

JAMES KLEYNHANS BULK WATER SUPPLY

Date: 1 November 2022



Amatola
Water · Amanzi

bringing water to life

PRESENTED BY:

S. Koyo

(Executive Manager: P&D)

Contents

- Background
- Overview of current water resources at Makhanda
- James Kleynhans Bulk Water Supply
- Site Master Plan
- Procurement
- Project Challenges and Remedial Action
- Conclusion



Amatola
Water • Amanzi

bringing water to life

Overview of current water supply at Makhanda (1)

- Makhanda Local Municipality has two independent raw water sources for its bulk water storage and water treatment known as the (a) Waainek or Western system and the (b) James Kleynhans (JKHWTW) or Eastern system.
- The two systems are interconnected to allow transfer of water between these two systems enabling the municipality to meet the current demand of 16-18 ML/d. However, due to current operational challenges on the western system, the LM has to rely on the JKHWTW or eastern side.
- This means water-shedding is inevitable as such reservoirs are allowed to fill and distributed every second day
- **The Western/Waainek System:** The water is treated at the Waainek Water Treatment Works (WTW's) and the capacity of this plant is 8 Ml/day.
- This WTW mainly serves the town area (including surrounding private schools, prison, hospitals and Rhodes University – mainly high lying areas) and is getting water from the Settlers and Howison's Poort dams.
- Unfortunately the Waainek WTW's have not been operating at its full capacity due to the severe drought which has been experienced over the last few years and current pipeburst



Amatola
Water • Amanzi

bringing water to life

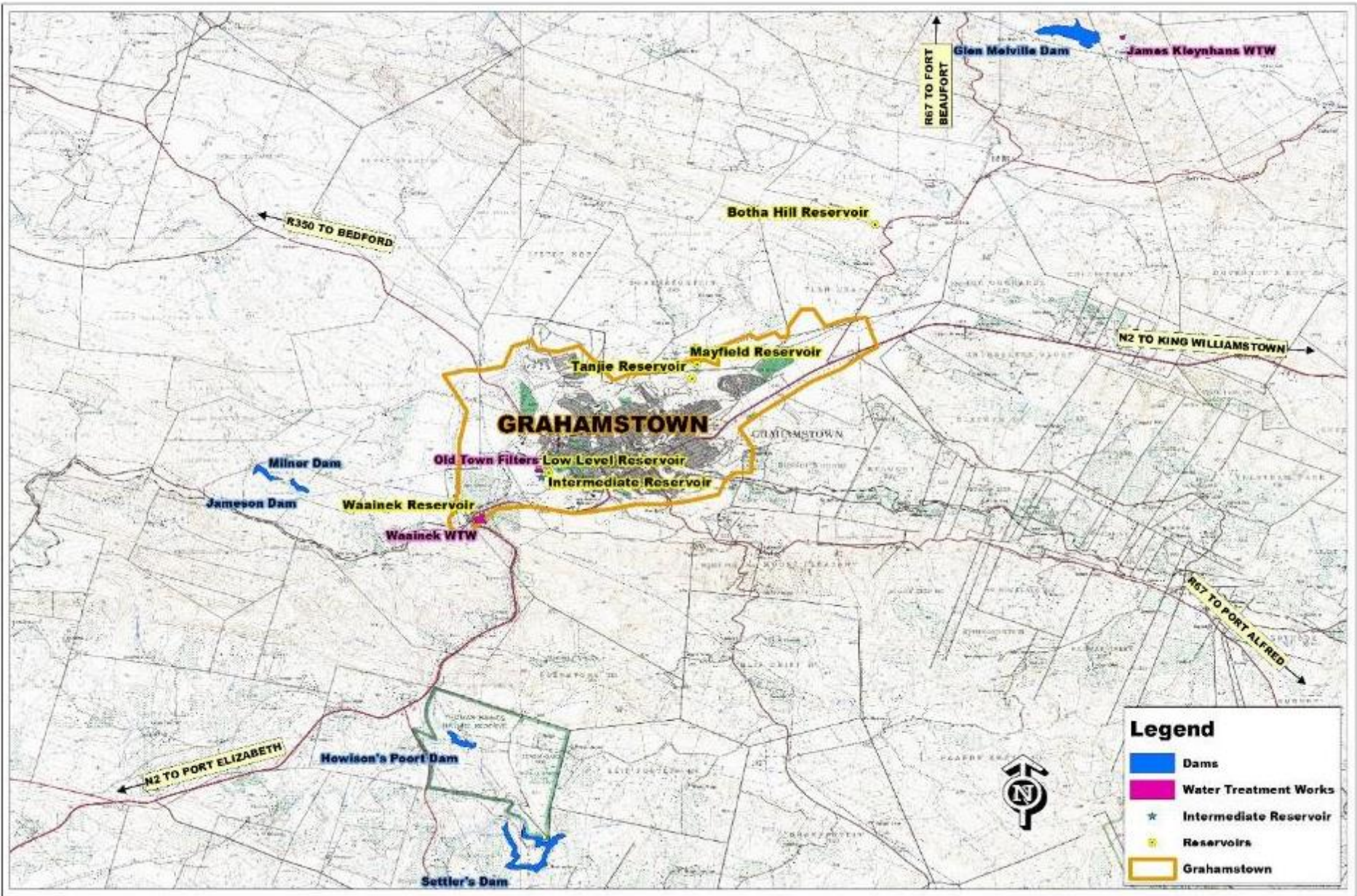
Overview of current water supply at Makhanda (2)

