visited the town over weekends. An assumption was made that if the facilities were provided they would not be used, which raised questions about local inhabitants being considered uncivilised and uneducated by their own authorities.

3.5 Rigid Regulations and Court Rulings: 1915-1924

In January 1915 certain water regulations for Williston were approved: Regulation 65 stated that all the water which was supplied through the Municipal mains was for domestic purposes only and that no person was to use the water supplied for garden irrigation or for any other purpose without obtaining the written consent of the Council first. Regulation 66 stated that it was compulsory for all householders to apply for a supply of domestic water, which was available at a charge of twenty shillings per annum. Several additional regulations were also passed, stating that no person to whom water was supplied from the Municipal mains was to allow any other person who did not reside in the same house or who had not paid the Municipality for water for that year, to take water from his service pipe.[50] Additional regulations were also promulgated in 1915 which determined that householders were required to maintain a suitable receptacle with a proper lid, which was to be used for the disposal of household refuse with an additional receptacle for slop-water. The removal of household refuse was to be carried out twice a week and the removal of slop-water three times weekly. Furthermore, "the owner of every dwelling or premise situated within the Municipality and

[49] SAB, GES 692, 201/13, Letter from the Secretary for the Interior to the Town Clerk in Williston, 9 June 1913 and A letter from the Secretary in Williston to the Assistant Resident Magistrate in Williston, 11 September 1913.
[50] KAB, PAS 2/202, L32A, Amended and Additional Regulations framed by the Williston Municipal Council, November 1914.

not already having a separate water connection or leading from the Municipal main or service pipe shall forthwith make application to the Council, for such water connection or leading.[51]

These various rules and regulations emphasise that the maintenance and provision of unpolluted water was of the utmost importance to authorities, both local as well as national. It adds to the argument that certain individuals held great power over the resource and also who received access to it. These regulations show an attempt at the improvement in the management of night-soil, slop-water and household removal as well as disposal. A desire to keep the environment unharmed had evidently developed and is reflected in the stern measures, as described above, to curb individuals from polluting nature through means of the disposal of waste. Interestingly, these regulations refer to the water as being solely for domestic purposes, thereby suggesting that it should not be used for other purposes, such as irrigation, and thereby commenting on the notion that water was a scarce commodity in the division and that it needed to be used only as was necessary. The scarcity and importance of water is also reflected in a case heard in the Water Court during the mid-1920s.

In 1925 the Water Court saw an application by Robert Christoffel Laurie, a farmer of Riverside in the District of Williston. The respondent was Charles de Villiers, a retired legal practitioner who resided in Cape Town, but was also the registered owner of the remaining extent of the farm *Lekkerleg*, also located in the division of Williston. Both of the farms were riparian to the Zak (later Sak) River, a public stream flowing through the division of Williston. During August 1918 "the applicant obtained from the predecessor of the Respondent in title a right to a servitude of water leading over the property of the Respondent. The Respondent was only able to exercise his property rights subject to his said servitude, which still existed at the time. Therefore, Laurie as well as his successors was therefore entitled as against de Villiers and his successors to control his legal share of the water in the Zak River by means of the weir sluice gates and furrow which existed on the de Villiers farm until such time as he had wet all his lands. During February 1924 and on several occasions thereafter, the Zak River was in flood and de Villiers took exclusive control of the sluice gates and the water it controlled.[52]

[51] KAB, PAS 2/202, L32A, Letter from the Assistant Resident Magistrate in Williston to the Provincial Secretary, 6 August 1914.
[52] KAB, CSC 5/1/1/77, 109, Water Court Case of Applicant Robert Christoffel Laurie and Respondent Charles Christian de Villiers, 26 October 1925.

De Villiers claimed that prior to February 1924 he had no knowledge of the existence of servitude over the property. He further argued that the Zak River has no regular flow and therefore Laurie was only entitled to the surplus water when he, de Villiers, had met his own requirements. The case was concluded with de Villiers being found responsible for any damage arising from the fact that Laurie's water had been withheld from him. It was difficult to ascertain the amount of damage, however, it was felt that it could safely be assessed at a minimum of £225, for which amount judgement was therefore given in favour of Laurie.[53]

This court case is significant since it highlights how pivotal a role water played in the lives of local farmers and that being denied access to a servitude had severely detrimental effects on the harvest for a season and the overall conditions of a farm. It also emphasises total reliance on the resource, even though it was an accepted scarcity within the region. A court case such as this would not have existed for the coloured community within the division of Williston at this time since they did not own farms and certainly would not have had any claim to water on a farm where they may have been residing as labourers. This relates to the greater argument of this chapter, which maintains that access to water was racialised between the two communities present within Williston and that the white community received preferential access to water. The scarcity of water and the importance attached to the resource also adds to argument that water was at the heart of socio-economic development within Williston. The importance of and reliance on water reiterates the prominent role it played in the lives of farmers, who were often forced to adjust to circumstances beyond their control, as was discussed with the transportation of livestock during times of drought in the previous chapter.

3.6 Drought Distress and Dual-Pails: 1927-1931

During June 1927 the Secretary of the Farmer's Association contacted local authorities in Williston requesting that the government be approached to declare the division as a *nooddistrik* or emergency district due to the terribly dry condition of the region as a result of the continued drought. It was requested that the district of Williston fall under the Emergency Loan Act of 1927. Rainfall had supposedly not been as low in the previous twenty-nine years. Furthermore, conditions were worsened by the fact that neighbouring districts had also been suffering from droughts and therefore whereas previously the majority of farmers had been able to *trek* elsewhere, they could not do so in this instance. This was partly due to there

[53] KAB, CSC 5/1/1/77, 109, Water Court Case of Applicant Robert Christoffel Laurie and Respondent Charles Christian de Villiers, 26 October 1925.

being no relief to be found within any close distance, but also the fact that transhumance was no longer possible since the farms in the region were permanently occupied and the modern state did not allow for this type of existence any longer. For this reason, the losses suffered in terms of livestock within the region were devastating.[54]

A systematic inspection of the Williston district was undertaken in June 1928 and stated that despite a considerable increase in the population being noted, it was considered doubtful that it would continue since the whole area had suffered from a terrible drought in the three years prior and therefore many farmers, who were able, had moved away. Furthermore, the water supply of the district derived from three boreholes, each capable of yielding approximately 100,000 gallons a day. The water was pumped to a covered cement reservoir on the top of a *koppie*, which had a capacity of 55,000 gallons. The water was led through piping to the town and while the more modern houses had the water laid on, the greater part of the inhabitants obtained their supply from stand pipes in the yards of properties. Significantly, water was only available for two hours in the morning and two hours in the afternoon since the reservoir was not large enough to meet the demands made on it.[55] This report suggests that the size of the town and the number of residents had escalated to the point where the existing water infrastructure, specifically the size of the reservoir, was insufficient in terms of serving the needs of the inhabitants, however, no population statistics for the time are available in the archives and the reports do not often include estimates on the number of local residents. The Voters' Rolls for 1941 to 1959 are discussed below and create an impression of the size of Williston in terms of its population as opposed to elsewhere in South Africa.

A health report for Williston from June 1930 stated that there was room for a great deal of improvement with regards to sanitation in the village. It was firmly advised that overcrowding in the *Nachtmaal* rooms be forbidden, since this was not only unhygienic but it also had "far-reaching moral aspects", which presumably referred to unmarried males and females sharing accommodation which would have impacted their stature in local society. Furthermore, a special plea was made to improve matters in the 'location'; however, no further details with regards to the dissatisfaction were furnished.[56] March 1931 saw the

[54] SAB, LBD 2311, R3381/1, Letter from the Secretary of the Farmer's Association to the Magistrate in Williston, 4 June 1927 and a letter from the Magistrate in Williston to the Secretary for Agriculture, 23 June 1927.
[55] SAB, GES 692, 201/13, A Systematic Inspection of the District of Williston in 1928 by the Assistant Health Officer.
[56] SAB, GES 692, 201/13, Letter from the Secretary for Public Health to the Town Clerk in Williston, 8 August 1930.

division appointing a full-time sanitary inspector for the first time. With regards to the 'location', the Town Clerk emphasised that it was more of a "coloured settlement" rather than a 'location' since only one "native" family resided within the district. The huts or rooms were rented on a monthly basis and only one family were allowed per dwelling, however, how strongly this was or could be enforced is doubtful. The water supply derived from a main pipe in the village, free of charge, and the removal of night-soil was also done free of charge. There were four closets in the entire 'location': two for men and two for women.[57] The emphasis on the difference between a 'location' and a coloured settlement is noteworthy in that it was obviously considered of importance that only one "native" family was residing in the district of Williston at the time and therefore it needed to be communicated that there was not an abundance or large presence of "natives" within the region. Furthermore, it is also highlighted that sanitary services were provided to local residents free of charge and therefore drew a distinction between them and the white community, who were required to pay for these same services, which signals that national authorities felt the need to emphasize this courtesy.

In April 1931 homeowners in Williston were given two months notice to provide every pail closet with two regulation size pails, in order to make the transition from a single to a dual-pail system. The homeowners referred to here were probably white homeowners since the coloured community of the town did not yet have pail closets within their homes, or even on their properties. Whether the local municipality upgraded the latrines is unknown. The night-soil was deposited at night time in a pit dug in the ground and covered with soil the following morning. The Town Clerk reported that there was a slight improvement with regards to the unsanitary state of dwellings in the 'location', however, as soon as the new houses were built it was due to improve the overall situation. This was met by a response from the Acting Secretary for Public Health that there was no need for the construction of additional latrines in the 'location' to be delayed until the new houses had been completed. The Council was therefore urged to construct the new latrines without delay.[58] This final statement is noteworthy in that it indicates a discrepancy between state and local authorities: while the local municipality was delaying the construction of suitable latrines for the coloured community of Williston, national authorities insisted on the improvement of facilities

[57] SAB, GES 692, 201/13, Letter from the Town Clerk in Williston to the Secretary for Public Health, 20 March 1931.
[58] SAB, GES 692, 201/13, Letter from the Town Clerk in Williston to the Secretary for Public Health, 15 April 1931.

immediately and refused to accept the excuse provided by the local body. This is suggestive thereof that national standards of sanitation were increasing for all communities, regardless of race, and that a small town in the Karoo, such as Williston, was unable to follow the advancement of the time, which therefore impacted on the socio-economic development of the district and contributes to the argument that a scarcity of water held the town back from expansion as was undergone elsewhere.

3.7 Sanitation, Supply and Typhoid Fever: 1933-1946

A thorough health inspection of the division of Williston in December 1933 revealed that the transition to a dual-pail system had been made, which meant that the used pail was removed from the closet and replaced by a clean, empty one. The full pail was placed on an animal-drawn wagon, which proceeded to the disposal site. The transition from a single to a dual-pail system is noteworthy in that it greatly improved the overall sanitation habits of the region and the local residents. Sanitary facilities in the coloured 'location' were entirely inadequate, with four closets provided to serve 91 dwellings. This was considered very unsanitary and a danger to public health. It was recommended that severe measures be taken to rectify this. The recent drought suffered by the entire division had affected the yield from the boreholes in the vicinity and therefore the local Council had been conducting various boring operations on the banks of the Sak River, approximately two miles from the town, with the view of obtaining an adequate supply for domestic purposes. The more recently constructed houses had water laid on to the kitchen, but in most cases water was simply obtained from standpipes that were erected in the yards of properties. The residents of the 'location' obtained their water from a covered tank situated some 500-600 yards[59] from the properties.[60]

In August 1934 the Town Clerk reported that the water supply for the second half of the previous year had been inadequate, however, a small amount of rain had brought relief to the region. Furthermore, the Council had sunk various boreholes, but a sufficient supply of water for the town had not yet been discovered.[61] The Annual Health Report for 1936 stated that the water supply for the village remained inadequate, with over £400 having been spent on

[59] A yard is equal to 0, 9144 meters.
[60] SAB, GES 692, 201/13, A Health Inspection of the District of Williston completed by E. D. Fowles, 30 December 1933.
[61] SAB, GES 692, 207/13A, Letter from the Town Clerk in Williston to the Secretary for Public Health, 9 August 1934.

fruitless boring the previous year.[62] In February 1937 the Municipality in Williston contacted authorities stating that the water question had become acute and that the public health was suffering due to widespread water scarcity. A request was made for a geologist to be sent to the local division in order to offer advice in terms of where to bore for a sufficient supply.[63] These extracts highlight the severity of water scarcity suffered by Williston during this period, however, it also reflects the unfaltering belief and faith local inhabitants had that there was an adequate water supply underground, it was simply a case of requiring professional assistance in order to locate it. This hopefulness coupled to fatalism is explored in Chapter Five. These residents did not consider leaving the district in the hope of finding a sufficient water source, many were potentially too poor to attempt to do so, and others arguably remained hopeful and motivated that they may be blessed with rainfall to bring relief to their drought-stricken farms.

In April 1939 a systematic inspection of the division of Williston was undertaken. In spite of recurring periods of drought, the population was said to have increased since 1921 with both races having more than doubled their numbers.[64] The water supply was derived from five boreholes situated outside the village, from where the water was raised by means of two-power driven pumps and three air-motors[65] to the enclosed cement reservoir on the hill above the village. From the reservoir a municipal main carried the water to the town itself. The water supply is described as plentiful and "in every way satisfactory".[66] In the 'location' the nearest water supply was at a borehole with a hand-pump, which was situated some distance from the properties. A latrine block consisting of six closets had been provided by the Council; however, it was recommended that the local authorities should endeavour to erect at least one pail closet per twenty inhabitants.[67] This stands in stark contrast to the white community where a pail closet existed for every household, proving once more that sanitary facilities and the provision of water was influenced by race.

[62] SAB, GES 692, 207/13A, Letter from the Town Clerk in Williston to the Secretary for Public Health, 12 December 1936.
[63] SAB, GES 692, 207/13 Letter from the Municipality in Williston to the Secretary for Public Health, 11 February 1937.
[64] SAB, GES 692, 207/13A, A Systematic Inspection of the District of Williston by the Assistant Health Officer, 26 April 1939. This report does not present any actual statistics.
[65] An air-motor or pneumatic motor is a type of motor which does mechanical work by expanding compressed air. These motors generally convert the compressed air into mechanical work through either linear or rotary motion.
[66] SAB, GES 692, 207/13A, A Systematic Inspection of the District of Williston by the Assistant Health Officer, 26 April 1939.
[67] SAB, GES 692, 207/13A, A Systematic Inspection of the District of Williston by the Assistant Health Officer, 26 April 1939.

Following the systematic inspection of health and sanitary conditions in Williston at the end of 1939, the Secretary for Public Health contacted the Under Colonial Secretary at the start of 1944 to comment on the unsatisfactory findings. The outbreak of typhoid fever in Williston earlier in 1944 was ascribed by the District Surgeon to the general unhygienic conditions of the town due to a lack of supervision by the Council. At the start of January 1945 the local Town Clerk requested a partial refund for expenses incurred with the outbreak of typhoid fever, arguing that proof had been delivered that "the source of contamination was river-water, where coloureds had been working on harvest fields".[68]

Typhoid not only erupted in Williston, but spread into the greater district and especially on the farms which were located riparian to the river. The bulk of the infection, however, was restricted to the 'location' in Williston. It is noteworthy, therefore, that a source of life had become a source of illness and potentially even death. With the outbreak of the epidemic, the local authorities took all the necessary measures to isolate those persons infected and to prevent the further spread of the disease. The infections were mainly limited to the coloured community and therefore the disease was racialised in nature, since the white community were not affected to the same extent and therefore not as mobilised to prevent further infections. The Council felt it unfair that they were blamed for the outbreak of the fever when they did everything in their power to bring it under control and contain it. Furthermore, they also argued that they were not to blame for the outbreak since the contamination was found to be river-water.[69] This incident is significant in that the District Surgeon so easily ascribed the outbreak of fever to the sanitary conditions of the village. It is also suggestive thereof that national authorities were looking for a scapegoat of sorts on whom to blame the outbreak of the fever. The most noteworthy factor, however, is that the contamination is linked to river-water where, specifically coloureds, had been working. This is therefore directly implying that the outbreak of the fever can be linked to the coloured residents who had been working alongside the river.[70] This explanation is taken as sufficient and the case is closed as such, without further exploration of possible contamination sources or factors even being

[68] SAB, GES 692, 207/13A, Letter from the Secretary for Public Health to the Under Secretary, 14 February 1944 and A Letter from the Town Clerk in Williston to the Magistrate in Williston, 18 January 1945.
[69] SAB, GES 692, 207/13A, Letter from the Town Clerk in Williston to the Magistrate in Williston, 18 January 1945.
[70] This incident can be linked to an international study on cholera in Russia by McGrew whereby it was stated "that the wealthy and uncivilised also contracted cholera and died of it seemed only to underline the danger of living near the poor". It suggests that the contamination of diseases was seen in purely racial terms and justified the introduction of locations in South Africa whereby coloured and white communities were housed in separate areas. From Swanson, "The Sanitation Syndrome", 389.

considered. The report does not furnish details on whether any fatalities were suffered, which comments on the segregationist state of affairs of the time and the lesser importance of the coloured community in the eyes of the state.

In February 1945 the Secretary of Health reported that the local Council in Williston had carried out various improvements since the last report: a sub-economic housing scheme had been undertaken and building had already commenced; water was being laid on to the 'location'; a qualified health inspector had been appointed and application had been made for the establishment of a nursing home.[71] Under these circumstances it was felt that the purpose of withholding the refund, as described above, had been served and it was therefore recommended that application be approved. In April 1945 the application was accepted for part-refund in terms of the expenditure incurred by the Williston Municipality in dealing with the outbreak of typhoid fever in January 1944.[72]

It would therefore appear as though the typhoid outbreak of 1944 served as a catalyst for change within the community and spurred the local authorities to make a variety of improvements to the sanitary conditions as well as overall public health of the village, despite the majority of infected persons being coloured. Arguably they were pressured by state to make these basic improvements due to national standards of sanitation being raised. These improvements, however, occurred quite late in the history of Williston and therefore undoubtedly affected the manner in which the town developed, perhaps too late, as opposed to Prince Albert.

A health inspection from 1946 revealed that 50 coloured homes had already been built and that the rent was set at £1 per house per month and it included all sanitary services as well as the provision of drinking water. Water was laid on to taps on the street where one tap existed for every six houses. Two schools existed for white children and the sanitary facilities at each were considered satisfactory. Two schools also existed for coloured children, however, the sanitary facilities were completely inadequate with two pails being provided to serve roughly 200 children.[73] Once again, the extreme inequality between the two different races is highlighted in terms of sanitary facilities provided to children. The conditions were

[71] SAB, GES 692, 207/13A, Letter from the Secretary for Public Health to the Deputy Chief Health Officer, 15 February 1945.
[72] SAB, GES 692, 207/13A, Letter from the Secretary for Public Health to the Deputy Chief Health Officer, 12 April 1945.
[73] SAB, GES 692, 207/13A, A Health Inspection of the District of Williston by the Deputy Chief Health Officer, 13 May 1946.

completely unhygienic and quite a serious danger to the public health of the coloured children, who were liable to a great deal of contamination due to the inadequate services provided to them. There is no further mention of the need for improvement or a call to action with regards to how local authorities intended to improve the situation.

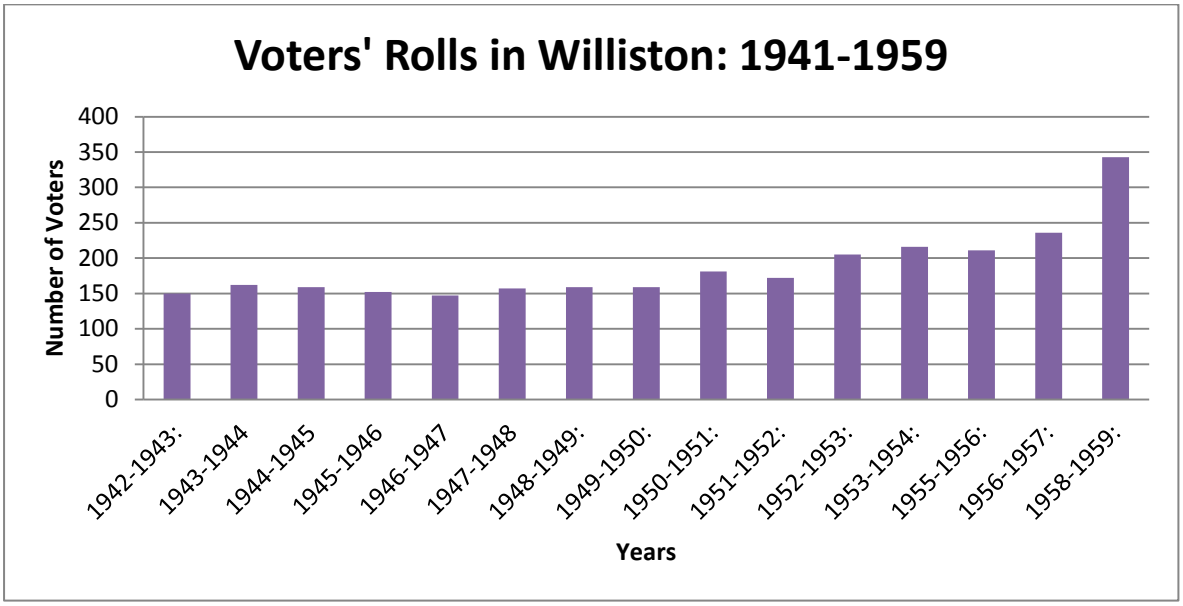
3.8 Williston Voters and Registered Rainfall

The Voters' Rolls for the period between 1942 and 1959 provide an indication of the number of white adults registered within the town.[74] The lowest number of registered adults was 147 between 1946-1947, while the highest number of registered adults was 343 in the years 1958-1959. This figure, however, seems somewhat inaccurate since it is a drastic increase from all the other years before and also shows too great an increase from the 1956-1957 periods prior, with 236 registered voters. It seems impossible for such a small district to have over an additional one hundred registered white voters in the space of a year, unless it was a case of a number of nomadic farmers returning to the region, however such a drastic increase would be unlikely. Overall there is a steady increase from one annual figure to the next, showing a controlled expansion of the division during this period.

These figures are significant in the sense that they can be compared with voters' rolls from other towns across the country during the same period in order to indicate how Williston compared in terms of size and number of inhabitants, though not entirely accurate since not all communities within the district held the right to vote. Vail describes Cradock in the 1920s as a town of intermediate size with a total population of 14,870 as opposed to Graaff-Reinett, which was at 14,000. Queenstown was recorded at 25,000 and Grahamstown at 23,000 residents.[75] Though the figures for Williston are for a much later time frame than those discussed by Vail, it nevertheless indicates the insignificant size of the village in comparison to other towns. Despite the fact that the Voters' Rolls would not have included the entire population and specifically not the coloured community, these figures highlight the small population which resided within the division of Williston, which undoubtedly played a major role in the socio-economic development of the town to its modern condition since it lacked the dynamic and growing population as was evidently present elsewhere.

[74] Unfortunately, no statistics to represent all the communities of Williston could be retrieved and therefore the Voters' Rolls are only representative of the white community.
[75] J. Butler, "Afrikaner Women and the Creation of Ethnicity in a small South African Town, 1902-1950", in L. Vail, *The Creation of Tribalism in Southern Africa (*California: University of California Press, 1991), 58.

