



RE: WATER SYSTEM IMPROVEMENTS PROJECT NO. E08-237
 CITY OF LAWRENCEVILLE, GEORGIA
 CONTRACT 2 - LAWRENCEVILLE WATER TREATMENT AND WATER DEPARTMENT FACILITIES

FROM: PRECISION PLANNING, INC. TO: PROSPECTIVE BIDDERS
 (770) 338-8000

THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS AND MODIFIES THE ORIGINAL BIDDING DOCUMENTS FOR THE REFERENCED PROJECT DATED FEBRUARY 2010.

The following items of the contract documents are modified as part of this addendum:

- (1) **Butterfly Valves:** Section 15050, Article 2.12. Add Bray International, Inc. as a named manufacturer of butterfly valves.
- (2) **Water Treatment Facility Equipment:** Section 11501, Article 2.03:
 - a. Item B shall be revised to read as follows:

B. Operating Conditions: The water treatment plant shall be capable of satisfactorily treating groundwater from a number of wells in and around the City of Lawrenceville at a maximum influent flow of 600 gpm with the following chemical composition:

*Total hardness (as CaCO3) . 93 ppm
 Alkalinity (as CaCO3) 95 ppm
 Iron (as Fe) 1.0 ppm
 Manganese (as Mn) 0.5 ppm
 pH 6.79 - 8.29*

The system must be capable of receiving chemical slurries created in the hydrous manganous oxide (HMO) process in order to reduce influent radium concentrations (Ra 226 & Ra 228 combined) to below the 5.0 pCi/L maximum contaminant level (MCL). The system must also be capable of treating influent levels of the volatile organic contaminant trichloroethylene (TCE) of as high as 15 ug/L to below its MCL of 5 ug/L.

System design parameters for the equipment include:

*Flow Rate 600 gpm
 Number of Units 1
 Size of Unit 16'-0"
 Number of Filter Cells 4
 Filter Rate 2.99 gpm/s.f. (3.99 gpm/s.f. with one cell off line)*

- b. Paragraphs 3 and 4 of item C.8.b shall be revised to read as follows:

All valves necessary for the operation of the General Filter AERALATER shall be provided. These shall include:

- *1 - Modulating Unit Effluent valve, size 8" (Refer to C.1)*
- *4 - Filter Cell Inlet Valves, size 6"*
- *4 - Filter Cell Backwash Waste Valves, size 10"*
- *4 - Filter Cell Air Wash Valves, size 3"*
- *1 - Backwash Rate Set Valve, size 10"*
- *2 - Unit Drain Valves, size 2"*
- *1 - Filter-to-Waste Valve, size 8"*

Filter cell inlet, filter-to-waste and backwash waste valves shall be equipped with electric actuators having rate of opening adjustment and manual overrides for auxiliary local manual operation. Air wash valves shall be butterfly type with electric actuators. The backwash rate set valve shall be equipped with an electric actuator and pneumatic positioner to set valve to proper backwash rate of flow during backwash and to be full open during service. The cell drain valves shall be manual gate valves.

- c. All requirements included in item C.10 (filter backwash rate of flow indicator) are deleted from the project.

(3) **Water Treatment Facility Equipment:** Section 11501, Article 2.04:

- a. Item A.1.a shall be revised to read as follows:

a. *Two (2) Milton Roy mechanical type metering pumps (one for use as shelf spare), maximum capacity 25.0 gal/hour, including:*

- *Stroke length indicator*
- *Sight flow indicator*
- *1/2" PVC pipe tap main connection*

- b. Item A.2.a shall be revised to read as follows:

a. *One (1) Milton Roy mechanical type metering pump, maximum capacity 25.0 gal/hour, including:*

- *Stroke length indicator*
- *Sight flow indicator*
- *1/2" PVC pipe tap main connection*

- c. Item A.3.b shall be revised to read as follows:

b. *Three (3) feed systems, each including:*

- *Pump stand pre-piped and pre-wired - Piping to include suction pipe and fittings for metering pump.*
- *Control panel in a NEMA-12 enclosure to include variable speed drive for pump.*
- *Control panel to include power on-off switch; motor running/stopped/fault lights; speed readout meter; motor HOA switch for Start/Stop control; start-stop control relay; speed adjust potentiometer; local-remote switch for speed control mode*

- *and isolator to receive a 4 to 20 milliamp speed control signal.*
- *500 ml PVC calibration column with ml graduations.*
- *Control panel shall have contacts and signals for interface with the plant SCADA system as shown on Electrical Drawings.*
- *Low flow switch (DigiPulse or equal).*

(4) **Flow Meters:** Section 11501, Article 2.07 and Section 13420, Article 2.1.H and Instrument Index:

- a. The following applies to the influent flow meter (Filter 1 Influent flow meter) and finished water flow meter (Effluent flow meter):

The Contractor shall provide propeller type flowmeters for Influent (FIT150) and Effluent (FIT610) instead of Magmeter types shown in Spec 13420 Instrument Index.

The flowmeters shall have ranges as shown in Spec 11501-2.07A. The flowmeters shall have 2% of reading accuracy guaranteed throughout range. The bearing assembly shall have an impeller shaft of 316 stainless steel with ball bearings of 440C stainless steel. An instantaneous flowrate indicator and six-digit straight-reading totalizer shall be hermetically sealed within a die cast aluminum case. The protective housing shall include a domed acrylic lens and hinged cover with locking hasp. Impeller shall be manufactured of high-impact plastic. Provide bearing assembly for higher than normal flowrates.

