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MPUMALANGA PROVINCIAL TREASURY

MPUMALANGA ECONOMIC GROWTH AGENCY
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Enq: Mr S Lekhuleni
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04 August 2025

Ms G. Mashiteng
The Head of Department
Provincial Treasury
Building no.4 Upper Ground
Government Boulevard Riverside Park
NELSPRUIT
1200

MPUMALANGA GOVERNMENT
PROVINCIAL TREASURY
2025 -08- 05
HEAD PROVINCIAL TREASURY
RECEIVED

Dear Ms. Mashiteng

SUBJECT: REQUEST FOR THE ADVERTISEMENT OF ERRATUM NOTICE ON BIDS ADVERTISED ON THE MPUMALANGA TENDER BULLETIN AND NATIONAL TREASURY ETENDERS PUBLICATION

We hereby formally request the publication of the attached Erratum Notices in relation to the advertised bids as listed below:-

No	Bid description	Bid Number
1	Bid for the appointment of a service provider for the provision of operating and maintenance services on Waste-Water Treatment Works at Ekandustria Industrial Park for a period of three (3) years. (Re-advertisement)	MEGA/2024/05
2	Bid for the appointment of a service provider to Supply and Install Smart Utility Meters at Ekandustria and Siyabuswa Industrial Parks within a turn-key solution aimed at ensuring accurate measurement and billing of utility services consumption.	MEGA/2026/04

Attached to this letter are Erratum Notices for the specific corrections.

We trust that the above is in order.


MR M MAHLANGU
CHIEF EXECUTIVE OFFICER

5 August 2025
DATE

DIRECTORS:
JL MAHLANGU (CHAIRPERSON); MI MAHLANGU (CEO); N MKHUMANE; M MASILELA; D MAIMELA; C PULE; N LEBAMBO; ZP BHENGU-MAKHUBU.
P MNYAMBO; MM NTHALI; ADV. P. MORGAN (COMPANY SECRETARY)



ERRATUM NOTICE

BID NUMBER: MEGA/2024/05

Appointment of a Service Provider for the Provision of Operating and Maintenance Services on the Waste Water Treatment Plant at Ekandustria Industrial Park for Three (3) Years

Date: 05 August 2025

This amendment relates to the bid originally advertised on **11 July 2025** in the **Mpumalanga Bid Bulletin** and on the **CIDB Tender Portal**, and to the **briefing session held on 29 July 2025**.

Amendments and Clarifications:

1. Bid Document Change

- **Page 18, Clause 2.4.4 (d): The clause has been amended as follows:**
- **From:** *Security fencing of plant inlet work*
- **To:** *Maintaining of fence*

2. Waste Water Treatment Plant (WWTP) Operational Data:

As per the commitment made during the briefing session, the following technical data is provided:

- **Flow Capacity:** 4 Megaliters per day (ML/d)
 - **Influent Design Parameters:** (Chemical Oxygen Demand (COD): 75 mg/l, Ammonia: 1.5 mg/l, Nitrates: 10 mg/l, Phosphates: 1 mg/l, & Suspended Solids: 30 mg/l)

3. Operational Context Clarification:

The plant experiences variable loading patterns, with peak inflows during morning hours due to industrial and office discharges. No specific data on peak inflow capacity or hydraulic overload thresholds is available in the prior report. **Annexure A: Full historic overview report is provided for further context.**

4. Extension of Bid Closing Date

The Closing Date for bid submission has been extended from **14 August 2025 at 12:00 p.m.** to **22 August 2025 at 12:00 p.m.**, closing date for questions and answers be extended to **18 August 2025**.

NB: ALL OTHER BID CONDITIONS REMAIN UNCHANGED.

FOR ENQUIRIES PLEASE CONTACT:

Sibusiso Lekhuleni: Supply Chain Management
Tel No: 013 492 5818 or Email: scm@mega.gov.za

DIRECTORS:

JL MAHLANGU (CHAIRPERSON); MI MAHLANGU (CEO); N MKHUMANE; M MASILELA; D MAIMELA; C PULE; N LEBAMBO; ZP BHENGU-MAKHUBU, P MNYAMBO; MM NTHALI; ADV. P. MORGAN (COMPANY SECRETARY)

