Eskom	Scope of work	Majuba Power Station

Title: **Scope of Work for the Supply and Delivery of Microbiology Laboratory consumables and Spares at Majuba Power Station for 5 Years**

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1. Introduction

Majuba Power Station operates a microbiology laboratory to comply to the chemistry and microbiology standard and SANS 241 standard for drinking water.

2. Supporting Clauses

2.1 Scope

This document provides details on the scope of work for the supply and delivery of the microbiology laboratory consumables and spares at Majuba Power Station for 5 Years

2.1.1 Purpose

This document describes the scope of work for the supply and delivery of Microbiology Laboratory consumables and spares at Majuba Power Station for the period of 5 Years.

2.1.2 Applicability

This document is applicable to Majuba Power Station only.

2.1.3 Effective date

Effective date will be from the authorisation date.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] ISO 17025 standard

[2] SANS 241:2015 standard for drinking water quality

[3] Chemistry and microbiology standard for cooling water -24055864767

[4] Majuba Power station water use license.

2.2.2 Informative

[1] ISO 19458, Water Quality – Sampling for Microbiological Analysis

2.3 Definitions

N/A

2.4 Abbreviations

Abbreviation	Explanation
SANS	South African National Standard
ISO	International organization for standardization

2.5 Roles and Responsibilities

Majuba Chemical Services

a) Compiles the scope of work.

b) Coordinates execution of the scope on site

c) Reviews technical submission provided by the contractor.

d) Contracts Manager for the supply and delivery of the scope of work as stipulated.

2.6 Process for Monitoring

a) Customer Survey done by the contractor and is to be submitted to the employer to review contractors' performance quarterly for the duration of the contract.

b) Key Performance Indicator Table as stipulated on the NEC document for the supply and delivery of the microbiology consumables and spares.

2.7 Related/Supporting Documents

NEC document for the supply and delivery of microbiology and spares.

3. Scope of work for the supply and delivery of the Microbiology Laboratory consumables and spares as and when required for the period of five (5) years.

a) The supply and delivery of Microbiology Laboratory consumables and spares as and when required basis to Majuba Power Station for 5 years as stipulated in **Table 1** below.

b) Purchase orders will be placed as and when required.

c) Only goods delivered according to the prescribed specifications will be accepted.

Material	Description	Specification
1. Safety Laboratory gas burner:	Used to Bunsen Burner is a common piece of lighter that produces a single open gas flame.	button (function knob) and (Safety Control System) with BHC (Burner Head Control) suitable for Liquefied petroleum gas.

2. Magnetic stirrer bar	Magnetic stir bars coated with magnets used to stir liquids. Used in Laboratory reagent/media preparations	Dimensions 35mmx 8 mmx 40mm Cylindrical shape, Anti-Corrosive, Chemical Resistant.
3. Digital Bottle top Dispenser 10-100 ML	liquid measuring device that attaches to the top of the bottles containing the liquid to be measured which allow for safe and reproducible liquid distribution without contamination in the lab environment. Fully autoclavable at 121°C	Fully autoclavable at 121°C, must be accompanied with resent calibration certificate.
4. Digital Bottle top dispenser 1-5 ML	liquid measuring device that attaches to the top of the bottles containing the liquid to be measured which allow for safe and reproducible liquid distribution without contamination environment. Fully autoclavable at 121°C	Fully autoclavable at 121°C, must be accompanied with resent calibration certificate.
5. Magnetic stirrer bar retriever.	Magnetic rod that contains a strong magnet to remove a stir bar from all glass and plastic containers, with a permanent magnet on one end and holding ring on the other one.	250mm, Anti-Corrosive, Chemical Resistant.
6. Digital triple display wall mount Thermohygrometer with Max/Min Temperature Display and Alarm Functions. With a temperature measuring range of -10 -50 °C and a humidity measuring range of 20 -90% RH. Once off supply	To measure both room air temperature and humidity	with Max/Min Temperature Display and Alarm Functions. With a temperature measuring range of -10 -50 °C and a humidity measuring range of 20 -90% RH.
7. Fluke 51 thermometer	handheld digital probe Thermometer	Operating temperature -10 - 60ºC, Checked against NIST), certified with valid calibration certificate
8. Mass Piece pack	Mass Piece pack (1-1000g): Mass piece pack containing each (1g,5g, 10g,	Calibrated according to SANAS. Stainless steel Includes aluminium case and tweeze.

