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Bartow, FL 33831

Providing clean, safe water for Polk County now and for future generations.

July 31, 2023

Mr. Michael Chase, P.E.  
CWSRF Program Administrator  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399

Subject: **American Iron and Steel Project Specific Waiver Request – PRWC SE WPF  
Injection Well Construction**

Dear Mr. Chase:

The Polk Regional Water Cooperative (PRWC) requests an American Iron and Steel (AIS) Project Specific Waiver for the use of seamless 20-inch diameter steel well casing produced outside the United States (US) due to lack of availability of this casing from manufacturers in the US.

The drilling contractor (Youngquist Brothers Inc.) hired by the PRWC has indicated that US Steel idled its Loraine, OH tubular production facility during June of 2020 and has not reopened it. This was the only facility in the US capable of producing AIS compliant seamless carbon steel casing with the required dimensions. There are no domestic producers of 20-inch diameter (0.50-inch thickness) seamless carbon steel casing. It's our understanding that the EPA has previously granted project specific waivers to the AIS requirements for the seamless, final injection casing on other projects in Florida (Miami-Dade 24-inch injection well casing 2021).

The PRWC will require approximately 3,700 feet of seamless 20-inch diameter steel casing (0.5-inch thickness) meeting the specifications of ASTM A53 Grade B or API 5L Grade B as the final casing string in the injection well to be installed at the proposed SE Water Production Facility which will be located in the southeast part of Polk County. This project is partially funded with an EPA Water Infrastructure Finance Innovation Act (WIFIA) loan (Loan Number CUSIP 73151QAA4).

Please contact me if you have any questions or require additional information regarding this request for waiver.

Kind regards,

A handwritten signature in black ink, appearing to read 'Ed DeHaven'.

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## SECTION 02852

### CASING

#### PART 1 - GENERAL

##### 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide all the work, materials, and equipment necessary for furnishing, installing, and testing the straightness and plumbness of the well casing and wellhead, complete.
- B. The CONTRACTOR shall provide all materials and equipment necessary for joining and installing the casing as specified.
- C. The CONTRACTOR shall supply the ENGINEER with mill certificates prior to the installation of casing.

#### PART 2 - PRODUCTS

##### 2.01 INJECTION WELL CASINGS

- A. Pit Pipe: The pit pipe shall have an inside diameter sufficient (minimum 44-inches) to accommodate a drill bit for the conductor casing borehole. The material, length, and method of installation shall be at the CONTRACTOR's option subject to review by the ENGINEER.
- B. Conductor and Surface Casings: The casing shall be new, unused steel, random length, 0.375-inch wall thickness, and shall conform to API 5L Grade B, ASTM A 53 Grade B or Spiral Weld A 139 Grade B. The casing shall be plain end and beveled for welding and shall be joined together by certified welders.
- C. Intermediate Casings: The casing shall be new, unused steel, random length, 0.500-inch wall thickness, and shall conform to API 5L Grade B, ASTM A 53 Grade B or Spiral Weld A 139 Grade B. The casing shall be plain end and beveled for welding and shall be joined together by certified welders.
- D. Injection Casing: The inner casing shall be new, unused seamless steel, random length, 0.500-inch wall thickness, and shall conform to either API 5L Grade B or ASTM A 53 Grade B. The casing shall be plain end and beveled for welding and shall be joined together by certified welders. Prior to installation of the inner casing into the well, it shall be sand blasted to remove any traces of mill varnish from its surface.
- E. Injection Tubing: The injection tubing shall be new and unused fiberglass reinforced epoxy resin composite, manufactured by the filament-winding mechanism, such as Wellstrong high pressure downhole casing, as manufactured by Future Pipe Industries, or an approved equivalent. The epoxy resin shall be an aromatic amine cured system. Every joint shall be male X female, with threaded and coupled connections. Male threads and couplings shall be precision lathe cut. Every joint of casing shall be furnished with thread protectors for safe shipping, storage and handling. The internal pressure rating of the casing shall be

2,500 psi minimum and the collapse rating shall be 2,900 psi minimum. The fiberglass tubing shall be installed in accordance with the recommendations of the manufacturer. The casing shall have the following nominal dimensions and operating performance ratings

Nominal inner diameter: 8.85 inches  
Nominal outer diameter: 10.72 inches  
Wall thickness: 0.94 inches  
Coupling outer diameter (box): 14.35 inches  
Tensile rating 157,500 lbs

