

## Design, Supply, Installation, Commissioning and Training for the A-train - Demineralisation plant.

Tender no: FTP /24/LK

Cost Code:

Revision<sup>1</sup>: 1.0 see legend at bottom of page

Revised date: 07/11/2024


| NAME | TITLE | Empl. no | SIGNATURE | DATE |
|------|-------|----------|-----------|------|
|------|-------|----------|-----------|------|

### COMPILED - RECOMMENDATION




|           |                  |        |   |             |
|-----------|------------------|--------|---|-------------|
| L Raphiri | Process Engineer | 504826 |  | 22 Jan 2025 |
|           |                  |        |   |             |

### COMPREHENSION AND ACCEPTANCE BY CLIENT

The Client warrants that he/she reviewed the Scope of Works and that this Tender and related document and that the Scope of Works comply to Production requirements and the outcome of the work as agreed between parties.

|                    |                                     |       |   |            |
|--------------------|-------------------------------------|-------|---|------------|
| Precious Buthelezi | Snr. Manager - Sulphuric Acid Plant | 22171 |  | 22/01/2025 |
| Comments:          |                                     |       |   |            |

### APPROVAL TO PROCEED

|                   |                        |        |   |            |
|-------------------|------------------------|--------|---|------------|
| Ntsikelelo Lukope | Snr. Manager Tech & CI | 503496 |  | 22/01/2025 |
| Ramo Moroeng      | Snr. Manager Projects  | 505819 |  | 22-10-2025 |
| Sam Mbuyazi       | GM Acid Division       | 500441 |  | 23/01/2025 |

<sup>1</sup> Revision Legend:

0.n = Draft,

.1= Final version

Thus first draft = 0.1, second draft = 0.2, etc, and final approved = 1.0

Should the final be revised for whatever reason the revision would be 1.1 etc.



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## Definitions:

For the purpose of this document the following definitions/abbreviations will apply:~

- Foskor -** - Shall only mean and refer to Foskor (Pty) Ltd.
- Tenderer -** - Shall mean a business company, organization or person who undertake to conduct such works as described in the Scope of Work section of this document and as submitted by means of return Tender.
- Contractor -** - Shall mean a business company, organization or person who undertake to conduct such works as described in the Scope of Work section of this document. Unless



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otherwise specified, the Tenderer and the Contractor will be deemed to be one and the same.

**He/His/Himself -**

- Shall also refer to the opposite gender as well or a company of individuals or combination of persons of different genders as applicable to the Tenderer.



## Section A: INVITE AND TENDER INSTRUCTIONS

### A.1 Invitation to Tender

A.1.1 Tenderers are invited to submit a tender in accordance with this Tender Document.

The Works consists of the **Design, Supply, Installation, Commissioning and Training for the A-train - Demineralisation plant.**

The tender Instructions are to be found in **Section A.**

The Contract Works Forms of Tender is stipulated in **Section B.**

The detailed Scope of Work and Specifications are to be found in **Section C.**

The Conditions of Contract are stipulated by **Foskor (Pty) Ltd, Procurement Department.**

A.1.2 At the time of tendering, any queries and/or doubts within the scope, specifications or drawings shall be referred to:

|                      |                                |
|----------------------|--------------------------------|
| Designation          | <b>Category Buyer Projects</b> |
| For the attention of | <b>Mphumeleli Ngqulunga</b>    |
| Telephone            | <b>035 902 3115</b>            |
| Fax                  | <b>035 797 3941</b>            |
| Cell no              |                                |
| Email                | <b>phumen@foskor.co.za</b>     |

### A.2 Return of Tender Documents

A.2.1 One copy of this document, duly completed and signed by the Tenderer, shall be delivered in a plain sealed envelope, distinctly marked as follows:

|               |                   |                                |
|---------------|-------------------|--------------------------------|
| <b>TENDER</b> |                   | <b>The Manager Procurement</b> |
| Tender No.    | <b>FTP /24/LK</b> | <b>FOSKOR LIMITED</b>          |



|                         |  |
|-------------------------|--|
| Contract Title:         | <b>Design, Supply, Installation, 21 John Ross Parkway<br/>Commissioning and Training for Richards Bay<br/>the A-train Demineralisation plant</b> |
| Closing date &<br>time: |  |

A.2.2 Tenders shall be placed in the **Tender Box at Foskor Richards Bay Main Administration Reception** no later than **12h00 noon** on the closing date

A.2.3 A tender sent by fax shall not be accepted.

- In case of Tenderers not being local, and not being in a position to hand deliver tender documents to the above-mentioned location, Tenderers may use an approved document courier for the purpose of delivering the tender document to Foskor (Pty) Ltd. This would be subject to auditable proof of dispatch from the Courier Company (including time and date of dispatch).
- Such proof shall be faxed and confirmed as addressed to Superintendent: Tenders and Contracts, FOSKOR (PTY) LTD, 21 John Ross Parkway, Richards Bay, facsimile number as indicated under item A.1.3 before the closing time and date of the tender.
- Foskor shall take no responsibility for lost courier documents – prior to opening of tenders - and onus rests on Tenderer to keep duplicate of Tender Submission.
- In this case the sealed envelope shall remain addressed as per paragraph A.2.1, and shall be placed in a sealed courier bag with the following street address delivery instructions:

**FOSKOR (PTY) LIMITED - (TENDER BOX)**  
**21 John Ross Parkway**  
**Richards Bay**  
**3900**

A.2.4 Tenders will not be opened in public and under no circumstances will the price(s) at which any Contract was awarded be divulged to any person.

A.2.5 In the event that the Tenderer did not submit a tender or if his tender was unsuccessful, the Tenderer shall return the Enquiry Document and Drawings within **14 days** to the **Superintendent: Tenders**



and Contracts .

## A.3 Site Inspection

An official Site inspection shall be held at the **Foskor, Richards Bay** site in order for the Tenderer to fully acquaint himself with prevailing site and works conditions. In so doing you are to ensure that you fully understand the context and extent of the works (refer B.5 – Site Inspection Certificate).

Date of Site Visit

Time of Site Visit

Meeting Venue

|   |      |
|---|------|
|   |      |
| From :                                  | To : |
| <b>Report at Main Security Entrance</b> |      |

Please wear the following protective clothing:

Overalls (Acid Proof)

Hard Hat

Safety Shoes

Safety Glasses

Hearing protection

Gloves

**Yes**

**Yes**

**Yes**

**Yes**

**Yes**

**Yes**

### IMPORTANT

- Please note that a Safety Induction is **MANDATORY** and all Tenderers to allow for at least **30 minutes** before the Site Meeting start, to complete the induction.
- The Site Visit / Inspection are **OPTIONAL**.

## A.4 Examination and Completion of Documents



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- A.4.1 The Tenderer shall examine all documents forming part of the Tender and submit his tender accordingly. All drawings, addendums, annexures received with the Tender documents must be returned with your company stamp and/or signature, as a comprehensive part of your Tender Submission. Failure to do so may result in disqualification from tender.

Tender in accordance with this format and submit documents as specified below.

- A.4.2 The Sections of this document shall not be separated in any way nor shall any pages be detached therefrom.

- A.4.3 The Tenderers submission is to include all Financial and Contractual detail and be signed (by authorized person) and/or company-stamped together with tender submission.

