Utility Engineering Consultants, *LLC*

Phone : 205.951.3838
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135 Gemini Circle, Suite 211
Homewood, AL 35209
P.O. Box 21918
Birmingham, Alabama 35219

February 13, 2026

City of Marion
123 East Jefferson Street
Marion, Alabama 36756

RE: City of Marion, Alabama
Proposed Marion DWSRF Critical Needs Infrastructure Improvements Project Phase I
Contract 7 Emergency Chemical Feed System Upgrades Project
DWSRF PROJECT NO. FS010248-03

All Contractors shall acknowledge receipt of Addendum No. 2 for above referenced job by signing and returning this statement by fax to (205) 951-3839 or email to ktwymon@uecllc.com

Contractor: Schmidt Environmental Construction, Inc.

Received by: Luke Yovich

Date: February 13, 2026

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City of Marion
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Proposed Marion DWSRF Critical Needs Infrastructure Improvements Project Phase I
Contract 7 Emergency Chemical Feed Upgrades Project
DWSRF PROJECT NO. FS010248-03

ADDENDUM NO. 2

The changes, modifications and/or additions covered by and set forth in this Addendum No. 2 shall become part of and be incorporated in the Specifications, Contract Documents and Bid Documents for the above referenced project.

SPECIFICATIONS

- In Section 01010 Summary of Work; Part 1.1 shall be replace with the following:

1.1 Work Under This Contract

A. The Supplier Scope of work involves the following:

1. Remove existing Chlorine Gas System from the existing Chemical building.
2. Install two (2) – 1100 Gallon Bulk Chemical tanks to be used for Caustic and Liquid Bleach containment.
3. Install one (1) – 550 Gallon Chemical Storage Tank to be used for a Coagulation Chemical.
4. Install one (1) – 165 Gallon Chemical Storage Tank to be used to contain Potassium Permanganate.

These four Tanks will be located in the existing Chemical Building.

Remove Two (2) Existing 165 gallon chemical storage tanks and pump system located in the main building of the water treatment plant. Install one (1) -165 gallon chemical storage tank to be used for phosphate containment.

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Each of the five Tank shall have a Dual wall mounted Pump System. The supplier is responsible for all suction/discharge piping connection. The supplier is responsible for all electrical connections and required venting for chemicals where applicable.

- Sections 11101 and 11102 have been replaced with Section 13000.

CLARIFICATIONS

- Please note the Bid documents can be submitted electronically prior to the Bid date and Bid time February 17, 2026 at 1:00 P.M. The documents can be sent to rhawkins@uecllc.com and copy dexterhinton2@gmail.com. If you do not get a "Receipt Confirmation" please call Rod Hawkins at (205) 540-4615.

UTILITY ENGINEERING CONSULTANTS, LLC.

Roderick Hawkins, P.E.

RH/kt

Attachment:

Addendum No. 2
2/13/2026

SECTION 13000

Chemical Feed System Specifications

Part 1 - General

1.1 Description

Watson-Marlow Qdos 60 Chemical Metering Pump

A. Pumps shall be positive displacement type complete with cartridge-style pump head, consisting of an eccentrically driven rotor which occludes a membrane against a track and self-contained variable speed drive as specified.

B. Pumps shall be self-priming and shall have a maximum suction lift capability of up to 30' vertical water column.

C. Discharge Pressure Rating: Up to 60 psi on Qdos 60.

D. Pumps shall be capable of pumping both liquids and gases without vapor locking.

E. Pump shall not require the use of back pressure valves, suction foot valves, strainers, pulsation dampeners, or auto degassing valves and shall not require dynamic seals in contact with the pumped fluid. Process fluid shall be contained within pump tubing and shall not directly contact any rotary or metallic components during operation. Upon failure, the process fluid shall be completely contained within the pump head to prevent hazardous exposure to operators. Manufacturers that do not offer a completely contained pump head are not acceptable.

1.2 Quality Assurance

A. This specification is the basis for the design of all chemical metering pumps. All pumps, whether named as an acceptable supplier or submitted as an equal shall, at a minimum, meet the following critical design requirements.

B. Pump shall be 24 hr. continuous duty rated and have a five-year manufacturer's warranty from date of shipment.

C. For quality assurance, pumps shall be supplied and labeled by the original manufacturer. Relabeled products, even under license by manufacturers, shall not be acceptable.

D. Manufacturer shall have a minimum twenty (20) years of experience manufacturing peristaltic pumps, shall have a direct business presence in the United States for minimum of twenty (20) years, and shall employ a minimum of fifty (50) employees in the United States. Manufacturers without a direct American presence who distribute through a third-party distributor are not acceptable.

