

# DEPARTMENT OF HEALTH – NORTHWEST



**health**

Department of  
Health  
North West Province  
REPUBLIC OF SOUTH AFRICA

## TENDER DOCUMENT

**BID NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**

<b>NAME OF BIDDER (BIDDING ENTITY)</b> (FULL NAME, i.e. (CC, (PTY) LTD, LTD, JV, SOLE PROPRIETOR etc.)	



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**DEPARTMENT OF HEALTH  
NORTHWEST PROVINCE**

**Cnr 1st Street &, Sekame St  
Mahikeng  
2745**

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E-Mail: [gleseyane@nwpg.gov.za](mailto:gleseyane@nwpg.gov.za)

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## PART C1: AGREEMENT AND CONTRACT DATA

The sections listed below contain data that is specific to the project and form the contract. This will be used as basis for contract compliance and any dispute resolution that may arise during and/or after the contract:

- C1.1 Form of Offer and Acceptance
- C1.2 Contract Data (Part 1)
- C1.3 Contract Data (Part 2)
- C1.4 Form of Guarantee

**For the Tenderer** .....  
(Name and address of organization – stamp if available)

Signature.....	<b>Witness</b>
Name .....	Name.....
Capacity .....	Signature.....
CIDB registration number .....	Date.....
Date .....	

**For the Employer** .....  
(Name and address of organization – stamp if available)

Signature.....	<b>Witness</b>
Name .....	Name.....
Capacity .....	Signature.....
CIDB registration number .....	Date.....
Date .....	

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C1.1 Form of Offer and Acceptance

C1.2 Contract Data (Part 1)

C1.3 Contract Data (Part 2)

C1.4 Form of Guarantee

**PART C1.1: FORM OF OFFER AND ACCEPTANCE**

**OFFER**

The employer, identified in the acceptance signature block, has solicited offer to enter a contract for the procurement of:

**CONTRACT NO.:** NWDOH/\_\_\_\_\_

The tenderer, identified in the offer signature block, has examined the documents listed in the contract data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of contract.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the condition of contract identified in the contract data.

THE OFFERED TOTAL OF THE PRICE INCLUSIVE OF VALUE ADDED TAX IS:

.....

(In words).

**R** ..... (in figure)

This offer may be accepted by the employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the tenderer whereupon the tenderer becomes the party named as the contractor in the Condition of Contract identified in the Contract Data.

**For the Tenderer** .....

(Name and address of organization – stamp if available)

Signature .....

Name .....

Capacity .....

CIDB registration number .....

Date .....

**Witness**

Name .....

Signature .....

Date .....

**ACCEPTANCE**

By signing this part of this Form of Offer and Acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form a agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1 Agreement and contract data, (which includes this agreement)

Part C2 Pricing data

Part C3 Scope of work.

Part C4 Site information

And drawings and documents or parts thereof, which may be incorporated by reference into Part 1 to 4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said document are valid unless contained in this schedule, which must be duly signed by the authorized representative(s) of both parties.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the contract data, or just after, the date this agreement comes into effect. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

**For the Employer** .....  
(Name and address of organization – stamp if available)

Signature .....

Name .....

Capacity .....

Date .....

**Witness:**

Name .....

Signature .....

Date .....

## Schedule of Deviations

1 Subject

---

2 Subject

---

3 Subject

---

4 Subject

---

By the duly authorized representatives signing this schedule of deviations, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendment to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification, or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the Issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have Any meaning or effect in the contract between the parties arising from this agreement.

**For the Tenderer** .....

(Name and address of organization – stamp if available)

Signature .....

Name .....

Capacity .....

**For the Employer** .....

(Name and address of organization – stamp if available)

Signature .....

Name .....

Capacity .....

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## C1.2: CONTRACT DATA (PART 1)

### DATA PROVIDED BY THE EMPLOYER

#### CONDITIONS OF CONTRACT

Variations, amendments and additions to the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006) as Special Conditions of Contract prescribed by the Employer are set out below. The Tendering Contractor is advised to read the NEC 3 Engineering and Construction to fully understand the implications of this Data which the Tenderer is required to complete. Each item of the Special Conditions of Contract given below is cross- referenced to the clause in the NEC 3 Engineering and Construction to which it mainly applies.

The NEC 3 Engineering and Construction contract is applicable to this Contract and is obtainable from [www.neccontract.com](http://www.neccontract.com).



## Compulsory Data

Clause	
1	<p>The conditions of contract are the core clauses and the clauses for main Option</p> <p style="text-align: center;"><b>B: Priced contracts with Bill of Quantities</b></p> <p>dispute resolution Option</p> <p style="text-align: center;"><b>W1: Dispute resolution procedure</b></p> <p>and secondary Options</p> <p><b>X7: Delay damages</b></p> <p><b>X13: Performance Bond</b></p> <p><b>X18: Limitation of liability</b></p> <p><b>Z: Additional conditions of contract</b></p> <p><b>Z1: Intellectual property</b></p> <p><b>Z2: Assignment and Waiver</b></p> <p><b>Z3: Defect Correction Bond (Retention)</b></p>
10.1	<p>The <i>Employer</i> is: <b>North West Department of Health.</b></p> <p>The Employer's address for receipt of communications and notices is follows:</p> <p><b>Mr Gregory Leseayne</b>  <b>Tel: 018 391 4632 / 066 289 2635</b>  <b>E-Mail: <a href="mailto:gleseayne@nwpg.gov.za">gleseyane@nwpg.gov.za</a></b></p> <p><b>Mr M Manhivi</b>  <b>Tel.: 061 383 1886</b>  <b>Email: <a href="mailto:MManhivi@nwpg.gov">MManhivi@nwpg.gov</a></b>  <b>Postal Address: Health Office Park</b>  <b>Private Bag X 2068</b>  <b>2735</b></p>
11.2(13)	<p>The works are</p> <p><b>Maintenance and Repairs of Boilers, Steam &amp; Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers and Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.</b>  <b>(KLERKSDORP &amp; TSHEPONG HOSPITAL)</b>  <b>BID NUMBER: NWDOH/_____</b></p>

11.2(15)	The boundaries of the site are <b>Klerksdorp Hospital and Tshepong Hospital</b>
11.2(16)	The Site Information is in <b>Part C4: Site Information</b>
11.2(19)	The Works Information is in <b>Part C3: Scope of Work</b>
12.2	The law of the contract is the law of <b>the Republic of South Africa</b> subject to the jurisdiction of the Courts of <b>South Africa</b> . The language of this contract is <b>English</b>
13.3	The period for reply is <b>3 (Three) weeks</b>
11.2(3)	The completion date for the whole of the works is <b>TBA</b>
30.1	The access dates are <b>TBA</b>
31.1	The Contractor is to submit a first programme for acceptance within <b>Two weeks of the Contract Date</b>
<b>4</b>	<b>Testing and Defects</b>
42.2	The defects date is <b>52 (fifty two) weeks after Completion of the whole of the works</b>
43.2	The defect correction period is <b>3 (Three) weeks</b>
<b>5</b>	<b>Payment</b>
50.1	The assessment interval is monthly on the <b>TBA</b>
51.1	The <i>currency of this contract</i> is the <b>South African Rand. (ZAR)</b>
51.2	The period within which payments are made is <b>30 Days (from receipt of the Contractor's valid Tax invoice and statement prepared in accordance with this contract and the applicable law)</b>
<b>6</b>	<b>Compensation events</b>
60.1(13)	The weather measurements to be recorded for each calendar month are, <b>the cumulative rainfall (mm)</b> <b>the number of days with rainfall more than 10 mm</b> <b>the number of days with minimum air temperature less than 0 degrees Celsius</b> <b>the number of days with snow lying at 08:00 hours South African Time.</b>
60.1	These are additional Employer's risks <b>No additional risks are accepted by the Employer other than those which are provided for in this contract</b>

8	<b>Risks and insurance</b>		
84.1	The Employer provides these insurances from the Insurance Table		
	1	Insurance against:	Loss of or damage to the goods immediately after the goods, which are the subject matter of this contract or any part of such goods, have arrived off the vessel carrying such goods at the Employer's site in South Africa at which the Goods are to be delivered.
		Cover / indemnity:	As is to be stated in the Employer's insurance policy for contract works liability and public liability (Project Specific Insurance).
		The deductibles are:	As is determined by the Principle Controlled Insurance (PCI) of the Employer.
	2	Insurance against:	Loss of or damage to property (except the works, plant, materials & equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) arising out of or in connection with the performance of the Contract as stated in the PCI insurance policy for Contract Works / Public Liability
		Cover / indemnity	Is to the extent as stated in the PCI insurance policy for Contract Works / Public Liability.
		The deductibles are	As stated in the PCI insurance policy for Contract Works / Public Liability.
	3	Insurance against:	Loss of or damage to Equipment (Temporary Works only) as stated in the PCI insurance policy for contract Works and Public Liability
		Cover / indemnity	Is to the extent as stated in the PCI insurance policy for Contract Works / Public Liability
		The deductibles are:	As stated in the <b>PCI</b> insurance policy for Contract Works / Public Liability
	4	Insurance against:	Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon
		Cover / indemnity	Cover / indemnity is to the extent provided by the SASRIA coupon on site.
		The deductibles are:	The deductibles are subject to the SASRIA COUPON of the SASRIA insurance provided by the Employer.

84.2	<p>The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is</p> <p><b>Whatever the Contractor requires Within minimum limit of R10m. The contractual amount must be in the offer.</b></p> <p>The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract for any one event is</p> <p><b>The Contractor must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.</b></p> <p>Processional indemnity</p> <p><b>Which cover legal liability as a result of neglect, error or omission</b></p> <p>Marine cover</p> <p><b>Cover the full replacement of the Goods to be transported to include but not limited to the loading and unloading of the Goods from vessel during any stage in the transportation of the Goods.</b></p> <p>Marine Transit</p> <p><b>Covering imports until delivered and checked</b></p>
9	Termination <b>There is no additional Contract Data required for this section of the conditions of contract.</b>
W1.1	
W1.2(3)	<p>The Adjudicator nominating body is: <b>The Chairman of the Association of Arbitrators (Southern Africa)</b></p> <p>If no Adjudicator nominating body is entered, it is: <b>the Association of Arbitrators (Southern Africa)</b></p>
W1.4(2)	The tribunal is: <b>Arbitration</b>
W1.4(5)	The arbitration procedure is <b>The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)</b>
X18.1	<p>The Contractor's liability to the Employer for indirect or consequential loss is limited to:</p> <p><b>An amount being equal to the total Contract Value inclusive of VAT.</b></p>
X18.2	<p>For any one event, the Contractor's liability to the Employer for loss of or damage to the Employer's property is limited to:</p> <p><b>An amount being equal to the total Contract Value inclusive of VAT.</b></p>
X18.3	<p>The Contractor's liability for Defects due to his design which are not listed on the Defects Certificate is limited to:</p> <p><b>An amount being equal to the total Contract Value inclusive of VAT.</b></p>
X18.4	<p>The Contractor's total liability to the Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to:</p> <p><b>An amount being equal to the total Contract Value inclusive of VAT.</b></p>

X18.5	<p>The end of liability date is</p> <p><b>A period being 12 (Twelve) consecutive months after the completion by the Contractor of the whole of the works to the Employer in terms of the Contract.</b></p> <p><b>Five years after the defect date for latent defects.</b></p>
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## C1.3: CONTRACT DATA (PART 2)

### DATA PROVIDED BY THE TENDERER

#### Clause 10.1:

The name of the Contractor is .....

The address of the Contractor is:

*Physical address:* .....

.....

.....

*Postal address:* .....

*E-mail address:* .....

*Fax number:* .....

*Contact person:* .....

*Cell No:* .....

#### Clause 11.2(3):

The completion date for the whole of the works is thirty six (36) months after the starting date.

In determining their Tender Period, Tenderers must take cognisance of Construction Regulations, 2014 Clause 3(1), as applicable.

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## Clause 24.1:

The key people are:

Name: .....

Job: .....

Responsibilities: .....

.....

.....

Qualifications: .....

Experience: .....

Contact Number: .....

Name: .....

Job: .....

Responsibilities: .....

.....

.....

Qualifications: .....

Experience: .....

Contact Number: .....

SIGNED ON BEHALF OF THE TENDERER: .....

DATE: .....

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## C1.4: PERFORMANCE BOND

### PERFORMANCE GUARANTEE FROM AN APPROVED FINANCIAL INSTITUTION

This proforma to be reproduced exactly as shown below on the letterhead of the Surety.

#### GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means:

.....

Physical address: .....

"Employer" means: NORTHWEST DEPARTMENT OF HEALTH

"Contractor" means: .....

Engineer Means: The Client's Agent

"Works" means: Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers and Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months. (KLERKSDORP & TSHEPONG HOSPITAL)

"Site" means: The site as defined in C4.1 of this contract .....

"Contract" means: The agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount exclusive of tax of R .....

Amount in words: .....

"Guaranteed Sum" means: The maximum aggregate amount of R.....

Amount in words: .....

"Expiry Date" means: The date of issue by the Engineer of the Certificate of Completion of the Works

#### CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificates and the Certificate of Completion of the Works as defined in the Contract.

#### PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.



2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever comes first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
3. The Guarantor hereby acknowledges that:
  - 3.1. any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a surety ship;
  - 3.2. its obligation under this Performance Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
  - 4.1. A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
  - 4.2. A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2
  - 4.3. a copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
  - 5.1. The Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
  - 5.2. a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; or
  - 5.3. the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payments in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor, showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this performance Guarantee shall bear interest at the prime overdraft rate of the Employer's banks compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until date of refund
8. Payment by the Guarantor in terms of 4 or 5 shall be made within 7 (seven) calendar days upon receipt of the first written demand to the Guarantor.
9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
13. This Performance Guarantee, with the required demand notices in terms of 4 and 5, shall be regarded as a liquid document for the purpose of obtaining a court order.
14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No. 32 of 1994, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

**SIGNED AT:** .....

**DATE:** .....

**GUARANTOR'S SIGNATORY (1):** .....

**CAPACITY:** .....

**GUARANTOR'S SIGNATORY (2):** .....

**CAPACITY:** .....

**WITNESS SIGNATORY (1):** .....

**WITNESS SIGNATORY (2):** .....

# Department of Health – North West

**CONTRACT NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation,  
Water Treatment on Boilers and Autoclaves, Calorifiers and Mechanical  
Equipment at Various Health Facilities in the North West Province  
Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG HOSPITAL)**



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## C 2.1: PRICING INSTRUCTIONS

1. The Tender Data, the Contract Data, the Scope of Works and the Site Information shall be read in conjunction with the Schedule of Quantities.
2. The Schedule comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.
3. Although the Tenderer is at liberty to insert a rate of his own choosing for each item in the Schedule, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Employer's Agent is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Schedule.

The measurement and payment clauses of each Specification, read together with the relevant clauses of the Specification Data, all set out which ancillary or associated activities are included in the rates for the specified operations.

4. Descriptions in the Schedule of Quantities are abbreviated and may differ from those in the Standardized and Specification Data. No consideration will be given to any claim by the Contractor submitted on such a basis. The Schedule has been drawn up generally in accordance with the latest issue of Mechanical Engineering Quantities<sup>1</sup>. Should any requirement of the measurement and payment clause of the appropriate Standardized or Specification Data be contrary to the terms of the Schedule or, when relevant, to the Mechanical Engineering Quantities, the requirement of the appropriate Standardized Specification or Specification Data as the case may be, shall prevail.
5. Unless stated to the contrary, items are measured and paid for net, in accordance with the tender information, without any allowance having been made for waste.
6. The amounts and rates to be inserted in the Schedule of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Tender is based.
7. An amount or rate shall be entered against each item in the Schedule of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Schedule.

The Tenderer shall also fill in a rate against the items where the words "rate only" appears in the amount column. Although no work is foreseen under these items and no quantities are consequently given in the quantity column, the tender rates shall apply should work under these items actually be required.

Should the Tenderer group a number of items together and tender sum for such group of items, the single tender sum shall apply to that group of items pro rata and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

The tender rates, prices and sums shall, subject only to the provisions of the General Conditions of Contract, remain valid irrespective of any change in the quantities during the execution of the Contract.

The standard system of measurement of Mechanical engineering quantities published by the South African Institution of Mechanical Engineers.

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8. The quantities of work as measured and accepted and certified for payment in accordance with the General Conditions of Contract, and not the quantities stated in the Schedule of Quantities, will be used to determine payments to the Contractor. The validity of the Contract shall in no way be affected by any differences between the quantities in the Schedule of Quantities and the quantities certified for payment.

The ordering of materials shall not be based on the quantities in the Schedule of Quantities. Materials ordered from the Schedule of Quantities without prior confirmation by the Employer's Agent shall be at the risk of the Contractor. No compensation shall be paid for materials ordered erroneously and all costs shall be borne by the Contractor.

9. For the purposes of this Schedule of Quantities, the following words shall have the meanings hereby assigned to them:

Unit	: The unit of measurement for each item of work as defined in the SANS Specification.
Quantity	: The number of units of work for each item
Rate	: The payment per unit of work at which the Tenderer tenders to do the work
Amount	: The quantity of an item multiplied by the tender rate of the (same) item
Sum	: An amount tender for an item, the extent of which is described in the Schedule of Quantities, the specifications or elsewhere, but of which the quantity of work is not measured in units.

10. The units of measurement indicated in the Schedule of Quantities are metric units. The following abbreviations may appear in the Schedule of Quantities:

mm	=	millimetre
m	=	meter
km	=	kilometre
km-pass	=	kilometre-pass
m <sup>2</sup>	=	square metre
m <sup>2</sup> -pass	=	square meter-pass
ha	=	hectare
m <sup>3</sup>	=	cubic meter
m <sup>3</sup> -km	=	cubic meter kilometre
kW	=	kilowatt

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kN	=	kilo-Newton
kg	=	kilogram
l	=	litre
kl	=	kilolitre
MI	=	mega litre
t	=	ton (1 000 kg)
%	=	per cent
MN	=	mega-Newton
MN-m	=	mega-Newton-meter
PC Sum	=	Prime Cost Sum
Prov Sum	=	Provisional Sum
Sum	=	Lump Sum



**Part C2.2 BILL OF QUANTITIES**

- 1 The Bill of Quantities is split into the sections shown in the Bid Value Table below.:
- 2 Each of the four bills must be completed. Then a total for each bill must be calculated to get to bill total. The four totals must then be filled in the Bid Value Table below. A final bid value inclusive of VAT must then be calculated.

<b>BID VALUE TABLE</b>		
<b>Part</b>	<b>Bill of Quantities</b>	<b>Price</b>
<b>C7.2</b>	Priced rates for maintenance and repairs of the Coal Fired Steam Boilers	
<b>C9.2</b>	Priced rates for maintenance and repairs of the Steam and Condensate Reticulation and Mechanical Equipment Installations	
<b>C15.2</b>	Priced rates for maintenance and repairs of the Autoclave Installations	
<b>C17.2</b>	Priced rates for the Supply and control of Chemical Water Treatment on Steam Boilers, which shall include the regular Maintenance, Repairs and Servicing of the Boiler house related water softening plants and cooling towers Installations	
	Sub-Total	
	VAT	
	<b>TOTAL BID VALUE</b>	

- 3 The **Total Bid Value** from the table above must be transferred to **C1.1 Form of Offer and Acceptance** as well as on this bid cover page.