- The Eastern/James Kleynhans System : The Eastern side system is not affected by the current drought as it is supplied from the Lower Orange-Fish Government Water Scheme through various canal and river systems and stored at Glen Melville Dam which feeds the James Kleynhans Water Treatment Works (JKWTW) which mainly serves the township.
- The JKWTW is a 10Mℓ/day plant, but due to the shortage of treated water on the Western side, Makana LM had to push the treatment capacity of the plant to between 10 and 13Mℓ/day as to transfer water to the Eastern side of Makhanda.
- The JKWTW is being upgraded to provide 20 Mℓ/day treated water. This project is being funded by the Department of Water and Sanitation through the Regional Bulk Infrastructure (RBIG) programme at a total cost of R237,5mil and Amatola Water board is the Implementing Agent



Amatola
Water • Amanzi

bringing water to life



Legend

- Dams
- Water Treatment Works
- Intermediate Reservoir
- Reservoirs
- Grahamstown



bringing water to life

James Kleinhans BWS: background (1)

- Bosch Projects was appointed by Makana Local Municipality, in a letter dated 18 September 2013, as the service provider for the Upgrading of the Bulk Water Supply for James Kleynhans. The appointment involved the following;
 - Technical Feasibility
 - Preliminary Design and Research
 - Implementation Ready Study
 - Funding application to Regional Bulk Infrastructure Grant (RBIG)
- Approval of James Kleynhans Bulk Water Supply by DWS was on 04 March 2015.
- The project cost & funding is R101,850,000. (RBIG = R68mil, Makana LM Co-funding = R23,940mil, Shortfall on MTEF = R9,910mil)
- The project was planned for a duration of three (3) years to complete in 2018.
- Makana Local Municipality was placed under administration in terms of section 139(1)(b) in Oct 2014 until 30 March 2016.
- Amatola Water was appointed as the Implementing Agent (IA) for the James Kleynhans Bulk Water Supply (JKBWS) in a tri-partite agreement of the 29th July 2015.
- At the time, AW had been appointed to augment/upgrade/refurbish the existing 10Mℓ/day James Kleynhans WTW with an approved budget of R101,850 million.

