



REQUEST FOR PROPOSALS: RFP# 2021-15

TITLE: HS Pump Replacement Wiggins Mill WTP

ISSUING AGENCY: CITY OF WILSON (Attn: Purchasing)
P.O. BOX 10
WILSON, NC 27894-0010

ISSUE DATE: December 10, 2021

OPENING DATE AND LOCATION: December 22, @ 2:00pm
City of Wilson Purchasing Department
1800 Herring Ave. E
Wilson, NC. 27893

SCOPE: The City of Wilson will open publicly, sealed proposals from qualified bidders to provide a replacement High Service Pump at the Wiggins Mill WTP. Please see the replacement scope of work below for further information.

Instructions to Bidders: Indicate FIRM NAME, TITLE (above), and RFP number (above) on the front of each sealed proposal envelope or package, along with the date for receipt of proposals specified below. Attach all requested documents in RFP behind Execution of Bid page.

Sealed proposals, subject to the entirety of this document made a part hereof will be received until 2:00 p.m. Wednesday December 22, 2021 in the office of the Purchasing Manager, Operations Center, Purchasing Department / Warehouse, 1800 Herring Ave., Wilson, NC.

SEND ALL PROPOSALS DIRECTLY TO THE ISSUING AGENCY ADDRESS SHOWN ABOVE.

Direct all technical inquiries concerning this project to: David Staab
dstaab@wilsonnc.org

The envelopes containing the proposals should be sealed and clearly identified on the front as to the contents. The City will not accept bids by fax or by electronic email.

Bidders may hand deliver RFPs to the Purchasing Department, or if preferred, UPS and FedEx make daily deliveries to our office. If using any other delivery method allow ample time for delivery as late bids will not be accepted.

TERMS AND CONDITIONS

- 1) **DEFAULT AND PERFORMANCE BOND**: In case of default by the contractor, the City of Wilson may procure the articles or services from other sources and hold the contractor responsible for any excess cost occasioned thereby. The City of Wilson reserves the right to require performance bond or other acceptable alternative guarantees from successful bidder without expense to the City of Wilson.
- 2) **GOVERNMENTAL RESTRICTIONS**: In the event any Governmental restrictions are imposed which necessitate alternation of the material, quality, workmanship or performance of the items prior to delivery, it shall be the responsibility of the contractor to notify, in writing, the issuing purchasing office at once, indicating the specific regulation, which required such alternations. The City of Wilson reserves the right to accept any such alternations, including any price adjustments occasioned thereby, or to cancel the contract.
- 3) **AVAILABILITY OF FUNDS**: Any and all payments to the contractor are dependent upon and subject to the availability of funds to the City for the purpose set forth in this agreement. This agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.
- 4) **TAXES**: Any applicable taxes shall be invoiced as a separate item. The City is not exempt from local or North Carolina sales tax.
- 5) **SITUS**: The place of this contract, its situs and forum, shall be North Carolina, where all matters, whether sounding in contract or tort, relating to its validity, construction, interpretation and enforcement shall be determined.
- 6) **GOVERNING LAWS**: This contract is made under and shall be governed and construed in accordance with the laws of the State of North Carolina.
- 7) **INSPECTION AT CONTRACTOR'S SITE**: The City of Wilson reserves the right to inspect, at a reasonable time, the equipment/item, plant or other facilities of a prospective contractor prior to contract award, and during the contract term as necessary for the City of Wilson's determination that such equipment/item, plant or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the contract. Contractor will cover the cost of a visit and a witness test, if necessary, of a City representative at the contractor's manufacturing facility.
- 8) **PAYMENT TERMS**: Payment terms are Net 30 after receipt of correct invoice or acceptance of goods, whichever is later.
- 9) **AFFIRMATIVE ACTIVE**: The contractor will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin or physical handicap.
- 10) **CONDITION AND PACKAGING**: Unless otherwise provided by special terms and conditions or specifications, it is understood and agreed that any item offered or shipped has

not been sold or used for any purpose and shall be in first class condition. All containers/packaging shall be suitable for handling, storage or shipment.

11) STANDARDS: All manufactured items and/or fabricated assemblies subject to operation under pressure, operation by connection to an electric source, or operation involving a connection to a manufactured natural, or LP gas source shall be constructed and approved in a manner acceptable to the appropriate state inspector which customarily requires the label or reexamination listing or identification marking of the appropriated safety standard organization; such as the American Society of Mechanical Engineers for pressure vessels; the Underwriter's Laboratories and / or National Electrical Manufacturers' Association of electrically operated assemblies; or the American Gas Association for gas operated assemblies, where such approvals of listings have been established for the type of device offered and furnished. Further, all items furnished shall meet all requirements of the Occupational Safety and Health Act (OSHA), and state and federal requirements relating to clean air, and water pollution.

