

1. PERSONAL DETAILS

Name : Adèle Bosman (Neé Vos)

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Date of birth : 20 March 1986

Nationality : South African

ID Number : 860320 003 108 9

Profession : Civil Engineer

Current Employer : University of Stellenbosch

Years experience : 5 years, 3 months

Present Position : Civil Engineer and Lecturer

Qualifications : BEng, Stellenbosch University, 2008

: MSc (Civil), Stellenbosch University, 2012

Key skills : Hydraulic Design of structures
Pump-pipeline design
Process design of water treatment works
Water resource management
Team management and motivation
Client relationship management skills
Planning, budgeting and payment certificates
Team Player

2. EMPLOYMENT HISTORY

July 2013 – May 2014: ***Hydraulic and Hydrology Lecturer at the University of Stellenbosch***

March 2013 – July 2013: ***Zeerust Waste Water Treatment Works (Design and Documentantation)***

North West Province, South Africa
Position: Candidate Engineer
Employer: Aurecon

The Zeerust Wastewater Treatment Works (WWTW) has a design capacity 2.573 Ml/day. The Works is not currently operating according to design and the effluent being discharged does not comply with the General Limits as set by the Department of Water Affairs (DWA). Mrs Bosman is currently responsible for the following:

- Assess alternative process configuration options for increasing the capacity of the wastewater – responsible for hydraulic design of plant.
- Provide a wastewater strategy for the town of Zeerust over a 25 year horizon.
- Compilation of a performance orientated quotation document for the abattoir upstream of the Zeerust WWTW. The quotation contains the technical requirements for an oil/fat trap, gravel trap and hair trap at the abattoir.
- Perform the quotation adjudication process and submit a Quotation Adjudication Document to the abattoir which outlines the evaluation process and recommend the best suitable Contractor for the project.

March 2013 – July 2013: ***Design of the New Tlakgameng Wastewater Treatment Works (Documentation and Lifecycle Costing)***

North West Province, South Africa
Position: Candidate Engineer
Employer: Aurecon

A wastewater treatment works in Tlakgameng is required for treatment of the wastewater generated in order to cater for the future proposed upgrading of sanitation service levels. The design requirements for the proposed Tlhakgameng WWTW were determined. Mrs Bosman is currently responsible for an option analysis for the design of the WWTW, concluding with a preferred option based on a technical and financial feasibility analysis by analysing the lifecycle costs of each option to provide a wastewater strategy for the town of Thlakgameng over a 22 year horizon (up to 2035).

February 2012 – July 2013: ***Biofiltration Plant and Borehole Pipelines at Preekstoel Water Treatment Works (Preliminary and Detail Design and Contract Documentation and Site supervision)***

Western Cape, South Africa
Position: Candidate and Resident Engineer
Employer: Aurecon

This project addressed the need to increase water supply to the Greater Hermanus area, Western Cape. As part of the scope of the project, additional water sources were explored. A new Biofiltration Plant was designed to treat groundwater from seven boreholes, including the pipeline-pump system from the boreholes.

Mrs Bosman was responsible for the following:

- Pipe hydraulic design
- Pipeline material selection by taking into account the water characteristics and costs of material and the presentation thereof to the client
- Took full responsibility for the preliminary and detail design of the pipelines and civil infrastructure (seven

borehole chambers, air valves, scour valves and 15 km borehole pipeline system using Civil Designer)

- Selection of borehole pumps for the abstraction of ground water.
- Compilation of the schedule of Quantities for the pipelines
- Compiled the specifications and project data for the borehole pipeline system according to the General Conditions of Contract (GCC) 2010
- Compiled a Readiness Implementation Study Report to apply for a R29 million grant from the Regional Bulk Infrastructure Grant (RBIG) Board, who forms part of the Department of Water Affairs (DWA). The application was successful and the grant was approved for this project.