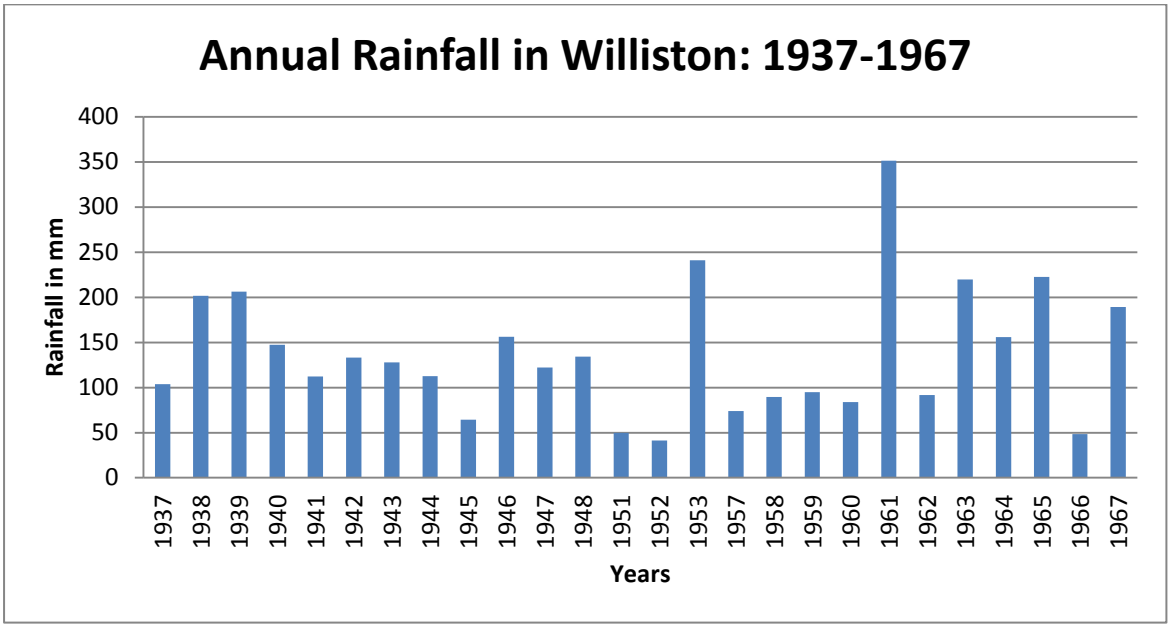
Graph 3.1: Voters' Rolls in Williston from 1941 to 1959.[76]



The thirty year period between 1937-1967, with data missing for 1949, 1954, 1955 and 1956, indicate a great deal about the division of Williston with specific reference to rainfall measured. Williston received its highest amount of rainfall, by far, in 1961 with 351, 4 mm measured for the year. This was one of the years in which the *Sak* River flooded, which will be explored in Chapter Five. Data for 1937 indicate that only 103, 7 mm was measured for the year, which confirms the details supplied above, whereby the local authorities requested the services of a geologist to assist in finding a sufficient supply since the division was plagued by drought at the time. There are three years during this period where Williston received less than 50 mm of annual rain; these are 1951, 1952 and 1961. The lowest being in 1952 with barely 40 mm measured. On average, the region received between 50 and 100 mm of rain, also on many occasions between 100 and 150 mm of rain. This data can be compared with rainfall figures for another town, such as was done with Prince Albert in the previous chapter, across the same period to truly indicate how little rainfall the district received, which comments on the reliance on a groundwater supply as well as the droughts which irregularly but frequently plagued the division.

[76] KAB, 3/WIL, 10/1, Voters' Rolls for Williston, 1942-1959.

Graph 3.2: Annual Rainfall in Williston from 1937 to 1967.[77]



As mentioned above, these rainfall figures highlight the droughts which perpetually return to the region and influence the lives of all inhabitants, but specifically farmers who were dependent on their harvests for survival. The harsh environment has played a major role in the history of Williston and had a huge impact on those who reside in the area; many learn to adjust to the uncontrollable nature, while others are forced to move elsewhere in an attempt to better the lives of their families and improve their chances of success and prosperity. In this way the climate has played a major role in the socio-economic development of Williston into the town as it is presently known. The advancement of Williston largely took place without state assistance, as will be discussed below.

3.9 State Assistance to the Development of Irrigation

In her work on the Upper Kuruman Valley, Nancy Jacobs researched water management between c.1800 and 1962 and emphasized the manner in which the missionaries from the London Missionary Society developed irrigation works during the 1830s and 1840s, despite widespread food shortages and the manner in which the local communities were affected by these developments. Some time thereafter, the new Union Government in South Africa further developed irrigation within the region for the white community. She concluded that years of disadvantaging African rights to both land and water ended with the removal of

[77] Aggregated from data provided by The South African Weather Service. Personal Communication with Ms. Phumudzo Tharaga via email. 29 August 2012.

black communities from the range of the strongest flowing spring within the region.[78] Therefore, the history of the changing ownership and use of the Eye shows how the rural transformation in South Africa involved dividing the environment and allocating the ability to exploit it,[79] which again relates to the domination of one over another as stated by C. S. Lewis. What this proved in the Kuruman district, however, does not reveal a trend for interaction or relations between missionaries and local inhabitants in other regions within South Africa. It also does not reveal a trend between state assistance or the provision of funding and irrigation projects. The interaction between local inhabitants in Williston and the Rhenish Missionaries was outlined briefly in the previous chapter and revealed in the research of Herbst: the two missionaries did not undertake any extensive irrigation projects in their time of employment within Williston. They did not exploit the scarce water supplies in order to advance themselves. Furthermore, the state did not provide the same amount of support to the farmers within the division of Williston to allow for the advancement of water works and infrastructure, as was explored throughout this chapter. The local municipality applied for loans in order to improve the water supply; however, the state did not go beyond this to assist the local farmers.

The inconsistent and racialised state support is usefully contextualised in order to escape the trap of South African exceptionalism by the research of Valerie Grim on African American farmers in the rural south between 1980 and 2000. She concluded that these farmers had only started adopting irrigation schemes since the 1980s in order to address the economic stresses of drought and a lack of irrigation works. This stands in contrast to the southern white farmers, who have large land holdings, and had approached the development of irrigation independent of state assistance, which resulted in no federal or government offices providing solutions to the droughts faced by southern farmers as had been the case in their management of western irrigation. Southern white farmers had integrated advanced technology and thereby defined the approach towards drought within the south for the past two decades of the century, while many African American farmers continue to seek alternative and more affordable means by which to handle drought.[80] Therefore, while state assistance in western America had been widespread, there was a complete lack thereof in the southern parts. Similarly to the situation locally, therefore, a trend cannot be discerned in the provision of

[78] Nancy Jacobs, "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa c.1800-1962", *The Journal of African History*, (37), (2), 241 and 258-259.
[79] Jacobs, "The Flowing Eye", 239.
[80] Valerie Grim, "The High Cost of Water: African American Farmers and the Politics in the Rural South, 1980-2000", *Agricultural History*, (76), (2), *Water and Rural History*, 2002, 338, 339-340 and 348.

support from the state. However, state authorities in South Africa have recently intervened in Williston in order to introduce an artificial recharge scheme to conserve the groundwater supplies within the region.

3.10 Natural Limitations and Artificial Recharge

Owing to factors such as restricted resource availability, quantity of water, erratic precipitation, drought and water management issues, and the reliability on groundwater in the entire Northern Cape has not been adequate for its population. This region also suffers from low annual rainfall and therefore the recharge of groundwater is limited, which has had the effect that only small quantities can be extracted in order to remain sustainable. Furthermore, the intense heat of the summer months is accompanied by high evaporation rates.[81] Those with power and state support addressed these problems with technology.

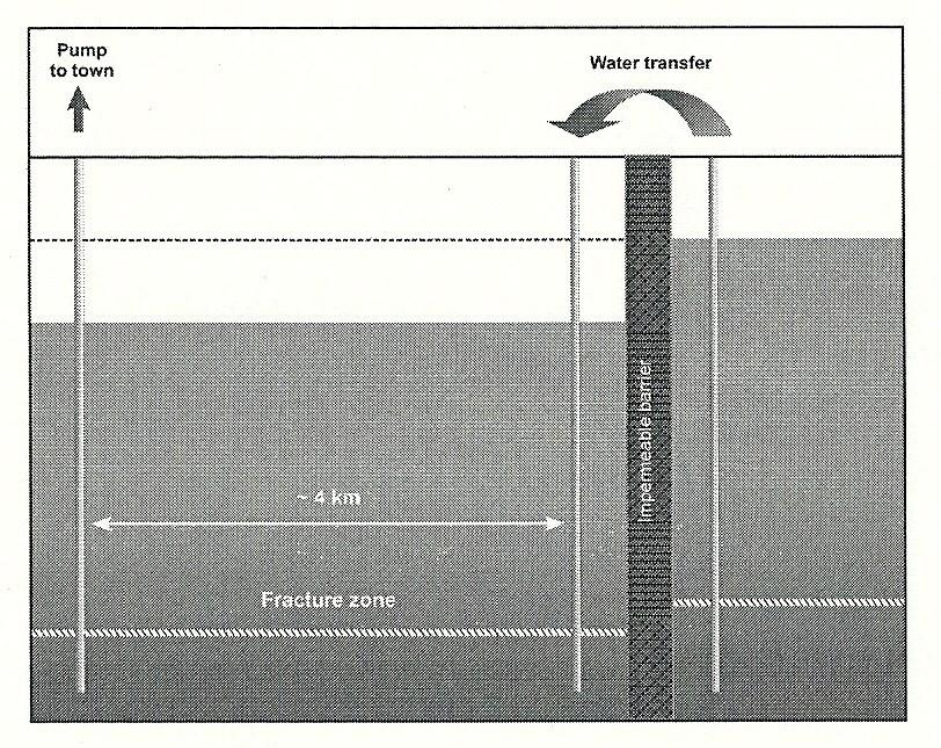
Artificial recharge, as was described briefly in Chapter Two, can be defined as the process whereby surface water is transferred underground to be stored in an aquifer. The most common methods practised presently involve injecting water into boreholes or transferring water into spreading basins where it then infiltrates the subsurface. The main reasons for the current interest in artificial recharge include that it is generally much cheaper to follow through than other surface water schemes, such as the construction of a dam; secondly new surface water sources are sometimes not available or increasing the yield from an existing supply is not possible and thirdly, because surface water resources are already under pressure and therefore artificial groundwater recharge presents the opportunity for water management specifically water-stressed communities, which are common across South Africa.[82]

In Williston specifically, abstraction from the aquifer has been in excess of the natural recharge rate ever since 1983 when intensive monitoring of the water level was implemented.[83] The image below reveals the nature of the scheme implemented in Williston: the water is drawn from an underground aquifer, in which the levels have dropped since

[81] P. Mukheibir and D. Sparks, "Climate Variability, Climate Change and Water Resource Strategies for Small Municipalities", *Report to the Water Research Commission*, September 2005, 7 and 11.
[82] Department of Water Affairs. 2010. Strategy and Guideline Development for National Groundwater Planning Requirements. Water Banking; A Practical Guide to Using Artificial Groundwater Recharge, dated November 2010, 3.
[83] E.C. Murray and G. Tredoux. 1998. Artificial Recharge: A Technology for Sustainable Water Resource Development. Water Research Commission Report No. 842/1/98, Pretoria. Input from Chris Esterhuyse, SRK Consulting, Western Cape.

1983.[84] The aquifer has a neighbouring aquifer; however, the two are separate by an impermeable barrier. Therefore, water is being pumped from the aquifer where water levels have not dropped into the one where the town supply is derived from. It is stated that "water can now be transferred at 3L/s from one compartment to the other and this has had the effect of doubling the yield of the town's well-field".[85]

Image 3.1: A Depiction of the Artificial Recharge Scheme in Williston.[86]



The implementation of artificial groundwater recharge scheme in Williston comments on the continued concern that exists over the water supply in the town and the need which existed for state authorities to intervene in an attempt to relieve the situation. This reiterates the argument that water scarcity within the division of Williston has had a major impact on both the social and the economic development of the village since it directly influenced the

[84] Finally, it is arguable whether the practise of artificial groundwater recharge is truly recharging an underground supply since in essence one aquifer is being pumped into another where the levels have dropped due to the rate of abstraction being higher than the rate of natural recharge. Therefore, the new aquifer from where an additional supply is being pumped is simply going to see its own water levels dropping while the level for the neighbouring aquifer remain constant or potentially even increasing. It begs the question of where the town's water supply will derive from once the level of the neighbouring aquifer too becomes too low and a point of concern.

[85] E.C. Murray and G. Tredoux. 1998. Artificial Recharge: A Technology for Sustainable Water Resource Development. Water Research Commission Report No. 842/1/98, Pretoria. Input from Chris Esterhuyse, SRK Consulting, Western Cape.

[86] Department of Water Affairs, 2010. Strategy and Guideline Development for National Groundwater Planning Requirements. Water Banking: A Practical Guide to using Artificial Groundwater Recharge, dated November 2010. Available online at: http://artificialrecharge.co.za/booklet/AR_booklet_13Jan2011.pdf.

residents who chose to reside within the district as well as the economic yield of the town and the farmers. It also comments on how central the resource has been to the development, or lack thereof, of Williston as a town.

3.11 Conclusions

This chapter drew chronologically on various health and sanitation reports, inspections as well as official correspondence between local and national authorities to reconstruct the history of Williston's water supply between the 1870s and the present. The region was plagued with problems such as drought and a continued search for a sufficient supply of water to meet the domestic needs of local residents. Furthermore, the concerns of the local municipality were also focussed entirely on the white community of the district as opposed to the coloured community. This was most evident in the substandard sanitary facilities which were provided as well as the water supply, which was never modernised to the same level of convenience as experienced by the white community.

There seems to exist a certain amount of inconsistency with regards to the water supply within the town, from one year to the next the state of affairs shifted from an adequate and satisfactory supply to a serious shortage. It is suggestive thereof that many of the boreholes used during this period were depleted of their supply and it was necessary therefore to keep searching for additional sources to yield a sufficient supply, which was not always found before the situation became a concern.

Furthermore, a key point was the water supply and the technology to use what little water was available, was erratic and broadly insufficient, but also racialised, which means access to water was determined largely based on race. It could be argued that this division too impacted the socio-economic development of the town, since the perspective prevented the overall advancement of the town in an attempt to keep facilities provided to the coloured community of a backward and inferior quality, while modernising and advancing facilities for the whites were a priority. The insufficient water supply and the harsh climate were major determinants in forcing inhabitants elsewhere and preventing the permanent settlement of others. These factors combined developed Williston into the luminal Karoo town it is presently known as.

Chapter Four:

Two Streams: The History of the Public and Private Management of Water in Prince Albert, c. 1870-1998

Presently in Prince Albert, there are two ways of obtaining water: firstly, irrigation water, which is obtainable through the water furrow system, managed by the Kweekvallei Water Users Association. Secondly, there is a domestic water supply, which is managed by the local municipality. This chapter builds on the argument from the previous two chapters that water lies at the heart of the socio-economic development of both Williston and Prince Albert and served as a contributing factor in the two Karoo towns advancing so differently. It also explores the tension between the private and public management of water in Prince Albert, as opposed to water being under the control of the local municipality, as is traditionally the rule in other towns, such as Williston. Finally, the chapter explores the manner in which the coloured community of Prince Albert were disadvantaged in their access to water by not only the private management of the resource, but also the public. Therefore, while there are physically two streams of water that enter the village of Prince Albert, the public and the private, there are also two streams in terms of access to the resource being influenced by both race and class.

This distinction is illustrated in the following series of images, which indicate the flow of the local Dorps River from the one end of Prince Albert through to the other and specifically aims to highlight the position of the North-End 'location' and its proximity to the water supply as opposed to many of the farmers within the region, who are situated riparian to the river. The images are arranged in an order that depicts the upstream flow of the Dorps River and therefore the image closest to the Swartberg, the source of water in Prince Albert, is the last image. These images not only highlight the proximity of the 'location' to the water, but also the fact that these residents of North-End are located downstream from the source as opposed to those farmers who are both riparian to the river, but also situated upstream and a great deal closer to the actual source.

Image 4.1: The Northern Entrance to Prince Albert.

Image 4.2: The Northern Outskirts of Prince Albert.

Image 4.3: The Centre of the Village of Prince Albert.

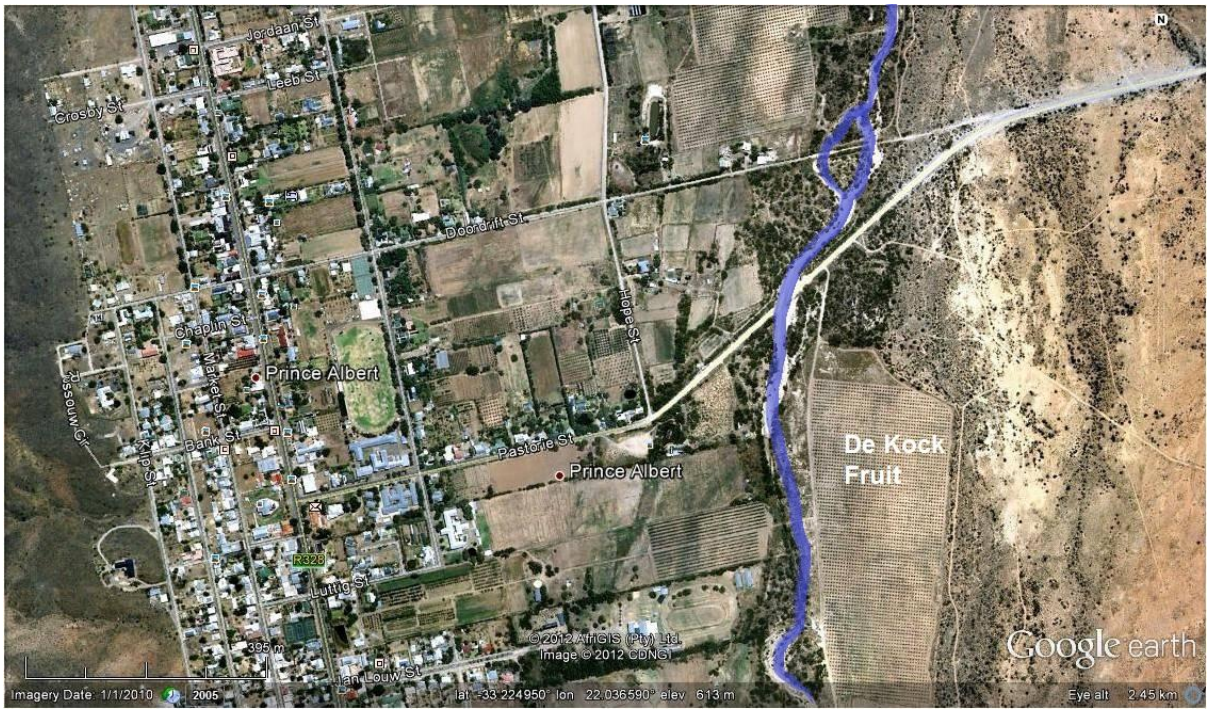
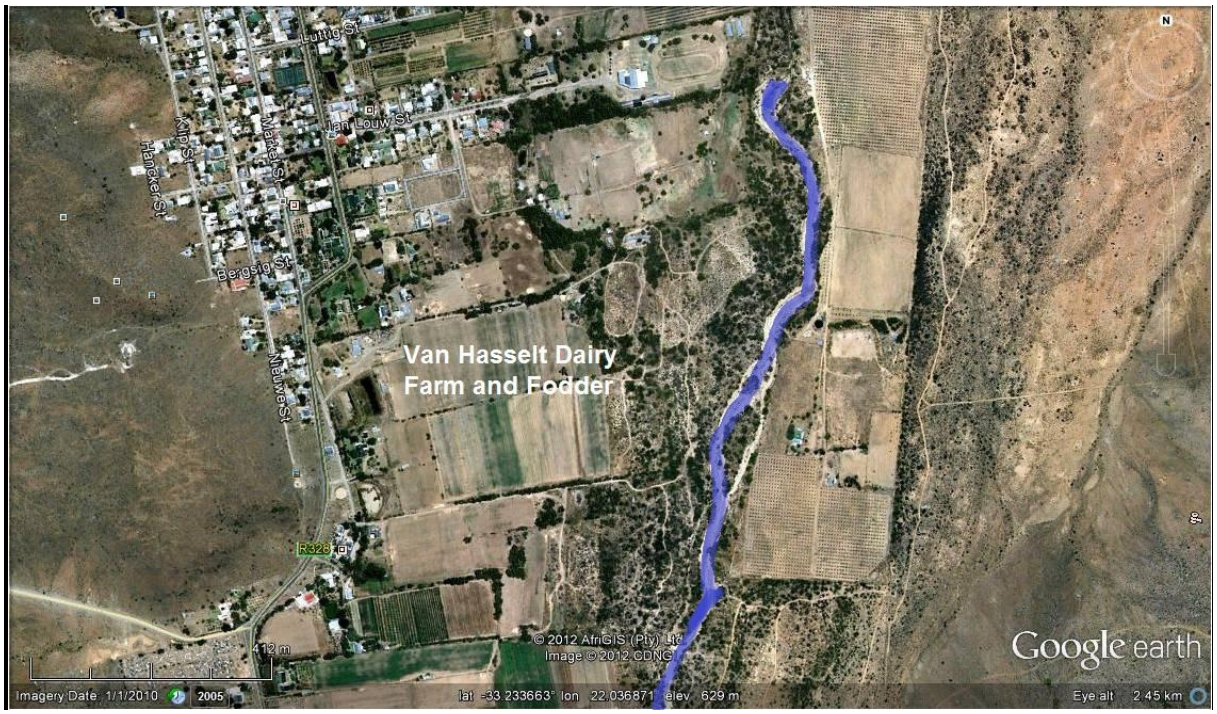


Image 4.4: The Southern Entrance to Prince Albert, closest to the Swartberg.[1]



[1] All images were accessed online using Google Earth and thereafter edited by the author with the assistance of Sue Milton, a local Prince Albert resident.

4.1 Early Control and Management of Water: 1870s-1897

The present-day images highlight the flow of the Dorps River as well as the settlements alongside the river as opposed to the proximity of the North-End 'location' to the water. The settlement patterns have been "written into" the landscape and reveal this as having been the accepted management of the resource for many years, which is further discussed throughout this chapter. These images are also suggestive of the influential role water played in early settlement within the region and the establishment of farms. Most small towns and farms were entirely dependent on fountains, streams, earth dams and other water sources for survival, as discussed in Chapter One. In water projects dating from the 1870s, farmers made use of a variety of different techniques, which were reliant on the physical opportunities as well as the capital available to them. The more determined and affluent farmers built larger storage dams as opposed to smaller earth dams, which was the accepted practice at the time. This meant that these farmers were able to store a great deal more water and therefore irrigate more land, depending on the amount of rainfall received or the water resources available to them.[2] Advancements in construction technology improved towards the end of the nineteenth century and the dried, moulded cattle hides on which earth was initially piled during the earlier years to build dams was replaced by wooden scraping boxes and later by wheeled scrapers. An alternative solution for those farmers with riparian properties entailed the construction of weirs in order to divert flood water onto their property.[3] A similar practice existed in Prince Albert whereby water furrows were constructed from a kloof in the Swartberg to transport water to the village, but more specifically to individual properties within the village, as will be explored below. Water has always been managed very strictly in Prince Albert, both publicly and privately, which appears to have started with legislation dating from as early as 1897.

Various regulations were implemented in 1897 in the village of Prince Albert in order to regulate the use of drinking water: "Any person may take water in reasonable quantities for use for domestic purposes from any public fountains or taps, provided that no person shall in

[2] In 1883 the Dutch Reformed Church built its first irrigation settlement at Kakamas in order to help destitute whites, and thereafter continued to advocate for irrigation development for several decades. At first they constructed an irrigation furrow for the Church's gardens at Kakamas, using private financing. Following the success of that project, the Church established an irrigation colony at Kakamas in order to help improve the economic situation of destitute whites. In 1897 the government gave the state two farms on the banks of the Orange River in order to further their project. From K. M. Findlater; N. Funke; R. Adler and A. Turton, South *Africa's Hydropolitical History: Actors, Actions, Roles and Responsibilities.* CSIR Parliamentary Grant Report. NRE No. CSIR/NRE/IR/WR/2007/0064/A. CSIR: Pretoria, 2007.