12) PATENT: The contractor shall hold and save the City of Wilson, its officers, agents and employees, harmless from liability of any kind, including costs and expenses, on account of any copyrighted material, patented or unpatented invention, articles, device or appliance manufactured or used in the performance of this contract, including used by the government.

13) ADVERTISING: Contractor agrees not to use the existence of this contract, the name of the City of Wilson as part of any commercial advertisement.

14) ACCESS TO PERSONS AND RECORDS: An independent auditor shall have access to persons and records as a result of all contracts or grants entered into by the City of Wilson in accordance with General Statute 147-64.7.

15) ASSIGNMENT: No assignment of the contractor's obligations or the contractor's right to receive payment hereunder shall be permitted. However, upon written request approved by the issuing purchasing authority and solely as a convenience to the contractor, the City of Wilson may:

- a. Forward the contractor's payment check directly to any person or entity designated by the contractor, and
- b. Include any person or entity designated by contractor as a joint payee on the contractor's payment check. In no event shall such approval and action obligate the City of Wilson to anyone other than the contractor and the contractor shall remain responsible for fulfillment of all contract obligations.

16) INSURANCE:

a.) COVERAGE – During the term of the contract, the contractor at its sole cost and expense shall provide commercial benefits of such type and with such terms and limits as may be reasonably associated with the contract. As a minimum, the contractor shall provide and maintain the following coverage and limits:

b.) Worker's Compensation – The contractor shall provide and maintain Worker's Compensation Insurance, as required by the laws of North Carolina, as well as

employer's liability coverage with minimum limits of \$150,000.00, covering all contractors' employees who are engaged in any work under the contract. If any work is sublet, the contractor shall require the subcontractor to provide the same coverage for any of his employees engaged in any work under the contract.

c.) Commercial General Liability – General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of \$500,000.00 Combined Single Limit. (Defense cost shall be in excess of the limit of the liability).

d.) Automobile – Automobile Liability Insurance, to include liability coverage, covering all owned, hired, and non-owned vehicles, used in connection with the contract. The minimum combined single limit shall be \$150,000.00 uninsured/under insured motorist; and \$1,000.00 medical payment.

e.) REQUIREMENTS: Providing and maintaining adequate benefits coverage is a material obligation of the contractor and is of the essence of this contract. All such benefits shall meet all laws of the State of North Carolina. Such benefits coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Benefits to do business in North Carolina. The contractor shall at all times comply with terms of such benefits policies, and all requirements of the insurer under any such benefits policy, except as they may conflict with existing North Carolina laws or this contract. The limits of coverage under each benefits policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

17) CANCELLATION: All contract obligations shall prevail for at least 180 days after the effective date of the contract. After that period, in addition to the provisions of the paragraph entitled Price Adjustments, for the protection of both parties, this contract may be canceled in whole or in part by either party giving 30 days' prior notice in writing to the other party. Such notice of cancellation, as required herein, shall be transmitted via U.S. Mail, Certified and Return Receipt Requested. The 30 days' notice for cancellation shall begin on the day the return receipt is signed and dated.

18) QUANTITIES: The award of a contract neither implies nor guarantees any minimum or maximum purchases thereunder unless otherwise specified and agreed to mutually by both parties.

19) PRICE ADJUSTMENTS: Any price changes, downward or upward, which might be permitted during the contract period, must be general, either by reason of market change or on the part of the contractor to other customers.

- a. Notification: Any notification must be given to the Purchasing Department, in writing, concerning any proposed price adjustments. Such notification shall be accompanied by copy of manufacture's official notice or other acceptable evidence that the change is general in nature.
- b. Decreases: The City of Wilson shall receive full proportionate benefit immediately at any time during the contract period.
- c. Increases: All prices shall be firm against increase for 180 days from the effective date of the contract. After this period, a request for increase may be submitted with the City of Wilson shall occur not later than 15 days after the receipt by the City of

Wilson of a properly documented request for price increase. Any increases accepted shall become effective not later than 30 days after the expiration of the original 15 days reserved to evaluate the request for increase.

- d. Invoices: It is understood and agreed that orders will be shipped at the established contract prices in effect on dates orders are placed. Invoicing at variance with this provision will subject the contract to cancellation. Applicable North Carolina sales tax shall be invoiced as a separate item.

