

WATER TREATMENT / HOT WATER BOILER AND CLOSED WATER LOOP SYSTEM.

LOCATION:

Bledsoe County Correctional Complex
1045 Horsehead Rd.
PIKEVILLE, TN. 37367

CONTACT: Bruce Fields, FACILITY MANAG

Email: bruce.g.fields@tn.gov

Phone: 423-881-6233

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I. SCOPE:

----A. SCOPE OF SERVICE:

ALL SERVICES TO BE RENDERED AND PERFORMED IN ACCORDANCE WITH REQUIREMENTS AS DEFINED BY CONTRACT AGREEMENT AND BEST COMMERCIAL PRACTICES BY THE INDUSTRY RELATING TO WATER TREATMENT OF BOILER AND RECOMMENDED PROCEDURES OF THE SYSTEMS MANUFACTURER.

THE CONTRACTOR'S WATER TREATMENT PROGRAM SHALL BE ADMINISTERED FOR MAXIMUM ENERGY EFFICIENCY AND CYCLES OF CONCENTRATION SO AS TO PREVENT SCALE FORMATION; MINIMIZE CORROSION OF WATER SYSTEMS, AND TO MAINTAIN THE SYSTEMS FREE OF SLUDGE

BUILD-UP AND FOAM.

CONTRACTOR TO PROVIDE MONTHLY PREVENTATIVE MAINTENANCE SERVICE FOR WATER TREATMENT TO COOLING TOWER(S), CLOSED LOOP(S) AND ACCESSORIES. MONTHLY SERVICE TO INCLUDE COST OF EQUIPMENT, SUPPLIES, SERVICE, WATER TREATMENT CHEMICALS, TESTING, INSPECTION, TRIP CHARGE, LABOR, AND MONITORING THE PERFORMANCE OF THE WATER TREATMENT PROGRAM. CONTRACTOR SHALL SCHEDULE ON-SITE VISITS TO THIS SITE A MINIMUM OF ONE (1) TIME PER MONTH AND PROVIDE ALL SERVICES SPECIFIED PER THIS AGREEMENT AT THE PRICE BID. CONTRACTOR IS TO COORDINATE ALL VISITS WITH THE FACILITY MANAGER OR DESIGNEE

FOR EACH PROPOSED WATER TREATMENT CHEMICAL, CONTRACTOR SHALL PROPOSE A DOSAGE RATE WITH TEST CONTROL RANGES FOR THE TRACE PARAMETER. USING THESE DOSAGES, CONTRACTORS SHALL PROVIDE A DOCUMENTED CALCULATION OF THE ESTIMATED CONSUMPTION OF EACH CHEMICAL, ON THE BASIS OF YEARLY CONSUMPTION OR CONSUMPTION PER 1000 GALLONS OF SYSTEM CAPACITY OR MAKE UP RATE, AS APPROPRIATE. CONTRACTOR SHALL INDICATE CYCLES OF CONCENTRATION IN CALCULATING CONSUMPTION OF BOILER TREATMENT CHEMICALS.

THE SUCCESSFUL CONTRACTOR WILL ON THE INITIAL FIRST VISIT TO THE FACILITY TEST THE BOILER, COOLING TOWER, AND MECHANICAL CLOSED WATER LOOP SYSTEMS TO MAKE THE DETERMINATION OF THE AMOUNT OF CHEMICALS NEEDED TO BRING THE SYSTEMS WITHIN THE RECOMMENDED AND ACCEPTABLE WATER TREATMENT PARAMETERS.

THE CONTRACTOR SHALL PROVIDE CHEMICALS TO MAINTAIN THE PARAMETERS OF THE BOILER, COOLING TOWER AND MECHANICAL CLOSED WATER LOOP SYSTEMS AT NO COST TO THE FACILITY.

II. BIDDER/CONTRACTOR REQUIREMENTS:

A. CONTRACTOR QUALIFICATIONS:

CRITERIA FOR BIDDER/CONTRACTOR QUALIFICATIONS ARE DEFINED BY THE TERMS AND CONDITIONS OF THE SOLICITATION. BIDDER TO BE LICENSED IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY, FEDERAL, STATE AND LOCAL REQUIREMENTS.

B. CONTRACTOR REQUIREMENTS AND RESPONSIBILITIES:

1. THE CONTRACTOR AWARDED THIS SERVICE AGREEMENT IS TO HAVE AN ESTABLISHED AND QUALIFIED FULL TIME SERVICE STAFF WITH THE ABILITY TO RECEIVE AND DISPATCH SERVICE TECHNICIANS UPON REQUEST OF THE FACILITY MANAGER AND/OR AN AUTHORIZED AGENCY REPRESENTATIVE.

2. THE CONTRACTOR SHALL PROVIDE TELEPHONE NUMBERS AND PAGER NUMBERS OF PERSONNEL TO CONTACT ON AN AS NEEDED BASIS. AN OUTSIDE ANSWERING SERVICE AND/OR VOICE MAIL SYSTEM (I.E., ANSWERING MACHINE / RECORDER) IS NOT ACCEPTABLE TO THE STATE AS A CONTACT.