James Kleinhans BWS: background (2)

- Due to the drought between 2011 to 2017, the JKBWS had to be upgraded from 10Mℓ/day to 20Mℓ/d. The budget was then revised to R237,6 million after additional work such as new sludge ponds, additional storage, etc. were added as to improve management, efficiencies and operations at the plant.
- This was to be funded through RBIG in a multi-year allocation in a letter dated 24 January 2019 and inclusive of all funding (no co-funding from Makana LM as RBIG will fund entire project).
- The scoping of the project has been phased into three (3) phases and the scope includes:
- Phase 1: The augmentation of the James Kleynhans WTW by the construction of sludge ponds, 2,0Mℓ Clearwater Reservoir, High-Lift Pumps, Supernatant Pump and associated pipe works.
- Phase 2: The augmentation of the James Kleynhans WTW by the construction of an additional 10 Mℓ/day WTW – with a new raw water inlet works, bunding area, flocculation channel, 2 x 5Mℓ Sedimentation Tanks, 1,0Mℓ Clear Water Reservoir, new Filter building and filtration system, backwash pumps, refurbishment of the existing 350mm diameter rising main, refurbishment of the old existing 10Mℓ/day water treatment, HV line and transformer area with associated pipe works and;
- Phase 3: The refurbishment of the old non-practical works with chambers in the 9km rising main, construction of a drainage pipework from the clear water pumpstation, perimeter fencing and site paving with landscaping and miscellaneous works.



Amatola
Water • Amanzi

bringing water to life

James Kleinhans BWS: background (3)

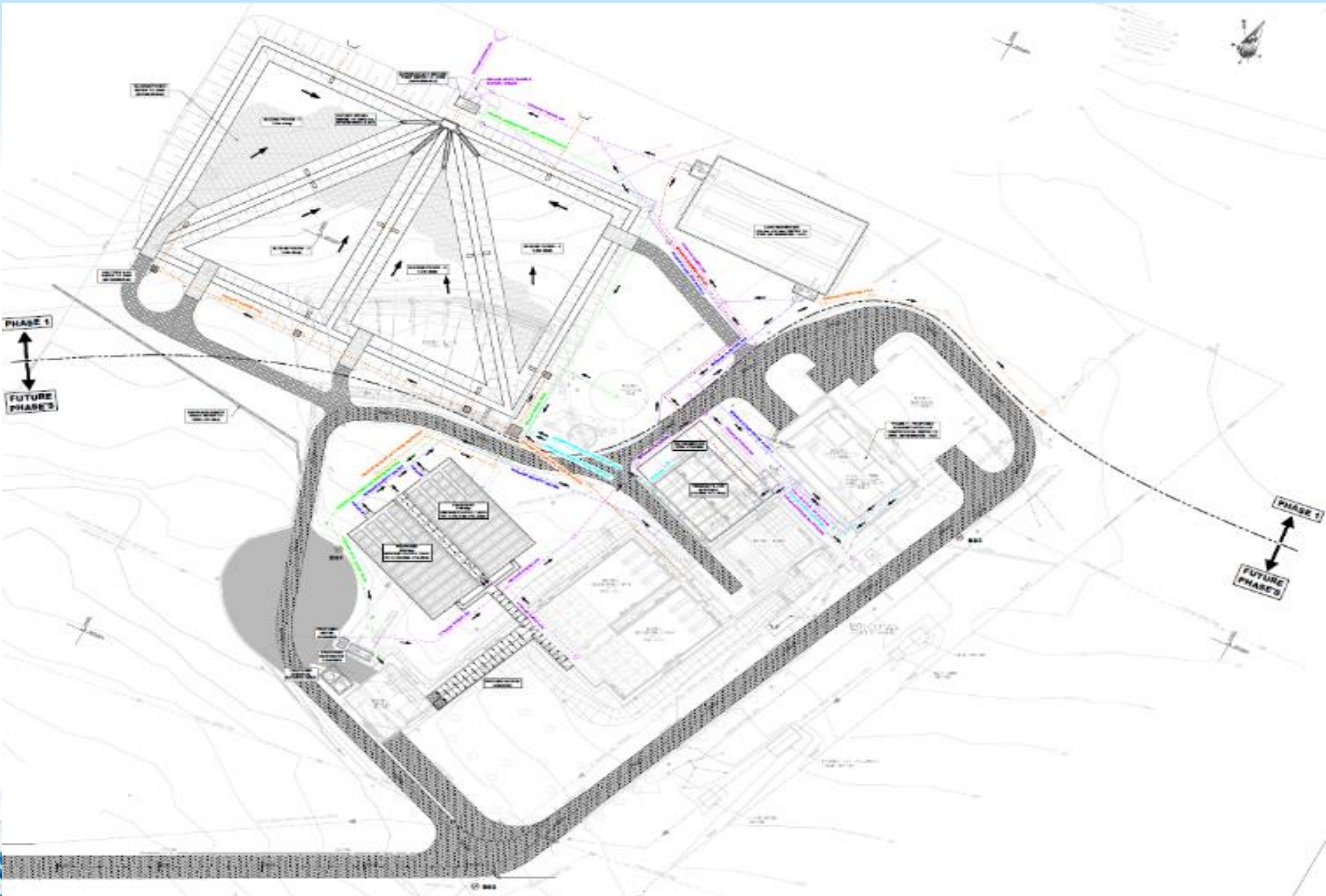
- **Progress : Phase 1 (100% complete)** The Contractor; was appointed for Phase 1 of the project on the 06th of September 2016 and later terminated due to poor performance. A replacement Contractor (Mamlambo Construction) was then appointed on the 12th of September 2018 for a period of ten (10) months and they completed Phase 1 on the 17th of September 2019 Two (2) months later than the anticipated contract duration.
- **Progress : Phase 2 (100% complete)** Mamlambo Construction was later appointed for Phase 2 of the works which entails the construction of an additional 10Mℓ/day capacity of a plant to augment the old existing plant with some additional works.