**Part C3.1 SCOPE OF WORK**

3.1.1 The Scope is split into sections, as shown in Scope of Work Table Below.

<b>Part</b>	<b>Scope of Work</b>
<b>C8.1</b>	Scope of Work for maintenance and repairs of the Coal Fired Steam Boilers
<b>C10.1</b>	Scope of Work for maintenance and repairs of the Steam and Condensate Reticulation and Mechanical Equipment
<b>C16.1</b>	Scope of Work for maintenance, refurbishment, replacement and upgrades of the Autoclaves Installations
<b>C18.1</b>	Scope of Work for the Supply and control of Chemical Water Treatment on Steam Boilers, which shall include the regular Maintenance, Repairs and Servicing of Boiler house related water softening plants and cooling towers Installations

**3.1.2 Applicable national and international standards****3.1.3 Materials, samples and shop drawings***Samples of materials*

The contractor shall furnish samples of materials and specimens of finishes as may be called for by the Department of Health North West Province: Infrastructure Unit Representative for his approval

*Workmanship samples*

The supervisor may instruct the contractor to furnish samples of workmanship for his approval. Where the supervisor requires an assembly of various elements of the building or installation which is not incorporated in the works, the contractor shall arrange such an assembly at the employer's expense and the contract value shall be adjusted accordingly

*Shop drawings*

Only shop drawings and samples submitted for approval by the contractor shall be considered by the supervisor. The supervisor's approval of shop drawings or samples shall be limited to checking for general conformity with design and specification and shall not alter the design responsibilities in terms of the agreement. Where shop drawings are called for:

The contractor shall:

- Prepare, or ensure that a subcontractor, manufacturer, supplier or distributor prepares shop drawings at their own expense
- Submit sufficient copies of shop drawings to the supervisor for approval
- Allow the supervisor reasonable time to approve shop drawings
- Keep a record of all shop drawings submitted to the supervisor
- Ensure that shop drawings conform to the dimensions of built work
- Submit sufficient copies of the approved shop drawings to the supervisor for his use and for use on the works
- Ensure that work is not executed from shop drawings that have not been approved by the supervisor

The supervisor shall:

- Check the shop drawings submitted by the contractor timeously
- Advise the contractor where shop drawings are approved or are to be resubmitted

### **3.1.4 Instruction manuals and guarantees**

The Contractor shall hand over to the project manager any operating and instruction manuals, data, product guarantees or instructions required by the project manager or provided by the manufacturers, suppliers or subcontractors

Operating and instruction manuals are to be submitted to the following employer's required format and manner:

- One master manual which contains all original certificates
- Three copies of the master manual

The Contractor shall train all relevant staff of the employer in the safe operating procedures of the starting up, maintaining and shutting down of equipment supplied, all to the approval of the project manager. The contractor will also provide any other related additional training about the systems, accessories, operating, maintenance and management of machinery when deemed necessary by the Department. The Department will request quotation for such work and this training will commence only after an the quotation has been approved and access to site has been granted.

### **3.1.5 Dimensional accuracy**

The contractor shall within 4 weeks of the access date check the existing levels, lines, profiles and the like affecting the works and satisfy himself as to the dimensional accuracy of work previously executed. The contractor shall forthwith notify the supervisor

### **3.1.6 Site establishment**

#### **Water and Electricity**

The Employer does not warrant that any water or electricity supply that may exist is adequate for the proper execution of the works. Where such supply is inadequate, the contractor shall provide an adequate supply at his own expense

#### *Service - Water*

The Contractor shall make and upon completion remove all the necessary temporary plumbing connections to the Employer's water supply at designated points and make use of water free of charge for construction purposes only.

#### *Service - Electricity*

The Contractor shall make and upon completion remove all the necessary temporary installation to the Employer's electrical supply at designated points and make use of electricity free of charge for construction purposes only.

The Contractor shall ensure that a **master installation electrician** is required to oversee and certify any electrical work to the works.

#### **Ablution facilities**

The Employer shall permit the Contractor usage of the existing ablution facilities. The Contractor shall maintain such facilities in a thoroughly clean and tidy condition and make good any damage thereto at his own expense.

### **3.1.7 Other facilities and services**

#### **Telecommunication facilities**

The Contractor shall provide the following telecommunication facilities and shall be entitled to recover usage costs from the users thereof:

- Telephone
- Facsimile
- E-mail

#### **Security of the works**

The Contractor shall take all appropriate measures for general security of the works.

#### **Compliance with manufacturer's instructions**

The Contractor shall take delivery of, handle, store, use, apply and fix all products in strict accordance with the manufacturer's instructions.

#### **Protection/isolation of existing/sectionally occupied works**

The Contractor shall provide all temporary measures to protect/isolate the existing and/or sections of the occupied works and remove such measures on completion.



### **3.1.8 Notice boards**

The Contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board, size 2,44m wide and 2,89m high, according to the standard drawing available from the employer, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick round outer edges and projecting 12mm from face of boarding and rounded on front edge. The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces.

The lettering is to be 50mm and 100mm "sans serif" in ivory white on the blue background and in 100mm "sans serif" in navy blue on the ivory white background. The inscription, in one language only, which must bear the approval of the Project Manager. No other names or notice boards may be erected without the written approval of the Project Manager.

Sketch drawings of all proposed names or notice boards must be submitted to the Project Manager for approval, before being prepared and erected on site. These sketch drawings must not only show the full content of the proposed names or notice boards, but also the position and locality in which the boards will be erected.

### **3.1.9 Notice before covering work**

The contractor shall give adequate notice to the project manager whenever any work or material which is subject to inspection or re-measurement is to be covered or concealed in any way. In default of such a notice being received timeously by the project manager such work shall be exposed and later made good at the contractor's expense.

## **Preventative Maintenance**

The Contractor shall:

- Visit the installation at least once per month
- Make all necessary adjustments for the correct operation of the plant
- Maintain all lubrication levels
- Clean all relevant machinery/equipment and affected plant rooms
- Record all work performed in a logbook

## **Scheduled Services**

The Contractor shall:

- Perform all scheduled services in accordance with the operating and maintenance manuals
- Complete all maintenance schedules
- Clean all relevant machinery/equipment and affected plant rooms
- Record all services in a logbook

## **Break Downs**

The Contractor shall:

- Attend to all call outs with due diligence
- Make good any defects due to inferior material and/or workmanship
- Clean all relevant machinery/equipment and affected plant rooms
- Record all work performed in a logbook
- Call-outs will be billed on a job card basis with accompanying approved work orders.

## **Vandalism**

The Contractor shall:

- Attend to all call outs with due diligence
- Prove vandalised breakages
- Submit a price for repairs to the agent
- Effect repairs on receipt of instruction
- Clean all relevant machinery/equipment and affected plant rooms
- Record all work performed in a logbook

## **Administration**

The Contractor shall:

- Submit all relevant contact details to the maintenance site foreman including the start and end dates of the maintenance period
- Supply a triplicate record type logbook for the installation to be kept in the office of the foreman
- Report to the foreman when visiting the site
- Sign off all logbook records with the foreman or his duly appointed representative
- Not shut down any part of the plant or installation without the approval of the institution management

- Convene three quarterly site meetings for the purpose of performance tracking. This meeting is to be attended by the site foreman, the employer's maintenance inspector and the agent
- Complete a site meeting record in the logbook, which must be signed by the foreman and the agent
- Submit a monthly invoice with copies of the monthly site inspection record, any service records and all relevant schedules

## **Site Meetings and Procedures**

The Project Manager and the Contractor shall hold meetings relating to the progress of the works at regular intervals and at other such times as may be necessary. The Contractor shall attend all site meetings and shall ensure that all persons under his jurisdiction are notified timeously of all site meetings should the Project Manager require their attendance at such meetings.

The indicative duties of the *Project Manager*, *Supervisor* and *Employer* are as indicated in Annexure A

The Contractor shall keep on site a set of minutes of all site meetings, daily records of resources (people and equipment employed), a site instruction book, a complete set of contract working drawings and a copy of the procurement document and make these available at all reasonable times to all persons concerned with the contract.

## **Health and safety**

### **3.1.10 Health and safety requirements**

The contractor shall be responsible for compliance with the requirements of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993, as a principal contractor and shall manage the health and safety aspects of the works in accordance with the requirements of Generic Specification for Occupational Health and Safety in engineering and construction works contracts.

The abovementioned generic standard makes several references to the Specification Data for data, provisions and variations that make these standards applicable to this contract. The Specification Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and these standards.

The contractor shall within one week of the starting date and prior to commencing with the works, submit to the Project Manager for approval a suitable and sufficiently documented health and safety plan, based on this specification and the risk assessment that is conducted. No *access* to the site will be allowed to the contractor without the documented health and safety plan being submitted to and approved by the Project Manager.

Each item of Specification Data given below is cross-referenced to the clause in the standard to which it mainly applies.

### **3.1.11 Aids awareness**

The Contractor, as an obligation of the contract, is required to promote proper HIV/AIDS awareness in accordance with requirements of SANS 1921-6



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**Part C3.2 TECHNICAL SPECIFICATION**

3.1.1 The Technical Specification is split into two sections, as shown in the Technical Specification Table below:

<b>Part</b>	<b>Technical Specification</b>
<b>C8.2</b>	Technical Specification for maintenance and repairs on Coal Fired Steam Boilers
<b>C10.2</b>	Technical Specification for maintenance and repairs on the Steam and Condensate Reticulation and Mechanical Equipment Installations
<b>C16.2</b>	Technical Specification for maintenance and repairs of the Autoclave Installations
<b>C18.2</b>	Technical Specification for the Supply and control of Chemical Water Treatment on Steam Boilers, which shall include the regular maintenance and repairs of Boiler house related water softening plants and cooling towers Installations

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## C4.1 : SITE INFORMATION

### C4.1 THE SITE

The sites are various Department of Health Institutions/Facilities within the North West Province. These institutions are Klerksdorp Hospital and Tshepong Hospital.

#### KLERKSDORP HOSPITAL



GPS Locations: Latitude: 26° 87' 90.0" S; and Longitude: 26° 66' 29.3" E



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## TSHEPONG HOSPITAL



**GPS Locations: Latitude: 26° 53' 07.07" S; and Longitude: 26° 36' 54.20" E**

### C4.2 WORK AREA

The working area will be all the boiler plants, steam and condensate reticulation plants, various mechanical equipment and or plants, steam autoclaves and water treatment of all these equipment in the institutions described above. All areas of the Health Facility will be affected.

The works undertaken will affect operations in the Health Facility and as such the contractor will be required to provide equipment to isolate areas been worked on so that operations in the Health Facility continue during the project implementation.

### C4.3 ACCESS

Access to the sites are through security manned gates. Vehicles and individuals may be searched when accessing or exiting sites. The contractor must arrange temporary access cards for all his/her employees during the project implementations as access may be denied for unauthorized personnel. The Client reserves the right of admission to the premises.

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## NOTE

No claims whatsoever that may arise because of unforeseen ground and subsoil conditions will be considered. It is the responsibility for the Contractor to ascertain for himself the nature of the ground as well as the conditions on site.

It is the Contractor's responsibility to check site locations to ensure that all costs of travel are included in this Tender. No additional costs not supplied in this submission will be entertained as per contract



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### Part C5.1 DECLARATION OF INTEREST

Any legal person, including persons employed by the state<sup>1</sup>, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-

- the bidder is employed by the state; and/or
- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

**2 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

2.1 Full Name of bidder or his or her representative: \_\_\_\_\_

2.2 Identity Number: \_\_\_\_\_

2.3 Position occupied in the Company (director, trustee, shareholder<sup>2</sup>): \_\_\_\_\_

2.4 Company Registration Number: \_\_\_\_\_

Tax Reference Number: \_\_\_\_\_

2.6 VAT Registration Number: \_\_\_\_\_

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers "State" means

- a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- b) any municipality or municipal entity;
- c) provincial legislature;
- d) national Assembly or the national Council of provinces; or
- e) Parliament

<sup>2</sup>"Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.7	Are you or any person connected with the bidder presently employed by the state?	YES / NO
2.7.1	<p>If so, furnish the following particulars:</p> <p>Name of person / director / trustee / shareholder/ member: _____</p> <p>Name of state institution at which you or the person connected to the bidder is employed : _____</p> <p>Position occupied in the state institution: _____</p> <p>Any other particulars: _____</p> <p>_____</p> <p>_____</p> <p>_____</p>	
2.7.2	If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector?	YES / NO
2.7.2.1	<p>If yes, did you attached proof of such authority to the bid document?</p> <p>(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.</p>	
2.7.2.2	<p>If no, furnish reasons for non-submission of such proof:</p> <p>_____</p> <p>_____</p>	
2.8	Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months?	YES / NO
2.8.1	<p>If no, furnish reasons for non-submission of such proof:</p> <p>_____</p> <p>_____</p>	
2.9	Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid?	YES / NO
2.9.1	<p>If no, furnish reasons for non-submission of such proof:</p> <p>_____</p> <p>_____</p>	
2.10	Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid?	YES / NO
2.10.1	<p>If no, furnish reasons for non-submission of such proof:</p> <p>_____</p> <p>_____</p>	
2.11	Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract?	YES / NO
2.11.1	<p>If no, furnish reasons for non-submission of such proof:</p> <p>_____</p> <p>_____</p>	

3 Full details of directors / trustees / members / shareholders.

Full name	Identity Number	Personal Tax Reference Number	State Employee Number / Persal Number

4 DECLARATION

I, THE UNDERSIGNED (NAME).....  
CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT.  
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 23 OF THE GENERAL  
CONDITIONS OF CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of bidder

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**Part C5.2 DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES**

- 1 This Standard Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be disregarded if that bidder, or any of its directors have
  - a) abused the institution's supply chain management system;
  - b) committed fraud or any other improper conduct in relation to such system; or
  - c) failed to perform on any previous contract.

Item	QUESTION	YES	NO
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?  <b>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the audi alteram partem rule was applied).</b>  The Database of Restricted Suppliers now resides on the National Treasury's website ( <a href="http://www.treasury.gov.za">www.treasury.gov.za</a> ) and can be accessed by clicking on its link at the bottom of the home page.		
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?  The Register for Tender Defaulters can be accessed on the National Treasury's website ( <a href="http://www.treasury.gov.za">www.treasury.gov.za</a> ) by clicking on its link at the bottom of the home page		
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?		
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?		
	If so, furnish particulars:		

4    **DECLARATION**

I, THE UNDERSIGNED (NAME).....  
CERTIFY THAT THE INFORMATION FURNISHEDON THIS DECLARATION FORM IS TRUE AND CORRECT.  
I ACCEPT THAT, IN ADDITION TO CANCELLATION OF THE CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of bidder

<b>C5.3 CERTIFICATE OF INDEPENDENT BID DETERMINATION</b>
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**SBD9: CERTIFICATE OF INDEPENDENT BID DETERMINATION**

- <sup>1</sup> This Standard Bidding Document (SBD) must form part of all bids<sup>1</sup> invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).<sup>2</sup> Collusive bidding is the pe se prohibition meaning that it cannot be justified under any grounds
- 3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
  - a. disregard the bid of any bidder if the bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to the such system
  - b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract
- 4 This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, this Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

<sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals

<sup>2</sup> Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / services for the purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

**SBD9: CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

\_\_\_\_\_  
(Bid Number and Description)

in response to the invitation for the bid made by:

\_\_\_\_\_  
(Name of Institution)

do hereby make the following statements that certify to be true and complete in every respect:

I certify, on behalf: \_\_\_\_\_ that:

- 1 I have read and understand the contents of this Certificate;
  - 2 I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
  - 3 I am authorised by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
  - 4 Each person whose signature appears on the accompanying bid has been authorised by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
  - 5 For the purpose of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
    - (a) has been requested to submit a bid in response to the bid invitation;
    - (b) could potentially submit a bid in response to this bid invitation based on their qualifications, abilities; and
    - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
  - 6 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium<sup>3</sup> will not be construed as collusive bidding.
  - 7 In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
    - a) prices
    - b) geographical area where product or service will be rendered (market location)
    - c) methods, factors or formulas used to calculate prices;
    - d) the intention or decision to submit or not submit, a bid;
    - e) the submission of a bid which does not meet the specifications and the conditions of the bid; or
    - f) bidding with the intention not to win the bid.
  - 8 In addition, there has been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
  - 9 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- <sup>3</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.
- 10 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of Bidder

Js914w2



Part C5.4 MANDATORY EMPLOYMENT CREATION FORM												
MINIMUM DATA REQUIRED FROM CONTRACTOR MONTHLY												
Item No:		File No:					Report date:					
Institution:												
Service:												
	ACTUAL PAYMENTS	ACTUAL PEOPLE EMPLOYED					ACTUAL TRAINING					
Month	Wages (inc in Constr.)	Monthly Employment - Number of persons and average number work days					Number of persons and training days					
		Men	Youth	Women	Disabled	Work days	Manage	days	Tech skills	days	Life skills	days
b/f												
April												
May												
June												
July												
August												
September												
October												
November												
December												
January												
March												
TOTAL												
COMMENTS:												
		Benchmark	Offered		Contractor's Name:							
Labour content					Tel:							
Jobs created					E-mail:							
Training					Responsible Person:							
					Fax:							



BID NUMBER: NWDOH 06/2025

Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)



**health**

Department of  
**Health**  
North West Province  
REPUBLIC OF SOUTH AFRICA

## Part C6 CALCULATION OF PENALTIES

### CALCULATION OF PENALTIES

#### CALCULATION OF PENALTY PER DAY (EXCLUDING VAT)

CONTRACT PERIOD	RATE PER R100 OF ESTIMATE
1 month	27,5 cents
2 months	22 cents
2 months	16,5 cents
3 months	13,5 cents
3 months	11 cents
4 months	9,5 cents
4 months	8,5 cents
5 months	7,5 cents
5 months	6,25 cents
6 months	5,75 cents
7 months	4,75 cents
8 months	4 cents
months	3,75 cents
10 months	3,5 cents
11 months	3 cents
12 months	2,75 cents
14 months	2,5 cents
15 months	2,25 cents
16 months	2 cents
18 months	1,75 cents
20 months	1,5 cents
21 months	1,5 cents
24 months	1,25 cents
30 months	1 cent
36 months	1 cent
42 months	1 cent

#### PENALTY PER DAY ROUNDED OFF AS FOLLOWS:

R0	-	R500	nearest	R5
R501	-	R1 000	nearest	R10
R1 001	-	R5 000	nearest	R50
R5 001	-	and above	nearest	R100

#### EXAMPLE

Estimated contract value = R2 500 000 (excluding VAT)  
Contract period = 12 months

$$\begin{array}{rcl} \text{R2 500 000} & \times & \frac{0,0275}{100} \\ \hline & & \text{R687,50/day} \end{array}$$

Therefore rounded off to the nearest R10.00  
= R690,00/day

#### PENALTIES ON CONTRACTS IN PHASES

Penalties must be calculated proportionally on the estimated contract value of each phase

BID NUMBER: NWDOH 06/2025

Maintenance and  
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And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a  
Period of 48 Months.  
(KLERKSDORP & TSHEPONG)



**Part C7.2 BILL OF QUANTITIES - COIL FIRED BOILERS**

**C7.2 PRICED RATES FOR MAINTENANCE, REPAIRS AND SERVICING OF THE COAL FIRED STEAM BOILERS**

ITEM NO:	SCHEDULED MAINTENANCE	UNIT	Number of Services in 4 years	Nr of Boilers	RATE	TOTAL
1	Boiler Maintenance Routine - Monthly (Klerksdorp Hospital)	No	32	2		R
2	Boiler Maintenance Routine - Monthly (Tshepong Hospital)	No	32	3		R
3	Boiler Maintenance Routine - Quarterly (Klerksdorp Hospital)	No	12	2		R
4	Boiler Maintenance Routine - Quarterly (Tshepong Hospital)	No	12	3		R
5	Boiler Maintenance Routine - Annual (Klerksdorp Hospital)	No	3	2		R
6	Boiler Maintenance Routine - Annual (Tshepong Hospital)	No	3	3		R
7	Boiler Statutory 36 monthly Service (Klerksdorp Hospital)	No	1	2		R
8	Boiler Statutory 36 monthly Service (Tshepong Hospital)	No	1	3		R
ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES		RATE	PRICE [EXT VAT]
1	15mm copper tubing; class 2; 6,1m length	M	1			R
2	20mm copper tubing; class 2; 6,1m length	M	1			R
3	25mm copper tubing; class 2; 6,1m length	M	1			R
4	76mm copper tubing, class 2 6,1m length	M	1			R
5	50mm copper tubing, class 2 6,1m length	M	1			R
6	40mm copper tubing, class 2 6,1m length	M	1			R
7	15mm heavy duty steam pipe 6,1m length	M	1			R
8	20mm heavy duty steam pipe 6,1m length	M	1			R
9	25mm heavy duty steam pipe 6,1m length	M	1			R
10	Valve gland packing 12,5mm roll	Roll	1			R
11	Valve gland packing 10mm roll	Roll	1			R
12	Valve gland packing 6mm roll	Roll	1			R
13	Graphite pipe jointing compound 5kg container	Nr	1			R
14	PTFE thread sealing tape roll	Roll	1			R
15	Rope packing; non asbestos; 40mm x 30m roll	Roll	1			R
16	Rope packing; non asbestos; 25mm x 30m roll	Roll	1			R
17	Rope packing; non asbestos; 15mm x 30m roll	Roll	1			R
18	Manhole gaskets, spirally wound; 460mm x 340mm x 5mm thick x 32mm winding with	No	1			R
19	Side wall header gaskets, spirally wound; 125mm x 82mm x 5mm thick x 10mm winding width	No	1			R
20	Gland packing for Sulzer HCP 15-6½ boiler feed water pump; 6 packing per set	No	1			R
21	Lined webbing; non asbestos; rolls of 50mm x 6mm x 30m	Rolls	1			R
22	Packing material: graphite impregnated wire reinforced sheets, 1,2m x 2,4m x 1,5m	No	1			R
23	Packing material: graphite impregnated, wire reinforced sheets 1,2m x 2,4m x 3,0m	Sheet	1			R
24	Acetylene 8,kg cylinder	Cylinder	1			R
25	Industrial quality Oxygen 11,5kg cylinder	Cylinder	1			R
26	Welding electrodes 2,5mm x 5kg	kg	1			R
27	Welding electrodes 3,2mm x 5kg	kg	1			R