3. THE CONTRACTOR IS TO HAVE TECHNICAL SKILLS, MATERIALS, EQUIPMENT WITH AN INVENTORY OF MATERIALS, SUPPLIES AND EQUIPMENT NECESSARY TO OPERATE, TEST AND MAINTAIN BOILER AS REFERENCED BY THIS MAINTENANCE AGREEMENT
4. THE CONTRACTOR SHALL FURNISH A WRITTEN REPORT DETAILING RESULTS OF CHEMICAL TESTS AND INSPECTION FINDINGS TO THE FACILITY MANAGER AT THE CONCLUSION OF EACH SCHEDULED VISIT IN THE FORM OF A SERVICE REPORT WHICH SHALL ALSO INCLUDE RECOMMENDED CONTROL RANGES AND RESULTS OF ANALYSIS BY THE SERVICE REPRESENTATIVE AT THE TIME OF THEIR VISIT AND WHERE APPLICABLE, WILL BE REQUIRED TO FILE A REPORT WITH INSURANCE AND/OR OTHER AUTHORITIES AS DIRECTED BY THE FACILITY MANAGER.
5. ALL VISITATIONS BY SERVICE TECHNICIANS SHALL BE LOGGED ON-SITE AS TO DATE AND TIME (I.E., TIME AND TIME OUT). THIS REQUIREMENT WILL BE MONITORED BY FACILITY MANAGERS AND/OR AN AUTHORIZED REPRESENTATIVE OF THE STATE. EACH SERVICE TECHNICIAN SHALL PERSONALLY SIGN-IN AND SIGN-OUT AT THE JOB SITE TO VERIFY THEIR PRESENCE & LENGTH OF STAY. LUNCH AND OTHER BREAKS ARE NOT ELIGIBLE FOR HOURLY RATE.
6. A SERVICE VOUCHER/JOB TICKET SHALL BE LEFT AT JOB SITE DOCUMENTING SERVICES RENDERED. THIS SERVICE VOUCHER/JOB TICKET SHALL BE REQUIRED AS SUPPORTING DOCUMENTATION OF SERVICES PROVIDED AND TO ASSIST IN EXPEDITING PAYMENT UPON RECEIPT OF AN INVOICE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS, SUPPLIES, WATER TREATMENT, CHEMICALS, CHEMICAL ANALYSIS, ON-SITE QUARTERLY LABORATORY REPORTS, AND LABOR.
8. THE CONTRACTOR SHALL FURNISH A WRITTEN REPORT DETAILING THE PREVIOUS MONTHLY RESULTS OF HIS WATER TREATMENT AND MONITORING PROGRAM, INCLUDING AVERAGE OPERATING PARAMETERS: CYCLES OF CONCENTRATION, AVERAGE PH, COOLING TOWER WATER MAKE UP AND BLEED.
9. THE CONTRACTOR SHALL FURNISH A WRITTEN REPORT DETAILING A YEARLY SUMMARY OF RESULTS OF HIS WATER TREATMENT AND MONITORING PROGRAM IN THE SAME FORMAT AS THE MONTHLY REPORTS PER ITEM #8 ABOVE.
10. THE CONTRACTOR SHALL PROVIDE TECHNICAL DATA SHEETS, MATERIAL SAFETY DATA SHEETS FOR THE PROPOSED TREATMENT AND PROOF OF EPA AND DEPARTMENT OF AGRICULTURE APPROVAL TO THE FACILITY MANAGER.
11. INSURANCE REQUIREMENTS: DEFINED BY THE TERMS AND CONDITIONS OF THE SOLICITATION.
12. THE CONTRACTOR SHALL PROVIDE ONE (1) HOUR PER MONTH OF CHEMICAL TREATMENT TRAINING TO DESIGNATED STAFF TO MAINTAIN THE SYSTEMS

III. GENERAL SPECIFICATIONS AND SPECIAL REQUIREMENTS:

A. GENERAL SPECIFICATIONS AND REQUIREMENTS:

THE OMISSION OF DETAILED SPECIFICATIONS DOES NOT LIMIT THE QUALITY OF SERVICES TO BE PROVIDED AND ONLY THE BEST COMMERCIAL PRACTICES ARE ACCEPTABLE.

1. GENERALLY, ALL SERVICES SHALL BE PERFORMED BETWEEN 7:00 AM AND 4:00 PM, MONDAY THROUGH FRIDAY. SPECIAL ATTENTION SHOULD BE GIVEN TO THE SCHEDULING AND COORDINATION OF ALL SERVICES AS SPECIFIED PER THIS AGREEMENT. THE INTENT IS TO MINIMIZE DISRUPTION OF TENANT AND VISITOR ACTIVITIES IN THE FACILITY(S). ALL SERVICE ACTIVITIES SHALL BE COORDINATED WITH THE FACILITY MANAGER. THE CONTRACTOR SHALL, IN ADDITION TO THEIR MONTHLY INSPECTION SERVICE, PERFORM EMERGENCY MAINTENANCE AND REPAIR SERVICE AS REQUESTED BY THE FACILITY'S "AUTHORIZED REPRESENTATIVE." ALL VISITATIONS BY SERVICE TECHNICIANS SHALL BE LOGGED ON SITE AS TO DATE AND TIME (I.E., TIME IN AND TIME OUT) BY FACILITY MANAGER AND/OR AN AUTHORIZED REPRESENTATIVE. IT IS REQUIRED THAT ALL SERVICE TECHNICIANS PERSONALLY SIGN-IN AND SIGN-OUT TO VERIFY THEIR PRESENCE AND LENGTH OF STAY AT THE FACILITY ALL REPAIRS SHALL HAVE PRIOR APPROVAL OF THE FACILITY MANAGER BEFORE BEGINNING. AFTER COMPLETION, THE CONTRACTOR AND THE FACILITY MANAGER OR DESIGNEE WILL INSPECT THE COMPLETED WORK.