[3] Beinart, *The Rise of Conservation*, 162.

taking or conveyance of such water cause any nuisance or waste of water". Furthermore, this legislation also entitled the owner of any property to a maximum of 100 gallons of water per day without charge.[4] This chapter uses this legislation as a starting point from which to approach the history of water in Prince Albert in terms of the resource being central to the village from its origin and access to it being not only racialised but also influenced by class. The legislation makes reference to "drinking water", which draws a distinction between the different purposes water was acquired and used for, which will become apparent below when reference is made to "irrigation water" or furrow water.

4.2 Origins and Ownership of Water: 1897-1911

In August 1897 a report was written on the water supply in the village of Prince Albert and explained that the town was supplied with water for both drinking and irrigation purposes by means of a furrow, which derived its supply from a *kloof* in the *Swartberg* pass. It was, however, believed that access by both cattle as well as a number of "natives"[5] had polluted the stream. The erf-holders of the town were collectively entitled to a certain amount of water for domestic as well as drinking purposes, while certain property owners were entitled to water from the town furrow for irrigation purposes. It was stated in the report that the right to water was therefore considered to be "communal", emphasising that it was not owned or managed by the state or local authorities. Finally, typhoid fever and other similar enteric diseases were, at the time, commonly attributed to the contaminated drinking water and therefore an established disapproval against the purity of the local water existed among many of the local residents. It failed, however, to specify the exact source of pollution to blame for these infectious diseases.[6] The reference to African polluting the water also stands in contrast to the legislation from 1897, which permitted "any person" to take drinking water. While this report refers to water as being communal, it simultaneously blaming pollution on Africans and thus promoted a racialised as well as classed approach towards water access since it was largely determined by the ownership of property.. Indeed, the owners of properties were essentially the owners of water as well, as is argued below.

In March 1898 the Honourable Commissioner for Crown Lands was contacted by the Board of Management in Prince Albert regarding the lease of two farms in the district: *Dorps Rivier*

[4] KAB, PAS 1/1048, L85/A/4, Regulations for Drinking Water, 1897.
[5] The term "natives" is used throughout the Health and Sanitation reports to refers to both the black and coloured communities within Prince Albert. as opposed to the white community.
[6] KAB, PWD 2/6/366, U20, Prince Albert Water Supply, 16 August 1897.

and *Voetpad's Berg*. The water supply of the village had its rise on the two farms in question and therefore concerns existed that if farms were leased a new party would be able to reduce the supply or cut it off altogether from the village. State authorities consequently reserved the farms from both lease and sale,[7] which emphasises the central importance of the resource to the inhabitants of the town as well as to the state.

On 11 November 1907 the Medical Officer of Health for the Colony contacted the local Town Clerk in Prince Albert regarding a report on the Public Health and Sanitation of Prince Albert, which had taken place the previous year. It stated that slop-water and refuse were not dealt with at all within the village and that household refuse was left to each householder to dispose of on an *ad hoc* basis. The municipality was encouraged to deal with this in the same manner as the local night-soil removal. The report also commented on the drainage of storm water and specifically that this facility was completely inadequate, since the furrows and drains were able to fill up with both sand and refuse and when a rush of water came along they were completely blocked and many of the streets flooded. Direct reference was made to an open drain that ran through the "native quarter"[8], which was a shared cess-pool and a danger to anyone who went near it.[9] Furthermore, it was revealed in May 1908 that enteric fever had been very prevalent within the area during the two summers prior and that the Resident Magistrate believed it to have been due to a considerable portion of the population consuming drinking water from the furrows, which were subject to widespread pollution since they were uncovered.[10] A cess-pool within the "native quarter" is mentioned; however, while it is highlighted as a danger to the public health of local residents, no instructions or even suggestions were given for the issue to be addressed. It was clearly of lesser importance due to the problem persisting within the area where coloureds and Africans resided as opposed to the part of the village where the white community resided. The issue of local inhabitants consuming water from the open furrows was also raised and linked to the outbreak of enteric disease within the village. It could be that part of the local population were forced to use this water for domestic purposes since they did not have another water

[7] KAB, LND 1/698, L11014, Correspondence between the Honourable Commissioner for Crown Lands and the Board of Management in Prince Albert and also between the Under Secretary for Agriculture and the Surveyor General, 5 March 1898 and 7 April 1898.
[8] Throughout the health and sanitation reports for Prince Albert, the term "native quarter" is used repeatedly to refer to the area where the coloured and African communities resided. This is similar to the use of the term "coloured location" in the previous chapter on Williston.
[9] KAB, MOH 345, L80C, Letter from the Medical Officer of Health for the Colony to the Town Clerk in Prince Albert, 11 November 1907.
[10] KAB, PAS 2/453, L80C, Letter from the Medical Officer of Health for the Colony to the Department for Public Health, 1 May 1908.

supply and therefore did so out of desperation, alternatively it was more convenient to use furrow water than travel to inconveniently located standpipes or reservoirs, as will be seen below. This contributes to the argument that the coloured community of Prince Albert were disadvantaged in their access to water by both the private as well as the public spheres, since they did not have furrow water laid on to the 'quarters' where they resided and also did not have adequate domestic facilities supplied to them by the municipality.[11]

It was reported in July 1909 that the night-soil pails were not being cleaned sufficiently, while the removal of slop-water and household refuse were still not dealt with at all and generally disposed of in the backyards of local residents. The water supply in the "native location" was described as deficient, with the standpipe being located too far away from the homes of inhabitants. The sanitary facilities were inadequate and filthy. Night-soil was removed once a week, presumably by the municipality or a private contractor employed by the municipality. The local Town Clerk in Prince Albert replied that householders were compelled to keep their premises clean and required to deposit their household refuse as well as slop-water at places specifically set aside for these purposes. Water had, apparently, been laid on to the 'location' during the course of the year in question.[12] It is not specifically stated whether water was laid on to the actual houses in the 'location' or whether more standpipes were installed. Oral sources, as will be discussed in the following chapter, revealed that certain houses still do not have water laid on to the confines of their houses presently.[13] Local authorities maintained that it was the responsibility of local householders to keep their properties clean, however, evidently the *ad hoc* basis on which slop-water and household refuse were disposed of was not meeting this standard and yet local authorities would not acknowledge this or enforce any legislation to alter the situation. This report highlights the prominent role water played in the lives of local residents and also emphasises its importance in the early, formative years of the town, which had a profound impact on the manner in which it later advanced.

In April 1911 the Assistant Medical Officer of Health for the Colony undertook a thorough inspection of the Prince Albert Municipality, which revealed that the water supply was weaker during summer months than in winter. Presently, Prince Albert experiences the same problem, as will be discussed in Chapter Five. The report explains that the water was

[11] The North-End 'location' still does not receive any furrow water at present. This issue is more closely explored through oral testimony Chapter Five.
[12] SAB, GES 670, 178/13, Sanitation Prince Albert, July-September 1909.
[13] Interview with D. Koot; 23 September 2012; conducted by N. Kruger (in person).

considered to be the sole property of approximately 50 water erf-holders, who were attempting to formulate a scheme at the time in order to increase the water supply of the village during summer by bringing the water in the *kloof* in a cement pipe for the lower two miles in order to avoid leakage and wastage.[14] This report confirms the argument of the chapter that water in Prince Albert was privately managed for the majority of the town's history and continues to be done so, in part, presently. The local municipality, as will be revealed later, was treated as any other water user within the water furrow scheme.

At the lower end of the *kloof*, in the centre of the river bed, there was a concrete "collecting tank". Three lengths of cement half-pipes lead into this tank: one ran outwards on each side and another extended some distance up the river bed. Further cement pipes lead to a distribution tank from where two additional covered cement pipes carried surplus water to the furrows meant for irrigation purposes. A cast iron main existed at the upper end of the village, from where an intricate distribution system with pipes in main streets and smaller pipes in side streets existed. At the time, about 100 houses had connections to their homes; however, an additional 22 standpipes were also suitably distributed. This water scheme was carried out in 1905-1906 by the local water erf-holders and cost £5 060. The piped water was described as clear, soft and palatable. After heavy rains, however, it was discoloured, due to river water soaking through the "filter" into the cement pipes which fed into the collection tank, as was described above.[15] Once more, it is confirmed that the water supply scheme was not carried out or managed by the local municipality, but instead was the initiative of the water erf-holders who evidently wished to maximise the supply for the village as well as, most likely, for their own farming interests. The initiative taken by private members of the public is unusual in the sense that it was widely accepted for the management of water and the carrying out of initiatives to build and improve water infrastructure to be undertaken by local municipalities or even the state. This initiative, however, did not include the provision of water infrastructure or furrows to the other communities who resided within Prince Albert.

4.3 Closets and Communities: 1911-1913

While the village had an elaborate established water scheme, the sanitary conditions were not considered satisfactory by the state: each dwelling had a pail closet of some kind, however,

[14] SAB, GES 670, 178/13,Inspection of Prince Albert Municipality by the Medical Officer of Health for the Colony, 14 and 15 April 1911.
[15] SAB, GES 670, 178/13,Inspection of Prince Albert Municipality by the Medical Officer of Health for the Colony, 14 and 15 April 1911.

only a small portion of them were substantially built, properly lit as well as ventilated.[16] Conditions were further described by a report on Public Health and Sanitary Matters in Prince Albert dated June 1911, which argued that most of the pail closets were of a poor standard; the floors were fouled with both urine and excrement and a foul-smelling tank-cart was used to complete the removals. The local municipality had still not enforced a removal system for slop-water or household refuse. In a concluding statement, it was noted that in the "native location" each dwelling had a closet of some sort; however, it was not satisfactory. Removals were carried out in the same manner as in the main part of the village.[17] The Annual Health Report for 1911 revealed different conditions: an open drain ran through parts of the area with very few latrines; however, night-soil was not removed at all. This report also noted that the water supply in the areas where the coloureds and Africans resided was entirely deficient.[18] These various reports all reveal the differences that existed between the white community and those who resided in the 'locations' with regards to water supply as well as sanitary conveniences and while officially access was not to be racialised or influenced by class, local authorities as well as the private owners evidently did not enforce this and focussed their resources on the maintenance and improvements of facilities within the white community.

Following the formation of the Union of South Africa in 1910, the government promulgated the Irrigation and Conservation of Waters Act in 1912, as was outlined in Chapter One. This was the first attempt at codifying all water law within the South African context and control over national water development was culminated with the establishment of the Department of Irrigation Board. However, in Prince Albert power continued to be vested in the Kweekvallei Irrigation Board and the promulgation of this Act did not grant the municipality of Prince Albert any additional means by which to control or regulate the water supply, since it was already managed privately.

The Town Clerk in Prince Albert contacted the Administrator in Cape Town to voice the concern of local residents who resided in the "upper portion" of the village, who maintained that they were frequently not able to obtain water, in other words, when the persons in the "lower portion" of the village drew water from standpipes, there was no pressure in the

[16] SAB, GES 670, 178/13,Inspection of Prince Albert Municipality by the Medical Officer of Health for the Colony, 14 and 15 April 1911.
[17] SAB, GES 670, 178/13, Public Health and Sanitary Matters by the Acting Under Secretary for the Interior, 5 June 1911.
[18] SAB, GES 670, 178/13, Annual Health Report by the Acting Secretary for the Interior, 1911.

supply of the "main upper village".[19] This report draws a very clear distinction between the upper and lower portions of the village, which refers not only – implicitly - to race, but also to class and therefore emphasises, again, that access to water was not only racialised but it was also impacted by class in terms of the layout of the town. Those of the "upper portion" felt that their access to the water should never be hindered by the "lower portion" of the village. Their supply should be consistent and sufficient at all times, without a concern for the "lower portion" of residents. Whether this matter was resolved or even responded to is unknown, however, the municipal authorities considered it necessary enough to contact state authorities. The correspondence emphasises the central importance of the resource to the local residents of the town and also the mentality that promoting the interests of the white community, while disadvantaging the coloured community, were paramount.

In June 1913 the Secretary for the Interior commented on the Annual Health Report for Prince Albert for 1912. With regards to the water supply, he stated that the quality of the water was good; however, the supply was insufficient. Furthermore, all dwellings had pail closets and the night-soil was removed once a week to an area where it was deposited beyond the village. When it was stated "all dwellings have closets", the report was only referring to the houses of white inhabitants and the "native quarter" or "coloured settlement" was dealt with in an entirely separate section of the report. Slop-water and refuse were still not dealt with by the municipality, with each individual required to make his own arrangements on an *ad hoc* basis. With regards to the accommodation of Africans, "they are scattered all over the village and wherever they are, there filth abounds. A disgrace to the village and a menace to the inhabitants. They seem to get an unlimited supply of brandy and many of them suffer from syphilis and consumption".[20] This statement is indicative of the unthinking racism of the time and the manner in which the Africans were looked upon as the reason for the town being filthy, when truthfully the municipality were failing all the residents of the village by not imposing stricter measures with regards to the removal of slop-water and household refuse. The municipality were also responsible for the inadequate sanitary facilities within the 'locations'. On a different note, the Resident Magistrate stated in his Annual Report for 1912 that local landowners were becoming aware of the possibilities in reclaiming waste land by the irrigation of splendid soil on the banks of the periodical rivers and that various schemes

[19]The earliest mention of the Kweekvallei Irrigation Board specifically dates from July 1940, as is seen below. KAB, PAS 2/532, L85/L/T1, Letter from the Town Clerk in Prince Albert to the Honourable Administrator in Cape Town, 23 October 1912.
[20] SAB, GES 670, 178/13, Annual Health Report for 1912 by the Secretary for the Interior, June 1913.

for conserving water were being carried out and weirs had been built with excellent results.[21] This closing remark highlights that while locally the village of Prince Albert was plagued with problems regarding sanitation and access to water, overall the village was prospering in terms of farming and that the water supply was not a grave concern, as was the case in Williston. There was evidently enough water in order to allow for a successful farming component, however, the issue within the town revolved around access to water and the provision of facilities that carried water into the homes of all residents of the town, which was under the auspices of the local municipality. The prosperity and success of certain farmers' links to the argument that water has been central to the village of Prince Albert and greatly influenced the development and advancement of the town.

4.4 Working Classes and 'Locations': 1919-1926

A Public Health Inspection of Prince Albert, from December 1919, revealed that, as was explained above, certain properties had water rights from the river and were entitled to a specific amount of irrigation water conveyed by the furrow system. Those entitled to this supply generally possessed large gardens and in some instances even large orchards. According to this report, the local municipality obtained consent from the water owners[22] to lay on a piped water supply to the village. This extract reiterates that water belonged to private water owners, or water erf-holders as was described above, as opposed to the municipality and that these water owners were therefore in charge of the management of the resource through an Irrigation Board, as will be seen below and further discussed in Chapter Five. A short distance from the town an underground weir was constructed across the river and from the weir the water was piped by large cement pipes to a small cement reservoir from where it was conveyed by means of a four inch pipe to the town. Each household was entitled to 100 gallons of water per diem, for which there was no charge, as was dictated by legislation from 1897. Households were, however, required to pay for the construction of private leadings from the municipal main to the dwelling.[23]

Unfortunately, a four inch pipe was too small to convey the amount of water necessary for domestic purposes and therefore the domestic supply was often insufficient, which forced "poorer classes" to make use of the furrow supply for domestic use, which was vulnerable to

[21] SAB, JUS 97, 1/566/11, Annual Report by the Resident Magistrate of Prince Albert, 1912.
[22] The water owners numbered 60 to 70 person and their properties varied from ½ morgen to about 30 morgen in extent. From KAB, PAS 2/532, L85/L/T1, Letter from the Town Clerk in Prince Albert to the Provincial Secretary, 11 July 1920.
[23] SAB, GES 670, 178/13, A Public Health Inspection, December 1919.

pollution. The reference to "poorer classes" draws, once more, a distinction between access to water that was racialised in terms of the houses within the village and those within the 'locations', but also draws a distinction in access between the "upper" and "lower" portions of the town, therefore the different classes of the same community. While households were entitled to 100 gallons of water per diem at no charge, the houses within the 'locations' were evidently not classified as households since the legislation enabling this was not enforced within the areas where they resided. Sanitary services were described as primitive in the extreme and unsafe. Inhabitants were charged a monthly rate for weekly sanitary removal. There was still no system of municipal slop-water or household refuse removal, in either the main part of the village or in the 'locations'. The report makes reference to two "locations", which were in existence at the time: firstly Alberts' location, which contained some 20 dwellings or shanties and then secondly, the municipal one. In the latter 'location' water was obtained from a standpipe and no sanitary arrangements existed at all.[24] These conditions add to the argument that not only access to water, but also sanitary facilities, as provided by the municipality, were disadvantaging the coloured community of Prince Albert.

In her work on Kuruman, Jacobs outlines the manner in which Africans were alienated from their land and more specifically, from the water source in order to allow for the development of the Kuruman municipal irrigation scheme and the later Vaal-Harts Project.[25] Similarly, the coloured 'locations' within Prince Albert were all equipped with an inadequate water supply as well as primitive sanitary facilities. These areas were not constructed within close proximity to the reliable water source that fed, and continues to supply, the domestic as well as irrigation needs of the rest of the village. However, unlike the argument put forth by Jacobs that the Union government aided in the development of irrigation at Kuruman, the state was not directly involved in the expansion of irrigation within the district of Prince Albert. The Kweekvallei Irrigation Board managed the water supply within the village and was also responsible for the improvement of or introduction of water infrastructure in order to maintain a reliable, consistent and equitable flow.

---

[24] SAB, GES 670, 178/13, A Public Health Inspection, December 1919.

[25] Nancy Jacobs, "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa, c.1800 to 1962", *The Journal of African History*, (37), (2), 1996, 259.
In the mid-1980s Kevin Shillington published on the Harts River Valley stating that the area (in the Northern Cape) had witnessed "the growth of the largest single irrigation scheme in southern Africa" and that the irrigation schemes had started as early as the 1890s. From Kevin Shillington, "Irrigation, Agriculture and the State: The Harts Valley in Historical Perspective", in William Beinart, Peter Delius and Stanley Trapido (eds.), *Putting a Plough to the Ground: Accumulation and Dispossession in Rural South Africa 1850*-1930 (Johannesburg: Ravan Press, 1986), 311 and 321.

A Sanitary Survey from 1922 revealed that the single pail system was still in use in Prince Albert, since the local residents were apparently too poor to afford the transition to a duplex system. A great deal of obvious pollution occurred in the street furrows since there was still no official system of slop-water or refuse removal.[26] The refusal of local authorities to acknowledge the continued complaints about the removal of slop-water and household refuse highlights their disregard of reports presented by state authorities and also emphasises the lack of interference by national authorities to force the resolve of the issues that were raised annually within these reports. It also reflects an overall lack of change in state provided facilities. A General Health Inspection from 1923 revealed that three 'locations' were in existence in Prince Albert by this time: firstly, Alberts' 'location', as was described above, where both coloureds and Africans resided on the strict condition that they work, when required, for a local mill owner and town councillor by the name Mr. Alberts. Houses in this 'location' were of a poor construction and sanitary conveniences, where in existence, were primitive in the extreme. Drinking water was obtained from a furrow as the 'location' was situated on a hill, which was higher than the water source. Secondly, there was Rooikamp 'location', which was situated in the village itself, but on private ground. Water was laid on to standpipes and sanitary conveniences of a fairly good type were provided, which were cleared by the municipality. The third 'location' was managed by the municipality and had been named Waaikraal. It contained 25 houses of very poor construction. Water was laid on to standpipes and sanitation did not exist at all.[27] This report highlights that the conditions in the private 'locations', though far from acceptable, were better than what prevailed in the municipal 'location', which could arguably be due to the municipality being too poor to be able to afford the improvement of facilities due to resources being spent on the provision and improvement of facilities in the white community, while in so doing disadvantaging the coloured community of Prince Albert.

In a detailed report on the water supply in the village, dated from October 1923, Prince Albert Village was described as "essentially consisting of a large number of persons who practically carry on farming operations in the village, on ground varying in size from perhaps half an acre to many morgen in extent".[28] Wheat, fruit and vegetables of every variety were grown and a small amount of ostrich farming was also carried out. The success of this farming was entirely dependent upon irrigation by furrow water taken from the *kloof* situated above the

[26] SAB, GES 670, 178/13, Sanitary Survey of Prince Albert Municipality, 20 March 1922.
[27] SAB, GES 670, 178/13, General Health Inspection, January 1923.
[28] KAB, PAS 2/532, L85/L/T1, Prince Albert Municipality: Water Supply, October 1923.

local Dorps River. Despite the apparent success, the village of Prince Albert is described as "a comparatively poor municipality and in recent years has been badly hit by drought and the ostrich feather slump."[29] This report is noteworthy in that it once more highlights the greater socio-economic development the overall town of Prince Albert was undergoing, while still struggling with internal concerns such as sanitation. It also highlights the municipality as being poor, while emphasising the widespread mixed farming in the region despite the drought with which the district had been faced. Therefore, as opposed to Williston, the division of Prince Albert was able to continue advancement due to the reliable water supply of the town as well as the fact that droughts were not as prolonged and frequent as in the former district, which is evident in the statistics from Chapter Two. The climatic conditions allowed for farmers to produce a variety of products. Therefore, the success and prosperity of Prince Albert was largely due to natural factors as opposed to human factors.

In the early decades of the twentieth century the term "drought" implied more than a periodic lack of rain, as was experienced in Prince Albert. Drought was often associated with the perception that the country was 'drying-up', in the sense that rainfall was declining overall and not simply in one specific district or village. This, in turn, became bound up with the idea that surface water was declining and that denudation was causing rainfall to run off rather than sink into the ground. The individual relationship to dryness and extreme aridity is further explored in Chapter Five. Drought in this broader sense was therefore manifested in problems such as soil erosion and deep dongas.[30] Prince Albert, fortunately, was not plagued with long-term droughts and, as mentioned above and shown in Chapter Two, both subsistence and commercial farmers were able to remain successful and prosperous in the face of these climatic conditions.

In a Systematic Inspection of Prince Albert from 1926 it was revealed that the great difficulty with regards to the water supply of the village arose from the fact that all the water in the *kloof* was claimed by the water-erf owners as being solely their property, although in 1904 they permitted water from the underground flow of the river bed to be drawn and piped to the town for drinking, which in effect gave the municipality ownership of a certain amount of water. Therefore, while a certain amount of water was given to the municipality, the resource overall and the supply remained under the ownership and management of the water erf-

[29] KAB, PAS 2/532, L85/L/T1, Prince Albert Municipality: Water Supply, October 1923.
[30] A donga means gully.
Beinart, *The Rise of Conservation*, 235.

holders. The inspection maintained that it was imperative for the double-pail system to be introduced immediately. Removals were carried out by a sanitary wagon once or twice a week as required. Finally, this report also details four 'locations': Waaikraal, where there were some forty huts, mainly unsuitable for human habitation. Only two sanitary conveniences were observed and these were extremely primitive. Water for drinking purposes was obtained from the nearest furrow, which was entirely unprotected in its course. Secondly, Alberts' 'location', which comprised about thirty houses, which were privately owned and required owners to pay rent. Three sanitary conveniences were observed within this area. Thirdly, Rooibank 'location', where there were also about thirty houses, most of which were privately owned. Water was obtained from a standpipe and sanitary conveniences were of an acceptable standard, similar to the white community. Finally, Luttig 'location', which comprised about twenty houses on private land that were badly constructed and overcrowded. No sanitary conveniences were observed and there was no water supply within the 'location'.[31] The comparison of sanitary facilities to the white community is noteworthy in that it emphasises the manner in which the coloured community was disadvantaged by the public and private management of the water supply.

