

REQUEST FOR PROPOSAL

Deep Well Pump

RFP Posted:	October 10, 2017
On Site Pre-Proposal Visit:	October 31, 2017 8:00 A.M. (RSVP by October 12, 2017)
Questions Posted	November 7, 2017 2:00 P.M.
Questions & Answers Posted:	November 10, 2017 2:00 P.M.
Proposal Due Date:	November 16, 2017 2:00 P.M.

The South Dakota Science and Technology Authority (SDSTA) is seeking proposals for the supply and installation of a deep well dewatering system that is located in the underground portion of the Sanford Underground Research Facility (SURF), located in Lead South Dakota. Documents included in this Request for Proposal include:

- A. Request for Proposal (RFP)
- B. Draft contract (2017-37)
- C. Division 1 Specifications
- D. Appendix B – Equipment List and Pictures
- E. Bid Security Form (to be submitted with proposal)
- F. Payment and Performance Bond Form (informational - to be submitted with contract)
- G. Construction Quality Management Program link:
<https://www.sanfordlab.org/contractors-and-vendors/vendor-registration-guidelines>

The deep well pumping system is the only method used to keep the underground pool of water at a safe level. The major items of this project include.

1. Procurement of a new complete pump, motor, and seal assembly, plus one complete additional as a spare.
2. Procurement of a new 8” pipe string, pressure sensor, and electrical cable.
3. Complete installation prior to the September 20, 2018 deadline.

1.0 Background

The SDSTA is a quasi-governmental agency established by the state of South Dakota to operate and manage the SURF at the former Homestake Gold mine in Lead South Dakota. The Homestake mine was closed in 2002. In 2006 the mine was donated to SDATA for developing and underground science laboratory. Since then, SURF has been rehabilitated and developed to support a variety of underground laboratories and scientific experiments, including physics, biology, geology, and others.

During the last days of the Homestake Mine operation, Barrick Mining Co. turned off the pump systems located throughout the full expanse of the mine in 2002. The SDSTA took control and pumping resumed in 2009. During those seven years, the water levels rose from the sump below the 8000 level up to the 4500 level in the underground. By late 2011, the water level had been pumped down to its current level, and is allowed to fluctuate between the 5650 level down to the 5900 level. The deepest level of the underground is the 8000 level, so there remains a significant “pool” of water in the old underground workings. Estimates of 500 to 600 gmp infiltration water occurs continually along with an additional amount of water originating from rain runoff in the open cut part of the facility. These inflows must be removed to keep the pool water level stable.

At the end of December 2017, the SDSTA is going to own leased equipment related to pumping water from the pool in the underground portion of the laboratory. This is due to an expiration of a lease with the leased equipment reverting to SDSTA ownership. The equipment list can be found in Appendix A. Continued pumping to keep the water at a manageable and safe operating level remains as a high priority for the SDSTA.

2.0 Project Information/Specifications/Requirements:

The following sections provide key information on the main aspects of this project. More detailed information can be found in the specification sections, and will be found in Appendix A. Pictures showing past installations are shown in Appendix B.

2.1 Procurement and Installation of a new pump

This request is to provide a firm fixed-price proposal for the supply and installation of a submersible pump system. This project would require the contractor to immediately purchase two new pumps, motors, and seals, plus one set of electrical cable, pipe, and pressure sensor. One set of this new equipment would need to be installed after January 2018 and prior to September 20, 2018, or immediately if the existing pump experienced a failure. The extra new pump, motor, and seal assembly is to be delivered to the SDSTA directly after the initial pump installation. While waiting to be installed, the Contractor shall maintain both sets of equipment as per manufacturer’s full recommendations. Existing electrical supply, switchgear, transformers, and VFD drive components will be expected to be reused. Please reference Appendix A. The contractor is responsible for all electrical disconnections and reconnections to the electrical supply.

