MOOI-MGENI TRANSFER SCHEME – PHASE 2, WATER TRANSFER SCHEME, KWAZULU-NATAL PROVINCE, SOUTH AFRICA

FINAL ENVIRONMENTAL SCOPING REPORT

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EXECUTIVE SUMMARY

Background
Phase 1 of the Mooi-Mgeni Transfer Scheme (MMTS-1) was completed in 2003. This scheme utilised the transfer infrastructure of the original emergency scheme and included the construction of a new Mearns Weir on the Mooi River and the raising of the Midmar Dam.

In 2000, DWA and Umgeni Water jointly initiated the feasibility study of the second phase of the proposed Mooi-Mgeni Transfer Scheme (MMTS-2). This proposed development comprised the construction of the Spring Grove Dam (a dam on the Mooi River at Spring Grove, about 8 km upstream of the Mearns Weir near the town of Rosetta in the KwaZulu-Natal Midlands), a pump station and 2 measuring weirs, an artificial fish barrier weir on the Mooi River upstream of the Inchbrakie Falls on the farm Coldstream, and the construction of a transfer pipeline (including breakwater pressure tank and outfall works) from Spring Grove Dam to the Mpofana. The final EIR was submitted to DEA in January 2009 and was granted a positive Record of Decision (RoD) on 15 June 2009. This authorised the construction of the project activities, subject to specific conditions. Subsequently, two appeals were lodged against the RoD. The Mooi River Farmers Association appealed against the Spring Grove Dam since it was felt that other strategic resources were not considered, however, this appeal was withdrawn. The second appeal was from the Mziki Homeowners Association and related to the lack of alternatives for the routing of the pipeline from the Spring Grove Dam to the existing servitude for the MMTS-1 pipeline. On 28 September 2010, the Minister of Justice and Constitutional Development upheld the appeal against the Water Transfer System, but allowed the construction of the dam, fish barrier and gauging weirs to proceed. Therefore this EIA process involves the proposed construction of the water transfer system only.

According to the Department of Water Affairs (DWA), the motivation for the proposed project in general terms arose from the following potential benefits:

- Meeting the current demand for water supply to the eThekwini Municipality. Currently the demand exceeds the supply, and severe water shortages are anticipated in the near future.
- Job creation.

Legal Requirements
In accordance with the requirements of the National Environmental Management Act 107 of 1998 (NEMA), relevant EIA regulations made in terms of this Act and promulgated in August 2010 (Government Notice No 543), and listed activities (Government Notice No’s 544, 545 and 546), the activities that will be undertaken during the construction and operation of the proposed project in GNR 544, 545, and 546 are listed in Table 1.1 in this report.

The Environmental Impact Assessment
Coastal & Environmental Services (CES), a well-established specialist environmental consulting firm with offices in Grahamstown and East London, have been appointed by TCTA, the implementing agent, as the Environmental Assessment Practitioner (EAP) to conduct the Environmental Impact Assessment (EIA). The Department of Environmental Affairs (DEA) is the competent authority that must consider and decide on the application for authorisation.

The applicants will be applying for a Water Use Licence (Issued by the Department of Water Affairs – DWA) in terms of the National Water Act (Act No. 36 of 1998) for any and/or all developments that may be planned within 500 m of any wetland that may occur within the development footprint (a wetland specialist have been consulted to delineate all seasonal wetlands on the proposed development site). It should be noted that Section 27(2) of the National Water Act states that a responsible authority may not issue a licence to itself without the written approval of the Minister. Water Use Licence applications fall outside the scope of this EIA and it is therefore up to the applicant to ensure that all authorisations are in place before construction commences.
The EIA process is divided into two key phases – Scoping and Environmental Impact Assessment. This draft scoping report presents the outcomes of the first phase of the EIA process. The Scoping Process has been undertaken to identify and describe –

- The nature of the proposed project;
- The legal, policy and planning context for the proposed project;
- Important biophysical and socio-economic characteristics of the affected environment;
- Potential environmental issues or impacts, so they may be addressed in the EIA phase;
- Feasible alternatives that must be assessed in the EIA phase; and
- The Plan of Study (POS) for the EIA phase.

**Project Description**

The proposed activity consists of the following components:

- The Spring Grove Dam Pumping Station
- Rising Main from the Pumping Station to the Break Pressure Tank at Gowrie
- Break Pressure Tank at Gowrie Village
- Section of new pipeline from Gowrie Village to the Mpofana River; and
- Outfall Works on the Mpofana River

The preliminary pipeline route established during the original EIA Review (2009) for the project ran from the Spring Grove pumping station eastwards through a number of smallholdings over a distance of approximately 3km up to the existing MMTS-1 pipeline servitude.

In the BKS report *Spring Grove Dam and Appurtenant Works Pipeline Route Assessment, May 2010* (BKS, 2010), three routes were described that were considered environmentally acceptable from an initial route selection. This was carried out following the appeal on the Original DWA Route. This report investigated a number of alternatives, and from this report, two routes were identified as viable. Since then a number of options (refinements) to these routes have been suggested.

A complete project description, the detailed route and various alternatives are described in full in Chapter 2 of this report.

**The Affected Environment**

**Geology and Soils**

The geology of the study site is mainly sedimentary rocks of the Karoo Super Group (DWAF 2009). Overall, soils are acidic with a pH range of 3.8 to 5.94 in the project area (Drennan, Maude and Partners 2009). The region is considered to have high agricultural potential.

**Vegetation**

The study area occurs within the Maputaland-Pondoland-Albany area of endemism (CI 2010). According to Mucina and Rutherford (2006) vegetation on site consists of Mooi River Highland Grassland and Drakensberg Foothill Moist Grassland. Ezemvelo KwaZulu-Natal Wildlife (EKZNW) has mapped the vegetation of the area in more detail, but the vegetation types are the same as the Mucina and Rutherford (2006) descriptions. They also list several species that occur within both vegetation types, and of these, 11 are on the IUCN red data list. On site investigations showed that the majority of the proposed development site is currently being utilised for agricultural purposes (e.g. grazing land, crops, chicken farm and dairy farms). The proposed route will also traverse some public amenities (Gowrie golf course) and residential areas (Gowrie and Zinzani Villages). As a result, the majority of natural vegetation along the route has been removed for these various purposes. It is important to note that various wetlands occur in the area and may be traversed by the proposed route alternatives. These are protected in terms of the National Water Act.
Fauna
There is a lack of pristine terrestrial habitats in the general study area. In this case, the terrestrial fauna has been severely impacted upon by human activity. Vegetation clearing for cultivation is the primary impact on the natural habitats of the region. Despite this, a few large mammals occur in the region, along with small and medium sized animals (such as oribi in the Bill Barnes Crane and Oribi Nature Reserve). Reptile and amphibians occurring in the area include many species of frogs, tortoises and terrapins, lizards and snakes. Furthermore, there are breeding pairs of both Blue Crane and Wattle Crane within the Bill Barnes Crane and Oribi Nature Reserve.

Socio-economic profile
The proposed development site is surrounded by various land use forms; these include agriculture (e.g. grazing land, crops, chicken farm and dairy farms), public amenities (e.g. Gowrie Golf Course and a soccer field and netball court in Zinzani Village), residential areas (e.g. Gowrie and Zinzani Villages), natural areas (wetlands and the Bill Barnes Crane and Oribi Nature Reserve) and infrastructures (roads and railway). The proposed development is expected to generate employment both during the construction and operational phases of the project. Furthermore, the proposed development will increase the much needed water supply to the eThekwini Municipality.

The Public Participation Process
At the inception of the project an extensive public participation process (PPP) was undertaken to allow Interested and Affected Parties (I&APs) to voice their concerns and raise issues regarding the proposed project. The key elements of the process included:-

- Development and distribution by hand of a Background Information Document (BID) to all landowners and other relevant stakeholders;
- Informing potential I&APs of the proposed development through newspaper advertisements and site notice boards;
- Holding various focus group meetings; and
- Holding a public meeting

Throughout this process, a register of I&APs was compiled and maintained, together with a record of their comments and responses from the project proponent and the EAP.

