

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

TABLE OF CONTENTS

1. PROPOSED SCHEDULE	Page 2
2. OVERVIEW	Page 3
3. GENERAL INSTRUCTIONS	Page 4
4. SPECIFIC INSTRUCTIONS	Page 10
5. GUARANTEED SERVICE REQUIREMENT	Page 12
6. WATER TREATMENT BID ASSUMPTIONS	Page 13
7. TOWER WATER SYSTEM TREATMENT	Page 14
8. CHILLED WATER SYSTEM TREATMENT	Page 15
9. PHILOSOPHY STATEMENT	Page 16
10. REQUIRED SUBMITTALS	Page 17
11. PRICING SHEETS	Page 18
12. MONITORING SHEETS	Page 22
13. BID SUMMARY FORM	Page 24
14. METHOD OF PAYMENT AND DISCOUNT FOR EARLY PAYMENT	Page 25

APPENDIX

- A. Homeyer Consulting Services, Inc. Data Sheet from Sampling Nov. 30, 2021**
- B. Satellite Tower Survey Information**

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

1.0 PROPOSED SCHEDULE

3/08/2023 – Site Inspections by Vendors

3/10/2023 – Technical Questions/Inquiries

3/21/2023 – Proposals Received by 2:00PM, MST

TBD – Questions Released Concerning Proposals

TBD– Questions Answered Concerning Proposals

TBD – Interviews

TBD – Award

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

2.0 OVERVIEW

THE UNIVERSITY OF ARIZONA (“UA”) is considering an agreement for the services of a firm that can provide a comprehensive, service-oriented water treatment program. The proposal shall be *best and final*.

The agreement shall be awarded to the vendor who best satisfies all of UA’s water treatment needs at optimum cost performance. The cost shall not be the sole criteria for determining the agreement award; however, it shall be weighed heavily. The proposal’s technical content and the interview of the vendor’s designated local representative shall be an important part of the final evaluation.

2.1 Goals – In no order of preference, the primary goals of the service-oriented water treatment program are as follows:

- 2.1.1 The submitted proposal must be tailored to provide all possible protection of UA’s infrastructure from water-related damage.
- 2.1.2 Minimize or eliminate chemical handling by, and safety hazards to, UA personnel.
- 2.1.3 Provide professional, knowledgeable, and involved service personnel.
- 2.1.4 Accurately monitor program results and communicate appropriate recommendations with quantifiable, business-oriented justifications.
- 2.1.5 Thoroughly train UA personnel on the implementation and control of the programs.
- 2.1.6 Reduce the overall energy/utility consumption through improved heat-transfer efficiency and improved water quality. This is accomplished by improving the make-up quality, reducing system contamination, and minimizing scale, corrosion, fouling, and microbiological growth, which create deposits on heat-transfer surfaces.
- 2.1.7 Minimize the repair and maintenance costs associated with the replacement and cleaning of equipment due to scale, corrosion, fouling, or microbiological activity.
- 2.1.8 Provide competitive water treatment program costs.

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
3.0 GENERAL INSTRUCTIONS

- 3.1 Propose a program as a one-year, “pay-as you-go, assumption-based price,” with a break-out for all control and feed equipment, with renewable terms, with 4 optional extension years.**
- 3.1.1 A) The vendor will supply all services for the tower systems and associated closed loops. Service is required to be performed weekly on all systems as described in this request for proposal.**

The program must include the following:

- 3.1.2 All chemicals
- 3.1.2.1 The vendor will ensure that sufficient treatment chemicals are on site at each satellite cooling tower location at all times.
- 3.1.3 All testing reagents, supplies, test procedures, and disposal procedures.
- 3.1.3.1 The water treatment provider must use their own reagents and testing equipment during service visits.
- 3.1.4 All log sheets.
- 3.1.5 The successful proposer shall provide and maintain a program manual for UA’s water systems manager. This manual is to be updated whenever necessary to ensure accurate representation of the current program. The manual shall include, but not be limited to, the following:
- Detailed testing instructions
 - Actions to be taken in response to test results
 - Control guidelines
 - All pertinent information required by an operator to correctly apply the water treatment programs
 - Emergency contact numbers
- 3.1.6 All necessary equipment – Review controllers, containment for drums and/or pails, and corrosion coupon racks during bid site inspections. Your bid submission should include any control equipment requiring replacement, secondary containment for all tanks, drums or pails, and corrosion coupon racks on all open and closed systems included in this bid.
- 3.1.6.1 UA currently owns all of the equipment on site; however, the equipment may be in need of replacement. The vendor should propose all new chemical feed equipment and controllers. You may propose chemical storage tanks; however, you must be aware of space limitations at the locations and be sure that any proposed storage tanks can fit in the limited-space areas. All drums,

ATTACHMENT A

THE UNIVERSITY OF ARIZONA

WATER TREATMENT BID SPECIFICATIONS

tanks, and pumps must have containment, which should also be included in the proposal.

- 3.1.6.2 Controllers and monitoring equipment should be non-proprietary. You may propose a proprietary system *as an alternate* if the proprietary system has features which provide additional value to UA.
- 3.1.7 Propose according to the indicated programs for each system. Only programs that adhere to the bid specifications will be considered.
- 3.1.8 Weekly service for all towers, closed loops and make-up water, at a minimum.
- 3.1.9 The successful proposer must maintain its own, or contract with, an industrial water-conditioning testing laboratory, the services of which shall be made available to test and analyze samples at no additional cost when conditions are warranted.
- 3.1.10 Also, the successful proposer shall maintain a current, accurate file on the awarded contract and provide guidance and recommendations for complying with USDA, OSHA, USEPA, and other applicable standards as requested, and as needed because of proposed or actual changes in the law, regulations, standards, etc., or as required because of the types of chemicals used or handled.
- 3.1.11 Service must be interpreted as the *testing* of all treated systems, the review of written and computerized log sheets, inventory review, the inspection of chemical feed equipment, and general equipment inspections. An electronic report must be completed during each and every service call and submitted before leaving UA. The service representative shall notify the UA's water systems manager both verbally and in writing of any deviations from designated treatment levels and of any abnormal situations in the treated systems, and make appropriate recommendations for corrective actions. Copies of the weekly service reports shall be presented to the UA's water systems manager.
- 3.1.12 The service representative shall be available for *emergency service* on a 24-hour basis (by cell phone) and be located within two hours of the site.
- 3.1.13 Inspect each chemical feed station prior to proposing and offer solutions to chemical feed, blowdown, storage, and distribution system deficiencies.
- 3.1.14 Any increases in price after the first year require a minimum of 60 days written notice, and must be approved by UA in writing before taking effect. Such price increases must be accompanied by proof of the increase in raw material fees, supplier fees, or substantial publicly-documented changes in the market, such as the consumer's price index. Any reduction the supplier makes in their standard fees will be provided immediately to UA as a comparable percentage reduction in the fees.
- 3.1.15 By a mutual agreement of both parties, this agreement may be extended for four additional one-year periods. The unit price is to be negotiated between UA and the

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

bidder annually; however, it is not to exceed the annual renewal escalator percentage entered on the bid response form.