4.5 Poverty, Pollution and Purification: 1929-1940

On 9 March 1929 the local council in Prince Albert wrote to the Prime Minister[32] in Cape Town stating that a unanimous decision had been made the previous day by the local authorities, due to the extreme poverty and terrible suffering of the local population as a result of a drought, to bring the critical condition of the town to the attention of the authorities and they asked that provision be made for work for at least 300 families from the district. A reply was received, stating that General Hertzog admitted receipt of the telegram and acknowledged the dilemma. He had forwarded the details to his colleague, General Jan Kemp, the then Minister of Lands, for further consideration.[33] The matter was not raised again and whether the state came to the assistance of the Prince Albert inhabitants in this regard is unknown. The graph depicting rainfall in Prince Albert, as shown in Chapter Two, depicts these low rainfall figures and thereby confirms the drought the district suffered from during this period and confirms that these conditions would have forced many farmers into depression and desperation. This can be compared to the drought suffered by Williston during

[31] SAB, GES 670, 178/13, A Systematic Inspection of Prince Albert, 6 December 1926.
[32] A First Minister is the leader of a government cabinet.
[33] SAB, PM 1/2/33, PM7/49, Emergency State of Affairs, March 1909.

the mid-1960s whereby farmers were forced to send their livestock elsewhere in the hope that they would find grazing and survive the extreme aridity.

In 1929, the Director of Irrigation in the Union emphasised a very specific environmental point: the essential trouble, regarding water and successful farming, is that the mountains in the Cape are not high enough to hold the infrequent snow and the plains are not low enough to build up extensive alluvial flats. Therefore, water came off most watersheds too quickly, there were few ideal dam sites, and the valleys they could serve were too narrow or too barren. This later proved to be the major reason for the lack of dams in the country until the 1960s, when water could be led by tunnels to specific flats hundreds of kilometres away.[34] Interestingly, in Prince Albert the local population relied on water from the Swartberg for survival and this source was often derived from snow, which fell heavily on the mountain tops during the winter months.

The Town Clerk in Prince Albert wrote to the Secretary for Public Health during February 1933 stating that the local council were aware of the rust that appeared from time in the water and were trying to prevent it as much as possible, specifically with the newly implemented practice whereby the pipes were being scoured twice a week. On 9 June 1933 the Under Secretary for Public Health contacted the Town Clerk in Prince Albert about the existing water supply and explained that though the Department was convinced that it was fit for domestic use, they considered it dangerous that the river was liable to gross contamination and that polluted water could at any point seep into the water system For this reason, it was emphasised that the supply needed to be chlorinated and considered a risk without a purifying process. 26 June 1933 saw the Town Clerk communicate with the Acting Under Secretary for Public Health regarding a sanitation report, stating that the Council would do their best to carry out the suggested improvements, specifically the transition to a double-pail system.[35]

A Systematic Inspection of Prince Albert from 1933 revealed that a drought started in the region in 1926, was at its worst in 1928 and continued to plague the region at the time of the report being written. As was discussed above, the graph on rainfall in Prince Albert in Chapter Two reflects these climatic conditions.[36] A Health Report for 1936 revealed that the double-pail system had finally been introduced and removals were done once a week by a

[34] Beinart, *The Rise of Conservation*, 159.
[35] SAB, GES 671, 178/13A, Sanitation Prince Albert, February-June 1933.
[36] SAB, GES 671, 178/13A, A Systematic Inspection of Prince Albert, 1933.

private contractor.[37] The transition from a single to a double pail system was a major improvement since it had been a concern for state authorities for many years. The practice was also a great deal more hygienic and therefore a better option for the public health of all local residents. During 1939 a chlorinator was finally installed, which greatly improved the quality of the drinking water obtained from the Swartberg. In additional to the removal of night-soil, as was described above, slop-water and household refuse were also being removed by a private contractor who was under the supervision of the municipality.[38] This too is noteworthy in that state authorities had requested the involvement of local authorities in the removal of slop-water and household refuse for many years; however, there had been no reaction. The installation of a chlorinator is noteworthy in that it changed the condition of water for domestic purposes; however, it is uncertain whether all inhabitants of the village received access to this purified water. It may not necessarily have been laid on to the standpipes in the various 'locations' and therefore the improvement could arguably only have benefited the white community.

In a routine inspection of Prince Albert, which was conducted in 1940, the number of houses in the village inhabited by the white community was estimated at 215. The report stated that there were four 'locations', but goes on to describe five: Nuwerus, which comprised about 90 stone houses which were inhabited by about 500 people. The large number of inhabitants in such a limited housing facility emphasises the overcrowded conditions in which people were living. Albert, Muller and Sterkstroom 'locations' were all private, equally dissatisfactory and in need of improvement. Finally, Rooikamp 'location', which comprised houses of a better quality than the other areas, however, certain properties were not yet linked to the town water supply.[39] This report emphasises the unacceptable conditions prevalent within the 'locations' with specific reference to housing, sanitary facilities as well as water supply and thereby contributes to one of the central arguments of this chapter that the coloured community were disadvantaged by both the public as well as the private sectors in their access to water.

4.6 By-laws, Irrigation Boards and Court Cases: 1940-1943

On 17 July 1940 various by-laws were framed by the Kweekvallei Irrigation Board in the district of Prince Albert, which stated that the furrow water was to be distributed according to

[37] SAB, GES 671, 178/13A, A Health Report of Prince Albert, 30 June 1936.
[38] SAB, GES 671, 178/13A, A Health Report of Prince Albert, 30 June 1939.
[39] SAB, GES 671, 178/13A, A Routine Inspection of Prince Albert, 1940.

a "Schedule of Turns", which was prepared by the Irrigation Board. This schedule was to be strictly obeyed. Furthermore, no person was allowed to interfere with any sluice other than his own or interfere with the flow of water in the furrows. The schedule referred to in the legislation is a system that continues to be used presently in the town of Prince Albert, with the water turns being determined by an Irrigation Board, more recently known as a Water Users Association. The municipality within the town is also allocated a turn, obviously larger than all the rest, whereby the majority of the water for domestic purposes is received and thereafter it goes through a process of chlorination and purification before being distributed along the municipal mains, which is more closely explored below. These by-laws emphasise once more the distinction in Prince Albert whereby water was not owned or managed by the municipality, but was rather in the control of the private Irrigation Board, which operated independently. Despite the sufficient, consistent and reliable water supply in Prince Albert, disputes existed over access to the resource and even developed into court cases.

In 1943 a court case in the Water Court of the Water Court District No. 4 of the Union of South Africa was heard in Cape Town. The two applicants were Adriana Josina van Tonder and Marie Magdalena le Grange, while the four respondents were Johannes Jacobus Nicolaas Allers, Susara Getruida le Grange, Hermanus Johannes van der Hoven and Hendrik Johannes van Niekerk. The dispute concerned the use, diversion or appropriation of water from the Swartberg River. The applicants in this case sought an interpretation of a previous court order from 1935 between themselves and the four respondents. In the previous case the applicants had applied for an investigation, definition as well as recording of rights to the water of the Swartberg River, which was defined as a public stream. The applicants contended that the previous Order of the Court stated that the respondents, referred to as the upper owners, could choose a defined point above the *uitkeerdam*[40] as the point at which they were obliged to return all the water diverted by them back to the river during the period commencing 9am on Saturdays and concluding 6am on Mondays in each week. They further contended that the upper owners had no right at any time during the week to divert the water below the intake of what is known as the *bronsloot,* [41] and that they (the applicants) were entitled to all the water below this point. A claim for damage was also included against the fourth respondent in the sum of £105 claimed by the first applicant and in the sum of £30 claimed by the second

[40] An *uitkeerdam* is a dam where to where a water stream is diverted.
[41] A *bronsloot* is the source furrow or trench.

applicant.[42] The applicants, however, had not been completely successful; they were not entitled to all their costs. It emerged that the dispute really dealt with *oorloop* or excess water as opposed to those issues raised above, which had been previously heard and judged. In the circumstances the Order which the Court made was that the fifth respondent was ordered to pay two-thirds of the applicants' taxed costs.[43]

This court case reveals the pivotal importance of the resource within the lives of local inhabitants and the measures which residents were willing to go to in order to secure their supply of the resource, which had been central to the inhabitants of the town since the town was found in 1762. It also highlights how infrastructure did not exist at the time to ensure that water was received equally by all parties and therefore a certain manner of dependence existed since farmers often shared water infrastructure and were required to maintain agreements, as the one above, to ensure that all parties concerned remained content and received their share. The use of water and the advancement of Prince Albert was also greatly influenced by the number of permanent inhabitants and registered voters within the town.

4.7 Population Statistics and Voters' Rolls

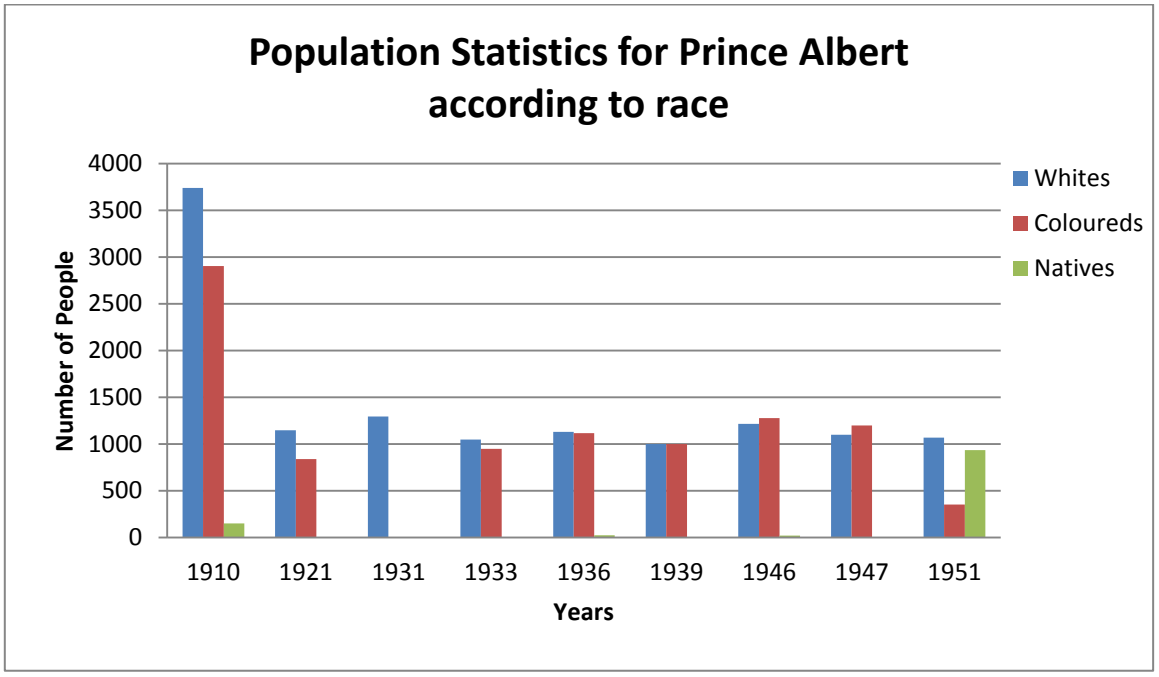
A number of the Health Reports and Sanitation Inspections estimated the local population for the village of Prince Albert, first according to the three dominant races within the community and thereafter the total for the village.[44]

In 1910, the number of white inhabitants of Prince Albert is estimated at 3740 according to the local census. The number of coloured residents is reported at 2903 and the total number of Africans at 152. This is the highest number at which the local white population is recorded in the entire period, which is most likely due to the district of Prince Albert having developed clearer boundaries after 1910 and therefore what appears as a drastic decrease in the number of white residents, is in actual fact a more accurate depiction of the number of white residents within the village of Prince Albert. Between 1921 and 1951 the figures show a much more consistent annual increase and decrease. The same is true for the coloured population, which was more consistently measured between 1921 and 1947, excluding 1931 where data was provided only for the white community. In 1951 the African population is shown as having

[42] KAB, CSC 5/1/1/178, 259, Court Case, 1943.
[43] KAB, CSC 5/1/1/178, 259, Court Case, 1943.
[44] Unlike in the earlier Health Reports where the term "natives" was used to refer to both the African as well as the coloured communities, in these instances a specific distinction was made between coloureds and Africans in order for the latter to refer only to the African community.

suddenly exceeded the coloured community, with the former recorded at 936 residents and the latter at 352 persons.

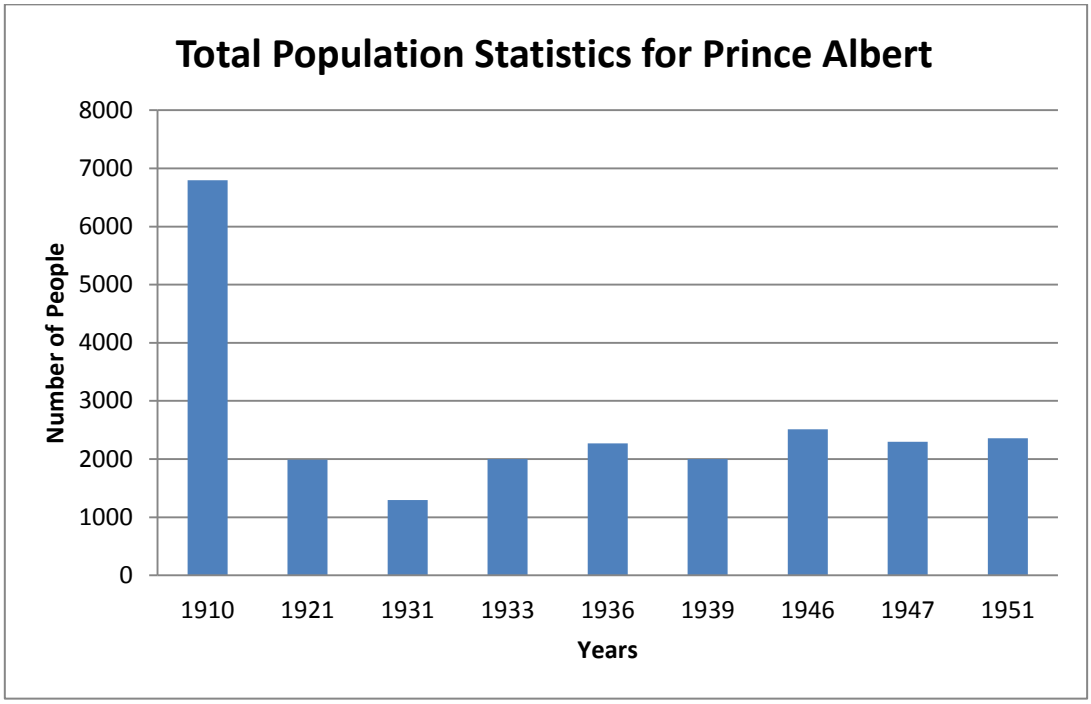
Graph 4.1: Population Statistics for Prince Albert from 1910 to 1951.[45]



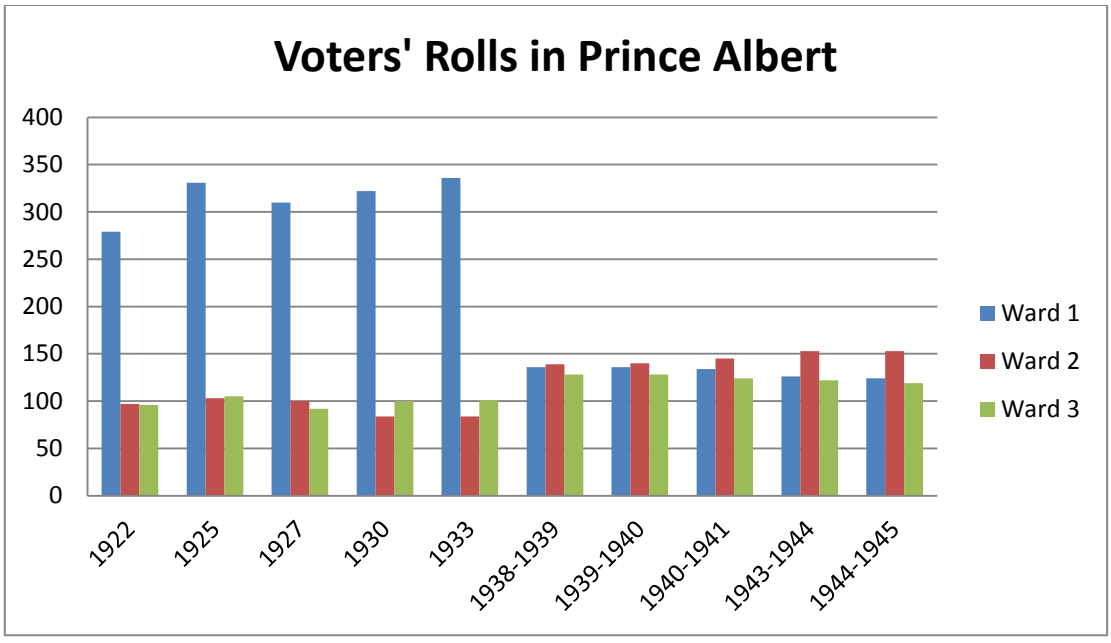
The total population statistics for the village of Prince Albert, which is a combination of the statistics in the graph above, reveal similar trends: a much more consistent growth, as well as slight slump, in the local population, excluding 1910 where the overall population is estimated at 6795 persons. These statistics, when compared to the statistics presented by Vail, as was discussed in Chapter Three, reveal that Prince Albert also had a small local population as opposed to a Karoo town such as Graaff-Reinett.

[45] SAB, GES 671, 178/13A, Prince Albert Water Supply and Systematic Inspection, 1933; Prince Albert Health Report, 1936; Health Report, 1939; A Health Report, 30 June 1946; Prince Albert Municipality, 20 October 1947; A Health Report, 1 August 1947; A Health Report, 30 June 1951; A Health Report, 30 June 1953 and SAB, JUS 97, 1/566/11, Annual Report, 1912.

Graph 4.2: Total Population Statistics for Prince Albert from 1910 to 1951.[46]



Graph 4.3: Voters' Rolls in Prince Albert from 1922 to 1945.[47]



The Voters' Rolls for Prince Albert date from 1922 to 1945, with data missing for a number of those years.[48] The data is presented according to three wards, which are clarified as

[46] SAB, GES 671, 178/13A, Prince Albert Water Supply and Systematic Inspection, 1933; Prince Albert Health Report, 1936; Health Report, 1939; A Health Report, 30 June 1946; Prince Albert Municipality, 20 October 1947; A Health Report, 1 August 1947; A Health Report, 30 June 1951; A Health Report, 30 June 1953 and SAB, JUS 97, 1/566/11, Annual Report, 1912.
[47] KAB, 3/PAL, 8/1, Voters' Rolls in Prince Albert, 1922-1945.

follows: Ward One is the actual town of Prince Albert, Ward Two is the Swartberg and Ward Three is Traka. The parameters of the latter two are not defined. The voting population for the town of Prince Albert is therefore at its highest in 1933 with 336 persons. These statistics drop drastically in the period between 1939 and 1945, which suggest once more that perhaps the parameters of what consisted the local town of Prince Albert were adjusted and therefore the latter figures suggest more accurate numbers of what the town, as it is presently known, was like in terms of its registered voters. In the 1938-1939 period the number of voters in Prince Albert itself was 136 persons, which had decreased to 124 persons by 1944-1945. The Voter's Rolls for Prince Albert and Williston are not too strikingly different during this period and the brief overlap that exist in figures reveal similar numbers, which will be more closely discussed in the concluding chapter with specific references to how the towns developed differently despite their populations not being too varied in size.

Throughout the various health and sanitation reports, reference is made to the different 'locations', which existed on the outskirts of Prince Albert. The 'location' that still exists in Prince Albert presently is known as North-End and was first built in 1946.[49]

4.8 North-End and Water Erf-holders: 1946-1973

An inspection report from March 1946 stated that a new 'location' had been constructed for the coloured community on the outskirts of Prince Albert. At that point, 48 houses had been completed, all of which had their own sanitary facilities. The water was obtained from two standpipes within the 'location'.[50] Later in 1946 a report specifically dedicated to the water supply of the village was completed and detailed that the original water scheme, which had been introduced in 1905, provided a daily supply of 40,000 gallons, which had been sufficient for the residents of the town up until 1940. The town council had since purchased an additional *watererf* or water property, which allowed them to supplement the water supply to a level more sufficient for domestic use.[51] In 1947, the local authorities considered the construction of an additional reservoir in order to improve the situation.[52] Furthermore, it was also estimated that the number of houses in the village inhabited by white residents was about

[48] Similarly to Williston in Chapter Three, the statistics provided only represents the white community of Prince Albert and excludes the other communities, for which no data in addition to the above could be located.
[49] North-End is visible in the images revealing the flow of the *Dorps* River.
[50] SAB, GES 671, 178/13A, Prince Albert Inspection, 21 March 1946.
[51] SAB, GES 671, 178/13A, Prince Albert Water Supply, 5 April 1946.
[52] SAB, GES 671, 178/13A, A Health Report, 1 August 1947.

220. The new 'location', as was described above, was named North-End.[53] Water was obtained from standpipes and there were still only 48 houses of good quality.[54] This stands in stark contrast to the results of a Systematic Inspection in 1949, which revealed that nearly 250 people in one of the 'locations' were required to share two closets. This highlighted the urgency and serious shortage of sanitary conveniences in some of the 'locations' as opposed to the newly constructed North-End.[55] The conditions within North-End will be more closely discussed through oral testimony in the following chapter. These reports indicated the manner in which the water supply was privately managed and the local municipality were treated as another water owner, who purchased property in order to receive those rights.

During the early 1950s when the "wool boom", triggered by the material needs of the Korean War, was experienced across parts of South Africa, Prince Albert remained relatively poor since there were only a few sheep farmers within the district as many of the farmers were engaged in mixed farming, such as ostriches and fruit. Williston, however, experienced a flood of wealth during this time since the majority of farmers in the district were sheep farmers and consequently the town underwent great change. Many of the houses were rebuilt and the architecture modernised.[56] This is confirmed in the oral testimony of Derek Swart, who stated that the Merino sheep from the Williston district was "king during this time and fetched the highest price in the world". He recalls that the town was very prosperous at this time, however, it was shortly before a severe drought hit the region and brought a harsh end to local successes. This drought was only broken with the flood of the Sak River in 1961, as is seen in Chapter Five.[57] This personal testimony is more evocative about local memory and the occurrence of drought than it is buttressed by economic statistics. Personal narratives are further explored in Chapter Five.

Returning to conditions within Prince Albert, in a Health Report of 1951 it was stated that the local Council had bought an erf with a water-turn of eight hours in order to supplement its ordinary supply which was obtained from an underground reservoir.[58] The additional water supply was three hours in length and was purchased for the sum of £1100.[59] This Health

[53] The name North-End or Noord-Einde is still the term used to refer to area where the majority of the coloured community reside in present-day Prince Albert.
[54] SAB, GES 671, 178/13A, Prince Albert Municipality, 20 October 1947.
[55] SAB, GES 671, 178/13A, Systematic Inspection, 1949.
[56] Interview with J. Maguire; 20 April 2012; conducted by N. Kruger (in person).
[57] Interview with D. Swart, 16 October 2012; conducted by N. Kruger (in person).
[58] SAB, GES 671, 178/13A, A Health Report, 30 June 1951.
[59] SAB, GES, 671/178A, A Health Report, 30 June 1953.

Report highlights the interesting notion whereby property had to be purchased in order to secure additional water, therefore at this time, it would appear as though water was linked to a property and the two could not be separated whereas later it was introduced that water could be sub-divided or sold from specific properties and added to others, so long as the Water Users Association was aware of these changes and transactions. This too will be discussed more closely in Chapter Five.

On 3 August 1971 a S.W.J. Botes from the farm *Kweekkraal* in Prince Albert was granted permission by the Secretary of Waterworks to extract 4500 gallons of water a month, at a tariff of 2 cent per gallon, from the Gamkapoort Dam, as was described in Chapter Two. The extraction was for both household as well as livestock purposes.[60] This is suggestive thereof that while there appears to have been enough water in the district to ensure the continued success of local farmers, additional measures were necessary, such as extracting water from the Gamkapoort Dam, in order to ensure the domestic supply for the town residents remained sufficient. As opposed to Prince Albert, this luxury did not exist in Williston and if there was no water or a scarcity, that truly was the case and there were no emergency or reserves to extract from a nearby dam. The region simply did not have the same abundant supply of water as Prince Albert.