A.4.3.1 Schedule of rates of Costs in detailed Breakdown or Labour Rates for the Works or Breakdown per Bill of Quantities

A.4.3.2 Initial Project Program of Works, Work Methodology, and Cash Flow (structured similarly to payment terms)

A.4.3.3 Schedule of Key Personnel on the Project

A.4.3.4 Schedule of Similar Contracts Undertaken

A.4.3.5 Site Inspection Certificate – signed by Tenderer as proof of attendance

## **A.5 Contract Documents Priority**

The eventual Contract shall comprise the documents as stated in this tender document, your Tender submission by which you agree and the Foskor (Pty) Ltd Terms and Conditions, which shall be interpreted in accordance with the order of priority stated in the said Conditions.

## **A.6 Alterations by Tenderer**

- A.6.1 Should the Tenderer propose any departures or modifications from the Conditions of Contract, Specifications, or to qualify his tender in any way, he/she shall set out his/her proposals clearly in the covering letter attached to this Tender with reference to the particular section of the document, failing which the tender will be deemed to be unqualified. Any proposed technical departures from



Foskor (Pty) Ltd.'s Requirements or Specifications shall only be considered if submitted in writing together with a detailed motivation for such departures.

**A.6.2** The Tenderer shall include in respect of each proposed alteration the following:

- a) Reason for proposed exception;
- b) Suggested re-wording;
- c) Any effect on the tender price;
- c) Any effect on the execution of the scope of supply;
- d) Any effect on Foskor's overall program objectives.

If any of the above information is not supplied, the Tender may be regarded as non-compliant.

## **A.7 General**

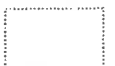
**A.7.1** Foskor (Pty) Ltd reserves the right to adjust arithmetical or obvious errors in the Tender. Such adjustments made by Foskor (Pty) Ltd will be communicated to the Tenderer prior to the acceptance of his Tender.

**A.7.2** The Tenderer (whether his Tender is accepted or not) shall treat the details of the Tender as private and confidential and no copies shall be made thereof without the permission of Foskor (Pty) Ltd.

**A.7.3** Foskor (Pty) Ltd is not bound to accept the lowest or any other Tender it may receive, nor to assign a reason for the rejection or acceptance of any Tender, and Foskor (Pty) Ltd has the right, after Tenders are opened, and before a Contract is awarded, to enter into negotiations and discussions with one or more Tenderers short-listed on a price, program or technical basis, with a view to the clarification, improvement or amendment of any particular Tender.



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- A.7.4 All Tenderers tender at their own risk and Foskor (Pty) Ltd is not bound to accept any Tender and under no circumstances whatsoever will be responsible for any costs incurred by any Tenderer in compiling or submitting the tender.
- A.7.5 Furthermore, Foskor reserves the right to accept only a part of the Tender, with due communication and agreement of the Tenderer.
- A.7.6 The Tenderer is required to submit a 'bona fide' Tender, intended to be competitive and not to fix or adjust the amount of the Tender by or under or in accordance with any agreement or arrangement with any third party. The Tenderer is also obliged to ensure that it has not and will not at any time before the hour and date for the lodging of this Tender do any of the following acts:
- a) Communicate to any person the amount or approximate amount of the proposed Tender except where the disclosure, in confidence, of the amount of this Tender was necessary for the preparation of the Tender.
  - b) Enter into any agreement or arrangement with any third party that shall disqualify from or that Foskor shall refrain from using.



## Section B: FORMS OF TENDER TO BE SUBMITTED

### B.1 Schedule of Rates or Summary of Bill of Quantities

From Bill of Quantities – if applicable

or →

qty

x rate =

ZAR

#### 1.0 SUB TOTALS:

1.01 Preliminary and Generals

A1

1.02 A – Train replacement

A2

A2

A2

Sub Totals Sum (Excluding VAT)

A3

2.0 Add: VAT

15%

D

3.0 Total Tender Sum (Including VAT)

A4

**B1.1** In the event of their being any obvious errors of pricing, extensions or additions in the priced Schedule of Quantities attached, we agree to their being corrected, and the contract amount altered accordingly.

**B1.2** We further undertake that this tender cannot be withdrawn or retracted for **90** (ninety) days from the closing date.

**B1.3** Notwithstanding that, this tender is submitted by invitation, it is clearly understood and agreed that there is no obligation upon Foskor to accept the lowest or any tender.

**B1.4** *The tendered prices are fixed and firm for the duration of the contract.*



B1.5 *Unless or until a formal agreement is prepared and signed, this tender, shall serve as your written acceptance and constitute a binding contract between Foskor and Yourself.*

Amount In Words:

Signed at .....on.....

Signatur

e ..... Company Stamp

For and on behalf of the Tenderer (duly authorized)

Company Stamp

## B.2 Initial Project Program of Works, Work Methodology and Cash Flow

(This is a workable schedule and the Contractor is in no way obligated to these dates. An obligatory final programme will only be required once the tender is awarded)

Commencement Date

28 Weeks from appointment date



**TO BE SUBMITTED WITH THIS TENDER**

The Tenderer shall submit with this Tender:

- 1 Initial program (Bar Chart/Gantt Chart).
- 2 Quality Control Plan.
- 3 Milestones.
- 4 Method Statement for Manufacturing (Contractor's Workshop).
- 5 Method Statement for Installation (On Foskor Site).
- 6 Record of experience and recent references (Similar Contract Undertaken).
- 7 Proof of professional registration for the Works to be completed.

**OTHER IMPORTANT NOTES**

- **'Defects Liability Period'** shall be that period in force for Foskor to call upon the Contractor/Consultant to rectify at no cost to Foskor (Pty) Ltd any defects of workmanship, quality or practice; and shall remain in force **in parallel with the Warranty Period** and any other duration agreed to.
- The Tenderer is to list and motivate any deviations in terms of Project Program and/or time allowed and this is subject to approval by the Foskor (Pty) Ltd Engineer.
- It would be expected, in the event of critical work and/or work behind programme/schedule, should such be attributable to the Contractor, to make up the time and work and complete the work at no cost to Foskor (Pty) Ltd.
- The Tenderer shall, within **7 (seven)** days of contract, award submit a final detailed work methodology and program, and the final work methodology shall be verified and approved by Foskor (Pty) Ltd.
- The Tenderer is welcome to propose alternatives work methodology or approach to work, that may be of mutual benefit. This would be submitted in the form of an Alternative (clearly marked), however the Tenderer is **still to submit a tender in the form specified** in this tender.



- The Tenderer shall submit a Work Breakdown Structure (WBS) and compile a programme (use MS Projects or MS Excel to compile the Project Program).
- If the Tenderer is partially or wholly responsible for the design or design drawings according to which construction is specified, any corrections to design/design drawings shall remain for the Tenderers account for a period of 6 months (or as otherwise agreed) after project completion. This is to ensure that poor design or inaccuracy of designs is rectified at no cost to Foskor.

## B.2.1 Project Completion and Handover; Warranty

Unless otherwise agreed, Project Completion (handover), shall be deemed to be from date of Foskor issuing a Project Complete/Handover Certificate to the Contractor. This should be expected to be received within seven (7) days from date of receipt by Foskor of the complete Data Pack in its acceptably certifiable form (refer Section C of this document, **Quality Control**). Once the project has reached completion as defined by this scope, onus rests on the Tenderer to request from Foskor a Project Complete/Handover Certificate, which receipt shall define and signify the commencement of Retention Period (if applicable).

## B.2.2 Initial Program to be Submitted

The interim and final project completion dates, as indicated in the above table should be used as a guideline for the Tenderer to compile the detail project schedule.

After the contract agreement is accepted (by signature of an agreement or acceptance of a Purchase Order) the dates shall be fixed and shall be applicable to the penalty clause as per agreement.