Amatola
Water • Amanzi

bringing water to life

Site Master Plan:



Overview

JAMES KLEYNHANS BULK WATER SUPPLY : PHASE 1-3

Project Description The project is divided into three (3) phases at an approved budget of R 237.6 million. Optimization of the existing Water Treatment, New additional 10ML WTW & refurbishment of the pumping main and M&E work	Progress: Phase 1 – Augmentation of James Kleynhans WTW 100% Complete Phase 2 – Augmentation of James Kleynhans WTW 82% Complete (TERMINATED) Phase 3 – Refurbishment of Old Filters & ancillary works 0% Complete
	Impact: Makanda will have adequate water supply during peak and drought conditions servicing the East and Western Makanda Zones whenever the other supply system becomes strained.
	Jobs created: 75 temporary jobs have been created for residents of Makana LM.
Duration	August 2015 - June 2024 (Phase 1, 2 & 3)
Budget	Budget Approved: R 237,6 million (Phase 1 & 2) Estimated Budget to Complete (Phase 3): R 175,4 million (estimated) presented to DWS ECTAC (Phase 3 was originally budgeted for refurbishment works that had not been clearly outlined)
Expenditure	Project Expenditure to Date: R 163 million (See Annexure B slide below) Percentage Expenditure: 69%
Municipality & Location	Eastern Cape, Sarah Baartman District Municipality, Makana Local Municipality
Challenges	<ul style="list-style-type: none">• Poor performance by the appointed Winwater and Mamlambo Construction that led to their termination.• Additional works for the drainage pipework, perimeter fencing, paving and landscaping• Cancellation of a tender process to procure services of a replacement contract for Phase 2 (advert after termination in June 2022).
Solutions	<ul style="list-style-type: none">• Re-tender process commenced with the advertisement conducted on the 06th of October 2022.• Appoint a contractor by the end November 2022 and negotiate with the successful bidder to establish and start work through the builder's shutdown.• AW presented to the DWS Eastern Cape (DWS EC) ECTAC to request an appraisal for the budget maintenance and additional funding to complete phase 3 on the 11th of October 2022. A submission to the National DWS office is still being put together after the ECTAC supported the request. – DWS await motivation letter from AW for additional works as requested by Makana LM

James Kleinhans BWS Phase 1 - Summary

Project description:

