water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

aurecon

MINUTES OF MEETING

Algoa WSS Reconciliation Strategy Continuation: Meeting 11 of the Administrative and Technical Support Group held on Wednesday 15 August 2018 at 09h00 at the Aurecon Offices in Port Elizabeth

Item			Action
1.	**WELCOME AND CONSTITUTION OF MEETING** WELCOME Mr Paul Chilton, welcomed everybody to the meeting of the Administrative and Technical Support Group (ATSG) of the Algoa Water Supply System Reconciliation Strategy Continuation, on behalf of Mr Tendayi Makombe who was unable to attend the meeting due to budget constraints in the Department of Water and Sanitation.		
2.	**ATTENDANCE AND APOLOGIES** **Attendance**		
	Paul Chilton	DWS: CE: Proto CMA CM (Chair)	PC
	Andrew Lucas	DWS ECape: Water Regulation and Use	AL
	Bheki Kunene	DWS ECape: Proto-CMA	BK
	Cebisa Goboza	DWS: NWRI	CG
	Glen Daniell	DWS: Infrastructure Operations	GD
	Vhuthu Tshishonge	DWS: WIM (IE)	VT
	Graham Taylor	Coega SEZ	GT
	Jeff Govender	DEDEAT	JG
	Andreas Engelbrecht	GFRWUA	AE
	Martin Labuschagne	DWS ECape: WR&U-Manager Sarah Baartman DM	ML
	Mike Primmer	LSRWUA	MP
	Nick Chapman	VWSA – Business Chamber	NC
	Nico Lombard	Cacadu District Development Agency	NL
	Paul du Plessis	NMBM	PdP
	Pierre Joubert	Gamtoos IB	PJ
	Rienette Colesky	Gamtoos IB	RC
	Thelani Grant	Living Lands	TG
	Victor Felton	Kouga LM	VF
	Kevin McRae	AfriCoast	KM
	Erik van der Berg	Aurecon	EvdB
	Reina Zastron	Aurecon	RZ
	Apologies		
	Barry Martin	NMBM	BM
	Jacques van der Merwe	DWS EC	JvdM

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	Jenny Pashkin	DWS: D: WRPS Systems Operation	JP
	Liz Metcalfe	Living Lands	LM
	Menard Mugumo	DWS: D: OA CE: South	MM
	Pieter Viljoen	DWS: WRPS	PV
	Sieg Rousseau	Amatola Water	SR
	Tendayi Makombe	DWS: NWRP PE (South)	TMa
	Tony Moore	DWS: D: OA CE	TMo
	Eddie Oosthuizen	Kouga LM	EO
3.	**ADOPTION OF AGENDA** The agenda was adopted with one addition: 16.1 (under General) Ad Hoc Studies An ATSG pre-meeting was held in Pretoria between the PSP and DWS head office officials. Where necessary, EvdB will provide feedback from notes taken during the meeting.		
4	**APPROVAL OF PREVIOUS MINUTES** The minutes of the meeting held on 9 May 2018 were accepted with the following changes: Page 4 Item 6.3 (last paragraph): **Action** Jannie Fourie (and not JP) Page 5 Item 7.1: 'Status report ~~7~~ **5**' Page 6 Item 9.2: 'An EIA for a ~~16~~ **60**Mℓ desalination scheme has been approved. '		
5	**MATTERS ARISING FROM PREVIOUS MINUTES** Item 12.7 NMBM Coega Kop implementation: 'RM stated that, to know more about the yield, quality etc. of the Coega Kop groundwater scheme, he would like to test-pump the water for a significant time. He wanted to route the water through the storm water canals into the Swartkops River. The legality and approvals needed to do this need to be determined by DWS, CDC, NMBM and DEDEAT, who agreed to address this.' This issue is still not resolved. AL indicated that the water must be used in this drought-stricken time. GT mentioned that the water could possibly go into the Coega SEZ attenuation pond to be used for construction, etc. EvdB will ask Marius van Jaarsveld and Ricky Murray to investigate and propose a solution.		EvdB/ MvJ/ RM
6. **6.1**	**RELEVANT PROJECTS AND INITIATIVES UNDERTAKEN BY OTHER RESPONSIBLE ENTITIES** **AWSS Annual Operating Rules** EvdB did a presentation on behalf of JP who was unable to attend the meeting. The following was reported: The System Operating Forum meeting for 2018-2019 cycle was held on 14 June 2018. Overall, 30% restrictions have been agreed to be imposed on the NMBM from 1 June 2018. The restrictions are in terms of the estimated unrestricted projected consumption		