In 1973 another court case from the district of Prince Albert was heard in the Water Court in Cape Town. The applicants were Matthys Andries de Wit and Christian Pieter de Wit. The respondents were Christian Pieter de Wit and Roelof Petrus de Wit. The applicants maintained that they were entitled to the continued use of water from a *bronsloot* for household purposes on the farm *Lower Scholtzkloof*. They required an Order of the Court for this and also judgement that the two respondents bear the expenses for the application. Judgement on 14 November 1973 in Oudshoorn saw that each party was liable to pay his own share of expenses for the case and the applicants were required to carry out a number of works in order to make the judgement official that they be allowed free access to the *bronsloot* on *Lower Scholtzkloof*.[61] This court case shows the manner in which the state intervened and forced the construction of improved water infrastructure in order to bring about a solution that would satisfy both parties, but that would also be fair and just by allowing both the applicants as well as the respondents their rights to the water. The

[60] KAB, WAD 313, 923/D1/50, Correspondence between the Secretary for Waterworks and S.W.J. Botes in Prince Albert, 3 August 1971.
[61] KAB, 5/1/1/260, 1, Court Case, 1971.

following section explores the current legislation regulating water within South Africa and follows from the history of water legislation as was discussed in the first chapter.

4.9 Water Developments and Legislation

While the first chapter covered the detailed history of water legislation up to and including the National Water Act of 1998, this chapter explores the Water Users Association in terms of the National Water Act, which presently formally regulates all water resources in the country and had a significant impact on the private management of water in Prince Albert.

As was mentioned in Chapter One, water legislation became a tool of the Apartheid government, which is illustrated by the number of dams that were completed during this period. The National Water Act of 1998 and the introduction of democracy in South Africa altered the position of existing Irrigation Boards to Water Users Association. The reasoning behind this change, as discussed in Chapter Two, was primarily to ensure a more equitable management of water and the supply of water within these designated areas.

The National Water Act states that "although water user associations are water management institutions, their primary purpose, unlike catchment management agencies, is not water management".[62] Instead, they operate at a local level and effectively comprise associations of individual water users within a specific district who wish to undertake activities relating to water for the mutual benefit of all those concerned.[63]

As was explained in Chapter Two, the Kweekvallei Irrigation Board in Prince Albert is in charge of the weekly timetable whereby the allocation of furrow water for irrigation purposes, therefore private water, is managed.[64] With the promulgation of the Water Act of 1998 the government and the Department of Water Affairs and Forestry set about to transform existing irrigation boards into Water User Associations (WUAs). The WUAs were to recognise and encourage the active participation of various users of water, to consist of a broader spectrum of stakeholders and are tasked with a broader mandate. The old irrigation boards, however, which essentially comprised commercial farmers as members, continue to

[62] The National Water Act 36 of 1998.
[63] The National Water Act 36 of 1998.
[64] A water furrow system existed in Grahamstown during the early 19th century, however, it proved to be too unhygienic and frequently blocked with rubbish, which forced the development to covered pipelines. From Harri Mäki, *Water, Sanitation and Health: The Development of the Environmental Services in Four South African Cities, 1840-1920* (Tampere: Juvenes Print, 2008), 91.

control water use in the present-day Prince Albert and the transition to a WUA has been delayed.[65]

A member of the current WUA is I.D. Vorster, who arrived in Prince Albert in 1990 and is an active member of the Kweekvallei Water Users Association. It comprises seven members: six of whom are normal residents of the town and one who is a representative of the municipality. The six normal residents must consist of four commercial farmers and two normal water users. The current committee, however, have been fighting to have the divide set at three commercial farmers and three normal water users in order to make it more equal and representative of local interests. Vorster added that there are also only about four or five commercial farmers in the entire district and consequently the same farmers would serve on the committee from one year to the next if the system remained unchallenged. In terms of the furrow water, 10% of the total water that flows from the Swartberg belongs to the municipality who have water turns that accumulate to 18 hours in the week. The municipal reservoirs are not very big and therefore they overflow at times, which has resulted in the constant need to renegotiate the timetable of weekly turns so as to ensure that the levels of the reservoirs remain high enough but also do not overflow. This also allows for a great balance and minimal wastage of water. There used to be an open furrow that brought the water from the Swartberg to the village, however, a great deal was lost due to evaporation and therefore in the past few years the transition was made to a covered pipeline. The 250mm pipeline allows for a stronger stream to flow from the kloof. At its maximum and strongest it carries 110 litres per second, while during summer months it carries 55-60 litres a second at its very weakest. Vorster maintains that the residents of Noord-Einde or North-End do not have a desire for *leiwater* and that no pressure exists to provide this.[66]

The oral testimony revealed the intricate details of the manner in which water was managed from the perspective of a member of the Water User Association. Furthermore, it affirms the argument that water in Prince Albert, overall, is privately managed and that the municipality are simply another "water user" within the town, except that they receive a bulk percentage of the water and thereafter purify it before it becomes the domestic supply of the village. The history of the water furrow system also reveals how central the resource has been to local inhabitants since the formation of the town. Finally, the comment that the residents of North-

[65] G. Wellman, *Water, Land and Power: The Development of Water User Associations in South Africa*, A Surplus People Project Research Paper, May 2001. Available online at: www.spp.org.za/reports/Water_Users_Ass_Exec_Summary.pdf.
[66] Interview with I.D. Vorster; 19 April 2012; conducted by N. Kruger (in person).

End have no desire for water also emphasises the manner in which the coloured community have been disadvantaged, and continue to be, by the private as well as the public management of water within the village.

4.10 Conclusions

This chapter has discussed the history of water as well as sanitation within the district of Prince Albert. The most salient point is that water was under the ownership, control and management of water erf-holders, which later developed into the Kweekvallei Irrigation Board and more recently the Water Users Association, as opposed to the local municipality. The private management of such a vital resource is unique in that these rights usually reside with local authorities under the greater auspices of the state. Furthermore, the entire town has been structured according to the water furrow system, which allowed for irrigation water to travel directly into the gardens or orchards of property owners. The mere existence of such a luxury stands in stark contrast to the garden of succulents, which characterises the Dutch Reformed Church in Williston. It also emphasises the central importance of the resource since the first settlement in the district.

Just as in Williston, Prince Albert was plagued with problems such as inadequate sanitary facilities and a lack of sufficient water sources within the parts of the village where the coloureds and Africans resided. The municipality failed to address many of the issues that were repeatedly raised by state officials in health reports and sanitation inspections. They also did not spend resources on the improvement of facilities within the "native quarters"; however, importance was placed on maintaining and improving the overall water infrastructure that carried the water from the *kloof* in the Swartberg to the town. The management of this water infrastructure did not reside with the local municipality and therefore the work carried out was due to the initiative and insistence of the water erf-holders. In this manner, the coloured community were repeatedly disadvantaged in their access to water as well as the provision of sanitary facilities, by both the public as well as the private sphere of management within the village of Prince Albert. Indeed, even if – in a counter-factual fantasy - land and technology had been granted to the coloured community in Prince Albert or they had managed to acquire these, they would still not have had access to the water or been in a close enough proximity in order to farm successfully.

Chapter Five:

"Dit is nou droog, maar dit sal weer reën"[1] – An Intimate History of Water.

This chapter opens with a case study on a farm near Williston. Dennis and Jo Steenkamp are the third generation to farm tellingly named *Klipputs*, located a few kilometres outside of Williston in the Northern Cape. His grandfather bought the farm in 1892 and the name was derived from the *put* or well that was dug to provide the farmer and his family with water. This well still exists today and can be seen a few metres from the farmhouse. Many farm names in the area developed as a direct result of water: *Volstruisfontein, Grootfontein and Kareeboomputs*. Steenkamp farms with sheep and maintains that while a sheep can survive for two weeks without food, during the summer months it cannot survive more than two days without water.[2]

Image 5.1: A Dam on *Klipputs*.[3]

While the previous two chapters considered legislation to present a structural and political history of water within Williston and Prince, this chapter relies on the narratives of current and previous residents of both towns in order to reveal an intimate history of water through

[1] Interview with H. Esterhuyse; 14 April 2012; conducted by N. Kruger (in person).
[2] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (via email).
[3] Image from personal collection. Taken during April 2012.

their personal experiences. It is believed that while oral history is based on the use of personal reminiscences, it has the greater purpose as a source on which to build history and to complement the documents on which historians normally rely.[4] Furthermore, the importance of oral history lies in the fact that research which solely depends on written sources bears the risk of presenting only the views of the dominant groups and classes within a society, and thereby presents a very institutional, top-down and statist perspective.[5] This chapter specifically aims to highlight the differential access to water based on race and builds on the overall argument of the previous three chapters that water lies at the heart of the socio-economic development of both towns and played a major role in the advancement of the towns to their present conditions. It also argues that there appears to have always been enough water in both towns to sustain the needs of residents, whether acquired at additional expense or not, despite the droughts which plagued the Williston area.

This chapter draws on insights from historical ethnography, while cogniscent of the danger of teleology. The rich detail it provides is not found in government reports, which are often as arid as the Karoo itself. This chapter outlines several themes that became apparent in the narratives of residents from both Prince Albert as well as Williston, which include fatalism, hopefulness, adaptability, 'water overload', water as an historic event and the use of intimate knowledge systems. Williston and Prince Albert are compared overall in terms of a culture of aridity, present within the former, while a water furrow culture dominated in the latter village. These two comparative cultures as well as all of these themes are explored below. Informants from both Williston and Prince Albert were selected to represent both the core communities within each town: white and coloured residents were chosen. Furthermore, in order to cover as long a period as possible through personal reminiscences, older informants were actively sought out.

5.1 Klipputs

Growing up on Klipputs, Steenkamp was accustomed to a "water-fetching system", whereby a bucket was used to fetch clean water from the well, for drinking as well as bathing purposes. These wells were further deepened by subsequent generations and in many instances long furrows were developed for ease of access. Steenkamp remembers how in his

[4] S. Caunce, *Oral History and the Local Historian* (United States of America: Longman, 1994), 7.
[5] S. Field, History Workshop on the TRC: Commissioning the Past (June 1999), 2-3. Available online at: http://wiredspace.wits.ac.za/handle/10539/7805.

boyhood a row of bushes was packed through the furrow in order to ensure that humans were the first to use the water before the animals, in turn, dirtied the water.[6]

Image 5.2: The *puts* near the farmhouse on *Klipputs*.[7]

Access to water on Klipputs was simplified with the development of both the windmill and the *bakkiespomp*[8] or the bucket pump that entailed a donkey and a chain, which employed small buckets. With the aid of clay dams, small irrigation works were developed which allowed for the growth of vegetables for human consumption as well as lucerne for animals.[9]

The next major development that influenced Steenkamp was that of the *stampboormasjien* or jump drill, which allowed for the sinking of boreholes. It entails a type of drill of which the bar is lifted by two men and then forced downward, so that it has a jumping motion. These boreholes were sunk onto underground veins of water and windmills were then placed

[6] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (via email).
[7] Image from personal collection. Taken during April 2012.
[8] The "bakkiespomp" or bucket pump was employed in order to provide a more continuous water supply. The iron buckets were spaced across two endless chains, the links of which engaged with the sprockets as they came up from the well. The buckets filled with water when they dipped in the well and when they reached the top of the wheel they discharged their water into a basin between the two rims of the wheel, from which the water poured through an outlet into an irrigation channel or furrow. From J. Walton and A. Pretorius, *Windpumps in South Africa* (Cape Town: Human and Rousseau, 1998), 4.
[9] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (via email).

directly on top of these boreholes. However, this resulted in the natural underground level of water dropping and the need for deeper drilling methods to develop in order to gain access to enough water. This was followed by the introduction of the *lugboor* or air drill, which is driven by the elastic pressure of condensed air.[10] These technological advancements comment on the central importance of water in the lives of local residents and the major role the resource played in the advancement of the town.

Image 5.3: A *Bakkiespomp* at the Museum in Upington.[11]

Williston's river, the Sak River, is known as one of the strongest flowing rivers in South Africa, however, as noted in Chapter Two and Three, its flow is neither permanent nor is it reliable. Local knowledge maintains that it floods roughly every thirteen years, which appears to be accurate since floods are recalled in 1948, 1961, 1974 and 1988.[12] It is true that its floods do cause a large amount of damage, however, the town of Williston and the surrounding farmers have not experienced a flood since 1988. In 2003 both the Fish and Renoster rivers flooded within a week. Intriguingly, vernacular understanding insists that one of those two floods was "supposed" to be that of the Sak River, but it "missed its turn".[13]

A modern technology is that of the solar pump, which is promoted as a type of 'alternative energy'. These pumps are mainly used for the production of drinking water for animals. However, well ahead of its time and surrounding farms in the district, such a system is

[10] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (via email).
[11] An unusual museum example, which has become a noted tourist attraction, is at Upington where a small "bakkiespomp" is harnessed to the statue of a donkey, thereby recognizing the part which both the donkey and the "bakkiespomp" played in the settlement of that part of the country. From Walton and Pretorius, *Windpumps in South Africa*, 5.
[12] These floods are also illustrated in the rainfall statistics as revealed and discussed in Chapter Two.
[13] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (via email).

already in place on *Klipputs*, where a dam exists that holds about 3.2 million litres of water and irrigates a small area of lucerne.[14] The introduction of the solar pump on *Klipputs* not only comments on the continued central importance of the resource, but also on the need for local residents to make provision for a continued future supply in order to remain active within the farming community.

Image 5.4: The Solar-Powered Dam on *Klipputs*.[15]

This story of a farm is a lens to the story of Williston's water history. Indeed, the Steenkamp's vignette offers a sampling of the approach of this chapter to the social history of water. Stories capture the personal relationships people have had with water, which has shifted over time, these are not found in official archives but have to be sought in the memories of local inhabitants who have a long history with the region.

As explained in Chapter One, the approach of this thesis is socio-environmental history, and to redress the statist imbalance of earlier works, draws deliberately on oral evidence to offer history from the ground (water) up. For her research on the Upper Kuruman Valley, Jacobs undertook various oral interviews which improved her argument about the manner in which Africans had been alienated from both land and water sources and provided valuable insight regarding the development of irrigation systems within the region.[16] In her research on the *Women of Phokeng*, Belinda Bozzoli observed that "oral history reveals the existence of a

[14] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (via email).
[15] Image from the personal collection of J. Steenkamp. Received during April 2012.
[16] Nancy Jacobs, "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa c.1800-1962", *The Journal of African History*, (37), (2), 1996, 257-259.

world... that is, generally speaking, neglected".[17] This can be linked to the socio-environmental approach of this thesis, which aims to include the experiences of the marginalised and often underrepresented.

Finally, the introductory chapter also referred to this thesis as a type of micro-history, as advocated by Ginzburg. He defines micro-history as the "exaltation of minor historiography, against the historiography that concentrates on the great and the powerful". He also emphasises the need to pursue reconciliation between micro- as well as macro-history in order to ensure a constant back and forth between close-ups and extreme long-shots, so as to force into the discussion the comprehensive overall vision of the historical process through exceptions and cases of brief duration as delineated by personal encounters.[18] Indeed, this chapter and specifically the case study on *Klipputs* provide a micro-history of water within the two villages of Williston and Prince Albert.

5.2 Growing up in Williston

Jan Swart is 100 years old and resides in the retirement home in the coloured 'location' in Williston.[19] He spent his life working on farms in the district and looking after sheep. He never learnt to swim and does not know where the town's water supply derived from, only being able to recall that it was *baie droog op die plaas*.[20] The second oldest informant is Jacobus Adriaan Louw, better known as "Oom Das", who was born on 4 September 1914. He was a highly successful farmer in the district and later also became the Mayor of Williston. He explained that Williston has always been a dry town and that they really struggled with water in terms of finding sufficient sources. He specifically recalled how coloured residents from the 'location' used to knock on his door with a bucket begging for some water, when there really was none for him to give. There was a pump situated in the middle of the town and everyone, meaning all communities, had to make use of this. The water originated from underground and was obtained through boreholes and located with the assistance of *waterwysers* or diviners, who most commonly made use of a green wood rod or a *mikstokkie* (a little forked stick). Louw maintains that water was a luxury and that access was always

[17] Belinda Bozzoli, *Women of Phokeng: Consciousness, Life Strategy and Migrancy in South Africa, 1900-1983* (Portsmouth: Heinemann, 1991), 15.
[18] Carlo Ginzburg, "Microhistory: Two or Three Things that I know about It", *Critical Inquiry*, (20), (1), 1993, 16.
[19] The residents of the town continue to make segregated reference to the "coloured retirement home" in Williston as opposed to the "white retirement home".
[20] The Afrikaans for "very dry on the farm".
Interview with J. Swart; 16 April 2012; conducted by N. Kruger (in person).

limited. Farmers often bore without any successful sources being found.[21] In his research on water divination in the Cape between 1891 and 1910, Van Sittert explained that by promoting the idea of water veins, diviners encouraged the widespread illusion among farmers that water was everywhere available if only they were prepared to bore deep enough, and every failure of state boring was claimed as a proof of this theory.[22] Local knowledge maintains that residents always believed there to be water within the district of Williston, however, they simply did not know where to bore in order to gain access to it. This idea is discussed more with reference to the discovery of the current water supply.

These two elderly men have both spent their entire lives in Williston, however, their life experiences were sufficiently different: while Louw became the Mayor of Williston and witnessed the discovery of a significant water source on the outskirts of the town, as will be revealed below, Jan Swart spent his life as a farm labourer and never experienced the luxuries of the resource. He did not reside in a home with running water or a flushing toilet up until his move into the retirement home. These two narratives emphasise the racialization of access to the resource, specifically through the testimony of Louw who remembers the coloured community knocking on his door with buckets, since they expected and predicted that if any person would have water, it would be the Mayor of the Town. Their expectations were most likely correct, he would have been granted a water supply long before they would have been. These informants also reveal the central importance of the resource in the lives of local residents, which is illustrated by Worster in his argument that it was the scarcity of water, not its excess, "the potential to desiccate and shrivel that made people aware of the significance this element holds for living".[23]

Another informant is Anna Fritz, who is 83 years old and has lived in Williston since she was three years old. She worked as a maid for all her life up until her retirement and eventually moved into the retirement home in the 'location'. She never learnt to swim since, she maintains, such facilities were never available to her, commenting on the Apartheid regime of the previous government. On the farm where she worked and resided, there was a vegetable garden with irrigation water to sustain it. She too recalls the worst drought being in 1933,

[21] Interview with D. Louw; 16 April 2012; conducted by N. Kruger (in person).
[22] Lance van Sittert, "The Supernatural State: Water Divining and the Cape Underground Water Rush, 1891-1910", *Journal of Social History*, (37), (4), 2004, 926.
[23] Donald Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (New York: Oxford University Press, 1985), 19.

where the sheep were very underweight and stated that her *Oubaas*[24] had moved away temporarily with his livestock in order to find grazing.[25] Another informant, Dawid Abrahams is 79 years old and spent his life as a farm worker. He too never learnt to swim; however, he recalls travelling to Tygerberg Hospital relatively recently and seeing, from a distance, *die blou water* or the blue water. Though he felt frightened at the thought of the sharks and crocodiles residing within the water, he seemed to recall the majestic beauty of the sheer volume of the ocean. Growing up, he never had running water or toilets in their home; water was fetched with buckets from the fountain while one went to the *bossies* or bushes for anything else.[26]

Fritz and Abrahams are both members of the coloured community in Williston and reside in the "coloured retirement home". Their experiences with regards to growing up in Williston and water are similar, with neither informant ever learning to swim despite being raised on farms where there were farm dams. Fritz's testimony about her Oubaas having to temporarily move elsewhere with his livestock is suggestive of the type of adaptability that existed among farmers within the district, but also of their workers or labourers who were accustomed to these types of adjustments and the manner in which their lives were subsequently affected thereby. Abrahams' recollection of seeing the ocean for the first time is suggestive of 'water overload', whereby he was overwhelmed by the large and terrifying amount of water he was exposed to due to the culture of aridity to which he had become accustomed in Williston. These emotions and reactions to the ocean as well as the flood of the Sak River were experienced by a number of informants, which is more closely explored below. The testimonies of Fritz and Abarahams thus reveal a type of fatalism and adaptability, whereby they were forced to accept the conditions with which they were faced and adjust accordingly. These conditions included being surrounded by farm dams, but not being presented with the opportunity to swim, which could be influenced by their race but also by the potential lack of a figure to teach them. Fritz did not have a flushing toilet and running water in her own home, however, the white family she worked for had such facilities and therefore she grew up in a working environment where sanitary facilities existed, where she was expected to clean them and thus her experience was not as simplistic as Abrahams' experience, who was not familiar with a flushing toilet or running water in his home until he moved into the old-age

[24] A respectful term used among Afrikaans-speaking people to refer to ones' boss or employer. The term does, however, have a paternalist connotation and refers to a time of unequal power relations, therefore, while respectful, it is also coupled with fear.
[25] Interview with A. Fritz; 16 April 2012; conducted by N. Kruger (in person).
[26] Interview with D. Abrahams; 16 April 2012; conducted by N. Kruger (in person).

home. These narratives once more emphasize that both access to water as well as sanitary facilities were racialised and also influenced by class. Fritz had enough water to irrigate a vegetable garden, while Abrahams referred to fetching sufficient water from a fountain, therefore suggesting that there was enough water to live comfortably, while not necessarily having the same luxuries within their homes or shelters as the white community. It is arguable that the white community had enough water to allow for such luxuries since the coloured community were denied the same amount of water and the same type of access

Harry Esterhuyse is 70 year old white male and has spent his entire life in Williston as a subsistence farmer. Growing up, they too made use of a water-fetching system from the dam located nearby to the farm house, similar to Steenkamp. Once a week, on Saturday evenings, they bathed in a *sinkbad* or a zinc tub in front of the stove. They did not have running water in the house and no flushing toilet either; instead there was a long-drop located on the property. The transition to a flushing toilet within the house was made in 1953, which is very early when compared to the rest of the town, as will be discussed below in the narrative of Derek Swart. Esterhuyse learnt to swim in farm dams, but never received any formal coaching since these facilities did not exist during his childhood. In 1955 their home acquired a fridge as well as a telephone and he remarked that he considered himself privileged to have lived through the introduction of all these forms of technology.[27] Lettie de Bruyn is a coloured woman who was born in the early 1940s and has spent her entire life in the Williston area. She is illiterate, having never attended any form of schooling, possibly due to Apartheid, but largely also the lifestyle of her family whereby they continuously moved from one farm to the next, therefore never settling in one place for very long. Her father looked after the sheep owned by white farmers. She has never learnt how to swim and she has never seen the ocean. De Bruyn recalls her life in Williston as *always being dry*, as she puts it, with no time being particularly 'more dry' than another. Water was always scarce and her family continually moved closer to water sources. Up until she moved into the retirement home in Williston, she had never resided in a home with a flushing toilet. When asked where the water for the town originated from, she responded "*Uit die lug uit. Alle water kom uit die lug uit"*.[28]

[27] Interview with H. Esterhuyse; 14 April 2012; conducted by N. Kruger (in person)
[28] The Afrikaans for "from the sky, all water comes from the sky".
Interview with L. de Bruyn; 16 April 2012; conducted by N. Kruger (in person).

Esterhuyse and De Bruyn, though both having spent their lives in Williston, experienced life very differently: Esterhuyse was a farmer, while De Bruyn's family worked for farmers. Their water supply was scarce and while Esterhuyse was accustomed to a water-fetching system, their supply of the resource was sufficient for basic needs. While De Bruyn never experienced a home with a flushing toilet or running water, it was not a luxury that Esterhuyse had been born with either; it was only introduced once he was already attending school and therefore living in the local hostel. These testimonies, specifically the Esterhuyse family's weekly bathing ritual, comment on the fatalism with which local residents accepted the climatic conditions and the subsequent forced adaptability of residents within the district of Williston and the manner in which a culture of aridity developed whereby these conditions were almost considered normal.