James Kleynhans Bulk Water Supply
Augmentation of James Kleynhans Water Treatment Works – Phase 1

Location:

- Eastern Cape, Sarah Bartman District Municipality, Makana LM

Status:

- Phase 1 – Construction

Jobs impact:

- Project construction jobs: 13
- >30% Subcontracted to SMME's (Civils)

Projected cost to completion:

- Estimated Budget – R 71,042 million (R68m + R3,042 from Phase 2)
- Expenditure – R 65 million
- Remainder - R 5,89 million

Project Scope :

- Clear water storage (2Ml reservoir) – new reservoir;
- Handling of Sludge – Upgrading of existing
- Sludge Ponds – Construction of new sludge ponds size
- Mechanical works – Refurbishment & installation of new;
- Electrical (Internal) – Refurbishment & installation of new;
- Interconnecting pipe work – Construction pipelines
- Miscellaneous works

Project schedule:

- Completion in September 2019.

Expenditure / Progress:

- Accumulated Expenditure R 65 Million

Progress/Issues:

- Phase 1 - Construction = 100% complete



October 2013 – prior to commencement of works



Image © 2022 CNES / Airbus

March 2020 – Prior to start of Phase 2

Phase 1 - New 2 ML reservoir

Phase 1 - Attend to new M&E

Phase 1 - New Sludge ponds with supernatant sump

Attend to Interconnecting pipework



James Kleinhans BWS Phase 2 - Summary

Project description:

Augmentation of the Water Treatment Works from 10MI/d to 20MI/d and associated Storage, Pipelines, ME&I, upgrading of existing pipelines and refurbishing existing 10MI/d WTW

Augmentation of the James Kleinhans Water Treatment Works –

Phase 1 – 100% Completed (project also had a termination at 40% and re-appointment to complete works)

Phase 2 – Terminated at 82%

Location:

- Eastern Cape, Sarah Bartman District Municipality, Makana LM

Status:

- Civils Pipeline - 85%
- Civils platform & Roads - 60%
- Structural - 88%
- Electrical - 55%
- Mechanical Pipework - 75%
- Mechanical Ventilation - 10%
- Instrumentation - 20%

Jobs impact:

- 55 persons and 17,011 person days

Projected Construction cost to completion: (Mamlambo Contract)

- Estimated Budget – R 110, 6 million
- Expenditure – R 67,58 million
- Expenditure (PSP incl) - R 93,843,431

Project Scope:

Augmentation of the Water Treatment Works from 10MI/d to 20MI/d and associated Storage, Pipelines

Project schedule:

- Phase 2 – Contract Start date 16 March 2020 and Revised Due Contractual Completion Date 20 September 2021. Project terminated on the 02 June 2022.
- Procurement of replacement contractor commenced on the 27 July 2022 and cancelled on the 27 September 2022. A new bid has been advertised on the 06 October 2022 and to be closed on the 27 October 2022. Estimated construction duration is 8 months

Progress/Issues:

- Phase 1 - Construction = 100% complete
- Phase 2 - Terminated at 82%, procurement is underway

Challenges:

- Contract terminated due to poor performance
- Bids received were not successful and all were rejected, bid is cancelled

Proposed Actions:

- AW re-advertised on the 06th of October 2022
- Targeted appointment end November 2022
- Contractor to be encouraged to work through the builder' shutdown.

Expenditure / Progress:

- Accumulated Expenditure Phase 1 and 2 (Construction, Fees, Disbursements & IA Fees)
- R 162,94 million



Amatola
Water • Amanzi

bringing water to life

Major works of Phase 2 and excluding 350mm dia pipeline

Phase 2 – New Transformers with associated work

Phase 2 – New Filter building and filters with associated pipework - not fully complete

Phase 2 – New Sedimentation tanks with associated pipework

Phase 2 – New Chemical Storage area and work at inlet to building – not fully complete