E. Pumps shall be manufactured in compliance with ISO 9001-2015 standards.

F. Pumps shall meet CE, NSF 61 and applicable electrical standards.

G. To ensure proper function and quality, pump head and drive shall be manufactured by the same company.

1.3 Submittals

A. Submit the following:

1. Certified shop drawings.

2. Performance curve showing flow rate as a function of RPM and pressure.

3. Dimensional drawings.

4. Operating, maintenance, programming, and wiring instructions

5. Tool-free pump head replacement instructions

6. Manufacturer's certification that pump head and drive are all manufactured by the same manufacturer.

Part 2 - Pump Design

1.1 Manufacturers

A. Watson-Marlow, Inc. Supplied by Hawkins Inc.

1.2 Pump Process Schedule

Model: Qdos 60 Universal +

Quantity – 10

Skid – Yes

Mount - Wall

Fluid

1. Sodium Hydroxide 50%
2. Sodium Hypochlorite 12.5%
3. Poly Aluminum Chloride
4. Sodium Permanganate 20%
5. Poly Orthophosphate

Flow Range Min– Max (GPH) 0.01 – 15.85

Average Discharge Pressure (PSI) 10 PSI

Maximum Discharge Pressure (PSI) 30 PSI

1.3 Pump Construction

A. Pump head

1. Technology: Provide tool-free Conveying Wave Technology (CWT) cartridge style pump head, consisting of an eccentrically driven rotor which occludes an EPDM membrane against a PEEK track. For operator safety, pump head shall be serviceable as a single replaceable component. Pumps that require an operator to open the pump head for membrane replacement, cleaning, or rebuilding or that require tools for maintenance are unacceptable.

2. Max rating: Qdos 60, with chemical compatible pump head – 15.85 GPH at 125 rpm and 60 psi of discharge pressure

3. Housing construction: Corrosion resistant and high impact resistant glass filled PPS.

4. Geometry: Pump head shall consist of sealed track housing with in-line porting. Suction and discharge ports shall be 180 degrees apart with bottom suction and top discharge.

5. Rotor: Pump head rotor shall be constructed of 303 stainless steel, sealed within the track housing, and supported by its own bearings. Occlusion levels shall be factory set to ensure flow accuracy of +/- 1% and repeatability performance of +/- 0.5% and shall not require any field adjustment.

6. Contact Materials: All pump head components in the fluid path shall be NSF61 listed and shall be of materials specified by the manufacturer as compatible with the process fluid.

7. Leak containment/detection: In the event of EPDM element failure, the leak sensor shall shut the pump down immediately with all process fluid contained within the sealed pump head.

a. Sensor type: Utilize non-contacting optical sensor. Sensor shall not encounter the process fluid, shall contain no moving parts, shall not depend on the capacitance of the process fluid, shall not require fluid to leak out of the pump housing for engagement, nor shall require any sensitivity or calibration adjustment.

b. Alarm: Sensor shall shut down the pump, give a visual indication on the drive controller, and if specified shall provide an output general alarm signal.

c. For operator and environmental safety, pumps which do not have leak containment, leak sensor, and shutdown are not acceptable. For additional overpressure safety, sealed pump head shall have a controlled drain-to-waste port.

8. Port connections: Pump head shall utilize PVDF compression fittings which shall mate to ¼" x 3/8" or 3/8" x ½" PE interface tubing. Provide polypropylene compression by ½" NPT adaptors for connecting interface tubing to process line.

9. Spares: Provide one (1) spare pump head per pump supplied.

B. Drive

1. Rating: Continuous 24-hour operation, 45o C ambient.

2. Voltage: Drive shall be suitable for 100-240VAC, 50-60Hz, 1-Phase with an internal switch-mode power supply. Supply nine-foot length mains power cord with standard 115VAC three-prong plug.

3. Max drive power consumption: 190VA.

4. Enclosure: NEMA 4X constructed out of corrosion and impact resistant engineering plastic, 20% Glass filled PPE/PS. By nature of the environmental conditions, painted or unpainted metallic housing including 316SS are not acceptable. Enclosure shall house the drive motor and all control circuitry in one integrated unit. Separate VFDs and motors are not acceptable.

5. Direct coupled pump head with fully protected drive

a. Pump head shall direct couple mount to the controller via a splined drive shaft and shall be locked in place by two tool-free thumbscrews or lever mechanism.

b. Pump head shall be fully sealed to prevent any contamination of the controller or drive shaft by process fluid.

c. Pump head shall contain its own rotor bearings and not impart an overhung load on the pump shaft.

d. Pump heads shall be supplied mounted to the left or right side of the drive enclosure as specified in the drawings. If not specified, pump heads shall mount to right side of the enclosure.

e. Drive shall stop shaft rotation and give visual alarm in the event the pump head is removed.

6. Drive motor: brushless DC motor with integral gearbox and closed loop tachometer feedback.

a. Circuitry complete with temperature and load compensation and protection.