**ATTACH GANT CHART AND/OR BAR CHART TO THIS PAGE**



## B.2.3 Table with Milestones to be Submitted

Using the critical path items from the program compile related Milestone Dates. Thus, the items/actions/ activities to be met that is critical towards the completion of the project

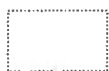
| WBS ref | MILESTONES | To be Completed on |
|---------|------------|--------------------|
|         |            |                    |
|         |            |                    |
|         |            |                    |
|         |            |                    |
|         |            |                    |
|         |            |                    |
|         |            |                    |
|         |            |                    |

## B.3 Schedule of Key Personnel on the Project

The Tenderer shall:

1. Complete schedule B.6.1 below concerning the Key Personnel on the project, indicating also if the person is employed by the Tenderer, a sub-contractor or temporary employed person.
2. Submit a project organogram showing the relationships and authority.

| Key Personnel           | Name and Surname | Full/Part Time on site, off-site? | Employed, Sub-Contractor or Temp? | Years Related Experience |
|-------------------------|------------------|-----------------------------------|-----------------------------------|--------------------------|
| Project Manager / Owner |                  |                                   |                                   |                          |





|                                    |  |  |  |  |
|------------------------------------|--|--|--|--|
| Site Manager/<br>Contracts Manager |  |  |  |  |
| Safety Officer                     |  |  |  |  |
|                                    |  |  |  |  |
|                                    |  |  |  |  |
|                                    |  |  |  |  |

These persons shall not be substituted without prior consultation with and approval from Foskor (Pty) Ltd.

Failure to submit this information at the time of tender could lead to disqualification of the tender.

## B.4 Schedule of Similar Contracts Undertaken

Please provide a list of work done on contract of which the Scope of Works that are similar to the one described in this document (or attach references)

| Completed Month, Year | Description | Client Name | Contact Person & Details | Value |
|-----------------------|-------------|-------------|--------------------------|-------|
|                       |             |             |                          |       |
|                       |             |             |                          |       |
|                       |             |             |                          |       |
|                       |             |             |                          |       |
|                       |             |             |                          |       |
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## B.5 Schedule of Labour Rates for the Works

The rates for labour indicated below shall be the Total Cost to the Company (Contractor). It shall include for all the Contractor's profits, overheads, wages, accommodation, travelling, subsistence and other costs relative to the employment by the Contractor of the personnel detailed, and for hand and portable electric or pneumatic tools and consumables normal to the trade of the respective personnel.

However, it will exclude indirect supervision as same are deemed to be included under the costs relating to the Conditions of Contract i.e. non-productive supervisors are deemed to be included in the rate.

The rates detailed herein shall **not** be subject to escalation.

The Contractor's rates per hour are based on a normal **9 hours per day**.

The application and use of these rates shall be at the sole discretion and subject to the prior approval of the Foskor designate representative.

| Item No. | Category | Rate per Hour in Rands |          |                 |
|----------|----------|------------------------|----------|-----------------|
|          |          | Normal                 | Overtime | Sundays and PPH |



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## B.6 Schedule of Equipment for the Works

The Contractor must list below all the items of major equipment, which he guarantees will be provided on site in perfect working order to complete the work. The lists of items of equipment shall provide the Contractor's warranty of ownership of such equipment unless specifically endorsed in this Annexure to the contrary as "hired" or "hire purchase equipment."

The rates for Equipment detailed below shall include all overheads, profits, and maintenance and running costs including the provision of drivers/operators where necessary.

Contractor's rates per day are based on **9 hours per day**.

The rates detailed herein shall not be subject to escalation. No payment in respect of standing time shall be paid for items of equipment not listed below.

This Schedule must be accurately completed. Phrases such as "adequate equipment will be provided" will not be accepted. The application and use of these rates shall be at the sole discretion and subject to the prior approval of the Engineer.

| Item | Description | Rate/hr | Rate/Day | Standing Time/Hour |
|------|-------------|---------|----------|--------------------|
|      |             |         |          |                    |
|      |             |         |          |                    |
|      |             |         |          |                    |
|      |             |         |          |                    |
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|      |             |         |          |                    |
|      |             |         |          |                    |



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## B.7 Site Inspection Certificate – To be signed by Tenderer

This is to **CERTIFY**, that we .....

(Name(s) in CAPITAL LETTERS) (Referred to on the Form as  
"We")

representing and being duly authorized by:

.....  
(Name of Company and Address) (Referred to on the Form as "We")

1. Visited the SITE on ..... (date);
2. Received the TENDER Documents (including all attachments and subsequent correspondence related to this tender);
3. Carefully examined the SITE and made ourselves familiar with all local conditions likely to influence the WORKS and the cost thereof;

We further CERTIFY that we are satisfied with the description of the WORKS and explanations given by Foskor (Pty) Ltd and that we fully understand the nature of this TENDER.

I/We are,

Yours faithfully

SIGNATURE: \_\_\_\_\_

ON BEHALF OF: \_\_\_\_\_



DATE: \_\_\_\_\_

AS WITNESS: \_\_\_\_\_



---

**Section C: SCOPE OF WORKS****C.1. Background, Present Situation and Proposed Solution****C.1.1 Background**

The function of the demineralised water treatment plant is to process municipal water to the pure water quality requirements of Foskor. The process flow diagram for Foskor's Demin plant can be seen in Appendix 1. Municipal potable water is fed to the Potable water storage tank. This tank caters for short periods of low Potable water supply, enabling the water treatment plant to run at a constant set flow rate. Potable water then flows through three carbon filters. The activated carbon Filters remove a substantial portion of the suspended solid particles (dust etc.), all residual chlorine and reduce the level of organic contaminants in potable water, all of which will adversely affect the performance of the ion-exchange process.

Filtered water is then transferred from the filtered water tank to the cation exchange vessel. The vessel contains cation exchange resin which can strip cations (calcium, magnesium, sodium etc) from the water and replace them in the liquid stream with hydrogen (H<sup>+</sup>) ions. The high concentration of hydrogen ions in water forms weak acids, this can be noticed by a low pH.

This de-cationised water is passed directly to the anion exchange resin which now strips off the anions (chlorides, sulphates, silica etc) from the water, replacing them with hydroxyl (OH<sup>-</sup>) ions, forming water. In this manner all the impurities in the form of dissolved minerals are removed from water supply.

There are 3 Demin trains onsite, namely A, B and C trains. The C train has been replaced, the OEM Veolia's recommendations were actioned and as a result the Demin plant water quality has improved. However, A and B trains continue to deteriorate, increasing maintenance frequencies and impacting on production.





## C.1.2 Present Situation

The A train is currently badly deteriorated and as such the plant experiences loss of resin and multiple vessel leaks, thus forcing Foskor to stop the train for repairs. When either of the trains has been stopped for repairs, this compromises the water levels available to run production thereby reducing production capacity in both the Sulphuric Acid Plant and Phosphoric Acid Plant. With lower water rates from the Demin plant, there's lower steam production rates to the Phosphoric Acid Plant, thereby greatly impacting production output.

## C.1.3 Proposed Solution: Reason for this Tender

The current set-up in the plant is that the C train has been replaced and functional and is yielding better quality water. The A and B trains are steadily deteriorating and as such need to be replaced to minimise the downtime impact on both the Sulphuric Acid Plants and Phosphoric Acid Plants. The A train will be the area of focus for this tender.