	20g,50g,100g, 250g 500g,1000g). Calibrated according to SANAS.	
9. Spatula spoon: with scoop end and Knife edge (200 mm) stainless steel. Once off supply	utensils that help with mixing, transferring materials and samples from one place to another.	With scoop end and Knife edge (200 mm) stainless steel.
10. Biosart plastic funnel cups sterile: Biosart funnels to fit microbiological filtration manifolds, 250 ml volume.	Biosart funnels to fit microbiological filtration manifolds pack of 50	250 ml volume, sterile
11. Suction flask with glass tube	Glass flask mounted with stopper, vent tap and series of pipes.	Büchner type flasks for vacuum filtration, volume 5L
12. 1-5 ml pipette tips	pipette tips Diamond pack of 1000	1-5 ml pipette, sterile, Autoclavable
13. 10 ml pipette tips	pipette tips Diamond pack of 1000	10 ml pipette, sterile, Autoclavable
14. Absolute 99.9% ethanol	99.9% 2.5 L in plastic/ glass bottle	AR grade
15. Aseptor bags: Aseptor bag number 13, (275x 108x 381mm) Autoclavable	Aseptor bag number 13	(275x 108x 381mm) Autoclavable, Sterile
16. Autoclave tapes:	Suitable for microbiological use	Size 25mmx50m. The tapes must have adhesive and offer good resistance to heat and moisture. Autoclavable @ 121˚C
17. Sodium Thiosulphate	99.5%, N2 S2 O3.5H20, 500 g	Analytical Reagent (AR)
18. Anaerogen 2.5 L	Anaerogen paper sachets	Individually foiled packed. compactible for use with Thermo Scientific™ Oxoid 2.5L jar
19. Anaerobic indicator For laboratory use, consists of a cotton strip impregnated with a redox indicator solution enclosed in a laminated foil envelope.	a sachet containing a test strip saturated with resazurin solution	Suitable for microbiology use, consists of a cotton strip impregnated with a redox indicator solution enclosed in a laminated foil envelope
20. Filter paper	0.45 um cellulose nitrate membrane filters 47mm pack of 100	47mm, pore size 0.45µm, white, grid marked. sterile

21. Filter paper	0.20 um cellulose nitrate membrane filters sterile 47 mm pack of 100	47mm, pore size 0.20µm, white, grid marked. sterile
22. petri dishes	65 mm sterile, plastic pack of 750	Sterile
23. petri dishes	90mm sterile, plastic pack 0f 500	sterile
24. inoculation loops	Disposable inoculation loops sterile pack of 1000	sterile polystyrene 10 ul
25. Inoculation loops	Nichrome wire pack of 25	10 ul, Suitable for microbiology use
26. Aesculin Bile agar	Both selective and differential Culture media ,500 g plastic bottle, powder	microbiological grade
27. Iron sulphide agar	Culture media used for the detection and enumeration of sulphide-reducing bacteria, 500 g plastic bottle, powder	microbiological grade
28. Plate count agar	Microbiological growth media commonly used determine viable bacterial growth. Yellowish- brown, 500 g plastic bottle, powder	suitable for microbiology use
29. M endo agar	Culture media for the enumeration of coliforms in water by the membrane filtration method, 500 g plastic bottle, powder	Microbiology grade
30. M FC agar	m-FC Agar is a selective membrane filtration medium used for the cultivation and enumeration of fecal coliforms, 500g plastic bottle, powder	microbiological grade
31. Slanetz and Barley medium	Culture media used for the enumeration of enterococci from water samples. 500g plastic bottle, powder	microbiological grade
32. Tryptone water	A liquid medium for the detection of indole-forming microorganisms, 500g plastic bottle, powder	microbiological grade
33. Lactose broth 500 g, microbiological grade	Broth is used for the detection of coliform bacteria in water, 500g, plastic bottle, powder	Microbiology grade

34. Brilliant green bile broth 2%	For the detection or confirmation of coliform bacteria, 500g plastic bottle, powder	microbiological grade
35. Rosolic acid 100 g, microbiological grade	Selective agent, Powder, 100g glass bottle	Microbial use, Selective agent to be added to m-FC broth medium,
36. Kovacs Indole reagent	Biochemical reagent consisting of isoamyl alcohol, para-dimethylaminobenzaldehyde (DMAB), and concentrated hydrochloric acid. for detecting microbial Indole in the identification of indole-positive and indole-negative microorganisms. 100 ml, glass bottle	Suitable to use microbiology.
37. Pasteur pipettes	3 ML, plastic, tapered to a narrow opening point at the lower end and fitted with a plastic or rubber bulb at the upper end	Sterile
38. Test tubes	Glass, pack of 100	(16x 150mm) BORO H WALL NO RIM, autoclavable, Sterile
39. caps	RED Test tube caps to fit glass test tubes (16x 150mm) BORO H WALL, pack of 100	Autoclavable
40. Caps	GREEN Test tube caps to fit glass test tubes (16x 150mm) BORO H WALL, pack of 100	Autoclavable
41. Caps	GREY Test tube caps to fit glass test tubes (16x 150mm) BORO H WALL, pack of 100	Autoclavable
42. Gas cartridge refill	55-120g Butane	suitable for use on safety burner
43. TTC Solution 30 ml (for Slanetz and barley media) sterile.	For use with (Slanetz and barley media) 30 ml glass bottle	Microbial use, Sterile
44. Ringers' solution	100 tablets per bottle, glass, or plastic bottle	Microbial use, Sterile