Issues and Concerns
The comments and response trail for the focus group meetings held on the 19th and 20th of March 2012, as well as for the open day meeting held on 10 May 2012 are included in Appendix C. The main issues and concerns arising from I&APS include:

- General Environmental Impacts
- Impacts on Fauna and Avifauna
- Impacts on Vegetation and Flora
- Impacts on Freshwater / Wetlands
- Impacts on Land And Property Values
- Impacts on Businesses and Agricultural Practices
- Impacts on Existing or Proposed Private Property Developments
- Noise Impacts
- Impacts on Tourism
- Human Health And Safety
- Visual Impacts
- Impacts on Existing Infrastructure
- Land Rights and Compensation
- Security and Crime
- Construction Impacts
- Maintenance Impacts, Access and Servitude Management
• Employment opportunities and skills transfer
• Damage to existing gardens
• Disruption to the Gowrie Golf Course

These issues and concerns were taken into consideration regarding route options, resulting in the conclusions discussed below:

**Alternative routes developed through stakeholder engagement**

**SECTION A** – At the stakeholder meeting for Section B, I&APs suggested an additional alignment of the route along a district road (DR 682), within the road servitude that passes the following portions of Springvale 2170 (130, 164, 128, 135 and 148). This would essentially be an extension of the Umgeni Route (BKS report *Spring Grove Dam and Appurtenant Works Pipeline Route Assessment*, May 2010), between the stands on either side of the road. Based on a subsequent site visit, it was determined that this option should be eliminated for further assessment.

**SECTION B** – Stakeholders expressed significant concern for many of the options traversing Section B. Many of these concerns arise from the fact that Portions 175 and 176 have both been sub-divided over the past few years into four 5 ha portions. Thus, route option B1 now traverses significantly more properties than originally anticipated. In addition, new houses have been constructed on some of these portions. A further concern was that the route options need to be more accurately plotted, as some of the lines do not traverse the exact boundary of various portions, but rather within them.

It was also suggested that Option B1 be aligned along the existing road servitude between Portions 175 and 176. The road servitude is too narrow to accommodate both the road and the pipeline. The servitude is approximately 8 m wide with a vehicle track requiring 4 m and the pipeline requiring a 6 m trench (within 20 m servitude). According to BKS engineers (Mr. Pat van Heerden) this road servitude is insufficient to accommodate the pipeline and agree that the noted difficulties count against this route. A further concern from I&APs was that Option B2 does not follow the boundary line between portions 177 and 332. An altered alignment would therefore be required to correctly follow this boundary. A further suggestion at the site meeting with land owners, held on 20 March 2012, was that Option B1 should preferably run along the inside boundary of portion 175, hence avoiding the newly built houses of land owners O’Connor (sub-division of portion of 176) and Carter (sub-division of portion 175).

There was general consensus that Option B3 should be eliminated from further investigation, as it traverses two large wetlands, with the wetland adjacent to Portion 189 hosting a pair of breeding blue cranes. In addition, the route traverses many plots adjacent to Portion 25. It was further requested that option B2 be re-aligned so that it does not cross through Portion 332, but rather on the boundary between Portions 332 and 177.

A further option put forward at the focus group meeting for Section B was a suggestion for the pipeline to travel due north of the dam along the D682 road as far as the intersection at Portion 87, and then east to the R103. Based on engineering and technical difficulties, especially associated with crossing the R102 at this point, and the four portions to the east of this, including the railway siding, this route was eliminated from further investigation.

A further suggestion was the option of going all the way north in the existing Mearns pipeline servitude and connecting at the point where the Mearns pipeline starts. This option had been previously investigated and it was excluded as being too costly, as it means going north across properties over a distance of approximately 7 km and then turning south for a few of hundred meters and then eastwards in the existing servitude – an additional length of approximately 14 km with associated additional energy losses and costs.

Based on comments from I&APs and upon consideration of these comments, as well further
analysis on site, it has been decided that Option B2 be excluded as a viable option and will therefore not be investigated further. Details are provided in Section 5.2 and Table 5.2 of the Route Options Report.

SECTION C – After a constructive discussion with the Gowrie Village Residents Association, there was overall consensus that Break Pressure Tank (BPT) location 2 be excluded from further analysis. There was also agreement that the location of BPT1, as discussed in the report was acceptable, provided that various mitigation actions were implemented. These primarily involved establishing a second access point through the existing gate opposite the bowling green, moving the electric fence eastwards to the existing BPT and alienating a piece of land from the estate during the construction period. In addition, requests to improve the architectural style of the BPT were made such as stone cladding on the lower portion and painting the upper portion in a grey colour to resemble a forge.

With respect to the pipelines exiting the BPT, a specific request was made for the pipeline to be situated immediately south of the erven on the southern extent of Gowrie village. At present the existing Mearns pipeline is located within these erven. Whilst the Gowrie village residents recognise that they have established gardens over the existing pipeline servitude, and recognise that maintenance activities would be required from time to time, they have requested that the new pipeline be located within the remaining approximately eight metres of servitude to the south of their boundary line. This however, has been found to be too technically challenging. Technically the best position for the new pipeline would be on the northern side of the existing pipeline. The new pipeline is, however, located closer than 8m from the existing pipeline over the affected area in an attempt to mitigate the impact of the new pipeline and of construction on the gardens. Further detail is provided in Section 6.1 of the Route Options Report.

Section D – At the focus group meeting, evidence supporting the fact that the farm dam, which the existing servitude traverses, existed prior to the servitude being established. Consequently efforts to re-align the new route around the dam need to be considered. However, BKS assessed available drawings that were prepared at the time of construction, and these suggested that a much smaller dam may have existed at the time of construction. TCTA is investigating this matter further. In addition to Option B1, members of the Gowrie golf estate suggested two alternative alignments, one avoiding the fairways, but going between them in a south easterly and then easterly direction, and the second a modification of Option D1 which would reduce the opportunity cost on potentially developable land that the current blue route traverses. It has been concluded that since Option D1 does not reduce environmental impacts any further than Options D2 and D3 and that there is no point investigating this option further in the EIA process. Option D1 requires a new servitude and there are significant technical difficulties and additional costs without any concomitant benefits. In addition, the MMTS 1 pipeline is currently undergoing maintenance and refurbishment. A detailed analysis will be conducted along the entire length of MMTS-1 from the Mearns Weir to the Mpofana Outfall. If leaks and severe corrosion are detected then sections of the pipeline will be excavated to either fix or replace the pipe. It is possible that sections of D1 will be subject to the above, therefore, while the alternate routes have been suggested to minimise the impact on the greens, the above might occur in any event.

Section E – The overall conclusion was that there was no need to construct outside the existing servitude. The focus should rather be on mitigation measures during the construction phase as well as determining the best access route(s). The need for upgrading the existing D2477 road should be investigated and safety issues during the construction phase at Zinzani Village need to be investigated. A site visit to Zinzani was undertaken and indicated that the servitude is particularly narrow and very close to a school in this area. Engineering input to mitigate these technical difficulties and construction phase impacts is required.

The Way Forward – EIA Phase
The EIA phase has four key elements, namely:-
Specialist Studies: Specialist studies identified during the Scoping Phase as being necessary, plus any additional studies that may be required by the authorities, are undertaken as the initial phase of the EIA. Appropriately qualified and experienced specialists are appointed to undertake the various assessments. Specialists gather baseline information relevant to the study being undertaken and assess impacts associated with the development. Specialists also make recommendations to mitigate negative impacts and enhance benefits. The resulting information is synthesised into the Environmental Impact Report (EIR), whilst the full reports will be attached to the EIR as appendices. The following specialist studies have been proposed for the EIA Phase:

- Ecological assessment;
- Traffic impact assessment;
- Archaeological assessment;
- Wetland assessment and delineation; and
- Review and update of the Environmental water requirement study.

Environmental Impact Report (EIR): The main purpose of this report is to gather and synthesise environmental information and evaluate the overall environmental impacts associated with the development, to consider mitigation measures and alternative options, and make recommendations in choosing the best development alternative. The EIR also identifies mitigation measures and management recommendations to minimise negative impacts and enhance benefits. The EIR and associated specialist reports are made available for public and authority review and comment. The availability of the report is advertised in the local newspaper(s) and the report is also made available for public scrutiny in easily accessible locations.

Comments Report: The comments report provides a detailed record of comments, issues and concerns raised by I&APs and the authorities during the review period, and also provides relevant responses to these comments.

Environmental Management Programme (EMPr): The EMPr provides guidelines to the project proponent and the technical team on how best to implement the mitigation measures and management recommendations outlined in the EIR during the construction and operational phase.