C. Human-Machine Interface (HMI) and Control

1. Manual Control Interface

a. Flow range: Qdos 30 CWT - 7,930:1 flow range from 0.001-7.93 GPH in 0.001 GPH increments.

b. Display: Backlit graphical TFT Display capable of up to 8 lines of text with up to 26 characters per line to display pump tag number, flow rate, and programming instructions. Display shall also provide visual indication of running status via screen color: Blue = Running, White = Stopped, and Red = Warning.

c. Keypad: Keypad for start, stop, speed increment, speed decrement, rapid prime, and programming.

d. Flow units: Programmable in either ml/min or gallons/hour.

e. Security: Programmable keypad lock and PIN security for optional lockout of all keys except emergency start/stop.

f. Auto Restart: feature to resume pump status in the event of power outage interruption.

g. Multilingual menu: include programming menus in nine languages, including at a minimum English, Spanish, and French.

h. Fluid level monitor: Programmable flow totalization to advise operator when their supply tank is low.

i. HMI and mains power shall be accessible from the front of the enclosure.

j. Minimum requirements: Pumps that do not meet the minimum manual control requirements as specified above are not acceptable.

Part 3 – Wall Mounted Dual Pump Skid

1. Contractor shall supply a wall mounted dual pump skid for each chemical. Skids shall be HDPE with a containment basin. Isolation ball valves shall be Asahi Type 21 true union ball valves. All accessories, inlet and outlet connections, and pump inlet and outlet connections shall be installed with valves. Skid shall have a junction box for communication wiring from the flowmeter. Accessories:
    a) (1) 250 mL calibration column
    b) (1) pressure relief valve
    c) (1) diaphragm protected gauge
2. Contactor shall install new pipe saddles with removable injection quills. Valves shall be stainless steel with stainless steel safety chain. Quills shall be PVC with a Teflon liner. Injection quills shall be installed with a backpressure valve for accurate dosing.

II Bulk Storage Tank

PART 1 - General

Furnish 3 high density crosslinked polyethylene double wall storage tank manufactured by Assmann Corporation of America, Garrett, IN or approved equal, in accordance with the definitions given in ASTM D 1998-96 (polyethylene upright storage tanks). The tanks shall be manufactured by rotational molding process. Tank capacity & model shall be listed within this specification.

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PART 2 - MATERIALS

2.1 Plastics

The tanks shall be molded from crosslinked polyethylene. The resin used for molding shall be Schulink XL350, as manufactured by A. Schulman, or approved equal. The plastic shall contain no fillers. All plastic shall contain a minimum of 0.3% U.V. stabilizers compound by the resin manufacturer. Pigments may be added as desired by the customer or as designated by the tank manufacturer, not to exceed 0.5%-dry blended and 0.2%-compounded in, of the total weight. The mechanical properties of the polyethylene shall include ESCR, condition A F50 results for 100% Igepal as defined in ASTM D1593 as well as the results using a 10% Igepal solution. Both test results must exceed 1000 hours of exposure without failure. The tank manufacturer must supply a copy of the mechanical property table as provided by the resin manufacturer for the resin used to manufacture the specified polyethylene tank.

PART 3.0 - TANK CONSTRUCTION

3.1 Design Parameters

The tanks shall be designed with a hoop stress value no greater than 600 PSI at 100 degrees F, with a safety factor of no less than 2. The Barlow Formula shall be used to calculate the wall thickness at the bottom sidewall or at the area of the tank that experiences the greatest head pressure. The manufacture shall produce the crosslinked polyethylene tank with verifiable uniform wall thickness throughout the entire surface area of vessel. The crosslinked tank shall have a minimum 70% crosslinking throughout, and Gel Test results shall be provided by the manufacturer using the test method as defined in ASTM D 1998-96. The sample used for the test shall come from the lowest point possible on the sidewall of the tank. The vessel shall be air-cooled to ensure a consistent cure throughout the thickness of the part and reduce the stress caused by shrinkage.

3.2 Appearance

The finished surface shall be as free as commercially practical from visual defects such as foreign inclusions, air bubbles, pinholes, and craters. All edges where openings are cut into tanks shall be trimmed smooth.

3.3 Dimensions and Tolerances

The tank diameter shall be measured externally. The tolerance on the outside diameter shall be plus or minus 3%. The measurement shall be taken with the tank in the vertical position. All tanks shall have a minimum 2” knuckle radius.

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PART 4.0 - DESCRIPTION OF VESSEL

4.1 Tank Design

The design of the vessel shall be vertical, flat bottom, closed top, and seamless in construction. The dome of the primary tank shall be larger in diameter than the diameter of the straight shell sidewall. The diameter of the secondary tank shall be the same as the diameter of the dome on the primary tank. The dome of the primary tank sitting inside the secondary tank shall provide a weather shield for the secondary tank restricting the elements from entering.

