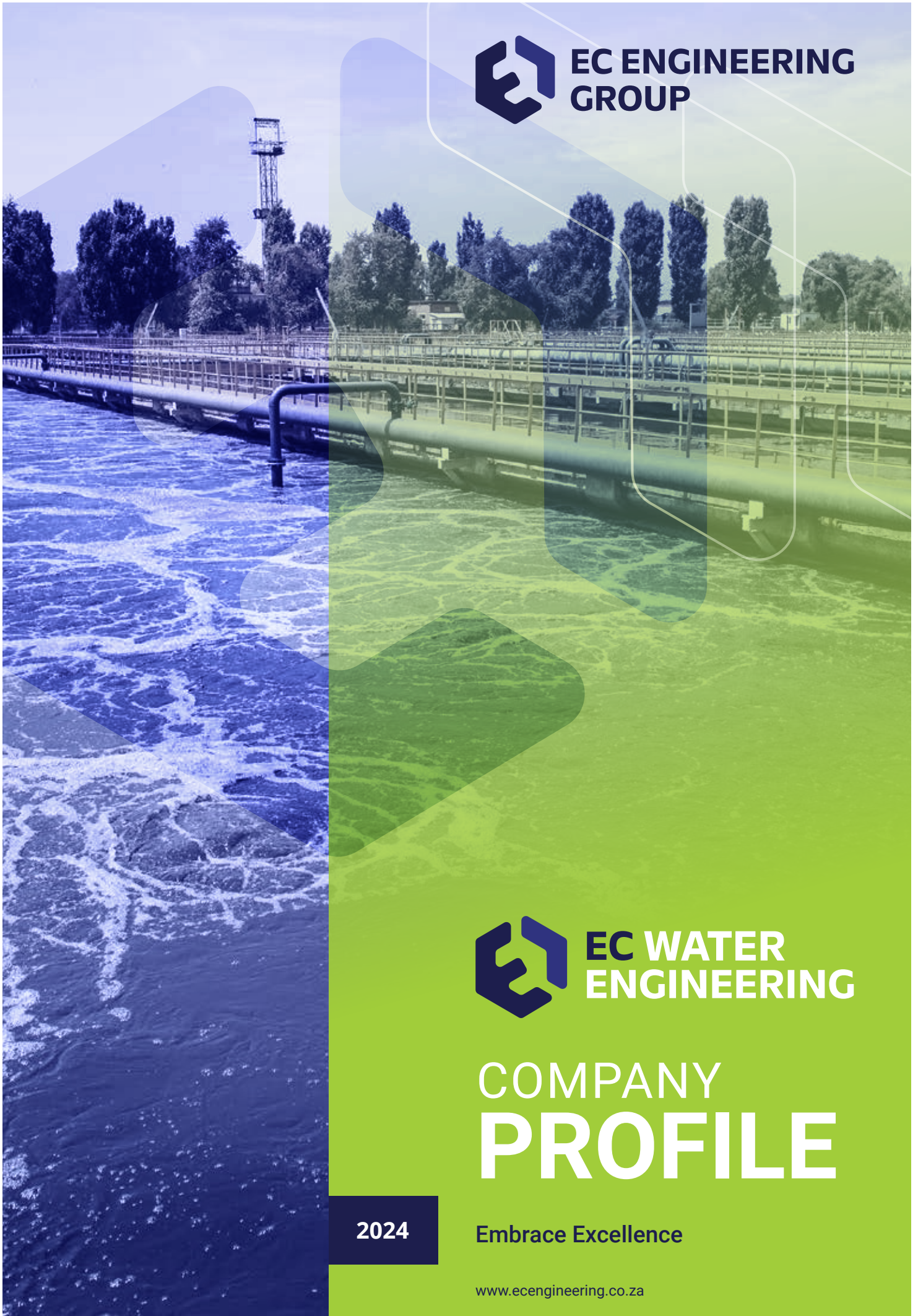




**EC ENGINEERING
GROUP**



**EC WATER
ENGINEERING**

COMPANY
PROFILE

2024

Embrace Excellence

www.ecengineering.co.za

01

Let us tell you about our business



We are Experts in Different Solutions

EC Water Engineering (Pty) Ltd is part of the EC Engineering Group, of which EC Engineering cc under the leadership of Everd Vermeulen, is the parent company that was established in 1994 in Johannesburg. It was primarily involved in mining engineering and in particular the smelter industry with a focus on the anodes used in the smelters. They were principle in the development of a solution to the limited life span of these anodes and have developed the extension of life span tenfold. The evidence is relevant in the results over the last 25 years.

This led to the establishment of the EC Engineering Group which now accommodates EC Water Engineering (Pty Ltd, EC Engineering Construction (Pty) Ltd, and EC Engineering Manufacturing.

EC Water Engineering (Pty) Ltd stands under the leadership of Everd Junior who realised that water is such a vital part and critical element of all walks of life and particularly in farming. He believes that in cooperating with the farming industry EC Water Engineering can contribute and develop the use of water to its optimum and efficiency in this commodity.

He is an active registered member at the Engineering Council of South Africa (ECSA), the South African Institution of Civil Engineering (SAICE), and the South African Institute of Irrigation (SABI).

What makes us different?

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Trust and Value