In addition to the above, the Public Participation Process commenced during the Scoping Phase is continued, during which I&APs are afforded further opportunities to raise their issues, concerns and comments regarding the proposed project. It is possible that some of the project details may have changed in response to the preliminary findings of the Scoping Report, and as a result of design changes made by the project proponent. I&APs and key stakeholders are given the opportunity to review the Draft EIR before it is submitted to the authorities for consideration. Comments on the Draft EIR received from I&APs are included and addressed in the submitted Final Scoping Report.
1. INTRODUCTION......................................................................................................................... 1
   1.1 Background to the study ....................................................................................................... 1
   1.2 Motivation for Activity ......................................................................................................... 1
   1.3 The Environmental Impact Assessment Process thus far ...................................................... 2
      1.3.1 Scoping Phase .................................................................................................................. 7
      1.3.2 The Scoping Report .......................................................................................................... 7
   1.4 Details and Expertise of the Environmental Assessment Practitioner ............................... 7
      1.4.1 Details of the EAP ............................................................................................................ 7
      1.4.2 Expertise of the EAP ....................................................................................................... 8
2. PROJECT DESCRIPTION ............................................................................................................. 10
   2.1 Proposed Activity .................................................................................................................. 10
   2.2 Description of the proposed route ....................................................................................... 10
      2.2.1 Route Alt A1 .................................................................................................................... 11
      2.2.2 Route Umgeni ................................................................................................................. 11
      2.2.3 Yellow Route .................................................................................................................. 11
      2.2.4 Blue Route ..................................................................................................................... 11
      2.2.5 Rising Main Alternative ................................................................................................. 11
      2.2.6 Route A Original DWA ................................................................................................. 11
      2.2.7 Break Pressure tank ....................................................................................................... 12
      2.2.8 Gravity Main ................................................................................................................... 12
      2.2.9 Existing Servitude ......................................................................................................... 12
3. RELEVANT LEGISLATION .......................................................................................................... 14
   3.1 The Constitution .................................................................................................................... 14
   3.2 The National Environmental Management Act (NEMA) (107 of 1998) ......................... 14
   3.3 The National Environment Management: Biodiversity Act (10 of 2004) .................... 15
   3.4 The National Forests Act (84 of 1998) ................................................................................ 16
   3.5 National Heritage Resources Act (25 of 1999) .................................................................. 17
   3.6 Atmospheric Pollution Prevention Act 45 of 1965 ............................................................... 17
   3.7 National Environmental Management: Air Quality Act (39 of 2004) ............................. 17
   3.8 Occupational Health and Safety Act (85 of 1993) ............................................................... 17
   3.9 National Water Act (36 of 1998) ......................................................................................... 19
   3.10 Hazardous Substances Act (15 of 1973) ........................................................................... 19
   3.11 The Environment Conservation Act (73 of 1989) ............................................................ 19
   3.13 National Environmental Management: Protected Areas Act (31 of 2004) .................... 20
   3.14 Conservation of Agricultural Resources Act (43 of 1983) ............................................. 21
   3.15 Municipal by-laws and planning ....................................................................................... 21
      3.15.1 uMgeni Municipality IDP ............................................................................................. 22
      3.15.2 Mpofana Municipality IDP ......................................................................................... 25
      3.15.3 eThekwinia Municipality ............................................................................................ 25
   3.16 Possible benefits of the development to the local community ........................................ 25
4. DESCRIPTION OF THE AFFECTED ENVIRONMENT ............................................................. 26
   4.1 Climate ................................................................................................................................... 26
   4.2 Topography .......................................................................................................................... 26
   4.3 Geology and Soils ................................................................................................................. 26
   4.4 Areas of Endemism ............................................................................................................... 27
   4.5 Vegetation and Floristics ...................................................................................................... 27
      4.5.1 Vegetation of the study area .......................................................................................... 27
   4.6 Fauna ..................................................................................................................................... 30
      4.6.1 Habitats .......................................................................................................................... 30
      4.6.2 Birds ............................................................................................................................... 30
      4.6.3 Reptiles ........................................................................................................................... 31
      4.6.4 Amphibians ..................................................................................................................... 32
      4.6.5 Mammals ....................................................................................................................... 32
      4.6.6 Conservation Planning Tools ....................................................................................... 34
4.7 Socio-economic Environment ................................................................. 41
5. PUBLIC PARTICIPATION PROCESS .......................................................... 43
  5.1 Register of interested and affected parties ........................................... 43
  5.2 Division of the pipeline route into sections ........................................... 43
  5.3 Presentation on public participation to Spring Grove Dam EMC .............. 44
  5.4 Notification of directly impacted landowners ........................................ 44
  5.5 Notification of I&APs about the EIA ...................................................... 44
    5.5.1 Background Information Document (BID) ....................................... 44
    5.5.2 Comments and Registration Form .................................................. 45
    5.5.3 Written Notices ............................................................................. 45
    5.5.4 Advertisements ............................................................................. 45
    5.5.5 Site notices .................................................................................... 45
  5.6 Registration of Interested and Affected Parties ...................................... 45
6. ISSUES IDENTIFIED DURING THE SCOPING PHASE ............................... 48
  6.1 Impacts that may result from the Construction phase ............................ 48
  6.2 Impacts that may result from the Operational Phase .............................. 50
    6.2.1 Issue 1: Access ............................................................................. 50
    6.2.2 Issue 2: Visual intrusion and landscape quality .................................. 50
    6.2.3 Issue 3: Loss of developable land and future private property developments ........................................ 50
    6.2.4 Issue 4: Impacts on the Mpofana River ........................................... 50
7. ALTERNATIVES ......................................................................................... 52
  7.1 Overview ............................................................................................... 52
  7.2 Additional routes developed through stakeholder engagement ............... 52
  7.3 Screening level assessment .................................................................... 59
  7.4 Options in Route Section A .................................................................... 60
  7.5 Options in Route Section B .................................................................... 62
  7.6 Pipeline and Break Pressure Tank – Section C ...................................... 64
  7.7 Options in Route Section D .................................................................... 66
  7.8 Options in Route Section E .................................................................... 67
  7.9 Recommendations ................................................................................ 67
  7.10 No Development Alternative ................................................................ 68
8. PLAN OF STUDY FOR EIA PHASE ......................................................... 70
  8.1 Scope and Intent of the EIA Phase .......................................................... 70
  8.2 The Public Participation Process ............................................................ 71
    8.2.1 Public Review Of The Draft Scoping Report (DSR) .......................... 71
    8.2.2 Public Review Of The Draft Environmental Impact Report (DEIR) ...... 71
    8.2.3 Notification Of Environmental Authorisation (EA) ........................... 71
  8.3 Environmental Impact Report (EIR) ....................................................... 72
    8.3.1 Structure of the EIA Report ............................................................ 72
  8.4 Specialist Studies .................................................................................. 72
    8.4.1 Ecological Assessment (Mr Jadon Schmidt) ...................................... 73
    8.4.2 Archaeological Assessment (Mr Gavin Anderson) ........................... 73
    8.4.3 Wetland Assessment and Delineation (Mr Jadon Schmidt) ............... 74
    8.4.4 Environmental Water Requirement Study ....................................... 74
  8.5 Methodology for assessing the significance of impacts ........................... 74
9. REFERENCES ............................................................................................ 78
APPENDIX A - THE EIA PROCESS ............................................................. 80
APPENDIX B - PHOTOGRAPHS .................................................................. 84
APPENDIX C - PUBLIC PARTICIPATION PROCESS .................................... 88
  7.1 APPENDIX C-1: Background Information Document ............................ 88
  7.2 APPENDIX C-2: Letter Of Notification Accompanying The Bid .......... 92
  7.3 APPENDIX C-3: Register Of Interested And Affected Parties ............... 94
  7.4 APPENDIX C-4: Copy Of Newspaper Advertisement – Initial Advertising ... 119
  7.5 APPENDIX C-5: Text Of The Site Notice ................................................. 123
  7.6 APPENDIX C-6: Photographs Of The Fixed Site Notice ........................ 125
  7.7 APPENDIX C-7: Environmental Focus Group Meetings Attendance Register – 19-20 March 2012 .......... 131
APPENDIX C-8: Issues And Response Trail (March 2012) ............................................. 146
APPENDIX C-9: Copy Of Letter Sent To I&As Notifying The Release Of The Draft Scoping Report ............................................................. 196
APPENDIX C-10: Minutes of Public Open Day Meeting (10 May 2012) ......................... 198
APPENDIX C-11: Comments And Response Trail (May 2012) ..................................... 211
LIST OF FIGURES