## C.2. Legislation, Standards and Codes of Practice

Latest revisions or amendments of the listed codes and specification are applicable to this contract:

| Number          | Title / Description                        | Revision |
|-----------------|--|----------|
| COP6            | Control of Construction Work               | Latest   |
| Act 85 of 1993  | Occupational Health and Safety (OHS Act)   | Latest   |
| SABS 1200       | Civil Construction Work                    | Latest   |
| S28 NEMA (1998) | Duty and care of environmental degradation | Latest   |



|         |  |        |
|---------|--|--------|
| AWSD1.1 | Structural steel   | Latest |
| API620  | Design and Construction of Large, Welded, Low Pressure Storage Tanks | Latest |
| API653  | Tank Inspection and Repair   | Latest |
| API579  | Assessments of Vessels – Fitness for Service                         | Latest |

All work listed in this scope of work shall be completed in accordance with the specifications and codes as listed above. It is the responsibility of the Tenderer to be in possession of the latest standards and codes as listed above in the execution of this project.



## C.3. Foskor Specifications

All work listed in this scope of work shall be completed in accordance with the specifications listed below.

Those specifically applicable to this Tender is **marked with “YES”**, however it does not exclude other specification listed or implied, and it remains the Tenderer’s responsibility to ensure that work execution and tender prepared is in line and meets the requirements of all standards indicated or not.

| Number  | Title / Description   | Version | Applicable |
|---|---|---------|------------|
| <b>OTHER STANDARDS on this Tender</b>                 |   |         |            |
| <b>APPLICABLE FOSKOR SPECIFICATION on this Tender</b> |   |         |            |
| <b>E003</b>   | Industrial Electrical Installations                                   | Latest  | <b>Yes</b> |
| <b>EC1</b>  | Installation, Testing and Commissioning of Electrical Equipment       | Latest  | <b>Yes</b> |
| <b>FC005</b>  | General Earth Works to Plant and Building                             | Latest  |            |
| <b>FD001</b>  | Design Criteria for Structures  | Latest  |            |
| <b>FG001</b>  | General Requirements for Projects                                     | Latest  | <b>Yes</b> |
| <b>FL001</b>  | Design & Fabrication Criteria for Ladders & Walkways                  | Latest  | <b>Yes</b> |
| <b>FM001</b>  | General Mechanical Specification                                      | Latest  | <b>Yes</b> |
| <b>FM003</b>  | Welding of Fabricated Equipment                                       | Latest  |            |
| <b>FQ001</b>  | General Engineering Quality Requirements                              | Latest  | <b>Yes</b> |
| <b>FS 001</b>   | Specification for the Fabrication & Erection of Structural Steel Work | Latest  |            |
| <b>GM5</b>  | Pipe Standards Including Auxiliary Equipment                          | Latest  | <b>Yes</b> |
| <b>GM6/COP9</b>                                       | Engineering Drawing and Document requirements                         | Latest  |            |



|                        |   |        |            |
|------------------------|---|--------|------------|
| <b>GQ1</b>             | Quality Control Procedure for Contractors   | Latest | <b>Yes</b> |
| <b>GS1</b>             | Structural Steelwork and Plate Work Fabrication and Erection  | Latest |            |
| <b>MC001</b>           | Corrosion Protection Colour Coding  | Latest | <b>Yes</b> |
| <b>MC004</b>           | General Plant Painting Specification Low Temperature  | Latest |            |
| <b>MC006</b>           | Repair/Touch-up of Damaged Steelwork  | Latest |            |
| <b>MC009</b>           | General Plant Protection High Corrosive Areas   | Latest |            |
| <b>SS-000000-C-006</b> | General specification for concrete construction   | Latest |            |
| <b>SS-000000-C-007</b> | Concrete specification  | Latest |            |
| <b>SS-000000-C-012</b> | Grouting  | Latest | <b>Yes</b> |
| <b>SS-000000-Q-001</b> | General quality requirements  | Latest | <b>Yes</b> |
| <b>SS-000000-S-001</b> | Fabrication and erection of structural steelwork  | Latest |            |
| <b>DD-000000-C-001</b> | Civil design criteria   | Latest | <b>Yes</b> |
| <b>DD-000000-S-001</b> | Structural design criteria  | Latest |            |
| ASTM C-279             | Standard Specification for Chemical-Resistant Masonry Units   |        |            |
| ASTM C20               | Standard Test Methods for Apparent Porosity, Water Absorption, Apparent Specific Gravity, and Bulk Density of Burned Refractory Brick and Shapes by Boiling Water |        |            |
| ASTM C133              | Standard Test Methods for Cold Crushing Strength and Modulus of Rupture of Refractories   |        |            |



|                  |  |  |  |
|------------------|--|--|--|
| ASTM C373        | Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity and Apparent Specific Gravity of Fired Whiteware Products |  |  |
| DIN 28062        | Building Materials for Brick Lining; Classification, Properties, Testing   |  |  |
| DIN EN 993-1     | Determination of Bulk Density, Apparent Porosity and True Porosity   |  |  |
| DIN 51067        | Determination of the Crushing Strength at Room Temperature (CCS) on Refractory Materials   |  |  |
| DIN 51068 Part 1 | Determination of the Resistance Against Thermal Shock  |  |  |
| DIN 51102 Part 2 | Determination of the Resistance Against Sulphuric Acid   |  |  |
|                  |  |  |  |
|                  |  |  |  |
|                  |  |  |  |

It is the responsibility of the Tenderer to be in possession of the latest specifications as listed above or implied in the execution of this project.

The Contractor is referred to the Specification mentioned for full descriptions of materials and methods referred to in these Bills of Quantities/Lump Sum documents, insofar as they apply.

The Contractor is advised to study the referred to specification, before pricing Bills of Quantities/Lump Sum documents.

No claim whatsoever will be allowed in respect of errors in pricing due to brevity of description of items in the Bills of Quantities/Lump Sum documents which are fully described when read in conjunction with the relevant Preambles and/or Specifications.



Suppliers of materials and the like, whose quality systems apply with one or more of the SABS/SANS ISO 9000 Series should be used whenever possible in the absence of a particular SABS/SANS Specification Standard Mark.

The Contractor is hereby informed that where SABS/SANS Specifications are referred to in these Bills of Quantities/Lump Sums documents and Specifications thereto, then **ONLY** the Specification of Work Clauses will apply. The method of measurement and payment clauses will **NOT** apply to this Contract.

#### **C.4. Project Requirements**

The following deliverables are required:

- a) Design, Supply, Delivery, Installation (incl. on site civil works), Testing & Commissioning and Training for the replacement of the Foskor A train Demineralisation vessels.
- b) Removal of existing A train vessels to be replaced.
- c) Design of the vessels by a Design Engineer in accordance with the applicable code/s.
- d) All associated parts such as: feed and discharge Piping & fittings, valves, instrumentation, electrical and civil requirements.
- e) As built drawings wherever applicable.
- f) Supply of all material, equipment, tools, consumables and trained labour.
- g) Supply of Cation and Anion ion exchange resins.
- h) Sourcing and supply of transport and crantage.
- i) Submission of detailed Quality Control and Assurance information such as data books, quality control plans, design calculations, as built drawings, material certificates.
- j) Provision of nameplates for the equipment.
- k) Since this is a regulated equipment, fabrication and installation supervision is required.
- l) Compliance at all times to the Foskor SHE requirements and permit systems.

The Contractor will be responsible for the manufactured integrity and detailed design of their supplied equipment. Data Pack to be fully inclusive of all checks and certificates required. The Contractor shall



further ensure that all work is executed with a detailed quantity of work and/or design detail is provided and complies with the specifications as set out in this document.

All detailed designs and specifications are to be approved prior to final acceptance by Foskop (Pty) Ltd.

