

ADDENDUM NO. 1
WATER SYSTEM IMPROVEMENTS
CONTRACT NO 110-2008-02
MOSS WATER TREATMENT PLANT EXPANSION
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY
HOPKINSVILLE, KENTUCKY
JRWCO 1849

DATE OF ADDENDUM: Wednesday, June 10, 2009

BID DATE: Thursday, June 18, 2009 at 2:00 PM Local Time

1. Detailed Specifications, Section 5. Piping, Fittings, Valves, Manholes, and Accessories, Paragraph 12. Butterfly Valves for Raw, Settled and Finished Water, Page DS 5 - 13:

Replace this paragraph with the following:

“12. Butterfly Valves (Raw, Settled and Finished Water)

Butterfly valves for pipe line service shall be suitable for 150 psi working pressure, shall be designed for underground service and shall meet the requirements of AWWA Standard C504-06 as modified hereinafter. Butterfly valves shall be Mueller or approved equal. Valves may be either of the "short" or "long" laying length type where this meets service conditions.

Butterfly valves shall be furnished with mechanical joint end connections unless flanged connections are requested by the Contractor. The end connections shall be suitable for connections to cast or ductile iron pipe. "Slip-on" joints will not be allowed.

Valve operators shall consist of a geared 2-inch square nut and shall conform to the latest revision of AWWA Standard C504 latest revision and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. The gear box shall be fully sealed and grease packed. Valve operators shall take approximately 44 turns to open and shall be capable of resisting without damage an input of at least 300 foot pounds. Valves shall open by turning counter-clockwise. The valve shall be supplied with a THREE (3) PIECE cast iron valve box and a drop cover marked "Raw Water", "Settled Water", or "Filtered Water" depending upon service condition."

2. Detailed Specifications, Section 5. Piping, Fittings, Valves, Manholes, and Accessories, Page DS 5 - 21:

Add the following paragraph to the end of this Section:

“30. Plug Valves

Plug valves shall be of the non-lubricated eccentric type, with neoprene resilient plug faces, cast iron (ASTM 126, Grade B) bodies and shall be suitable for 150 psi working pressure. Valves shall have a welded-in nickel seat. The valve shall be constructed in such a manner that the packing and packing gland are accessible without disassembly of the valve. Port areas of valves shall be at least 80 percent of all pipe area. All plug valves shall open counterclockwise. Plug valves shall be suitable for domestic wastewater service and shall provide drip tight shutoff up to the full valve rating.

Actuator type and end connections shall be as shown and listed in the Valve Schedule on the Plans.

Plug valves shall be DeZurik Series 100 or approved equal.”

3. Detailed Specifications, Section 8 – Painting and Coating, Paragraph 7. Surface Preparation and Painting, Subparagraph f. Wood and Gypsum Board, Page DS 8 - 5:

Modify item (1)a. to read as follows:

“a. Prime Coat: ***PVA Sealer per manufacturer’s recommended coverage rates.***”

4. Detailed Specifications, Section 10 – Miscellaneous Equipment, Paragraph 9. Synthetic Curtain Baffle for Clearwell No. 1, Page DS 10 - 7:

Modify the last sentence to read as follows:

“The clearwell baffle system shall be manufactured by Engineered Textile Products, Inc. using the Style 8130 XR-3PW baffle ***or by Environetics, Inc. using Director III Model.***”

5. Detailed Specifications, Section 10 – Miscellaneous Equipment, Paragraph 10. Liquid Chemical Transfer Pumps, Page DS 10 - 8:

Modify this paragraph as follows:

“10. Liquid Chemical Transfer Pumps

a. Chemical Transfer Pumps

The Contractor shall furnish and install the chemical transfer pumps ***listed hereinafter*** with ball valves and remote manual wall-mounted control station (***supplied by electrical subcontractor***) along with Schedule 80 PVC pipe, valves and fittings, and other miscellaneous equipment, spare parts and appurtenances necessary for proper completion of the liquid chemical transfer pumps, and remove manual control stations.