28	Brazing rods 1,5mm x 5kg	kg	1		R
29	Brazing rods 2,5mm x 5kg	kg	1		R
30	Brazing flux 500g container	g	1		R
31	Silver solder 100g	g	1		R
32	Copper to copper gas welding rods	kg	1		R
33	Gear box oil SAE 90 5 litre container	Litre	1		R
34	Motor oil SAE 30 5 litre container	Litre	1		R
35	Hydraulic oil CONDOR 310 20 litre containers	Litre	1		R
36	Paraffin 20 litre containers	Litre	1		R
37	General purpose grease 5kg containers	kg	1		R
38	High temperature soot blower grease 15kg	kg	1		R
39	Bolts, 6mm dia x 25mm long & nuts (HTS)	S	1		R
40	Bolts, 8mm dia x 25mm long & nuts (HTS)	S	1		R
41	Bolts, 8mm dia x 40mm long & nuts (HTS)	S	1		R
42	Bolts, 10mm dia x 25mm long & nuts (HTS)	S	1		R
43	Bolts, 10mm dia x 40mm long & nuts (HTS)	S	1		R
44	Bolts, 10mm dia x 50mm long & nuts (HTS)	S	1		R
45	Bolts, 12mm dia x 40mm long & nuts (HTS)	S	1		R
46	Bolts, 12mm dia x 50mm long & nuts (HTS)	S	1		R
47	Bolts, 16mm dia x 40mm long & nuts (HTS)	S	1		R
48	Bolts, 16mm dia x 50mm dia x 50mm long & nuts (HTS)	S	1		R
49	Bolts, 16mm dia x 65mm long & nuts (HTS)	S	1		R
50	Bolts, 16mm dia x 80mm long & nuts (HTS)	S	1		R
51	Bolts, 16mm dia x 100mm long & nuts (HTS)	S	1		R
52	Bolts, 20mm dia x 50mm long & nuts (HTS)	S	1		R
53	Bolts, 20mm dia x 80mm long & nuts (HTS)	S	1		R
54	Bolts, 20mm dia x 100mm long & nuts (HTS)	S	1		R
55	Paint: PWT TPA no 1; 5 litre containers	litre	1		R
56	Refractory Mortar; 25kg bags (Refcast 50)	Kg	1		R
57	Fibre glass wool sheeting: 50mm x 1,2mm x 6m roll	Roll	1		R
58	Pressure recorder charts for Negretti and Zambra P/N 9D192X	S	1		R
59	Conveyor belting for ash conveyor 400mm wide x 12mm thick 3 ply	M	1		R
60	Troughing rollers for ash conveyor 177mm width x 100mm dia x 25mm shaft dia	S	1		R
61	Return rollers for ash conveyor 485mm width x 100mm dia x 25mm shaft dia	S	1		R
62	Idler rollers for ash conveyor 485mm width x 150mm dia x 25mm shaft dia	S	1		R
63	Compensating rollers for ash conveyor 485mm width x 150mm dia x 25mm shaft dia	S	1		R
64	Conveyor belting for coal conveyor 550mm wide x 12mm thick, 3 ply	M	1		R
65	Troughing rollers for coal conveyor 100mm width x 190mm dia x 20mm shaft dia	S	1		R
66	Return rollers for coal conveyor 100mm width x 535mm dia x 20mm shaft dia	S	1		R
67	Roller bearings: SKF 6311 ZZ	S	1		R
68	Roller bearings: SKF 6310 ZZ	S	1		R
69	Roller bearings: SKF 6306 ZZ	S	1		R
70	Roller bearings: SKF 6308 ZZ	S	1		R
71	Roller bearings; MJR 38mm shaft dia	S	1		R
72	Roller bearings; RM 11	S	1		R
73	Roller bearings; NTN 22211 W 33 K	S	1		R
74	Roller bearings; KOYO 22209 RWK 33	S	1		R
75	Roller bearings; KOYO 30215J	S	1		R
76	Roller bearings; SKF 6003	S	1		R
77	40mm steam Barrel nipples	S	1		R
78	50mm steam barrel nipples	S	1		R

79	15mm gate valves	S	1		R
80	20mm gate valves	S	1		R
81	25mm gate valves	S	1		R
82	40mm gate valves	S	1		R
83	50mm gate valves	S	1		R
84	15 stainless steel ball valves	S	1		R
85	20 stainless steel ball valves	S	1		R
86	25 stainless steel ball valves	S	1		R
87	15mm long radius 90° steam bend	S	1		R
88	20mm long radius 90° steam bend	S	1		R
89	25mm long radius 90° steam bend	S	1		R
90	40mm long radius 90° steam bend	S	1		R
91	50mm long radius 90° steam bend	S	1		R
92	15mm C/C weldon Elbows	S	1		R
93	20mm C/C Weldon Elbows	S	1		R
94	25mm C/C Weldon Elbows	S	1		R
95	40mm C/C Weldon Elbows	S	1		R
96	50mm C/C Weldon Elbows	S	1		R
97	15mm C/C Weldon T pieces	S	1		R
98	20mm C/C Weldon T pieces	S	1		R
99	25mm C/C Weldon T pieces	S	1		R
100	40mm C/C Weldon T pieces	S	1		R
101	50mm C/C Weldon T pieces	S	1		R
102	15mm C/C Weldon straight connectors	S	1		R
103	20mm C/C Weldon straight connectors	S	1		R
104	25mm C/C Weldon straight connectors	S	1		R
105	45mm C/C Weldon straight connectors	S	1		R
106	50mm C/C Weldon straight connectors	S	1		R
107	25 to 15mm C/C Weldon reducing sockets	S	1		R
108	25 to 20mm C/C Weldon reducing sockets	S	1		R
109	15mm Spirax ft 14 ball float trap	S	1		R
110	20mm Spirax ft 14 ball float trap	S	1		R
111	25mm Spirax ft 14 ball float trap	S	1		R
112	15mm Armstrong 800 Inverted Bucket Trap	S	1		R
113	20mm Armstrong 800 Inverted Bucket Trap	S	1		R
114	20mm Armstrong 812 Inverted Bucket Trap	S	1		R
115	25mm Armstrong 812 Inverted Bucket Trap	S	1		R
116	15mm Steam strainer brass body	S	1		R
117	20mm Steam strainer brass body	S	1		R
118	25mm Steam strainer brass body	S	1		R
119	15mm Steam flap type Non return valve	S	1		R
120	20mm Steam flap type non return valve	S	1		R
121	25mm Steam flap type non return valve	S	1		R
122	40mm Steam flap type non return valve	S	1		R
123	50mm Steam flap type non return valve	S	1		R
124	15mm Sight glass 50mm single window brass body	S	1		R
125	20mm Sight glass 50mm single window brass body	S	1		R
126	25mm Sight glass 50mm single window brass body	S	1		R
127	15 – 20mm sight glass window repair kit	S	1		R
128	15mm cone face steam unions	S	1		R
129	20mm cone face steam unions	S	1		R
130	25mm cone face steam unions	S	1		R
131	40mm cone face steam unions	S	1		R

132	50mm cone face steam unions	S	1		R
133	15mm S/S trim steam globe valve 1000 kPa	S	1		R
134	20mm S/S trim steam globe valve 1000 kPa	S	1		R
135	25mm S/S trim steam globe valve 1000 kPa	S	1		R
136	40mm S/S trim steam globe valve 1000 kPa	S	1		R
137	50mm S/S trim steam globe valve 1000 kPa	S	1		R
138	15mm steam barrel nipples	S	1		R
139	20mm steam barrel nipples	S	1		R
140	25mm steam barrel nipples	S	1		R
141	50 to 40mm C/C reducing sockets	S	1		R
142	40 to 25mm C/C reducing sockets	S	1		R
143	40mm Mobrey modulating control valves	S	1		R
144	40mm Mobrey modulating control valve overall kit	S	1		R
145	20mm Hornes valves	S	1		R
146	25mm Hornes valves	S	1		R
147	40mm Hornes valves	S	1		R
148	0-100°C 75mm face dial thermometer	S	1		R
149	0-100°C Angle poise thermometer	S	1		R
150	10mm BSP gauge cock	S	1		R
151	10mm Syphon tube	S	1		R
152	15mm Quarter turn valves (Boiler)	S	1		R
153	20mm Quarter turn valves (Boiler)	S	1		R
154	15mm Parallel slide valve (Boiler)	S	1		R
155	20mm Parallel slide valves (Boiler)	S	1		R
156	25mm Mobrey sequencing valves (Boiler)	S	1		R
157	Pressure gauge 100mm dia bottom entry x 10mm BSP thread range 0 to 2000 kPa	S	1		R
158	Nylatron Elevator Buckets Outside length 320mm width 180mm depth 130mm projection 165mm wall thickness 8mm approx weight 1,13kg approx capacity 4,50 litre	S	1		R
159	Coal screws flight pitch 150mm x 14m	S	1		R
160	Gear box make ISQ 206118, Type VF130AP13285 Ratio 30MTGB3	S	1		R
161	Motor 5.5kw 380 Volt 3PH	S	1		R
162	Cross feed flight pitch 200mm x 17m	S	1		R
163	Gear box make ISQ 206118, Type VF130AP13285 Ratio 30MTGB3	S	1		R
164	Motor 5.5kw 380 Volt 3PH	S	1		R
165	Feed water pumps Grundfos Model no. A96501222P31233	S	1		R
166	Feed water pumps stork MCH 14A-7	S	1		R
167	Elevator belt buckets 150 x 115 x 85mm	S	1		R
168	Guillotine door cables 6mm x 450mm	S	1		R
169	Bearings FJU210 flanges	S	1		R
170	V belts SPZ1600	S	1		R
171	V belts 16 N x 3170	S	1		R
172	20mm gauge column glass tubes	S	1		R
173	20mm gauge column glass tube cone rubbers	S	1		R
174	Horns valves ¾"	S	1		R
175	Complete John Thompson boiler control panel	S	1		R
176	Complete Premier metal boiler control panel	S	1		R
177	Blower motor	S	1		R
178	Blower motor gasket	S	1		R
179	Fuel nozzle	S	1		R
180	Burner head	S	1		R
181	Burner cone	S	1		R
182	Burner head gasket	S	1		R

183	Burner blower housing	S	1		R
184	Front end gasket	S	1		R
185	Rear end gasket	S	1		R
186	50mm cast steel straight globe valve	S	1		R
187	40MM blow down valve	S	1		R
188	Grit trolley	S	1		R
189	Fuel trim 73/6000	S	1		R
190	Water Mert Kent WP4000 2"	S	1		R
191	Condensate meter Meinecke WPD 50 2"	S	1		R
192	Ware Control valve Bernad 0276000	S	1		R
193	Level switch Mobrey	S	1		R
194	Rope packing; non asbestos; 15mm x 30mm	S	1		R
195	Manhole gaskets, spirally wound; 405mm x 305mm x 5mm thick x 32mm winding width	S	1		R
196	Lined webbing, non asbestos; 50mm x 6mm x 30mm	S	1		R
197	Packing material: 1,5mm Graphite impregnated, wire reinforced sheet 1,2m x 2,4m x 1,5m	S	1		R
198	Packing material: 3mm Graphite impregnated, wire reinforced sheet	S	1		R
199	Paint: PWT TPA no 1 container	S	1		R
200	Refractory mortar; (Recast 50)	S	1		R
201	Fibre glass wool sheeting rolls 50mm x 1,2m	S	1		R
202	Conveyor belting for ash elevator 200mm wide x 10mm thick-3py	S	1		R
203	Parts for: Mark 4 Stoker for the boilers	S	1		R
204	Stoker mat common links	S	1		R
205	Stoker mat drive links	S	1		R
206	Stoker mat drive sprockets	S	1		R
207	Stoker roller	S	1		R
208	Stoker links rods	S	1		R
209	Carbo-frax blocks	S	1		R
210	Carbo-frax blocks supports	S	1		R
211	Carbo-frax end blocks	S	1		R
212	Carbo-frax distant pieces	S	1		R
213	Washers 14mm	S	1		R
214	3mm split pins	S	1		R
215	Guillotine door 1050 x 300 x 90	S	1		R
216	Feed water pump Calpido CP3KW 5.8 amp 380 Volt	S	1		R
217	Ash extractor frame complete	S	1		R
218	5 groove pulleys	S	1		R
219	Mobrey control valve PC board Type 86436	S	1		R
220	Level switch Mobrey	S	1		R
221	Sauter electric motor IP 55 ID	S	1		R
222	FD electrical motor (SMM) Squirrel cage 3 phase TEFC D1325 5,5KW	S	1		R
223	Stoker electrical motor R47 DT 80K4 0,55 KW	S	1		R
224	ID fan electrical motor AFMAC model 6312 30KW	S	1		R
225	Feed pump electrical motor hawker sidely DF 160 MP 15KW 80C rise 3 phase	S	1		R
226	Feed Pump electrical motor WEG 160M 15KW 3 phase	S	1		R
227	Feed pump electrical motor Siemens K4 95503 15KW 3 phase	S	1		R
228	Electrical motor 0,75 KW 3 phase RPM 2850 230-240 volts	S	1		R
229	Electrical motor Moway CMC075T 0,55KW 0,75HP RPM2800	S	1		R
230	Electrical motor Ebara CMAR-00T 0,75KW RPM2850 1,0HP	S	1		R
231	Bearings SKF 6208	S	1		R
232	Bearings 630903/2	S	1		R
233	Steam Separator 6"	S	1		R
234	Expansion Bellows 5"	S	1		R
235	Grit trolley	S	1		R
236	Fuel trim 73/6000	S	1		R

237	Water Mert Kent WP4000 2"	S	1		R
238	Condensate meter Meinecke WPD 50 2"	S	1		R
239	Ware Control valve Bernad 0276000	S	1		R
240	Preparation for statutory 36 monthly inspection as per item 2 – 1 Ton up to 9,9 ton	S	1		R
241	Preparation for statutory 36 monthly inspection as per item 2 – 10 Ton up to 20 ton	S	1		R
242	AIA Certificate of Continuance (36 Monthly)	S	1		R
243	AIA Pressure Test (12 Monthly)	S	1		R
	<b>LABOUR RATES</b>				-
244	Fitters paragraph 17.1	S	1		R
245	Electricians/Certified Millwright paragraph 17.2	S	1		R
246	Artisan per hour	S	1		R
247	Artisan Assistant per hour	S	1		R
248	Labour Technician per hour	S	1		R
249	Labour Technician per hour overtime	S	1		R
250	Labour Technician per hour Sunday and Public Holidays	S	1		R
251	Labour Technician Assistant per hour	S	1		R
252	Labour Technician Assistant per hour over timer	S	1		R
253	Labour Technician Assistant per hour Sunday and Public Holidays	S	1		R
254	Boiler Operator Training on site rate per hour	S	1		R
255	<b>PROVISIONAL SUMS FOR ADHOC REPAIRS NOT LISTED IN THE BOQ</b>				
256	Provisional Sum	S	1	R5 000 000,00	R 5 000 000,00
257	Percentage Mark up	S	1		R
<b>SUB-TOTAL BOILERS</b>					<b>R</b>

All unit prices that are not included or missed shall be determined through quotation process with agreed amounts standardised and revised as part of the baseline costs

All prices shall be priced to RSA currency excluding VAT

All travelling rates will be calculated according to the AA rates for the specific month

TENDERER'S SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

NAME OF FIRM: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CODE \_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_ CELL NO: \_\_\_\_\_

FAX NO: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_ DATE: \_\_\_\_\_

**BID NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



## **Part C8.1 Scope of Work - Coal Fired Steam Boilers**

### **1 SCOPE OF CONTRACT**

1.1 This Contract calls for the priced rates for the repairs, service and maintenance of the Steam generating plant and auxiliary equipment in accordance with the requirements as laid down in the Technical Specifications. It, furthermore, entails the servicing, maintenance and repair of said installation, as well as the preparation of the boiler for statutory inspections and being in attendance during any such inspection as well as the six month washout inspection in conjunction with appointed Contractor for the treatment of boiler feed water, in accordance with the requirements of the Department: Infrastructure Unit. The systems other than the steam generating plant and auxiliary equipment covered by this Tender/Contract are the following:

- The Steam and Condensate Reticulation within the boiler house.
- The boiler feed water system, inclusive of hot well tanks, boiler feed water pumps and controls.
- The coal supply, handling and transport system.
- The boiler ash removal plant up to and including the ash bunker.
- Appurtenances to the boilers.
- The boiler blow down sump and interconnecting piping, under floor and underground ducting, connecting pipe to the sewer.
- Statutory inspections and Hydraulic test of the compressed air receiver in the Boiler house in accordance with the Occupational Health and Safety Act and Regulations.
- Adherence to the Safety Regulations and membership on the Safety Committee at the institutions.
- Monthly meetings with Management of the Institutions.
- Monthly reports to the Department: Infrastructure Unit
- Supply of all lubricants and cleaning material needed.
- Supply of all hand tools and equipment needed for Contract.

### **1.2 Competent person**

It will be the person appointed as such and who is on Site a promulgated under the Machinery and Occupational Safety Act No 6 of 1983.

1.3 The successful Tenderer shall be required to maintain the complete installation and equipment in a proper and safe operating condition, to clean, adjust and lubricate the equipment as required in terms of the Contract, repair or replace all electrical and mechanical parts as necessary due to wear and tear.

a) This shall include, but not limited to the following:

- (i) Examine the system in accordance with any applicable regulation framed under the Occupational Health and Safety Act 85 of 1993,
- (ii) Properly maintain, adjust and keep the installation and equipment in a safe and proper operating condition at all times,
- (iii) Repair/replace all parts of the installation which may become necessary for the proper use and / or operation of the installation,
- (iv) Examine, adjust and lubricate the complete installation, supply of all lubricants, replacement parts and the cleaning of material as required for proper maintenance of the equipment,
- (v) Any malfunction or defect occurring within a period of 14 days after any service or repair being executed will be for the account of the
- (vi) Examine, periodically and when necessary, all devices and perform any statutory safety tests at or before the expiring of the required intervals
- (vii) Complete the services, maintenance or repair action report, which shall be submitted with any invoice(s).

### **2 SELECTION OF PERSONNEL**

The successful tenderer must scrutinize the qualifications of all applicants under this contract and investigate any reference supplied by applicants. The tenderer is ultimately in charge of all personnel appointed under this contract. Successful applicants to be provided to the Representative of the Department of Health. Proof of all qualifications of candidates must be submitted to the Department of health. Applicant may be given a competency test before they will be allowed to operate any equipment or go on site.

The tenderer is to appoint a qualified foreman who will be in charge of all facilities that form part of this contract. Qualifications and CV of the foreman will be submitted to the Department of Health for scrutiny and approval. All contractual matters, meetings, instructions and required actions will be directly addressed with the Foreman. All communications will be directed to the foreman as a representative of the tenderer for the execution of this contract.



### 3 TOOLS AND TRANSPORT

All hand tools to enable tradesman to carry out their task on the various sites will be the responsibility of the successful tenderer. Tradesman found not to be in possession of adequate tools will not be allowed to start on any site. All personnel hired under this contract will be responsible for their own transport to get to work and back. If the successful tenderer supply transport to work and back it will be for his account, without any compensation on the part of the Department: Infrastructure Unit. A tool inspection to verify the contents of the toolbox to be used on site will be carried out before any tradesman is allowed on site.