PERFORMANCE EVALUATION OF EKANDUSTRIA WASTEWATER TREATMENT PLANT

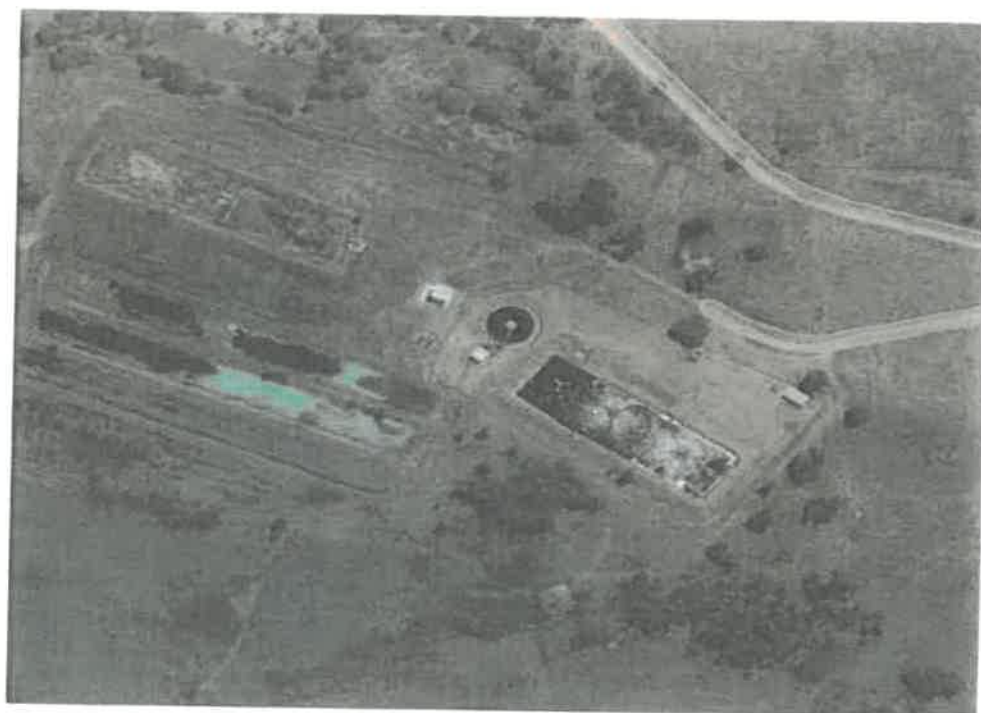
Complied by:

Romba Construction and Projects

Project Name: Waste Water Treatment

Plant Operator: Victor Masango

Process Management: Romba Construction and Project



GLOSSARY OF TERMS

MEGA	Mpumalanga Economic Growth Agency
Romba	Romba Construction and Projects / Appointed Contractor
MISA	Municipal Infrastructure Support Agency
ADWF	Average Dry Weather Flow: The average daily flow to the wastewater treatment plant during dry periods
Aerobic	Presence of Oxygen
Anaerobic	Absence of both oxygen and nitrate
Anoxic	Absence of oxygen but with the presence of nitrate
BNR	Biological Nutrient Removal, i.e. the removal of nitrate and phosphate by means of biological processes
Clarification	Separation of sludge from treated effluent. Also known as solids separation.

INTRODUCTION

Energy and water is needed by every living organism either in the form of food and liquids for its survival and it in turn produce wastes. Considering both normal and natural conditions nature is able to break down the wastes produced by organisms to fit in nature without causing health hazards. "Nature cannot treat all the waste produced by human without wastes causing health hazards in the process and more time will be taken for the breaking down of elements and compounds, all of this happen because of the unprecedented human population growth. Therefore human needs to treat their wastes in this case wastewater for the sake of their health and environment". (WRC Report No TT 375/08 2009 by LA Boyd and AM Mbelu). "The greatest challenge in the water and sanitation sector over few decades will be the implementation of low cost sewage treatment that will at the same time permit selective reuse of treated effluents for agricultural and industrial purpose."

MEGA requires an assessment of available information and recommendations based on an updated condition assessment of the plant in order to identify the corrective actions required to address non-optimal performance and compliance matters, where applicable. These requirements are addressed through this process audit. MEGA acknowledges the Department of Water and Sanitation's drive to commit and encourage political principles and their administrations to embark on dedicated and resourced risk management philosophies with the objective of improved compliant and sustainable wastewater services.

Wastewater is a combination of liquid water and substances which are not usable by human bodies and production industries. Wastewater comes from residential, commercial, industrial areas and inflow to sewer pipes. "The wastewater system is a gravitational system since it uses open channel hydraulics and therefore wastewater plant (receiving point) should be at lower altitude relative to its feed. The Ekandustria waste water plant design is therefore suitable for discharging such function.