## 2.02 MONITORING WELL CASINGS

A. DMW-1 Inner Tubing: The inner tubing shall be new and unused fiberglass reinforced epoxy resin composite, manufactured by the filament-winding mechanism, such as Wellstrong high pressure downhole casing, as manufactured by Future Pipe Industries, or an approved equivalent. The epoxy resin shall be an aromatic amine cured system. Every joint shall be male X female, with threaded and coupled connections. Male threads and couplings shall be precision lathe cut. Every joint of casing shall be furnished with thread protectors for safe shipping, storage and handling. The internal pressure rating of the casing shall be 1250 psi minimum and the collapse rating shall be 640 psi minimum. The fiberglass tubing shall be installed in accordance with the recommendations of the manufacturer. The casing shall have the following nominal dimensions and operating performance ratings

Nominal inner diameter: 4.42 inches  
Nominal outer diameter: 4.87 inches  
Wall thickness: 0.23 inches  
Coupling outer diameter (box): 6.70 inches  
Tensile rating 49,500 lbs

## 2.03 PVC CASING

A. PVC well casing shall be new and unused, of first quality material. All casing shall be free of defects in workmanship and handling.

B. The 2-inch (minimum) diameter PVC well casing for the surficial aquifer monitor wells shall be Schedule 40 pipe.

C. Joints shall be threaded or coupled.

## 2.04 WELLHEADS

A. CONTRACTOR shall furnish and install wellheads on the injection well and monitoring wells in accordance with the Drawings.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. The CONTRACTOR shall install casing to the approximate depths as shown in the Drawings, or as instructed by the ENGINEER.
- B. The CONTRACTOR shall install the casing such that all joints are watertight. The method used to connect casing lengths shall be in accordance with the manufacturer's recommendations so that the resulting joint shall have the same structural integrity as the casing itself. Fiberglass casing shall be installed under the supervision of representatives of the manufacturer or by equivalently trained and experienced crews, subject to the approval of the ENGINEER.
- C. If metallic casing is welded, the standards of the American Welding Society shall apply.
- D. Threaded and coupled joints shall be API or equivalent, made up so that when tight, all threads will be buried in the lip of the coupling.
- E. The CONTRACTOR shall remove and replace all casing, which fails, collapses, or separates during construction at his sole expense.

### 3.02 CENTRALIZERS

- A. The CONTRACTOR shall provide all fittings, drive shoes and centering guides necessary to complete the wells as designed.
- B. All casing centralizers shall be manufactured by a service company acceptable to the ENGINEER.
- C. The CONTRACTOR may propose fabrication of centralizers in the field provided they are constructed of exactly the same carbon steel as the casing. All centralizers shall provide at least 3-1/2 inches of clearance around the casing, and shall be in a precise vertical alignment, one above the other, to allow for placement of tremie pipes in the annulus.
- D. Casing centralizers shall be installed at the approximate locations shown below:
  - 1. 20 feet above bottom of casing
  - 2. 40 feet above bottom of casing
  - 3. 100 feet above bottom of casing
  - 4. At 100-foot intervals thereafter up to 100 feet from ground surface or as needed to meet applicable regulations

Alternative centralizer locations may be used with prior approval from the ENGINEER based on results of the caliper log.

### 3.03 WELDING

- A. The CONTRACTOR shall use certified welders on all welding operations. The CONTRACTOR shall pay for all testing requirements prior to acceptance of any welder. Welder's qualifications shall be in conformance with Section IX, Article III of the ASME Boiler and Pressure Vessel Code. The CONTRACTOR shall demonstrate that welder can make groove welds in carbon steel pipe for each welding process used.

- B. The CONTRACTOR shall provide welding certificates for all welders prior to any welding.
- C. The CONTRACTOR shall correct all welding deficiencies in materials and/or workmanship at his own expense.

**3.04 FIBERGLASS CASING INSTALLATION**

- A. All fiberglass casing is to be run by Future Pipe Industries or other casing manufacturer unless the CONTRACTOR can document to the satisfaction of the ENGINEER successful experience in installing pressure-tight fiberglass casing in injection well systems. Accurate documentation of torque operations for every joint shall be provided to the ENGINEER.

**3.05 PRESSURE TEST**

- A. The CONTRACTOR shall perform a casing pressure test after the installation of the 20-inch diameter injection well casing and after the installation of the nominal 10 ¾-inch diameter injection tubing. The procedures for the casing and annulus pressure tests for the injection well are specified in Section 02681 -Mechanical Integrity Testing.

END OF SECTION