### 4 CLOTHING

All personnel hired as tradesman, technicians, artisans or millwrights must wear protective clothing as prescribed in the Occupational Health and Safety Act, Act no 85 of 1993 at all times during working hours. Overhauls must bear the company slogan on it and must be clean and tidy at the start of each shift. No personnel will be allowed to start to work on a site without the required protective clothing.

### 5 SUPERVISION OF PERSONNEL

All personnel hired under this contract will work directly under the supervision of the Foreman on the site or an appointed Supervisor where applicable. A detailed duty sheet will be handed to hired personnel and the duties on it must be strictly performed. The successful tenderer will not be allowed to interfere or undermine the discipline or authority of the foreman on site.

### 6 TERMINATION OF EMPLOYMENT OF HIRED PERSONNEL

Any personnel making themselves guilty of misconduct on any site, will immediately be removed from site and not be allowed on any other site for this contract. Any personnel found to be unable to perform the duties prescribed as a result of a Health condition not declared during the interview, will immediately be removed from site. Any personnel found not to possess the tools needed to perform their duties or to wear the protective clothing, will be removed from site immediately.

#### MISCONDUCT THAT WILL RESULT IN AN IMMEDIATE DISMISSAL

- a) The use of alcohol or intoxicated drugs on the premises
- b) Anybody that commit an offence by
  - Stealing
  - Laziness
  - Insubordination
  - Acts of violence i.e. the use of abusive or insulting language to client or co-workers, fighting, wilful damage to Government-, Client-, or Co-workers property
  - Sleep on duty
  - Non-compliance with work on the duty sheet
  - Staying from work without notifying the site Supervisor for periods exceeding (three) 3 consecutive working days
  - Unauthorized strikes

### 7 CONTINUATION OF SERVICE

It is the responsibility and a condition of this tender that when an employee takes his annual leave or go on sick leave for periods exceeding two (2) days, the successful tenderer must supply a suitable qualified person to carry on with the duties of the employee on site and to ensure that the company got excess to sufficient personnel to be able to replace any personnel who resigns or terminate their employment. Failure on the part of the successful tenderer to replace an employee who vacates his post for any of the above reasons, within two (2) working days will be seen as a breach of contract and result in a fine equal to the hourly rate of such personnel for the duration of the absentee. Any penalties occurred due to the above will be subtracted from the monthly payment due to the contractor for the month in which the breach of contract occur.

### 8 DESIGN OF EQUIPMENT

No alterations will be allowed to the design of equipment without the prior consent, in writing of the representative of Department: Infrastructure Unit. Any alterations, without permission, to equipment must immediately be rectified at cost to the successful tenderer or in cases where the equipment is damaged beyond repair the replacement thereof at the successful tenderers cost.

### 9 MATERIALS

All materials and spare parts will be supplied by the Contractor according to the scheduled material list to carry out preventative maintenance and repairs on equipment. It is the responsibility of the employee to timeously request all material and spare parts required to carry out his/her work. Any hired personnel found to use material and spare parts for any other purpose than the intended purpose of repairing the North West Provincial Government property will be immediately dismissed and the cost will be recovered from the successful tenderer.

## 10 REDUNDANT COMPONENTS

All redundant material remains the property of the Department: Infrastructure Unit and must be handed to the Representative of the Department: Infrastructure Unit on site. NB – All materials used and all redundant materials must be written on the spreadsheet to be provided and handed back to the Representative together with a completed daily time sheet at the end of each shift.

## 11 STANDBY DUTIES

It will be expected occasionally of Electricians and Fitters to do standby duties at Hospitals. Standby duties are for a period of seven (7) days and will alternate between personnel on site. Personnel will be paid a standby allowance for each completed period of 24 hours on standby and overtime for each hour spent on actual repairs on a call out. Personnel on call out will be called out by the boiler operator on duty and immediately upon arrival on site report to the Boiler house where his time of arrival will be recorded. The standby personnel must then report to the Maintenance Official for the Hospital and obtain a defect order for the service required.

When the service is completed the Maintenance Official in charge of the section where the breakdown occurred must sign the completed work on the defect order. The standby personnel must again report to the Boiler Operator after the call out ended and ensure that the time of departure is recorded correctly.

## 12 EMERGENCY MATERIAL

In cases of emergency the successful tenderer will be requested to supply material from scheduled material list. Un-Listed Material obtained in cases of Emergency will be paid for on a basis of proven cost plus a 15% mark up. Separate invoices must be provided in each case.

## 13 BASIC CONDITIONS OF EMPLOYMENT ACT 75 OF 1997

It will be the sole responsibility of the successful tenderer to ensure that all conditions applicable to the basic conditions of Employment Act, Act 75 of 1997 are strictly adhered to. Tenderers must make adequate provision in their tendered price to provide for all financial implication that might be required to the adherence of the Act.

A copy of any contract between the successful tenderer and the employees for this contract, as a result of collective agreement, must be handed to Department: Infrastructure Unit before the employee commences with service.

NB – Employees that makes themselves guilty to any of the misconducts referred to in paragraph 7:00 will be removed directly from site and no compensation as a result of the Act will be forwarded to the successful tenderer.

All salaries must comply to the minimum wages as published by SIEFSA.

## 14 OFFICIAL WORKING HOURS

The official working hours is as it is currently worked but may change in the future in which case the new official working hours will apply.

## 16 PAYMENT OF EMPLOYEES BY CONTRACTOR

By tendering for the execution of this contract the contractor declares that he/she is in the financial position to carry the financial burden to pay the salaries of the employees on this contract on a regular basis on the last working day of each month. Contractors must take into consideration that the monthly payments to the contractor will be in arrears and that the successful tenderer will have to pay his salaries for each month before the monthly payments due to him/her is finalized.

Due to the fact that late payments of salaries to employees by the employer causes labour unrest it is a firm condition of this tender/contract that salaries must be paid on or before the last working day of the applicable month.

## 17 QUALIFICATIONS OF TRADESMAN

### 17.1 FITTER

A completed apprenticeship and proof of passing a trade test in terms of section 13 (2)(h) of the manpower training Act 1981 as Amended  
OR

A certificate issued under the provision of section 28 or 30 of the manpower training act 1981 as Amended

OR

A certificate issued under the provision of the repealed section 27 of the Act referred to

PLUS

Three (3) years appropriate post qualification experience

### 17.2 ELECTRICIAN

The Electrical contractor must provide the following documents, when tendering with the department:

Wireman's certificate handed-in together with the tender document.

Electrical contractors license.

Industrial Council registration certificate.

Registration certificate and latest receipt of payment to the Workman's Compensation as required by the Workman's Compensation Act of 1941, as amended.

Master electrician certificate

18 CANVASSING FOR PERSONNEL

The successful tenderer will have a period of one (1) month from the date of acceptance of his tender in which to canvass and employ the personnel needed to fill the various post. During this one (1) month period the existing labour hiring contract will still be applicable. On the date that the existing contract expire all personnel must be in place for this contract.

NOTE: ALL WORK IN THIS CONTRACT SHALL BE DONE ACCORDING TO THE STANDARD QUALITY SPECIFICATION FOR STEAM AND CONDENSATE RETICULATION, MARCH 2006, AND CENTRAL HEATING INSTALLATIONS OF THE DEPARTMENT. A COPY SHALL BE MADE AVAILABLE TO THE SUCCESSFUL TENDERER ON REQUEST

**BID NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



**Part C8.2 Technical Specification**

**1 SERVICE REQUIRED:**

- 1,1 Replace existing cladding and lagging at various points and sizes, will be indicated on a site inspection
- 1,2 Replace existing steam traps at various points and sizes, will be indicated on a site inspection
- 1,3 Replace existing leaking steam piping and condensate piping will be indicated on a Site Inspection
- 1,4 Prepare surfaces for painting these areas, will be indicated on the site inspection
- 1,5 Preparation of boiler for Statutory Inspections

- 1,6 Repairs to Steam Generating plants and auxiliaries inside the boiler house as required
- 1,7 Hiring of Fitters, Electricians/millwrights and artisans

NOTE: All above shall be done only after an inspection was conducted by the Representative of the Department: Infrastructure Unit

**2 48 Months STATUTORY PREPARATION AND INSPECTION:**

**DESCRIPTION OF WORK TO BE PERFORMEND**

- 2,01 Isolate and lock intermediate valve on steam mains of the specified boiler in collaboration with the local workshop foreman on site. The Contractor shall comply with General Safety Regulation 5(2)(a) and (b)
- 2,02 Drain boiler through blow down valve. Remove chain grate. Remove manholes, head holes and mud holes. Remove all the fittings on the boiler. Expose all welded or riveted seams and short stay bars. Remove feed water dispersion pipes and anti-priming device all brickwork and arches will have to be removed.
- 2,03 The boiler is to be cleaned to a state in which it is free of all scale, both internally and externally.
- 2,04 All boiler fittings are to be cleaned, overhauled, tested and certified to be suitable for the application intended.
- 2,05 All removed parts and components pertaining to the boiler are to be reassembled and fitted to the boiler, the boiler filled with water for hydraulic test.
- 2,06 Removed sections of lagging are to be remounted, brickwork and arches having been broke down, are to be rebuilt, and the stoker, is to be re-installed.

**3 FITTINGS**

- 3,01 All the fittings are to be stripped and cleaned and shall be free of all scale and rust (internally and externally). All old packing, glands packing are to be removed and areas shall be cleaned.
- 3,02 All valves shall be visually checked for possible damage and defects that will cause valves to be unsafe for further use.
- 3,03 Check and clean all studs/threaded holes/bolts and nuts for possible damage or defects.
- 3,04 All the valve seats are to be resealed by lapping ensuring proper and drop tight seating under pressure.
- 3,05 All the fittings are to be dismantled, the parts being displayed on the bench for inspection purposes on the day specified for the fittings inspection.
- 3,06 After all the fittings have been assembled and before being mounted on the boiler, these shall be hydraulically tested to 1.25 x the authorized working pressure, using a hand pump.
- 3,07 Any major repairs/replacement may only be carried out after written instruction by the Department Health: Infrastructure Unit has been issued.
- 3,08 Overhauling of soot blowers must be done by authorized agents, the two shut off steam valves in front of the soot blowers does form part of this contract, including steam traps.

**4 WATERSIDE OF BOILER**

- 4,01 All scale deposits inside /or on the outside surface of the tubes are to be removed from accessible areas by means of wire brushing.
- 4,02 If a rattler type descaler is to be used it shall be done under full time supervision of the successful contractor to prevent any damage through improper use of such equiument.
- 4,03 Should any damage occur through the incorrect use or the failure of such equipment the successful tenderer/contractor shall be responsible to effect the necessary repair to the satisfaction of the Department: Infrastructure Unit at his own cost in the most suitable way, which is to be determined by Control Boiler Inspector.

**5 EXTERNAL AND FIRESIDE**

**5,01 SHELL, FURNACE, REVERSAL CHAMBER, MUDHOLES AND MANHOLES**

- 5,01.1 All accessible areas are to be cleaned and shall be free of all scale and rust by means of wire brushing and scraping without damaging or removal of any of the underlying material
- 5,01.2 All seating surfaces of all mud holes and manholes are to be cleaned and shall be free of old packing/gasket material. Care shall be taken not to damage the underlying surfaces.
- 5,01.3 Threaded section of draw bolts on all mud holes and Manholes are to be properly cleaned without causing damage to the threads.

**5.02 WELDED SEAMS**

All accessible areas of welded seams are to be cleaned and shall be free of scale. This shall be accomplished by means of wire brushing and scrapping without deforming the surface or the removal of any of the underlying metal.

## 6 HYDRAULIC TEST AND EXTERNAL INSPECTION

- 6,01 All cleaning material and foreign matter shall be removed from inside the boiler.
- 6,02 Feed water dispersion pipe and anti-priming device shall be reinstalled.
- 6,03 Remount all boiler fittings with suitable new gaskets and packing where required. All mud holes and manholes shall be fitted using new gaskets as specified.
- 6,04 The boiler shall be filled with cold raw water by means of a hosepipe until all air is removed from the highest point or air purge valve where provided.
- 6,05 The pressure in the boiler must be raised slowly by means of a hand pump to the authorized working pressure to check for possible leaks on fittings and joints, and repairing of such faults, when they occur. Under no circumstances will it be allowed to exceed the working pressure at this stage.
- 6,06 Under no circumstances must the boiler be left under pressure for any extended period of time.
- 6,07 All safety valves springs must be removed. The seat on the valve must be gag during hydraulic pressure after work these gag must be removed and showed to the Control Boiler Inspector
- 6,08 On the day of the specified inspection the pressure in the Boiler is to be raised slowly to the authorized working pressure for  $\pm 15$  min before the time of the scheduled inspection. The final test pressure will be determined by the Boiler Inspector.

## 7 PAINTING

After the successful completion of the hydraulic test and external inspection all the welded seams and areas normally covered by brickwork and arches (if removed) must be treated with 3 coats of PWT no 1 paint, which will be supplied by the Contractor.

All grit arrestors, cyclone, ducting, FD and ID fans ducting must be painted with a heat resistant aluminum paint.

## 8 LAGGING

Lagging removed from all welded seams and attachment welds are to be reinstalled in workman like manner, leaving a neat well finished installation.

## 9 CHAINGRATE / STOKER

The following are to be done on overhauling of chain grate stoker.

- 9,01 Remove and strip all worn and broken stoker drive and common links. Strip out all old stoker chain rods and re-install new rods. Remove and inspect the condition of drive shafts, bearing blocks and drive gears. Supply and install new stainless steel sliding strips. Remove, inspect and re-install broken or damaged side seals, carbofrax blocks and brackets.

NB: The following must be replaced and will be supplied by the Contractor: Rods, Washers, Stainless Steel Split Pins, Rear Roller, Drive Gears, New Stainless Steel Sliding Strips and Carbofrax Blocks, drive links and side links.

Common links will only be replaced if required and approved by the Control Boiler Inspector in writing.

- 9,02 Replace and re-install end roller. Check and straighten air guide veins where necessary. Check and set under grate dampers for correct operation. Check chain tensioner bolts. All parts needed to overhaul stoker that does not form part of the price schedule will be supplied by the successful contractor and paid out of the Maintenance cost adjustment
- 9,03 Check and repair guide plate under stoker where necessary. (Contractor to supply material and labour). Replace thrust bearing on worm gear of stoker drive. Inspect and report on condition of main worm wheel and worm gear. Reassemble complete stoker.
- 9,04 The stoker is to be re-installed after the brickwork and further required preparation has been completed. The site must be left clean and tidy after the completion of the contract.
- 9.05 SCOPE OF WORK ON SOOTBLOWERS
  - 1. Collect, strip, degrease and chemically clean blowers.
  - 2. Re-sleeve steam chest.
  - 3. Replace neck rings.
  - 4. Replace steam spindle assemblies.
  - 5. Replace bronze bushes.
  - 6. Replace caps and operating nuts.
  - 7. Replace piston rings.
  - 8. Replace hammer drive screws.
  - 9. Replace split pins and gland packing.
  - 10. Present pre-assemble for inspection by Reg. inspector.
  - 11. Assemble
  - 12. Paint with suitable etching primer.
  - 13. Commission on Boiler with correct nozzle setting.
  - 14. If beyond repairs replace with new

## 10.00 OVERHAUL CATER GEAR BOX / GEAR BOX

Gear box must be overhaul as per manufacture specification, should it not be economical to repair, the gear box must be replaced with a variable speed drive motor gear box and all additional modification to make this a working installation to the boiler panel.

## 11 GRIT ARRESTOR / CYCLONES

Where possible parts of the inlet and outlet of the ducting to and from grit arrestor must be removed for cleaning and inspection purposes. Where this is not possible and there is now other means of access into grit arrestor, a new inspection door must be supplied and installed, Insuring airtight to grit arrestor. The size of these inspection doors must be 450 x 450 x 6mm mild steel. All stubs and swills must be removed and clean by means of sandblasting.

## 12 DETAILED TECHNICAL REQUIREMENTS

- 12.01 Any repairs to the boiler that may become necessary during this contract will only be carried out on written instruction of the Department: Infrastructure Unit. After receipt of such an instruction, a written repair procedure shall be obtained from an approved inspection authority. Proof of the required and appropriate SABS Accreditation shall accompany such submissions. Any such repair work carried out will be at extra cost to the Department: Infrastructure Unit.
- 12.02 Should scale build up on the water side be excessive, chemical cleaning may be considered. Only an approved water treatment contractor on written instruction of the Department: Infrastructure Unit may affect this type of cleaning.
- 12.03 Sand blasting and needle descaling to remove excessive fire scale on the outer shell will only be carried out on written approval by the Department: Infrastructure Unit. Care shall be taken not to damage the underlying metal base or to remove as little of the underlying metal as possible.
- 12.04 Chipping to remove any scale on any area of the Boiler is not permitted and will not be tolerated.
- 12.05 Any welding on any part of the boiler will only be allowed on written approval of an approved inspection authority accredited to SABS 0227/ Part 2. Only an approved coded welder with a valid certificate may do such welds and an approved repair and welding procedure, which is to be submitted prior to any welding shall be submitted.
- 12.06 Should the removal of all external lagging become necessary after adjudication of this contract, and no prices were allowed for in the price schedule, this will be at extra cost to the Department: Infrastructure Unit.
- 12.07 Any re-lagging of the boiler will only be permitted after thorough cleaning and painting has been completed.
- 12.08 Any re-lagging of the boiler shall be carried out by a reputable lagging company approved by the Department: Infrastructure Unit.
- 12.09 Filling of the boiler must be with cold raw water and utmost care must be taken to prevent over filling and any spilling.
- Any damage occurring in this respect, necessitating i.e. removal and replacing of lagging will be for the account of the successful tenderer/ contractor.
- 12.10 Pressurizing the boiler shall be done by using a suitable hand pump, any other method is not permitted. Should the boiler be over pressurized through any means whatsoever and any damage sustained through this occurrence, the successful tenderer/contractor shall be responsible for payment for such repairs.

The painting of areas specified and rebuilding of brickwork and arches are part of this contract.

- 12.11 Wire brushing of threads on brass fittings is prohibited.
- 12.12 Time is of the essence for this contract and the contractor is to ensure that all work is completed on the scheduled dates.
- 12.13 Equipment, tools and material necessary to carry out the work as specified herein must be supplied by the contractor.
- 12.14 Portable lights used are to be in compliance with Electrical Machinery Regulations, R10, promulgated under the Machinery and Occupational Safety Act, 1983.
- 12.15 The successful tenderer/contractor must at all times ensure that Access to operate and maintain any of the other boiler/s in the Boiler House is not obstructed or impeded in any way.
- 12.16 Storage of equipment and material shall solely and fully be the responsibility of the contractor, and no liability for any damage or loss of equipment of the successful tenderer /contractors stored on site will be accepted by the Department: Infrastructure Unit.
- 12.17 All work carried out within this contract will only be permitted during normal working hours, unless prior arrangement was made.

## 13 LAGGING

The entire surface of the Boiler shall be thoroughly cleaned of all scale, oil, grease, rust, etc., by means of sandblasting, (see section 6.00 paragraph 3) without damaging the underlying surface or the excessive or unnecessary removal of underlying metal.

The entire outer surface of the boiler shall then be painted with three coats of PWT no 1 paint. The quality of the paint supplied by the contractor will be approved by the Control Boiler Inspector before any paint can be put to the surfaces before any rust or dirt can form on or adhere to the surface.

A 50mm thick 120-140kg/m<sup>3</sup> density mattress of glass wool or slag wool shall be secured to the boiler shell with sufficient galvanized steel strapping Thermal conductivity of insulation to be approximately 0,045W/m<sup>2</sup> C. The shell must then be enclosed by means of 0,9mm thick grade 430B stainless steel sheet metal.

All other surface such as the fire box must be lagged with a 40mm thick non asbestos composition layer troweled to a smooth finish and after allowing sufficient time for drying be painted with two coats of heat resistant aluminum paint.

Installation of lagging must be done in such a manner that all main welding seams as identified areas by Control Boiler Inspector are permanently exposed. These open areas will be approximately 100mm wide and must be rounded off neatly.

Openings between lagging and fittings must be sealed off by means of a non asbestos rope and a non-hardening silicone sealer.

To enable the competent person to examine welded joints, cover strips, secured by means of stainless steel self-tapping screws, shall be installed over joints.