2.2 In the Shaft Derrick System

When the current lease expires, equipment that was originally installed to assist with the pump and column placement reverts to the SDSTA. An “in the shaft derrick” system was built to install and remove the pump and pipe string. The deep well pump and column runs down the #6 Winze. At the top of the “derrick”, is a winch and hydraulic drive system and that is located on the 4550 level. The well head is located on the 4850 level and is shown in photo #5, and the discharge nozzle is located at the 5000 level. The pump/pipe string is removed from the 4850L while utilizing the remote-controlled winch. A length of pipe is shown in photo #6 being hoisted up to be threaded into the pipe string. Photo #3 shows the top end of the derrick and contains the winch. Photo #4 shows the hydraulic power supply. The photographs are included in Appendix #B.

The Contractor shall assume all risk associated with utilizing the rigging and lifting equipment in the Winze, and will be responsible to perform routine inspections, perform maintenance and repairs to keep the devices in safe operating condition for the duration of the pump and pipe installation. If the Contractor does not have personnel that are trained in inspections of the hydraulics system, the wire ropes, synthetic slings, and lifting attachments, a third party shall be hired by the Contractor. Documentation demonstrating the inspector's training and experience shall be provided. The new pipe delivered to the SDSTA shall be transferred to special underground transport cars (Zimmerman cars) by the contractor personnel and assisted by SDSTA personnel. These shall be transported down the shaft by the SDSTA crew members and delivered to the 4850L. There, SDSTA shall transport the car to the work site where contractor personnel shall unload the pipe. Photo #2 from Appendix #B shows the Zimmerman car being hoisted into the Yates shaft with a load of 8" pipe aboard.

The contractor shall advise the SDSTA when it nears the end of the job and setting of the well head on its permanent landing is close at hand. An SDSTA crew will then mobilize to the 5000L to align the nozzle to its proper position, the pipe string shall be landed and the SDSTA crew shall couple the existing discharge pipe to the nozzle. Then, final electrical connections can be installed.

2.3 Operating History

Operating history has shown that there exists an anaerobic system in the underground pool of water that encourages the growth of iron eating bacteria. The bacteria have contributed to stress corrosion cracking in steel containing alloys. The bacteria rob the iron from the crystalline structure leaving behind a weak matrix that is prone to cracks that open fresh iron to be decayed by the bacteria. Although fresh water continually flows into the upper sections of the winze, the lab is expecting the bacteria to always be a major factor. A bronze fitted pump that does not contain iron is required, however other non-iron containing alloys can be considered.

2.4 Capacity and Head Requirements

Flows from the deep well pump must match an existing split case dewatering pump maintained by the SDSTA. These can range from 1550 gpm to as low as 1300 gpm, and is fully dependent upon wear within the split case pump. A variable speed drive has worked adequately with the existing pump and motor combination. Typical run times would be 12 hours per day for weekdays and beginning Friday evening, could run continuously until Monday morning, if the SDSTA is trying to reduce the pool water level. To maintain the pool water level, the pump times might run 10 to 12 hours per day 7 days per week.

2.5 Notification of Equipment Failure

If the pump or motor equipment were to fail prior to the installation of the first pump, the Contractor will be notified by the SDSTA that the equipment is failing or has failed and the Contractor will be given no later than 5 weeks after the notification of equipment troubles to mobilize at the SDSTA site.

The SDSTA recognizes that there is a period of time where the pump is waiting for delivery. During that period, the contractor may not be able to meet the notification time period outlined in the preceding paragraph. In this case, the contractor shall meet with the pump supplier to obtain a firm delivery schedule and determine if the equipment can be expedited and at what cost. The SDSTA shall provide guidance if this were to occur.

2.6 Access For Work

All work is located in the underground portion of the Sanford Lab. Transportation down the Yates shaft and to the work site is provided by the Sanford Lab crews. When the Contractor is on site for maintenance or pump string removal, they will have at least one SDSTA person acting as a guide. A second guide will be supplied when access to the 4550L is necessary.

3.0 Proposal Requirements

Your proposal should be provided in digital format as a pdf file with standard letter size format. Please note there is a 30-page limit for your response to proposal requirements. Proposals must contain the following:

3.1 Contact information, including an email address, for the Contractor's designated contact person who can receive and distribute RFP information.