The Contractor shall provide five magnetic drive centrifugal close coupled transfer pumps for transferring liquid chemicals from bulk storage tanks to the second floor chemical day tanks in the chemical feed rooms. The number of pumps and pump capacities are as follows:

<u>Chemical</u>	<u>No. of Pumps</u>	<u>Capacity and Head</u>	<u>Finish Thompson Model No.</u>
Coagulant	2	50 gpm @ 40 ft.	DB11, #4 Imp., 1 Hp
Caustic Soda (50%)	1	50 gpm @ 40 ft.	DB11, #4 Imp., 1 Hp
Sodium Permanganate	1	30 gpm @ 34 ft.	DB10, #3 Imp., ½ Hp
Hydrofluosilicic Acid	1	30 gpm @ 34 ft.	DB10, #3 Imp., ½ Hp

The chemical transfer pumps shall utilize materials of construction compatible with the chemicals shown. The transfer pumps shall be magnetic driven, sealless type centrifugal transfer pumps and shall have polypropylene housings coupled to NEMA 56 C frame motors. The pumps shall have 24-hour run-dry capability, back pull out design for easy service and 1/4" NPT drains in the suction casings. The pumps shall be Finish Thompson as shown or approved equal.”

6. Detailed Specifications, Section 10 – Miscellaneous Equipment, Paragraph 11. Bulk Storage Tanks and Chemical Day Tanks, Page DS 10 - 10:

Modify subparagraph a. General and b. Tank Dimensions and Volumes as follows:

“a. General

The Contractor shall furnish and install two - 8,500 gallon tanks for bulk storage of coagulant, two - 8,500 gallon tanks for bulk storage of 50% strength caustic soda, one - 100 gallon day tank for the storage of sodium permanganate, and one - 100 gallon day tank for the storage of hydrofluosilicic acid. The tanks shall be single wall flat bottom type and shall be designed for vertical installation and capable of containing the chemicals at atmospheric pressure.

The two - 100 gallon day tanks shall have a closed top, molded in level markers, gasketed screwed lid, flanged fittings for 1-inch fill, 1-1/2-inch vent, 1/2-inch pump relief return, 1/2-inch tank discharge with valve and welded valve support.

The four - 8,500 gallon bulk storage tanks (two for coagulant and two for caustic) shall have closed tops with top mounted 24-inch flanged and gasketed manways, top mounted 4-inch welded flange vent nozzles, top mounted 3-inch welded flanges for fill with drop tubes and welded wear plates, external level indicator (sight gauge), bottom side mounted 3-inch welded discharge flanges with valves, welded valve supports, flexible expansion joints, lifting lugs, equipment tags, chemical product identification signs and shrink wrap protection.

b. Tank Dimensions and Volumes

<u>Chemical</u>	<u>Volume</u>	<u># of tanks</u>	<u>Single or Double Wall</u>	<u>Diameter</u>	<u>Height</u>
Sodium Permanganate	100	One (1)	Single Wall	28"	42"
Hydrofluosilicic Acid	100	One (1)	Single Wall	28"	42"
Coagulant	8,500	Two (2)	Single Wall	120"	203"
Caustic Soda (50%)	8,500	Two (2)	Single Wall	120"	203"

7. Detailed Specifications, Section 10 – Miscellaneous Equipment, Paragraph 12. Sodium Permanganate Feed System, Subparagraph a. General, Page DS 10 - 14:

Modify this paragraph as follows:

“12. Sodium Permanganate **and Polyphosphate** Feed System

a. General

The Contractor shall furnish and install a complete sodium permanganate feed system with all accessories and appurtenances as shown on the Plans and as specified herein. The transfer pump and day tank to be provided with this system are specified elsewhere in this section.

The work **for the sodium permanganate system** shall include furnishing and installation of the metering pump with automatic SCR variable speed flow proportional and remote dosage control, control panel, **SS 304** pump mounting stand, back pressure and pressure relief valve, vacuum breaker, pump suction strainer, calibration chamber, closed top poly day tank, ball valves, ball checks and ball valves along with Schedule 80 PVC pipe, valves and fittings, and other miscellaneous equipment, metering pump preventative maintenance kits, spare parts and appurtenances necessary for proper completion of the feed system.

The work for the polyphosphate system shall include reuse of the existing metering pump and new automatic SCR variable speed flow proportional and remote dosage control, control panel and SS 304 pump mounting stand necessary for proper completion of the feed system.