Name plate, boiler inspector plate etc., shall be left un-lagged and must NOT BE SANDBLASTED.

## 14 TESTING / INSPECTION AUTHORITY

All MPI, ultrasonic and thickness testing must be done by a reputable level 3 SANAS registered company. An approved inspection authority with a registered pressure vessels certificate and register with SANAS must inspect the boiler with the Control Boiler Inspector and complete all relevant documents.

## 15 GENERAL NOTES TO TENDERER

- a) All work executed under this contract shall comply fully with the Regulations of the Occupational Health and Safety Act, Act 85 of 1993 and all amendments thereof, as well as any Regulations and Standards, promulgated under said Act and which, are in force during the time between handing over of the site to the successful tenderer/ contractor and the handing over of the completed contract to the Department: Infrastructure Unit.
- b) The materials and fittings of the boiler are to the relevant current British Standard specification and to the requirements of approved Inspection Authorities. All threads on pipes, studs, etc., are to British Standards. This shall be maintained by the Contractor.
- c) The contractor shall further more work in close collaboration with the Control Boiler Inspector of the Department: Infrastructure Unit to ensure satisfactory progress of the work.
- d) No second hand equipment of any description may be offered for the use in this contract.
- e) All schedules which accompany the tender notice are an integral part of the tender and shall be duly completed in every detail, failing which, the tender in question may be rendered ineligible for consideration.
- f) Alarms, cutouts and pump controls to be checked for Correct operation under cold conditions directly after completion of the hydraulic test.
- g) Valves on boilers will be opened at random to check for correct assembly after hydraulic inspection.
- h) Boiler internal to be inspected before filling for hydraulic test by the Infrastructure Unit to ensure correct assembly of the dispersion pipe assembly and that no foreign matter is left inside the boiler.
- i) All work must be done according to the standard quality specification for boiler installations.

## 16 TENDER DEVIATIONS

16.01 This specification has preference over any additional documentation submitted by a tenderer. Deviations from this specification will only be considered if indicated as such in this document and has been proven to be suitable for this particular application.

16.02 If the Tenderer wishes to clarify certain aspects of his offer, this may be done in an additional document which, will be subject to the aforementioned preference.

16.03 These items will be subject to the written approval of the Department: Infrastructure Unit.

## 17 BUILDER'S WORK (FIRE BRICK WORK)

All builders work required under this tender is part of this contract and Tenderers must make provision therefore under the tender price.

## 18 ELECTRICAL / BOILER PANELS

Contractor must clean all relevant boiler control panels and as set out in prices schedule to repair / replace as required. He must test and submit a full report on the condition of the boiler control panel. Should it be uneconomically to repair the boiler control panel it must be replaced with a new panel as required by the manufacture

All electrical work required under this contract shall be in accordance with the latest issue of the "Standard Quality Specification for General Electrical Installations GP/ESI Latest addition".

## 19 ROOF FLASHING

Roof flashing around safety valves vent pipe must be made good after securing vent pipe subsequent to a successful inspection/test.

## 20:00 COMMISSIONING AND TRAINING

After completion the contractor must execute a cold commissioning on the relevant boiler insuring that all safety devises are in place and in working order. After these tests have been executed the boiler will be fired up by the facility boiler operator under which the relevant boiler operators on site will be trained as specified in the following for a period as refer to in the price schedule.

### TRAINING SCHEDULE

- 20.01 Train boiler operators on all safety devises and safety aspects (high level alarm, low level alarm, cut out, mobrey testing, gauge glass testing and safety valves)
- 20.02 Train boiler operators to steam boiler to a economically standards as set out by the manufactures (coal supply, coal bed thickness, draft control, cleanings of boilers, cleaning of fly ash in smoke box on a regular basis).
- 20.03 Testing of boiler TDS and mixing of chemicals for water treatment.
- 20.04 Ensure that blow down intervals comply with the water treatment
- 20.05 To curry out proper soot blowing on boilers
- 20.06 Fill in all relevant log books as required by the OSH act and proper shift hand over.

## 21 SIX MONTHLY WASHOUT INSPECTION:

- 1 Shut down boiler for annual maintenance and cool it
- 2 Clean fire tube plates front and back
- 3 Clean tubes of boiler 1st pass, 2nd pass and 3rd pass to a state in which it is free of all scale, both internally and externally
- 4 Remove and check stocker grate mark and stoker gearbox
- 5 Check and rebuilt building work and arches having broken down i.e ignition arch, ring arches and guillotine door and secondary arches
- 6 Check and clean all welded or riveted seams and short stays shall be free of scale
- 7 Open and clean grit arrestors and cyclones
- 8 Open, clean and balance FD fan. Re-grease bearings
- 9 Open, clean and balance ID fan. Re-grease bearings
- 10 Check boiler feed pumps and re-grease bearings
- 11 Calibration boiler pressure gauge
- 12 Electrical control panel to be serviced and cleaned
- 13 Check, clean and reset of mobreys and safety valves
- 14 Check and clean of sootblowers

- 15 Check and clean all fittings of free scale and rust i.e valves, gauge columns, including auxiliary valves, non return valve and modulating valve
- 16 Removal of all fly ash in boiler

#### HEALTH AND SAFETY SPECIFICATION

- 1 All piping and ducting which can allow steam, water, condensate, boiler feed water or flue gasses entering the boiler on which work is to be performed, shall be isolated by the Contractor, and remain isolated in such a manner that persons performing work on the boiler, shall be safe. Any valve or damper used for isolation shall be chained and locked in the closed position.
- 2 Lead lights shall operate at a voltage less than 50V and all hand held electrical tools and the ventilation fan shall be protected by earth leakage or be double
- 3 The electrical supply to the boiler shall be isolated, locked and tagged or physically isolated. This shall be done by the contractor Electrician. The contractor shall arrange for this and file a written signed statement by the Electrician that the boiler is isolated with a COC certificate.
- 4 The steam and waterside of the boiler shall be ventilated by providing a 125mm diameter centrifugal fan temporarily mounted to extract air from a mud hole. The fan shall deliver 0,1m³/s at 50Pa. It shall be similar or equal to Donkin type CDC 125/1.0
- 5 In the event of scaffolding being used, it shall be carried out under the supervision of a competent person.
- 6 Rigging equipment shall be used for items where more than 1 person is required to man-handle the item.
- 7 Fall arrest equipment shall be provided and worn where there is a danger of falling.
- 8 Head, foot, eye, ear and nasal dust protection equipment is to be provided and worn as indicated by a hazard identification process.
- 9 The Contractor is to perform the duties as imposed by the Construction Regulations, R1010, of 2003.
- 10 The contractor shall supply all cleaning machines, sandblasting equipment, lapping equipment, lead lights, scaffolding and safe step ladders to complete this

#### 1 DESCRIPTION

##### REMOVE / STRIP FROM BOILER AS REQUIRED

- 1,1 All fittings i.e. valves, gauge columns, etc., including auxiliary valves and non-return valves where applicable
- 1,2 Remove coal hopper(s)
- 1,3 Automatic stoker(s)(only remove)
- 1,4 Sheet metal covering and lagging over welded or riveted joints as well as covering over stay bars on rear of semi wetback boilers.
- 1,5 Cover plates over tubes / bars
- 1,6 Building work, fire brickwork i.e. ignition Arch ash retaining walls brickwork, ring Arches and Guillotine door and secondary arches.
- 1,7 Sheet metal and lagging around blow down valve (s)
- 1,8 Sheet metal and lagging around ash port (s)
- 1,9 Sheet metal and lagging for outer shell

#### 2 CLEANING OF BOILER

- 2.1 Tube plates on water side
- 2,3 Water side of boiler shell
- 2,4 Tubes ordinary and stay tubes or stay bars (water side)
- 2,5 Tube plates on fire side
- 2,6 Furnace flue (s)
- 2.7 1st pass  
2nd pass  
3rd pass  
Chambers
- 2,8 Tubes ordinary and stay tubes or stay bars (fire side)
- 2,9 Weep holes (Tell tale holes)
- 2,1 Ash port (s)

#### 3 MACHINE BOILER PADS

- 3.1 Safety valve pad(s)
- 3.2 Crown valve
- 3.3 Mobrey pads
- 3.4 Water feed pads
- 3.5 Blow down pad(s)
- 3.6 Other pad(s)
- 3.7 Stub flanges

#### 4 STUDS IN BOILER PADS AS REQUIRED

- 4.1 Safety valve pad
- 4.2 Crown valve
- 4.3 Mobrey pads
- 4.4 Water feed pads



- 4.5 Blow down pads
- 4.6 Head hole pads
- 4 STUDS IN BOILER PADS AS REQUIRED
- 4.1 Safety valve pad
- 4.2 Crown valve
- 4.3 Mobrey pads
- 4.4 Water feed pads
- 4.5 Blow down pads
- 4.6 Head hole pads
- 5 SAND BLASTING
- 5.1 Sandblast Boiler flue
- 5.2 Front tube plate
- 5.3 Rear tube plate
- 5.4 Endplate
- 5.5 Outer shell
- 5.6 All cast steel valves
- 5.7 Stoker frame
- 5.8 Ash extractor frame(if required)
- 5.9 FD fan
- 5.1 ID fan
- 5.11 Grit arrestor tubes
- 5.12 Grit arrestor swills
- 6 STRIP AND CLEAN BOILER VALVES
- 6.1 Strip clean and reassemble boiler valves mounted onto boiler including auxiliary valves, non return valves and modulating valve (See pages DRT 2 point 3.00).
- DESCRIPTION
- 7 ACID WASH
- 7.1 Acid wash boiler in water side
- 8 STRIP AND CLEAN TWO SOOT BLOWERS – SEE PAGE DTR 5 POINT (9.05) CONTRACTOR MUST PRICE ACCORDINGLY
- 8.1 No 1
- 8.2 No 2
- 8.3 Replace complete soot blowers
- 8 STRIP AND CLEAN TWO SOOT BLOWERS – SEE PAGE DTR 5 POINT (9.05) CONTRACTOR MUST PRICE ACCORDINGLY
- 8.1 No 1
- 8.2 No 2
- 8.3 Replace complete soot blowers
- 9 STRIP AND CLEAN SAFETY VALVES
- 9.1 1 x \_\_\_\_\_ double spring safety valve
- 9.2 Replace safety valve springs
- 10 STRIP AND CLEAN REASSEMBLE STOKER GRATE MARK
- 10.1 Strip clean and reassemble stoker grate
- 10.2 Replace stoker rods
- 10.3 Replace washers
- 10.4 Replace split pins stainless steel
- 10.5 Replace rear roller
- 10.6 Replace drive sprockets
- 10.7 Replace drive shaft
- 10.8 Replace stainless steel wear strips
- 10.9 Replace carbofrax blocks
- 10.10 Replace drive links
- 10.11 Replace common links
- 10.12 Replace left hand side links

## DESCRIPTION

- 10.13 Replace right hand side links
- 10.14 Replace spur gear / worm wheel
- 10.15 Replace bearings / bushes on gearbox
- 10.16 Replace oil in worm wheel box
- 11 STRIP AND CLEAN (ONE) STOKER GEARBOX
  - 11.1 Strip and clean Stoker gearbox
  - 11.2 Replace oil
  - 11.3 Replace bearings
  - 11.4 Replace bushes
  - 11.5 Replace inspect worm wheel
  - 11.6 Replace shaft
  - 11.7 Replace oil seals
  - 11.8 Replace bearings on motor
  - 11.9 Replace drive coupling between motor and gearbox
  - 11.10 Replace drive sprockets
  - 11.11 Replace drive chain
  - 11.12 Replace motor fan
- 12 REPLACE CATER GEARBOX CONTRACTOR MUST PRICE ACCORDINGLY
- 12.1 Replace variable speed drive motor gear box and invertor
- 13 FANS
  - SUPPLY AND INSTALL NEW BEARINGS
  - 13.1 ID fan motor
  - 13.2 FD fan motor
  - 13.3 ID fan
  - 13.4 FD fan
  - 13.5 ID fan plumber blocks
  - 13.6 FD flanges bearing
  - 13.7 New groove pulley for motor / fans
  - 13.8 New taper locks for motor / fans
  - 13.9 New keys for motor / fans
  - 13.10 New drive couplings
  - 13.11 New match set V-belts
  - 13.12 Balance ID fan in position on site
  - 13.13 Balance FD fan in position on site
- 14 STRIP AND CLEAN REASSEMBLE GRIT ARRESTOR
  - 14.1 Open and clean grit arrestor
  - 14.2 Cut and manufacture 600 x 600 manual
  - 14.3 Remove tubes
  - 14.4 Remove swills
  - 14.5 Install new vibrating eliminators
  - 14.6 Cyclones
  - 14.7 Ducting
- 15 COAL SCREW
  - 15.1 Remove coal from coal bunker
  - 15.2 Remove coal screw casing
  - 15.3 Remove coal screw
  - 15.4 Supply and install a new coal screw casing
  - 15.5 Supply and install coal screw
  - 15.6 Supply and install a new coal screw motor and gear box
- 16 TRAPPING ARRANGEMENT (SEE ATTACHED DRAWING)
  - 16.1 Supply and install new trapping arrangement(s) T4

- 17 REPLACE BUILDING WORK
  - 17.1 Ignition Arch(s)
  - 17.2 Ash retaining wall(s)
  - 17.3 Secondary arch(s)
  - 17.4 Ring Arch(s)
  - 17.5 Replacing air seal inside furnace flue(s)
  - 17.6 Around automatic stoker
  - 17.7 Side seals
  - 17.8 Webbing (tube plate covers)
- 18 TESTING
  - 18.1 MPI Testing
  - 18.2 Ultrasonic Testing
- 19 Thickness Testing
- 20 Supply Magnetically Spray
  - a) White back ground x 6
  - b) Penetrating x 3
- 19 Calibration boiler pressure gauge
- 19.1 Approved inspection authority(3 x visit)
- 20 CLEAN REPAIRS BOILER PANEL
  - 20.1 Clean boiler panel
  - 20.2 Secure all electrical connections
  - 20.3 Clean all contactors
  - 20.4 Replace all variable pretension meter
  - 20.5 Replace all stop start buttons
  - 20.6 Replace all panel indication lamps and holder
  - 20.7 Replace photo and magnahelix meter(s)
  - 20.8 Clean and reset over loads switches
  - 20.9 Replace sauter box motors
  - 20.10 Clean Mobrey panel
  - 20.11 Replace all magnet switches
  - 20.12 Replace solenoid coils
  - 20.13 Replace boiler alarm
  - 20.14 Test for faults and report
  - 20.15 Replace level control diaphragm in coal shut
  - 20.16 Replace electric wiring on coal hopper
- 21 Comply with responsibilities as imposed by Construction Regulations R1010
- 22 Replacement of any parts is subject to approval from the Department or the Department's acting agent.
- 23 COMMISSIONING OF BOILER - CONTRACTOR MUST PRICE ACCORDINGLY
- 24 Contractors must submit a price to fire up the boiler and reset all controls and safety devices to working order on completion of boiler. The contractor must steam the boiler with own boiler personnel and train boiler attendants for a period of 7 (seven) days on a 8 (eight) hour day shift (08:00 until 16:00).
- 25 Comply with responsibilities as imposed by Construction Regulations R1010
- 26 Handover of the Boilers for the 36 Month Statutory Servicing is subject to Department of Labour approval and certificate of compliance. All certifications to be submitted to the Department and copies kept for records.

BID NUMBER: NWDOH 06/2025

Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)



Part C9.2 BILL OF QUANTITIES - STEAM AND CONDENSATE RETICULATION

C9.2 Priced rates for servicing, repairs maintenance of the Steam and Condensate Reticulation and Various Mechanical Equipment

ITEM NO:	SCHEDULED MAINTENANCE	UNIT	Number of Services in 4 years	Nr of Calorifiers	RATE	PRICE [EXT VAT]
1	Calorifier Maintenance Routine - Quarterly (Klerksdorp Hospital)	No	12	11		R
2	Calorifier Maintenance Routine - Quarterly (Tshepong Hospital)	No	12	15		R
3	Calorifier Maintenance Routine - Annual (Klerksdorp Hospital)	No	4	11		R
4	Calorifier Maintenance Routine - Annual (Tshepong Hospital)	No	4	15		R
ITEM NO:	SCHEDULED PARTS	UNIT	QUANTITIES	RATE		PRICE [EXT VAT]
1	15mm ball float valve	S	1			R
2	20mm ball float valve	S	1			R
3	25mm ball float valve	S	1			R
4	15mm Steam barrel nipples	S	1			R
5	20mm Steam barrel nipples	S	1			R
6	25mm Steam barrel nipples	S	1			R
7	40mm Steam barrel nipples	S	1			R
8	50mm Steam barrel nipples	S	1			R
9	Armstrong 800 Steam trap repair kit: 4.27mm orifice	S	1			R
10	Armstrong 800 Steam trap gasket sets	S	1			R
11	15mm Spirax FT14 Steam traps	S	1			R
12	20mm FT14 Spirax Steam traps	S	1			R
13	25mm FT14 Spirax Steam traps	S	1			R
14	15 to 20mm Spirax Sarco sight glass window repair kits	S	1			R
15	15mm brass horns valves	S	1			R
16	20mm brass horns valves	S	1			R
17	25mm brass horns valves	S	1			R
18	32mm brass horns valves	S	1			R
19	15mm S'S trim globe valve 10 bar	S	1			R
20	20mm S'S trim globe valve 10 bar	S	1			R
21	25mm S'S trim globe valve 10 bar	S	1			R
22	15mm cone face steam unions	S	1			R
23	20mm cone face steam unions	S	1			R

ITEM NO:	SCHEDULED PARTS	UNIT	QUANTITIES	RATE	PRICE [EXT VAT]
24	25mm cone face steam unions	S	1		R
25	15mm copper tubing, class 2 6,1m length	S	1		R
26	20mm copper tubing, class 2 6,1m length	S	1		R
27	25mm copper tubing, class 2 6,1m length	S	1		R
28	40mm copper tubing, class 2 6,1m length	S	1		R
29	50mm copper tubing, class 2 6,1m length	S	1		R
30	80mm copper tubing, class 2 6,1m length	S	1		R
31	15mm heavy duty steam pipe 6,1m length	S	1		R
32	20mm heavy duty steam pipe 6,1m length	S	1		R
33	25mm heavy duty steam pipe 6,1m length	S	1		R
34	40mm heavy duty steam pipe 6,1m length	S	1		R
35	50mm heavy duty steam pipe 6,1m length	S	1		R
36	80mm heavy duty steam pipe 6,1m length	S	1		R
37	Valve gland packing 12,5mm	S	1		R
38	Valve gland packing 10mm	S	1		R
39	Valve gland packing 6mm	S	1		R
40	Graphite pipe jointing compound; 5kg container	S	1		R
41	Rope packing; non asbestos; 40mm x 30mm	S	1		R
42	Rope packing; non asbestos; 25mm x 30mm	S	1		R
43	15mm flap type brass body non return valves	S	1		R
44	20mm flap type brass body non return valves	S	1		R
45	25mm flap type brass body non return valves	S	1		R
46	40mm flap type brass body non return valves	S	1		R
47	50mm flap type brass body non return valves	S	1		R
48	15mm steam strainers, brass body	S	1		R
49	20mm steam strainers, brass body	S	1		R
50	25mm steam strainers, brass body	S	1		R
51	40mm steam strainers, brass body	S	1		R
52	50mm steam strainers, brass body	S	1		R
53	Rope packing; non asbestos; 15mm x 30mm	S	1		R
54	Packing material: 1,5mm Graphite impregnated, wire reinforced sheet 1,2m x 2,4m x 1,5m	S	1		R
55	Packing material: 3mm Graphite impregnated, wire reinforced sheet	S	1		R
56	Valve gland packing 8mm	S	1		R
57	Paint: PWT TPA no 1 container	litre	1		R
58	Fibre glass wool sheeting rolls 50mm x 1,2m	S	1		R
59	Pressure Gauge, 100mm dia, bottom entry x 10mm BSP thread, range 0 to 2000 KPA	S	1		R
60	10mm siphon tube	S	1		R
61	10mm cock valves	S	1		R
62	15mm TLV steam traps	S	1		R