## C.5. Plant Data

All work listed in the document will be constructed for installation at the **FOSKOR RICHARDS BAY PLANT, 21 JOHN ROSS PARKWAY**

## C.6. Drawings and/or Equipment Manuals

The following drawing, data and/or manuals remain the property of Foskop (Pty) Ltd and shall be returned to Foskop (Pty) Ltd on completion of the work.

| Drawing No. | Title / Description | Revision |
|-------------|---------------------|----------|
|             |                     |          |
|             |                     |          |
|             |                     |          |
|             |                     |          |
|             |                     |          |

All work listed in this Scope of Work shall be completed in accordance with the latest copies of drawings/specifications as listed above. It is the responsibility of the Tenderer to ensure that the Tenderer has the latest copies of drawings/specifications as listed above for the execution of this project.



On completion of the project the Contractor must certify all documentation and drawings for correctness and conformance, specifying which standards and regulatory acts these conform to.

### **C.7 Scope of Work - General**

The Scope of Work ("Works") calls for the successful completion of the works/services as described in this document and all the relevant associated works that is required to make such a facility functional for its purpose.

The Contractor to supply as per the complete Bill of Quantities submitted. The supply of any equipment/material that is suggested by the Contractor must be approved by Foskor.

All specialized equipment/material shall be installed as per recommendation by the manufacturer of the supplied material/equipment. Any deviations from Manufacturer recommendations must be suitably justified.

All completed work will be inspected and approved by Foskor. The Contractor shall ensure that all 'acceptance approvals' are received from Foskor (Pty) Ltd before proceeding to the next stage.

After completion of installation, the Contractor must allow for final inspection, passing & Handover of the project works with Foskor (Pty) Limited and the nominated Contractor.

The project to be undertaken in terms of the latest revisions and amendments of all relevant legislation, standards and Codes of Practices. The Contractor will complete the Works in accordance with all statutory obligations, municipal regulations and all other relevant requirements. The Consultant is specifically reminded of the requirements in terms of the Occupation Health and Safety Act, Act 85 of 1993 and latest amendments in terms of this project.

The design, selection and supply of all equipment to be supplied by the Contractor shall be approved by Foskor.

All work carried out shall be in accordance with the Installation recommended or specified by the manufacturer of the supplied material.

#### **C.7.1 Scope of Work – Extent**

The works include:





- 1) Engineering design, supply and installation including project management of the following:
  - (a) Replacement (manufacture and installation) of one (1) cation IX vessel
  - (b) Replacement (manufacture and installation) of one (1) anion IX vessel
  - (c) Inclusion of associated system valves, pipework, electrical and instrumentation.
- 2) Testing and Commissioning of the Equipment/system.
- 3) Training.
- 4) Supply of cation and anion ion exchange resins.
- 5) Removal of the existing A train vessels.

- **INTENT:** The intent of this scope of work is to refurbish the existing Demin plant by replacing the current A-Train cation and anion vessels and improve the quality of the regeneration cycles by replacing the current system with a newly built system.
- **BILL OF MATERIALS:** Each tenderer must submit a detailed Bill of Materials for all equipment, instrumentation, works and labor and accompanying costs. Costs for the cation and anion resin must be separated and easily distinguishable. An example is given in **Section C**.
- **EQUIPMENT SELECTION:** Each tenderer cost proposed must clearly state the equipment model proposed and all optional features provided in addition to the standard unit.
- **O&M Manuals:** A set of O&M manuals shall be provided after the installation of the equipment. O&M manuals must include all schematics that are required in the maintenance or troubleshooting of the system.
- **TRAINING:** After installation and commissioning is complete a training session shall be provided by the tenderer. Training session shall include system maintenance, repairs and operating procedure.
- **LABELLING:** All equipment and circuits installed or altered shall be correctly labelled.



**Work Methodology**

- The Tenderer shall submit a work methodology as a part of the tender.
- The methodology shall contain sufficient details to assure Foskor that the Tenderer has a detailed understanding of the work and has the staff and resources to execute the project.
- Failure to submit this methodology at the time of tender will result in the disqualification of the tender.
- A detailed work methodology shall be submitted within 7 days of contract award.
- A final work methodology shall be verified and approved by Foskor on contract award.

The successful Tenderer to read the Scope of Work and execute the work as outlined in this tender.

The Tenderer will be allowed to do work which is not in the scope of work only on request or agreement from the Foskor Project Leader, and communications issued during the tender process and subsequent to appointments.

**C.7.1.1 Technical requirements****Demineralization Plant requirements:****Design Basis**

The plant was designed to produce water with silica at < 50 ppb at 800m<sup>3</sup> operational volume per train per cycle (anion limiting). The Plant operates over 330 days per year. Plant PFD in Appendix 1.

Foskor's Demineralisation plant runs three (3) parallel IX trains. Each train processes 80m<sup>3</sup>/h of potable water at a pressure of 7.5bar. According to design, each train should achieve a 10-hour cycle time between regenerations and product quality as given below:

**Output data:**

- Conductivity - <5μS/cm
- Silica - <50ppb



Input data:

- Throughput: 80m<sup>3</sup>/hr per train
- Running Time: 10.00 hr

Currently, Foskor's A-Train IX units are only processing 40-45m<sup>3</sup>/h of water due to damaged internals of the units.

The acid regeneration cycle consists of a two-step acid injection system. The first injection step consists of 2.0% H<sub>2</sub>SO<sub>4</sub> solution at a flow of 32m<sup>3</sup>/hr. The second injection step consists of 4.0% H<sub>2</sub>SO<sub>4</sub> solution at a flow of 32m<sup>3</sup>/hr.

The caustic regeneration cycle consists of a single 4% NaOH solution injection step at a flow of 13.4m<sup>3</sup>/hr.

Currently, Foskor experiences frequent regeneration upsets, with the regenerant strengths varying by up to ±28%.

Cation and Anion Resin Requirements:

Ion exchange resins are a type of synthetic polymer that can exchange ions from the water to remove impurities. They work by exchanging positively/negatively charged ions in the water with positively/negatively charged ions that are attached to the resin. This process removes contaminants such as heavy metals, calcium, and magnesium from the water, making it pure and safe to use. There will be a requirement for the new vessels to be topped up with resin. Please include in line with the vessel Design.

### **C.7.2 Site Conditions**

The site is located on the Foskor (Pty) Ltd Richards Bay Plant comprising of the Sulphuric Acid Plant, Phosphoric Acid section and the Granulation Plant. The Tenderer is deemed to have viewed the site and to have thoroughly acquainted themselves with the extent, nature and conditions affecting the work to be done before submitting his tender.



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Access to the area is free of obstructions, however the Contractor must take note that unexpected unsafe conditions e.g., acid leaks, if any will take priority for containing of these and returning to a safe working condition.

It will be imperative for the successful Tenderer to liaise with the Foskor (Pty) Ltd.'s designated project leader (Foskor representative) to ensure safety whenever site access is required.

Full acid resistant PPE (personal protective equipment/clothing) must be always worn/used.

Be cautious of Foskor equipment, employees and contractor employees always doing their routine maintenance and daily duties in the area.

As it will be deemed that the prevailing conditions have been considered when tendering, no claims for extras arising from failure to observe all site conditions will be admitted.

### **C.7.3 Services which are known to exist on the site**

The following services exist on the site:

- Water and air pipes.
- Acid pipes.
- Steam pipes.
- Electrical cables and racking.