Therefore for the wastewater to be treated not to be harmful to the environment and to human health, it should go through wastewater treatment technology "(WRC Report No TT 375/08 2009 by LA Boyd and AM Mbelu). Wastewater treatment is a technology used to remove all the impurities constituting to wastewater. Wastewater treatment compromise of stages that differ in performance and that require different maintenance.

These processes are:

- Screening
- Primary sedimentation
- Biological/ Aerated tank
- Clarification tank
- Disinfection / Contact tank

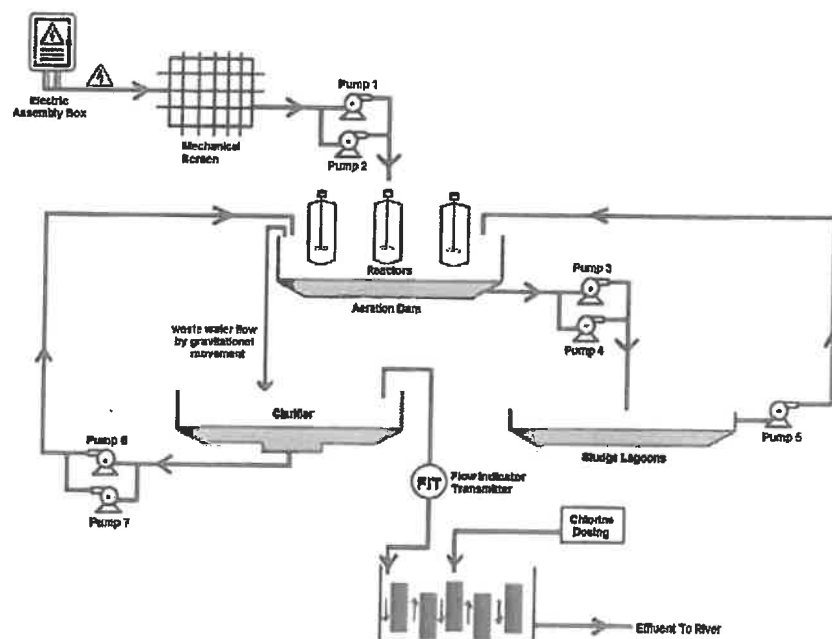
PROBLEM STATEMENT

The problem we currently experiencing is that the current treatment technologies lack sustainability and the process structure is incomplete for the current conditions of the Industrial park. The untreated water undergo through biological processes (Aeration) before the Primary Sedimentation process. The volume of water together with the industrial wastewater causes the flow of large volumes of contaminated wastewater into the Aeration dam. Our Waste water plant does not have a separate primary sedimentation process, thus the Aeration dam with the current system is failing to meet the desired outcomes. The wastewater needs to be pre-treated before going through the biological processes since the flow increases as the cost of the treatment increase.

The Electrical panels at the influent side are stripped off due to vandalism and new panels need to be installed and programmed. The contingency pump is not connected thus the risk of spillage and overflow.

The mechanical Screen is disconnected; this is one of the major reasons of over maintenance in the Aeration Dam. The Aeration dam' reactors are forever not working due to the primary treatment compromised. The current motors of the reactors needs repairs, the overload pressure on the motors burnt the winding. This non optimal performance of the equipment leads to our non-compliance reports.

STUDY AREA DESCRIPTION



The Ekandustria wastewater treatment plant single line diagram

Waste water that is collected and treated by the Ekandustria Waste Water Treatment plant come from the factories and office parks within the Industrial park. The purpose of treating wastewater is to make it potable, reusable and safe by making it to comply with the green drop systems for Department of water and sanitation. Wastewater is not safe for drinking or household use after it has been treated it is released back to the river.

PARAMETERS	DESIGN (Units)
Incoming Flow	4 ML/d
Ammonia	1.5 mg/l
COD	75 mg/l
Nitrates	10 mg/l
Phosphates	1 mg/l
Electric conductivity	70 mg/l
Suspend Solids	30 mg/l
E-coli	0

Wastewater contains plastics, rags, grit and large solids which interfere with the treatment processes. Treatment equipment may have increased maintenance and mechanical wear may occur because of contamination that is found in the wastewater.

METHODOLOGY

This plant works optimally in the morning, when factories and offices open, they flush their toilets and release most of their waste from the previous day. The water is collected by these waste water plants, treated and discharged into our lagoons. When waste water enters these plants, it is screened, and everything solid other than water is removed. Sand is problematic at the influent, for the screen cannot help effectively with sand. The waste water goes through different stages, including the Aeration tank unit where bacteria are removed.