- 3.1.16 No interpretation of the meaning of pre-bid or specification documents will be made orally. Interpretations and supplemental instructions will be by written addenda to the bidding documents. The bidders shall not rely on any interpretation or correction given by any other method.
- 3.1.17 All questions should be addressed to the purchasing department. If questions necessitate an addendum, UA will originate and forward it to all of the bidders of record.
- 3.1.18 Any addenda, if issued, will be mailed at least seven days prior to the bid date, to each person or firm recorded by UA as having received copies of the bidding documents. Failure of the bidder to acknowledge the receipt of such addenda on the proposal may be grounds for rejection of their bid. Addenda so issued shall become part of the bidding documents.
- 3.1.19 UA reserves the right to purchase small quantities of chemicals not specified herein for the purpose of evaluating and conducting water treatment tests.
- 3.1.20 Include a representative example of a transition plan. This plan should describe the steps undertaken, with a corresponding schedule for the transition.
- 3.1.21 UA reserves the right to consider more than one proposer to fulfill its industrial water treatment needs; therefore, it may be prudent to submit both package and line-item formatted proposals for consideration.
- 3.1.22 The proposals shall address, but not be limited to, treatment programs for the campus satellite cooling tower systems and associated closed loops at the following buildings (See Appendix B for details):
- Bldg. 158A (USB)
 - Bldg. 158B (Marshall)
 - Bldg. 300A (USA)
 - Bldg. 151 (Babcock)
 - Bldg. 11 (Harshbarger)
 - Bldg. 222 (Cancer Center)
 - Bldg. 23 (Cesar Chavez)
 - Bldg. 336 (Roy Place)
 - Bldg. 490A (AML)
 - Bldg.506(Vet Medicine)
 - Bldg. 87 (Global Center)
 - Bldg. 2324 (VDL)

3.2 Required Information:

- 3.2.1 Include the name and resume of the single service representative who shall service the site, as well as their backup. Also include the name and background of their immediate supervisor. Include office, home, and cell phone numbers, as well as e-mail addresses. All references must be those serviced by the proposed service

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

representative, who shall be a full-time, fully trained employee of the water treatment supplier.

- 3.2.2 The local service representative shall act as liaison between the successful proposer and UA operation manager(s). The local service representative must have a minimum of three years of verifiable industrial water treatment field service experience. In addition, the local service representative shall be supervised by a professional having at least a Bachelor of Science degree in chemistry or chemical engineering and a minimum of ten years of industrial water treatment technology field service experience.
- 3.2.3 Removal and/or replacement of any service representative must be approved in advance by UA. Failure to obtain approval will be considered as grounds for termination of the water treatment contract.
- 3.2.4 The successful proposer shall ensure that service via telephone is available to UA personnel 24 hours per day, seven days per week for emergency information and advice regarding chemical spills and/or accidents involving the successful proposer's products. The successful proposer shall provide UA with the emergency telephone number and immediately notify UA of any changes in the contact information.
- 3.2.5 Include a statement that UA has been visited and that the proposal submitted is based on the information given combined with your own in-depth survey. Do not consider only the information given; however, please indicate any deviations as such in your proposal. No warranty is given as to the accuracy of this information. This statement must include a Statement of Compliance or echo full text of all items in the General Instructions. The vendor may propose a section titled "Exceptions and Clarifications to Specifications." This section must include a numbered list of all exceptions and clarifications. Except for items explicitly addressed in this section, the vendor is assumed to be in full agreement with these specifications.
- 3.2.6 The vendor must submit Safety Data Sheets (SDS) and technical guidance with recommended practices for the storage and handling of all chemicals to be supplied upon award, **(do not submit SDS with bid proposal)**. These files must be kept up-to-date for the entirety of the contract (both hard and electronic files). An SDS should be laminated and placed on each drum or storage tank for all of the chemicals provided.
- 3.2.7 UA reserves the right to reject any or all proposals for any reason and will not necessarily accept the low bidder.
- 3.2.8 Include contract renewals.
- 3.2.9 UA reserves the right to terminate the contract at any time.

