

**NORTH DAKOTA STATE WATER COMMISSION  
PROJECT 1736**

**ADDENDUM NO. 1**

**TO THE CONTRACT DOCUMENTS  
FOR  
DODGE AND RICHARDTON PUMP STATION UPGRADES  
SWPP CONTRACT 4-1E/4-2B**

**JULY 2018**

**NOTICE IS HEREBY GIVEN TO BIDDERS** that in reference to the CONTRACT DOCUMENTS of the above referenced contract, the following will be noted:

1. C-200 INSTRUCTIONS TO BIDDERS

A. Delete references to Consensus Docs Form 220 and attachments in Paragraph 3.01.C

B. Change Paragraph 14.01.C to the following:

"C. If Bidder submits Bids on individual sections and a Combined Single Construction Bid under Bid Section IV, such combined Bid Subtotal must be the sum of the Total Bids on the individual sections. The Bid Adjustment Item in Section IV - Combined Single Construction Contract is available to Bidders for any adjustments in price for a combined Bid."

2. C-520 AGREEMENT

Under Article 1, the sub-heading "THE PROJECT" should be numbered as Article 2 with all subsequent Articles increased in number by 1.

3. C-800 SUPPLEMENTARY CONDITIONS

Change the first line of Paragraph SC 6.03.K.1 to the following:

"1. Worker's Compensation, and related coverages under paragraphs 6.03.A.1 and A.3 of the General Conditions."

4. SPECIFICATION SECTION 013300 – SUBMITTALS

Change Paragraph B.10 as follows:

"10. For materials originating outside of the United States for which materials tests are required, submit recertification by independent domestic testing laboratory unless the non-domestic testing meets the specified standards."

5. SPECIFICATION SECTION 099000 – PAINTING AND COATING

Clarification: In Part 3.B.9 and Part 3.B.10, the references to Owner's Representative inspection and review apply to field applied coatings or shop applied coating systems for which a factory visit is required.

6. SPECIFICATION SECTION 402001 – GENERAL REQUIREMENTS FOR STEEL PIPING

In Part 1.C.2 delete the language requiring re-certification of materials originating outside of the United States. Valid certifications must be provided and verified.

7. SPECIFICATION SECTION 432102 – MECHANICAL SEALS AND PACKING

Replace Section 432102 with Attachment 1 to Addendum No. 1.

8. SPECIFICATION SECTION 432150 – VERTICAL TURBINE PUMPS

A. Modify Part 2.O.1 as follows:

"1. The Contractor shall assign the design and construction of the pump (including bowls, column, pump can, and discharge head), motor and supporting stand, and baseplate and soleplate system to the pump manufacturer. The pump manufacturer shall design and construct an integrated system to comply with the specified performance, restraint, deflection, vibration, and critical speed criteria."

B. Modify Part 3.D.3 as follows:

"3. Hydrostatically test bowl assembly columns, discharge heads, and pump cans at design pressure."

C. Modify Part 3.D.8 as follows:

"8. Performance tests shall be "full-scale." The complete pump and pump can, including column and discharge elbow, shall be used. Measuring devices shall have been calibrated within the previous year."

D. Change the maximum NPSHR values in the pump data tables in Part 3.A.2, Part 3.A.3, and Part 3.A.4 to 23 feet. The net positive suction head available is 33 feet.

9. CLARIFICATION

All new pumps shall be supplied with new pump cans and sole plates and the existing pump cans and sole plates salvaged and provided to Owner.

10. DRAWING S-103

Revise the note on Detail 1/S-103 to read as follows:

"REMOVE EXISTING 2" SOLE PLATE AND PUMP CAN AND SALVAGE TO OWNER. FURNISH AND INSTALL NEW SOLE PLATE AND PUMP CAN PER SPECIFICATIONS SECTION 432150. SOLE PLATE SHALL BE LEVELED TO WITHIN 0.005" PER LINEAR FOOT IN ALL DIRECTIONS OF MACHINED SURFACE."

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## SECTION 432102 MECHANICAL SEALS AND PACKING FOR PUMPS

## PART 1 - GENERAL

A. Description

This section includes materials, application, and installation of mechanical seals for vertical turbine pumps. See the detailed pump specifications for the specific type of seal or packing to be provided.

B. Related Work Specified Elsewhere

Vertical Turbine Pumps: 432150.

C. Submittals

1. Submit shop drawings in accordance with the General Conditions and Section 013300.
2. Submit manufacturer's catalog data and detail drawings showing packing type and material and mechanical seal design and parts. Describe material of construction by specification (such as AISI, ASTM, SAE, or CDA) and grade or type. Identify each mechanical seal and type of packing by the tag number of the associated pump to which the catalog data and detail sheets pertain.

## PART 2 - MATERIALS

A. Type "A": Balanced Cartridge Seal for Clear Water Service

1. Seal Type: The seal shall be of a nondestructive (nonfretting) type requiring no wearing sleeve for the shaft. Pumps specified with mechanical seals shall have shafts with no reduction in size through the seal area. Mechanical seals shall be the balanced cartridge type, being preset at the factory for setting length. For clear water services and solids concentrations up to 1/2% by weight, the face combination shall be hard/soft.
2. Seal faces shall have a gasket cushioned drive to increase start-up torque capability. Provide micropolished secondary seal surface (4 rms or better). Seal shall have integral fixed bushing.
3. Seal Materials:
  - a. Metals: Type 316 stainless steel minimum for loaded parts over 0.060-inch cross-section. For thinner parts (springs), use Hastelloy-C®, Alloy 20®, AMS5876 (Elgiloy®), or other alloy that is not vulnerable to chloride stress corrosion.
  - b. Elastomers: Nitrile (Buna-N)
  - c. Faces: Faces shall be of homogeneous construction. Do not use surface treatments and plated faces. Acceptable hard faces include nickel-bound ( $\geq 5\%$ ) tungsten carbide, self-sintered silicon carbide, or reaction bonded silicon carbide. Acceptable soft face is carbon-graphite, either Morgan AM&T Grades P-8412, CY103, CNFJ, and John Crane Grades 90156 and 20118.
4. Hydraulically balance and design seal for the range of 28-inch Hg vacuum to 300-psig service or 200% of sealing area pressure, whichever is higher, at the design rotating speed, shaft diameter, temperature, and liquid of the pump for the service.

5. Seal water shall use plan 13 piping to recirculate from pump discharge through seal chamber and then flow back into pump suction in the pump head.
6. Products: Cartridge, balanced, self-centering, single, John Crane 1B or equal.

**PART 3 - EXECUTION**

A. Installation of Mechanical Seals

Install per API 610 (tenth edition), Section 5, paragraphs 5.8.4 through 5.8.11.

B. Seal Chamber Face Runout

Comply with API 682 (fourth edition), paragraph 6.1.2.13.

C. Cartridge Seal Sleeves

Comply with API 682 (third edition), paragraphs 6.1.3.2 through 6.1.3.9.

END OF SECTION