In 1950 after she had married Johanna van den Berg, known as *Tannie Bokkies*, arrived in Williston. She was a Kindergarten teacher and recalls that several houses still had pail-systems when she got to the town, however, she and her husband had built a new home and therefore had a flushing toilet from this point onwards. The soil around their property was filled with rocks and smaller stones, which therefore did not allow for a vegetable garden.[29] A white informant by the name of Dennis Viviers maintains that they always had enough water for drinking, cooking and bathing purposes. However, in the Karoo one grows up with a *bewaar en spaar*[30] mentality. One is educated, not in school but through familial l socialisation, about not wasting water. Viviers *bewaar en spaar* approach is once more indicative of the fatalism, but also the adaptability, among local inhabitants of the Williston division and the manner in which they remained hopeful in the face of extreme aridity and harsh climatic conditions, but adjusted their lifestyles accordingly in order to avoid any wastage of water. In 1952 his father built a new family home on their farm, at which point he was only four years old, which had a flushing toilet. He recalls that it was one of the first in the district.[31] These two informants had similar privileged experiences since van den Berg had a flushing toilet in her home from the moment she arrived in Williston and Viviers had one from a very young age. Van den Berg emphasised the reason for her never growing a vegetable garden was due to the rocky soil and not the lack of water, which is suggestive thereof that the domestic supply within the town of Williston itself was enough to allow for irrigation. While Viviers' *bewaar en spaar* mentality creates a different impression of the

[29] Interview with J. van den Berg; 17 April 2012; conducted by N. Kruger (in person).
[30] The Afrikaans for "protect and conserve."
[31] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).

amount of water available within Williston, it is arguable that the mentality he was raised with refers to the manner in which water was looked upon as a precious resource that was not to be wasted. Van den Berg could also be referring to additional water being available at great expense, as is revealed below in the narrative of Derek Swart.

Another informant is Esterhuyse's sister, Maria Getruida Wilhelmina le Roux, more commonly known as *Tannie Slopie*, who has also spent her entire life in Williston. After she finished school, she briefly left to complete her training as a nurse, after which she returned to the district. Le Roux recalled that during her primary school years in the hostel an aluminium drum was placed in the middle of their *slaapsaal* or sleep-hall at night, which they were to use as a toilet. The alternative was to leave the building itself and walk a few metres outside to the *buitetoilette.*[32] Slopie's recollection of this experience highlights the manner in which the school was forced to adjust to a lack of sanitary facilities during this period, most likely due to the widespread scarcity of water and the additional water that more modern and acceptable sanitary conveniences would require as well as the expense for such a poor district.

A classmate of hers was Derek Swart, who is 65 years old and currently resides in Stellenbosch. Swart remembers the entire town making the transition to flushing toilets in the early 1960s, when he was already in high school. He recalls that there was discontent and reluctance among certain local residents who were frustrated with the expenses that accompanied the new system as opposed to the inexpensive *nagwa* that previously managed pail removals. Swart completed his high school career in 1964 after which he left Williston permanently, only to return for holidays as a student. He was the youngest son of the local Primary School Principal, J. H. Swart, and recalls that they had a very elaborate garden (for a Karoo town) while growing up. His father had to pay a great deal for the water he used to maintain the manicured lawn, the rose garden as well as the variety of trees. Amusingly he recalls how Williston "must be the only place in the world" where local residents run outside during the rain in order to dig tunnels and grooves that allowed each drop of water to be used towards irrigation or other purposes.[33] His father also ensured that all dishwashing water as

[32] The Afrikaans for outside sanitary facilities, separate from the main building.
Interview with S. Le Roux; 17 April 2012; conducted by N. Kruger (in person).

[33] Vanessa Taylor and Frank Trentmann studied the history of droughts in the United Kingdom with specific focus on policies regarding water-management and drought-time restrictions. The early 1930s saw many rural areas being without piped water supplies or sewerage systems, while in areas with pipes supplies water suppliers were required to cater for the spread of the water closet, the bath, the garden and other luxuries. Hosepipe bans were specified in legislation for the first time in the Water Act of 1945 and allowed for restrictions on hosepipes

well as bath water was returned to the garden in order to water the trees. Thus Swart was raised to be cautious about water use and consumption, which he maintains is something that has stuck with him throughout his life, long after he left Williston, which can be linked to the *bewaar en spaar* mentality, as advocated by Viviers and discussed below.[34] Similarly, the experiences of Swart as a child growing up in Williston relate to the themes of adaptability, hopefulness and fatalism. The lack of rainfall in Williston was accepted and local residents adapted accordingly, which is revealed in the purchase (at great expense) of additional water by Swart's father in order to irrigate his extensive garden, which in itself was unusual for the arid conditions of Williston. These themes are also revealed through the attempt at capitalising on all rain in order to ensure that all the water was used towards a beneficial purpose of sorts.

Margaretha Susarah Lotter, better known as Marina, was born in January 1952 and permanently resides in Cape Town; however, she spent the majority of her primary school career in Williston. Her father was a builder by trade. She explained that as a child she never grasped how dry the area was: they used to play in the dry riverbeds of the Sak River, never realizing that there was actually supposed to be water. Though they grew up with little water, she could not recall any water restrictions being imposed. They bathed on Wednesday and Friday evenings and were fortunate enough to have had running water in their home. A flushing toilet, however, was a luxury that was only brought in much later. These recollections of playing in a dry river bed and bathing twice a week is indicative of the manner in which local residents adapted to the arid environment of Williston and the scarcity of water. Lotter explained that the town was divided into a white and coloured area with the white community having the reservoir located within their boundaries and emphasising the power they held over the distribution and allocation of the resource, which relates once more to the statement by C. S. Lewis that "What we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as its instrument".[35] In the early divide, the coloured area was referred to as *die blok* or the block and it was situated relatively close to the white community. She attended primary school in this coloured area. A new divide was later enforced and this area was called *die nuwe erwe* or the new properties, which

---

and other 'wasteful' uses during periods of drought. From Vanessa Taylor and Frank Trentmann, "Hosepipes, History and a Sustainable Future", *The History and Policy Website*. Available online at: www.historyandpolicy.org/papers/policy-paper-75.html (Accessed on 6 April 2012).

[34] Interview with D. Swart; 16 October 2012; conducted by N. Kruger (in person).

[35] D. Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (New York: Oxford University Press, 1985), 50.

was located much further from the white community. Their childhood home was one of the first in this new settlement, which is part of the greater area known today as Amandelboom or simply *die lokasie*. Lotter confirmed archival details by stating that for the older homes there was no running water and taps were strategically placed between properties and water was fetched with buckets.[36] These three narratives emphasise the racial divide and segregation within the town during the 1950s, specifically through the emphasis by Lotter on the different schools attended.

Lotter never learnt to swim, because, she says, "there was no water", relating to the lack of such facilities within the town of Williston itself as opposed to the dams on farms within the district. Strangely, they had a fish pond on their property as well as a vegetable garden and an impressive flower garden. She therefore maintains that there must have been enough water to sustain these, since they had three taps in their back garden. Swart's testimony revealed that his father was required to pay for the additional water he required for his garden, which is most likely what occurred in this instance. Lotter also remembers a Mr. Bailey who used to walk past them as children with his fishing rod and thus believes the Sak River must have had a constant reliable supply of water somewhere, which allowed him to go fishing.[37] The water supply is indicative thereof that there was enough water within the town for the residents to sustain their needs and in some cases even afford certain luxuries, even if these were bought at additional expense.

Elsa van Schalkwyk is a white informant, who was born in 1940, however, only came to Williston in 1960 following the completion of her teacher's diploma. She taught Grade One learners. Her home already had a flushing toilet when she arrived, which confirms the statement by Swart that the entire town had made the transition from the pail system by this time. She explained that the period of rainfall for Williston includes February, March and April, however, since her arrival in the town its rainfall had been decreasing and consequently the Sak River does not flow "its' minimum of twice annually any longer".[38] The rainfall figures, as depicted in Chapter Two, do not confirm this decrease in annual rainfall received within the region and comments on the manner in which the culture of aridity and scarcity of water has also clouded the memory of local residents, allowing them to develop a type of nostalgia whereby they refer to an earlier time where the town received

[36] Interview with M. Lotter; 24 May 2012; conducted by N. Kruger (in person).
[37] Interview with M. Lotter; 24 May 2012; conducted by N. Kruger (in person).
[38] Interview with E. Van Schalkwyk; 15 April 2012; conducted by N. Kruger (in person).

higher rainfall and was more prosperous. Many other informants simply believe that the town is currently faced with a long-term drought, as will be discussed later in this chapter.

5.3 Modern Movement and Transhumance

Another factor of importance in the lives of local inhabitants was the railway line, which Viviers explained was built in 1912. Modern trucks, however, changed the relevance of this public transport system in more recent times. The previous state regime, the National Party, had a rule that one could transport only ones' own goods with ones' own truck, but no other persons goods and therefore the railway system was extensively made use of since many farmers were too poor to be able to afford their own truck. The present state does not have the same rule and trucks presently provide a convenient door-to-door service, which the railway was unable to compete with. The railway in Williston stopped functioning around 2001.[39]

Viviers recalls how in 1959 the town received bad rainfall, which is evident in the rainfall figures presented in Chapter Two, and thereafter the drought of 1960 hit the region, which forced many farmers to send their sheep to Harrismith, Bloemfontein and other locations across the country. Whole families left their farms and loaded their sheep along with a few household items on the train and departed to accompany their sheep. They chose to live in other farm houses, in barns or outside rooms and similar such accommodation. In 1961, with the flood of the Sak River, a portion of the railway washed away and therefore it took a while before all local residents were able to return to their homes. Viviers maintains that it had been a matter of survival. People left, returned and carried on because there was no alternative but to persevere through the harsh conditions.[40] The need to leave the district and return once the drought had been broken comments not only on the uncontrollable environment, but also on the central importance of water to farmers within the region in order for the survival of their livestock and therefore the availability of the resource played a major role in the socio-economic development of the town. The manner in which farmers left the district and later returned also relates to the theme of fatalism, whereby the harsh conditions of the environment were simply accepted and the necessary adaptations implemented in order to survive, which is indicative of their hopefulness that the situation would improve and that they would be able to continue farming in the district once more.

[39] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).
[40] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).

Le Roux recalls using the local railway to travel all the way to Cape Town during her studies since it was convenient and also inexpensive. Van den Berg also made use of the railway, recalling that she travelled all the way to Bulawayo in the former Rhodesia to visit her children. She believed the demise of the railway was due to the tracks suffering flood damage and thereafter never being repaired in its entirety again.[41] The narratives of these two women emphasise the important role the railway played in the lives of local residents and how convenient it was for a small town such as Williston to have a functioning railway. The majority of informants were also able to recall the impact the discovery of the current water source had on their lives, as is discussed below.

5.4 *"Ons het Water!"*

Daniel Johannes Viviers is nearly 64 years old and though he left Williston after school for a number of years, he has been settled in the town for the past 35 years. He recalls particularly bad droughts in the years 1960 and 1966, however, maintains that his father simply carried on farming and persevered through the difficulties that came with the territory; stating that essentially, it all came down to *moed en geloof*.[42] This mentality, similarly to *bewaar en spaar*, relates to fatalism and hopefulness, two recurring themes that have been identified within the testimonies of local residents in the division of Williston in the face of the aridity that plagued the region.

Viviers explained that following the extreme drought of the late 1950s and early 1960s, the town suffered a serious water shortage and subsequently the Municipal Council offered to pay all expenses for boring contractors as well as a bonus of £1000 if they found a sufficient water source for the town. Four contractors arrived and they managed to sink one borehole that brought relief to the drought-stricken residents, however, additional relief came about due to the flood of 1961. In 1966 the next drought hit the region and apparently lasted all of seven years. The district received less than 50 mm of annual rainfall during this year, which is visible in Chapter Two. The same problem thus arose, however, this time the Department of Waterworks sent a British Geologist to the region as well as their own boring equipment. The geologist was a young gentleman in his mid-twenties, who gained access to aerial photographs of the region and simply pointed to a specific spot where he instructed the drilling to commence. The water sprayed out above the ground the moment the drill made

[41] Interview with J. van den Berg; 17 April 2012; conducted by N. Kruger (in person).
[42] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).

contact with it.[43] Louw, who was the Mayor of Williston at the time, recalled sitting next to the borehole and waiting in anticipation when suddenly they hit 20 feet below ground and about 220-230 feet of water sprayed out above the earth. He described it as a "great blessing". Soon thereafter, pipes were laid on and reservoirs were built.[44] The discovery of water relates to the argument by Van Sittert, as seen above, that the local inhabitants of the Karoo always believed there to be water within the region, always remained hopeful, however, they were uncertain as to where to drill in order to locate it and therefore needed the expert opinion of a third party.

Image 5.5: The Discovery of the Current Water Supply in Williston.[45]

Le Roux recalls the excitement and joy among local residents when the news "*Ons het Water"!*[46] spread through the district[47], while van den Berg recalls what a major event it was, which apparently greatly aided the expansion of the town.[48] Prior to this source being

[43] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).
[44] Interview with D. Louw; 16 April 2012; conducted by N. Kruger (in person).
[45] Image from the Williston Museum.
[46] The Afrikaans for "We have water!"
[47] Interview with S. Le Roux; 17 April 2012; conducted by N. Kruger (in person).
[48] No other informants made reference to the expansion of the town as a result of the discovery of water, which comments on the manner in which water literally clouded the memory of Van den Berg since the occasion and

discovered, water restrictions were implemented often, however, local residents have not experienced any since.[49] These narratives confirm the central importance the resource played in the development and advancement of the town, while also affirming that access to the resource was racialised since none of the coloured informants selected for interview purposes were present for this memorable occasion nor were they aware of its significance. Another theme which became apparent through the oral testimonies was that of water as a historic event, which is evident in the discovery of water and the subsequent excitement that spread throughout the village. This is also visible in the flood of the Sak River, as is discussed below.

5.5 *"Die Lewe van die Dorp hang af van Reën"*[50] The Sak River Flood of 1961

Swart explained that prior to the Sak River Flood of 1961 the town had not experienced any sufficient rainfall in six or seven years, which is evident in the low rainfall statistics for this period as shown in Chapter Two. There were children within the district who had never seen rain before. It was during this drought that families used to bathe once a week: first the father, followed by the mother and thereafter the children. All of them in the same water. There was no certainty that they would have drinking water and therefore measures like these were standard for his high school career, which comments on the manner in which residents adapted to the environmental conditions with which they were faced.[51]

Swart recalls the flood as *"astronomies"* (astronomical). Williston was entirely cut off from the outside world as no newspapers, telephone calls or even fresh food supplies could be transported to the town or its local residents. Those children, who had been on their farms for the weekend when the flood broke, were fortunate enough to not be able to attend to school since they were trapped on farms. He recalls the panic that spread through the town as residents stocked up on tinned food and flour since they were uncertain as to how long they would be isolated for. The flood water was, however, absorbed into the arid environment at a rapid pace and the impulsive buying that local residents had undergone proved to have been unnecessary. The reaction, however, comments on the manner in which this large volume of water evoked fear and panic among the local inhabitants of the village and drove them to

---

the excitement coupled therewith had allowed her to exaggerate the impact on the village. Similar to the manner in which Van Schalkwyk's memory has been clouded regarding the amount of rainfall received within Williston since her arrival in the village.

[49] Interview with J. van den Berg; 17 April 2012; conducted by N. Kruger (in person).

[50] Interview with D. Swart; 16 October 2012; conducted by N. Kruger (in person).

[51] Interview with D. Swart; 16 October 2012; conducted by N. Kruger (in person).

extreme behaviour. The amount of water Swart witnessed scared him and signalled danger, in a manner that the ocean never did, which again comments on the notion of 'water overload' whereby residents had become accustomed to a culture of aridity and the scarcity of water that accompanied the region with which they were familiar.[52]

Image 5.6: The Flood of the Sak River in 1961.[53]

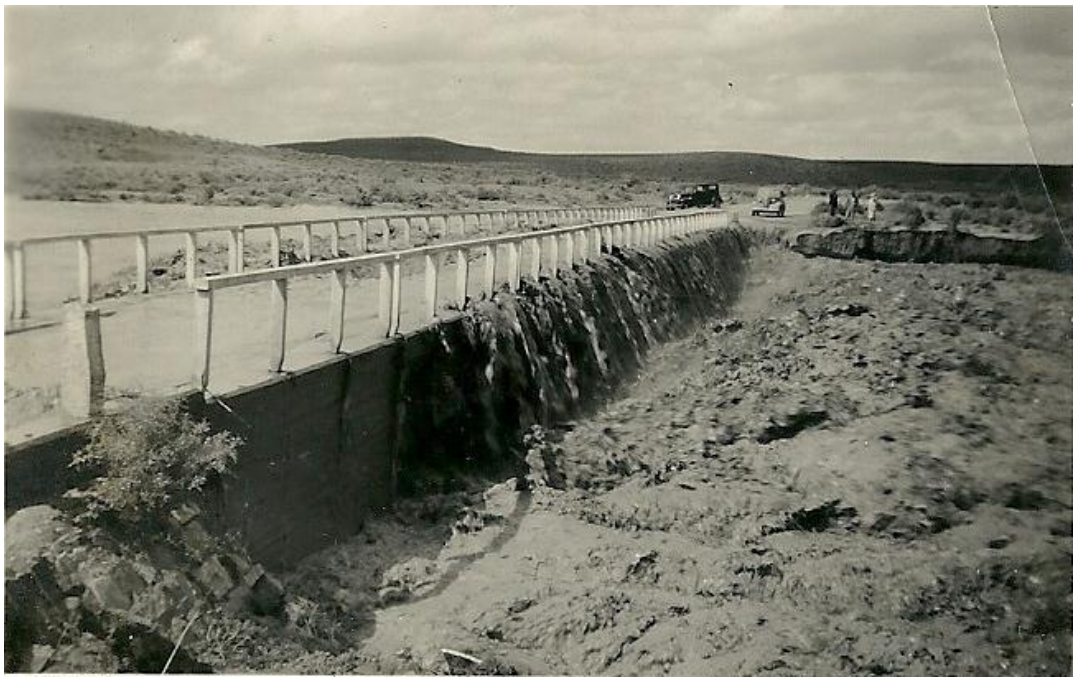
Viviers saw the ocean for the first time as a young boy; however, his first experience of a flood in 1961 was a much more memorable experience – recalling the Sak River being between 700-800 feet wide.[54] Le Roux remembers the flood of the Sak River in 1961 and the great inconvenience it caused: being in hostel, she and her brother went home to their family farm for weekends, but the bridge on the main road towards Calvinia had completely flooded. Consequently the two siblings were driven to the edge of the bridge on the one side, walked and swam their way through to the water to the other side where their parents would collect them. Fortunately, she had learnt to swim in local farm dams prior to this environmental catastrophe.[55]

Lotter recalls how in 1961 they were having a family *braai* on the bridge when her father announced that a storm was coming and they packed up in a hurry to get home to shelter.

[52] Interview with D. Swart; 16 October 2012; conducted by N. Kruger (in person).
[53] Image from the personal collection of J. H. Swart.
[54] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).
[55] Interview with S. Le Roux; 17 April 2012; conducted by N. Kruger (in person).

Soon thereafter, the rain started and within a few days the Sak River flooded. After two or three days all the water was gone and the greenery it left in its wake was quickly devoured by a plague of locusts.[56] Van den Berg recalls her experience of the 1961 flood as her daughter having to stand-in as flower girl for a local couple getting married since their flower-girl was unable to make the trip across the flooded bridge in order to attend the ceremony.[57] Therefore, even in the quotidian, water mattered.

Image 5.7: The Sak River Flood of 1961.[58]



Though these experiences across various ages differ, all of these informants experienced the flood of the Sak River and their lives were impacted in some way, whether small and insignificant or major inconveniences. These testimonies also reveal, once more, the manner in which an occurrence related to water has come to be seen as a historic event. These testimonies also reveal the manner in which local residents had grown accustomed to aridity and were therefore overwhelmed by a type of "water overload" when faced with such a large amount of water, which left many terrified. This is revealed specifically in the oral testimony of Swart who recalls standing upon a bridge between Carnarvon and Williston with his brother when he saw the flood waters of the 1961 flood approaching and remembers in vivid detail the speed at which the two of them ran towards the town in order to escape the

[56] Interview with M. Lotter; 24 May 2012; conducted by N. Kruger (in person).
[57] Interview with J. van den Berg; 17 April 2012; conducted by N. Kruger (in person)
[58] Image from the personal collection of J. H. Swart.

terrifying amount of water approaching the bridge.[59] These emotions were also experienced by certain informants when they were faced with the ocean for the first time as opposed to their experience of a swimming pool.

5.6 Recreational Water

Viviers stated that the town pool was built around 1974, while he was working away from Williston. He learnt to swim in *plaasdamme* or farm dams, however, cannot swim very well and did not make use of the town pool much, since it was built by the municipality more for the entertainment and enjoyment of children in the district.[60] This is furthered by Van Schalkwyk who recalls that she swam in the town swimming pool but once. She believed the municipality had built it since there was no entertainment in the town for children and they hoped to provide that.[61] During his time as Mayor of Williston, Louw often visited the swimming pool and recalls that it was during the Apartheid years, which meant that it was a luxury reserved for whites and their children.[62] The importance and relevance of the town pool was notably absent from the narratives of coloured informants, which underlines Louw's assertion that it was a luxury reserved for whites and their children, therefore confirming that access was entirely racialised. Many of these informants and their subsequent generations of children and grandchildren are not able to swim since they were not allowed access to these facilities due to the strict measures of the Apartheid regime and also their facilities while growing up, which did not present them with the opportunity to learn to swim at the hands of another.

Van den Berg saw the ocean for the first time when she travelled to the teachers' training college in Wellington.[63] Le Roux recalls water restrictions being implemented shortly after she got married in Williston, however, having been raised to use water sparingly, this did not have a major impact on her life. She had seen the effort her father had gone through to acquire borehole water on their farm and therefore understood what an issue the resource was in the district and had grown accustomed to there being little of it. As an adult and a parent, she frequented the town swimming pool with her husband and children, saying they enjoyed it together as a family. When asked about the sea, she maintained that she has always been very careful of the ocean since it is not something she grew up with or ever became

[59] Interview with D. Swart; 16 October 2012; conducted by N. Kruger (in person).
[60] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).
[61] Interview with E. Van Schalkwyk; 15 April 2012; conducted by N. Kruger (in person).
[62] Interview with D. Louw; 16 April 2012; conducted by N. Kruger (in person).
[63] Interview with J. van den Berg; 17 April 2012; conducted by N. Kruger (in person).

accustomed to.[64] There appears to be a general trend among Williston residents, of both communities, to be wary of the ocean since it is unfamiliar to these Karoo residents and many are uncomfortable, therefore they find it frightening and unpredictable. This relates to the theme of "water overload", as was explored above with reference to the Sak River flood of 1961.