3.3 Performance:

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

- 3.3.1 Acceptable performance shall be indicated by the following specifications:
- Corrosion rates no greater than 1 mil/year (MPY) for mild steel, 0.1 MPY for copper, and 1.0 MPY for zinc in open systems, 0.5 MPY for mild steel in closed loops, and 0.1 MPY for copper and stainless steel in all systems
 - Aerobic bacteria counts no greater than 10,000 cells/ml in towers and 1,000 cells/ml in chill loops
 - Anaerobic bacteria counts no greater than 50 cells/ml in any system
 - Clean heat-transfer surfaces with no pitting as determined by UA's water consultant
- 3.3.2 The successful bidder shall be responsible for removing all non-permanent chemical containers and their own unused chemicals (if so directed) at any time following the end of the contract period. Such requests to remove chemicals and their containers must occur within 30 days following the end of the contract period or any extensions to the contract period. Chemical containers must be heavy gauge, stainless steel or plastic, double containment, permanent storage containers, which can become the property of UA at the expiration of the contract or any extensions at their option (the proposal must clearly show a buyout schedule, if applicable).
- 3.3.3 Please provide three references with systems of similar sizes and complexities relative to UA. UA and/or its agents reserve the right to contact or visit the references listed. Include the contact names, titles, addresses, phone, and e-mail addresses.
- 3.3.4 All prices shall include delivery, chemical handling, removal of empty containers, and the maintenance and repair of all vendor-supplied equipment for the life of the agreement.
- 3.3.5 The vendor shall be responsible for cleaning scaled or fouled equipment that arises as a direct result of the poor implementation of the water treatment by the vendor.
- 3.3.6 The vendor must maintain adequate chemical inventories at all times to avoid a shutdown.
- 3.3.7 The vendor's program must not produce any offensive odors or other nuisance to the campus and neighboring homes and facilities.
- 3.3.8 The vendor will be penalized at rates of \$1,000.00 per day for running out of chemicals, \$500.00 per day for missed service visits, and \$250.00 per day for failing to repair or replace any defective controllers supplied by the vendor as part of this water treatment program starting seven days following notification to the vendor of the failure.
- 3.3.9 UA wants to have annual cooling tower cleanings as a part of their routine maintenance. Vendors should indicate their ability to provide this service and provide the costs associated with cleaning each of the cooling towers included in this bid package (See Section 3.1.21).

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

- 3.3.10 The vendor must submit a list of tests to be performed during each service visit and a calendar of services to be performed during the year.
- 3.3.11 Note the skin temperatures used in calculating saturation indices when building your cooling program.

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
4.0 SPECIFIC INSTRUCTIONS

4.1 The pricing for the chemical portion of this bid is assumption-based. This means that we have chosen the assumption under which this bid will be evaluated for pricing.

4.2 Required Tests – The following are the minimum required tests that must be performed during each scheduled visit:

- Raw Water
 - pH
 - Conductivity
 - M-alkalinity
 - Calcium hardness
 - Silica

- Tower Water
 - pH
 - Conductivity
 - M-alkalinity
 - Calcium hardness
 - Silica
 - Trace
 - Phosphonate
 - Copper
 - Azole
 - Turbidity
 - Free halogen
 - Biological count (by strip method inoculated 48 hours prior and incubated at 35° C)
 - Legionella testing of all satellite cooling towers during the last two weeks of July

- Chilled Water (Monthly)
 - pH
 - Conductivity
 - Nitrite
 - Copper
 - Iron
 - Azole
 - Turbidity
 - Biological count (by strip method inoculated 48 hours prior and incubated at 35° C)

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

- 4.3 Corrosion coupon testing (using actual UA metallurgies) must be conducted year-round on a 90-day basis for all tower and closed loop systems. The data must be reported within 30 days. If coupon racks are not currently located on a given system, your bid should include providing them as part of your equipment package.**
- 4.4 Missing or late tower or chilled loop data will be interpreted as incomplete and result in a \$200.00 billing credit per system, per coupon set. These should include the following metallurgies:**
- Mild steel
 - Copper
 - Stainless steel (when applicable)
 - Galvanized steel (when applicable)
- 4.5 Include details of any equipment package (a complete list of the necessary equipment); detail if it is currently present, or if it will be provided.**
- 4.6 The winning bidder will be required to perform volume studies on all systems within 90 days.**
- 4.7 The winning bidder is required to attend quarterly review meetings with UA and HOMEYER CONSULTING SERVICES, INC. at UA's discretion. Meetings must include project updates, chemical usage, water usage, corrosion coupon results, and out-of-control exceptions by system.**

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
5.0 GUARANTEED SERVICE REQUIREMENT

This section of the proposal is important, and should be given considerable attention.