8. Detailed Specifications, Section 10 – Miscellaneous Equipment, Paragraph 16. Emergency Chlorine Ton Container Valve Closure System, Page DS 10 - 18:

Modify the first two paragraphs as follows:

“The contractor shall furnish all labor, materials equipment and appurtenances required to provide **one** Max-Pro air driven automatic emergency ton container valve closure system **with control panel** for the six – one-ton chlorine containers setup for the chlorinator supply. The pre & pre filter chlorinator supply shall include two one-ton containers and the post chlorinator supply shall include four one-ton containers. The

equipment for the emergency ton container valve closure systems specified herein shall be coordinated with associated equipment and devices to provide a complete and fully compatible system and comply with all applicable provisions and recommendations of the National Electric Code and the Chlorine Institute, Inc.

The emergency ton container valve closure systems shall be specifically designed to close all the chlorine ton container valves on the chlorine supply system. This shall be accomplished by using a Max-Pro pneumatic operated actuators directly coupled to the ton container valves. The pneumatic operated valve actuators shall utilize compressed air as a source of operating air. The pneumatically operated actuators shall use a bracket assembly that attaches directly to the ton container valve and shall not require any support except on the valve. This bracket assembly shall also avoid contact with the captive yoke assembly which is used for mounting the remote vacuum manual and automatic switchover regulators. The per & pre filter ton container supply system shall be designed to simultaneously close up to two cylinder valves when activated. The post ton container supply system shall be designed to simultaneously close up to four cylinder valves when activated. ***The Contractor shall furnish and install all required air supply piping from the ton containers to the air compressor using ½-inch copper tubing.***

9. Detailed Specifications, Sub-Section 11-B – Process Control Valves and Actuators, Paragraph 2. Manufacturers, Page DS 11-B - 1:

Modify this paragraph to read as follows:

“The filter control butterfly valves shall be Henry Pratt Company Model 2FII, M & H/Clow Series 4500 or ***DeZurik Model BAW***. The electric actuators shall be Auma Corporation, ***Keystone***, or EIM Company pre-approved equal furnished by the valve manufacturer.”

10. Detailed Specifications, Sub-Section 11-B – Process Control Valves and Actuators, Paragraph 3. Butterfly Valves, Page DS 11-B - 1:

Modify the last sentence to read as follows:

“Butterfly valves for air service shall be ***Tyco/Keystone AR1***, or equal.”

11. Detailed Specifications, Sub-Section 11-B – Process Control Valves and Actuators, Paragraph 4. Electric Operators, Page DS 11-B - 2:

Modify the last sentence of this Paragraph to read as follows:

“Electric Operators shall be manufactured by EIM Company, **Auma**,
Keystone or approved equal.”

12. Detailed Specifications, Sub-Section 11-G – High Service Pump, Paragraph 1.
Scope, Page DS 11-G - 1:

Modify the second paragraph to read as follows:

“**Variable frequency drives are covered by Sub-Section 11-J – Control and Monitoring System** and electrical switchgear are covered under Section 12 – Electrical Work. The Contractor shall familiarize itself with other sections of these Specifications and shall not avail itself of any discrepancy, but shall report same to the Engineer for resolution and shall furnish the complete system in the true intent of these Specifications.”

13. Detailed Specifications, Sub-Section 11-G – High Service Pump, Paragraph 5.
Pump Characteristics, Subparagraph a. General Requirements for High Service
Pipe (One Required), Page DS 11-G - 5:

Modify the Synchronous Speed and Discharge ANSI 16.1 Class 125 as follows:

“Synchronous Speed **1800 RPM**
Discharge ANSI 16.1 Class 125..... **14-inch**”

14. Detailed Specifications, Sub-Section 11-G – High Service Pump, Paragraph 7.
Pump Materials and Construction, Subparagraph f. Discharge Head, Page DS
11-G - 7:

Modify the first paragraph to read as follows:

“Pump discharge heads shall be high grade cast iron ASTM A48, Class 30, shall be provided for mounting the motor and supporting the pump column, bowls and suction pipe. The above ground **14-inch** outlet shall be flanged, provided with a circular groove interfaced for square packing, and drilled for ANSI B16.1 Class 125 cast iron flange connection. The discharge nozzle shall be constructed with a vertical vane for reduction of turbulence. The discharge flange shall have a 1/4 –inch NPT connection for a pressure gauge. The design shall permit the drive shaft to be coupled above the **mechanical seal** to facilitate easy removal and replacement of the driver.”