3.2 Contractor description and evidence of qualifications to address the scope described in this document. Provide three examples of projects performed that demonstrate the qualifications and competence for each of the disciplines/requested areas of expertise. Provide contact information for three client references.

3.3 Resumes for all key project staff to include:

- Experience with similar relevant projects.
- Qualifications, including training and certification.

3.4 Description of your management and communication process for working with SDSTA on this project. Provide a description of your safety program and quality control (QC) program (safety and QC manuals will not be included in the 30-page limit). Explain how your safety and QC programs will be implemented for this project.

3.5 Safety records for the past three years (incident/injury records, OSHA 300 logs and EMR data)

3.6 Exceptions to the draft contract or other RFP materials. Disclose any existing relationships and previous work with SDSTA/Sanford Lab.

3.7 Description of your company's approach to cost and schedule control. What tools do you use, and how do you communicate the information to the project team and client?

3.8 Work plan and schedule for completing all scope items in 2.1 and 2.2, including expected durations for tasks and relevant details that define your work process.

3.9 Provide a detailed fee proposal for services in 2.1 and 2.2 broken down by task as outlined in the work plan and schedule.

3.10 Bid security for the scope in 2.1 and 2.2 must accompany the proposal if the bid exceeds \$50,000 (as described in 4.8 below). Bid bond documents will not count against the 30-

page proposal limit.

4.0 General Requirements

4.1 The selected Contractor will be required to abide by all applicable federal, state and local laws and ordinances, as amended for time to time. Including, but not limited to, the applicable local laws and ordinances.

4.2 The SDSTA may at its sole and absolute discretion reject any and all, or parts of any and all submissions; re-advertise this solicitation; postpone or cancel at any time this solicitation process; or waive any irregularities in this solicitation or in the submittals received as a result of this solicitation.

4.3 All expenses involved with the preparation and submission of materials to the SDSTA, or any work performed in connection therewith, shall be borne by the Offeror(s). No payment will be made for any responses received, nor any other effort required of or made by the Offeror(s) prior to commencement of work as defined by a contract approved by SDSTA.

4.4 The materials will be evaluated by the Selection Committee appointed by the SDSTA. The Selection Committee will recommend and Offeror by consensus based on the Selection Criteria described in this RFP.

4.5 The SDSTA reserves the right to enter contract negotiations with the selected Offeror. If the SDSTA and the Offeror do not agree to terms of a Contract, the SDSTA may elect to terminate negotiations and begin negotiating with the second-ranked Offeror and so forth. This process will continue until a contract has been executed, or, all submittals have been rejected. No Offeror shall have any claims and/or rights against the SDSTA arising from such negotiation and/or the qualification process.

4.6 The SDSTA reserves the right to contract for all or part of the work program described in the RFP.

4.7 Offeror(s) submitting materials should not submit any information in response to this solicitation which the Offeror(s) considers to be a trade secret or confidential. The submission of any information in connection with this solicitation shall be deemed conclusively to be a waiver of any trade secret or other protection, which would otherwise be available to the Offeror. In the event that the Offeror submits information in violation for this restriction, either inadvertently or intentionally and clearly identifies that information in the submission as protected or confidential, the SDSTA will endeavor to redact and return that information to the Offeror. The Selection Committee will then evaluate the balance of the submission. The redaction or return of information pursuant to this clause may render a submission nonresponsive.

4.8 Bid security: Bids over \$50,000 must be accompanied by a bid security as follows:

- Bid Bond: A bid bond of ten percent (10%) of the total amount of the bid including all add alternatives, shall be furnished by the Contractor. A form of Bid Bond is included with the proposal documents.
- Certified Check or Cashier's Check: In lieu of a Bid Bond, a certified check or

cashier's check for five percent (5%) of the amount of the bid, including all add alternates, may be furnished. Such check shall be certified or issued by either a state or national bank and payable to the South Dakota Science and Technology Authority.