- 5.1 The successful bidder shall be responsible for good housekeeping practices.
- 5.2 Please clearly outline a section in your proposal as “Guaranteed Service Requirement.”
- 5.3 Prepare a list of the items that will be serviced periodically (e.g., particle size distribution studies, biological profiles, system volume/leak tests, system audits, borescope inspections, deposit analyses, corrosion studies, etc.). Please state the periodicities for each and any costs.
- 5.4 Provide a “footprint” (elevation and plan view, including volume) of the chemical containers for each system if you are proposing replacements. Keep in mind the space limitations you observed during your survey. Note power requirements.
- 5.5 Describe what types of services shall be available during routine equipment inspections at no expense to UA.
- 5.6 The successful bidder shall be available for quarterly reviews scheduled at the discretion of UA. These should include recommendations and corrective actions needed to improve the program performance.
- 5.7 All water-side equipment (towers, chillers, etc.) must be inspected and photographed annually when available for inspection; a full written report is required. All inspection reports must be submitted with two bound copies and be available within 30 days of each inspection.
- 5.8 As part of normal service, the vendor may be asked to perform quarterly laboratory analyses of all treated systems. Any additional costs for this service must be listed as a line item on the bid summary page.
- 5.9 The successful proposer shall submit invoices to UA for services and products every 30 days (monthly). Exceptions will only be accepted with prior authorization from UA Procurement Services.

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
6.0 WATER TREATMENT BID ASSUMPTIONS

The following is a list of the systems to be treated and the basis for the bid.

- Towers (See Appendix B for cooling tower details):
 - Make-up per year (Estimated total) 10,750,000 gallons
 - Cycles of concentration 3.0 cycles
 - Volume (Estimated total) 14,000 gallons

- Chilled Loop (See Appendix B for closed loop details):
 - Make-up per year 2,000 gallons (50%)
 - Volume 4,000 gallons*

**Each loop was estimated to have 500 gallons volume*

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
7.0 TOWER WATER SYSTEM TREATMENT

7.1 Inhibitor (Trace/Phosphonate [PBTC]/Azole/Polymer-Based) – City Water Make-Up:

- 7.1.1 Provide the treatment levels, recommended feed points, LSI limitations, and container sizes, materials, and types.
- 7.1.2 Traced technology is recommended (no molybdenum).

7.2 Dispersant (Liquid) – You may propose a one-drum treatment approach.

7.3 Biocide #1 (Liquid Bromine) – Feed three times per week to achieve a free halogen residual of 1 PPM at the end of a four-hour feed*. Use 90 PPM per day for calculation purposes. *The feed cycle time may need to be limited during summer months.

- 7.3.1 Provide the minimum/maximum levels in PPM; active ingredients; container sizes, materials, and types; and recommended dosage schedules in days.

7.4 Biocide #2 (Glutaraldehyde) – Feed >120 PPM once per week (when using 45% active product).

- 7.4.1 The full dose must be fed within a one-hour timeframe.

7.5 Documentation – Provide a chart listing control limits for the above, including, but not limited to, the following:

- Measurable treatment levels
- Guaranteed levels of phosphonate and azole (i.e., 3-5 PPM as the specific phosphonate, and 2-5 PPM of azole)
- Raw water cycles
- pH
- Free halogen levels
- All tests to be performed (describe)

7.6 Note – Acceptable performance shall be indicated by total biological counts no greater than 10,000 cells/ml as aerobic and 50 cells/ml as anaerobic bacteria, and corrosion rates no greater than 1 MPY for mild steel and 0.1 MPY for copper.

7.7 A dry feed program may be offered as an alternate program. However, a liquid-based program as detailed above must be used as the primary bid.

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
8.0 CHILLED WATER SYSTEM TREATMENT

8.1 Inhibitor (Nitrite/Azole-Based Treatment):

8.1.1 Provide the treatment levels for nitrite and azole.

8.1.2 Provide the container sizes, materials, and types.

8.1.3 Be sure that the product quoted is free of all glycols.

8.2 Biological Treatment Program (Isothiazoline and Glutaraldehyde-Based):

8.2.1 Isothiazoline (>240 PPM) and 45% glutaraldehyde (>120 PPM) will be alternately fed a minimum of every six months (one isothiazoline and one glutaraldehyde feed per year), or as often as conditions warrant treatment with a microbiocide. Note: A 50% glutaraldehyde product is acceptable.