20) E-VERIFY: Contractor understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work of authorization of newly hired employees pursuant to federal law in accordance with NCGS 64-25 et seq. Contractor is aware of and in compliance with the requirements of E-Verify and Article 2 of Chapter 64 of the North Carolina General Statutes. To the best of Contractor's knowledge, any subcontractors employed by it as a part of this contract are in compliance with the requirements of E-Verify and Article 2 of Chapter 64 of the North Carolina General Statute.

21) IRAN DIVESTMENT ACT CERTIFICATION: Contractor certifies that, as of the date listed (2017), it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. Chapter 147 Article 6E. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. Chapter 147 Article 6E, Contractor shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List.

22) EVALUATION OF BID: All qualified proposals/bids will be evaluated and award made to the firm(s) whose proposal/bid is deemed to be in the best interest of the City of Wilson, all factors considered. The City of Wilson reserves the right to reject any and all offers if determined in its best interest.

23) BID/PROPOSAL PUBLIC RECORD: All proposals/bids received become the property of the City of Wilson and information included therein or attached thereto shall become public record upon their delivery to the city. Submission of a bid/proposal in response to a request constitutes acceptance of all terms and conditions and requirements contained in the request.

24) RECOMMENDATION OF AWARD: The recommendation of award by city council represents a preliminary determination and not a legally binding acceptance of the bid or proposal until the city has executed a written agreement in a form agreeable by an authorized city official.

25) VENDOR REGISTRATION: All vendors (new, current or potential) must register with our Vendor Registration system through Vendor Registry at the following link.
<https://vrapp.vendorregistry.com/Vendor/Register/Index/city-of-wilson-nc-vendor-registration>

26) IDEMNIFICATION: To the fullest extent permitted by law, (vendor) shall indemnify, defend, and hold harmless the City and the City' officials, employees, and agents from and against any claims, losses, damages, fines, penalties, royalties, obligations, liabilities, and expenses, including but not limited to reasonable attorneys' fees to the extent they arise or are alleged.

Wiggins Mill WTP – HSP-WH-4 – Replacement Scope of Work

Project Overview:

High Service Pump #4 at the Wiggins Mill WTP is currently removed from service and requires replacement. The existing vertical motor will be reused and is currently stored onsite. Below is the minimum scope of work for the replacement of High Service Pump #4 for qualified bidders:

Licenses:

- To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit written evidence of the following with the bid:
 - Bidder's General Contractor's License – At a minimum, the Bidder shall be a licensed Public Utility Contractor in North Carolina.
 - Bidder's Electrical Contractor's License – The Bidder shall hold an unlimited electrical license in North Carolina for any medium voltage work associated with project. The successful bidder will be required to rewire the existing medium voltage motor after pump installation.

Qualifications & References:

- To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit written evidence of the following with the bid:
 - Bidder's qualifications demonstrating at least (20) years' experience in municipal pump replacements for pumps this size and larger.
 - Bidder shall provide a minimum (5) references for pump replacement of this size or larger.
 - References must be municipalities in NC.

Pump Replacement:

- Furnish and install one (1) vertical turbine short-set pump to replace High Service Pump #4 in accordance with the following requirements:
 - Submittals. Submit product data and shop drawings describing the equipment in sufficient detail, including materials of construction, to indicate full conformance with the requirements herein.
 - Furnish a dynamic vibration analysis for the replacement pump in accordance with the following requirements:
 - Submit Critical speed analyses report to the City of Wilson. Prior to manufacture, a submittal must be forwarded to the City of Wilson indicating that the required vibration analyses outlined herein have been performed and that the specified limitations will be met. For the dynamic vibration analysis described, minimum and maximum operating speeds will be in accordance with the operating speeds required to satisfy the conditions of operation listed in the Pump Replacement requirements.
 - Structural dynamic analysis of the combined pump/motor system including the nearby foundation and the piping out to the first pipe restraint or expansion joint. Analysis shall not simply assume the foundation is rigid rather it shall incorporate existing foundation design at the facility. The structural dynamic analysis shall predict that no first or second bending mode frequencies will exist within a pump speed range from 15 percent below minimum operating speed of 65 percent to 20 percent above maximum operating speed.
 - A lateral rotordynamic analysis of the pump rotating system (i.e., motor rotor, line shafting, couplings, bowl shafting and impellers, etc.) shall identify and predict that the first lateral critical speed shall have a separation margin of at least 15 percent above the