VENDOR WILL BE ON CALL 24 HOURS A DAY, 365 DAYS A YEAR, WITH EMERGENCY ON-SITE RESPONSE OF 4 HOURS & NON-EMERGENCY ON-SITE RESPONSE TIME OF 24 HOURS. RESPONSE TO A CALL MEANS RESPONDING IN PERSON TO A CALL NOT RESPONDING BY PHONE.

NOTE: THE STATE'S NORMAL WORKING HOURS ARE FROM 7:00 AM TO 4:00 PM, MONDAY THROUGH FRIDAY, EXCLUDING STATE HOLIDAYS, PROCLAIMED BY THE COMMISSIONER OF THE DEPARTMENT OF PERSONNEL.

DEFINITIONS:

"NON-EMERGENCY"- REFER TO SERVICES OF A NON-EMERGENCY NATURE, DURING NORMAL BUSINESS HOURS OF 7:00 AM TO 4:00 PM, MONDAY THROUGH FRIDAY, EXCLUDING STATE HOLIDAYS AND CHARGED AT REGULAR TIME RATES.

"EMERGENCY"- REFERS TO CONDITIONS WHEREBY "ON-SITE" SERVICES IS REQUIRED AT TIMES OTHER THAN THE REGULARLY SCHEDULED ANNUAL INSPECTIONS, AND/OR SERVICES REQUIRED AT TIMES OTHER THAN THOSE DEFINED AS "NON-EMERGENCY" ABOVE. THESE CONDITIONS MAY EXIST AFTER NORMAL BUSINESS HOURS AND/OR ON WEEKENDS AND HOLIDAYS.

"REGULAR TIME"- REFERS TO THOSE HOURS FROM 7:00 AM TO 4:00 PM, MONDAY THROUGH FRIDAY AND DOES NOT INCLUDE ANY DAY DECLARED TO BE A HOLIDAY BY THE STATE COMMISSIONER OF PERSONNEL. "PREMIUM TIME"- REFERS TO THOSE ON-SITE HOURS AFTER 4:00 PM PROIR TO 7:00 AM MONDAY THROUGH FRIDAY AND ALL SATURDAY, SUNDAY, AND HOLIDAYS AS DECLARED BY THE COMMISSIONER OF PERSONNEL.

LABOR RATES BEGIN WHEN TECHNICIAN SIGNS IN AT THE FACILITY.

LABOR RATES END WHEN TECHNICIAN SIGNS OUT AT THE FACILITY.
BREAKS AND LUNCH ARE NOT COVERED BY LABOR RATES.
USE OF MORE THAN ONE TECHNICIAN MUST BE PRE-APPROVED BY
FACILITY MANAGER.

TRIP CHARGES ARE LIMITED TO A SINGLE TRIP CHARGE PER ROUND TRIP PER GIVEN WORK ORDER
RETURN TRIPS DUE TO INCOMPLETE WORK AND/OR SERVICES WILL BE LIMITED TO A SINGLE TRIP
CHARGE. A TRIP CHARGE IS NOT ALLOWABLE FOR THE MONTHLY INSPECTION OF THE FACILITY.

ALL PARTS, MATERIALS, SUPPLIES AND EQUIPMENT WILL BE BILLED AT CONTRACTOR'S COST,
MINUS ANY APPLICABLE SALES OR USE TAX PURSUANT TO TENNESSEE CODE ANNOTATED SECTION
67-6-209, PLUS FIFTEEN PERCENT (+15%) REFERENCE STANDARD TERM & CONDITION NO. 40,
TITLED "TAXES". THE VENDOR SHALL SUBMIT AS BACKUP DOCUMENTATION A COPY OF THE
ORIGINAL PURCHASE INVOICE(S) AS PROOF OF COST FOR PARTS, MATERIALS, SUPPLIES &
EQUIPMENT. THIS BACKUP DOCUMENTATION MUST ACCOMPANY THE JOB INVOICE ORDER FOR
THE AGENCY TO PROCESS PAYMENT FOR SERVICE PERFORMED. IF THE VENDOR CANNOT PRODUCE
A COPY OF THE ORIGINAL PURCHASE INVOICE AS PROOF OF COST FOR THE REPAIR PARTS,
MATERIALS, SUPPLIES AND EQUIPMENT. THE STATE MAY VERIFY CURRENT MARKET VALUE AND IF
NECESSARY, ADJUST THE JOB INVOICE TO REFLECT FAIR MARKET PRICE.

2. DURING THE PERFORMANCE OF CONTRACTED SERVICE, CONTRACTOR WILL MAINTAIN A
CLEAN WORK AREA. UPON COMPLETION OF THE WORK, CONTRACTOR WILL REMOVE ALL TRASH
AND DEBRIS FROM THE JOB SITE.

3. THE CONTRACTOR'S TECHNICAL SERVICE REPRESENTATIVE SHALL MAKE SCHEDULED SERVICE
VISITS APPROXIMATELY EVERY 25 DAYS, MAKING NOT LESS THAN 12 VISITS PER YEAR. DURING
THESE VISITS, THE SERVICE REPRESENTATIVE SHALL INSPECT ALL EQUIPMENT, INCLUDING THE
AGENCY'S DAILY REPORTS, AND PERFORM ALL ANALYSIS REQUIRED AT THE SITE NECESSARY TO
DETERMINE THAT
THE WATER TREATMENT PROGRAM IS BEING ADMINISTERED PROPERLY. THAT THE ANALYSIS
PERFORMED BY THE AGENCY'S PERSONNEL ARE ACCURATE, AND THAT THE PROGRAM IS
OPERATING AT OPTIMUM PERFORMANCE. THE CONTRACTOR SHALL ALSO CHECK ON A
MONTHLY BASIS, OFF-LINE BOILERS FOR SULPHITE, ALKALINITY, CONDUCTIVITY AND PH.