We endeavor that All our clients choose to work with us beyond the completion of their first project. We are frequently requested to get involved in the early stages of the project scope, to help minimise costly technical oversights.

Empowerment

Our focus as a company is to empower all individuals, irrespective, by allowing them to acquire experience and develop their skills through our business to ultimately reach their fullest potential and opportunities.

Our Vision

Our vision is to become the most sort after water engineering partners to serve the farmers in South Africa.

Our Mission

To provide a partnership with our clients by treating them with integrity and delivering quality service on time and providing the best quality materials for a sense of stability and security over the life span of the product. To train our client and his staff professionals to operate and grow with the results and the industry.



02

What we do best is **our services**

Our clients are at the center of all the decisions.

Why As a Group, we have had experience and understand the passion of sharing solutions with clients rather than just selling and therefore, we can take a vision and be part of developing that vision into a reality.

How Allowing us to develop a solution with you by providing our expertise and your experience to produce the most effective and cost-saving solution for the better use of water.

What We can assist in applying our skills in Irrigation Systems, Planning surveys, Pumping facilities, Earthworks, and Civil construction and various Solar Power facilities.

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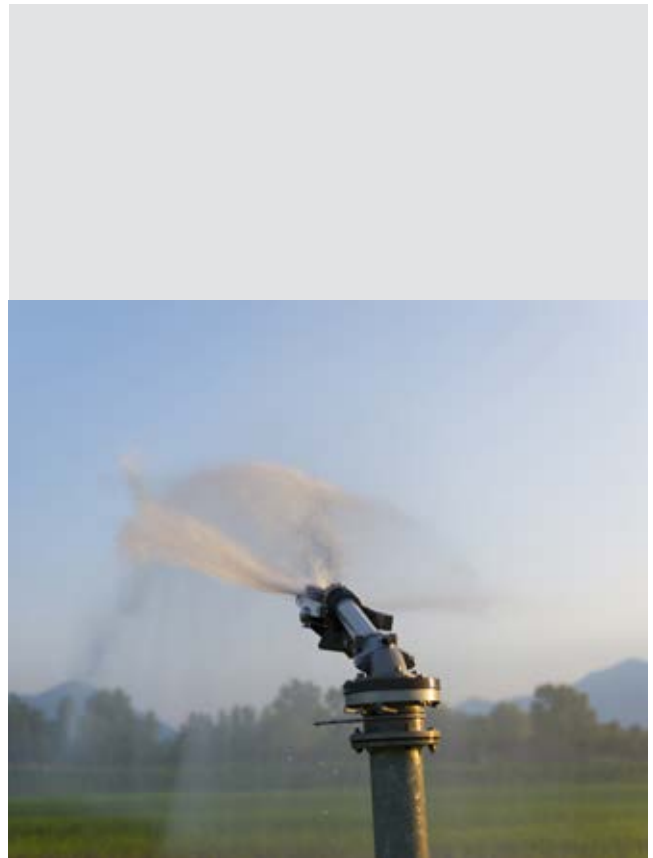
The secret of change is to focus all your energy not on fighting the old but on building the new.