#### **C.7.3.1 Foskor Supplied Services**



| Foskor (Pty) Ltd shall be responsible for: |  | Applicable: |
|--|--|-------------|
| 1  | Supply a copy of the relevant Foskor Procedure Specification(s).   | refer C.3   |
| 2  | Supply a copy of reference drawings if required.   | refer C.6   |
| 4  | Provide access to electricity connection points <ul style="list-style-type: none"> <li>Any connection and consumption will be monitored by Tenderer and verified by Foskor on defined intervals (usually at the beginning and end of contract)</li> </ul>  | YES         |
| 5  | Provide access to potable water <ul style="list-style-type: none"> <li>Connection and consumption would need to be monitored by Successful Tenderer (Contractor) and verified by Foskor on intervals (usually at the beginning and end of contract) defined by Foskor</li> </ul>   | YES         |
| 6  | Provide a suitable area for site establishment for Successful Tenderer (Contractor). <ul style="list-style-type: none"> <li>Successful Tenderer to formally in writing motivate, request and define the area and services it deems necessary for site establishment.</li> <li>Foskor will at its own discretion (if request is approved) allocate a site establishment area, however Foskor can should it deem necessary retract or re-define its approval by giving reasonable notice to the successful Tenderer</li> </ul> | ON REQUEST  |



|   |  |     |
|---|--|-----|
| 7 | <p>Provide access to ablutions facilities. (not change rooms)</p> <ul style="list-style-type: none"> <li>▪ Successful Tenderer (Contractor)'s workers to be fully dressed in required PPE when coming on site.</li> <li>▪ The successful Tenderer to ensure that its workers/subcontractors/ supplier that are making use of facilities, do so in an orderly and well-mannered way.</li> <li>▪ Successful Tenderer is not allowed to make use of Foskor's change room or tearoom facilities unless agreed to in writing.</li> <li>▪ The successful Tenderer might be called on to assist with the maintenance and cleaning of ablutions, should Foskor at its discretion be of the opinion that it be necessary. Cost associated with such cannot be claimed from Foskor (Pty) Ltd.</li> </ul> | YES |
| 8 | Assist in issuing of work clearances and HIRA certificates.  | YES |



## C.7.3.2 Successful Tenderer (Contractor) Responsibilities

| The successful Tenderer (Contractor) shall be responsible for (inter alia): |   | Applicable: |
|---|---|-------------|
| 1   | Supply of own labour, supervision, equipment, specialized manpower and other staff to fulfill the scope of work.  | YES         |
| 2   | Supply suitable (approved) Personal Protective Equipment (PPE)  | YES         |
| 3   | To ensure that all work is reviewed by designated Foskor (Pty) Ltd representative at all stages and/or agreed milestones of the project. All work completed needs to be inspected and approved by the designated Foskor representative (e.g. Project Supervisor/ Manager) | YES         |
| 4   | After installation/construction and commissioning the successful Tenderer shall conduct final inspection of all work together with designated Foskor (Pty) Ltd representative to compile a SNAG list.   | YES         |
| 5   | To ensure that all acceptance approvals as per the Quality Control Policy (QCP) are received before work is finally handed over.  | YES         |

Note that concerning above:

- i. No claims towards losses will be accommodated.
- ii. All items that the Successful Tenderer will bring to Foskor (Pty) Ltd, will be subjected to review and approval by Foskor (Pty) Ltd and shall conform to Foskor procedures.

## C.7.4 Certification by Recognized Bodies

Only Tenderers registered with the relevant Board (e.g. Electrical, National Building, etc.) of South Africa in accordance with the Regulations of the Occupational Health and Safety Act will be accepted and permitted to do work under this contract.



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## C.7.5 Requirement for the termination, diversion, or maintenance of existing services

Only Applies if/where electrical conductors, pipe conduits, electrical transmitters, ducting or ventilation services are affected. Unless identified as part of the scope, the Contractor must immediately bring to Foskop's attention any previously unspecified or obstructing services existing in his area of work and without terminating/diverting/hindering such services.

## C.7.6 Nominated Sub-Tenderers

Should the tenderer anticipate using Subcontractors for any part of the scope, these must be specified below.

The following Sub-Tenderers are nominated:

| Contractor | Concerning Works | Contact |
|------------|------------------|---------|
|            |                  |         |
|            |                  |         |
|            |                  |         |

## C.7.7 Invoicing and Payment

Payment will be made by Foskop (Pty) Ltd, after approval (with consideration for the construction, completion and defects corrections of the Works) by the Foskop (Pty) Ltd's Project Representative (i.e. Engineer, Project Supervisor) of the submitted Payment Certificate to the Tenderer within **30 (thirty)** days from the date of the Tenderers approved invoice.

The invoice shall be approved in accordance with the provisions of Foskop (Pty) Ltd.'s terms and conditions.





The invoice submitted is to be in a format acceptable to the Foskor (Pty) Ltd.'s Project Representative and need to contain the following minimum information:

- Company details, registration no and VAT registration no,
- Purchase Order no & Date of Invoice,
- Copy of Purchase Order,
- Detail description of work done to date,
- Value of the current claim and work done (excl. VAT),
- VAT charged.

#### **C.7.8 Standing Time**

Standing time is defined as a period measured in hours, when the Contractor's normal operational cycle is affected by causes caused by Foskor (Pty) Ltd and results in normal stoppage or major disruption to the regular progress of the Works.

Payment to the Contractor for standing time will be certified only where, in Foskor (Pty) Ltd's opinion, the delay was clearly beyond the reasonable control of the Contractor and the Contractor further took all reasonable measures to avoid or reduce such delay and such delay imposed direct costs to the Contractor.

#### **C.7.9 Progress of Works**

Should Foskor (Pty) Ltd at any time be of the opinion that the rate of progress of the Works or any part thereof is too slow to ensure the completion of the Works or any part thereof by the Completion Date, Foskor (Pty) Ltd shall so notify the Contractor in writing, with specific reference to this Clause, and the Contractor shall thereupon, subject to the approval of Foskor (Pty) Ltd take such steps as are necessary to expedite progress so as to complete the Works or the said part thereof by the Due Completion Date.



**C.7.10 Penalty**

If the Contractor, by the Due Completion Date, fails to complete the Works to the extent which entitles him to receive a Certificate of Practical Completion, the Contractor shall be liable to Foskor (Pty) Ltd for an amount of **0.1% for every Calendar Day that the works is late or such portion of the contract price as is associated with that part of the Works.**

The imposing of such penalty shall not relieve the Contractor from the obligation to complete the Works or from his obligations and liabilities under the Contract.

**C.7.11 Claims: Extension of Time for Completion, Additional Payments or Compensation****C.7.11.1 Claims Procedure**

The following provisions shall apply:

- i. Claims are to be submitted in writing within **7 days** after the circumstances, event, act or omission giving rise to such claim has arisen or occurred to the Foskor (Pty) Ltd Project Representative
- ii. Submit **written notice** to the Foskor (Pty) Ltd Project Representative of the intention to claim within **7 days** after the circumstances, event, act or omission giving rise to such claim has arisen or occurred. The Notice and subsequent claim to set out:
  - a. Particulars of the circumstance, event, act or omission giving rise to the claim concerned;
  - b. Provisions of the portion of the contract on which he intends to make the claim;
  - c. Length of extension of time, if any, claimed and the basis of calculation thereof, and
  - d. The Price Adjustment, if any, claimed and the basis of calculation thereof.
- iii. If the Contractor cannot reasonably comply with any of the provision above within the said period 14 days, he shall:
  - a. Notify the Foskor (Pty) Ltd Project Representative in writing of his intention to make the claim and comply with such requirements as he reasonably can;
  - b. Deliver additional information in writing that is reasonably required by Foskor (Pty) Ltd; and



- c. Comply as soon as practical with such requirements as described above in this clause, within a time agreed to by the Foskor (Pty) Ltd Project Representative.
- iv. In the event of failure to comply to any of the provisions, the claim would not be accommodated and Foskor (Pty) Ltd would be discharged of all liability in connection with the claim.