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	of 123.36 million m³/a (330 Ml/day) for the Metro,therefore if you apply the 30% the restricted projected consumption will be 86 million m³/a (230 Ml/day). NMBM can only abstract a raw water volume of 35.9 million m³/a (97 Ml/d) from the Kromme, Kouga and Groendal sub-systems (local resources). To make up the deficit in the amount of water needed within the Metro a minimum of 50 million m³/a (135 Mℓ/d) should be supplied to the NMBM from the Sundays River sub-system to reach a total net supply of 86 million m³/a (230 Ml/day). For the Gamtoos Irrigation Board, 80% restrictions will be imposed in terms of the existing lawful allocation of 60.3 million m³/a. The GIB will be allowed a total abstraction of 16.6 million m³/a. This includes losses of ± 4.5 million m³/a. If the losses are higher the actual use should reduce to accordingly. At the pre-meeting in Pretoria, FF proposed that other DWS role players, e.g. Infrastructure (regional and national) be involved with the drought situation. JP mentioned that the restrictions are in the approval phase but have not yet been gazetted. AL mentioned that going forward, farmers will also attend the drought monitoring meeting. NMBM was asked to ensure that Loerie Dam does not increase above 85% during the drought period.	
6.2	**Orange River Annual Operating Rules** JP indicated at the pre-meeting that the rules are not yet finalised, but no restrictions are envisaged. AL indicated that the restrictions will be gazetted after the meeting with the upstream farmers on 16 August.	
6.3	**OFS Real-time Model** At the pre-meeting held, Kevin Greaves of reported that the operations user group of the Algoa WSS had requested that more information on the efficiency of water transfers be included in the monthly report. This required the updating of reporting templates in the OFS operational model to report on distribution efficiency of the OFS water transfer scheme. Undertaken as an *ad-hoc* task, this has been nearly completed, with the only part being the training of DWS staff in Pretoria on the extraction of template reports from the OFS operational model. EvdB noted that a significant volume of water can be saved on an ongoing basis by knowledgeable staff applying the operational model.	
6.4	**Verification and Validation (V&V)** PC reported that not all required work has been completed. DWS staff has taken over the outstanding work to complete. Many appeals have been received, and the water tribunal has asked the regional office to deal with appeals, to try to reduce the number of appeals to be dealt with by the tribunal. PV also indicated that the DWS is making progress with the finalisation of the outstanding properties.	
6.5	**Working for Water and Working for Wetlands** GIB reported that the Department of Environmental Affairs has recently renewed their contract for the Working For programmes with GIB. Work will start soon in the catchment of the Kouga and Kromme rivers. A budget of R11 million is available for the current year to do clearing of invasive alien plants. It is of concern to the Implementing	