Phase 2 – New Contact channel with associated works



NEW FENCE LAYOUT PLAN

NEW FENCE SETTING-OUT COORDINATES

REVISIONS: 005.04 L: 25

REV	DATE	DESCRIPTION
1	01/15/2010	ISSUE FOR PERMITS
2	02/01/2010	ISSUE FOR PERMITS
3	02/01/2010	ISSUE FOR PERMITS
4	02/01/2010	ISSUE FOR PERMITS
5	02/01/2010	ISSUE FOR PERMITS
6	02/01/2010	ISSUE FOR PERMITS
7	02/01/2010	ISSUE FOR PERMITS
8	02/01/2010	ISSUE FOR PERMITS
9	02/01/2010	ISSUE FOR PERMITS
10	02/01/2010	ISSUE FOR PERMITS
11	02/01/2010	ISSUE FOR PERMITS
12	02/01/2010	ISSUE FOR PERMITS
13	02/01/2010	ISSUE FOR PERMITS
14	02/01/2010	ISSUE FOR PERMITS
15	02/01/2010	ISSUE FOR PERMITS
16	02/01/2010	ISSUE FOR PERMITS
17	02/01/2010	ISSUE FOR PERMITS
18	02/01/2010	ISSUE FOR PERMITS
19	02/01/2010	ISSUE FOR PERMITS
20	02/01/2010	ISSUE FOR PERMITS
21	02/01/2010	ISSUE FOR PERMITS
22	02/01/2010	ISSUE FOR PERMITS
23	02/01/2010	ISSUE FOR PERMITS
24	02/01/2010	ISSUE FOR PERMITS
25	02/01/2010	ISSUE FOR PERMITS

THE ABOVE COORDINATES TO BE USED TO SET THE NEW FENCE TO BE CONSTRUCTED.

Procurement to source replacement contractor (Phase3]

Description	Status	Planned	Actual Date
TENDER			
Documentation	Complete	30 Sept 2022	30 Sept 2022
Bid Spec Committee	Complete	03 Oct 2022	03 Oct 2022
Bid Documentation	Complete	05 Oct 2022	05 Oct 2022
Bid Advert	Complete	06 Oct 2022	06 Oct 2022
Bid clarification meeting	Complete	14 Oct 2022	14 Oct 2022
Bid Closing	Complete	27 Oct 2022	27 Oct 2022
Bid Evaluation Committee Meetings	Outstanding	02 Nov 2022	
Bid Adjudication Committee Meeting	Outstanding	04 Nov 2022	
Final Appointment	Outstanding	30 Nov 2022	



Amatola
Water • Amanzi

bringing water to life

James Kleynhans BWS Phase 3 - Summary

Project description:

James Kleynhans Bulk Water Supply

Upgrading of the existing 350mm dia Pumping Main, Upgrading of pump station and filters, refurbishment of existing infrastructure and additional drainage pipeline

Location:

Eastern Cape, Sarah Baartman District Municipality, Makana LM

Status:

Phase 3 – Design Stage

Jobs impact:

Estimated Project construction jobs: 40

>30% Subcontracted to SMME's

Projected cost to completion:

Estimated Budget – R175 million (Be more definitive)

Expenditure – R 0 million

Remainder - R 0 million

Project Scope:

Upgrade 350mm pumping main

Refurbish 450mm pumping main (new scope - as requested by Makana LM)

Complete Existing WTW upgrades

Upgrades to the pumpstation

ME&I Upgrades

Access Road

Fencing (new scope - as requested by Makana LM)

Upgrade Pumpstation Mechanical

Upgrade Pumpstation dewatering by installing drain (new scope - to prevent future flooding due to human error or mechanical failure)

Miscellaneous works

Project schedule:

Planned for procurement during construction of Phase 2 (with the anticipation that the additional budget would be approved).