THE CONTRACTOR SHALL PERFORM ON-SITE WATER ANALYSIS AND PROVIDE WRITTEN
RECOMMENDATIONS AT THE TIME OF THE SERVICE VISIT, HOWEVER, A CENTRAL LABORATORY
SHALL ALSO PERFORM QUARTERLY VERIFICATION OF FIELD ANALYSIS AND RECOMMENDATIONS
ANNUAL ANALYSIS PERFORMED AT THE CENTRAL LABORATORY SHALL INCLUDE ANALYSIS OF
FUEL OIL, INTERNAL SCALE AND FIRESIDE DEPOSITS, AT THE TIME OF ANNUAL BOILER TEARDOWN
FOR INSPECTION.

4. THE STATE SHALL BE PROTECTED AGAINST ANY DAMAGES OR LOSS OF EQUIPMENT DUE TO
LACK OF PERFORMANCE AND/OR NEGLIGENCE BY THE CONTRACTOR. EXPENSES INCURRED DUE
TO DAMAGES RESULTING FROM UNSATISFACTORY SERVICE ON THIS CONTRACT AGREEMENT
SHALL BE BORNE BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL BE REQUIRED
TO CLEAN AND/OR REPLACE DAMAGED EQUIPMENT COMPONENTS RESULTING FROM
INADEQUATE PERFORMANCE, RECOMMENDATIONS, AND/OR LACK OF PROPER INSTRUCTIONS

PROVIDED BY THE CONTRACTOR. CONTRACTOR SHALL CONDUCT A COMPLETE SURVEY OF THE EQUIPMENT AND PROVIDE A WRITTEN DETAIL OF THE CONDITION OF THE EQUIPMENT AND DOCUMENTING ANY EXISTING DAMAGE AND PREVENTIVE RECOMMENDATIONS PRIOR TO THE COMMENCEMENT OF THIS CONTRACT.

5. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL TO SERVICE, REPAIR, REPLACE, AND INSTALL ANY EQUIPMENT REQUIRED AS PART OF THE WATER TREATMENT AND MONITORING SERVICE. THIS EQUIPMENT SHALL REMAIN THE PROPERTY OF THE STATE. CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THIS EQUIPMENT AT PERCENTAGE OF MARKUP

B. SERVICE SPECIFICATIONS AND REQUIREMENTS:

THE CONTRACTOR SHALL PROVIDE COMPLETE WRITTEN DIRECTIONS FOR APPLYING ALL MATERIALS, INCLUDING PROCEDURES TO MAINTAIN ALL PROPER OPERATING CONDITIONS WITHIN THE EQUIPMENT BEING TREATED TO THE FACILITY MANAGERS. THE CONTRACTOR SHALL INSTRUCT THE AGENCY'S PERSONNEL, ON-SITE, IN THE PROPER ADMINISTRATION AND ANALYSIS OF THE TREATMENT PROGRAM, TO OUTLINE PROCEDURES NECESSARY TO ENSURE SAFE HANDLING AND TO RECOMMEND SAFETY EQUIPMENT.

1. COOLING TOWER CONTROL AND SYSTEM MONITORING THE TREATMENT PROGRAM WILL PROVIDE CORROSION, SCALE/DEPOSIT, AND MICROBIOLOGICAL CONTROL.

TREATMENT SYSTEM SHALL MAINTAIN BIOLOGICAL & BACTERIOLOGICAL CONTROL, WHICH WILL MAINTAIN 2000 COLONY COUNT OR LESS; MINIMUM MAINTAIN 4.5 CYCLES OF CONCENTRATION (BASED ON MAKEUP AND BLEED WATER METERS) WITHOUT SCALING; MAINTAIN PH LEVEL AT A MINIMUM 8.2; CONTROL GENERAL CORROSION WITH ALL OPEN SYSTEMS TO LESS THAN 2.0 MIL/YR FOR CARBON AND .5 MIL/YR FOR YELLOW METAL BASED ON QUARTERLY CORROSION COUPON TESTS; MAINTAIN WATER CONSERVATION AND ENVIRONMENTAL COMPLIANCE. ALSO TO BE EVALUATED UPON ANNUAL WATER ANALYSIS REPORT FROM LABORATORY. TREATMENT SYSTEM SHALL MONITOR FOR WATER MANAGEMENT, THE PH, MAKEUP WATER CONDUCTIVITY, SYSTEM WATER CONDUCTIVITY, CYCLES OF CONCENTRATION, TOWER TOTAL WATER DISCHARGE (DAILY AND MONTHLY) EVAPORATION CREDIT. SYSTEM SHALL MONITOR THESE POINTS AND STATUS IN ORDER TO MAINTAIN THESE REQUIREMENTS.