Figure 1-1: The EIA process under current legislation (NEMA Regulations 2010) ............................................... 6
Figure 2-1: Location of the existing MMTS-1 servitude and some of the proposed alternative routes .................. 13
Figure 3-1: The Mooi-Mgeni system (source: TCTS 2011) ......................................................................................... 22
Figure 3-2: Greater Mpoofana Bulk water supply (source: Umgeni Water 2012) .................................................. 23
Figure 3-3: Spatial development framework for uMgeni Municipality ................................................................. 24
Figure 4-1: The Maputaland-Pondoland Albany Hotspot (Source: CI, 2010). ......................................................... 28
Figure 4-2: KZN Wildlife Vegetation Map of the study area and surrounds ..................................................... 29
Figure 4-3: Mucina and Rutherford Vegetation Map of the study area and surrounds ....................................... 29
Figure 4-4: Important Bird Areas (IBAs) in proximity to the proposed pipeline .................................................. 36
Figure 4-5: Corridors in proximity to the proposed pipeline ................................................................................... 37
Figure 4-6: Protected Areas Expansion Strategy and its proximity to the proposed pipeline ......................... 38
Figure 4-7: Terrestrial Systematic Conservation Plan and its relevance to the proposed pipeline .................. 39
Figure 4-8: Wetlands and their proximity to the proposed pipeline ................................................................. 40
Figure 7-1: Various route alternatives for the Water Transfer Pipeline, and route sections ...................... 53
Figure 7-2: Options for the location of the new break pressure tank in SectionC ........................................... 65
The red line shows the existing servitude ........................................................................................................... 65
Figure 7.3 – Preferred route alternative for Sections A and B, showing approximate size of the servitude. ... 69

LIST OF TABLES

Table 1-1: Listed activities triggered by the proposed development ................................................................. 3
Table 4-1: Temperature variability with change in altitude in uMgeni (source: uMgeni IDP 2002) ...................... 26
Table 4-7: Conservation and planning tools that need to be considered for the proposed project .......................... 35
Table 4-8: Demographic and economic profile of uMgeni and Mooi Mpoofana municipalities .......................... 41
Table 7-1: Options analysis matrix derived from the pairing of the significance of the impact and the technical difficulty or cost of mitigation .................................................................................................. 59
Table 7-2: Options categories defined .................................................................................................................. 59
Table 7-3: Description of key impacts likely to have different impact ratings along the route alignments used to compare and analyse options ............................................................................................................. 60
Table 7-4: Summary of ratings for all options in section A .................................................................................... 62
Table 7-5: Summary of ratings for all options in Section B ................................................................................... 64
Table 7-6: Summary of ratings for break pressure tank options in section C .......................................................... 65
Table 7-7: Summary of ratings for all options in section 4 .................................................................................... 66
Table 7-8: Summary of ratings for all options in Sections A&B ........................................................................... 68
Table 8-1: Ranking of Evaluation Criteria ........................................................................................................... 75
Table 8-2: Ranking matrix to provide an Environmental Significance .................................................................. 76

LIST OF PLATES

Plate 7-1: The road servitude for D682 is too narrow to accommodate a pipeline, which requires a 6m wide trench ....................................................................................................................................................... 54
Plate 7-2: Crossing from the D682 to the MMTS-1 pipeline servitude provides fatally flawed engineering challenges ............................................................................................................................................... 54
Plate 7-3: House O Conner within a subdivision of Portion 176 ............................................................................. 56
Plate 7-4: The existing road servitude between Portions 175 and 176. House Carter is partially visible to the left of the photograph ........................................................................................................................................ 56
Plate 7-5: The new pipeline must be located to the right of the fence, essentially between the fence and the Chestnut tree, to avoid damage to existing gardens. A temporary servitude will be required in the open area to the right ........................................................................................................................................ 56
Plate 7-6: The servitude in the valley below Zinzani is very narrow, being pinched between a waste water treatment works, a road (adjacent to a school) and Eskom power lines within the servitude ........................................................................ 58
LIST OF ACRONYMS

BID: Background Information Document
CBA: Critical Biodiversity Areas
CES: Coastal & Environmental Services
CITES: Committee for International Trade in Endangered Species
DEAT: Department of Environmental Affairs and Tourism (now DEA)
DEA: Department of Environmental Affairs
DMS: Degrees, Minutes, Seconds
DWA: Department of Water Affairs
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment
EIR: Environmental Impact Report
EMP: Environmental Management Programme
GNR: Government Notice Regulation
ha: Hectare
I&APs: Interested and Affected Parties
IDP: Integrated Development Plan
KZN CPlan: KwaZulu-Natal Conservation Plan
Ltd: Limited
NEMA: National Environmental Management Act 107 of 1998 as amended
PoS: Plan of Study
PAES: Protected Areas Expansion Strategy
PPP: Public Participation Process
RDB: Red Data Book
SSC: Species of Special Concern
TCTA: Trans-Caledon Tunnel Authority
ToR: Terms of Reference
1. INTRODUCTION

1.1 Background to the study

Phase 1 of the Mooi-Mgeni Transfer Scheme (MMTS-1) was completed in 2003. This scheme utilised the transfer infrastructure of the original emergency scheme and included the construction of a new Mearns Weir on the Mooi River and the raising of the Midmar Dam.

In 2000, DWA and Umgeni Water jointly initiated the feasibility study of the second phase of the proposed Mooi-Mgeni Transfer Scheme (MMTS-2). This proposed development comprised the construction of the Spring Grove Dam (a dam on the Mooi River at Spring Grove, about 8 km upstream of the Mearns Weir near the town of Rosetta in the KwaZulu-Natal Midlands), a pump station and 2 measuring weirs, an artificial fish barrier weir on the Mooi River upstream of the Inchbrakie Falls on the farm Coldstream, and the construction of a transfer pipeline (including breakwater pressure tank and outfall works) from Spring Grove Dam to the Mpofana. The final EIR was submitted to DEA in January 2009 and was granted a positive Record of Decision (RoD) on 15 June 2009. This authorised the construction of the project activities, subject to specific conditions. Subsequently, two appeals were lodged against the RoD. The Mooi River Farmers Association appealed against the Spring Grove Dam since it was felt that other strategic resources were not considered, however, this appeal was withdrawn. The second appeal was from the Mziki Homeowners Association and related to the lack of alternatives for the routing of the pipeline from the Spring Grove Dam to the existing servitude for the MMTS-1 pipeline. On 28 September 2010, the Minister of Justice and Constitutional Development upheld the appeal against the Water Transfer System, but allowed the construction of the dam, fish barrier and gauging weirs to proceed. Therefore this EIA process involves the proposed construction of the water transfer system only.

In accordance with the requirements of the National Environmental Management Act No. 107 of 1998 (NEMA), and relevant Environmental Impact Assessment (EIA) regulations made in terms of this Act (Government Notice No R.543) and promulgated in 2010, the proposed project requires a full Scoping and EIA.

1.2 Motivation for Activity

eThekwini Municipality’s water demand exceeds its water storage supply. This was evident in 1983, when during a severe drought the Mearns Emergency Transfer Scheme (METS) was implemented. With a transfer capacity of 3.2 m³/s, the METS enabled water to be transferred from the Mooi River to Mgeni System, which supplies the eThekwini Municipality, preventing crippling water shortages.

Despite the implementation of the METS, population and economic growth has resulted in the eThekwini Municipality facing a municipal water supply crisis (Savides, 2011). Above average rainfall in the last few years has led to a false sense of water supply security, masking the serious threat to the metropolitan area. Dam levels supplying the eThekwini Municipal Area were 20% lower in January 2011 compared to January 2010 (Savides, 2011).

In line with the Constitution (No 108 of 1996) that states access to safe drinking water is a basic human right, the eThekwini Municipality, has set a target that by 2013 all households will have access to potable water (eThekwini Municipality, 2011). This entails supplying water to an additional 400 000 homes (The Witness, 2009). With a population estimated at 3.5 million people (1513 people/km²), the task of supplying water is difficult, which is further compounded by the insufficient supply of the resource (Central Spatial Development Plan, 2011). Proposed water restrictions, likely to be implemented this year (Savides, 2011) could have serious consequences for the economic sector. For economic growth in the region to be sustained, as well as encouraged to grow, adequate water supply needs to be assured. The Central Spatial Development Plan (2011) highlights tourism as a significant contributor to the economy. In addition to the 3.5 million people resident in eThekwini Municipality, 1.1 million tourists visit the city each year (16% of South
African tourists) spending an estimate of R2.27 Billion. According to the eThekwini Municipality’s Central Spatial Development Plan (2011), development projects are already being excluded from economic zones where water supplies are inadequate to meet the demands. The eThekwini Municipality needs to find a reliable method in increasing its water supply so that households, industries and tourism are not adversely affected.

The eThekwini Municipality receives potable water from the Mgeni River (Mgeni catchment) with a yield of 334 million m³/yr (Central Spatial Development Plan, 2011). This system, with four major dams has no scope of further development and water must therefore be supplied from elsewhere. 98% of water supplied to eThekwini Municipality is located outside the municipal boundaries (eThekwini Municipality Metro, 1999). This means that eThekwini Municipality does not have direct control over its water supply, which results in competition of the resource with the surrounding areas (Pietermaritzburg) for future requirements.

The construction of the Spring Grove Dam would add a much needed 60 million m³/yr to the Mgeni system (Central Spatial Development Plan, 2011). With the construction of the dam, pipelines are essential to transport the water to the stressed areas. Additional pipelines are proposed to be laid down in such a way that enables a consistent supply of water to eThekwini Municipality regardless of malfunctions in either of the pipelines.