5.7 Water and Vernacular Knowledge

In the narratives of local residents, various intimate knowledge systems have been passed down through various generations, which provide explanations for the recurring droughts and irregular floods within the region. Lotter's grandmother maintained that the droughts which plagued the region came with the killing of the donkeys. Her belief is explained as follows: in earlier times, every three months farmers in the district and their families came to Williston on donkey carts for communion. They left these carts on the town square for the duration of their stay, which apparently caused discontent among some local inhabitants. An order was given for the donkeys to be shot, which was executed and her grandmother believed that this tragedy resulted in the punishment of the district through continued and severe periods of drought.[65]

Van Sittert has shown that Karoo water could also be detected and discovered through the close observation of birds, animals and flora.[66] Van den Berg believes that farmers who live close to nature are in tune with their animals, which in turn are intuitive when it comes to rainfall. She made specific reference to springbuck, stating that these animals chose not to mate if there was a drought prevalent since they knew that there was not enough food to support them and their newborns.[67] Van Schalkwyk recalls seeing frogs climbing up a hill one Sunday afternoon and that the flood followed by the Thursday thereafter. Furthermore, she also believes if bees move away from an area, it is taken as an indication that there will not be enough nourishment the following year. However, if bees move towards an area, it is because they expect rainfall and a sufficient amount of nourishment the following year. This is furthered by the behaviour of weavers that tend to build their nests in trees overhanging river beds: if they are built high, it is because rainfall and the flow of the river is anticipated;

[64] Interview with S. Le Roux; 17 April 2012; conducted by N. Kruger (in person).
[65] Interview with M. Lotter; 24 May 2012; conducted by N. Kruger (in person).
[66] Van Sittert, "The Supernatural State", 916.
[67] Interview with J. van den Berg; 17 April 2012; conducted by N. Kruger (in person).

however, low nests that are close to the ground indicate that no rainfall is expected.[68] Le Roux was not entirely familiar with legends about water, but maintained that she had experienced tortoises climbing to higher grounds and areas prior to rainfall in order to avoid drowning.[69]

Viviers explained that in November 1972 the sheep on their farm lambed and then again in about February 1973, however, they did not leave their lambs as they normally do and instead chose to keep them close. It was about two weeks later that major rainfall came down in the region.[70] All but one of the narratives were from white informants, who had either grown up on farms or married farmers, which explains their connectedness to the environment by which they were surrounded. Furthermore, these observations emphasise the manner in which animals were reliant on water to the same extent as humans and their subsequent behaviour to ensure the well-being of their offspring as well their own survival.

Therefore, while a culture of aridity has developed in Williston, which is coupled with emotions such as hopefulness and adaptability in the face of unchanging environmental conditions, a furrow culture exists within Prince Albert, which was coupled with similar emotions of adaptability, however, also emotions such as the sharing of the resource and consideration towards other water users since the entire system relies on honesty. These themes will be discussed in the narratives of local residents below.

5.8 Growing up in the district of Prince Albert

Bridging the narrative between Williston and Prince Albert, is Ellen Elisabeth Botma, who originally hailed from Williston, moved to Prince Albert when she was nine years old. The 83-year old white woman lives in the local retirement home, commemoratively named *Huis Kweekvallei*. She grew up as an only child, who chose to spend most of her time with her parents. As employment, she used to receive parcels sent from elsewhere and deliver them to local residents in the village as well as handing over parcels to the busses passing through. She never learnt to swim and remembers being very young when she saw the ocean for the first time. When she arrived in Prince Albert, many of the houses already had water laid on to their homes, however, a few did not and there was a tap next to the municipal offices where residents were to fetch water using buckets. Many houses chose to take water from the water

[68] Interview with E. Van Schalkwyk; 15 April 2012; conducted by N. Kruger (in person).
[69] Interview with S. Le Roux; 17 April 2012; conducted by N. Kruger (in person).
[70] Interview with D. Viviers; 17 April 2012; conducted by N. Kruger (in person).

furrows instead, since it was more convenient than transporting buckets. Her recollection reveals the manner in which local residents adapted to the conditions with which they were faced, even if these measures were not necessarily hygienic. This extract confirms that access to water was influenced by both race as well as class since the pump situated alongside the municipal buildings was located within the white community and therefore the coloured community would not have been allowed to draw from this supply. The class distinction is highlighted between those houses that already had water laid on and those that drew domestic water from the irrigation furrows since they were not as privileged or advanced, and were also inconveniently located from the hand pump.

Botma explained that the water for the town derives from the Swartberg and is carried to the town with pipes and stored in reservoirs. It also goes through a purifying process before being transported to the homes of local residents, which confirms all of the archival details from the previous chapter. During the summer months the water supply was much less, however, there was still enough. She felt very grateful for the snow that fell during the winter months and supplemented the water supply, which allowed for reserves to be built up carrying them through the drier months.[71] Botma's narrative emphasises that the water supply in Prince Albert has been adequate during all of her time spent there, despite the summer months yielding less of a supply, which confirms the argument that Prince Albert has always had enough water to suffice local requirements.

Another informant is 92-year old Hendrika Wilhelmina Botes. She was born in the district of Prince Albert and her father was a farmer near the Prince Albert Road Station. She and her husband farmed with Merino sheep and the nearest town to their farm was Prince Albert. She maintains that the simplicity she grew up with cannot be compared to present conditions of life. When asked if she could swim, she responded *"Nee, daar was skaars water om te drink!"*[72] She immediately retracted her statement to explain that conditions were not really as extreme, however, their surroundings were dry and water was not a luxury. Her testimony highlights the aridity of the region. Their farm was situated riparian to the Gamka River; however, they did not take water from the river. They had a borehole of which all the water pumped belonged to them. They had a great deal of lucerne on their farm, but struggled with

[71] Interview with E. Botma; 10 August 2012; conducted by N. Kruger (in person).
[72] The Afrikaans for "No, there was barely enough water to drink!"
Interview with H. Botes; 10 August 2012; conducted by N. Kruger (in person).

a vegetable garden since the water from the borehole was *kruitwater*[73]. The type of water which the borehole yielded is indicative of the manner in which they adapted to the conditions with which they were faced since it did not allow for a vegetable garden and there was no other water to use. Botes recalls that the district used to be colder with a lot more snow during winter months. They owned a *dorpshuis* for the weekends as well as for eventual retirement. When they purchased the farm and built their house, a flushing toilet was installed and running water laid on.[74] Her narrative reveals the important role water played in the success of their lucerne farming and also confirms that while they may not have had a luxurious amount of water, the supply was sufficient.

Another informant is the white 84-year old Lydia Barella, who has been settled in Prince Albert for 28 years. She described water as being especially precious in the Karoo where it is so scarce and one cannot know when, or even if, it will rain. The water sources for the town are fountains located in the Swartberg, which flows into a stream and later becomes the Dorps River. While few informants in Prince Albert believed that animals were intuitive about approaching rainfall, Barrella has experienced tortoises and leguan coming onto her property at night, presumably in search of food and water since they are often found in the furrows and, in the case of the tortoises, are unable to climb out by themselves.[75] This recollection serves as her own version of an intimate knowledge system to account of the presence of animals within the water furrows of the village.

A coloured man of 80-years who has spent his whole life in Prince Albert and the surrounding district is Daniel Koot. He undertook a variety of different tasks for employment, stating he simply did that which was required of him, commenting on the manner in which he adjusted to the conditions he was faced with as a result of the arid environment but also as a result of the limited opportunities available to him due to being a member of the coloured community. He has never learnt to swim since such facilities were never available to him. He maintains that the town's water supply is derived from the mountains and is supplemented by the rain and snow received during the winter months. The stream of water becomes thinner and weaker the closer it comes to the town itself and he recalls how the supply used to get blocked from time to time, while it was still an open furrow, and how it was necessary for

[73] "Kruitwater" refers to water containing sulphureted hydrogen or otherwise hepatic water.
[74] Interview with H. Botes; 10 August 2012; conducted by N. Kruger (in person).
[75] Interview with L. Barrella; 20 April 2012; conducted by N. Kruger (in person).

him to unblock it in order for the water to reach the town,[76] thereby not only emphasising the importance of water, but also the efforts to maintain a constant supply. The theme of consideration towards other water users is revealed in his narrative; through arguably the same courtesy would not have been extended to him by members of the white community. Another informant, Magdalena Johanna Petronella Cordier, 79 years old, resides in the Kweekvallei retirement home in Prince Albert and grew up in the isolated village of Gamkaskloof.[77] She enjoyed her childhood in the area and explained that she never felt isolated, since they had no knowledge of what was happening "out there". Her childhood home never had any taps, but was located riparian to the river and therefore they made use of a water-fetching system. The water derived from the mountain and the supply never ran dry. She learnt to swim in this river as a child. Those properties which were not located alongside the river were forced to dig fountains in order to get additional water since they did not always have enough. Cordier explained that with the Laingsburg flood of 1981, they too suffered a flood in Gamkaskloof and a great deal of their land washed away. Her husband realized that they would never be able to restore the water supply and consequently they chose to move away from the region to the town, Prince Albert.[78] Cordier's narrative also affirms that there was a sufficient amount of water within the region that ensured a supply to satisfy the needs of residents, both within Gamkaskloof as well as later in Prince Albert. While the theme of fatalism does not feature a great deal within the narratives of residents within Prince Albert, it does feature in the experience of Cordier following the flood in Gamkaskloof, which left her and her husband with no alternative but to move away from the devastated area and adapt to the environmental conditions with which they had been faced by resettling in Prince Albert.

The testimony of Ina Burger, who is 73 years old and attended school in Prince Albert, revealed that she left the town after she married and only returned about 12 years ago. She first worked as a school teacher, but upon her return to Prince Albert she assisted in the old-age home for a few years before retiring. Currently she serves as a bookkeeper for the Water

[76] Interview with D. Koot; 23 September 2012; conducted by N. Kruger (in person).
[77] Gamkaskloof, also known as "the Hell", is a fascinating valley near Prince Albert, where a small, proud community lived in isolation for more than 100 years. Access to the valley was on foot and horseback and harvests of dried fruit and wild honey were carried out by pack animals. It is believed that Gamkaskloof was discovered when trekboers lost their cattle and followed their tracks into the fertile valley. Petrus Swanepoel was the first to farm there and the valley supported the hard-working community until 1962 when, for the first time, a proper road was carved into the valley. A gradual exodus occurred and the last farmer to leave was Piet Swanepoel in 1991. From the Prince Albert Tourism Website. Available online at: www.patourism.co.za (Accessed on 10 October 2012).
[78] Interview with M. Cordier; 10 August 2012; conducted by N. Kruger (in person).

Users Association, as will be discussed below.[79] Spaas Fortuin is 55 year old coloured woman, who was born in Prince Albert. She is the daughter of Daniel Koot. She has spent the majority of her life in the village, leaving only for brief periods to work in the city. She has done housework her entire working life, cleaning as well as looking after children. When she was young, they did not have running water in their house, but instead made use of a water-fetching system with buckets from the tap located on their property. She has never learnt to swim and feels very afraid of the ocean, relating to "water overload" as was previously described.[80] These two narratives reveal the different forms of employment the women were engaged in for the duration of their working lives. Fortuin still works presently since she has a large family to support, who require financial assistance, commenting on the manner in which she has been forced to adjust in order to cater for the needs of her family due to the limited opportunities with which they have been presented within the North-End 'location' in Prince Albert and also her hopefulness that conditions will improve.

5.9 The Water Furrow Culture

In contrast to Williston's "culture of aridity", a water furrow culture developed in Prince Albert. This has been captured in the narrative of I.D. Vorster, in the previous chapter, as well as by several of the informants. Barrella explained that each person has to be very punctual in taking their turn. Every person is responsible for his own sluice. The bigger properties receive many hours of water and most of these farmers have dams on their properties which they fill and then later use the water for irrigation purposes as they wish. The geographical layout of the town, narrow and long, was determined by the fact that water runs downhill.[81] She mentioned that the Water Users Association consists of people who make use of furrow water and not simply from all property owners in the village, thereby confirming the narrative of Vorster from the previous chapter.[82]

Barrella also described the water scheme as unique since the government had not contributed any money thereto, rather that it was all due to the initiative and hard-work of the WUA. Those who made use of the system were required to pay an annual fee, which is put towards the maintenance of the scheme, as will be revealed below. The amount of water received is determined by the size of the property. According to her, the municipality began boring for

[79] Interview with I. Burger; 19 April 2012; conducted by N. Kruger (in person).
[80] Interview with S. Fortuin; 23 September 2012; conducted by N. Kruger (in person).
[81] The layout of the town is visible in the images detailing the flow of the Dorps River in Chapter Four.
[82] Interview with L. Barrella; 20 April 2012; conducted by N. Kruger (in person).

additional water 27 years ago in order to supplement the supply from the Swartberg during the summer months. This water flows along with the furrow water to their reservoirs where it goes through a chlorination process and flows into pipes to be spread throughout the village for domestic purposes.[83]

Burger stated that the water furrow culture has been in existence since the first farms were established in the district and that when the town was divided into properties, the water was also divided accordingly. The latest water tariff charged for the furrow water is R951, 05 per hour, which is payable to her in person as the bookkeeper for the WUA.[84] Albertus Johannes Olivier, better known as Das, is the local butcher in Prince Albert and came to the town during the 1960s. He explained that the transition from clay to cement furrows only took place during the 1940s, prior to which a great deal of the furrow water was lost since it was absorbed into the clay or soaked up along its course. He also maintained that there is legislation or a rule which determines that a property owner with a water turn must take his water. This becomes complicated when the property is a second home or a holiday home where there are no permanent inhabitants since arrangements must be made for the water to always be taken.[85]

Vorster also stated that surplus water flows along the Dorps River, which has been used to feed the various boreholes that exist alongside the river. Dr. Ricki Murray, who was also involved in the artificial groundwater recharge project in Williston, introduced a project whereby during the winter months, when there was a surplus of water due to snow and rainfall, boreholes were recharged by pumping water back into them. This happens naturally, to a certain extent, during the summer months and Vorster feels it is fair to use the surplus water since the water otherwise simply flows into the Gamka River and later the *Gamkapoortdam.* He also referred to the *Oukloofdam*, as was mentioned in Chapter Two, which was built in 1931 during the Depression years in order to create employment. The dam was later enlarged in 1970. He feels this dam should have been built in Prince Albert, as opposed to the region known as *Die Gang* where it is situated, since it would have meant that the entire village could have survived for two years without rainfall.[86] The *Oukloofdam* presently serves as the source of irrigation water for many of the farmers in the greater division of Prince Albert. Vorster's narrative emphasises the central importance of water to

[83] Interview with L. Barrella; 20 April 2012; conducted by N. Kruger (in person).
[84] Interview with I. Burger; 19 April 2012; conducted by N. Kruger (in person).
[85] Interview with D. Olivier; 19 April 2012; conducted by N. Kruger (in person).
[86] Interview with I. D. Vorster; 19 April 2012; conducted by N. Kruger (in person).

the inhabitants of the village and also confirms that there is enough water within the region to satisfy the albeit circumscribed and highly managed needs of local residents.

The water furrow culture, as described above and through the narrative of Vorster, reveals the manner in which water is privately managed in Prince Albert and access thereto determined by an old 'timetable of turns' relating to properties and the size thereof. This system relies on the sharing, honesty, consideration and punctuality of water users within the village in order to remain active and effective.

Image 5.8: Present-Day Depiction of the Water Furrow System in Prince Albert.[87]

According to Fortuin the population of the town has increased recently and therefore it has been necessary for the municipality to switch off the water supply altogether at times. She explained that it happens from time to time where they are informed they will have no water between a certain time in the morning and late afternoon. According to her, the whole town is cut off from their water supply for this time frame. In their present house, they have running water as well as a flushing toilet. The house was apparently built in 1996-1997, therefore

[87] Image from personal collection. Taken during August 2012.

under the auspices of the new state regime.[88] In contrast, the house where her father, Koot, presently resides and the home where she was raised, still does not have running water inside the house or a toilet. There is a flush toilet separate to the house and a tap in the backyard of the property where he fetches water from to use within his home for cooking and drinking purposes.[89]

These two narratives emphasise the racialised access to water as it has existed throughout the water history of Prince Albert and the manner in which power over the resource allowed for the domination of one community by another, but in a very different way to Williston – as will be highlighted in the concluding Chapter Six.

Image 5.9: The Dorps River in partial flood during August 2012.[90]

5.10 Conclusions

Through the "culture of aridity" in Williston and the "furrow culture" in Prince Albert, it becomes apparent that a different understanding of water exists among the inhabitants of the two towns. In Williston, informants experienced emotions such as "water overload" – anxiety at the excess of water rather than anxiety over its scarcity – due to the manner in which they had grown accustomed to understanding and explaining to themselves the climatic conditions of the region. The two most talked about and remembered "historical" events in the history of

[88] Interview with S. Fortuin; 23 September 2012; conducted by N. Kruger (in person).
[89] Interview with D. Koot; 23 September 2012; conducted by N. Kruger (in person).
[90] Image from personal collection. Taken during August 2012.

the town related to water, emphasising the social and personal significance of the resource in the district. In Prince Albert, on the other hand, informants' experiences related more to the processes of having and controlling access to the water supply which was present in the town through the system of *leivore*. In both towns, however, experiences were influenced by those who held power over the resource and determined access to it. Therefore, their understanding of water was shaped – albeit tacitly - by race and class for the ways in which these factors impacted on their experiences. Overall, however, they spoke about water with great yet simple respect – for the manner in which their lives depended on it entirely.

Chapter Six

"Water sal altyd ons lewensbron bly".[1] – Conclusions

This thesis has studied two fairly insignificant places and subjected them to both scrutiny and comparison. The key argument driving both facets has been that both the availability *of* and access *to* water played roles in the development of Williston and Prince Albert – and, as this thesis demonstrated, played fundamental and conflicting roles for certain individuals, based on their proximity to power. A corollary to this has been the ethnographic description of the development of two towns roughly defined "water cultures", which may be discerned in the two different towns, although both are porous and leak through the social cracks created by race and class.

On a macro-level, Worster observed that "water cannot be 'built'. It can be lost to the farmer, or it can be diverted, polluted, misused or over-appropriated, but it can never be deepened or enhanced...There is only so much of it circulating in nature and then there is no more".[2] This argument served as a starting point from which the Great Karoo region was approached, a region where the scarcity of water and alienation from water by one community over another has been central to the social history. While the second chapter explored initial settlement at each village, the third and fourth chapters revealed the manner in which water was controlled by authorities, who determined access thereto in Williston, while water in Prince Albert was privately managed and access to it determined by the Irrigation Board.

Chapter Two analysed key differences between the two settlements: while Williston as a town initially started as a mission station, indeed as noted in Chapter Two, the Church came first through the arrival of the Rhenish Missionaries and the town developed around it. Prince Albert, on the other hand, is not a church town and did not start as a mission station. For the first 100 years of its existence, the village was merely a dispersed rural settlement. Prince Albert was formally named in 1845, but only achieved municipal status in 1902. Williston, on the other hand, was constituted a municipality much earlier, in 1883. Significantly, however, early settlement at each location occurred due to the presence of water, which led to subsequent development and expansion. As discussed in Chapter Two, *trekboers* first settled

[1] Interview with D. Steenkamp; 14 June 2012; conducted by N. Kruger (in person).
[2] D. Worster: *The Wealth of Nature and the Ecological Imagination* (New York: Oxford University Press, 1993), 124.

in Prince Albert due to the presence of water, while Nel chose to overnight near a fountain in the Kareeberg region, which later became known as Amandelboom.

As noted, the first settlement at Williston occurred as simply a stopover and it would appear as though the village has come full-circle since then as it presently serves that sole purpose to disconnected outsiders who do not reside there or in the district and have no connection to the village. Even the farmers in the surrounding district choose to only spend weekends in the town of Williston, preferring instead to enjoy the luxuries of their farm houses. Echoing Lutz when he departed from the Amandelboom mission station, it would appear as though the village is past its high-point. Interviewees describe this "high-point" as being the early 1950s when South Africa experienced a wool boom and various farmers in the district of Williston achieved success. Swart's recollection of the wool boom and the prosperity it brought to the region is indicative of the manner in which water, specifically a lack thereof, has clouded the memory of these informants. They have become nostalgic about Williston, recalling a prelapsarian age where it used to receive higher rainfall, where the town was prosperous and expanded when in reality the region has been plagued by drought, irregular flooding in the twentieth century and did not undergo any significant expansion as was stated by Van Schalkwyk.

With regards to the water supply in Williston, as outlined in Chapter Three, the supply has originated from groundwater since at least 1904 when the first archival reference to borehole water is made.[3] Inhabitants made use of wells prior to the invention of drills. The development of modern technology has aided access to water which has been present for many years, as was illustrated with *Klipputs* and the arrival of the British Geologist to locate the source of the current water supply. The introduction of the solar pump on the farm is a form of technology that Steenkamp believes will spread through the district and allow for irrigation works of an 'alternative energy' to replace previous systems. The artificial recharge scheme is indicative of the continued concerns that exist over the water supply in the arid region. The introduction of the solar pump as well as the artificial recharge scheme is indicative of the manner in which those who can afford technology and improved water infrastructure will implement these measures in order to advance themselves, in both towns, as opposed to those poorer inhabitants of the region who not only lack the financial means, but also the land as well as the water in order to attempt farming.

[3] KAB, MOH 173, L30C, A copy of an extract from the District Surgeon's Health Report for the half-year ended June 1904.

In Prince Albert, as opposed to Williston, the water furrow culture and the system of *leivore* characterizes the town and continues to play a central role in the lives of local residents. This system relies on privatised management, while trying to inculcate values like "honesty" and "punctuality" by water users in order to ensure that no single person takes any more water than his or her share and in no way disadvantages another user through his or her "selfish actions". Yet, ironically, the water supply is privately owned and also privately managed, with the local municipality being simply another water user alongside many others in the town. The irony is compounded by the fact that not all current property owners have water rights as their properties did not exist when the 'Schedule of Turns' was first drawn up. There are methods by which to acquire water rights, however, it requires a "sacrifice" on the part of another water user and as was explained above, all of the hours in a week are currently allotted to different users which means that there is no additional 'time' for other users to be allocated. The rhetoric of sharing is undermined by the reality of individualised use.

Access to water was racialised in both towns, with certain individuals, whether public or private, holding power over others since they were in control of the resource. In Williston, the white community, represented by someone such as Louw who served as the Mayor of Williston, held power over the allocation of the resource and the provision of facilities to improve the water supply as well as sanitary facilities. In Prince Albert, the water supply was privately as well as publically managed and therefore power over the resource rested with both of these authoritative bodies, which allowed for the advancement of the white community and the allocation of irrigation water to further their farming interests, while the coloured community were denied the same privileges. Sanitary facilities, as discussed in Chapters Three and Four, were inadequate in the coloured communities at both settlements and while initially also inadequate in the white community, improvements in infrastructure were brought about here that was never implemented within the coloured housing areas. Similarly, the oral testimonies reveal the realities of Apartheid and the impact it had on the lives of these local Karoo inhabitants, specifically through the coloured community's reduced familiarity with sanitary facilities and water supply, which was most clearly reflected in Koot still not having a water supply laid on to his home presently. Finally, the narratives showed that while the water supply was not always ample in either town, there was a sufficient amount for residents to live from without suffering, though access in terms of facilities were not equal in the slightest. In Prince Albert the inhabitants of North-End do not have access to furrow water, or any claim thereto, and all houses do not (yet) have water laid on to the

houses. In Williston, coloured informants in the old-age home had rarely been introduced to sanitary facilities and taps with running water prior to their move into the retirement home. White informants, however, revealed that while Williston is a dry town and water has always been scarce, the supply has been enough to meet domestic requirements. They were also able to acquire additional water at an expense and described the manner in which they enjoyed the town swimming pool, which was notably absent from the narratives of coloured residents.

The inhabitants of both regions, however, have developed a social understanding of the scarcity of water (in very different ways). This relates to the *bewaar en spaar* mentality as advocated by Vivers in Chapter Five. His approach is indicative of the "culture of aridity" to which he had become accustomed in Williston. It all came down to *moed en geloof* is indicative of the subsequent attitude of hopefulness that was adopted as a coping mechanism to see local residents through the long periods of drought and water shortages. The themes of fatalism and adaptability were also key in understanding the inhabitants of Williston, since they had been forced to accept the environmental conditions of the region and adjust their lifestyles accordingly, or alternatively move elsewhere to a region less plagued by harsh conditions.

While in Williston and Prince Albert, twenty five interviews were conducted and several key trends have been identified in the social history with regards to water: firstly, while many of the whites have been taught to swim, at least on a basic level, the coloured community did not have the same opportunities in terms of access to farm dams or the town pool in Williston and Prince Albert.[4] The majority of coloureds had also never seen the ocean before, while those local inhabitants of either region who had seen the ocean were struck by a type of sensory overload owing to the way in which they had adapted to aridity. All of the interviewees made use of a "water-fetching system" of sorts prior to the introduction of running water into homes and they had all lived through periods of drought in each town, whether entirely aware of it or not. All of the informants in Williston had also experienced the flooding of the Sak River and were struck with the same "water overload" as described above.

