Client:
Ministry of Water and Sanitation
Maji House, 6th Floor
Ngong Road, Nairobi.
Republic of Kenya

Consultant:
The Priory, 5th Floor
Argwings Kodhek Road
P.O. Box 76672-00508
Nairobi, Kenya

Project Name:
MAKAMINI DAM PRELIMINARY DESIGN

LIST OF DRAWINGS

1) DAM-RESERVOIR, CATCHMENT AREA & TRANSMISSION PIPELINES LOCATION MAP
2) RESERVOIR, EMBANKMENT AND SPILLWAY LAYOUT PLAN
3) EMBANKMENT DAM TYPICAL SECTION
4) DEPTH-AREA CAPACITY CURVES
5) TYPICAL CONVENTIONAL WATER TREATMENT PLANT-UNIT PROCESSES
6) WATER SUPPLY SERVICE AREA & TRANSMISSION PIPELINES LAYOUT MAP

7. WATER SUPPLY TRANSMISSION PIPELINES LONGITUDINAL PROFILES
   i. LINE 1 (0+000 TO 10+800)
   ii. LINE 1 (10+800 TO 21+600)
   iii. LINE 1 (21+600 TO 32+400)
   iv. LINE 1 (32+400 TO 43+200)
   v. LINE 1 (43+200 TO 53+042)
   vi. LINE 2 (0+000 TO 10+636)
   vii. LINE 3 (0+000 TO 8+799)
NOTES/LEGEND

- All elevations are in metres above sea level
- All dimensions are in mm unless otherwise stated
- CI: Contour Interval
- masl: Metres Above Sea Level
- NWL: Normal Water Level
- VI: Vertical Interval
- WTP: Water Treatment Plant
- Ø: Diameter
- PB: Pump Station

- Water Supply
- Transmission Pipeline
- Service Area Boundary
- River Flow
- Major Contours (5m VI)
- Minor Contours (1m VI)

Reservoir

- Water Supply Transmission Pipeline
- Service Area Boundary
- River Flow
- Major Contours (5m VI)
- Minor Contours (1m VI)
NOTES/ LEGENDS
1. All dimensions are in mm unless otherwise stated
2. Abbreviations
   NTS - not to scale
   D/S - Downstream
   U/S - Upstream
   Spec - Specifications
   masl - Metres Above Sea Level
   CW - Crest Width
   DOS - Determine on site
   PCC - Precast Cement Concrete
   CT - Cutoff Trench
   OGL - Original Ground Level
   HW - Height of Water (Reservoir)
   GFB - Gross Free Board
   EL - Elevation Level
   1:n - slope, 1 unit vertical to n units horizontal

MAKAMINI EARTHFILL EMBANKMENT DAM
TYPICAL SECTION - NTS

Crest Level=199masl

NWL (Spillway Crest Level)=196masl

U/S Shell

Impermeable compacted clay core

D/S Shell

Graded gravel envelope

Kerb for parapet

Outlet Valve chamber

OGL=190masl

Drawoff and scour pipes

Anti-seepage collars at pipe joints

Stripped foundation level

Anti-seepage collar at pipe joints

1:3 Slope

150-300mm compacted gravel crest road

300mm dumped riprap stone pitching on 300mm gravel bed filter

Free draining transition zones

Water drawoff tower to details-A

See details-A

Reservoir Draw off Tower System Detail A

Scale : NTS

TOE DRAIN DETAILS
Detail B (NTS)
Makamini Dam: Depth-Area-Capacity Curves

Reservoir Surface Area $X 10^3$ (m$^2$)

Reservoir Gross Storage Capacity $X 10^6$ (m$^3$)

Proposed NWL=196 masl

Datum=190.00 masl

Storage = 1,284,534 m$^3$

$SA = 1,541,776.95$ m$^2$

Gross Cumulative Storage Capacity (m$^3$)
Reservoir Surface Area (m$^2$)

DEPTH - AREA - CAPACITY CURVES
Kenya Water Security and Climate Resilience Project.
Consultancy Services For Preparation of Kwale County Water Supply Development Master Plan. (KCWSDMP)

TYPICAL WATER TREATMENT PLANT - UNIT PROCESSES LAYOUT PLAN
The Priory, 5th Floor, Argwings Kodhek Road, P.O. Box 0, Kenya

Water Security and Climate Resilience Project. Consultancy Services For Preparation of Kwale County Water Supply Development Master Plan (KCWSDMP)

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MAKAMINI DAM PRELIMINARY DESIGN

WS-1:3000
HS-1:15000

CHAINAGE 10+800 TO 18+200

VS-1:3000
HS-1:15000

CHAINAGE 16+200 TO 21+800

Project: MAKAMINI DAM
Prepared By: eglisau Consulting Engineers
Client: Ministry of Water and Sanitation

Theme: Water Supply Transmission Pipeline Longitudinal Profile Line 10+0400 TO 21+4000

No. Date Description Author Checked Approved

5 22/03/2020 Water Supply Transmission Pipeline Longitudinal Profile Line 10+0400 TO 21+4000