ITEM NO:	SCHEDULED PARTS	UNIT	QUANTITIES	RATE	PRICE [EXT VAT]
63	20mm TLV steam traps	S	1		R
64	25mm TLV steam traps	S	1		R
65	Steam Separator 6"	S	1		R
66	Expansion Bellows 5"	S	1		R
67	Lagging preformed pipe section fiber glass ½"	S	1		R
68	Lagging preformed pipe section fiber glass ¾"	S	1		R
69	Lagging preformed pipe section fiber glass 1"	S	1		R
70	Lagging preformed pipe section fiber glass 1½"	S	1		R
71	¼ " brass globe valves	S	1		R
72	¾" brass globe valves	S	1		R
73	1" brass globe valves	S	1		R
74	1 ½" brass globe valves	S	1		R
75	Lagging preformed pipe section fiber glass 1 ¾"	S	1		R
76	Lagging preformed pipe section fiber glass 2"	S	1		R
77	Lagging preformed pipe section fiber glass 2½"	S	1		R
78	Lagging preformed pipe section fiber glass 2 ¾"	S	1		R
79	Lagging preformed pipe section fiber glass 3"	S	1		R
80	Lagging preformed pipe section fiber glass 4"	S	1		R
81	Lagging preformed pipe section fiber glass 5"	S	1		R
82	Lagging preformed pipe section fiber glass 6"	S	1		R
83	Galvanized muffs ½"	S	1		R
84	Galvanized muffs ¾"	S	1		R
85	Galvanized muffs 1"	S	1		R
86	Galvanized muffs 1½"	S	1		R
87	Galvanized muffs 1¾"	S	1		R
88	Galvanized muffs 2"	S	1		R
89	Galvanized muffs 2½"	S	1		R
90	Galvanized muffs 2¾"	S	1		R
91	Galvanized muffs 3"	S	1		R
92	Galvanized muffs 4"	S	1		R
93	Galvanized muffs 5"	S	1		R
94	Galvanized muffs 6"	S	1		R
95	40mm conex straight connector	S	1		R
96	50mm conex straight connector	S	1		R
97	Gate valves ½"	S	1		R
98	Gate valves ¾"	S	1		R
99	Gate valves 1"	S	1		R
100	Gate valves 1 ½"	S	1		R
101	Gate valves 1 ¾"	S	1		R
102	Gate valve 2"	S	1		R

ITEM NO:	SCHEDULED PARTS	UNIT	QUANTITIES	RATE	PRICE [EXT VAT]
103	Gate valve 3"	S	1		R
104	Gate valve 4"	S	1		R
105	15mm cast steel body strainer	S	1		R
106	- 20mm cast steel body strainer	S	1		R
107	25mm cast steel body strainer	S	1		R
108	40mm cast steel body strainer	S	1		R
109	1/2 " brass angle globe valve	S	1		R
110	1½" brass globe valve	S	1		R
111	Temperature Thermometer Ispesl 0-120°C	S	1		R
112	Pressure relieve Bailey 323 2"	S	1		R
113	15mm pressure reducing valve 100-700 Kpa	S	1		R
114	Pressure reducing valves ¾" 100-700KPA	S	1		R
115	Circulating pump Moway	S	1		R
116	Condensate pump Mand B 40M0/75	S	1		R
117	Level switch Mobrey	S	1		R
118	Safety valve pull up type ¾"	S	1		R
119	Safety valve pull up type 1"	S	1		R
120	Central Heating radiators	S	1		R
121	Central Heating Pearch Cocks	S	1		R
122	15mm conex male adaptor	S	1		R
123	20mm conex male adaptor	S	1		R
124	25mm conex male adaptor	S	1		R
125	15mm conex straight connector	S	1		R
126	20mm conex straight connector	S	1		R
127	25mm conex straight connector	S	1		R
128	50mm cast steel globe valves	S	1		R
129	65mm cast steel globe valves	S	1		R
130	75mm cast steel globe valves	S	1		R
131	15mm cast steel pressure reducing valves	S	1		R
132	20mm cast steel pressure reducing valves	S	1		R
133	25mm cast steel pressure reducing valves	S	1		R
134	32mm cast steel pressure reducing valves	S	1		R
135	40mm cast steel pressure reducing valves	S	1		R
136	50mm cast steel pressure reducing valves	S	1		R
137	65mm cast steel pressure reducing valves	S	1		R
138	75mm cast steel pressure reducing valves	S	1		R
139	300 litre vertical calorifiers	S	1		R
140	500 litre vertical calorifiers	S	1		R
141	1000 litre vertical calorifiers	S	1		R
142	2000 litre vertical calorifiers	S	1		R
143	3000 litre vertical calorifiers	S	1		R
144	300 litre horizontal calorifiers	S	1		R

ITEM NO:	SCHEDULED PARTS	UNIT	QUANTITIES	RATE	PRICE [EXT VAT]
145	500 litre horizontal calorifiers	S	1		R
146	1000 litre horizontal calorifiers	S	1		R
147	2000 litre horizontal calorifiers	S	1		R
148	3000 litre horizontal calorifiers	S	1		R
149	Condensate pump Ebara CMA.075 T	S	1		R
150	Condensate pump Ebara CMA.100 T	S	1		R
151	Condensate pump Ebara CMA.200 T	S	1		R
152	15mm brass angle globe valves	S	1		R
153	20mm brass angle globe valves	S	1		R
154	25mm brass angle globe valves	S	1		R
155	15mm 90° BSP thread steam elbows	S	1		R
156	20mm 90° BSP thread steam elbows	S	1		R
157	25mm 90° BSP thread steam elbows	S	1		R
158	15mm 90° BSP thread steam bends	S	1		R
159	20mm 90° BSP thread steam bends	S	1		R
160	25mm 90° BSP thread steam bends	S	1		R
161	15mm 90° weld on black elbows	S	1		R
162	20mm 90° weld on black elbows	S	1		R
163	25mm 90° weld on black elbows	S	1		R
164	15mm 90° weld on black bends	S	1		R
165	20mm 90° weld on black bends	S	1		R
166	25mm 90° weld on black bends	S	1		R
167	Key Steel 6mm	S	1		R
168	Key steel 8 mm	S	1		R
169	Key steel 10mm	S	1		R
170	Key steel 12 mm	S	1		R
171	2.5mm mild steel welding rods	S	1		R
172	PTFE thread tape	p/roll	1		R
173	M6 x 50mm mild bolts and nuts	S	1		R
174	M8 x 50mm mild bolts and nuts	S	1		R
175	M10 x 50mm mild bolts and nuts	S	1		R
176	M12 x 50mm mild bolts and nuts	S	1		R
177	M14 x 50mm mild bolts and nuts	S	1		R
178	M16 x 50mm mild bolts and nuts	S	1		R
179	M20 x 50mm mild bolts and nuts	S	1		R
180	M6 x 100mm mild bolts and nuts	S	1		R
181	M8 x 100mm mild bolts and nuts	S	1		R
182	M10 x 100mm mild bolts and nuts	S	1		R
183	M12 x 100mm mild bolts and nuts	S	1		R



ITEM NO:	SCHEDULED PARTS	UNIT	QUANTITIES	RATE	PRICE [EXT VAT]
184	M14 x 100mm mild bolts and nuts	S	1		R
185	M16 x 100mm mild bolts and nuts	S	1		R
186	M20 x 100mm mild bolts and nuts	S	1		R
187	BSP thread reducing bushes 15-10mm	S	1		R
188	BSP thread reducing bushes 20-15mm	S	1		R
189	BSP thread reducing bushes 20-10mm	S	1		R
190	BSP thread reducing bushes 25-10mm	S	1		R
191	BSP thread reducing bushes 25-15mm	S	1		R
192	BSP thread reducing bushes 25-20mm	S	1		R
193	Square condensate tanks 300 litre	S	1		R
194	Square condensate tanks 500 litre	S	1		R
195	Square condensate tanks 1000 litre	S	1		R
196	Condensate tank level switches float type	S	1		R
197	Condensate tank level switches liquid level 3 probes	S	1		R
198	Labour Technician per hour	S	1		R
199	Labour Technician per hour over time	S	1		R
200	Labour Technician per hour Sunday and Public Holidays	S	1		R
201	Labour Technician Assistant per hour	S	1		R
202	Labour Technician Assistant per hour over time	S	1		R
203	Labour Technician Assistant per hour Sunday and Public Holidays	S	1		R
204	Coded Welder per hour	S	1		R
205	Coded Welder per hour over time	S	1		R
206	Coded Welder per hour Sunday and Public Holidays	S			R
	<b>SUB-TOTAL RETICULATION</b>				R

All unit prices that are not included or missed shall be determined through quotation process with agreed amounts standardised and revised as part of this baseline costs

All prices shall be priced to RSA currency excluding VAT

All travelling rates will be calculated according to the AA rates for the specific month

TENDERER'S SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

NAME OF FIRM: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CODE \_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_ CELL NO: \_\_\_\_\_

FAX NO: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_ DATE: \_\_\_\_\_

**BID NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



**health**  
Department of  
**Health**  
North West Province  
REPUBLIC OF SOUTH AFRICA

### **Part C10.1 Scope of Work - Steam and Condensate Reticulation**

#### **1 SCOPE OF CONTRACT**

1.1 This Contract calls for the price rates for the servicing, maintenance, repairs and Statutory Inspections of the Steam and Condensate plant and auxiliary equipment in accordance with the requirements as laid down in the specifications. It, furthermore, entails the servicing, maintenance and repair of said installation. The systems other than the steam generating plant and auxiliary equipment covered by this Tender/Contract are the following:

- The Steam and Condensate Reticulation within the facility
- Statutory inspections and Hydraulic test of all Pressure Vessels in accordance with the Occupational Health and Safety Act and Regulations.
- Adherence to the Safety Regulations and membership on the Safety Committee at the institutions.
- Monthly meetings with Management of the Institutions.
- Monthly reports to the Department: Infrastructure Unit
- Supply of all lubricants and cleaning material needed.
- Supply of all hand tools and equipment needed for Contract.

#### **1.2 Competent person**

It will be the person appointed as such and who is on Site a promulgated under the Machinery and Occupational Safety Act No 6 of 1983.

2.3 The successful Tenderer shall be required to maintain the complete installation and equipment in a proper and safe operating condition, to clean, adjust and

b) This shall include, but not limited to the following:

- (viii) Examine the system in accordance with any applicable regulation framed under the Occupational Health and Safety Act 85 of 1993,
- (ix) Properly maintain, adjust and keep the installation and equipment in a safe and proper operating condition at all times,
- (x) Repair/replace all parts of the installation which may become necessary for the proper use and / or operation of the installation,
- (xi) Examine, adjust and lubricate the complete installation, supply of all lubricants, replacement parts and the cleaning of material as required for proper maintenance of the equipment,
- (xii) Any malfunction or defect occurring within a period of 14 days after any service or repair being executed will be for the account of the Contractor,
- (xiii) Examine, periodically and when necessary, all devices and perform any statutory safety tests at or before the expiring of the required intervals
- (xiv) Complete the services, maintenance or repair action report, which shall be submitted with any invoice(s).

#### **CALORIFIERS - WEEKLY TASKS**

- Log and record date of inspection
- Inspect the outer shell condition
- Inspect the tube bundles condition
- Clean the calorifiers base
- Check operation pressure
- Check operating temperature

#### **CALORIFIERS - 12 MONTH TASKS (ANNUAL)**

- Log and record date of inspection
- Inspect the outer shell condition
- Inspect the tube bundles condition
- Clean the calorifiers base
- Check operation pressure
- Check operating temperature
- Check Strainer and clean
- Check valves for operability
- Check Scale deposits on the heater battery tube surfaces (primary or secondary side)
- Check Service circulating pumps
- Check pump setting
- Check pipes for leak or damage

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**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



## **Part C10.2 Technical Specification - Steam and Condensate Reticulation**

### **1 SERVICE REQUIRED**

- 1,2 Replace existing cladding and lagging at various points and sizes, will be indicated on a site inspection
- 1,3 Replace existing steam traps at various points and sizes, will be indicated on a site Inspection
- 1,4 Replace existing leaking steam piping and condensate piping will be indicated on a site inspection
- 1,5 Replace existing condensate pumps at various points and sizes, will be indicated on a site inspection
- 1,6 Replace cladding and lagging on central heating calorifiers, will be indicated during a site inspection
- 1,7 Prepare surfaces for painting these areas, will be indicated on the site inspection
- 1,8 Replace existing calorifiers at various points and plant rooms.
- 1,9 Replace condensate tanks at various points and plant rooms
- 1.10 Replace central heating calorifiers at various points and plant rooms
- 1,14 Replace central heating pumps at various points and plant rooms

NOTE: All above shall be done only after an inspection was conducted by the Representative of the Department: Infrastructure Unit

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(KLERKSDORP & TSHEPONG)



**health**  
Department of  
Health  
North West Province  
REPUBLIC OF SOUTH AFRICA

Part C15.2 BILL OF QUANTITIES - AUTOCLAVE INSTALLATIONS

C15.2 Priced rates for servicing, repairs, maintenance of the Autoclave Installations

ITEM NO:	SCHEDULED MAINTENANCE	UNIT	Numebr of Services in 4 years	Nr of Autoclaves	RATE	PRICE [EXT VAT]
1	Autoclaves Maintenance Routine - Quarterly (Klerksdorp Hospital)	No	12	4		R
2	Autoclaves Maintenance Routine - Quarterly (Tshepong Hospital)	No	12	4		R
3	Autoclaves Maintenance Routine - Annual (Klerksdorp Hospital)	No	4	4		R
4	Autoclaves Maintenance Routine - Annual (Tshepong Hospital)	No	4	4		R
ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	RATE		PRICE [EXT VAT]
1	BPT7 Steam Trap Kit	Kit	1			R
2	BP10 Steam Trap Kit	Kit	1			R
3	BP13A Steam Trap Kit	Kit	1			R
4	15mm Steam Globe Valve	S	1			R
5	20mm Steam Globe Valve	S	1			R
6	15mm Steam Solenoid Valve (A47)	S	1			R
7	20mm Steam Solenoid Valve (A49)	S	1			R
8	Asco Solenoid Valve Kit (302-841)	Kit	1			R
9	Asco Solenoid Valve Kit (158-959D)	Kit	1			R
10	Asco Solenoid Valve Kit (304-032)	Kit	1			R
11	Asco Solenoid Valve Kit (304-030)	Kit	1			R
12	Asco Solenoid Valve Kit (304-394)	Kit	1			R
13	Asco Solenoid Valve Kit (302-273)	Kit	1			R
14	Asco Solenoid Valve Voil (400426/117)	S	1			R
15	Asco Transducer (RV24A21)	S	1			R
16	Temperature Sensor Probe PT100	S	1			R
17	Asco Non-Return Valve Kit (216-286)	Kit	1			R
18	Asco Non-Return Valve Kit (216-287)	Kit	1			R
19	ASco Non-Return Valve (15mm)	S	1			R
20	B13 Normally Open Valve	Kit	1			R
21	Check Valve 15mm – Mushroom	S	1			R
22	Check Valve 20mm – Mushroom	S	1			R
23	15mm BRV2 Steam Reducing Valve (700-240kPa)	S	1			R
24	20mm BRV2 Steam Reducing Valve (700-240kPa)	S	1			R
25	15mm Steam Pop-up Type Safety Valve (240kPa)	S	1			R
26	20mm Steam Pop-up Type Safety Valve (240kPa)	S	1			R
27	D2 Water Valve	S	1			R
28	Burkett Air Plunger	S	1			R
29	Butterworth Diaphragm	S	1			
30	Door Piston Seal (Butterworth)	S	1			R
31	15mm Silicone Valve Seal Butterworth	S	1			R
32	20mm Silicone Valve Seal Butterworth	S	1			R
33	Whistle Valve Copper Bellows	S	1			R

ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	RATE	PRICE [EXT VAT]
34	Door Bellows	Kit	1		R
35	Sekonic Disposable Pens	S	1		R
36	Sekonic Disposable Charts	S	1		R
37	Negretti Zambra Disposable Pen Sets	Sets	1		R
38	ZGPB.01V-1 Domnick Hunter Bacteria Filter	S	1		R
39	ZGPB.01V-1 Domnick Hunter Filter Sock	S	1		R
40	10mm Hollow Round Door Gasket	Meter	1		R
41	10mm Square Door Gasket	Meter	1		R
42	13mm U-shaped Door Gasket	Meter	1		R
43	15mm U-Shaped Door Gasket	Meter	1		R
44	Silicone Spray	Can	1		R
45	-100 to 300kPa Compound Gauge 100mm dial	S	1		R
46	0 – 400kPa 100mm Dial Steam Pressure Gauge	S	1		R
47	Sauter Pressure Switch (B59)	S	1		R
48	Sauter Pressure Switch (DSA40)	S	1		R
49	Pressure Switch Bellows	S	1		R
50	OMRON unit switch (Z-15GK335)	S	1		R
51	Indicator lamps	S	1		R
52	Shinco contract thermometer	S	1		R
53	NT70 water pump	S	1		R
54	SIHI vacuum pump (LOHE 25007)	S	1		R
55	SIHI Vacuum pump (LEMA 50)	S	1		R
56	Hi-Vac Vacuum pumps	S	1		R
57	OMRON Time (3 min)	S	1		R
58	Delay Timer	S	1		R
59	Limit Switch (D4D/1121)	S	1		R
60	Vacuum Pump Motor (WEG90S/292)	S	1		R
61	Circuit Breaker (SP5 Amp)	S	1		R
62	Circuit Breaker (TP15 amp)	S	1		R
63	Overload (1.6 – 2.5 amp)	S	1		R
64	Overload (0.40 – 0.63 amp)	S	1		R
65	PTFE tape	Rolls	1		R
66	Hydraulic test	S	1		R
67	Steam inlet valve 15mm	S	1		R
68	Steam inlet valve 20mm	S	1		R
69	Steam inlet valve air diaphragm 15mm	S	1		R
70	Steam inlet valve air diaphragm 20mm	S	1		R
71	Water inlet valve 15mm	S	1		R
72	Water inlet valve 20mm	S	1		R
73	Water inlet valve air diaphragm 15mm	S	1		R
74	Water inlet valve air diaphragm 20mm	S	1		R
75	Exhaust valve 15mm	S	1		R
76	Exhaust valve 20mm	S	1		R
77	Air inlet valve 15mm	S	1		R
78	Air inlet valve 20mm	S	1		R
79	Air inlet valve diaphragm 15mm	S	1		R
80	Air inlet valve diaphragm 20mm	S	1		R
81	Safety valve 15mm	S	1		R
82	Safety valve 20mm	S	1		R

ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	RATE	PRICE [EXT VAT]
83	Vacuum pump coupling	S	1		R
84	Water tank ball valve 20mm	S	1		R
85	Water tank ball valve 25mm	S	1		R
86	Compressor oil	S	1		R
87	Oil lubrication	S	1		R
88	Electrical relays	S	1		R
89	Door cylinder	S	1		R
90	Door interlocks	S	1		R
91	Door slides/fingers	S	1		R
92	Door gearbox (open and close)	S	1		R
93	Water strainer	S	1		R
94	Steam strainer	S	1		R
95	Vacuum gauge maximum (kPa)	S	1		R
96	Level switches (boiler)	S	1		R
97	Elements 32mm 3 x 2 kw	S	1		R
98	Float less switch	S	1		R
99	P.L.C. Toshiba	S	1		R
100	P.L.C. Mitsubishi	S	1		R
101	P.L.C. Omron	S	1		R
102	P.L.C. Delta	S	1		R
103	Printers	S	1		R
	<b>PRICE RATES</b>				
104	Major service Schedule A item 2.1 to 2.1.6.6	S	1		R
105	Minor service Schedule B item 2.2 to 2.4.8	S	1		R
106	Labour Technician per hour	S	1		R
107	Labour Technician per hour over time	S	1		R
108	Labour Technician per hour Sunday and Public Holidays	S	1		R
109	Labour Technician Assistant per hour	S	1		R
110	Labour Technician Assistant per hour over time	S	1		R
111	Labour Technician Assistant per hour Sunday and Public Holidays	S	1		R
	<b>SUB-TOTAL 5(e)</b>				<b>R</b>

All prices shall be priced to RSA currency excluding VAT

All travelling rates will be calculated according to the AA rates for the specific month

TENDERER'S SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

NAME OF FIRM: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CODE \_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_ CELL NO: \_\_\_\_\_

FAX NO: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_ DATE: \_\_\_\_\_

**BID NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



### **Part C16.1 Scope of Work - Autoclave Installations**

#### **1 SCOPE OF CONTRACT**

- 1,1 This contract calls for the price rates for the maintenance, refurbishment, replacement and upgrades to the sterilising autoclaves. It also calls for the Statutory Inspections and Hydraulic test of the autoclaves and a 24 hour 7 days a week standby duty as per attached list.
- 1,2 The contractor shall carry out by – monthly service calls annually for each autoclave. The first service, which shall be the major service (Schedule A), shall be performed within the first month of the commencement of this contract. The contractor shall maintain the autoclave in this condition through minor services. The remaining minor services (Schedule B) shall be carried out at intervals of two months and will cover all auxiliary equipment such as water conservation units, electrode boilers and steam generators as listed.
- 1,3 An unconditional guarantee period of two weeks after a service shall be enforced and no charge for calls shall be levied during these two weeks provided the call is a direct result of a fault occurring on the unit serviced.
- 1,9 The contractor's servicing shall include testing, adjusting and rectifying of faults, as well as the cleaning of the plant room.
- 1,1 If breakdowns of the autoclaves do occur as a result of negligence on the part of the contractor, the Contractor at his own expense shall repair the autoclave.
- 1,11 All servicing and repairs on the equipment as well as scheduled preparation of autoclaves for inspections shall be carried out in such a manner to ensure that the requirements of the occupational Health and Safety Act (Act 85 of 1993) and any amendments to it is adhered to:
- 1,12 Attend monthly meetings with the Department
- 1,13 Submit quarterly written reports to the Department.