Mrs Bosman was also the full-time Residential Engineer on the Preekstoel Biofilter Plant and borehole pipelines. Mrs Bosman was responsible for overseeing the construction of a 10 MI/day Biofiltration Plant and the laying of a 15 km pipeline borehole system. The pipeline route crossed the R43 Provincial Road and the Onrus River twice. Her main duties included the following:

- Performing contractual inspections
- Contract administration duties which included preparing payment certificates, the preparation and presentation of project budgets, the issuing of construction drawings, conducting technical and contractual meetings and preparing minutes for management meetings, the preparation of variation orders and practical completion certificates
- Daily monitoring of the project's progress in respect of costs and specified deadlines by reviewing / comparing the project program and budget with actual spend
- Enforcement of Health and Safety and Environmental regulations
- Successfully implemented a planning system that provided weekly updates to top management, and the client, on the progress of the current project. As a result the planning system has since been implemented for various other projects.
- Onsite training of staff member to perform daily construction and administrative related tasks.

February 2012 – Dec 2012: ***Refurbishment of the existing Preekstoel Water Treatment Plant (Site supervision)***

Western Cape, South Africa

Position: Resident Engineer

Employer: Aurecon

Mrs Bosman was the full-time Residential Engineer on the existing Preekstoel Water Treatment Works in Hermanus, Western Cape. The project involved the refurbishment of the existing works to a capacity of 28 MI/day. Her main duties included contractual inspections, health and safety enforcement and related contract administration duties. (Overstrand Local

Municipality).

June 2010 – Dec 2012: ***Unsteady flow conditions at dam bottom outlet works due to air entrainment during gate closure: Berg River Dam model (Dissertation)***

Western Cape, South Africa

Position: Master Student

Employer: University of Stellenbosch

This project entailed laboratory tests and analysis of a physical model representing the outlet works and air vent of the Berg River Dam located near Franchhoek, South Africa. The objective of the study was to determine the reasons for the air blowback phenomenon which occurred during the commissioning trail of the dam in 2008. It also sought to find solutions to mitigate the excessive airflow from the air vent. Mrs Bosman researched air blowback phenomenon's which occurred at various international dams. She led the project and solved the air blowback problem on the Berg River Dam by using high headed conduit and open channel flow principles (Stellenbosch University).

Nov 2011 – Dec 2011: ***Compilation of Tender Proposal Documents***

Western Cape, South Africa

Position: Candidate Engineer

Employer: Aurecon

Mrs Bosman compiled two tender proposal documents, the upgrade of the Potsdam Wastewater Treatment Plant, and sludge dewatering and sludge handling facilities for various wastewater treatment plants in Cape Town. The proposals contained returnable documents, information on previous similar projects, the proposed approach to the project execution, appropriate information on the proposed team as well as the financial proposal (City of Cape Town Municipality).

August 2011 – Nov 2011: ***North Eastern Wastewater Treatment Works: Construction of a 15 Ml/day Works (Hydraulic Design, Contract Documentation)***

Free State, South Africa

Position: Candidate Engineer

Employer: Aurecon

Assisted in the design of a new 15 Ml/day wastewater treatment works in Bloemfontein (Mangaung Local Municipality). Mrs Bosman was responsible for the following:

- Training staff members to design the hydraulics of the plant and associated hydraulic structures
- Compilation of the quotation for geotechnical investigation services
- She took full responsibility for all tender documentation according to the GCC 2010, schedule of quantities and specifications

February 2011 – May 2011: ***Koukamma Water Treatment Works (Process and Detail Design and Contract Documentation)***

Eastern Cape, South Africa
Position: Candidate Engineer
Employer: Aurecon

This project addressed the need for conventional package plants with special green sand filters, used for iron removal, at five different treatment works, namely Clarkson, Woodlands, Blikkiesdorp, Sanddrif and Stormsrivier which is located near Port Elizabeth (Koukamma Local Municipality). The capacity of each treatment plant was approximately 345 kl/day. Mrs Bosman was responsible for the following:

- Took full responsibility for the process design of each of the five different plants according to each plant's water characteristics.
- Plant layout design
- Compilation of the specifications and the schedule of quantities for all five different treatment works.