Sludge is separated from the water to prepare dry manure that is discharged. The treated water is then discharged to the lagoons. By law, Ekandustria Water may not simply discard waste water into the rivers untreated, because there are still people who rely on river water, mostly the farmers. Ekandustria Water is also regulated by the Department of Water and Sanitation.

It is important for the community of the Industrial park to be mindful of what they put into waste water at work. No other foreign objects are allowed into the waste water because they clog the smooth flow of the system and that cost time and money,

Romba collects 4 samples a month to test water in Pretoria. It mainly tests the level of E. coli and other bacteria that can contaminate waste water.

"Since the wastewater influent contains large particle that includes, plastics, papers, metals and other large objects. These objects need to be removed from wastewater for downstream processes to work effectively and to avoid unnecessary mechanical breakdown. The large and hard objects are removed from wastewater by the process called screening" (WRC Report No TT 375/08 2009 by LA Boyd and AM Mbelu).

The screening process is the process of removing large, hard objects found in wastewater. This involves trapping large objects by a vertical bars set in the influent channel (https://en.wikipedia.org/wiki/Screen_filter). At Ekandustria plant the screening process is done automatically meaning machines clean up the bars using a rotating shaft to remove large objects.

For the flow that has passed the screening, it goes to degritting process. Whereby small to medium objects that have passed screening bars are removed, this includes particles like silt, glass sand, small stones and as well as other large-sized organic and inorganic substances (W.R.C Report No TT 375/08 2009 by LA Boyd and AM Mbelu).

Visual inspections of the Activated Sludge Process are very important. The smell, colour and appearance of the biomass give a good sign of whether the A.S.P is working right or not.

The treatment process is a biological nutrient removal process. As a result, the plant effectively prevents eutrophication occurring, at the end water source, as a result of effluent discharge. Each zone allows for different biological processes to occur in order to effect biological nutrient removal.

The anaerobic zone allows for fermentation of organic matter to volatile fatty acids (VFAs), these VFAs are taken up by Phosphorus Accumulating Organisms (PAOs) with the subsequent release of orthophosphate into the mixed liquor.

The clarified effluent flows within the clarifier compartment and out to the Chlorine Contact Channel. The clarified effluent is dosed with chlorine on entering the contact channel.

When excess sludge needs to be wasted the S-Recycle line is stopped and the sludge is airlift pumped to the drying beds. Supernatant from the drying beds drains back to the sump and is pumped back to the reactor or

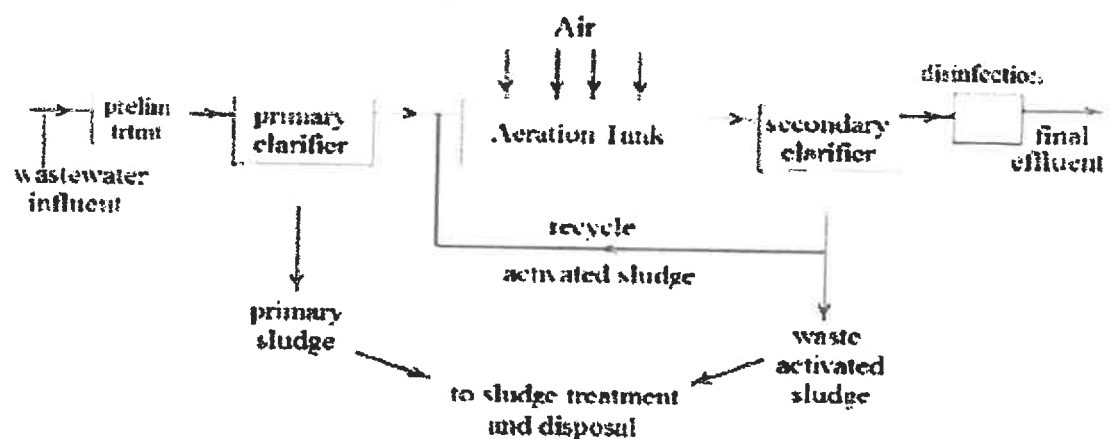
irrigated to waste. The dried sludge cake in the drying beds is suitably disposed of by incineration along with the screenings and grit.