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**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



## **Part C16.2 Technical Specification - Autoclave Installations**

- 1,1 The successful Tenderer shall be required to maintain the complete installation and equipment in a proper and safe operating condition, to clean, adjust and lubricate the equipment as required in terms of the Contract, repair or replace all electrical and mechanical part as necessary due to wear and tear.
- 1,2 This includes, but is not limited to the following:
  - 1.2.1 Examine the system in accordance with any applicable regulation framed under the Occupational Health and Safety Act 85 of 1993.
  - 1.2.2 Properly maintain, adjust and keep the installation and equipment in a safe and proper operating condition at all times.
  - 1.2.3 Repair/replace all parts of the installation which may become necessary for the proper use and/or operation of the installation.
  - 1.2.4 Examine, adjust and lubricate the complete installation, supply of all lubricants, replacement parts and the cleaning of material as required for proper maintenance of the equipment.
  - 1.2.5 Any malfunction or defect occurring within a period of 1 month after any service or repair being executed will be for the account of the Contractor.
  - 1.2.6 Examine, periodically and when necessary, all devices and perform any statutory safety tests at or before the expiring of the required intervals.
  - 1.2.7 Complete the services, maintenance or repair action report, which shall be submitted with invoice(s)
  - 1.2.8 Proof of an effective sterilization process by the equipment.

## **2 SCHEDULES OF SERVICE OPERATIONS**

### **2,1 SCHEDULE A - SERVICING TASKS TO BE CARRIED OUT ON MAJOR SERVICE**

The following list of spares must be replaced and form part of the price to service each autoclave.

- a) Bacterial filter
- b) Air in solenoids kits
- c) All non return kits
- d) Steam to chamber valve kits
- e) Gasket exhaust valve kit
- f) Exhaust valve kit
- g) Steam to gasket valve kit
- h) All steam trap kits
- i) Door gasket
- j) Recorder ink pens
- k) Jacket control steam solenoid valve kits (all)
- l) Reducing valve diaphragm, ball and seat
- m) Oil in compressors where applicable

#### **2.1.1 MECHANICAL COMPONENTS**

- 2.1.1.1 Open all mechanical control valves, check seats and replace discs. Repack and replace spindles and springs if necessary
- 2.1.1.2 Examine all unions, pipes, connections and fittings for leaks and tightness, repair where necessary
- 2.1.1.3 Open and clean out all strainers
- 2.1.1.4 Open all steam traps and replace elements and seats
- 2.1.1.5 Open glands on vacuum pump, repack
- 2.1.1.6 Check all reducing valves for accuracy, adjust and replace diaphragms, ball and seat
- 2.1.1.7 Examine water tank and condensers for corrosion, replace if necessary
- 2.1.1.8 Change oil in compressor, check oil level
- 2.1.1.9 Check conditions of all V-belts and pulleys, adjust or replace if necessary
- 2.1.1.10 Clean and lubricate all mechanical moving parts on machine
- 2.1.1.11 Replace bacteria air filters
- 2.1.1.12 Open all non-return valves and replace seats if necessary
- 2.1.1.13 Check all safety valves for correct operation, adjust or replace if necessary
- 2.1.1.14 Blow out all pipes to gauges, pressure and vacuum switches
- 2.1.1.15 Visually check chamber for cracks



## 2.1.2 DOOR

- 2.1.2.1 Replace chamber door seal
- 2.1.2.2 Test door locking mechanism (Examine ratchet set, replace diaphragm)
- 2.1.2.3 Lubricate nose-piece and spindle, report to this Department if threads are worn and not safe
- 2.1.2.4 Check wearing strips and fingers, report to this Department if replacement needed
- 2.1.2.5 Test clutch on sliding door, adjust or repair if necessary
- 2.1.2.6 Check chains and hinges if fitted, repair or replace if necessary
- 2.1.2.7 Visually check door for cracks
- 2.1.2.8 Visually check safety flap operation where fitted

## 2.1.3 ELECTRICAL

- 2.1.3.1 Check all limit switches, adjust where necessary
- 2.1.3.2 Test pressure and vacuum switches for correct functioning, adjust or replace if necessary
- 2.1.3.3 Check all timer and overload units for correct setting, adjust if necessary
- 2.1.3.4 Check all indication lights, replace if necessary
- 2.1.3.5 Check fixing screws on all electrical components, repair if necessary
- 2.1.3.6 Examine all electrical connections, contacts in control box where possible
- 2.1.3.7 Open solenoid valves, clean and examine seats

## 2.1.4 INSTRUMENTS

- 2.1.4.1 Check all pressure and vacuum gauges and contact thermometers, adjust or replace if necessary  
Check temperature recorded, if faulty obtain an order number from this Department for repairs or replacement
- 2.1.4.2 replacement
- 2.1.4.3 Replace pen and ink

## 2.1.5 ELECTRODE BOILER, STEAM GENERATOR AND WATER CONSERVATION DEVICE

- 2.1.5.1 Check float level device, repair or replace if necessary
- 2.1.5.2 Blow down sequence
- 2.1.5.3 Remove and examine elements and replace if necessary, clean when necessary

## 2.1.6 TESTING

- 2.1.6.1 Test machine through manual cycle as applicable to each machine
- 2.1.6.2 Test machine through automatic cycle as applicable to each machine
- 2.1.6.3 Do "A TEST" test with a Bowie Dick tape or sheet under the supervision of hospital authority
- 2.1.6.4 Check temperature recorder charts for correct operation of autoclave
- 2.1.6.5 All parts removed or replaced from any autoclaves must be handed over to the Representative of the Department of Health: Infrastructure Unit on site when the service report is presented for signature. This must be noted on the reports.
- 2.1.6.6 The Representative of the Department of Health: Infrastructure Unit on site and the Sister in charge must sign the worksheet certifying that the test have been satisfactorily carried out in their presence. Failure to have this certification will result in non-payment of the invoice. Retesting will require a new

## 2.2 SCHEDULE B – SERVICING TASKS TO BE CARRIED OUT BY MINOR SERVICE

The following list of spares must be replaced and form part of the price to service each autoclave.

- a) All non-return kits
- b) Steam to chamber valve kit
- c) Gasket exhaust valve kit
- d) Steam to gasket valve kit
- e) Door gasket
- f) Recorder ink pen kits
- g) Filter sock

## 2.2.1 MECHANICAL COMPONENTS

- 2.2.1.1 Open all mechanical control valves, seats and discs, spindles and springs, replace if necessary
- 2.2.1.2 Examine all unions, pipes, connections and fittings for leaks and tightness. Repair where necessary
- 2.2.1.3 Open and clean out all strainers
- 2.2.1.4 Check all steam traps, clean out
- 2.2.1.5 Check glands on vacuum pumps, repack if necessary
- 2.2.1.6 Check all reducing valves for accuracy, adjust if necessary
- 2.2.1.7 Examine water tank and condensers for corrosion, replace if necessary
- 2.2.1.8 Check oil level in compressor, top up
- 2.2.1.9 Check conditions of v-belts and pulleys, adjust or replace if necessary

2.2.1.10 Clean and lubricate all mechanical moving parts on machine

2.2.1.11 Check bacteria air filters and replace sock

2.2.1.12 Replace all non return valve kits

2.2.1.13 Check all safety valves for correct operation, adjust or replace if necessary

2.2.1.14 Check chamber visually for cracks

## 2.2.2 DOOR

2.2.2.1 Replace chamber door seal

2.2.2.2 Test door locking mechanism

2.2.2.3 Check nose piece and spindle, report to Department if threads are worn and not safe

2.2.2.4 Check wearing strips and fingers, report to Department if replacement is needed

2.2.2.5 Test clutch on sliding door, adjust or repair if necessary

2.2.2.6 Check door visually for cracks

2.2.2.7 Check operation of safety flaps if fitted

## 2.2.3 ELECTRICAL

2.2.3.1 Check all limit switches, adjust where necessary

2.2.3.2 Check pressure and vacuum switches for correct functioning, adjust or replace if necessary

2.2.3.3 Check all timer and overload units for correct settings, adjust if necessary

2.2.3.4 Check all indication lights, replace if necessary

2.2.3.5 Check fixing screws on all electrical components, repair if necessary

2.2.3.6 Examine all electrical connections, contacts in control box where possible

2.2.3.7 Check solenoid valves, for correct functioning

## 2.2.4 INSTRUMENTS

2.2.4.1 Check all pressure and vacuum gauges and contact thermometers, adjust or replace if necessary

2.2.4.2 Check temperature recorder, if faulty obtain an order number from this Department for repairs or replacement.

2.2.4.3 Replace pen and ink

## 2.2.5 ELECTRODE BOILER, STEAM GENERATOR AND WATER CONSERVATION DEVICE

2.2.5.1 Check float level device, repair or replace if necessary

2.2.5.2 Blow down sequence

2.2.5.3 Test and examine elements and replace if necessary, clean when necessary

## 2.3 TESTING

2.3.1 Test machine through manual cycle as applicable to each machine

2.3.2 Test machine through automatic cycle as applicable to each machine

2.3.3 Do "A TEST" test with a Bowie Dick tape or sheet under the supervision of hospitals authority

Check records of each machine on every visit to the Works. Failure by the Institution to provide this information must be reported immediately to the

2.3.4 Representative of Department of Health: Infrastructure Unit

## 2.4 COOLING TOWERS

2.4.1 Check pumps for operation

2.4.2 Clean out all strainers on water lines

2.4.3 Clean out sump of cooling towers

2.4.4 Clean sump filter of towers

2.4.5 Check water float valve for correctness

2.4.6 Check fans for operation and condition

2.4.7 Check spray nozzles for operation and blockages

2.4.8 Check and clean cooling coil fins

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(KLERKSDORP & TSHEPONG)



**health**  
Department of  
Health  
North West Province  
REPUBLIC OF SOUTH AFRICA

**Part C17.2 BILL OF QUANTITIES - CHEMICAL WATER TREATMENT**

**C17.2 Priced rates for the Supply and control of Chemical Water Treatment on Coal Fired Steam Boilers, which shall include the regular Maintenance and Service of Boiler house related water softening plants and cooling towers**

ITEM NO:	SCHEDULED PARTS	UNIT	Number of Services in 3 Years	Nr of Treatment Plants	RATE	PRICE [EXT VAT]
1	Water Quality Testing Every 6 Months (Klerksdorp Hospital)	No	8	1		
2	Water Quality Testing Every 6 Months (Tshepong Hospital)	No	8	1		
ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES			PRICE [EXT VAT]
1	Replacement exchange resin	Litre	1			R
2	Testing of water softener resin	S	1			R
3	Replacement filtration media	Per m <sup>3</sup>	1			R
4	Internal sand blasting for metal softeners	Per kg	1			R
5	Corrosion protection for metal softeners	Per litre	1			R
6	Replacement nossels 50mm dia PVC pipe	Per m	1			R
7	Iron contamination protection for a sodium on exchange resin bed	Per litre	1			R
8	Test kit	S	1			R
9	Yes/No tablets	Per 100	1			R
10	TDS meter	S	1			R
11	Accuracy test solution for TDS meter	Per litre	1			R
12	Auto duplex head for water softener 300 litre / 120 x 5	S	1			R
13	Auto duplex head for water softener 1500 litre	S	1			R
14	Auto duplex head service pack 300 litre / 150 x 5	S	1			R
15	Auto duplex head service pack	S	1			R
16	Auto duplex head service pack 1500 litre	S	1			R
17	Auto duplex head timer drive motor 300 litre	S	1			R
18	Auto duplex head timer drive motor 400 litre to 600 litre	S	1			R
19	Auto duplex head timer drive motor 800 litre and larger	S	1			R
20	Water softener vessel 300 litre	S	1			R
21	Water softener vessels 400 litre to 600 litre	S	1			R
22	Water softener pre filter 32mm	S	1			R
23	Water softener pre filter cartridge 32mm	S	1			R
24	Water softener pre filter 40mm	S	1			R
25	Water softener pre filter cartridge 40mm	S	1			R
26	Water softener pre filter 50mm	S	1			R
27	Water softener pre filter cartridge 50mm	S	1			R
28	Brine tank for 300 litre 1500 litre	S	1			R
29	Calibration of an existing water meter	S	1			R
30	Water meter 32mm	S	1			R
31	Water meter 40mm	S	1			R
32	Water meter 50mm	S	1			R
33	Water meter 65mm	S	1			R
34	Water meter 80mm	S	1			R
35	Condensate meter 32mm	S	1			R
36	Condensate meter 40mm	S	1			R

ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES			PRICE [EXT VAT]
37	Condensate meter 50mm	S	1			R
38	Condensate meter 80mm	S	1			R
39	Galvanized piping 15mm	S	1			R
40	Galvanized piping 20mm	S	1			R
41	Galvanized piping 25mm	S	1			R
42	Galvanized piping 32mm	S	1			R
43	Galvanized piping 40mm	S	1			R
44	Galvanized piping 50mm	S	1			R
45	Galvanized piping 65mm	S	1			R
46	Galvanized piping 80mm	S	1			R
47	Galvanized piping 100mm	S	1			R
48	Galvanized elbow 15mm	S	1			R
49	Galvanized elbow 20mm	S	1			R
50	Galvanized elbow 25mm	S	1			R
51	Galvanized elbow 32mm	S	1			R
52	Galvanized elbow 40mm	S	1			R
53	Galvanized elbow 50mm	S	1			R
54	Galvanized elbow 65mm	S	1			R
55	Galvanized elbow 80mm	S	1			R
56	Galvanized elbow 100mm	S	1			R
57	Galvanized socket 15mm	S	1			R
58	Galvanized socket 20mm	S	1			R
59	Galvanized socket 25mm	S	1			R
60	Galvanized socket 32mm	S	1			R
61	Galvanized socket 40mm	S	1			R
62	Galvanized socket 50mm	S	1			R
63	Galvanized socket 65mm	S	1			R
64	Galvanized socket 80mm	S	1			R
65	Galvanized socket 100mm	S	1			R
66	Galvanized nipple 15mm	S	1			R
67	Galvanized nipple 20mm	S	1			R
68	Galvanized nipple 25mm	S	1			R
69	Galvanized nipple 32mm	S	1			R
70	Galvanized nipple 40mm	S	1			R
71	Galvanized nipple 50mm	S	1			R
72	Galvanized nipple 65mm	S	1			R
73	Galvanized nipple 80mm	S	1			R
74	Galvanized nipple 100mm	S	1			R
75	Galvanized union 15mm	S	1			R
76	Galvanized union 20mm	S	1			R
77	Galvanized union 25mm	S	1			R
78	Galvanized union 32mm	S	1			R
79	Galvanized union 40mm	S	1			R
80	Galvanized union 50mm	S	1			R
81	Galvanized union 65mm	S	1			R
82	PTFE tape	S	1			R
83	PVC piping 15mm	S	1			R
84	PVC piping 20mm	S	1			R
85	PVC piping 25mm	S	1			R

ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES			PRICE [EXT VAT]
86	PVC piping 32mm	S	1			R
87	PVC piping 40mm	S	1			R
88	PVC piping 50mm	S	1			R
89	PVC piping 65mm	S	1			R
90	PVC piping 80mm	S	1			R
91	PVC piping 100mm	S	1			R
92	PVC elbow 15mm	S	1			R
93	PVC elbow 20mm	S	1			R
94	PVC elbow 25mm	S	1			R
95	PVC elbow 32mm	S	1			R
96	PVC elbow 40mm	S	1			R
97	PVC elbow 50mm	S	1			R
98	PVC elbow 65mm	S	1			R
99	PVC elbow 80mm	S	1			R
100	PVC elbow 100mm	S	1			R
101	PVC socket 15mm	S	1			R
102	PVC socket 20mm	S	1			R
103	PVC socket 25mm	S	1			R
104	PVC socket 32mm	S	1			R
105	PVC socket 40mm	S	1			R
106	PVC socket 50mm	S	1			R
107	PVC socket 65mm	S	1			R
108	PVC socket 80mm	S	1			R
109	PVC socket 100mm	S	1			R
110	PVC to steel connector 15mm	S	1			R
111	PVC to steel connector 20mm	S	1			R
112	PVC to steel connector 25mm	S	1			R
113	PVC to steel connector 32mm	S	1			R
114	PVC to steel connector 40mm	S	1			R
115	PVC to steel connector 50mm	S	1			R
116	PVC to steel connector 65mm	S	1			R
117	PVC to steel connector 80mm	S	1			R
118	PVC to steel connector 100mm	S	1			R
119	PVC Glue	S	1			R
120	Chemical dosing pump	S	1			R
121	Chemical containers – 54 litre	S	1			R
122	Chemical containers – 70 litre	S	1			R
123	Chemical containers – 120 litre	S	1			R
124	Chemical containers – 230 litre	S	1			R
125	Boiler PWT No 1 paint	5 litres	1			R
126	Salt	50 kg	1			R
127	Manhole gaskets on boilers	S	1			R
128	Handhold gaskets	S	1			R
129	Rates to treat boiler make up water	Per cub meter	1			R
130	Rates to treat condensate return	Per cub meter	1			R
131	Rates to treat cooling tower water	Per cub meter	1			R
132	Wet storage of boilers evaporation rate 2900 kg/hr as per technical specification item no 2	S	1			R
133	Wet storage of boilers evaporation rate 4000 kg/hr as per technical specification item no 2	S	1			R
134	Wet storage of boilers evaporation rate 4900 kg/hr as per technical specification item 2	S	1			R

ITEM NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES			PRICE [EXT VAT]
135	Wet storage of boilers evaporation rate 5000 kg/hr as per technical specification item 2	S	1			R
136	Wet storage of boilers evaporation rate 6000 kg/hr as per technical specification item 2	S	1			R
137	Wet storage of boilers evaporation rate 7500 kg/hr as per technical specification item 2	S	1			R
138	Wet storage of boilers evaporation rate 13000 kg/hr as per technical specification item 2	S	1			R
139	Wet storage of boilers evaporation rate 15000 kg/hr as per technical specification item 2	S	1			R
140	Wet storage of boilers evaporation rate 20000 kg/hr as per technical specification item 2	S	1			R
141	Six monthly wash out of boiler	S	1			R
142	Six monthly Wash out of cooling towers	S	1			R
143	Wash out of Hotwells 4000 litre as per technical specification item 2	S	1			R
144	Wash out of Hotwells 6000 litre as per technical specification item 2	S	1			R
145	Wash out of Hotwells 8000 litre as per technical specification item 2	S	1			R
146	Wash out of Hotwells 10000 litre as per technical specification item 2	S	1			R
147	Wash out of Hotwells 15000 litre as per technical specification item 2	S	1			R
148	Wash out of Hotwells 25000 litre as per technical specification item 2	S	1			R
149	Independent testing for condensate water as per part 3	S	1			R
150	Labour Technician per hour	S	1			R
151	Labour Technician per hour over time	S	1			R
152	Labour Technician per hour Sunday and Public Holidays	S	1			R
153	Labour Technician Assistant per hour	S	1			R
154	Labour Technician Assistant per hour over time	S	1			R
155	Labour Technician Assistant per hour Sunday and Public Holidays	S	1			R
	<b>SUB-TOTAL WATER TREATMENT</b>				R	

All prices shall be priced to RSA currency excluding VAT

All travelling rates will be calculated according to the AA rates for the specific month

TENDERER'S SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

NAME OF FIRM: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CODE \_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_ CELL NO: \_\_\_\_\_

FAX NO: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_ DATE: \_\_\_\_\_

**BID NUMBER: NWDOH 06/2025**

**Maintenance and Repairs of Boilers, Steam & Condensate Reticulation, Water Treatment on Boilers and Autoclaves, Calorifiers And Mechanical Equipment at Various Health Facilities in the North West Province Department of Health for a Period of 48 Months.  
(KLERKSDORP & TSHEPONG)**



## **Part C18.1 Scope of Work - Water Treatment**

### **1 SCOPE OF CONTRACT**

This tender calls for the following:

- 1,1 Maintenance, refurbishment, replacement and upgrades of the chemical treatment plants, analyses of boiler feed water, boiler water, condensate Return and any other plants requiring any treatment of water for a period of forty eight (48) months.
- 1,2 The supply, when required as per specification, of all ancillary equipment and chemicals necessary for testing of all waters.
- 1,3 The incidental maintenance and servicing of water softening plants. The supply of ion exchange chemical (salt) necessary for the operation of the plant and chemicals for the removal of iron contamination on resin beds.
- 1,4 The supply of chemicals and monitoring of correct dosage limits for the wet storage of boilers in use.
- 1,5 The incidental maintenance and servicing of chemical dosing pumps complete with storage tanks.
- 1,6 The repairs and calibration of water and condensate meters.
- 1,7 The six (6) monthly wash out and inspections on boilers
- 1,8 The six (6) monthly wash out, cleaning and painting of hot well tanks
- 1,9 Chemical treatment and analyses of cooling tower water
- 1,1 Six (6) monthly wash out of cooling towers
- 1,11 Supply and Install new water meter on supply line to cooling towers
- 1,12 Three (3) monthly analysis on condensate tanks

### **2 GENERAL REQUIREMENTS AND CONDITIONS**

#### **PRICING AND PAYMENTS**

Pricing for all items must be according to price schedule for listed items. The Department reserves the right to ask for extra quotations if the need arises.