- maximum pump speed or 15 percent below the minimum pump speed. If a design modification (i.e., such as changing the bearing span or shaft diameter) cannot resolve a separation margin deficiency or is not practical, a forced damped response analysis shall be performed to demonstrate that the pump will function properly over the speed range.
 - A torsional rotordynamic analysis of the complete rotating system (pump, motor, intermediate shafting, and coupling) shall identify and predict that no torsional natural frequencies occur within a separation margin extending from 15 percent below to 15 percent above the specified pump operating speed range. Additionally, no natural frequencies shall be +/- 10% of 2x times running speed, line frequency, 2x line frequency, vane pass frequency, and VFD control frequencies (if applicable). If a design modification (i.e., such as a shaft diameter change or different coupling arrangement) cannot resolve a separation margin deficiency or is not practical, a forced damped response analysis shall be performed to show that infinite life will be achieved with a safety factor of at least two.
 - Campbell diagrams shall be submitted, documenting the structural lateral, rotating component lateral, and torsional analysis results, graphically demonstrating the separation margins specified above.
 - Maximum vibration velocity in inches per second RMS, measured in the field, shall conform to the requirements of ANSI/HI 9.6.4. In addition, for operating motor speeds less than or equal to 600 rpm, field vibration displacement in mils peak-to-peak shall conform to the requirements of ANSI/HI 9.6.4.
- **Quality Assurance.** Manufacture pump in accordance with the Hydraulic Institute Standards. The pump manufacturer or its representative shall have an authorized warranty center within a 150 mile radius of the job site, fully staffed with factory trained mechanics, and equipped with a stock of strategic spare parts for the model of pump furnished under this contract. The service facility and strategic spare parts shall be established prior to delivery of equipment.
 - The service facility should have adequate equipment, inventory, and personnel to perform repairs and rebuilds on each model of pump furnished under this contract.
 - The service facility shall be capable of providing no more than 48 hours turnaround of repairs from the time of notification of needed repairs to pumps being reinstalled and placed back in operation due to mechanical failure of shaft and bearings.
 - The service facility shall have complete push-pull equipment and crews which can be onsite within 24 hours of notification.
 - Service facilities without in-house push-pull capabilities will not be acceptable.
- **System Description.** The replacement vertical turbine pump will pump finished water from the wetwell to the distribution system.
 - Pumping Unit.
 - Supply by one Manufacturer.
 - Manufacturers
 - Underwood Pump/Peerless
 - Flowserve
 - Fairbanks Nijhuis
 - Or Pre-Approved Equal, submitted 15 days prior to the bid date and approved by Addendum.

- Complete system including pump and appurtenances such as, but not limited to, coupling and guards.
 - Materials, including the coatings in the pumps, conform to AWWA E-103, Horizontal and Vertical Line-Shaft Pumps Standard and ANSI/NSF 61 and ANSI/NSF 372.
 - Provide ample room for inspection, repairs and adjustments.
 - Design and build pump for 24-hour continuous service at any and all points within the required range of operation, without overheating, excessive vibration or strain.
- **Performance and Design Criteria.**
 - Original pump dimensional drawing and proposed pump performance curve included for reference.
 - Design the pump for design conditions listed herein. When the pump is operating at any point on its performance curve within the specified operating range at maximum speed, nameplate ratings of the motor shall not be exceeded, nor shall the design service factor be reduced.
- **Pumping Unit Design Requirements.**
 - Service: Finished Water
 - Maximum Allowable Pump Brake Horsepower (non-overloading throughout operating range): 400 HP
 - Existing motor speed: 1180 rpm
 - Design and build pump to be driven by a variable frequency drive
 - Pump Shut-Off Head (minimum/maximum): 280 feet / 380 feet
 - Flow Rate at Primary Operation Point: 5,600 gpm
 - Minimum Total Head at Primary Operation Point: 205 feet
 - Minimum Bowl Efficiency at Primary Operation Point: 82%
 - Maximum NPSH3 at Primary Operation Point: 22 feet
 - Flow Rate at Secondary Operation Point: 3,450 gpm
 - Minimum Total Head at Secondary Operation Point: 250 feet
 - Minimum Bowl Efficiency at Secondary Operation Point: 50%
 - Maximum NPSH3 at Secondary Operation Point: 22 feet
 - Flow Rate at Tertiary Operation Point: 6,500 gpm
 - Minimum Total Head at Tertiary Operation Point: 150 feet
 - Minimum Bowl Efficiency at Secondary Operation Point: 82%
 - Maximum NPSH3 at Secondary Operation Point: 26 feet
 - Best Efficiency Point (BEP) Flow Rate Acceptable Range (minimum/maximum): 5,800 gpm / 6,600 gpm
 - Minimum Submergence Above Pump Suction Bell: 8.0 feet
- **Pumping Unit Construction Requirements.**
 - Vertical Turbine Line-Shaft Pumps:
 - Lubrication: Process fluid
 - Bearings: Open line-shaft bearings.
 - Equip with motor support and discharge head.
 - Conform to Standards:
 - AWWA E 103, Horizontal and Vertical Line-Shaft Pumps.
 - ANSI/NSF 61 and ANSI/NSF 372.
 - Bowls (including Suction Bell):
 - Material: ASTM A48/A48M Class 30 cast iron or ductile iron.
 - Flanged and bolted construction
 - Bearings: as specified below.
 - Bowl Hardware: Type 316 stainless steel with monel nuts.
 - Bowl Wear Rings: Type 410 stainless steel.
 - Impeller:
 - Type: Enclosed.