SEWAGE TREATMENT EQUIPMENT

The sewage treatment plant comprises raw sewage feed pumps, a compartmentalised tank, containing: mixing, pumping and clarifier equipment, disinfectant storage tank, chemical pump, a contact tank and a control panel. The equipment is interconnected by openings and piping effectively arranged to treat raw sewage and produce environmentally acceptable effluent for discharge into natural water course.. All controls are manual or automatic including flow meters.

PROCESS FLOW DIAGRAM

(Diagram below represents the generic wastewater treatment plant flow)



EFFLUENT QUALITY REQUIREMENTS

In accordance with the National Water Act 1998 (Act No 36 of 1998), all wastewater treatment works being operated in South Africa are required to have a valid water use licence which sets out the allowable quantity and quality of the effluent that can be discharged. For the purpose of the report the General Authorisation limits can be adopted, going forward it is recommended that a letter is obtained from DWA stating that the General Limits will be used to measure the performance of this works.

The applicable General Limits therefore are: pH between 5.5 - 9.5; Chemical Oxygen Demand ≤ 75 mg/l; Nitrate as N ≤ 15 mg/l; Ortho phosphate as P ≤ 10 mg/l; Total ammonia as N ≤ 6 mg/l and Suspended Solids ≤ 25 mg/l

CONCLUSIONS AND RECOMMENDATIONS

The results obtained from the Ekandustria wastewater treatment plant does comply with the Department of Water and Sanitation standards.

- ✓ Urgent attention should be given to the Inlet: install a new panel and connect the pump
- ✓ The inlet screen needs maintenance and a new compactor to be installed
- ✓ Extended Fencing on the inlet side to avoid livestock and human incidents
- ✓ Sand removal at the inlet tank
- ✓ The Aeration dam needs repair of motors and a cleaning process(bioremediation)
- ✓ The Reactors outside the Aeration Dam needs rewinding and refurbishing
- ✓ Proper installation of the Aerators
- ✓ The clarifier needs deep cleaning, the amount of sludge present has caused immobility of the arm
- ✓ Replacement of reducer bearings and seals on the clarifier
- ✓ Proper functioning of the torque control on the clarifier
- ✓ RAS pumps needs full rewinds on the motors
- ✓ A new flow meter to be installed
- ✓ The contact tank needs deep cleaning
- ✓ Over 10m depth of sludge to be removed in the contact tank
- ✓ Lagoons to be cleaned and covered
- ✓ All Mechanical/ Instrumentation Equipment need service and an automated system in place

There's one event of livestock that was trapped in the mud created by the overflow at the inlet.

Corrective measures were taken to save the animal and to prevent future similar occurrences.

There are no accidents reported with health problems or even waterborne diseases.

The site is in close proximity to people's residential places, grazing of residence' livestock happens across the treatment plant. Improved monitoring system in the treatment works, maintenance and cleaning of equipment is pivotal for the safety of both the environment and preservation of life.

**WATERLAB (Pty) Ltd**

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T039

CERTIFICATE OF ANALYSES**GENERAL WATER QUALITY PARAMETERS**Date received: 2020-01-17.
Project number: 1003

Report number: 89382

Date completed: 2020-02-12
Order number:

Client name: Romba

Contact person: Victor Masango

Address: Office 52, Reeds view Office Park

e-mail: mbalirobbie@yahoo.com

Telephone: 072 922 707

Facsimile:

Mobile: 083 9898121

Analyses in mg/l (Unless specified otherwise)		Method Identification	Sample Identification			
			Clarifier	Downstream	Final Effluent	Raw
Sample Number			086262	086263	086264	086265
Date/Time Sampled			N/A	N/A	N/A	N/A
pH - Value @ 25 °C	A	WLAB085		5.6	7.5	8.5
Electrical Conductivity in mS/m @ 25°C	A	WLAB002		7.9	115	111
Suspended Solids at 105°C	A	WLAB004	28	44	18.0	52
Volatile Suspended Solids at 650°C	N	WLAB028				34
Total Alkalinity as CaCO ₃	A	WLAB007	236			
Nitrate as N	A	WLAB048	<0.1	0.3	0.1	
Ortho Phosphate as P	A	WLAB046		<0.1	1.6	1.6
Chemical Oxygen Demand as O ₂	A	WLAB018	79	40	40	107
Faecal Coliform Bacteria / (100 ml)	A	WLAB021			1000	
Free and Saline Ammonia as N	A	WLAB046	6.7	0.1	7.0	3.6

E. Nkabinde - Chemical/Technical Signatory

O. Mohlala - Microbiological Technical Signatory