THE COOLING TOWERS SHALL BE TREATED WITH A PHOSPHONATE CORROSION INHIBITOR WITH AZOLE FOR YELLOW METAL CORROSION CONTROL AND A POLYMER DISPERSANT FOR DEPOSIT CONTROL. SHOULD BE DESIGNED WITH A TREATMENT RATE OF 1 GALLON TO 12000 GALLONS LOST TO BLEEDOFF IN ORDER TO MAINTAIN A RANGE OF 5 - 15 PPM OF PHOSPHONATE. THE TOWERS SHALL BE TREATED WITH A SODIUM POLYACRYLATE POLYMER DISPERSANT-ON-LINE DESCALER TO ACTIVELY REMOVE EXISTING SCALE DEPOSITS AS TOWER OPERATES. TREATMENT RATE SHOULD BE HALF THAT OF THE PHOSPHONATE INHIBITOR. THE COOLING TOWER CONDENSER WATER SHOULD BE TREATED WEEKLY WITH A MICROBIOCIDE, BACTTERICIDE, FUNGICIDE, ALGAECIDE, SLIMCIDE CONSISTING OF A 20% DIBROMONITRILIO-PROPIONAMIDE SOLUTION DESIGNED TO TREAT AT A RATE OF

0.0095-0.095 GALLON PER 1000 GALLONS OF SYSTEM WATER. THIS CHEMICAL FORMULA IS DEEMED TO BE VERY ENVIRONMENTALLY FRIENDLY AND IS NON- CORROSIVE TO METAL.

A BIODISPERANT CONSISTING OF A SULFOSUCCINATE SOLUTION SHALL BE USED IN CONJUNCTION WITH BIOCIDES TO PENETRATE AND DISPERSE MICROBIOLOGICAL SLIMES AND ASSURE MAXIMUM EFFECTIVENESS OF MICROBIOCIDES. PRODUCT SHOULD BE DESIGNED TO TREAT AT A RATE OF 1 GALLON PER 50,000 GALLONS OF SYSTEM WATER.

2. BOILER SYSTEMS

A. SCALE AND DEPOSIT CONTROL

NOTE: ALL CHEMICAL PRODUCTS USED IN THE BOILER SYSTEMS SHALL ONLY CONTAIN INGREDIENTS FOUND ON THE FDA APPROVED LIST FROM 21 CODES OF FEDERAL REGULATIONS, PART 173.310, BOILER WATER ADDITIVES.

SHALL BE TREATED WITH A SOLUTION OF SODIUM POLYPHOSPHATES AND SODIUM POLYACRYLATE FOR THE PREVENTION OF SCALE AND SLUDGE. PRODUCT SHALL BE DESIGNED TO TREAT AT AN INITIAL RATE OF 1 GALLON TO 400 GALLONS AND A MAINTENANCE DOSAGE OF 1 GALLON TO 10,000 GALLONS OF SOFTENED MAKE-UP WATER. THIS DOSAGE RATE MAXIMIZES EFFICIENCY AND REDUCES THE HANDLING OF CHEMICALS BY STSRFC STAFF. PHOSPHATE RESIDUAL SHALL BE MAINTAINED AT 30 – 60 PPM.

ADDITIONAL PRODUCTS DEEMED NECESSARY TO MAINTAIN BOILER EFFICIENCY SUCH AS IRON DISPERSANT, DEFOAMER, PH ADJUSTER, CHLORINE-BROMINE BIOCIDES, INHIBITED ACID BASED DESCALERS, AND NONACID ONLINE DESCALERS SHALL BE AVAILABLE ON AN AS NEEDED BASIS.

A WATER SOFTENER SYSTEM ON THE MAKE-UP WATER IS A MUST FOR STEAM BOILERS. THIS WILL KEEP THE MAJORITY OF SCALE-FORMING ELEMENTS FROM ENTERING THE BOILER. THE VENDOR SHOULD CONTRACT WITH A WATER SOFTENER COMPANY FOR SOFTENER SALT, ANNUAL INSPECTION ON THE OPERATIONS OF THE SOFTENER, AND RESIN CONDITIONS. NEW RESIN AND/OR PARTS SHOULD BE QUOTED AS NEEDED. THE SERVICING WATER TREATMENT COMPANY WILL MONTHLY CHECKS THE SOFTENER TO INSURE THAT IT IS OPERATING CORRECTLY.

AUTOMATIC SKIMMER BLOW DOWN CONTROLLERS ARE DESIRABLE ON EACH BOILER TO KEEP THE TOTAL DISSOLVED SOLIDS (MONITORED BY CONDUCTIVITY TESTS) IN LINE WITH THE BOILER'S RECOMMENDED CONTROL RANGE.

FOR SYSTEMS THAT DO NOT HAVE SKIMMER BLOW DOWN CONTROLLERS OR WHERE THIS EQUIPMENT IS NOT FUNCTIONING PROPERLY, THE VENDOR WILL PROVIDE FROM HIS SERVICING WATER TREATMENT COMPANY A COST TO REPAIR OR REPLACE THIS SYSTEM. THE SKIMMER BLOW DOWN CONTROLLERS WILL BECOME THE PROPERTY OF THE STATE.

A SAMPLE COOLING COIL IS DESIRABLE ON EACH BOILER FOR SAFETY IN OBTAINING A BOILER WATER SAMPLE.

ONE CHEMICAL TANK (30- OR 50-GALLON) WITH A CHEMICAL PUMP (AGITATOR OPTIONAL)

SHOULD BE INSTALLED TO FEED AN OXYGEN SCAVENGER TO BASIN OF THE DEAERATOR OR FEED WATER TANK.

THE DECISION TO REPAIR, REPLACE WITH NEW EQUIPMENT, OR BUY ADDITIONAL EQUIPMENT WILL BE MADE BY THE FACILITY MANAGER OR DESIGNEE AFTER EVALUATING HIS PRESENT SERVICING WATER TREATMENT COMPANY'S RECOMMENDATIONS AND/OR THE BIDDING WATER TREATMENT COMPANY'S RECOMMENDATIONS.