- Material: Nickel aluminum bronze ASTM B148 Alloy C95800 or ASTM A743 CF8M cast stainless steel.
- Two-plane dynamic balance.
- Impeller design shall include adequate material to provide for the future addition of wear ring to restore impeller efficiency.
- Impeller Shafts and Couplings:
 - Material: 416SS or 17-4 PH stainless steel.
 - Key and rings: Type 316 stainless steel.
- Line-Shafts and Couplings:
 - Material: 416SS or 17-4 PH stainless steel.
 - Minimum Diameter: per AWWA E-103.
 - Connection Type: Threaded
 - Maximum Shaft Length: 5 feet
 - Manufacturer shall verify length per clearance limitations.
 - Line shaft and couplings shall be field replaceable.
- Bearing Retainers:
 - Design of the column flange system shall provide for bearing retainers.
 - Material: Type 316 stainless steel or epoxy-coated carbon steel.
- Open Line-Shaft Bearings Above Impeller:
 - Type: removable self-flushing product lubricated.
 - Material: One of the following:
 - Synthetic materials as manufactured by Greene Tweed and Co. (model AR® HT),
 - Synthetic materials as manufactured by Thordon (model SXL).
 - or Vesconite Hilube
- Discharge Columns:
 - Connection Type: Flanged and bolted.
 - Material: Carbon steel.
 - Maximum Length: 5 feet.
 - Manufacturer shall verify length per clearance limitations.
 - Flange Hardware: Type 316 stainless steel.
 - Pipe shall be heat stress relieved after welding and prior to machining.
 - Minimum Wall Thickness (nominal size 12 inch and above): 0.375 inch.
 - Minimum Wall Thickness (nominal size below 12 inch): Table E-1, AWWA E-103.
- Pump Discharge Head for Wet Well Mounted Pumps:
 - Type: L-Type.
 - Location: Above base.
 - Material: Fabricated carbon steel with ASME B16.5 Class 150 flanged connections.
 - Motor Mounting Flange:
 - Type: Registered fit.
 - Size: Per manufacturer, to be compatible with standard NEMA dimensions for commercially available motors.
 - Base plate: machine bottom of baseplate to mate with the sole plate.
 - Sole plate:
 - Material: Same material as discharge head.
 - Tapped holes for bolting down pump discharge head baseplate.
 - Machine top of the sole plate to mate with the discharge head baseplate.
 - Provide jack bolts for leveling and mounting the sole plate on the concrete support
 - Provide all bolts, nuts, washers and anchor bolts.
 - Dimensions: determined by the Manufacturer.