Our services breakdown

01

Irrigation and Pumping

- Irrigation design
- Irrigation system installations
- Pump station designs
- Pump station installations
- Potable water balance
- Solar power options and installations



02

Stormwater Management

- Stormwater designs
- Stormwater management plans
- Stormwater investigations



03

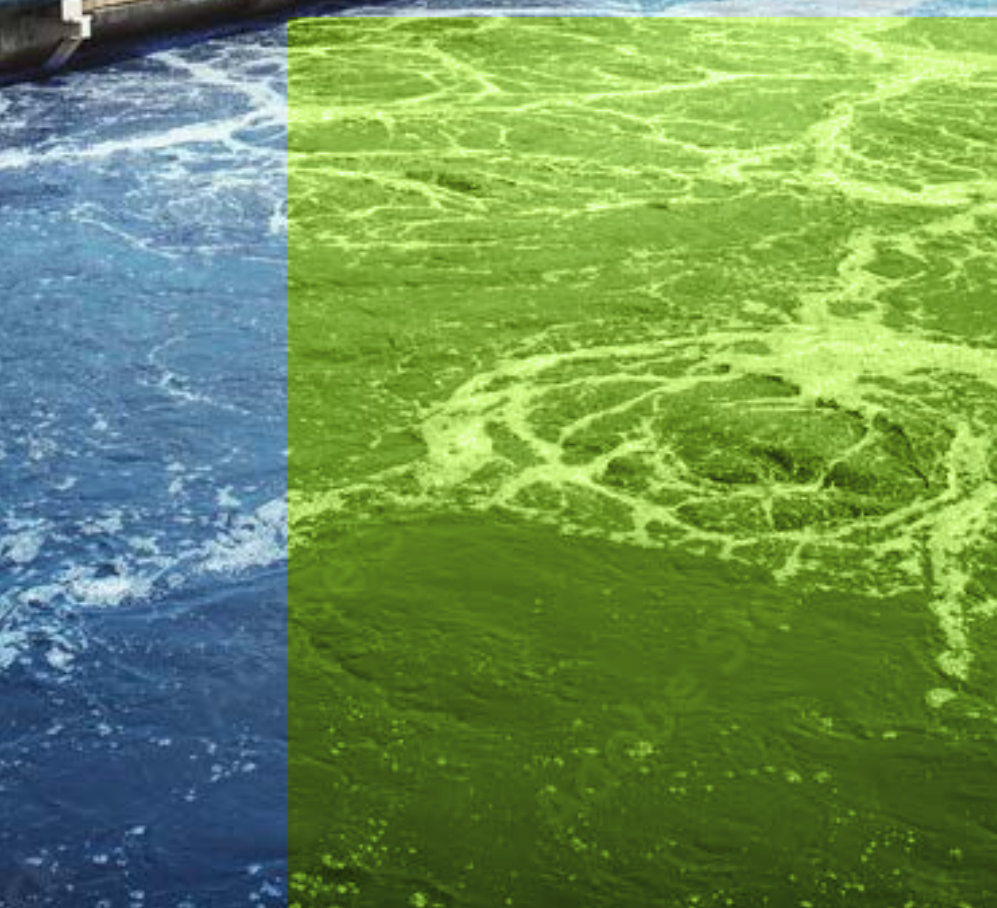
Civil and Earthworks Infrastructure

- Dam inspections
- Erosion control
- Sub-surface drainage
- Sub-surface drainage installations
- Dam and road construction
- Civil infrastructure