3.1 Specification and description of the goods for supply and delivery

- All microbiological agars must be suitable for microbiology use (microbiological grade), accompanied by SDS, certificate of analysis, and shelf life of greater than 10-12 months from delivery date.
- All microbiological broths must be suitable for microbiology use (microbiological grade), accompanied by SDS, certificate of analysis, and shelf life of greater than 10-12 months from delivery date.
- All chemical reagents must be AR grade, shelf life greater than 10-12 months from delivery date. certificate of analysis.
- All consumables and spares should conform to the specifications as described below:

3.2 Supply and delivery Requirements

a) Microbiological consumables and spares are required on an as and when required basis.

b) All supplied consumables supplied should have an expiry date of not less than a year.

c) Requests for delivery will be made on a contract release order starting with a 45 number.

d) Delivery is expected within 2 to 4 weeks after receipt of Eskom official order.

e) Supply and delivery of Microbiology Laboratory consumables and spares as and when required. The microbiology agar, broth, and should be microbiological grade/ suitable for microbiology use.

f) All microbiological agars must be suitable for microbiology use (microbiological grade), accompanied by SDS, certificate of analysis, and shelf life of greater than 12 months from delivery date.

g) All microbiological broths must be suitable for microbiology use (microbiological grade), accompanied by SDS, certificate of analysis, and shelf life of greater than 12 months from delivery date.

h) All chemical reagents must be AR grade, shelf life greater than 12 months from delivery date. certificate of analysis, and shelf life of greater than 12 months from delivery date.

i) No delivery will be accepted without an official contract release order.

j) Supplier Delivery Note must indicate partial delivery if partial delivery is made.

k) Each delivery Note to state the relevant release order number.

l) Each delivery to be recorded on receiving register and each delivery note must have unique number.

3.3 Work to be done by the Delivery Date

a) Contractor to quote the Eskom official purchase order in all delivery notes and invoices.

b) Goods must be well packaged and safely transported. The integrity of the chemicals and chemical reagents should be maintained.

c) Eskom to acknowledge receipt of goods by stamping and signing the delivery note of the supplier upon delivery, rejected items to be communicated after the official quality inspection is done on site by the end- user.

d) If the product is rejected, goods must be collected and the correct goods supplied within 3 days.

e) Only goods as specified will be accepted. Any goods which do not meet the specifications will be rejected.

3.4 Documentation control

a) All goods being delivered to Majuba Main Stores must have the following: : Unique delivery note number per delivery.

b) Delivery note – must have unique number, date of delivery, items that were delivered (material number, material short description, serial number and quantity delivered)

c) Delivery note must come in duplicates so that one copy is kept at Main Stores and other goes with the supplier for invoicing purposes and as a proof of delivery.

d) Both copies of delivery notes to be stamped with receiving stamp of Majuba Power Station and must have the signature of the receiver as well as the receiving personnel full

3.5 Obligation of the contractor

a) The contractor shall provide transportation that is road worthy for the delivery of all the goods as and when it is required.

b) The contractor shall provide own driver with valid South African driver's licence for the supply and delivery of all goods as and when it is required.

3.6 Quality

a) Supplier must provide data sheets, delivery notes, Safety data sheets and certificate of analysis.

b) The supplier must use suitable packaging method for the safety of each and every component.

c) The following table depicts the level of performance required of the *Contractor*. Should the *Contractor* be unable to meet these requirements, Low Service Damages will be claimed from the *Contractor*.

d) The total Low Service Damages will be limited to 10% per month per order based on as and when required supply

Table 2: Service Level Table for Low Service Damage

No.	Description	*Employer*'s Requirement	Damages payable by *Contractor*
1	On time delivery to Majuba Power Station	All deliveries to be delivered as per agreed lead time of the contract working from the time the supplier acknowledge receipt of an official Eskom Order Number that start with 45 number	5% of the total purchase order if an order is delivered one week later, 7.5% of the total purchase order if an order is delivered two to three weeks later and 10% of the total purchase order delivered later than four weeks and all the deductions to be subtracted from the original invoice of the purchase order
2	Packaging and Preliminary Marking of goods before delivery	All consumables and spares must have a date of manufacturing (DOM) and expiry date clearly displayed on each item. All Consumables that are non-conforming must be removed from Laboratory and be replaced within 31 days from the date it was officially reported to the supplier and the supplier to bear all the cost and risk of replacing the non-conforming items	Period between 32 days to 45 days penalties of 5% will be charged from the total cost of the item, period between 46 days to 59 days penalties of 7.5% from the total cost of the item, 60 days and above 10% of the total cost of the item failed will be charged as penalties
3	Safety and Quality documentation upon delivery.	All Microbiology reagents and other chemicals must have Safety data sheet and certificate of analysis, to be provided by the supplier for each chemical delivered.	6% of the total purchase

4. Acceptance

This document has been seen and accepted by:

Full Name and Surname	Designation
Jeanette Makhanya	Snr Chemist
Tshiki Mashabane	Manager Chemistry

5. Revisions

Date	Rev.	Compiler	Remarks
November 2024	1	Nontobeko Nxumalo	New Issue

6. Development Team

Nontobeko Nxumalo

7. Acknowledgements (if applicable)

N/A