**C.7.11.2 Extension of Time for Completion**

The whole works shall be completed within the time agreed upon.

If any circumstances of any kind whatsoever may occur and as such, fairly entitle the Contractor to any extension of time for the completion of the works or portion thereof, then the Foskor (Pty) Ltd Project Representative will consider a claim duly submitted.

**C.7.12 Cancellation of the Contract by Foskor (Pty) Ltd**

If:

- (a)
  - (i) The estate of the Contractor shall be sequestered (provisionally or finally), or
  - (ii) The Contractor shall publish a notice of surrender of his estate as insolvent, or
  - (iii) The Contractor, being a company or a close corporation, shall go into liquidation (provisionally or finally), or
  - (iv) The Contractor shall assign the Contract without the consent in writing of Foskor (Pty) Ltd having first been obtained, or
  - (v) The Contractor shall enter into a compromise with the general body of his creditors, or
  - (vi) The Contractor shall have an execution levied on his goods, or
- (b) the Foskor (Pty) Ltd Project Representative shall certify in writing to Foskor (Pty) Ltd, and to the Contractor/Consultant, with specific reference to this Clause, that in his opinion the Contractor/Consultant:
  - (i) has abandoned or repudiated the Contract, or
  - (ii) has, without reasonable excuse, failed to commence the Works in terms of the time allowed and agreed to, or
  - (iii) has suspended the progress of the Works without due cause, or



- (iv) has failed to proceed with the Works with due diligence, or
- (vi) is not executing the Works in accordance with the Contract, or
- (vii) has, without the approval of the Foskor (Pty) Ltd Project Representative, subcontracted any part of the Contract, or
- (viii) has failed to provide the Surety ship, Professional Indemnity within the time stipulated and for 14 days after receiving a written notice from the Foskor (Pty) Ltd Project Representative, referring specifically to the default concerned and to this Clause, failed to remedy the default,

Foskor (Pty) Ltd may, by written notice to the Contractor, terminate the Contract and withhold any payments due until further notice.

#### **C.7.13 Urgent remedial work**

All designs changes or remedial action must be communicated to the Foskor Engineer or the authorized Foskor Designate. Approval of such must be sought and received as early as not to impose undue costs and delays. Should there however be remedial work necessary, the Contractor shall, upon approval from the Foskor Engineer/Designate, effect these with care, accuracy and speed, so as not to impose undue extension of time and /or cost.

If any work as done by Foskor (Pty) Ltd is work which the Contractor was liable to do at his own expense under the Contract, all costs incurred by Foskor (Pty) Ltd in so doing shall be determined by Foskor (Pty) Ltd or its agent and shall on demand be paid by the Contractor to Foskor (Pty) Ltd.

### **C.8. Foskor Safety Documents to be submitted, Environmental and Site Management**

#### **C.8.1 SHREQ Requirements**

The successful Tenderer will be required to comply and ensure continuous compliance with Foskor standards and national regulations:

- Compliance with COP6 (Contractor Management).



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- Compliance and signing of Section 37(2) Agreement in terms of the OHSAct at the Foskor (Pty) Ltd Safety Department.
- Compliance with Legislation requirements which includes the OHSAct, NEMA (National Environment Management Act) and other relevant applicable Legislation.
- \* *copy of requirements available from Foskor SHREQ Department.*

### **C.8.2 Environmental Management Specifications**

In order to ensure that the construction works is designed for an environmentally sensitive area, strict compliance to the Environmental Management Plan (EMP) guidelines may be requested after appointment of the contractor.

The EMP shall be part of the terms of reference for all contractors/consultants, sub-contractors/consultants and suppliers.

A copy of the EMP requirements is available from Foskor (Pty) Ltd SHREQ department.

All MSDS's to be submitted to Foskor (Pty) Ltd.

Waste disposal needs to comply to Foskor (Pty) Ltd Waste Management Plan.

### **C.9 OHSA 1993 Health and Safety Specification**

This specification covers the health and safety requirements to be met by the successful Tenderer (Contractor) to ensure a continued safe and healthy environment for all workers, employees and subcontractors/consultants and for all other persons entering the site of works.

This specification shall be read with the Occupational Health and Safety Act (Act No 85 and amendment Act No 181) 1993, and the corresponding Construction Regulations 2003, and all other safety codes and specifications referred to in the said Construction regulations.



## C.9.1. Health and Safety Induction

The successful Tenderer (Contractor) shall ensure that all employees under his control, including the subcontractors/consultants and their employees, undergo a health and safety induction training course by a Foskor competent person before entering site.

- a. The Contractor shall prepare a safety plan for the work to be done.
- b. The contractor must appoint a qualified Safety Officer with at least Diploma in Safety Management or SAMTRAC or both either on a full time or part-time basis to conduct the following responsibilities:
  - Conduct and submits audits monthly
  - Conduct and submit inspections monthly
  - Compile and submit safety monthly report to Safety Department.
  - Perform safety talks and awareness training and submit evidence to Foskor.
  - Visibility on Site.
  - Conduct inspections on PPE and provide evidence to Foskor.
  - Continuously update Safety file.
- c. The Contractor to submit a comprehensive task-based risk assessment that has acknowledged the Foskor baseline risk assessment and method statement.
- d. The Contractor to appoint a full-time Supervisor to manage and supervise all the activities of his/her employer.
- e. All new work activities must have scope of work and communicated to Safety Department before starting with the work with exception of emergency breakdowns.
- f. All maintenance emergency works and consultants are exempted from the above-mentioned safety requirements.
- g. The Contractor shall ensure all his/her personnel have attended the Safety Induction, by Foskor (Pty) Ltd before they enter the site.
- h. The Contractor on entering site, must wear Foskor minimum required PPE at all times namely safety glasses, acid resistant overalls, safety harnesses (on heights), safety boots or steel cap gumboots, ear protection and **gas masks (Halfmask double filter – screw type with filter type A1B1E1K1 – North Safety Product or similar approved product) and goggles (Uvex ultravision – W1663459B – DIN CE 0196) preferably in a pouch.** Should a Contractor be found on site without the above-mentioned safety



clothing, he will be removed from site and will not be allowed to return. FFP3 dust mask fitted with an exhalation valve must be used when working in dust in on the B&D Store.

- i. A contractor that has been awarded work must register with **HSEC Online**, which is a contractor management system for Foskor Acid Division where all contractors are required to submit their safety files.
  - a. The above requirements are informed by previous incidents picked up during incident investigations and most industries apply this as a best practice to reduce incidents to an acceptable level especially with Lost Time Injury Frequency Rate (LTIFR). Therefore, it is the responsibility of Managers to enforce these safety changes in their areas of responsibility.
  - b. Your cooperation in this regard will be greatly appreciated, this will come into effect as from the 1st of June 2024.
- j. **Overalls must be Blue Sweet Orr overall (80% Ployester 20% Viscose Rayon Acid repellent) with Company names either on front of jacket or back OR Blue North Safety Acid/Flame overall (Flame retardant acid resistant anti-static ATPV 15.4CAL/CM2) with company names either on front of jacket or back and fluorescent reflective strips to be stitched onto sleeves and on the knees.**
- k. The Contractor shall demarcate the relevant work area. The Contractor shall supply and erect an appropriate name board with all relevant information and contact details at the work area.
- l. The job risk assessment shall be carried out at the start of each shift. This risk assessment shall cover all activities planned for the relevant shift. The risk assessment shall be submitted to Foskor (Pty) Ltd at the start of each day shift and each night shift.
- m. The Contractor must take safety precautions when working on site.
- n. The Contractor must remove all their equipment within 48 hours after project completion/closure.
- o. A complete safety file to be submitted to Foskor (Pty) Ltd Safety Department before any work commences.
- p. The Contactor's vehicle when entering the Plant must have rotating orange lights on at all times.
- q. **The Contractor and their employees must undergo a full medical at either Foskor (Pty) Ltd's Clinic or Caredoc Richards Bay or their approved by Foskor (Pty) Ltd.**





**A full lung function test must be done. If a project is longer than twelve months, then a complete medical including lung function tests must be done again and thereafter the lung function test. Medical certificates are valid for one year only. For medical costs and bookings please contact Sister Nkosazana Nxumalo at Foskor (Pty) Ltd Clinic on 035 902 3267.**

- r. A once-off fee is also required for access cards from Foskor Security. Please contact Foskor (Pty) Ltd Security Reception at 035 902 3267 for information.
- s. No access to elevated platforms, roof and scaffolding will be allowed during rainy days.