ALL CHEMICAL PRODUCTS USED IN THE BOILER SYSTEMS SHALL ONLY CONTAIN INGREDIENTS FOUND ON THE FDA APPROVED LIST FROM 21 CODE OF FEDERAL REGULATIONS, PART 173.310, BOILER WATER ADDITIVES. WATER TREATMENT COMPANY SHALL BE RESPONSIBLE FOR DELIVERY, UNLOADING, AND PLACEMENT OF CHEMICALS IN LOCATIONS ACCEPTABLE TO THE FACILITY MANAGER OR DESIGNEE.

TO PROPERLY CONDITION THE BOILER WATER, A LIQUID POLYMERIC DISPERSANT WILL BE USED AT 10 TO 20 PPM ACTIVE POLYMER IN BOILER WATER. IF PHOSPHATE FEED IS REQUIRED TO COUNTER HARDNESS IN THE BOILER, IT MAY BE SUPPLIED IN A LIQUID, GRANULAR, OR POWDER FORM: SODIUM TRIPOLYPHOSPHATE THAT IS 100% PURE WITH 75% AS PO₄, MAINTAINING 20 TO 40 PPM IN THE BOILER WATER.

TO CONDITION THE BOILER WATER FOR PROPER SLUDGE CONDITIONING AND KEEP SILICA IN SOLUTION, A PHENOLPHTHALEIN ALKALINITY LEVEL OF 300 TO 600 PPM SHALL BE MAINTAINED BY USING A SOLUTION OF SODIUM HYDROXIDE OR POTASSIUM HYDROXIDE. FOR CORROSION CONTROL IN THE BOILER, LIQUID OR POWDER FORM OF PRODUCT CONTAINING CATALYZED SODIUM SULFITE SHALL BE USED TO MAINTAIN A SULFITE RESIDUAL OF 30 TO 50 PPM IN THE BOILER WATER.

FOR CORROSION CONTROL IN THE CONDENSATE SYSTEM, A CHEMICAL PRODUCT CONSISTING OF A BLEND OF MORPHLINE AND CYCLO-HEXYLAMINE OR DIETHYLAMINOETHANOL (DEAE) SHALL BE USED FOR CONDENSATE RETURN LINE CORROSION PROTECTION. THE ACTIVE INGREDIENTS SHALL NOT EXCEED 40%. A PH LEVEL OF 8.0 - 8.5 SHALL BE MAINTAINED IN THE CONDENSATE WATER.

TO MAINTAIN THE BOILER WATER WITHIN THE RECOMMENDED CONDUCTIVITY CONTROL LIMITS OF 3000 TO 3500 MMHOS, FOR SOFT WATER, THE AUTOMATIC SKIMMER BLOW AND DAILY MANUAL BOTTOM BLOW DOWNS WILL BE CONDUCTED.

B. CORROSION CONTROL

C. BLOWDOWN CONTROL

CONTRACTOR SHALL USE A CONDUCTIVITY CONTROLLER TO MAINTAIN PROPER CONDUCTIVITY LEVELS. CORRECTED CONDUCTIVITY LEVELS IN THE BOILER SHALL BE MAINTAINED WITHIN A RANGE GREATER THAN 3500 MICROMHOS.

3. CLOSED LOOP SYSTEMS - CORROSION CONTROL

CONTRACTOR SHALL DETERMINE THE CAPACITY (IN GALLONS) OF EACH SYSTEM BEING TREATED

ALONG WITH THE LEAK RATE OF EACH SYSTEM THIS INFORMATION WILL BE PROVIDED TO THE OWNER IN A REPORT FORMAT WITHIN THE FIRST 60 DAYS OF THE CONTRACT. FOR SYSTEMS THAT DO NOT HAVE METERS OR WHERE THE METERS ARE NOT FUNCTIONING PROPERLY, THE CONTRACTOR SHALL PROVIDE A COST TO REPAIR OR REPLACE THESE METERS. THESE METERS WILL BECOME THE PROPERTY OF THE STATE. FOR ANY CLOSED LOOP WATER LOSS IN EXCESS OF 1%/MONTH, THE CONTRACTOR SHALL BILL SEPARATELY FOR CHEMICALS TO BRING SYSTEM UP TO NORMAL LEVELS.

THE CLOSED LOOP SYSTEMS SHALL BE TREATED WITH A NON-CHROMATE NITRITE BASED CORROSION INHIBITOR WITH AN APPROXIMATE TREATMENT RATE OF 1 GALLON TO 500 GALLONS OF SYSTEM WATER TO MAINTAIN 800-1000 PPM SODIUM NITRITE RESIDUAL. THIS TREATMENT RATE MAXIMIZES EFFICEIENCY WHILE REDUCING THE HANDLING OF CHEMICALS BY BCCX PERSONNEL. MUST CONTAIN PHENOLPHTHALEIN PH INDICATOR AND DYE TO EASE TESTING AND HELP IN LEAK DETECTION.

4. SERVICES: MONTHLY VISITS TO PROVIDE:

A. CHEMICAL TESTS SHALL BE CONDUCTED ON EACH SYSTEM. BOILER SYSTEMS: THE FEEDWATER, SOFTENERS AND CONDENSATE SYSTEMS SHALL BE CHECKED MONTHLY.