But they all have a recursive assertion of their "love for the Karoo" and claim that they will never choose to settle anywhere else. As the title of Chapter Five indicated with the statement

[4] No town pool exists in Prince Albert.

by Esterhuyse, *"Dit is nou droog, maar dit sal weer reën. Droogte is deel van ons bestaan"*[5], which illustrates how aridity has been and still is a part of their everyday lives and emotions such as fatalism and hopefulness in the face of an uncontrollable nature come with the territory. In Prince Albert, sentiments are a great deal more positive since droughts and widespread aridity is not experienced to the same extent due to the reliable supply of water from the Swartberg. The limited number of people whose needs are catered for by the *leivore* is indicative thereof that the system cannot remain in place indefinitely since in its most simplistic form, it promotes preferential treatment based on the ownership of property, which in this case, relates directly to race and class.

The socio-environmental history of water in the Karoo, as explored by this thesis, opens avenues for a great deal of potential further research. The history of water legislation and the current National Water Act, as explored in Chapters One and Five, show great strides in the revision of South African water laws and policies, however, "what everyone can agree on is more water for all". This is due to the implementation of the ideals presented within the 1998 National Water Act becoming more difficult to implement and the delay in further progress signals the pressure for continuity, but also the need for reform.[6] Therefore, options for further research exist in terms of future legislation towards water within South Africa and national forums to facilitate the adequate and equitable management as well as distribution of the resource.

Furthermore, this thesis has been a lens into the history of water within two small towns in the Great Karoo. Each town has a similar water history, which will depend on the region in which they are located and reasons for early settlement. Micro-historical perspectives such as these are useful in gaining an understanding of what conditions were truly like within a town, through the intimate personal narratives of local inhabitants, which can be used in a broader national context through archival sources revealing legislation and official correspondence. Mäki's work on Cape Town, Grahamstown, Johannesburg and Durban serves as a foundation from which a number of comparative works could be undertaken in order to examine conditions in metropolitan cities as opposed to smaller, more isolated villages.

---

[5] *"It is dry now, but it will rain once more. Drought is part of our existence".* Interview with H. Esterhuyse; 14 April 2012; conducted by N. Kruger (in person).

[6] Larry A. Swatuk, "The State and Water Resources Development through the Lens of History: A South African Case Study", *Water Alternatives*, (3), (3), 2010, 534.

This thesis has not explored the impact livestock and sheep had on the history of water within these two specific regions, but also more broadly within South Africa. Future research could examine more closely the ways in which these animals and their grazing patterns influenced the history of settlement and how their reliance on sufficient water impacted on the supply of water.

Furthermore, while this thesis considered the role of race and class in terms of access to water, the manner in which gender impacted was not explored. The history of differential access between men and women, across different communities, would serve as a different approach to writing the history of water.

In the fifth chapter, Carlo Ginzburg's notion of micro-history offered a way in to understanding the varying and shifting relationship between people and water. Micro-history, drawing on the *Annales* School, which polemicized against political history, pursuing the quarrying of deeper strata and structures of society. Thus, the focus on popular *mentalités* – to be examined, however, in intensive close-up, as in the testimonies in Chapter Five.

Finally, the most fundamental message this thesis offers is that historians of natural resources should be careful not to romanticise "human's ascendancy over nature". Instead one should be aware of the historical cost of this ascendancy to the environment and – equally – the cost to other people. This is often masked in whiggish institutional or statist histories and while this thesis is not entirely innocent of this same shortcoming, it aims to provide a broader perspective through personal narratives that is not solely limited to dominant groups of society or the state. Indeed, a drop of water, refracts the bigger history of South Africa's history regarding struggles over land and the alienation of the most fundamental resource.

List of References

Primary Sources

Acts

The National Water Act 36 of 1998

The Water Research Act 34 of 1971

The Water Services Act 36 of 1997

Archival Collections

Cape Town Archives Repository, Cape Town, South Africa (KAB)

3/WIL

3/WIL 10/1	Williston Voters' Rolls, 1941-1959.

3/PAL

3/PAL 8/1	Prince Albert Voters' Rolls, 1922-1945

CO

CO 7711 1487	Williston by-laws, 1897.

CSC

CSC 5/1/1/77 109	Water Court Case: Robert Christoffel Laurie versus Charles Christian de Villiers from Williston, 1925.
CSC 5/1/1/178 259	Water Court Case: Adriana Josina van Tonder and Maria Magdalena le Grange versus Johannes Jacobus Allers and others from Prince Albert, 1943.
CSC 5/1/1/260 1	Water Court Case: Matthys Andries de Wit and Christian Pieter de Wit versus Christian Pieter de Wit and others from Prince Albert, 1973.

LND

LND 1/698 L11014	Prince Albert farms to be excluded from farms to be leased, 1898.

MOH

MOH 173 L30C	Williston Health Reports from 1904-1907.
MOH 345 L80C	Prince Albert Health Report from 1907.

PAR

PAR 172 97/8	Williston Water Works from 1930-1948.

PAS

PAS 2/200 L32/A/3	Williston Municipality, amended water regulations, 1917-1918.
PAS 2/202 L32A	Williston Municipality, regulations regarding water, 1914-1915.
PAS 2/496 L33A/L/2	Williston Municipality, water scheme, 1912-1918.
PAS 2/453 L80C	Prince Albert Municipality, water supply, 1905-1910.
PAS 2/532 L85/L/T1	Prince Albert Municipality, water supply, 1911-1924.
PAS 2/1048 L85/A/4	Prince Albert Municipality, water regulations, 1908-1931.

PWD

PWD 2/6/3 C3	Williston, water supply, 1904-1905.
PWD 2/5/366 U20	Prince Albert, water supply, 1897-1900.

T

T 959 7240	Williston Municipality, loan for water works, 1905-1909.

WAD

WAD 313 923/D1/50	Prince Albert water supply accounts, applications and tariffs regarding S. W. J. Botes, 1971-1973.

South African National Archives, Pretoria, South Africa, (SAB)

GES

GES 692 201/13	Williston Sanitation, 1909-1934.
GES 692 207/13A	Williston Sanitation, 1934-1954.
GES 670 178/13	Prince Albert Sanitation, 1909-1930.
GES 671 178/13A	Prince Albert Sanitation, 1931-1953.

JUS

JUS 97 1/566/11	Prince Albert Annual Report, 1911.

LDB

LDB 2311 R3381/2	Drought Distress Relief Bill, Prince Albert, 1927-1928.

PM

PM 1/2/33 PM7/49	Drought Distress Prince Albert, 1929.

Interviews

All interviews were conducted by N. Kruger.

Anna Fritz, Williston (16 April 2012).

Daniel Koot, Prince Albert (23 September 2012).

Das Olivier, Prince Albert (19 April 2012).

Dawid Abrahams, Williston (16 April 2012).

Dennis Steenkamp, Williston (17 April 2012).

Dennis Viviers, Williston (17 April 2012).

Derek Swart, Stellenbosch (16 October 2012).

Ellen Elisabeth Botma, Prince Albert (10 August 2012).

Elsa van Schalkwyk, Williston (15 April 2012).

Harry Esterhuyse, Williston (14 April 2012).

Hendrika Wilhelmina Botes, Prince Albert (10 August 2012).

I. D. Vorster, Prince Albert (19 April 2012).

Jacobus Louw, Williston (16 April 2012).

Johanna van den Berg, Williston (17 April 2012).

Judy Maguire, Prince Albert (20 April 2012).

Ina Burger, Prince Albert (19 April 2012).

Lettie de Bruyn, Williston (16 April 2012).

Lydia Barrella, Prince Albert (20 April 2012).

Magdalena Johanna Petronella Cordier, Prince Albert (10 August 2012).

Marina Lotter, Cape Town (24 May 2012).

Slopie le Roux, Williston (17 April 2012).

Spaas Fortuin, Prince Albert (23 September 2012).

Personal Communication

Phumudzo Tharaga from the South African Weather Service (29 August 2012).

Secondary Sources

Books and Chapters in Books

Bate, R. and Tren, R., *The Cost of Free Water: The Global Problem of Water Misallocation and the Case of South Africa* (Johannesburg: The Free Market Foundation, 2002).

Beinart, William; Delius, Peter and Trapido, Stanley (eds.), *Putting a Plough to the Ground: Accumulation and Dispossession in Rural South Africa, 1850-1930* (Johannesburg, Ravan Press, 1986).

Beinart, William, *The Political Economy of Pondoland, 1860-1930* (Cambridge: Cambridge University Press, 1982)

Beinart, William, *The Rise of Conservation in South Africa: Settlers, Livestock and the Environment 1770-1950* (New York: Oxford University Press, 2003).

Boonzaier, B., *Spore oor die Veld: `n Spoorwegsafari deur Suider-Afrika* (South Africa: JNC Boonzaaier, 2008).

Bozzoli, Belinda, *Women of Phokeng: Consciousness, Life Strategy and Migrancy in South Africa, 1900-1983* (Portsmouth: Heinemann, 1991).

Carson, Rachel, *Silent Spring* (New York: Houghton Mifflin, 1962).

Caunce, S., *Oral History and the Local Historian* (United States of America: Longman, 1994).

Davenport, T. R. H., *South Africa: A Modern History* (Hong Kong: MacMillan Press, 1978).

Delius, Peter, *The Land Belongs to Us: The Pedi Colony, the Boers and the British in the 19th century Transvaal* (Johannesburg: Ravan Press, 1983).

Dovers, S.; Edgecombe, R. and Guest, B. (eds.), *South Africa's Environmental History: Cases and Comparisons* (Africa: David Philip Publishers, 2002).

Esler, K. J.; Milton, S. J. and Dean, R. J. (eds.), *Karoo Veld: Ecology and Management* (Pretoria: Briza Publications, 2006).

Green, L. G., *Karoo: The Story of the Karoos of South Africa – the Great Karoo, the Little Karoo and the far corners of the North West Cape and Namaqualand* (Cape Town: Howard Timmins, 1955).

Guy, Jeff, *The Destruction of the Zulu Kingdom* (Johannesburg: Ravan Press, 1982).

Haak, F., *Prince Albert aan die Voet van die Swartberge: Geskiedeniskalendar 1762-1995* (Prince Albert: Fransie Pienaar Museum, 1996).

Hall, C. G., *Water Rights in South Africa* (Oxford: Oxford University Press, 1947).

Jacobs, N., *Environment, Power and Injustice: A South African History* (Cambridge: Cambridge University Press, 2003).

Keegan, Timothy, Rural Transformations in Industrializing South Africa: The Southern Highveld to 1914 (Braamfontein: Ravan Press, 1986).

Kotze, D. A., *Amandelboom staan in Bloei: Ned. Geref. Kerk Williston, 1878-1978* (Williston: N.G. Gemeente, 1978).

Mäki, Harri, *Water, Sanitation and Health: The Development of The Environmental Services in four South African cities, 1840-1920* (Tampere: Juvenes Print, 2008).

Omer-Cooper, John D., *The Zulu Aftermath: A 19th Century Revolution in Bantu Africa.* North-West University Press, Ewanston, 1966.

Peires, Jeff, *The House of Phalo: A History of the Xhosa People in the days of their Independence* (Johannesburg: Ravan Press, 1981).

Penn, N., *The Forgotten Frontier: Colonist and Khoisan on the Cape's Northern Frontier in the 18th Century* (Cape Town: Double Storey Books, 2005).

Penrith, J. and Jansen, C., *Die Groot Karoo* (South Africa: Purnell, 1974).

Pollock, N. C. and Agnew, Swanzie: *A Historical Geography of South Africa* (London: Longmans, 1963).

Prince Albert Writer's Guild., *Prince Albert: Landmark Events, Colourful Characters and the Lifestyle of an Historic Karoo Town* (Retreat: Formsxpress, 2005).

Shillington, Kevin, *The Colonization of the Southern Tswana, 1870-1900* (Braamfontein: Ravan Press, 1985).

Stockenstrom, E., *Gedenkboek van die Nederduitse Gereformeerde Gemeente te Prins Albert: `n Geskiedkundige Oorsig van sy Honderdjarige bestaan, 1842-1942* (South Africa, Nasionale Pers, 1942).

Swart, S., *Riding High: Horses, Humans and History in South Africa* (Johannesburg: Wits University Press, 2010).

Tempelhoff, J. W. N. (ed.), *African Water Histories: Transdisciplinary Discourses* (Gauteng: Corals Publishers, 2005).

Tempelhoff, J. W. N., *The Substance of Ubiquity: Rand Water 1903-2003* (Vanderbijlpark, Keio Publishers, 2003).

Thompson, Hubert, *Water Law: A Practical Approach to Resource Management and the Provision of Services* (Cape Town: Juta, 2006).

Vail, L. (ed.), *The Creation of Tribalism in Southern Africa* (California: University of California Press, 1991).

Van der Merwe, P. J., *Studies oor die Mobiliteit van die Pioniersbevolking aan die Kaap* (Cape Town: Nasionale Pers, 1938).

Van der Merwe, P. J., *Die Trekboer in die Geskiedenis van die Kaapkolonie, 1657-1842* (Cape Town: Nasionale Pers, 1945).

Van Schalkwyk, E., *Die Amandel Breek Oop: 1845-1995* (Huguenot: Paarlse Drukpers, 1995).

Waterbury, J., *Hydropolitics of the Nile Valley* (New York: Syracuse University Press, 1979).

Walton, J. and Pretorius, A., *Windpumps in South Africa* (Cape Town: Human and Rousseau, 1998).

Worster, D., *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979).

Worster, D., *Rivers of Empire: Water, Aridity and the Growth of the American West* (New York: Oxford University Press, 1985).

Worster, D., *The Wealth of Nature: Environmental History and the Ecological Imagination* (New York: Oxford University Press, 1993).

Yell, L., *The Great Karoo* (Cape Town: Struik Publishers, 2008).

Articles in Peer-Reviewed Journals

Ally, Russel, "War and Gold – the Bank of England, the London Gold Market and South Africa's Gold, 1914-1919", *Journal of Southern African Studies*, (17), (2), June 1991, 222-238.

Booysen, J. and Roswell, D.I., "The Drought Problem in the Karoo Areas", *Proceedings of the Annual Congresses of the Grassland Society of Southern Africa*, (18), 1983, 40-45.

Bradford, Helen, "Women, Gender and Colonialism: Rethinking the History of the British Cape Colony and its Frontier Zones, c.1806-70", *The Journal of African History*, (37), (3), 1996, 351-370.

Carruthers, Jane, "Africa: Histories, Ecologies and Societies", *Environment and History*, (10), (4), November 2004, 379-406.

Cillie, G. G.; Coombs, P. and Odendaal, P. E., "Water pollution Research in South Africa", *Journal (Water Pollution Control Federation)*, (51), (3), March 1979, 458.

Ginzburg, C.: "Microhistory: Two or Three Things That I Know about It", *Critical Inquiry*, (20), (1), 1993, pp. 10-35.

Grim, Valerie., "The High Cost of Water: African American Farmers and the Politics of Irrigation in the Rural South, 1980-2000," *Agricultural History*, (76), (2), Water and Rural History, 2002, 338-353.

Guelke, L. and Shell, R., "Landscape of Conquest: Frontier Water Alienation and Khoikhoi Strategies of Survival, 1652-1780", *Journal of Southern African Studies*, (18), (4), December 1992, 803-824.

Hughes, Timothy, "Conflict Diamonds and the Kimberley Process: Mission Accomplished – or mission impossible?", *South African Journal of International Affairs*, (13), (2), December 2006, 115-130.

Jacobs, N., "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa, c.1800-1962", *The Journal of African History*, (37), (2), 1996, 237-260.

Musemwa, M., "Disciplining a Dissident City: Hydropolitics in the City of Bulawayo, Matabeleland, Zimbabwe, 1980-1994", *Journal of Southern African Studies*, (32), (2), June 2006, 239-254.

Mwangi, O., "Hydropolitics, Ecocide and Human Security in Lesotho: A Case Study of the Lesotho Highlands Water Project", *Journal of Southern African Studies*, (33), (1), March 2007, 3-17.

Nyota, Shumirai and Sibanda, Fortune, "Digging for Diamonds, Wielding New Words: A Linguistic Perspective on Zimbabwe's Blood Diamonds", *Journal of Southern African Studies*, (38), (1), March 2012, 129-144.

Obi, Cyril I., "The Petroleum Industry: A Paradox or (sp) oiler of development", *Journal of Southern African Studies*, (28), (4), October 2010, 443-457.

Singer, Michael, "Towards a Different Kind of Beauty: Responses to Coal-based Pollution in the Witbank Coalfield between 1903 and 1948", *Journal of Southern African Studies*, (37), (2), June 2011, 281-296.

Smith, Andrew, "Environmental Limitations on Prehistoric Pastoralism in Africa", *The African Archaeological Review*, (2), 1984, 99-111.

Swanson, M., "The Sanitation Syndrome: Bubonic Plague and Urban Native Policy in the Cape Colony, 1900-1909", *The Journal of African History*, (18), (3), 1977, 387-410.

Swart, S., Report on South African Environmental History, June 2012. (See footnote in Chapter One).

Swatuk, L. A., "The State and Water Resources Development through the Lens of History: A South African Case Study", *Water Alternatives*, (3), (3), 2010, 521-536.

Tempelhoff, J. W. N., "Civil Society and Sanitation Hydropolitics: A Case Study of South Africa's Vaal River Barrage", *Physics and Chemistry of the Earth*, (34), 2009, 164-175.

Tempelhoff, J. "`n Historiografiese Verkenning van Watergeskiedenis", *Koers*, (70), (3), 2005, 473-514.

Tempelhoff, J., "Recent Trends in South African Water Historiography". *The Journal for Transdisciplinary Research in Southern Africa*, (4), (1), July 2008, 271-296.

Tempelhoff, J. W. N. and Haarhoff, J., "Water Supply to the Witwatersrand (Gauteng) 1924-2003", *Journal for Contemporary History*, (32), (2), December 2007, 95-114.

Tempelhoff, J.; Gouws, C. and Motloung, S., "The River as Artefact: Interpreting the Groot Marico and its People in the 21st Century", *Ympäristöhistoria Finnish Journal of Environmental History*, (1), 2012, 26-27.

Thabane, M., "Shifts from Old to New Social and Ecological Environments in the Lesotho Highlands Water Scheme: Relocating Residents of the Mohale Dam Area", *Journal of Southern African Studies*, (26), (4), December 2000, 633-654.

Van Eeden, E. S.; de Villiers, B.; Strydom, H. and Stoch, L.: "Effects of Dewatering and Sinkholes on People and Environment – An Analysis of the Carletonville area in Gauteng, South Africa", *Historia*, (48), (1), May 2003, pp. 95-125.

Van Niekerk, S. and Du Pisani, K., "Water Resource and Water Management in the Bahurutshe Heartland", *Water SA*, (32), (4), July 2006, 445-451.

Van Sittert, L., "The Supernatural State: Water Divining and the Cape Underground Water Rush, 1891-1910", *Journal of Social History*, (37), (4), 2004, 915-937.

Vetter, S., "Drought, Change and Resilience in South Africa's Arid and Semi-Arid Rangelands", *South African Journal of Science*, (105), January/February 2009, 29-33.

Worster, D., "Transformations of the Earth: Toward an Agroecological Perspective in History", *The Journal of American History*, (76), (4), 1990, 1087-1106.

Yudelman, David and Jeeves, Alan, "New Labour Frontiers for Old: Black Migrants to South African Gold Mines, 1920-1951", *Journal of Southern African Studies*, (13), (1), October 1986, 101-124.

Other Published Sources

Erasmus, D.: "A Giant Leap for Local Science". *Farmers Weekly*, 25 June 2012. Available online at: http://www.farmersweekly.co.za/article.aspx?id=24265&h=A-giant-leap-for-local-science.

Kotze, P.: "Saving Water in a Big Way." *Farmers Weekly*, 8 August 2011. Available online: http://www.farmersweekly.co.za/article.aspx?id=10230&h=Saving-water-in-a-big-way.

Murray, R.: "Banking Water." *Imiesa Magazine*, June 2008. Available online at: www.artificialrecharge.co.za/articles/IMIESAmagazineJune2008_printed.pdf.

Wills, M., "Artificial Recharge is a Genuine Solution: Storing Water in the Rocks is the Answer to some Big Water Supply Questions." *Martin Creamer's Engineering News*, December 2008. Available online at: www.artificialrecharge.co.za/articles/martincreamer_text.pdf.

Wills, M., "Artificial Recharge Gets Real." *The Water Wheel*, August 2008, 38-39. Available online at: www.artificialrecharge.co.za/articles/WaterwheelJuly2008_printed.pdf.

Reports

Annual Report on the Performance of the Karoo Hoogland Municipality for the 2008/2009 Financial Year. Available online at: www.karoohoogland.co.za?ANNUAL%20REPORT%2008%2009%20%20KHM.pdf

Department of Water Affairs, 2010. Strategy and Guideline Development for National Groundwater Planning Requirements. Water Banking: A Practical Guide to using Artificial Groundwater Recharge, dated November 2010. Available online at: http://artificialrecharge.co.za/booklet/AR_booklet_13Jan2011.pdf.

Department of Water Affairs and Forestry: Status of the Water Sector in the Northern Cape, Achievements and Challenges, Northern Cape Water Summit August 2005. Available online at: www.dwaf.gov.za/Documents/Other/WS/NcapeWaterSummitAug05a.pdf.

Findlater, K. M.; Funke, N.; Adler, R. and Turton, A.: *South Africa's Hydropolitical History: Actors, Actions, Roles and Responsibilities*. CSIR Parliamentary Grant Report. NRE No. CSIR/NRE/Ir/WR/2007/0064/A. CSIR: Pretoria.

List of Registered Dams. Available online at www.dwaf.co.za

Murray E.C. and Tredoux, G., *Artificial Recharge: A Technology for Sustainable Water Resource Development*. Water Research Commission Report No. 842/98, Pretoria, 1998. Input from Chris Esterhuyse, SRL Consulting Western Cape.

Mukheibir, P. and Sparks, D., "Climate Variability, Climate Change and Water Resource Strategies for Small Municipalities", *Report to the Water Research Commission*, September 2005.

Prince Albert Cultural Foundation., *Prince Albert: Proposal for Protected Status as a Provincial Heritage Site,* July 2006.

Wellman, G., *Water, Land and Power: The Development of Water User Associations in South Africa.* A Surplus People Project Research Paper, May 2001. Available online at: www.spp.org.za/reports/Water_Users_Ass_Exec_Summary.pdf.

Theses and Dissertations

Herbst, R. O., *Die Rynse Sendinggenootskap en Grondkwessies in die Kareeberggrensgebied in die Neentiende Eeu, met spesifieke verwysing na die Amandelboomsending*. Thesis (DPhil), Stellenbosch University, 2004.

Internet Sources

Artificial Recharge Newsletter No. 6, 2010. Available online at: www.dwaf.gov.za/Groundwater/Documents/GSNewsletter2010_6ArtificialRecharge.pdf

Field, S., *History Workshop on the TRC: Commissioning the Past* (June 1999). Available online at: http://wiredpace.witz.ac.za/handle/10539/7805

http://mapsof.net/map/south-africa-blank-locator-map (Accessed 16 October 2012).

Marais, C.: "Waking up in Williston", *Karoo Space Magazine,* Available online at: http://www.karoospace.co.za/karoo-space-magazine/people/97-waking-up-in-williston.

Prince Albert Tourism. Available online at: www.patourism.co.za

Steyn, P.: *"The Greening of our Past? An Assessment of South African Environmental Historiography".* Available online at: http://www.h-net.org/~environ/historiography/safrica.htm (Accessed on 7 March 2012).

Taylor, Vanessa and Trentmann, Frank, "Hosepipes, History and a Sustainable Future", The History and Policy Website. Available online at: www.historyandpolicy.org/papers/policy-paper-75.html

www.mapstudio.co.za (5 June 2012).