1.3 The Environmental Impact Assessment Process thus far

The EIA process is guided by regulations made in terms of Chapter 5 of NEMA, published as Government Notice No R.543 in Government Gazette No 33306 of 2 August 2010. The regulations set out the procedures and criteria for the submission, processing and consideration of and decisions on applications for the environmental authorisation of activities.

Three lists of activities, published on 21 April 2006 and amended 2 August 2010, as Government Notice Numbers R.544, R.545, and R.546 define the activities that require, respectively, a Basic Assessment (applies to activities with limited environmental impacts), or a Scoping and Environmental Impact Assessment (applies to activities which are significant in extent and duration).

The activities triggered by the proposed development are listed in Table 1-1 below.
## Table 1-1: Listed activities triggered by the proposed development

<table>
<thead>
<tr>
<th>Number of relevant notice</th>
<th>Activity No(s)</th>
<th>Description of listed activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNR544</td>
<td>(9)</td>
<td>The construction of facilities or infrastructure exceeding 1000m in length for the bulk transportation of sewage and water, including storm water, in pipelines with - (i) an internal diameter of 0.36 metres or more; or (ii) a peak throughput of 120 litres per second or more. Excluding where: a) Such facilities or infrastructure are for bulk transportation of water or storm water drainage inside a road reserve; or b) Where such construction will occur within urban areas but further than 32 meters from a watercourse, measured from the edge of the watercourse.</td>
</tr>
<tr>
<td></td>
<td>(11)</td>
<td>The construction of: i. canals; ii. channels; iii. bridges; iv. dams; v. weirs; vi. bulk storm water outlet structures; vii. marinas; viii. jetties exceeding 50 square meters in size; ix. slipways exceeding 50 square meters in size; x. buildings exceeding 50 square meters in size; xi. infrastructure or structures covering 50 square meters or more. Where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</td>
</tr>
<tr>
<td></td>
<td>(18)</td>
<td>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: i. a watercourse; ii. the sea; iii. the seashore; iv. the littoral active zone, an estuary or a distance 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is greater. But excluding where such infilling, depositing, dredging, excavation, removal or moving: a. is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or b. occurs behind the development setback line.</td>
</tr>
<tr>
<td></td>
<td>(26)</td>
<td>Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).</td>
</tr>
<tr>
<td>GNR 545</td>
<td>(10)</td>
<td>The construction of facilities or infrastructure for the transfer of 50 000 cubic meters or more water per day, from and to or between any combination of the following: i. water catchments; ii. water treatment works; or iii. impoundments. Excluding treatment works where water is to be treated for drinking purposes.</td>
</tr>
<tr>
<td>Number of relevant notice</td>
<td>Activity No(s)</td>
<td>Description of listed activity</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------</td>
<td>--------------------------------</td>
</tr>
</tbody>
</table>
| GNR 546                   | (4)           | The construction of a road wider than 4 meters with a reserve less than 13.5 meters.  
(a) In Eastern Cape, Free State, **KwaZulu-Natal**, Limpopo, Mpumalanga and Northern Cape provinces:  
i. in an estuary;  
ii. outside urban areas, in:  
**(aa)** A protected area identified in terms of NEMPAA, excluding conservancies;  
**(bb)** National Protected Area Expansion Strategy Focus areas;  
**(cc)** Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;  
**(dd)** Sites or areas identified in terms of an International Convention;  
**(ee)** Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;  
**(ff)** Core areas in biosphere reserves;  
**(gg)** Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve;  
**(hh)** Areas seaward of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.  
iii. In urban areas:  
**(aa)** Areas zoned for use as public open space;  
**(bb)** Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;  
**(cc)** Seaward of the development setback line or within urban protected areas. |
| (14)                      |               | The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:  
(1) purposes of agriculture or afforestation inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes;  
(2) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from this list;  
(3) the undertaking of a linear activity falling below the thresholds in Notice 544 of 2010.  
(a) In Eastern Cape, Free State, **KwaZulu-Natal**, Gauteng, Limpopo, Mpumalanga, Northern Cape, Northwest and Western Cape provinces:  
i. All areas outside urban areas. |
Because the proposed development triggers a listed activity from GNR.545, it will require a full Scoping and EIA. This process (Figure 1-1) is regulated by Chapter 3, Part 3 of the EIA regulations and described in detail in Appendix A of this report.

The applicants will be applying for a Water Use Licence (Issued by the Department of Water Affairs – DWA) in terms of the National Water Act (Act No. 36 of 1998) for any and/or all development that may be planned within 500 m of any wetland that may occur within the development footprint (a wetland specialist have been consulted to delineate all seasonal wetlands on the proposed development site). It should be noted that Section 27(2) of the National Water Act states that a responsible authority may not issue a licence to itself without the written approval of the Minister. Water Use Licence applications fall outside the scope of this EIA and it is therefore up to the applicant to ensure that all authorisations are in place before construction commences.

The competent authority that must consider and decide on the application for authorisation in respect of then GNR 544-546 activities listed in Table 1-1 is DEA, and is the relevant authority which will review the Scoping Report and Environmental Impact Report (EIR) and issue the environmental authorisation.
Figure 1-1: The EIA process under current legislation (NEMA Regulations 2010)
1.3.1 Scoping Phase

The proposed project is currently in the Scoping Phase. The principal objectives of the Scoping Phase in accordance with the regulatory requirements are to:

- Describe the nature of the proposed project;
- Enable preliminary identification and assessment of potential environmental issues or impacts to be addressed in the subsequent EIA phase;
- Define the legal, policy and planning context for the proposed project;
- Describe important biophysical and socio-economic characteristics of the affected environment;
- Undertake a public participation process that provides opportunities for all Interested and Affected Parties (I&APs) to be involved;
- Identify feasible alternatives that must be assessed in the EIA phase; and
- Define the Plan of Study (PoS) for the EIA phase.

1.3.2 The Scoping Report

The Draft Scoping Report was made available to the public for a period of 40 days for comment, with focus group and public meetings taking place during this time. Registered I&APs were informed of the release of the Draft Scoping Report by e-mail or registered mail. The release of the report was also advertised in one provincial and one local newspaper. Hard copies of the report were made available in publicly accessible places such as the Rosetta Post Office, Balgowan Post Office, Nottingham Road Landowners Association Hall and Gowrie Golf Club. The Draft Scoping Report was also posted electronically on the CES and the Spring Grove Dam website. Any comments, issues and concerns raised by I&APs and the authorities are included in this Final Scoping Report in the form of a Comments and Response Report.

This Final Scoping Report will be submitted to DEA, who will decide whether the main phase of the EIA can be initiated. DEA will also approve, with or without amendments, the Terms of Reference for the proposed specialist studies, and the Plan of Study for the EIA phase of the assessment.

1.4 Details and Expertise of the Environmental Assessment Practitioner

According to regulation 17 of the EIA regulations (2010), An EAP must –
(a) be independent; and
(b) have expertise in conducting environmental impact assessments, including knowledge of the Act, these Regulations and any guidelines that have relevance to the proposed activity

In fulfilment of the above-mentioned legislative requirement, provided below are the details of the Environmental Assessment Practitioner (EAP) who prepared this Final Scoping Report as well as the expertise of the individual members of the study team.

1.4.1 Details of the EAP

Coastal and Environmental Services (CES)
Physical Address: 67 African Street, Grahamstown 6139
Postal Address: P.O. Box 934, Grahamstown 6140
Telephone: +27 46 622 2364
Fax: +27 46 622 6564
Website: www.cesnet.co.za
Email: info@cesnet.co.za
1.4.2 Expertise of the EAP

CES is one of the largest specialist environmental consulting firms in southern Africa. Established in 1990, and with offices in Grahamstown and East London, we primarily specialise in assessing the impacts of development on the natural, social and economic environments. CES’s core expertise lies in the fields of strategic environmental assessment, environmental management plans, environmental management systems, ecological/environmental water requirements, environmental risk assessment, environmental auditing and monitoring, integrated coastal zone management, social impact assessment and state of environment reporting. In addition to adhering to all relevant national legislative requirements, which we are often required to review and summarise for specific projects, acquisition of equity funding from the majority of financial institutions demands that developments must meet certain minimum standards that are generally benchmarked against the Policy and Performance Standards of the International Finance Corporation and the World Bank Operational Directives and Policies. The quality of our work during our long and extensive association with heavy mineral mining in Africa (we have worked on large projects in South Africa, Mozambique, Malawi, Kenya, Madagascar and Egypt) has been acknowledged by international lenders such as the World Bank and the International Finance Corporation, and the large mining companies continue to approach us as their preferred environmental consultant for this type of project.