B. CHEMICAL FEED & CONTROL EQUIPMENT CHECKED, CALIBRATED & CLEANED.

C. INSPECT EQUIPMENT, COOLING TOWERS, LOOP SYSTEMS, WATER SOFTENERS, BOILER SYSTEMS, FOR CLEANLINESS & PROPER OPERATION.

D. CONTRACTOR TO ESTABLISH MINIMUM LEVELS/LIMITS AND REORDER POINTS FOR CHEMICAL INVENTORY TO BE STOCKED AT THE FACILITY. CONTRACTOR SHALL KEEP A 45-DAY SUPPLY OF ALL NECESSARY CHEMICALS AT THE FACILITY. CONTRACTOR SHALL CARRY AN ADEQUATE STOCK TO INSURE TIMELY DELIVERY AND ADEQUATE INVENTORY FOR THE DURATION OF THE CONTRACT.

E. INSTALL AND REMOVE CORROSION COUPONS FROM BY-PASS TEST RACKS A MINIMUM OF ONCE PER QUARTER WHERE APPLICABLE.

F. SUBMIT A WRITTEN SERVICE REPORT DETAILING RESULTS OF CHEMICAL TESTS AND INSPECTION FINDINGS TO THE FACILITY MANAGERS.

G. CONTRACTOR SHALL PROVIDE WATER ANALYSIS REPORTS THAT MEASURE RELATIVE EFFECTIVENESS OF THE WATER TREATMENT PROGRAM UPON EACH SERVICE VISITATION.

H. ANALYZE WATER SAMPLE IN A LABORATORY A QUARTERLY AND PROVIDE COPY OF LABORATORY RESULTS TO FACILITY MANAGER. AN ANALYSIS SHALL CONTAIN TESTS FOR PH OF THE BOILER WATER, CONDENSATE, TOTAL DISSOLVED SOLIDS, P04, AND HARDNESS.

I. BRINE ELUTION STUDIES ON THE WATER SOFTENERS SHALL BE CONDUCTED A MINIMUM OF ONCE PER YEAR. TEST RESULTS WILL BE PROVIDED TO THE FACILITY MANAGERS.

J. DEPOSIT ANALYSIS & TESTS SHALL BE CONDUCTED A MINIMUM OF ONCE PER YEAR. TEST RESULTS WILL BE PROVIDED TO THE FACILITY MANAGERS.

K. SHIPPING COST FOR CHEMICALS IS TO BE INCLUDED IN THE MONTHLY BID PRICE, EMPTY CONTAINERS ARE TO BE RETURNED TO SHIPPER AT VENDORS EXPENSE.

L. TEST REAGENTS AND TEST KITS SHALL BE PROVIDED AT NO ADDITINAL COST TO THE STATE.

M. TEST ALL CLOSED LOOPS FOR NITRITE LEVELS A MINIMUM OF ONCE PER QUARTER.

5. RELATED WATER TREATMENT PRODUCTS

CONTRACTORS WILL PROVIDE PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

A. NON-ACID CONCENTRATED COIL CLEANER SHOULD DILUTE 100-150 SQUARE FEET PER GALLON.

B. CONDENSATE PAN TABLETS SHOULD CONTAIN NO CHLORINE WHICH CAN CAUSE RUST AND CORROSION. SHOULD BE NON-FOAMING AND SHOULD CONTROL MUD, SILT, AND LINT BUILD-UP IN PANS TO PREVENT CLOGGING DRAINS.

C. WATER SOFTENER CLEANER. SHOULD BE CITRIC ACID/POLYMER BLEND WHICH CAN BE ADDED DIRECTLY TO WATER SOFTENER TO CHELATE AND SUSPEND IRON DEPOSITS FOR SAFE REMOVAL DURING NORMAL OPERATION.

D. SELF-RINSING EVAPORATOR COIL CLEANER SHOULD CONTAIN NO FREE CAUSTICS OR ACIDS AND SHALL BE SUITABLE AS A FILTER COATING.

E. DE-FOAMER SHOULD BE SILICONE SOLUTION FOR USE IN CONTROLLING FOAM IN BOILER, COOLING TOWERS, AND CLOSED LOOPS DURING CLEANING, DESALING, OR NORMAL OPERATION.

F. CLOSED LOOP CLEANER SHOULD BE CONCENTRATED LIQUID CLEANER SPECIFICALLY DESIGNED AND LABELED FOR CLEANING OF RUST, MILL SCALE, AND SLUDGE FROM CLOSED LOOP SYSTEMS.

G. DE-SCALER SHOULD BE CONCENTRATED INHIBITED ACID SPECIFICALLY DESIGNED AND LABELED FOR THE AGGRESSIVE REMOVAL OF SCALE DEPOSITS FROM METAL SURFACES WITHOUT HARMS TO THE PROTECTIVE GALVANIZED COATING.

H. SOCKET OR FILTERS TO BE REPLACED AS NEEDED, IF APPLICABLE

LABEL INSTRUCTIONS

ALL PRODUCTS USED TO TREAT WATER IN BOILERS, CONDENSER-COOLING TOWER SYSTEMS, AND CLOSED LOOPS MUST BE CLEARLY LABELED AS TO PRIMARY INGREDIENT, USAGE INSTRUCTIONS,

AND CONCENTRATION LEVELS TO BE MAINTAINED IN SYSTEM. INITIAL TREATMENT RATE AND TESTING PARAMETERS TO BE USED SHOULD BE CLEARLY NOTED ON LABEL TO ASSURE PROPER DOSAGE AND FOR SAFETY OF THE FACILITY'S PERSONNEL.