Expenditure:

Accumulated Expenditure (Construction, Fees, Disbursements & IA Fees)

R 0 Million

Progress/Issues:

Phase 3 – Preliminary Design Stage = 90%

Phase 3 – Design and Drawings Stage = 0%

Phase 3 – Tender Stage = 0%

Phase 3 – Construction Stage = 0% complete

Challenges :

Shortage of budget to proceed with Phase 3

Proposed Actions:

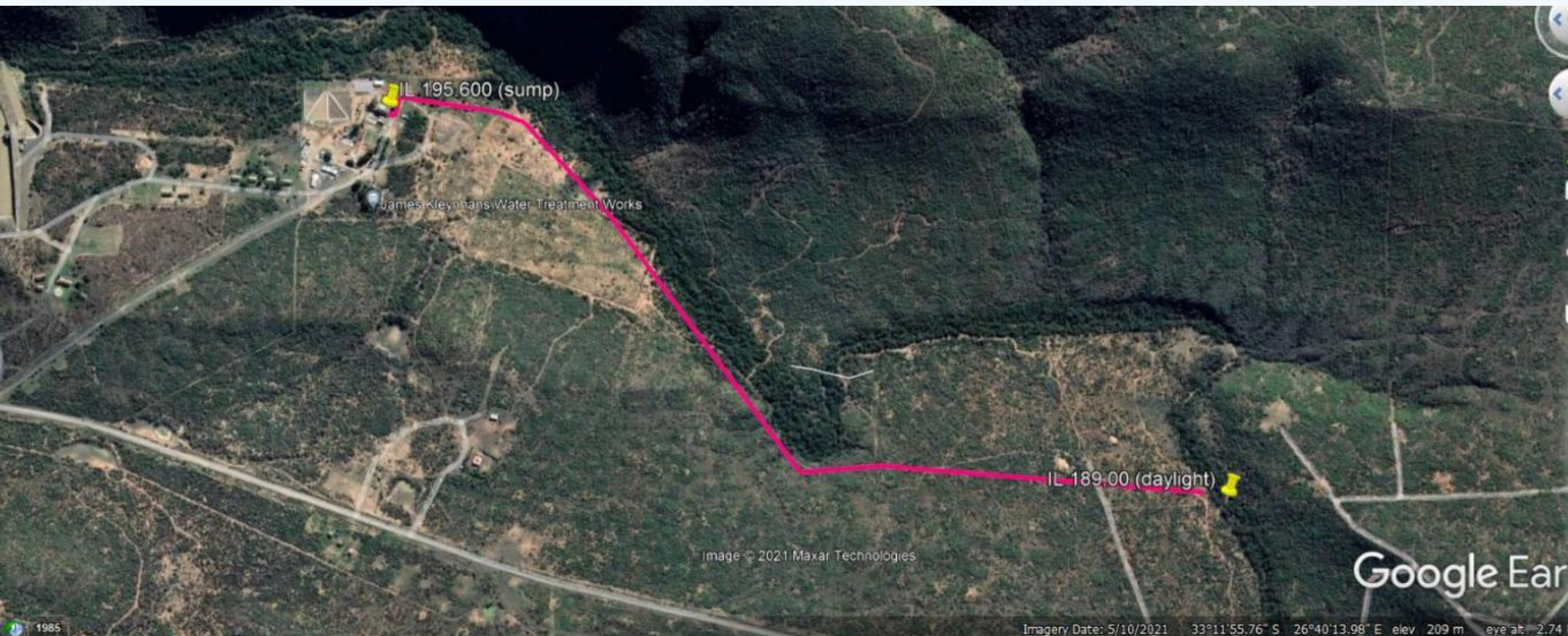
AW and Bosch to resubmit to the ECTAC more technical options (BOSCH still conducting TECHNICAL FEASIBILITY on other options due to cost of the already presented option)



Amatola
Water · Amanzi

bringing water to life

Proposed route for pipe line from High lift pump station for drainage – approx. 2km



Project challenges & remedial action:

Key Risks / Issues

Risk Description

- Budget shortfall of +/- R175m to complete the project is required due to delays, terminations, cost overruns and additional works
- Delays in the completion of the project .
- Delays in the provision of the Surety due to private sector constraints and Shutdown.
- Delays in commencing with the works due to Dept. of Labour Work Permit requirements.
- Delays due to SCM internal process.