8.2.2 The full dose must be fed within a one-hour timeframe.

8.2.3 Provide any pricing options.

8.3 Documentation – Provide a chart listing the control limits for the above, including, but not limited to, the following:

- Measurable treatment levels (i.e., 400 PPM of nitrite, 10 PPM of azole)
- pH range (8.5-10.3)
- Conductivity range
- All tests to be performed (describe)

8.4 Note – Acceptable performance shall be indicated by total biological counts no greater than 1,000 cells/ml as aerobic and 50 cells/ml as anaerobic bacteria, and corrosion rates no greater than 0.5 MPY for mild steel and 0.1 MPY for copper.

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
9.0 PHILOSOPHY STATEMENT

- 9.1 The treatment representative should be familiar with each component of the treatment chemicals to be applied.
- 9.2 Biological activity in cooling systems is the primary cause of system failures and should be monitored carefully.
- 9.3 It is required that all systems be checked for biological activity at least once per operating week by the vendor.
- 9.4 All treated systems shall have corrosion coupon studies run regularly (quarterly).
- 9.5 Any size chemical container needs secondary containment. A comprehensive Spill Prevention Control Countermeasure (SPCC) plan must be submitted. Please note that chemical metering pumps must also be contained.
- 9.6 Metering pumps and control equipment must be periodically calibrated to the OEM Specifications and documented.
- 9.7 Service call reports must be discussed with university personnel prior to leaving UA during each service call visit. They should also be e-mailed to all parties, preferably before leaving UA, or at least within 24 hours.
- 9.8 All treatment representative or product changes must be approved by the site in writing as an amendment to the contract, or the contract is in default.
- 9.9 The penalty for running out of chemicals is \$1,000.00 per day.
- 9.10 The penalty for missing a service visit is \$500.00 per unexcused visit.
- 9.11 The penalty for failing to repair or replace any defective controllers supplied by the vendor as part of this water treatment program starting seven days following notification to the vendor of the failure is \$250.00 per day.
- 9.12 All non-oxidizing biocides should be completely fed into the system within a maximum timeframe of one hour.
- 9.13 Intermittent halogen feeds to an open, recirculating system should be over four hours, reaching 1 PPM as free at the end of the fourth hour (unless tower size makes this impractical or unless an extended bleed lock-out may create excessive scaling issues).

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
10.0 REQUIRED SUBMITTALS

- 10.1 Treatment representative information
- 10.2 Completed Pricing Sheets
- 10.3 Completed Monitoring Sheets
- 10.4 Statement of Compliance
- 10.5 Guaranteed Service section
- 10.6 Footprint and quote for chemical handling, storage, delivery, and control
- 10.7 Equipment section
- 10.8 References
- 10.9 Renewal Price section
- 10.10 Bid Summary Form

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
11.0 PRICING SHEETS

CAMPUS SATELLITE COOLING TOWER WATER SYSTEMS

Based On

Make-Up (Gallons): 9,500,000 Total

Cycles of Concentration: 3.0

Total Volume (Gallons): 12,500 Total

<i>INHIBITOR</i>			
OPTIONS	BULK	DRUM	
Generic Type			
Vendor Name/Number			
Desired PPM Product Dosage			
% Total Active Ingredients			
% Phosphonate			
% Azole			
Form (Wet or Dry)			
Container Size/Weight			
Unit Cost			
\$\$/1,000 Gallons of Make-Up			
Exact PPM Used to Calculate Costs			

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

CAMPUS SATELLITE COOLING TOWER WATER SYSTEMS
(cont.)