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	Agent that the legal process of handing back land to landowners after sufficient clearing has been done, does not appear to be effective. The consequence of this is that funding is tied up in following-up on regrowth and a limited amount of funding is available to clear additional infested areas. RC said that the National Environmental Management: Biodiversity Act, 2014 (NEMBA) regulates alien invasive growth on land. Enforcement of the act is however somewhat problematic.	
6.6	**Projects undertaken by Living Lands** TG did a presentation on the LL initiatives. She reported that, in April this year stakeholders from the Langkloof, involved in Honeybush, embarked on a Honeybush Sensing Journey to the Overberg. Cultivation methods were investigated, and sustainable wild harvesting of fynbos was discussed. From this Sensing Journey it became apparent that there is an opportunity for the formation of a collective that could support both cultivation of Honeybush as well as the sustainable management of wild resources. LL is currently involved in Honeybush resource assessments on various farms, and information such as the number of alien invasive seedlings in assessment transects are recorded and could eventually feed into AIS and Farm Management Plans. LL is also involved in the formal Honeybush structures, such as the Honeybush Community of Practice and the South African Honeybush Tea Association. The establishment of a Water Fund for Algoa Bay has been promoted. A Water Fund is a platform which brings upstream and downstream stakeholders together around the main goal of securing water by investing in ecological infrastructure. This platform enables strategic planning and the distribution of funds, the governance of natural resources and the coordination of activities in catchments. The Water Fund could support the Algoa Reconciliation Strategy by giving feedback from the landscape and serving as a link between upstream and downstream stakeholders and activities. Engagements on the Water Fund has been ongoing with various entities, such as NMBM, DWS, National Resource Management, GIB, Coca-Cola Company, GIZ, Santam, The Nature Conservancy, Woodlands Dairy, Eastern Cape Parks and Tourism Agency, Conservation Outcomes, DEDEAT, SAEON, as well as with individuals. The Water Fund has a steering committee that focuses on strategic long-term planning and resource allocation, while a working group provides technical expertise that guides the practical implementation in the catchment. PC indicated that the DWS still needs the approval of their Chief Director of their attendance of the water board meetings.	PC
6.7	**Ongoing Coega SEZ Initiatives** GT reported that there is a new incentive to business to move their activities to the SEZ, to qualify for income tax savings. He mentioned that the 60Mℓ reservoir's planned completion date is 11 December 2018. The reservoir will initially be used for potable water as there is not yet currently a need for the use of return effluent. No new water users have been signed up. The question of whether the Coega SEZ should become a water service provider is still on the table.	

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7	**STATUS REPORT**	
7.1	**Progress Report (Status Report 6)** EvdB presented the draft status report and gave a summary of the feasibility evaluation of additional balancing storage in the LSRGWS, as well as the WUE assessment undertaken for the Fish and Sundays catchments. <u>Additional balancing storage in the LSRGWS</u> The preliminary screening, costing and comparison of potential dams site for a 4.6 million m^3 balancing dam was undertaken, with the recommended site being the Lower Coerney Dam site, located near the existing Scheepersvlakte Dam, notably because no pumping is required, and the dam is the cheapest. An alternative site is the Upper Scheepersvlakte site, located just upstream of the existing dam. Both these potential dams are located on private land with irrigation development planned to get underway during late 2018. Integration with the existing gravity pipeline to Nooitgedagt WTW can easily be achieved for both dams. The dams have been sized for the combined NMBM balancing capacity of 4 410 Mℓ (21 days balancing storage) plus the farmer's required irrigation capacity (~ 180 Mℓ, one week of storage). Geotechnical investigations are underway at the two sites, with core drilling still to be done. A draft EIA scope of work, with explanatory notes, have been provided to DWS. Topographical site surveys have been done at both dam sites, with a small additional survey to be done soon. A flood assessment is planned for the Lower Coerney Dam, as well as an ecological Reserve determination. <u>Water Use Efficiency assessment - Fish and Sundays rivers catchments</u> This component of the project has been completed, with an initial identified saving of 89 million m^3/a. The conclusions of the project are: • No savings are foreseen from WC/WDM at small towns or from the diversion at Hermanuskraal Weir to Makana Municipality and the Tyhefu Irrigation Scheme. • Avoid future under-utilisation of water from emerging farmers allocations, by learning from proven, sustainable emerging-farmer developments, to ensure the best future possible chance of success, to avoid unused allocations. • Phased implementation of recommended efficiency interventions. • Continuously monitor actual water savings realized and adjust savings targets. <u>Status Report 6</u> EvdB presented the water availability, water requirements, interventions and scenario planning. All information presented is in the status report which would be distributed within a few weeks after the meeting. The presentation is also available and can be requested from RZ. It was emphasized that the 2017/18 historical water use value is NOT used as the starting point for scenario planning, because: • 2017/18 historical value reflects restricted use of the Algoa WSS during a significant drought. • Using this value as the starting point for scenario planning will lead to under-estimation of the interventions needed to ensure a long-term water balance.	