03

Our projects
**show our
expertise**



BHP Billiton Potable Water Balance Project

Phase 3: A, B, C and 4

Project Specifications

Location

South Africa, Gauteng, Meyerton

Project duration

Phase 3A: Investigation and identification – 6 Months

Phase 3B: Installation of water meters and development of water balance sheet – 6 months

Phase 4: Water balance sheet application and training – 3 Months

Scope

BHP Billiton one of the biggest manganese smelters in the world did not have a full functional water balance as per their water use license requirements. The plant had 4 furnaces where a substantial usage of potable water was required and monitoring thereof was to a minimum. Previous attempts to implement a water balance by the client were unsuccessful. The scope of the client was to investigate and install all relevant water meters and develop a water balance to fulfil the client's needs.

Project challenges

- To gain access to the plant
- Inspecting and identifying all current installed meters
- Identify the locations for new water meters
- Modification of old meters
- Developing the water balance with alternative water sources supplying the different plants and furnaces

Solutions

- Do inductions to gain access to the different plants
- Walk the line from the rand water board source to the last delivering point
- Identify all tie-offs and existing water meters installed by the plant
- Identify new locations for the installation of new water meters
- Install new water meters
- Digitalize water system
- Collect data from new and existing water meters
- Develop water balance to fall within a 5% difference from readings obtained



www.bhp.com

Operation and Maintenance Manual and Emergency Preparedness Plans for the Lethabo Power Station

Project Specifications



Location

South Africa, Free State, Lethabo Power Station

Project duration

Inspections, identification and compiling of emergency preparedness manual – 3 Months

Scope

The dam safety regulations publicised by the Minister of Water and Sanitation in terms of the National Water Act (Act, No. 36 of 1998), GNR no. 139 of February 2012, require that the owner of a dam which constitutes a safety risk must operate and maintain the dam in a proper, safe and responsible manner. The purpose of this manual was to provide guidelines to the owner of the general operations and maintenance of the structure to ensure the safe use thereof throughout its full operational life. The routine inspections to be carried out as well as the records to be kept were also outlined in the manual. The manual had to be kept up to date and had to always be available for use at Lethabo Power Station Emergency Preparedness office.

Project challenges

- Inspecting and identifying defects on a big dam was a challenge
- The dam could not be emptied to do a full inspection of the dam liner
- Access to information was limited
- Identifying all sub-surface drainage outlets was very difficult
- Gaining access to certain areas and locations of the dam was a challenge

Solutions

- Walk the bottom of the dam wall and crest
- Made use of modern technology by using high-resolution cameras to identify indifferences on the dam wall
- Inspect the overflow structure
- Inspect the emergency pump house
- Measure the flow consistency of the sub-surface drains
- Closely inspect the water quality of the sub-surface drains
- Develop the emergency preparedness manual with an APP (approved Professional Person)



NWU Dam Embankment and Stormwater Design

Project Specifications

Location

South Africa, Gauteng, Vanderbijlpark

Project duration

Inspections, identification and design – 3 Months

Scope

The client identified soil erosion close to one of the main access roads on campus. The concern was that at the rate at which the erosion is happening the integrity of the main road would be compromised. The client approached us to develop a solution to stop erosion and divert the water away from the main road structure. During the inspection, we identified that the retention pond close to the stormwater outlet next to the road had damage to the embankment due to the wave action caused by wind.

Project challenges

- Access to information was limited
- No information on stormwater systems feeding into the dam
- Identifying stormwater inlets and linking them to the stormwater outlet was a challenge

Solutions

- Inspecting and identifying problem areas
- Survey the terrain to develop the contour profile
- Develop layouts of the area
- Developed three solutions to manage the erosion at the stormwater outlet and support the road integrity
- Provide the client with the best and most cost-effective solution
- Develop the design according to the solution proposed
- Construct design



PICTURE 1



PICTURE 2

PPC Dwaalboom Retention Ponds Inspections and Design

Project Specifications

Location

South Africa, between Northwest and Limpopo, Dwaalboom

Project duration

Inspections, identification and compiling of the report – 2 Months

Scope

The client PPC Dwaalboom requested to inspect, investigate and update their layout drawings to adhere to their water use license. The requirement from the environmental department was that the stormwater runoff with boundaries and detailed drawings of their retention ponds be updated and submitted to the department. We had to develop design drawings of their retention ponds to accommodate wastewater and dirty runoff water.