- Minimum Thickness (nominal discharge nozzle diameter 12 inch and above): 1.5 inch
 - Minimum Thickness (nominal discharge nozzle 10 inch and below): 1 inch
 - Discharge head shall include a stuffing box and have large openings for pump adjustment and seal maintenance.
 - Provide suitably sized drain connection and pre-lubricating water connection.
 - Stuffing box must be located and accessible above pump baseplate.
 - Tap for pressure gauge at discharge nozzle, complete with 1/4 inch brass pipe nipple and stainless-steel ball valve.
 - Packed type stuffing box
 - The stuffing box shall be of ASTM A48 Class 30 cast iron.
 - The packing box shall have a deep bore with a minimum of five rings of packing and a lantern ring capable of handling 450 PSI and 210° F temperature.
 - Connections for grease inlet and pressure relief shall be provided.
 - The one piece packing gland shall be of ASTM B584 C89833 bronze and secured in place with stainless steel studs and brass nuts.
 - A stuffing box bearing of ASTM B505 89835 bronze shall be provided directly below the packing for stability.
 - A neoprene o-ring shall be used to seal the packing box to the discharge head.
 - Vortex Suppressor:
 - Vaned-flow conditioning baskets as indicated for all vertical turbine, mixed flow and axial flow pumps with intake bells 8 inch and larger.
 - Pump suction bell mounted basket-style vaned-type vortex suppressor, to reduce possibility of vortices entering pump.
 - Coordinate dimensions of device with pump suction bell.
 - Coordinate method of securing the basket to the pump intake bell.
 - With pump shop drawings, include certified drawings for all vortex suppressors.
 - Material shall be 316 SS.
 - Manufacturer: Flow Optimizers, LLC. or City of Wilson approved equal.
 - Construction of the pump, position and number of column pipe flanges shall facilitate installation and removal for repairs within the crane vertical lift limitations using normal methods of operation and handling without undue difficulties.
- **Operation.**
 - Motor To Pump Coupling. Pump shafting shall be directly connected to the motor by means of a threaded coupling.
 - Material: 416SS or 17-4 PH stainless steel.
 - Minimum Diameter: per AWWA E-103.
 - Connection Type: Threaded
- **Shop Painting.**
 - Prepare, shop-prime and finish-coat each piece of equipment in accordance with the pump manufacturer's standard practice prior to shipment.
 - Clean all interior and exterior surfaces of pump columns, discharge heads and exterior of the bowl assemblies of all rust, mill scale, grease, dirt, other foreign matter and provide the pump manufacturer's standard epoxy coatings.
 - All coatings on wetted surfaces shall be epoxy type and shall comply with AWWA E-103 and ANSI/NSF 61 and ANSI/NSF 372 for use with drinking water systems. Surface preparation shall conform to the coating manufacturer's recommendations.
 - Protect all nameplates during painting.

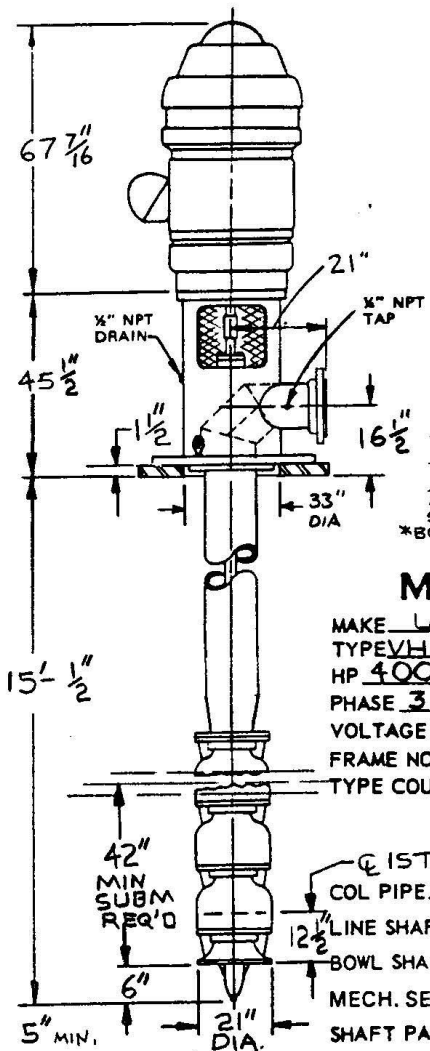
- **Factory Pump Testing**
 - Provide non-witnessed factory performance testing on the replacement pump in accordance with the following requirements:
 - Factory test the pump as described in ANSI/HI 14.6, American National Standard for Rotodynamic Pumps for Hydraulic Performance Acceptance Tests.
 - Factory pump tests shall be the basis of acceptance of the hydraulic performance of the pump. The pump manufacturer shall factory test the pump prior to shipment in accordance with the Hydraulic Institute standards. Flow rate, total head, efficiency and input KW shall be tested and recorded for at least seven points on the pump performance curve. Test shall be performed to demonstrate that the pumps meet ANSI/HI 14.6, acceptance grade 1U for specified (intermediate) design point. If the pump tested fails to meet any specification requirement it will be modified until it meets all specification requirements. If the pump tested fails to meet the flow rate, head or efficiency requirements for any of the conditions listed in the Pump Replacement requirements and all reasonable attempts to correct the inefficiency are unsuccessful, the pump shall be replaced with a unit that meets the specified requirements.
 - Submit certified pump performance curves, including total head, flow rate, bowl efficiency and total brake horsepower for the pump supplied. The certified pump performance curves shall be submitted for approval by the City of Wilson prior to shipment of the pump.
 - Provide non-witnessed factory hydrostatic testing on the replacement pump in accordance with the following requirements:
 - The pump manufacturer shall perform hydrostatic test on the pressure-containing parts in accordance with ANSI/HI 14.6. Test shall be conducted on each pump prior to shipment.
 - Pressure-containing parts are as follows:
 - Bowl Assembly
 - Column Pipe
 - Discharge Head
 - Test report for the hydrostatic testing shall be submitted for approval by the City of Wilson prior to shipment of the pump.
- **Installation.**
 - Preparation Prior to Installation. Take all necessary measurements in the field to determine the exact dimensions for all work and the required sizes of the complete pump to facilitate installation to the existing pump foundation and connecting discharge piping.
 - Rigidly and accurately anchor pump sole plate into position, precisely leveled and aligned, so that the completed installation is free from stress or distortion.
 - Proportion baseplate to support each the pump/motor assembly and the loads to which it may be subjected during operation.
 - Provide bolts, plates, nuts and washers and conform to the recommendations and instructions of the pump manufacturer.
 - The pump manufacturer or a qualified manufacturer's factory trained representative shall validate sole plate installation and levelness by on-site inspection during installation.
 - Pump sole plate shall be anchored to the existing concrete foundation.
 - Grout sole plate in accordance with the pump manufacturer's recommendations and standards with non-shrink precision type grout.
 - Remove the jack bolts after the epoxy grout has fully cured, within 24 to 48 hours after pouring, and tighten anchor bolts to torque levels recommended by the pump manufacturer.
 - Install replacement vertical turbine pump per pump manufacturer's instructions.