The flow indicating transmitter with 2-wire 4-20 mA output shall be provided with output linear to flowrate and have the following characteristics:

- Operating Temperature: +25 to +130 degrees F
- Supply Voltage: 24 VDC.
- Temperature Coefficient: 1.0%
- Linearity: 0.1%
- Accuracy: 0.5% over the entire range
- Reverse Voltage Protection: -300V Maximum.

The Influent propeller flow meter shall be sized for 6" pipe and shall be McCrometer Model MW508 with the bearing option of a B0100-82 and model E7000 transmitter, Sensus Technologies, or approved equal. The Effluent (Finished Water) propeller flow meter shall be sized for 10" pipe and shall be McCrometer Model MW510 with the bearing option of B0100-82 and model E7000 transmitter, Sensus Technologies, or approved equal.

- b. Flow range for influent flow meter in Section 11501, Article 2.07.A shall be 0-1200 gpm.

(5) **Water Treatment Facility Equipment:** Section 11501, Article 3.05:

- a. Item B.2 shall be revised to read as follows:

2. *Performance Guarantee*

Subject to the provisions contained herein, Manufacturer shall guarantee that the water treatment plant will produce water of a quality that will not exceed the following criteria:

- Fe 0.3 mg/L*
- Mn 0.05 mg/L*
- Ra (226 & 228 combined)... 5.0 pCi/L*
- TCE 5.0 ug /L*

The Process Performance Guarantee shall be subject to the raw water provided to the water treatment plant not exceeding the following characteristics:

*Flow 600 gpm
Fe 1.0 mg/L
Mn 0.5 mg/L
Ra (226 & 228 combined).... 15 pCi/L
TCE 15 ug/L*

Should any characteristics exceed the above, the Performance Guarantee shall be deemed to have been met, and Manufacturer shall have no further obligation or liability hereunder.

b. Paragraph 4 of item B.3 shall be revised to read as follows:

In the case of continuous reading instrumentation, calibration shall be performed at the above interval. In no case will samples be taken within one hour of filter backwashing. Iron and manganese measurements will be made in accordance with EPA Methods 236.1 and 243.1, respectively, or other commonly approved field test methods.

- (6) **Process Waste Tanks:** Sheet P8. Cast in place concrete construction is acceptable as a substitute for pre-cast concrete. Contractor shall be responsible for structural design of cast in place tanks for review and approval by Engineer. Cast in place tanks shall be designed and stamped by a structural engineer registered in the State of Georgia. Contractor shall include the cost of all work related to the design and submittal of cast in place structure in the base bid price for this item.
- (7) **Electrical Conduit:** EMT conduit shall be acceptable for use in the office area walls and above ceilings. PVC conduit shall be acceptable in floor slabs.
- (8) **Landscaping - Trees:** Sheet W11: Leyland Cypress, 6'-8' high at 15' O.C. are acceptable for use in matching existing landscaping.
- (9) **Landscaping - Trees:** Sheet LP-1.0: Decorative boulders shall be a weathered stone (not just blasted from site) approximately 2'x3'x2' high, buried about 4" in the ground. Boulders shall be of a weight so that each can be lifted by one or two persons.
- (10) **Chain Link Fence:** Section 02830, Article 3.02 and Sheet C-2.0: Fabric for portion of fencing facing Winer Industrial Way shall be polymer coated, color to be black, complying with ASTM F934.
- (11) **Finished Water Flow Meter:** Sheet P6: For Inset A, the leader pointing inside the 6' diam. precast concrete manhole is incorrectly labeled as "10" MJ Gate Valve". The correct label is 10" Finished Water Flow Meter.
- (12) **Well Level Transducers:** Sheets G5 and E8.3: Well level transducers shall be installed according to manufacturer recommendations, but not less than 6" above the pump to avoid turbulence.
- (13) **Raw Water Filter Influent Line:** Sheets P1 and P2: The correct arrangement for the filter influent line is as shown in Section B/P1 on Sheet P2.

- (14) **Natural Gas Supply Line:** Sheets PL3 and PL5: The Contractor shall be responsible for installing gas piping downstream of the meter and the City will provide the meter and service to the meter (including PRV's) as indicated in the service entrance detail on Sheet PL5.
- (15) **Process Instrumentation and Controls:** Section 13400, Article 3.3: Item E shall be revised to read as follows:
- E. During the 14 consecutive day test period, any malfunction which cannot be corrected within 24 hours of occurrence by PICS personnel, or more than two similar failures of any duration, will be considered a non-field-repairable malfunction.*
- (16) **Process Instrumentation and Controls:** Section 13400, Article 2.2.A: A third party solution for the MODBUS communications is approved for this project.
- (17) **Clearwell Baffles:** Sheets P6 and P7: Revise Sections D/P6 and E/P6 and BW-Pilaster Details to show all concrete cells within walls to be filled with RMG. Additional vertical dowels shall be placed between pilasters 16" O.C.
- (18) **Clearwell Overflow:** Sheet C-4.0: Correct size of clearwell overflow line is 8".
- (19) **Security Cameras:** Sheet E7.1: Regarding Note 9, no cable shall be supplied for the six future security cameras.

END OF ADDENDUM NO. 3