15. Detailed Specifications, Sub-Section 11-G – High Service Pump, Paragraph 7. Pump Materials and Construction, Subparagraph g. Two Piece Top Shaft, Page DS 11-G - 8:

Modify this subparagraph to read as follows:

“Two-Piece Top Shaft

Each vertical turbine pump shall be equipped with a two-piece top shaft. The coupling shall be provided between the ***mechanical seal*** in the pump head and the motor.”

16. Detailed Specifications, Sub-Section 11-G – High Service Pump, Paragraph 7. Pump Materials and Construction, Page DS 11-G - 8:

Add Subparagraph i. Mechanical Seal as follows:

“i. Mechanical Seals

Sealing of the pump’s liquid cavity shall be accomplished by use of a split ace type mechanical seal equal to Chesterton 442 Split Mechanical Seal which permits installation without disassembly of the equipment. All parts shall be non-corrosive materials.”

17. Detailed Specifications, Sub-Section 11-G – High Service Pump, Paragraph 8. Vertical Hollow Shaft Electric Motor, Page DS 11-G - 8:

Modify the first sentence of the first paragraph to read as follows:

“The motor shall be inverter duty premium efficient, high power factor open dripproof **1800** rpm rated for the horsepower shown to operate on 3 phase, 60 Hz, 480 volt power with a 1.15 service factor as manufactured by Emerson U.S. Motors Titan Series, General Electric or approved equal.”

18. Detailed Specifications, Sub-Section 11-H – Submersible Waste Pumps and Accessories, Paragraph 2. Manufacturer, Page DS 11-H - 1:

Add the following to the end of this paragraph:

***“KSB, Inc.
Richmond, VA
(804) 222-1818***

***KRTK 300-400/606X NG-K, 1,160 RPM, 14-
5/16 inch Impeller”***

19. Bid Schedule, Page BS - 9:

Replace with attached Page BS – 9*

20. Plans, Sheet 8

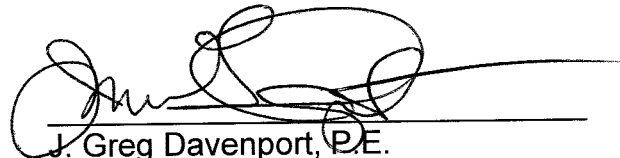
Modify existing note regarding fluoride day tank and scale as follows:

“REMOVE EXISTING FLOURIDE DAY TANK”

21. Plans, Sheet 19

Delete the AUTOTANK REFILL CONTROLLER shown on the SODIUM PERMANGANATE FEED SCHEMATIC.

J.R. WAUFORD & COMPANY,
CONSULTING ENGINEERS, INC.



J. Greg Davenport, P.E.
Kentucky License No. 22752

BID SCHEDULE
1849 - 05/2008

CONTRACT 110-2008-02 - MOSS WATER TREATMENT PLANT EXPANSION
BID SCHEDULE B - ADJUSTMENT ITEMS

7. Unit Prices for Adjustment Items (Continued)

ITEM : APPROXIMATE : DESCRIPTION WITH LUMP : UNIT : TOTAL
NUMBER : QUANTITY : SUM OR UNIT BID PRICE : PRICE : PRICE
WRITTEN IN WORDS

21. 20 S.Y. Hand Placed Rip-Rap \$ _____ \$ _____

22. 200 C.Y. TDOT No. 1 Compacted Crushed
Stone in Mucky Areas where
directed by the Engineer \$ _____ \$ _____

TOTAL BID, SCHEDULE B,
ADJUSTMENT ITEMS, ITEMS
1 THRU 22 INCLUSIVE \$ _____

EQUIPMENT ALLOWANCE FOR
TOOLS AND/OR EQUIPMENT
TO BE SELECTED BY OWNER \$25,000

TOTAL BID SCHEDULE A
(Repeat from Page BS-2) \$ _____

TOTAL BID FOR CONTRACT
110-2008-02 (SCHEDULE A & B
AND EQUIPMENT ALLOWANCE) \$ _____