Mitigating Actions

- Additional scope has been presented to ECTAC for appraisal on the 11 October 2022 and has been supported. AW are currently working on the submission to the DWS (National) for the request of funding having received the support of the provincial department office.
- R175mil is inclusive of additional works as requested by Makana LM and to prevent future flooding of high lift pump station at JKWTW
- Fast tracking of SCM process, which requires intervention at Executive level.
- SOE to Government stakeholder engagement to fast-track the work permit.
- Deducting 10% of monies due to the Contractor for the Guarantee until the Surety is submitted.

Variance Reason

- Unsuccessful bids led to a cancellation of a procurement process and a restart of the same process.

Recovery Plan

- Bid Advert was published on the 06th of October 2022, with a Clarification Meeting held on the 14th of October 2022.
- The bids are closing on the 27th of October 2022 with a plan to complete the award by the 30th of November 2022.
- Contractor to be encouraged to establish and work through the builder's shut down.



Amatola
Water • Amanzi

bringing water to life

Expenditure to date

PHASES	CONTRACTOR	PROFFESIONAL SERVICES	IMPLEMENTING AGENT FEE	SUB-TOTAL	VAT	TOTAL
Phase 1 Terminated	R 5 370 057	R 3 069 359	R 421 971	R 8 861 386	R 1 240 594	R 10 101 980
Phase 1 Completed	R 35 570 484	R 13 615 057	R 2 459 277	R 51 644 817	R 7 386 511	R 59 031 329
Phase 2 Terminated	R 59 711 232	R 18 005 895	R 3 885 856	R 81 602 984	R 12 240 448	R 93 843 431
Phase 2 Procurement	R 74 269 946	R 18 776 305	R 4 652 313	R 97 698 564	R 14 654 785	R 112 353 348
Phase 3 Future	R 93 302 526	R 21 512 238	R 5 740 738	R 120 555 502	R 18 083 325	R 138 638 827
TOTAL	R 268 224 245	R 74 978 854	R 17 160 155	R 360 363 253	R 53 605 663	R 413 968 916

*** Detailed expenditure breakdown on Annexure B



Amatola
Water • Amanzi

bringing water to life

Estimated programme of works

ITEM DESCRIPTION	Oct-22				Nov-22				Dec-22				Jan-23				Feb-23				Mar-23				Apr-23				May-23				Jun-23				Jul-23				Aug-23				Sep-23				Oct-23				Nov-23				Dec-23			
Total Weeks	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31	W32	W33	W34	W35	W36	W37	W38	W39	W40	W41	W42	W43	W44	W45	W46	W47	W48	W49	W50	W51	W52	W53	W54	W55	W56	W57	W58	W59	W60
Weeks Per Month	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4				
Bid Publication	■																																																											
Compulsory Briefing		■																																																										
Closing of Bids			■	■																																																								
Proposed Extension of Closing							■	■																																																				
BEC Meeting				■																																																								
BAC Meeting						■																																																						
Notice to Unsuccessful Bidders						■																																																						
Cooling off Period						■	■																																																					
Final Appointment						■	■																																																					
Guarantees & Insurances						■	■	■																																																				
H&S Submission						■	■	■																																																				
Programmes Submission						■	■	■																																																				
Approval of Programme						■	■	■																																																				
Work Permit (Dept. of Labour)						■	■	■																																																				
Builders Shutdown											■	■																																																
Commence with Works																																																												
10MI Delivery of Water																																																												
Practical Completion																																																												
Completion of the Works																																																												
Commencement of Defects Liability Period																																																												



Conclusion

- Project is currently on hold
- Contractor to be awarded and site handover by end November
- Fast tracked programme to ensure additional water is supplied by end June 2023 (and earlier with shortened closing period during festive season)
- Phase 3 to be completed December 2023 but will not affect additional water
- Amatola to offer operational assistance to Makana to deal with challenges on the western side operational challenges whilst James Kleynhans is implemented



Amatola
Water • Amanzi

bringing water to life



THANK YOU



Amatola
Water - Amanzi

bringing water to life