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	• Water use typically returns to pre-drought levels within a year or two unless some drought WC/WDM measures are kept in place. The theoretical 2017/18 starting value used for scenario evaluation corresponds closely with the 2017/18 trendline value of water historical use: • The 2017/18 actual (restricted use) water use was 139.1 million m^3/a. • The 2017/18 scenario starting value is 169.4 million m^3/a. EvdB explained that some changes were made to scenarios previously used. Seven scenarios have been developed. EvdB explained that climate change forms part of the worst-case scenario, but that this has always been simplistically done in the past, by reducing the system yield over the evaluation period. EvdB will liaise with the DWS Directorate Climate Change before the SSC meeting in September, with the aim of obtaining improved information on climate change, which can be used for scenario planning. A short study on climate change can be considered as an *ad-hoc* task. The following conclusions were made from scenario planning: • Current water shortages are caused by drought. • Delayed funding of infrastructure, procurement and implementation leads to risks of not meeting water requirements. • Water efficiency measures and behaviour should be made more permanent. • Effective WC/WDM is essential for NMBM and Kouga LM. • Complete NLLS Phase 3 and remove bottlenecks in delivery. • Planning of interventions should proceed due to long implementation lead times and uncertainty in terms of growth in water requirements. • Groundwater schemes should be pursued by NMBM and Kouga LM (and already forms part of their drought actions). • Kouga LM is aiming to become more self-sufficient. BK asked EvdB for information on the quality and turbidity of water transferred to Grahamstown. RZ will send the project's sub-report addressing the efficiency of this transfer sub-system (*Evaluation of Water Supply to Makana and the Tyhefu Irrigation Scheme* Report) to BK, as well as the design report for Phase 2 of the James Kleynhans WTW. ML indicated that due to budget constraints, Nooitgedagt WTW's completion date will move out. AL asked that the status report be updated to indicate what volume / percentage NMBM has received from the Nooitgedagt WTW. VF confirmed that the growth of the Kouga LM is 2.3%. JG mentioned that DEDEAT had received an EIA application for a desalination plant from the seven smaller municipalities. ML suggested that a scenario be developed that shows the situation if the licence for allocation of Orange River water is revoked. This possible scenario should include the fact that the beneficiaries of such water (assumed to be the Gauteng province) must assist the financing of a desalination plant. This could also be incorporated in the	EvdB EvdB RZ EvdB EvdB

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	worst-case scenario. Another possible scenario will be a case of permanent water restrictions. Income from financial penalties could then be used for WC/WDM interventions.	EvdB
8 **8.1**	**OPERATIONAL EFFICIENCY** **Darlington Dam operating capacity and dam safety rehabilitation programme** EvdB indicated that Aurecon, upon request, submitted a proposal for the *ad-hoc* determination of increased yield when raising the dam. At the pre-meeting MM indicated that this was no longer required. After the ATSG meeting, the Project Manager indicated that this ad-hoc task is still required, and the best option is to pay for this task from savings on the Algoa Recon study. Approval for the task is required from the Director: NWRP.	
8.2	**Report back Additional Balancing Storage in the LSRGWS** Reported under 7.1.	
9 **9.1** **9.2** **9.3**	**WATER REQUIREMENTS AND USE** **NMBM water requirements and use** PdP reported that the average use for July was 263Ml/day. The average August use up to 14 August is 258Ml/day. **Coega SEZ water requirements** GT indicated that there is still no change in the water requirements of the Coega SEZ. There are no new investors. The possible move of the manganese stockpile to the Coega SEZ is scheduled for 2023 at the earliest. **Kouga LM water requirements** VF reported that water shedding has been implemented at Hankie and Patensie. Kouga Municipality is receiving water from various entities e.g. Gift of the Givers, Dischem, etc. Kouga Municipality plans to equip a borehole in Hankie. The water will be blended to enhance the quality. He mentioned that desalination is not viable to supply towns in the Gamtoos valley as it is not close enough to the sea. VF indicated that water infrastructure in the Kouga LM is not adequate to meet the demand.	
10 **10.1**	**IMPROVING THE CONFIDENCE OF WATER AVAILABILITY** **Proposed water availability assessment study – Kromme and Kouga rivers** EvdB reported on behalf of TMa, that the study was submitted as a priority study which should start as soon as funding becomes available. As all DWS procurement has currently been stopped, the study cannot go ahead at this stage.	
11	**WC/WDM Report on progress of other municipalities** No discussion.	
12 **12.1**	**REPORT BACK BY NMBM** **NMBM drought measures and progress with implementation** Water use in the Metro reduced from 340Mℓ/day to an average use of 263Mℓ/day in July. No further discussion.	