The contractor must take note that where any equipment is to be installed these must function as working installations.

All supplementary equipment necessary to make it a working installation, which is not priced for in the listed price schedule e.g. plastic chemical feed piping, forms part of the installation and must be priced for as such.

Monthly invoices issued must be per institution and must indicate the following for the relevant month:

- 1 Actual water meter readings of the make-up water used and condensate returned
- 2 Volumes of make-up water used and condensate returned
- 3 Chemicals supplied and monitoring of chemical levels for boilers on wet storage
- 4 A file number for the relevant service
- 5 An item no for the relevant institution
- 6 The tender number
- 7 An item code as per price schedule
- 8 Chemicals supplied and monitoring of chemical levels of cooling tower water

The contractor must take note that the mentioned items 4 and 5 will be supplied on the day of the site hand over.

### **3 SUPPLY WATER CONDITIONS**

The contractor should note that the Department generally obtains its raw water supplies from the local municipality in which area each boiler house is situated. The water differs in quality and may vary over any period. All the boiler houses are equipped with Base Exchange softeners providing reasonably good softened water for use in the boilers.

### **4 CONDENSATE CONDITIONS**

Most of the boiler installations have large percentages of condensate return to the feed water tanks and in all instances this is metered.

### **5 NORMAL WORKING HOURS**

The contractor must take note that the normal working hours for all the institutions are from 07:00 in the morning until 15:30 in the afternoon and all visits must be scheduled during this time.

### **6 CONFIDENTIAL INFORMATION**

Only fully completed tender documents giving full details of treatment and chemicals offered will be considered. The actual formulation of each chemical combination must be filled in on schedules.

This information is seen as confidential and handled as such.

## 7 RESPONSIBILITIES AND DUTIES OF CONTRACTOR

### BOILER PROTECTION

The contractor will be required to control water treatment as detailed above to protect boilers, steam and condensate pipe reticulation.

Should it be found that a boiler is corroded (active) or dirty, scaled or otherwise fouled, it will be the responsibility of the contractor to rectify such fault by cleaning or other method at his own cost.

In the event where damage to a boiler is caused by improper treatment, the Chief Engineer reserves the right to recover the costs of repair from the contractor and to cancel the contract forthwith.

If the contractor can prove beyond doubt and to the satisfaction of the Chief Engineer that such fault has been caused by the negligence of the staff of the Department: Infrastructure Unit, corrective measures will be for the Department: Infrastructure Unit account.

The contractor must take note that it will be his responsibility to ensure that the responsible person on site is fully aware of dosing procedures and quantities per shift or daily.

## 8 STATUTORY REQUIREMENTS

The contractor will be responsible to ensure compliance to the requirements of the Occupational Health and Safety Act no 85 of 1993 with special reference to the regulations for hazardous chemical substances.

The contractor must take note that the Basic Conditions of Employment Act will be the basis for all labour aspects of this contract and the contractor is required to comply with it fully.

## 9 TESTS

All tests and analyses must comply with the latest specified BSI or equivalent approved standards. All boiler water and cooling towers must be done on site and an analysis report must be issued to the Representative on site and signed off. All condensate water three monthly testing must be done by an independent laboratory and analysis report must be supplied to the Representative of the Department.

## 10 MEETINGS

The contractor will be required to convene a quarterly meeting where he/she will be responsible for keeping minutes, agendas and attendance registers of these meetings which will be for the purpose of monitor the progress of the contract. These meetings must be held at the office facilities of the North West Department of Health Provincial Offices in Mafikeng.

The following people must attend this meeting –

- 10,1 One high ranking officer and one technical person from the company of the contractor
- 10,2 The Chief Mechanical Engineer – Directorate Construction Compliance (When available)
- 10,3 The two Safety Inspectors – Directorate Construction Compliance (When available)
- 10,4 Mechanical Works Inspector from the Infrastructure Unit.

## 11 WATER AND CONDENSATE METERS

For the purpose of this contract, it is accepted that all water meters are calibrated correctly and water volumes as indicated on these will be accepted.

In the case where a water meter's reading is in dispute the contractor must arrange that this water meter be calibrated. Where a meter is removed, the contractor must provide a substitute meter as an interim measure.

## 12 CHEMICAL DOSING PUMP

The contractor will be responsible to inspect the dosing pump at every site visit. The setting of flow volume are the responsibility of the contractor. If any of the pumps are faulty, it must be reported to the Department for corrective measures.

## 13. VOLUME FLUCTUATIONS

It will be the responsibility of the contractor to monitor monthly consumption of make-up water and return volumes of condensate. When a fluctuation of more than 20% is detected in either of the two cases, the contractor must investigate the problem and report this in writing to the Department

Taking into consideration that a fluctuation will have a direct implication on costs the Department will require the contractor to explain any variation in costs to the satisfaction of the Department.

## 14 FREQUENCY OF SITE VISITS

For the purpose of this tender, site visitations for the analyses and control of water conditions are required at intervals not exceeding ONE CALENDAR MONTH but should more frequent visits be required, these must be provided without any additional cost.

## 15 REPORTS

The following reports must be compiled and handed in as indicated:

- b) A monthly analytical test report, form attached as Form "A" must be completed in full detail immediately after tests have been done. Actual water meter readings must be taken by the contractor and not extracted from local records In the case where additional tests needs to be carried out in a laboratory, the details of tests necessary must be reflected on this report. These test results must be forwarded within 7 days.
- c) A comprehensive report on the internal conditions of the boiler after each boiler wash out which must indicate recommendations and solutions if any.
- d) A report detailing any fluctuation in consumption of make-up and returned condensate must be submitted immediately when this occurs.
- e) A report on malfunctioning of any water softeners, indicating required corrective action and spares required etc., must be submitted immediately when the problem is detected.
- f) A report on malfunctioning of any chemical dosing pumps, indicating required corrective action and spares required etc., must be submitted immediately when the problem is detected.



Distribution of above-mentioned reports will be done as follows:

- 1 One copy, supplied at the conclusion of test, to the responsible person on site.
- 2 One legible copy, supplied within 7 days, to the Infrastructure Unit Representative

#### 16 STAFF AND EQUIPMENT REQUIREMENTS

Suitably trained and properly qualified technical staff are required for the operations in this contract.

The contractor must be in possession of the correct testing equipment to ensure that all the requirements of this specification are met.

One or more fully equipped laboratory, for making of off site analyses of samples of water, scale deposits, etc., must be available for use to the

#### 17 QUALIFICATIONS AND EXPERIENCE

Only qualified Technical staff who have a recognized national diploma in Analytical Chemistry or a BSC Chemistry degree will be allowed to work on the water treatment. Where trainees are used to do the work, they must work under the Supervision of a qualified Technician.

All diploma's ( certified ) must be attached to this document.

#### 18 PACKAGING AND STOCK LEVELS

The contractor must supply and deliver chemicals in mini-bulk packaging to all institutions and only quantities sufficient for use between inspection and or site visits will be allowed on site. Stocks must be held at the contractor's store readily available to supply the demand.

## **Part C18.2 Technical Specification**

### **1 CONDITIONING TREATMENT**

The objective of this contract is to supply the boilers with a feed water treatment that will ensure that boilers remain clean and free of corrosion and or scale. Part of the objective is to ensure minimum down time both, during washout and preparation for statutory inspection.

The boiler water treatment must be F.D.A (Federal Drug Administration) approved.

This treatment prescribed at each boiler house must vary according to conditions. These variations must anticipate predictable seasonal variations, which result in an increase or decrease of steam load. Additionally it must anticipate the possible malfunctioning of base-exchange water softeners that can result in hardness or chlorine slippage.

The treatment prescribed must ensure that the TDS levels can be maintained within the National prescribed limits and adhere to the Manufacturers specification.

The treatment must ensure the prevention of scale deposits and or corrosion furthermore it must remove all traces of existing scale and corrosion.

The treatment must protect steam lines, condensate lines and condensate storage tanks against corrosion.

- 1.1 The treatment is intended to do the following:
  - 1.1.1 Prevent scale formation from small amounts of hardness and other impurities in the feed water.
  - 1.1.2 Remove traces of dissolved gasses (particularly oxygen before it enters the boiler)
  - 1.1.3 Maintain the correct Chemical balance in the boiler water.
  - 1.1.4 Protect the feed water systems between and including the point at which make up water is introduced into the collecting tanks.
  - 1.1.5 Condition sludge to ensure the forming of soft sludge that will be carried out at blow down.
  - 1.1.6 Adjust alkalinity to prevent corrosion in feed lines and boiler.
  - 1.1.7 De-gas water to remove dissolved oxygen and carbon dioxide.
  - 1.1.8 Adjust concentrations to inhibit caustic imbrittlement.
  - 1.1.9 Assure that steam and condensate is completely harmless and non-toxic and have a pH of between 7.0 and 7.4. A neutraliser may be used, provided every precaution is taken to make it safe for hospital use and the introduction of the amine is done slowly, full application only being reached at about 3 months after commencement. Such a chemical must not carry over into sterilisers or onto foodstuffs where steam is directly applied for this purpose.
  - 1.1.10 Contain an effective antifoaming compound.
  - 1.1.11 Passivate the after boiler reticulation system by using a volatile oxygen scavenger in the steam supply and to passivate all metallic surfaces in the steam and condensate lines.
  - 1.1.12 Prevent the forming of undesired and harmful substances in the steam and condensate lines.

Treatment must be pumped into the Feed water tanks of the boilers by means of fully automated dosing pumps.

**TANNIN BASED TREATMENTS ARE PREFERRED BUT ALTERNATIVELY BASED TREATMENTS MAY BE OFFERED, ALTERNATIVE TREATMENTS MUST BE SABS APPROVED.**

**SHOULD TANNIN BASED TREATMENTS BE INCLUDED IN THE TENDER THE CONTRACTOR MUST SUBMIT A LABORATORY REPORT TO SUBSTANTIATE THE PRODUCT TO BE SUITABLE FOR THE PURPOSE THAT IT WILL BE APPLIED FOR**

The Department reserves the right to request verification of the effectiveness of such an alternative treatment.

Phosphate treatments are **COMPLETELY UNACCEPTABLE.**

Under normal conditions on-line treatment for cleaning and removal of excessive scale will not be considered due to the possible obstruction of water passages and blockage to the blow down valve.

However should this procedure be necessary the cost involved for additional chemicals will be for the contractors account irrespective of the payment for this service being paid on amounts of condensate and raw water

### **2 BOILER WASHOUT**

Boilers will be washed out after six months of operation or the nearest possible time to that. The contractor must arrange with the various responsible persons that the opening of boilers take place at a convenient time to both parties which should preferably be at a time of regularly monthly visit. During winter, it may be necessary to run one or two boilers for shorter periods as required by local conditions. At the same time Hotwell tanks shall be washed out, scale removed by means of shot blasting and painted with boiler paint PWT No. 1 as prescribed. Three layers of paint with intervals, red black red, as prescribed. Mechanical Inspector will inspect condition of the tanks before painting. **ALL THE WORK AS ABOVE DESCRIP SHALL BE EXECUTED BY THE SUCESSFULL TENDERER AND MUST ALLOW FOR THIS IN THE PRICE SCHEDULE.**

#### **2.1 Method of Treatment**

Depending on scale, chemical decaling agents are to be added to a raw water filled boiler, while the circulating pump in running, until the calculated concentrations are maintained thus to prevent damage to boilers.

### 3 EXISTING WATER SOFTENERS

The Department has in use a water softening plant per boiler house, supplying softened water to boilers and equipment. The contractor will be responsible for incidental maintenance and servicing of these softeners to ensure no hard water and chloride slippage.

As it is in the best interest of the contractor to check the condition of the make-up water regularly, any malfunctioning must be reported to the Department immediately.

The contractor must always be present on site when repairs are done to water softeners. If the work is sub-contracted, the main contractor will still be accountable.

#### 3,1 Replacement resins

Where resins are to be replaced, it must be replaced with a synthetic non-phenolic polystyrene type. During the process of replacement, the contractor must ensure that sufficient chemical dosage is supplied to the boilers to compensate for any hardness slippage.

#### 3,2 Metal softeners

Where resin tests on metal vessels reveals rust it must be reported to the Department for a decision on remedial work.

Where metal softener vessels are to be repaired the inside must be sand blasted to SABS Standard Method 771 and painted with two layers of copon

#### 3,3 Iron contamination

Where iron contamination is detected, the vessels must be washed out with a chemical that will solubilise the contamination.

### 4 REPLACEMENT WATER SOFTENERS

In the instance where it is required to replace a water softener the following design criteria will be followed:

Fully automatic duplex water softeners are required to supply softened water to the boilers at a hardness not exceed 5 mg/l CaCO<sub>3</sub>.

The maximum and mean water consumption for sizing of the softeners must be ascertained at the relevant boiler house.

The softener must have an exchange capacity, delivering continuous soft water. With a salt usage of 150g NaCl/liter of resin, the exchange capacity must not be less than 60g/litre. The resin must be of the synthetic non-phenolic polystyrene type. Each vessel must be capable of handling the total quantity of water and must be installed in a duty and stand-by relationship.

#### 4,1 CONSTRUCTION OF THE PLANT

The softener vessel must be constructed with ABS inner shell and laminated fibre glass/epoxy outer shell and must be designed to withstand a working pressure of up to 690 kPa.

The brine tank shall be of polypropylene construction.

All interconnecting piping and valves must be neatly installed and colour coded. The pressure gauge must be not less than 100 mm in diameter and the siphon bend must be fitted with a valve to allow for replacement of the gauge. The control valve can be mounted on top or on the side but must be of a robust construction. The valve must be complete with staging meters, timers, incorporated injectors and backwash controllers. The operating must be completely mechanically and allow for low operating pressure during service flow.

### 5 WATER AND CONDENSATE METERS

The water and condensate meters must be sized to accommodate maximum flow but must be small enough to register the small flow of water experienced during summer. i.e the meter will be smaller than the raw water supply pipe.

The condensate meters must be able to withstand temperatures of up to 96°C.

When meters are to be re-calibrated it must be done by an Independent testing authority and the supply of a test certificate is necessary.

### 6 WATER FILTER

A Pre-filter in a cartridge type housing, complete with 25 micron cartridge and pressure relief valve, must be installed directly prior to the softener vessel inlet

The supply of replacement cartridges forms part of this contract.

### 7 CHEMICAL DOSING PUMP

A ratio feed chemical dosing pump must be supplied when required. This pump must operate with 220 V supply voltage. The pump must be suitably sized to supply the need for the biggest boiler house under the control of the Department.

A repair kit for this pump must be available.

A polypropylene chemical container must be supplied with the dosing pump.

### 8 TDS METER

TDS meters supplied must be battery operated, simple to use and able to indicate the level of total dissolved solids between 0->5 000 ppm. The units offered must be robust and be able to withstand abnormal working conditions and handling. One litre of accuracy test solution for the TDS meter must be supplied with the meter.

Full operating instructions to be supplied with TDS meters.

### 9 TEST KITS

All the necessary equipment and chemicals required for the tests must be supplied with a kit.

The quantities of chemicals supplied must be such that at the expected rate of consumption it will be depleted before the end of its shelf life.

NB: Dates of expiry must be clearly indicated on each container.

Full operating instructions to be supplied with test kits.

[Additional]

SCHEDULE OF INFORMATION

1,01 SCHEDULE OF INFORMATION

The following questionnaire must be filled in and fully completed by the tenderer, failing of which will invalidate the tender:

1,02 LABORATORY DETAILS

Address/es of laboratories

- (a) .....  
.....  
.....  
.....
- (b) .....  
.....  
.....  
.....

Capability of laboratory

- (a) .....  
.....  
.....  
.....
- (b) .....  
.....  
.....  
.....

1,03 DETAILS OF TREATMENT OFFERED

Treatment for raw water (detail fully)

.....  
.....  
.....  
.....  
.....  
.....  
  
.....  
.....

[illegible][illegible]

[illegible][illegible]

1,04 CHEMICAL FORMULATIONS

FOR BOILER WATER TREATMENT

DESIGNATION OF COMPOUND AND PURPOSE  
CONSTITUENTS OF COMPOUND CHEMICAL PERCENTAGE BY MASS OR VOLUME

PURPOSE OF COMPOUND  
SOLID OR LIQUID  
BULK OR MINI BULK  
PACKAGING TYPE SIZE

.....

.....

.....

.....

.....

.....

1,05 WATER SOFTENERS

Make and manufacturer of plant: .....

Model: .....

Country of origin: .....

Does the softener deliver continuous soft water?

Type of ion exchange material: .....

Make of ion exchange material:

Exchange capacity of exchange material: .....

Working pressure (Maximum): .....

Make and size of pressure gauge: .....

Full scale deflection of pressure gauge [kPa]: .....

Make and type of control valves: .....

Make and type of test kit: .....

Is piping colour coded? .....

Will operating instructions be supplied as specified? .....

Will softener be supplied fully charged and ready for operation after installation? .....

Does the plant comply with the Occupational Health and Safety Act, Act 85 of 1993, as

amended? .....

Is illustrated pamphlet attached: .....

How and where is salt administered for regeneration? .....

Guarantee period: .....

Delivery period: .....

Remarks: .....

Does the one vessel act as a standby for the other: .....

#### 1,06 WATER AND CONDENSATE METERS

Name .....

Type .....

Country of origin .....

Material of construction .....

Maximum working temperature of condensate meter .....

#### 1,07 WATER FILTER

Name .....

Type .....

Country of origin .....

Material of construction .....

Type of filter cartridge .....

Material of cartridge .....

#### 1,08 CHEMICAL DOSING PUMP

Name .....

Type .....

Country of origin .....

Does repair kit exist? .....

Operating voltage .....

#### 1,09 PRODUCT FOR IRON CONTAMINATION

Name of product .....

Chemical formulation .....

#### 1,1 TEST KIT

Make .....

Give details of each compound .....

.....



Give full description and working off test kit .....

.....  
.....  
.....

1,11 TDS METER

Name .....

Make .....

Model .....

Is the meter readily available Yes/no .....