Project challenges

- Inspecting and identifying defects on the dam was difficult as it was overgrown
- The dam could not be emptied to do a full inspection
- Access to information was limited
- The dam sub-surface drainage outlets were nonexistent

Solutions

- Walk the bottom of the dam wall and crest
- Made use of modern technology by using high-resolution cameras to identify indifferences on the dam wall
- Inspect the overflow structure
- Inspect the emergency pump house
- Measure the flow consistency of the sub-surface drains
- Closely inspect the water quality of the sub-surface drains
- Develop the emergency preparedness manual with an APP (approved Professional Person)





04

Our professional team

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We provide our clients with a unique accumulation of high specialized knowledge and experience.

Everd Junior Vermeulen



Water Engineering Technologist

Registered member - Engineering Council of South Africa (ECSA)
Associate Member - The South African Institution of Civil Engineering (SAICE)
Associate Member - South African Irrigation Institute (SABI)

Overview

Has a decade of work experience in various sectors including; rail engineering, construction, water engineering, mining, metals and petrochemicals.

Proven expertise in construction management, engineering management, design, maintenance engineering and troubleshooting with a focus on; irrigation, stormwater, dams, structures, and geotechnical engineering.

- Is driven to extract maximum value from existing assets and resources to improve company bottom line safely and responsibly.
- Has a track record of developing successful solutions to complex problems, sound construction management and effective leadership under pressure.
- Regarded as a creative innovator, with an aptitude for strategic thinking in pursuit of solutions to complex challenges.
- He has a strong practical background.



EC Vermeulen



EC Vermeulen is the founder of EC Engineering cc which was established in 1994 in Johannesburg to primarily serve the mining engineering and particularly the smelter industry with a focus on the anodes used in the smelters where a solution to the limited life span of these anodes was developed that extended the life span tenfold, and the evidence is relevant in the life improvement over the last 25 years.

His considerable experience in mining and underground operations expanded the scope of the business over its lifetime and with his family developed the shared dream of developing the EC Engineering Group that forms the umbrella for EC Water Engineering (Pty Ltd, EC Engineering Construction (Pty) Ltd and EC Engineering Manufacturing.

JJ Vermeulen



JJ Vermeulen has been in the construction industry for the last 45 years and covered various activities within the industries amongst other the following;

- Bridge construction over the Blood River and ancillary earthworks that included a major marshaling yard in Hlobane under the Resident engineer in Vryheid
- Harbours construction and Rail maintenance under the Walvis Bay Harbour engineer
- System breakwater management at the Durban port under Harbours engineer Durban
- Project manager for Racec with rail construction for Phalaborwa mining, Iscor, RBCT maintenance, and construction
- Founder and Director at LTA Rail construction with various civil and rail construction projects
- Owner and CEO at Econotrack Rail and Econcrete manufacturing of precast products
- Director at Fraser Alexander rail Construction, servicing mainly the Mining Industry.
- GM at Grindrod Rail – established a new company in Mozambique.
- GM at Ikusasa Rail, the Rail division for WHO





**EC WATER
ENGINEERING**

THANK YOU FOR YOUR BUSINESS

EC WATER ENGINEERING (PTY) LTD
Comp Reg. No. 2023/812064/07

Address: Plot 54, Beckendan, Tarlton, Krugersdorp, Gauteng, South Africa
Phone: +27 82 460 3809
E-mail: info@ecengineering.co.za

www.ecengineering.co.za