- **Payment and Performance Bond:** Upon award of contract, Contractor shall provide a Payment and Performance Bond produced by a South Dakota licensed insurance producer (agent) and issued by a South Dakota licensed surety in an amount not less than the amount of the awarded contract. The Payment and Performance Bond surety or sureties shall meet all requirements of South Dakota law. This bond is to secure the faithful performance of the contract and the payment of those to whom the offeror may become legally indebted for labor, materials, tools, equipment, or services of any kind used or employed by the offeror in performing the work. The surety bond shall be on a form similar to the form of Payment and Performance Bond in the time state shall be cause for consideration by the Owner of awarding the contract to another responsible and responsive offeror, and retention of the bid deposit.
- **Power of Attorney:** Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

- 4.9** **Liquidated Damages:** If offeror fails to substantially the installation within a 10-week time frame after a notice has been given that a pump has failed, Offeror shall be liable for liquidated damages in the amount of \$50 per \$100,000 of total contract value per day, as provided in Section VI (E) of the Draft contract.

5.0 Selection Criteria

The SDSTA will review all submitted proposals for adherence to this request's requirements and capabilities to identify the proposal providing the best value based on the following criteria:

1. Experience with similar projects
2. Qualifications of project personnel
3. Project understanding and responsiveness
4. ESH Program and Injury Experiences
5. Cost reasonableness

6.0 Selection Process

1. SDSTA will form a selection panel that will review the responses received to this RFP.
2. SDSTA will make a selection based on the submittals or, at their discretion, may ask a short list of offerors to interview prior to finalizing the selection.
3. Offerors will be notified of the selection decision by email within three weeks of the receipt of proposals.
4. Selection decisions are final. There will be no process for appeal or re-evaluation.
5. SDSTA retains the right to request scope adjustments and substitutions of individual team members and engineering disciplines during negotiations.

7.0 Submission Requirements

All offerors are required to attend an onsite pre-proposal conference October 31st, from 8:00 a.m.-12:30 p.m. MT at the Sanford Lab, 630 East Summit Street, Lead South Dakota. Pre-registration is required, email mbaumann@sanfordlab.org by close of business October 12th to receive instructions and directions. Only companies represented at the pre-proposal conference will be eligible to submit proposals. Contractors' subcontractors are encouraged, but not required, to attend.

Questions are to be submitted electronically to mbaumann@sanfordlab.org by 2:00 P.M. November 7th. All questions along with their answers will be emailed to all prospective offerors and posted to the sanfordlab.org website no later than November 10, 2017.

Offerors shall submit an electronic copy (.pdf format) of the proposal no later than 2:00 p.m. November 16, 2017, to: mbaumann@sanfordlab.org. Late submissions will not be accepted.

The proposal period may be extended at the discretion of SDSTA based on the quantity and/or complexity of questions. Any notices of extension of time to respond will be distributed to all prospective offeror by SDSTA.

All communications regarding this procurement between RFP release and contract award shall be directed by email to mbaumann@sanfordlab.org. Communications with other SDSTA staff regarding this procurement in advance of the contract award are not allowed.

APPENDIX A

The following list is equipment that reverts to SDSTA ownership following the expiration of the current lease in December 2017.

2 Each, Pump support structures

2 Each, Discharge tees

2 Each, Landing plates

2 Each, 8" flow meter

Column Pipe 8 5/8" OD, API J55, 8RD thread

Power Cable, 2/0 Armor Jacketed Submersible

1 Pump 3600 rpm

2 Each, Protectors

1 Each, submersible motor 525 Hp, 4160V, 3600 rpm

1 Each, winch support structure, includes main winch plus auxiliary

1 Each, 50 ton blocks

3 Each, variable frequency drive 480V

1 Each, lighting skid with transformer

- 1 Each, transformer, 1500kVA, 12,5kV primary, 480 secondary
- 1 Each, transformer, 1500kVA, 480 primary, 4160 secondary
- 2 Each, spooler carts with controls and hydraulic motor
- 1 Each, intercom system
- 1 Each, Hydraulic power unit for winches
- 2 Each, CCTV cameras and monitor