- Connect pump to existing discharge piping with 316SS bolts and neoprene rubber gasket.
- The pump discharge nozzle shall be properly aligned with the existing discharge piping such that it is free of strain and loads in excess of pump manufacturer's requirements.
- Install existing vertical motor and connect motor leads to conductors with split-bolt type connectors and vinyl tape.
- Install motor shaft, and set impeller clearance to manufacturer's requirements.
- **Installation Inspection and Startup.**
 - The Bidder shall include in his bid price the services of the pump manufacturer's factory representative who has complete knowledge of proper operation and maintenance shall be provided to instruct representatives of the City of Wilson on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and start-up. If there are difficulties in operation of the equipment because of the pump manufacturer's design or fabrication, additional services shall be provided at no additional cost to the City of Wilson. The listed service requirements are exclusive of travel time and shall not limit or relieve the Bidder of the obligation to provide sufficient service necessary to place the equipment in satisfactory and functioning condition. The qualified manufacturer's factory trained representative shall be a licensed Professional Engineer in North Carolina and shall have at least five (5) years of experience in the installation and startup of vertical turbine pump systems of similar size and scope. The qualifications and experience for the designated individual(s) shall be provided for review and approval.
 - Installation Inspection. The qualified manufacturer's factory trained representative shall provide written certification that the installation is complete and operable in all respects, and that no conditions exist which may affect the warranty. The Manufacturer shall supply the installation inspection services of an experienced Manufacturer's factory representative to verify the proper pump installation.
 - Start-up. The qualified manufacturer's factory trained representative shall provide written report, summarizing test procedures, tested and measured variables (flow rates, total heads, shaft-speed, vibration measurements, alignment check, etc.).
 - Provide spectrum vibration analysis and report.
 - Technician to be certified by the Vibration Institute.
 - Vibration values to be within latest HI guidelines.
 - Minimum time on-site by the qualified manufacturer's factory trained representative for installation inspection and startup shall be one 8-hour day.
- **Warranty.**
 - Provide non-prorated 2 year warranty from date of startup.
 - In addition to repair, the warranty shall include push/pull services.
- **Lead Time.**
 - The pump shall be fabricated and delivered to the Wiggins Mill WTP in 24 weeks (168 calendar days) from the date of order. The Submittals, Dynamic Vibration Analysis, and Factory Pump Performance Testing shall be included in the 24 week lead time. The City of Wilson's review time of the aforementioned is excluded in the 24 week lead time.

Bids will be evaluated on price, lead time, quality, and performance of the proposed pump.

Total Price: \$ _____ Plus Tax.

**VERTICAL TURBINE PUMP
TYPE FR**



CERTIFIED
FOR CONSTRUCTION

DISCHARGE
16" 150# R.F. ANSI FLG
16-1/8" DIA. HOLES*
21 1/4" DIA. BOLT CIRCLE
23 1/2" FLANGE O.D.
*BOLT HOLES STRADDLE VERTICAL C.