Provided below are short *curriculum vitae* (CVs) of each of the team members involved in the proposed development.

**Dr Ted Avis** *(Project Leader)*
Ted is a leading expert in the field of Environmental Impact Assessments, having project-managed numerous large-scale EIAs to international standards (e.g. World Bank and International Finance Corporation). Ted has also project managed and provided professional input to the State of Environment reports and Strategic Environmental Assessments produced by CES.

**Dr Chantel Bezuidenhout** *(Report Reviewer)*
Chantel holds a MSc and PhD in Botany and a BSc degree in Botany and Geography from NMMU. Chantel’s main focus is estuarine ecology and as a result she has been involved in a number of ecological reserve determination studies. Recently she has been focused on environmental management and has been involved in number of environmental impact assessments and management plans. She is currently employed in the Grahamstown office of CES.

**Ms Lara Crous** *(Report Production)*
Lara holds a BSc (Environmental Science and Geography) as well as a BSc Honours (Environmental Science) from Rhodes University. Her honours thesis evaluated Grahamstown’s Municipal water supply, focussing on aluminium for which she received a distinction. She is currently writing up her MSc (fisheries science) thesis on using constructed wetland technology in the treatment and beneficiation of brewery effluent. Lara presented her preliminary results at the International Water Association’s conference on Wetland Systems for Water Pollution Control in Venice, 2010. She is interested in environmental, municipal and effluent water quality.

**External Specialists**

**NMA Effective Social Strategists**

NMA Effective Social Strategists (Pty) Ltd is a fully HDI and woman owned consulting practice that specialises in the fields of Social Research, Social Facilitation and Community Participation for a wide range of Development Projects. Formerly known as Thebe Development Consultants (Pty) Ltd, the subsidiary Company was formed in 1995 by Thebe Properties (Pty) Ltd, which was a company within Thebe Investment Corporation. In January 1998 Thebe Development Consultants (Pty) Ltd was purchased by Nomi Muthialu, its Executive Manager, as a going concern and launched as Nomi Muthialu & Associates (Pty) Ltd. In 2006 the company changed its name to NMA Effective Social Strategists (Pty) Ltd.
NMA has a small dedicated team of 12 professionals specialising in social processes and public participation. The company’s head office is based in Johannesburg.

NMA has extensive experience conducting public participation processes for the planning and implementation of large development projects and has specific experience in undertaking the public participation component on numerous Environmental Impact Assessments, both for Basic Assessments and Scoping and EIAs. NMA also has extensive experience in conducting the public participation process on EIAs for linear projects. NMA undertook the public participation for the EIA for the proposed N2 Wild Coast Toll Highway between Gonubie outside East London and Isipingo outside Durban. The national Department of Environmental Affairs has said that this is the largest EIA ever undertaken in South Africa with more than 17 000 interested and affected parties registered on the project database.

Ms Nomi Muthialu (Managing Director)
Ms Muthialu has a Bachelor of Arts Degree (Psychology), a Master’s in Business Administration and several diplomas and certificates in Public Participation and Social Impact Assessment. She is Vice President of the Southern African Affiliate of the International Association for Public Participation (IAP2) and Deputy Presiding Member of the International Federation Board of IAP2. She has extensive experience in Social Research, Public Participation and Social Impact Assessment, and started working as a practitioner in 1990. She has been responsible for the strategy formulation, project management and implementation of the public participation component of numerous large development projects (for both the planning and implementation phases) and on a number of EIAs including several large linear projects. These projects include the Berg Water Project, the N2 Wild Coast Toll Highway, the N1 N2 Winelands Toll Highway and the N4 Witbank to Maputo Toll Road. She has been the Managing Director of NMA Effective Social Strategists (Pty) Ltd since 1998.

Mr Julian Drew (Senior Project Manager)
Mr Drew holds a BSc in Civil Engineering and a certificate in Social Impact Assessment. He has 22 years’ experience in the field of public participation, social facilitation and social research and has been the project manager for the public participation process on several large linear EIAs. These EIAs include the Eskom Bantamsklip Transmission Lines in the Western Cape, the N1 N2 Winelands Toll Highway and the N2 Wild Coast Toll Highway which, according to the Department of Environmental Affairs, was the largest public participation process ever undertaken for an EIA in South Africa. He is also an experienced freelance journalist and was a lecturer at the Institute for the Advancement of Journalism.

Mr Mfowabo Maphosa (Database Administrator)
Mr Maphosa holds a BSc in Information Technology and Computer Science and a BSc Hons in Information Systems. His area of expertise lies in the design, customization and management of CRM databases. He has managed the database for the largest Environmental Impact Assessment (EIA) in South Africa. Mfowabo is currently the Database Administrator at NMA Effective Social Strategists (Pty) Ltd in Johannesburg.

Ms Dilona Somai (Project Coordinator)
Ms Somai holds a BSc in Geography and Environmental Management and is currently undertaking a BSc Honours degree in Environmental Management. She has worked as an Education Officer in the environmental sector and is currently employed as a Project Coordinator at NMA Effective Social Strategists (Pty) Ltd in Johannesburg.
2. PROJECT DESCRIPTION

According to regulation 28 (1) of the EIA regulations (2010), a scoping report must include –
(b) a description of the proposed activity;
(d) a description of the property on which the activity is to be undertaken and the location of the activity on
the property, or if it is –
   (i) a linear activity, a description of the route of the activity; or
   (ii) an ocean-based activity, the coordinates where the activity is to be undertaken.

2.1 Proposed Activity

The proposed activity consists of the following components:

The Spring Grove Dam Pumping Station - A 5.8 MW pump station, with a maximum pumping
capacity of 4.5 m³/s, will be located immediately downstream of the Spring Grove Dam on the right
bank of the Mooi River.

Rising Main from the Pumping Station to the Break Pressure Tank at Gowrie - There will be
an approximately 1600 mm diameter pipeline from the Pumping Station to a new break pressure
tank located at the watershed in Gowrie Village. The pipeline will cross smallholdings in Rosetta for
the first 3 km and thereafter will join the existing MMTS-1 pipeline and run next to it in the existing
servitude to the break pressure tank. The length of pipeline is about 6 km.

Break Pressure Tank at Gowrie Village - The existing break pressure tank at Gowrie Village will
be demolished and replaced by a new one with sufficient capacity for both the MMTS-1 and
MMTS-2 systems. This new break pressure tank will be architecturally designed to blend in with
the surrounding structures.

Section of new pipeline from Gowrie Village to the Mpofana River - A new 600mm diameter
pipeline will be laid next to the existing MMTS-1 pipeline. The pipeline is approximately 8km long
and will also discharge at the existing outfall works on the Mpofana River.

Outfall Works on the Mpofana River - A new outfall works will be constructed adjacent to the
existing outfall works to accommodate the MMTS-2 system.

2.2 Description of the proposed route

The preliminary pipeline route established during the original Environmental Impact Assessment
Review (2009) for the project ran from the Spring Grove pumping station eastwards through a
number of smallholdings over a distance of approximately 3 km up to the existing MMTS-1 pipeline
servitude. This route was the route successfully appealed against in the original EIA Review, and is
referred to as the Route A Original DWA on Figure 2-1.

In the BKS report Spring Grove Dam and Appurtenant Works Pipeline Route Assessment, May
2010 (BKS, 2010), three routes were described that were considered environmentally acceptable
from an initial route selection. This was carried out following the appeal on the Route A Original
DWA Route. This report investigated a number of alternatives, and from this report, two routes
were identified as viable, namely Route Alt A1 and the Alt Umgeni Route. A number of options
(refinements) to these routes have been suggested, and these are described more fully below (e.g.
Yellow Route, Blue Route, Rising Main Alternative, Gravity Main Alternative). In addition to this the
existing servitude and the original appealed route are described briefly below.

A more detailed description of the route alternatives, and an analysis of their suitability, is
presented in Chapter 7 of this report.
2.2.1 Route Alt A1

Alternative Alt A1 crosses from the dam to the road just east of Portion 233 then turns southwards to follow the road (broken Blue line, Figure 2-1). The route then turns eastward along the boundary between Portions 102 and 103 of the Farm Springvale 2170 and from here it crosses Portion 98 and 189 and then follows the Northern property boundaries of Portion 189, 180, 179,178 until it reaches the boundary of Portion 332 where it continues south east along the boundary between Portion 332 and Portions 178/177 before turning east along the boundary between Portions 332 and 161. The route then crosses road R103 and join the existing servitude of the MMTS-2 pipeline.