**MANDATORY AS ENVISAGED BY SECTION 37(2) OF THE ACT**

By the submission of a tender, any tenderer will, if awarded the contract to which this tender document relates, be deemed to be the mandatory as envisaged by Section 37 (2) of the Act.

As a mandatory the successful tenderer will be deemed to be the “principal contractor” and an employer in his/her/their own right with duties as prescribed in the Act and accordingly will be deemed to have agreed to be solely responsible for ensuring that in connection with the service to which this tender document relates, all work will be performed in accordance with the Act.

It is further noted that: -

- a) The Contractor shall comply with all Foskor Regulations and Safety Standards.
- b) The Contractor shall fully comply with the OHS Act (Act 85 of 1993).
- c) The Contractor shall fully comply with Covid-19 compliance as part of Section 37(2) of the Act.

**IMPORTANT NOTE**

The above is a summary of some of matters as defined in the Act. The successful Tenderer (Contractor) is required and advised in his own interest to make a careful study of the Act and the Construction regulations.

Ignorance of the Act and the Regulations will not be accepted in any proceedings, as valid reason if non-conformance to the Act and the Regulations are committed.





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**C.10. Applicable General Conditions of Contract**

Unless expressly otherwise indicated, Foskor General Conditions of Contract and the FIDIC terms of Contract would apply, and is available from the Manager Procurement Foskor Richards Bay.

**C.11. Quality Management**

The successful Tenderer is to adhere to Foskor (Pty) Ltd's Quality Management System and specifications incorporated in this Tender Document.

To ensure that all installations are carried out in a controlled manner, the Contractor shall demonstrate this by means of the internal quality system, which shall include as a minimum a QCP for each piece of equipment. The QCP must be approved by Foskor before commencement of any work.

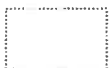


**C.12. Quality Control:**

- i. A detailed QCP (Quality Control Plan) shall be submitted within 3 days of contract award.
- ii. Quality of work must be monitored and controlled at a high level at all times.
- iii. At each hold and witness point all work shall be suspended until the specified inspection has been completed and the QCP updated and signed accordingly by Foskor (Pty) Ltd or its representative.
- iv. At each milestone, the designated Foskor (Pty) Ltd Quality Representative must approve the quality and standard of work being produced.
- v. It shall be the responsibility of the Successful Tenderer (Contractor) to give Foskor (Pty) Ltd timely notice of hold and witness points requiring their intervention.

**C.13. Tender Returnable Document**

- i. Initial program (Bar Chart/Gantt Chart).
- ii. Quality Control Plan.
- iii. Milestones.
- iv. Method Statement for Manufacturing (Contractor's Workshop).
- v. Method Statement for Installation (On Foskor Site).
- vi. Record of experience and recent references (Similar Contract Undertaken).
- vii. Proof of professional registration for the Works to be completed.
- viii. Site Inspection Certificate.



## Section D – Schedules of Quantities

Supplier to submit with this tender Schedules of Quantities or Bill of Quantities for all work to be done under this scope.

| FOSKOR         |   | PROJECT NAME:       |     | Design, Supply, Installation, Commissioning and Training for the A-train demineralisation plant |        |
|----------------|---|---------------------|-----|---|--------|
|                |   | PROJECT NUMBER:     |     |   |        |
|                |   | CONTRACT NUMBER:    |     |   |        |
|                |   | PROJECT SUPERVISOR: |     | Lerato Raphiri  |        |
|                |   | PROJECT CLIENT:     |     | Sulphuric Acid Plant  |        |
|                | DESCRIPTION   | UNIT                | QTY | RATE  | AMOUNT |
|                | <b>Design, Supply, Installation, Commissioning and Training for the A-train demineralisation plant: As defined in the Scope of Work</b> |                     |     | <u>Per item</u>   |        |
| <b>P&amp;G</b> | <b>Preliminary and General:</b> Any other costs associated with the project (Please provide a detailed breakdown on a separate sheet)   | Sum                 |     |   | R      |
| <b>1</b>       | <b>Engineering Design</b><br>Engineering design & Project Management - should include all relevant discipline-specific documents.       | Sum                 |     |   | R      |
| <b>2</b>       | <b>Equipment supply &amp; Execution</b>   |                     |     |   |        |
|                | 2.1. Cation System supply   | Sum                 |     |   | R      |
|                | 2.2. Cation & Inert Resin supply  | Sum                 |     |   | R      |
|                | 2.3. Anion System supply  | Sum                 |     |   | R      |
|                | 2.4. Anion & Inert Resin supply   | Sum                 |     |   | R      |
|                | 2.5. Electrical and instrumentation requirements  | Sum                 |     |   | R      |
|                | 2.6. Installation requirements  | Sum                 |     |   | R      |
|                | 2.7. Rigging methodology  | Sum                 |     |   | R      |
|                | 2.8. Delivery/transportation  | Sum                 |     |   | R      |
|                | 2.9. Onsite civil works   | Sum                 |     |   | R      |
|                | 2.10. Removal of existing A train vessels   | Sum                 |     |   | R      |
| <b>3</b>       | <b>Training &amp; Close-out</b>   |                     |     |   |        |
|                | 3.1. Commissioning and handover documents   | Sum                 |     |   | R      |
|                | 3.2. Training   | Sum                 |     |   | R      |
|                |   |                     |     | <b>TOTAL :</b>  |        |

Tender Signature and Company Stamp:



PROJECT NAME: Design, Supply, Installation, Commissioning and Training for the A-train demineralisation plant

PROJECT NUMBER:

CONTRACT NUMBER:

PROJECT SUPERVISOR: Lerato Raphiri

PROJECT CLIENT: Sulphuric Acid Plant

**PROJECT PHASE : TIME ALLOCATION (Where applicable)**

|  | DESCRIPTION  | UNIT | QTY | RATE | AMOUNT |
|--|--|------|-----|------|--------|
|  | Process Engineer   | hr   |     |      |        |
|  | Mechanical Engineer  | hr   |     |      |        |
|  | E&I Engineer   | hr   |     |      |        |
|  | Engineering Manager  | hr   |     |      |        |
|  | Contract Manager / Project Manager                               | hr   |     |      |        |
|  | Construction Manager / Supervisor                                | hr   |     |      |        |
|  | Quality Inspector  | hr   |     |      |        |
|  | Technician   | hr   |     |      |        |
|  | Design Draughtsman   | hr   |     |      |        |
|  | Overhead factor  | hr   |     |      |        |
|  | Mark-up on outsourced services                                   | hr   |     |      |        |
|  | Other: (Please provide a detailed breakdown on a separate sheet) | hr   |     |      |        |

TOTAL : \_\_\_\_\_



Appendix 1: Demin Plant Process Flow Diagram

Demineralisation Plant Process flow diagram