12.2 WC/WDM

PdP reported that flow limiter meters were installed and activated at 75 high users. 64 000 flow limiter meters were installed at low income users, but the activation is outstanding.

12.3 Report on progress with WUE in schools

Flow limiter meters were installed and activated at 43 schools, but lack of funding prevents NMBM from installing more. PM indicated at the drought meeting on 16 August that she will set up a meeting with the Department of Education in Bisho to discuss wastage of water at schools as well as the way forward (information received and included after the meeting). — PM

12.4 Nooitgedagt Low-Level Scheme: Implementation and Financing

ML reported that the contractor has not been paid and left site at the beginning of August. Payment should be made by the end of the week and the contractor should be back on site on 20 August. A realistic completion date of the project is now 2021. The non-payment is of concern as the contractor will have to be paid for standing time which could be deemed fruitless and wasteful expenditure (approximately R5 million per month). The contractor could also opt to terminate the contract.

12.5 Desalination of Sundays River irrigation return flows

EvdB noted that it had been proposed by NMBM that a pre-feasibility study be undertaken by DWS, for the NMBM to take this intervention further. This has also been included on the list of potential *ad-hoc* investigations.

12.6 Re-use of water treated to industrial standards – Fishwater Flats and Coega WWTWs

The scheme will not be developed further until there is sufficient demand from the Coega SEZ. No further discussion.

12.7 NMBM Coega Kop implementation

Aurecon received a progress report from Dr Ricky Murray (RM) from Groundwater Africa indicating progress with groundwater exploration and drilling. The information has been included in the status report.

<u>NMBM Drilling progress to date</u> (mid-August 2018):

Area	Aquifer	Progress
Wellfields		
Coega Kop	Coega Fault - TMG	Exploration boreholes mostly complete; 1st production borehole currently being drilled.
Uitenhage	Coega Fault -TMG	Geophysics complete; exploration borehole drilling to start soon (after procurement).
Churchill Dam (NMBM property)	Folded TMG	Phase 1 exploration boreholes mostly complete (put on hold) – to resume soon; Phase 2 geophysics complete; exploration borehole drilling to start soon (after procurement).
Bushy Park (West)	TMG	Geophysics complete; exploration borehole drilling to start soon (after procurement).
Moregrove	Moregrove Fault - TMG	Geophysics complete; some exploration borehole drilling complete, to resume soon (after procurement).
Individual Boreholes		
Individual Boreholes	Mostly TMG	No exploration boreholes; some potential production borehole complete, to resume soon (after procurement).

<u>Estimated groundwater yields</u>

The potential yield resulting from the currently-planned drilling is ~51 Ml/day or ~18.5

million m^3/a. If the NMBM includes ~6 production boreholes outside their Churchill Dam property, adjacent to the Churchill Dam pipeline, this could potentially increase to ~55 Ml/day or ~20 million m^3/a. These yields are estimates based on drilling results thus far and at this stage should be considered only as a rough guide for planning purposes.

12.8 Other groundwater studies

The following progress was reported by RM:

A table of Kouga Municipality drilling undertaken in 2017/2018 is indicated below.

Towns	Aquifer	Progress
Oyster Bay	TMG	3 boreholes were drilled and 2 were equipped to meet the December 2017 deadline. Water tinkering was stopped.
Jeffreys Bay	Folded TMG	2 boreholes were drilled and 1 existing borehole test pumped. None were equipped.
Humansdorp	Folded TMG	2 boreholes were drilled and 1 existing borehole test pumped and equipped.
Hankey	Folded TMG	4 exploration boreholes and 1 production borehole were drilled. The production borehole was also test pumped. The target area was ~10 km wet of Hankey on Kouga Municipality land. The yields and water quality around Hankey was considered to be unsuitable for domestic consumption.
Patensie/ Andrieskraal	TMG	4 production boreholes were drilled and test pumped on DWS-owned land at Kouga Dam. The yields and water quality around Patensie and Andrieskraal were considered to be unsuitable for domestic consumption.