BIOCIDE #1 – Liquid Bromine			
OPTIONS	BULK	DRUM	Alternate
Generic Type			
Vendor Name/Number			
Desired PPM Residual			
% Active Ingredients			
Form (Wet or Dry)			
Container Size/Weight			
Unit Cost			
\$\$/1,000 Gallons of Volume			

BIOCIDE #2 - Glutaraldehyde			
OPTIONS	BULK	DRUM	Alternate
Generic Type			
Vendor Name/Number			
Desired PPM Residual			
% Active Ingredients			
Form (Wet or Dry)			
Container Size/Weight			
Unit Cost			
\$\$/1,000 Gallons of Volume			

Note:

***This is an alternating biocide program.
Two biocides will be employed.***

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

CHILLED WATER SYSTEMS

Based On

Total Volume (Gallons): 4,000 Total

Average Make-Up per Year: 2,000 (50%)

INHIBITOR			
OPTIONS	1		
Generic Type			
Vendor Name/Number			
Desired PPM Product Dosage			
% Total Active Ingredients			
% Nitrite			
% Azole			
Form (Wet or Dry)			
Container Size/Weight			
Unit Cost			
\$\$/1,000 Gallons of Make-Up			
Exact PPM Used to Calculate Costs			

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

CHILLED WATER SYSTEMS
(cont.)

BIOCIDE #1 - Glutaraldehyde			
OPTIONS	1	Alternate	
Generic Type			
Vendor Name/Number			
Desired PPM Residual			
% Active Ingredients			
Form (Wet or Dry)			
Container Size/Weight			
Unit Cost			
\$\$/1,000 Gallons of Volume			
Exact PPM Used to Calculate Costs			

BIOCIDE #2 - Isothiazoline			
OPTIONS	2	Alternate	
Generic Type			
Vendor Name/Number			
Desired PPM Residual			
% Active Ingredients			
Form (Wet or Dry)			
Container Size/Weight			
Unit Cost			
\$\$/1,000 Gallons of Volume			
Exact PPM Used to Calculate Costs			

Note:

***This is an alternating biocide program.
Two biocides will be employed.***

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
12.0 MONITORING SHEETS

TOWER WATER SYSTEMS

Monitoring Tests – Use generic tests only.

Options	1	Alternate	
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

CHILLED WATER SYSTEMS

Monitoring Tests – Use generic tests only.

Options	1	Alternate	
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			
Test For			
Method			
Control Range			
Test Frequency			

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS
13.0 BID SUMMARY FORM

Annual Price

- | | | |
|---|-------|----------|
| 1. Price for All Chemicals and Services | _____ | \$ _____ |
| 2. Price for All Equipment | _____ | \$ _____ |
| 3. Renewal Escalator for Years 2-5 | _____ | % _____ |
| 4. Price for Additional Services | _____ | \$ _____ |

EQUIPMENT AMORTIZATION SCHEDULE:

- | | | |
|---------------------|----------|----------|
| 1. Price for Year 1 | \$ _____ | \$ _____ |
| 2. Price for Year 2 | \$ _____ | \$ _____ |
| 3. Price for Year 3 | \$ _____ | \$ _____ |

EQUIPMENT BUY-OUT SCHEDULE:

- | | | |
|---------------------------|----------|----------|
| 1. Price at End of Year 1 | \$ _____ | \$ _____ |
| 2. Price at End of Year 2 | \$ _____ | \$ _____ |

I certify the above to be correct as an official representative and officer of the company.

Company Name

Name and Title

Signature and Date

ATTACHMENT A
THE UNIVERSITY OF ARIZONA
WATER TREATMENT BID SPECIFICATIONS

14.0 METHOD OF PAYMENT AND DISCOUNT FOR EARLY PAYMENT

UA's preferred method of payment is via credit card. UA would issue a purchase order; upon receipt of goods or services, pay subsequent invoices by credit card.

Will you accept payment via credit card? _____ Yes _____ No

Do you offer an early payment discount? _____ Yes _____ No

If yes, what is your offer? _____ % if paid within _____ days
after UA receives a proper, accurate, and
uncontested invoice for payment

If payment via credit card is accepted and an
early payment discount is offered, will UA
receive the discount if paying by credit card? _____ Yes _____ No