2.2.2 Route Umgeni

This route follows the initial routing of Alternative A1 to the small dam wall between Portions 103 and 104 (Purple line, Figure 2-1) after which it continues along the boundary between Portions 95 and 146 until it reaches Portion 93. It then continues northwards adjacent to the road. The pipeline turns south east for a short distance past the densely populated residential area before proceeding north to the R103 alongside Portion 92 and joins the existing MMTS-1 pipeline servitude just east of the R103 and the railway line.

2.2.3 Yellow Route

The new Yellow route follows the same route as route Alt A1 to the road just East of Portion 233 of the Farm Springvale 2170. It crosses and follows the road on the eastern side between portions 233 and 104. It then turns eastwards along the boundary between Portions 103 and 104 and then on the boundary between Portions 95 and 146. The route turns in a southerly direction along the boundary between 146 and 93/96 and then cuts across Portion 189. It then follows the boundary of Portions 180 and 174/175 and Portions 179 and 175/176. Portions 175 and 176 have been subdivided, as described in more detail in Chapter 7. The route then runs along the Northern boundary of Portion 176, crosses the road and then joins the existing MMTS-1 servitude. This route skirts the Mziki Estate and instead follows boundary lines (between Portions 175 and 176, where the yellow line in Figure 2-1 is partly obscured).

2.2.4 Blue Route

This Route follows the same route as route Alt A1 to the road just east of Portion 233 of the Farm Springvale 2170. It follows the road down along the boundary of Portion 233/104 then 234/103, then turns east along the southern boundary of Portion 103, cuts across Portion 98 before following the Northern boundary of Portion 98. The route then follows the same profile as the Yellow Route.

2.2.5 Rising Main Alternative

The Rising Main Alternative follows the same route as route Alt A1 to the road just east of Portion 233 of the Farm Springvale 2170, and then follows the road down along the boundary of Portion 233/104 then 234/103 (Orange broken line on Figure 2-1). It then follows the property boundaries through Spring Grove 2169 Remainder/113; Remainder/158; Remainder/189; Remainder/180; Remainder/179; Remainder/178; Spring Grove 2169 Portion 19/177; 19/7; 19/144; Spring Grove 2169 Portion 25/264; 25/286; 25/268; 25/265. The Route would then cross Gowrie 1930 Portion 90 and join the existing servitude just north of the break pressure tank.

2.2.6 Route A Original DWA

Alternative Alt A1 (brown line – Figure 2-1) crosses from the dam to the road just east of Portion 233. It crosses the road and follows the road on the eastern side between portions 233 and 104, then turns eastwards along the boundary between Portions 103 and 104 and then on the boundary between Portions 95 and 146. From here the route runs in a southerly direction between Portions 103 and 146 until it reaches the southern boundary of Portion 146, where is turns in a south
easterly direction. From here it runs between the boundaries of Portions 146 and 98 and Portions 96 and 189 until it reaches the boundary between Portions 189 and 180 where it turns east and cuts through Portion 174 and the Mziki Estate to the boundary of Portion 175. From here it crosses the road and the railway line to connect to the existing servitude. This route was successfully appealed in 2010, but the appeal was based on the lack of alternatives and not the routing.

2.2.7 Break Pressure tank

The new BPT cannot be constructed in the same location as the existing BPT due to connection issues. Two locations were considered for the new BPT, which is a 10m high concrete structure.

Location 1: Just on the Southern side of the existing bowling green, to the eastern side of the existing pipeline (appears to be Portion 126 of Gowrie 1930). This is close to the existing location, with a road that borders one edge. The emergency drainage lines from the tank would need to be longer than from Location 2.

Location 2: On the southern edge of the bend that takes the pipeline from Portion 24 Gowrie 1930 to Portion 83 Gowrie 1930, situated in open space. This location is not ideal as the view from a number of properties would be compromised and the general view in the estate might be affected if a tank was put up in this location.

2.2.8 Gravity Main

The preferred route for the gravity main is the route following the existing servitude. The route follows a good technical profile. Much of the land conditions are known, the servitude is already registered, and additional land acquisition costs will not be required.

An alternative to the route along the existing servitude would continue the route in a southerly direction after it passes the BPT until the road. The route then follows the road through Gowrie 1930, Portion 83 then part of the way along the road in Gowrie 1930, Portion 24. It then crosses across Gowrie 1930 Portion 24, Wilde Als spruit 71 and Wilde Als Spruit Portion 118 to join back to the existing servitude. This alternative would skirt the Gowrie Village golf course, as well as the contentious farm dam on Gowrie 1930 Portion 71.

2.2.9 Existing Servitude

The existing servitude runs in a south easterly direction and transects Portion 85 of the Farm Springvale 2170. From the border between Portion 85 and Portion 276/2170 it runs in a southerly direction and transects Portion 90 before it reaches Gowrie Village at the existing BPT. From Gowrie Village it runs in a south easterly direction and transects Portions 83, 24 and 71 of the Farm Gowrie 1930. From this point the servitude turns in a southerly direction on the border between Portions 71 and 118. The servitude then traverses Potions 116, 107, 106, 75, 69, 10 and 11 of the Farm Waterford 15946 where it reaches the existing outfall to the Mqofana River.
Figure 2-1: Location of the existing MMTS-1 servitude and some of the proposed alternative routes.
3. RELEVANT LEGISLATION

According to regulation 28 (1) and (2) of the EIA regulations (2010), a scoping report must include –
1(f) an identification of all legislation and guidelines that have been considered in the preparation of the scoping report
(2) In addition, a scoping report must take into account any guidelines applicable to the kind of activity which is the subject of the application.

In line with the above-mentioned legislative requirement, the development of the proposed project described in Chapter 2 above will be subject to the requirements of a number of laws as follows:

3.1 The Constitution

This is the supreme law of the land. As a result, all laws, including those pertaining to the proposed development, must conform to the Constitution. The Bill of Rights - Chapter 2 of the Constitution, includes an environmental right (Section 24) according to which, everyone has the right:

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that:
  (i) Prevent pollution and ecological degradation;
  (ii) Promote conservation; and
  (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Relevance to the proposed pipeline route:

- Obligation to ensure that the proposed development will not result in pollution and ecological degradation; and
- Obligation to ensure that the proposed development is ecologically sustainable, while demonstrating economic and social development.

3.2 The National Environmental Management Act (NEMA) (107 of 1998)

The objective of NEMA is: “To provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.”

A key aspect of NEMA is that it provides a set of environmental management principles that apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. The proposed development has been assessed in terms of possible conflicts or compliance with these principles. Section 2 of NEMA contains principles (see Box 3) relevant to the proposed project, and likely to be utilised in the process of decision making by DEA.

**BOX 3: NEMA ENVIRONMENTAL MANAGEMENT PRINCIPLES**

| (2) | Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. |
| (3) | Development must be socially, environmentally and economically sustainable. |
| (4)(a) | Sustainable development requires the consideration of all relevant factors including the following: i. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied; ii. That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied; iii. That waste is avoided, or where it cannot be altogether avoided, minimised and re- |
used or recycled where possible and otherwise disposed of in a responsible manner.

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<tr>
<td>(4)(e)</td>
<td>Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.</td>
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<tr>
<td>(4)(i)</td>
<td>The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</td>
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<tr>
<td>(4)(j)</td>
<td>The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.</td>
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<tr>
<td>(4)(p)</td>
<td>The costs of remediating pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.</td>
</tr>
<tr>
<td>(4)(r)</td>
<td>Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.</td>
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As these principles are utilised as a guideline by the competent authority in ensuring the protection of the environment, the proposed development should, where possible, be in accordance with these principles. Where this is not possible, deviation from these principles would have to be very strongly motivated.

NEMA introduces the duty of care concept, which is based on the policy of strict liability. This duty of care extends to the prevention, control and rehabilitation of significant pollution and environmental degradation. It also dictates a duty of care to address emergency incidents of pollution. A failure to perform this duty of care may lead to criminal prosecution, and may lead to the prosecution of managers or directors of companies for the conduct of the legal persons.

In addition NEMA introduced a new framework for environmental impact assessments, the EIA Regulations (2010) discussed previously.

**Relevance to the proposed pipeline route:**
- The developer must be mindful of the principles, broad liability and implications associated with NEMA and must eliminate or mitigate any potential impacts.
- The developer must be mindful of the principles, broad liability and implications of causing damage to the environment.