Rigging Includes:

- 1 Each, sling, 50 ton polyester x 120' long
- 1 Each, sling, 30 ton polyester 40' long
- 4 Each, 55 ton shackles
- 1 Each, capstan winch assembly with hydraulic power supply

**UFGS SPECIFICATON SECTION 33 11 13
WATER SUPPLY WELLS**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

- | | |
|-----------|---|
| AWWA C200 | (2012) Steel Water Pipe – 6 Inches and Larger |
| AWWA C206 | (2017) Field Welding of Steel Water Pipe |

ASTM INTERNATIONAL (ASTM)

- | | |
|----------|--|
| ASTM A53 | (2012) Standard Specifications for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless |
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1.3 ADMINISTRATIVE REQUIREMENTS

- 1.3.1 Notification
Notify the Project Manager 10 days prior to arriving on site.
- 1.3.2 Delivery, Storage, and Handling
Store and maintain well materials in a clean, uncontaminated condition throughout the course of the project.

1.3.3 Project and Site Conditions

Access to and from the work site will be provided by the SDSTA. It will be expected that the Contractor's employees shall board the cage to ride underground and to return to the surface at specific predetermined times. Typical times have been: Board cage at 6:30 am to go underground, and board cage at 5:45 pm to ride to surface.

1.3.4 Water Well Design Requirements

1.3.4.1 Submit a plan as specified herein describing the well construction. The plan must include, but not limited to, a discussion of the following:

- a. Description of quality control procedures to be used for placement of piping, pump, seals, and motor equipment.
- b. List of personnel assignments for this project, and personnel qualifications.
- c. Description of well capacity testing techniques.
- d. Description of permanent pump to be installed, listing head, materials of construction, efficiency, amount of submergence to meet the pump's NPSHr requirement, brake Hp, and supplied motor Hp.
- e. Description of the pump operating tests to be employed at the site.

1.4 SUBMITTALS

SDSTA approval is required for submittals for the following materials.

Well casing materials and couplings
Pump
Seal Assembly
Motor
Electrical cabling
Pressure switch and wiring, acting as a level indicator

PART 2 PRODUCTS

2.1 CASING

All casing and other well materials must be of compatible materials to prevent galvanic reaction between components of the completed well. Include catalog data including any information, supplied by the manufacturers or suppliers of the listed items.

2.1.1 Steel Casing and Couplings

Steel casing must be new, 8", standard weight, carbon steel conforming to ASTM A-53 Gr B. Joints must be threaded and coupled with 8 RD threads.

2.1.2 Welding on the steel casing to build nozzles or a new well head shall conform to AWWA-C206.

2.2 PUMP AND MOTOR

2.2.1 Electrical Cabling

Power supply cabling to the motor must be armor jacketed, submersible, and be of sufficient size to meet the voltage loss requirements of the electrical code. Other than the connection at the motor, no mid length splices are allowed.

- 2.2.2 The permanent pump must be an approved submersible with a capacity sufficient to deliver 1550 gpm with the pool water level at its minimum of 900 feet below the discharge nozzle. The motor must be of sufficient size to operate the pump under the maximum operating conditions without exceeding its rating. Operate the motor on 4160V, through a variable frequency drive to adjust speed. The VFD's are previously installed. All transformers and connecting wiring have also been installed and have been operating for several years.

PART 3 INSTALLATION OF PERMANENT PUMP

- 3.1 The pump shall be positioned 1,500 feet below the 4850L.

- 3.2 After completion of the work, remove tools, appliances, surplus materials, rubbish, and debris incidental to work.

3.3 Documentation and Quality Control Reports

Establish and maintain documentation and quality control reports for well installation and testing to record the desired information and to assure compliance with contract requirements, including but not limited to, the following:

- a. Name of project and site.
- b. Date that the well installation was completed
- c. Reference data listing lengths of pipe installed and quantity.
- d. Seal installation and servicing details
- e. Motor servicing and installation details
- f. Electrical cable installation and connection details
- g. Electrical motor and cable testing details