Sept 2010 – February 2011: ***Extension of the Homevale Wastewater Treatment Works (Preliminary and Detail Design, Contract Documentation and Tender Adjudication)***

Northern Cape, South Africa
Position: Candidate Engineer
Employer: Aurecon

The project included the design of a 15 Ml/day extension of the existing Homevale Wastewater Treatment Works (Sol Plaatje Local Municipality). Mrs Bosman was responsible for the following:

- Took full responsibility for the hydraulics design of the plant and associated hydraulic structures
- Detailed design of the hydraulic structures
- Detailed design drawings
- Schedule of quantities and specifications
- Performed the tender adjudication process (two envelope system) and submitted a report to the Client which outlined the evaluation process and recommended the best suitable Contractor for the project.

July 2010 – October 2010: ***Bitou Pumping Scheme to supply water to Plettenberg Bay (South Africa)***

Western Cape, South Africa
Position: Candidate Engineer
Employer: Aurecon

The project included the modelling of the water requirements of Plettenberg Bay and the development of a yield model for the catchment. Mrs Bosman was responsible for determining the yield for the catchment area (Bitou Municipality).

March 2009 – June 2011: ***Built Environment Support Program***

Western Cape, South Africa

Position: Candidate Engineer

This project consisted of a support program for housing plans and spatial development frameworks. Responsibilities included the compilation of a high level infrastructure assessment aimed at various towns, which addressed the water, sanitation, landfill, electricity and transportation services for those towns.. She was also responsible for writing a thorough report to aid the infrastructure assessment of the various towns, as well as calculation and regular update of the overall project budget (free accounts). Mrs Bosman acted as the Project Administrator for the project and was responsible for issuing reports, preparing payment certificates, meeting minutes and monitoring the project process in terms of cost and time by reviewing the project program and budget. (Department of Housing and Local Government).

February 2009 – June 2011: ***Reconciliation strategy studies for water management areas***

Western Cape, South Africa

Position: Candidate Engineer

Employer: Aurecon

This project consisted of a water resource reconciliation study for the southern region of South Africa which focused on water resources for all towns in the area. Responsible for data collection, water demand analysis, water services and bulk water infrastructure and future interventions (such as surface water, re-use, WC/WDM). Mrs Bosman was also responsible for training various staff members to perform appropriate tasks, providing the necessary mentorship by communicate complicated ideas in a practical way. (Department of Water Affairs (DWA)).

July 2009 – August 2009: ***Lower Thukela bulk water supply scheme feasibility study***

KwaZulu-Natal, South Africa

Position: Candidate Engineer

Employer: Aurecon

This project entailed a feasibility study of the proposed Lower Thukela bulk water supply scheme and included abstraction works, an off-channel storage dam, waterworks, and linking bulk water supply infrastructure in order to deliver a maximum of 110 MI/d of potable water at the lowest possible overall cost and with the least environmental impact at the Mandini and KwaDukuza Local Municipalities. Mrs Bosman was responsible for project administration and research about various desilting structures and was involved in the preparation of the schedule of quantities, preliminary design drawing and a presentation for the proposed scheme. (Umgeni Water).

June 2009 – July2009:

Summary Provincial Bulk Infrastructure Master Plan (Water and Sanitation) for the Western Cape Province

Western Cape, South Africa

Position: Candidate Engineer

Employer: Aurecon

This project consisted of a bulk infrastructure master plan (water and sanitation) and was undertaken by the Bulk Regional Infrastructure Task Team (BRITT) in the Department of Local Government and Housing (DLG&H) in the Western Cape. The ultimate goal was to provide a breakdown of the annual budget requirements for the province up to 2019. Mrs Bosman was responsible for assisting with the first order costing relating to water and sanitation services for various municipalities in the Western Cape. (Provincial Government of the Western Cape).