Estimated groundwater yields

The table below provides estimates of the additional borehole requirements, to meet each town's current water requirements, and to be totally reliant on groundwater supply. Please note that the current demand and supply for the listed towns was provided by staff from the municipality

Town	Approximate current demand (Ml/day)	Approximate supply from dams (eg Churchill, Impofu, Kouga, Lourie) (Ml/day)	Approximate current supply from boreholes & springs (Ml/day)	Additional potential from new & existing unused boreholes (Ml/day)	Additional groundwater requirement to meet demand or stop reliance on dam/surface water (Ml/day)
Oyster Bay	0.5 - 0.6	0	0.53	0	0.1
Jeffreys Bay	11	7.4	3.6	1.2	6.2
Humansdorp	7.5	4.7	2.8	0.8	3.9
Hankey	2	2	0	0.9	1.1
Patensie/ Andrieskraal	1.3	1.3	0	0.5	0.8
Total	**22.3**	**15.4**	**6.9**	**3.4**	**12.1**

EvdB noted that existing yields have been used in the status report, as the revised yields were not yet clear enough.

12.9 NMBM 60Ml/day Desalination Scheme

Nothing to report as this is a possible future scheme.

12.10 Marina Sea Salt desalination

Nothing to discuss as there is no further development.

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13	**LOCAL SURFACE WATER DEVELOPMENT**	
13.1	**Kouga Dam 'raising' and Guernakop Dam** EvdB reported that several interventions were identified in the Algoa Reconciliation Strategy (2009), including the options to replace/raise the existing Kouga Dam and the option to construct the Guernakop Dam upstream on the Kouga River. Since then some refinements of these options have been done, to a limited extent. There is a need to re-assess the situation with regard to these potential dams and to refine the cost estimate of potential dams in the Kouga River, especially for comparison with seawater desalination as a longer-term reconciliation option. TMa asked EvdB to provide a quote for this evaluation.	EvdB
14	**IMPACT ON YIELDS OF EXISTING DAMS: ECOLOGICAL RESERVE & CLIMATE CHANGE**	
14.1	**Implementing the Reserve for existing dams** No discussion.	
15	**COMMUNICATION**	
15.1	**News Release** The News Release will be released after the completion of the Status Report in September 2018.	
15.2	**Webpage Update** As there is currently no webmaster at DWS for the update of the project webpage, the project data will be provided to the DWS Project Manager, who will establish who will update the webpage.	RZ
16	**GENERAL**	
16.1	**Ad-hoc studies** It was reported that there is expected to be between R2 million and R2.5 million saving on the lump sums provided for the study. The money could potentially be utilised for relevant, important smaller tasks relevant to the AWSS. The following ad-hoc tasks can be considered: • Algoa Annual Operating Analysis 2017-18 (complete). • Operational model improvement (approved and on-going). • Posters for Capacity Building (not approved). • Kouga River dams evaluation (estimate to be provided). • Darlington Dam raising (still to be considered). • Lower Sundays Return Flows Scheme (high priority, no proposal provided yet). • Algoa Annual Operating Analysis 2018-19 (complete). • Algoa WSS climate change assessment (to assess and potentially provide an estimate if needed). • Imagery and farm dam identification (estimate to be provided). RZ distributed the developed list to all members. Comments from the team are awaited.	All

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16.2	**Numbering of deliverables** At the pre-meeting, TMa asked the PSP to align the numbering of the minutes with the contract.	RZ
17.	**NEXT MEETINGS** The dates of the next meetings are given below. • SSC Meeting: Wednesday, 26 September 2018 @ 09h00 • SMM (Feasibility) Meeting: Tuesday, 9 October 2018 @ 14h00 • ATSG Meeting: Wednesday, 10 October 2018 @ 09h00 The meeting dates of the SMM and ATSG meetings still need to be confirmed.	
18.	**CLOSURE** PC closed the meeting at 14h30 and thanked the members for their attendance and informed inputs.	

APPROVAL OF MINUTES:

Project Manager: Mr T Makombe (DWS) Signed: _____ Date: _____

Study Leader: Mr E vd Berg (Aurecon) Signed: _____ Date: _____