APPROXIMATE WTS.
PUMP WT. 4,620
MOTOR WT. 3,600
TOTAL WT. 8,220 LBS

MOTOR [WFR]

MAKE U.S.
TYPE VHS NRR
HP 400 RPM 1185
PHASE 3 HERTZ 60
VOLTAGE 2300
FRAME NO. 5808
TYPE COUPLING THREADED

PUMP

16 X 24 1/2" FR STL. DISCH HD
SEAL-MECH. PACKED
2 1/4" LINE SHAFT 16" COL
5550 GPM 200' TDH
TYPE 20MKH STAGE 3
IMPELLER closed
STRAINER no

MATERIAL

COL PIPE SCH 10 STL
LINE SHAFT A502-416 S.S.
BOWL SHAFT A502-416 S.S.
MECH. SEAL ~
SHAFT PACKING J.C. #1340

PUMP BOWL A48-CL. 30 C.I.E
IMPELLER A48-CL. 30 C.I. w/ SCOTCH ROPE
BEARINGS (BOWL) B505-844 BRZ.
BEARINGS (LINESHAFT) NEOPRENE
STRAINER ~

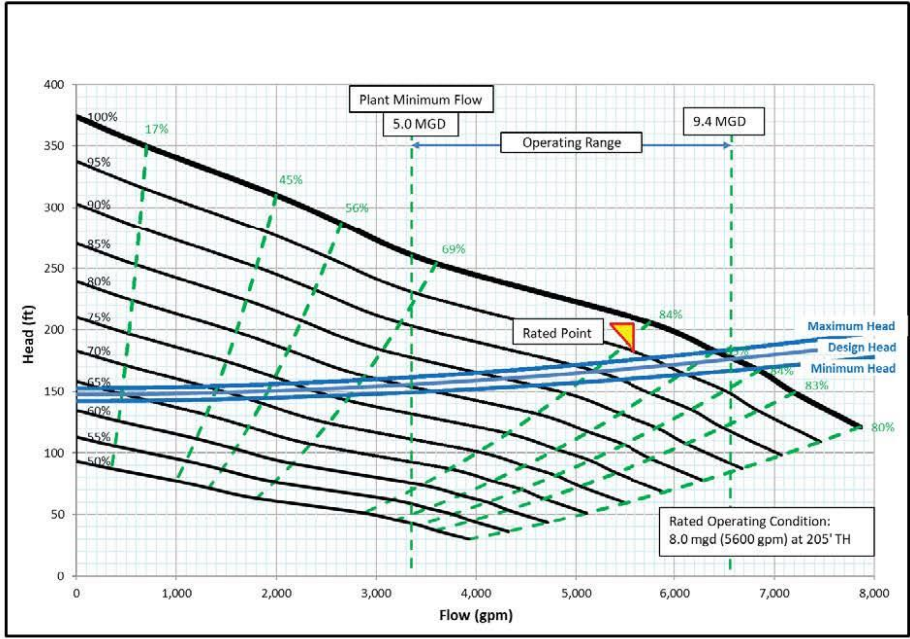
REMARKS
NO. UNITS REQ'D. 1
FINISH WATER
PUMP

CUSTOMER WIGGINS MILL
WATER TREATMENT PLANT

FLUID H2O
SPEC. GRAVITY 1.0
VISCOSITY ~
TEMPERATURE AMB
PH ~

NOT TO BE USED FOR
CONSTRUCTION
UNLESS CERTIFIED

"There's a Difference..."



EXECUTION OF BID

By submitting this BID, the potential contractor certifies the following:

- An authorized representative of the firm signs this BID.
- It can obtain insurance certificates as required within 10 days after notice of award.
- The cost and availability of all equipment, materials, supplies associated with performing the services described herein have been determined and include in the proposed cost.
- All labor costs, direct and indirect, have been determined and included in the proposed cost.
- The offeror can and will provide the specified performance bond or alternate performance guarantee.
- The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

OFFEROR: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

TELEPHONE NUMBER: _____

FEDERAL EMPLOYER IDENTIFICATION NUMBER: _____

BY: _____ **TITLE:** _____ **DATE:** _____
(Signature)

(Typed or printed name)

THIS PAGE MUST BE SIGNED AND INCLUDED IN YOUR BID, UNSIGNED BIDS WILL NOT BE CONSIDERED!

ACCEPTANCE OF BID - CITY OF WILSON

BY: _____ **TITLE:** _____ **DATE:** _____

Contractor certifies that as of this date, it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. 143-6A-4. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. 143C-6A-5(b), Contractor shall not utilize in the performance the contract any subcontractor that is identified on the Final Divestment List.