C. GENERAL EQUIPMENT LISTING:

3. Bledsoe County Correctional Complex

- A. 1 - RAYPAC - 100 HP - LOW PRESSURE, GAS FIRED, FIRE TUBE, WATER HEATING BOILER
- B. 1 - EVAC COOLING TOWER
- C. 1 - BALTIMORE COOLING TOWER

TEST EQUIPMENT FOR WATER TREATMENT PROGRAM

1. SODIUM NITRITE TEST KIT: TITRATING, TO TEST FOR PPM OF CORROSION INHIBITOR.
 2. CORROSION TEST COUPONS: TO CHECK CORROSION RATE
 - A. MILD STEEL CORROSION COUPONS
 - B. COPPER CORROSION COUPONS
 3. CONDUCTIVITY METER: TO CHECK CONDUCTIVITY OF WATER AND COMPARE WITH THE CONDUCTIVITY CONTROLLER SETTING AND DETERMINE CYCLES OF CONCENTRATION.
 - A. 0 TO 5,000 MMHOS OR
 - B. TRIPLE RANGE: 0 TO 10,000 MMHOS
 4. STANDARD CONDUCTIVITY TEST SOLUTION: 2,000 MMHOS: TO CHECK CONDUCTIVITY METER AND CALIBRATE, WHEN NECESSARY; USUALLY ONCE A MONTH. CHANGE BATTERY IN METER AT LEAST EACH 6 MONTHS.
 5. ORGANO PROPIONATE TEST KIT: TO VERIFY ACTUAL PH OF COOLING TOWER WATER.
 6. PH COLORIMETRIC TEST KIT: TO VERIFY ACTUAL PH OF COOLING TOWER WATER.
 7. TOTAL HARDNESS TEST KIT: TITRATING, TO VERIFY THAT THE SOFTENER IS REMOVING THE HARDNESS FROM THE MAKE-UP WATER.
 8. CONDUCTIVITY METER: TO CHECK CONDUCTIVITY OF WATER TO THE SOFTENER AGAINST THE CONDUCTIVITY OF THE SOFT WATER COMING OUT IF THE FINAL RINSE IS LONG ENOUGH TO REMOVE EXCESS BRINE, THE TWO CONDUCTIVITIES SHOULD BE NEARLY THE SAME.
 - A. 0 TO 5,000 MMHOS OR
 - B. TRIPLE RANGE: 0 TO 10,000 MMHOS
 9. TOTAL HARDNESS TEST KIT, TITRATING.
 10. "P" ALKALINITY TEST KIT, TITRATING.
 11. "M" ALKALINITY TEST KIT, TITRATING.
- (TWO TIMES THE "P" VALUE, MINUS THE "M" VALUE, WILL BE VERY CLOSE TO THE "OH")

ALKALINITY OF THE BOILER WATER.)

12. SULFITE TEST KIT, TITRATING.

13. PHOSPHATE TEST KIT: 0 - 100 PPM, COLORMETRIC

14. CONDUCTIVITY METER: TO CHECK CONDUCTIVITY OF BOILER WATER AGAINST SKIMMER BLOW DOWN CONTROLLER SETTINGS AND THE MANUAL BOTTOM BLOW DOWN FREQUENCY AND LENGTH OF TIME.

A. 0 TO 5,000 MMHOS OR

B. TRIPLE RANGE: 0 TO 10,000 MMHOS

15. STANDARD CONDUCTIVITY TEST SOLUTION: 2,000 MMHOS: TO CHECK CONDUCTIVITY METER AND CALIBRATE, WHEN NECESSARY, USUALLY ONCE A MONTH, CHANGE BATTERY IN METER AT LEAST EACH 6 MONTHS.

16. PH COLORMETRIC TEST KIT: TO VERIFY ACTUAL PH OF THE RETURNING CONDENSATE.
VARIOUS CHOICES

A. META CRESOL PURPLE (PH 7.6 - 9.2)

B. THYMOL BLUE (PH 8.0 - 9.6)

C. THYMOL RED (PH 8.0 - 11.2)

D. UNIVERSAL (PH 4.0 - 11.0)

17. CONDUCTIVITY METER: THE CONDUCTIVITY OF THE CONDENSATE SHOULD BE VERY LOW, LIKE DISTILLED WATER, 50 MMHOS OR LESS. IF CONDUCTIVITY IS GREATER THAN 100 MMHOS, CHECK FOR OTHER CONTAMINANTS SUCH AS DISSOLVED IRON AND/OR HARDNESS.

18. TOTAL HARDNESS TEST KIT, TITRATING

INVOICES FOR MONTHLY SERVICE SHALL BE SUBMITTED MONTHLY. ALL INVOICES ARE TO BE SUBMITTED IN TWO (2) COPIES (I.E., "ORIGINAL" AND A "COPY") AND ITEMIZED BY FACILITY. INVOICE(S) TO BE DIRECTED TO AND AS FOLLOWS:

A. "ORIGINAL" AND "COPY" OF INVOICE:

SUBMIT TO THE ATTENTION OF THE FACILITY MANAGER FOR EACH DELIVERY AGENCY LISTED ON BID TABULATION.

SUPPORTING DOCUMENTATION SHALL INCLUDE, BUT NOT BE LIMITED TO, SIGN-IN LOGS, WORK ORDERS AND SHALL ACCOMPANY EACH INVOICE SUBMITTED FOR PAYMENT.

CONTACT FACILITY MANAGER TO SCHEDULE A SITE VISIT.

QUESTIONS CONCERNING THIS SOLICITATION MAY BE DIRECTED TO

BRUCE FIELDS, FACILITY MANAGER

423-881-6233