### 3.3 The National Environment Management: Biodiversity Act (10 of 2004)

This Act provides for the management and conservation of South Africa’s biodiversity within the framework of the National Environmental Management Act 107 of 1998 (see Box 4 below). In terms of the Biodiversity Act, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).
- Application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all developments within the area are in line with ecological sustainable development and protection of biodiversity.
- Limit further loss of biodiversity and conserve endangered ecosystems.
BOX 4: MANAGEMENT AND CONSERVATION OF SOUTH AFRICA’S BIODIVERSITY WITHIN THE FRAMEWORK OF NEMA

| CHAPTER 4                                                                 | Provides for the protection of species that are threatened or in need of national protection to ensure their survival in the wild;  
|                                                                          | o to give effect to the Republic’s obligations under international agreements regulating international trade in specimens of endangered species; and  
|                                                                          | o ensure that the commercial utilization of biodiversity is managed in an ecologically sustainable way.  
| CHAPTER 5 (Part 2)                                                       | A person who is the owner of land on which a listed invasive species occurs must:  
| Section 73                                                               | a) notify any relevant competent authority, in writing, of the listed invasive species occurring on that land;  
|                                                                          | b) take steps to control and eradicate the listed invasive species and to prevent it from spreading; and  
|                                                                          | c) take all required steps to prevent or minimise harm to biodiversity.  
| Section 75                                                               | • Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs.  
|                                                                          | • Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.  
|                                                                          | • The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and regrowth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.  

The objectives of this Act are to provide, within the framework of the National Environmental Management Act, for:

- The management and conservation of biological diversity within the Republic;
- The use of indigenous biological resources in a sustainable manner.

The Act’s permit system is further regulated in the Act’s Threatened or Protected Species Regulations, which were promulgated in February 2007.

Relevance to the proposed pipeline route:
- The proposed development must conserve endangered ecosystems and protect and promote biodiversity;
- Must assess the impacts of the proposed development on endangered ecosystems;
- No protected species may be removed or damaged without a permit;
- The proposed site must be cleared of alien vegetation using appropriate means

3.4 The National Forests Act (84 of 1998)

The objective of this Act is to monitor and manage the sustainable use of forests. In terms of Section 12 (1) (d) of this Act and GN No. 1012 (promulgated under the National Forests Act), no person may, except under licence:

- Cut, disturb, damage or destroy a protected tree; or
- Possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree.
Relevance to the proposed pipeline route:

- If any protected trees in terms of this Act occur on site, the developer will require a licence from the DWAF to perform any of the above-listed activities.

3.5 National Heritage Resources Act (25 of 1999)

The protection of archaeological and paleontological resources is the responsibility of a provincial heritage resources authority and all archaeological objects, paleontological material and meteorites are the property of the State. "Any person who discovers archaeological or paleontological objects or material or a meteorite in the course of development must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority".

Relevance to the proposed pipeline route:

- An archaeological impact assessment must be undertaken during the detailed EIR phase of the proposed project.
- No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority.
- No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter or deface archaeological or historically significant sites.

3.6 Atmospheric Pollution Prevention Act 45 of 1965

This Act is currently the central legislation for the prevention of air pollution. Part IV deals with dust control – “Whenever dust originating on any land in a dust controlled area is causing a nuisance to persons residing or present in the vicinity of that land, the owner or occupier may be required to take the prescribed steps or adopt the “best practicable means” for the abatement of the dust”.

Relevance to the proposed pipeline route:

- The “best practicable means” for the abatement of dust during construction if approved have to be taken.
- All appliances used for preventing or reducing to a minimum the escape into the atmosphere of noxious or offensive gases have to be properly operated and maintained and the best practice means for achieving this implemented.

3.7 National Environmental Management: Air Quality Act (39 of 2004)

As with the Atmospheric Pollution Prevention Act 45 of 1965, the objective of the new Air Quality Act is to protect the environment by providing the necessary legislation for the prevention of air pollution.

3.8 Occupational Health and Safety Act (85 of 1993)

The objective of this Act is to provide for the health and safety of persons at work (See Box 5 below). In addition, the Act requires that, “as far as reasonably practicable, employers must ensure that their activities do not expose non-employees to health hazards” (Glazewski, 2005: 575). The importance of the Act lies in its numerous regulations, many of which will be relevant to the proposed development. These cover, among other issues, noise and lighting.
Relevance to the proposed pipeline route:

- The developer must be mindful of the principles and broad liability and implications contained in the OHSA and mitigate any potential impacts.

**BOX 5: HEALTH AND SAFETY OF PERSONS AT WORK ACCORDING TO THE OCCUPATIONAL HEALTH AND SAFETY ACT**

<table>
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<tr>
<th>8: GENERAL DUTIES OF THE EMPLOYERS TO THEIR EMPLOYEES</th>
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<tr>
<td>(1) Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.</td>
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<td>(2) Without derogating from the generality of an employer's duties under subsection (1), the matters to which those duties refer include in particular:</td>
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<tr>
<td>a) The provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to health;</td>
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<tr>
<td>b) Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment;</td>
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<tr>
<td>d) Establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;</td>
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<tr>
<td>e) Providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees;</td>
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<tr>
<td>f) As far as is reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in paragraphs (b) and (d), or any other precautionary measures which may be prescribed, have been taken;</td>
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<tr>
<td>g) Taking all necessary measures to ensure that the requirements of this Act are complied with by every person in his employment or on premises under his control where plant or machinery is used;</td>
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<td>h) Ensuring that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and authority as contemplated in Section 37 (1) (b).</td>
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<tr>
<th>14: GENERAL DUTIES OF EMPLOYEES AT WORK</th>
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<td>Every employee shall at work:-</td>
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<td>(a) Take reasonable care for the health and safety of himself and of other persons who may be affected by his acts or omissions;</td>
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<tr>
<td>(b) As regards any duty or requirement imposed on his employer or any other person by this Act, cooperate with such employer or person to enable that duty or requirement to be performed or complied with;</td>
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<tr>
<td>(c) Carry out any lawful order given to him, and obey the health and safety rules and procedures laid down by his employer or by anyone authorized thereto by his employer, in the interest of health or safety;</td>
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<td>(d) If any situation which is unsafe or unhealthy comes to his attention, as soon as practicable report such situation to his employer or to the health and safety representative for his workplace or section thereof, as the case may be, who shall report it to the employer; and</td>
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<tr>
<td>(e) If he is involved in any incident which may affect his health or which has caused an injury to himself, report such incident to his employer or to anyone authorized thereto by the employer, or to his health and safety representative, as soon as practicable but not later than the end of the particular shift during which the incident occurred, unless the circumstances were such that the reporting of the incident was not possible, in which case he shall report the incident as soon as practicable thereafter.</td>
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<th>15: DUTY NOT TO INTERFERE WITH, DAMAGE OR MISUSE THINGS</th>
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<td>[S. 15 substituted by S. 3 of Act No. 181 of 1993.]</td>
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<tr>
<td>No person shall intentionally or recklessly interfere with, damage or misuse anything which is provided in the interest of health or safety.</td>
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3.9 National Water Act (36 of 1998)

The Act regulates the protection, use, development, conservation, management and control of water resources in South Africa. The principal concerns in terms of the Act are the potential for the proposed development to pollute surface and groundwater resources, and to ensure that water is used as efficiently as possible.

The Act also stipulates that wetlands and estuaries are extremely sensitive environments and as such, the section 21(c) and (i) water use General Authorisation does not apply to:

- Any wetland or any water resource within a distance of 500 meters upstream or downstream from the boundary of any wetland; and
- Any estuary or any water resource within a distance of 500 meters upstream or downstream from the salt mixing zone of any estuary.

Since the proposed pipeline will cross various streams and wetlands a Water Use License is required.

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<th>Relevance to the proposed pipeline route:</th>
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<td>19 (1) An owner of land, a person in control of land or a person who occupies or uses the land on which— (a) any activity or process is or was performed or undertaken; or (b) any other situation exists, which causes, has caused or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.</td>
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3.10 Hazardous Substances Act (15 of 1973)

The Act aims to manage hazardous substances. It is the principal national legislation that controls the transportation, and manufacturing, storage, handling, treatment or processing facilities for any substance that is dangerous or hazardous (Groups I-IV). Specific regulations governing the conveyance of hazardous substances, including Group I substances, by road may also be relevant.

<table>
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<th>Relevance to the proposed pipeline route:</th>
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<td>- Manage the hazardous waste in such a manner that it does not endanger human health or the environment.</td>
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<td>- Prevent the waste from being used for an unauthorised purpose.</td>
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3.11 The Environment Conservation Act (73 of 1989)

The purpose of this Act is to provide for the effective protection and controlled utilization of the natural environment governed by the following regulations:

Protection of the natural environment:

- An area can be declared by a competent authority to be a protected natural environment.
- Every owner/holder of land situated within a declared protected natural environment shall comply with directions issued by the competent authority.

Control of activities which may have a detrimental effect on the environment

- No person shall undertake an activity or cause an activity which may have a detrimental effect on the environment without written consent from the competent authority
- Such land activities include:
  - Land use and transformation;
  - Water use and disposal;