The outer tank shall be vertical, flat bottom, open top, and seamless in construction and shall have a minimum of four flats on the bottom sidewall that extend towards the center of the vessel providing a means to center the primary tank. The flats shall also provide an area for the placement of bottom discharge fittings. The flats shall also provide stability for the primary tank for installations that require seismic restraint systems.

The two vessels shall be fastened together with stainless steel hardware for shipping and handling and shall provide lifting devices for tank placement.

Wall thickness for both primary and secondary vessels will be uniform throughout and verifiable via wall thickness testing procedures. The thickness of top sidewall will be consistent with bottom sidewall.

Part 5.0 - Accessories

5.1 Side Wall Fittings

Fitting shall pass through the sidewall of both the primary and secondary tank on the flats provided by the secondary tank. 1 each 2” fitting shall pass through the sidewall of the primary and the secondary tank. The fitting shall be a metallic double male bolted style fitting. The metallic fitting shall be constructed out of material compatible with the tank contents. Fitting shall be constructed to an ANSI 150 LB flange bolt hole pattern. A single gasket shall be placed between the metallic fitting and the inside of the primary tank wall. A second gasket shall be installed between the outside of the primary tank and the inside of the secondary tank. All mounting hardware shall be compatible with the tank contents. The sidewall fitting shall be constructed in a manner as not to expose cross sections of walls as might otherwise result by installation of the fitting. Fitting shall be located on the lower sidewall of the storage tank on the recessed fitting placement flat. Tank shall be shipped with discharge nozzle installed. No additional fitting installation will be required onsite.

5.2 Dome Fittings

Tanks shall be equipped with three (3) molded in fitting placement flats. Molded in flats shall be at 90-degree increments from tank manway. The flats shall be 14" x 14" square. All dome connections shall be PVC bulkhead fittings with EPDM elastomers. All dome fittings shall be fume tight.

5.3 Manway Covers

The standard manway shall be a 16" diameter opening molded integrally with the primary tank. The design shall be such that the polyethylene cover for the standard opening snaps over the molded lip and is secured with a nylon lever-lock. The optional manway covers shall be either 22" bolted and gasketed with a ½" thick polyethylene plate, ½" thick XLPE gasket and PVC threaded bolts, or a 21" diameter McFee insert with optional view port. The optional manway covers shall be mounted on a raised flat molded integrally with the primary dome for structural support.

5.4 Vents

The vent size shall be directly related to the size of piping specified for discharge and filling. The size of vent shall also take into consideration product flow and air pressure experienced in normal filing and discharge operations.

5.5 Tank Description & nozzle requirements

Tank	Nozzle Description	Nozzle Size	Nozzle Type	Nozzle Location	Special Equipment
IMT-1550 XL Double Walled QTY - 1	Manway	16"	SS Split Ring	Dome	Hawkinsight Tank Monitor
72" D x 122.75" H	Outlet	1/2"	Drop Tube	Dome	
Sodium Hydroxide 50%	Schedule 80 PVC Fill	2"	Cam Lock	Dome	
Indoors	Vent	4"	Mushroom	Dome	
S.G. 1.9	Level		Reverse Float	Dome	

Tank	Nozzle Descrption	Nozzle Size	Nozzle Type	Nozzle Location	Special Equipment

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IMT-1050 XL Double Walled QTY - 1	**Manway**	**16”**	**SS Split Ring**	**Dome**	**Hawkinsight Tank Monitor**
72” D x 87” H	**Schedule 80 PVC Fill**	**2”**	**Cam Lock**	**Dome**	
Sodium Hypochlorite 12.5%	**Outlet**	**1/2"**	**Drop Tube**	**Dome**	
Indoors	**Vent**	**2”**	**Vent to Outside**	**Dome**	
1.9 S.G.	**Level**		**Reverse Float**		

Tank	Nozzle Descrption	Nozzle Size	Nozzle Type	Nozzle Location	Special Equipment
IMT-550 XL Double Walled QTY - 1	**Manway**	**16”**	**SS Split Ring**	**Dome**	**Hawkinsight Tank Monitor**
60” D x 72 3/4” H	**Schedule 80 PVC Fill**	**2”**	**Cam Lock**	**Dome**	
Poly Aluminum Chloride Solution	**Outlet**	**1/2"**	**Drop Tube**	**Dome**	
Indoors	**Vent**	**2”**	**Mushroom**	**Dome**	
1.9 S.G.	**Level**		**Reverse Float**		

Tank	Nozzle Descrption	Nozzle Size	Nozzle Type	Nozzle Location	Special Equipment
IMT-165 XL Double Walled QTY - 2	**Manway**	**7”**	**Threaded**	**Dome**	**Hawkinsight Tank Monitor**

34.5" D x 65.75" H	**Fill**			**Manway**	
Sodium Permanganate/Poly Orthophosphate	**Outlet**	**1/2"**	**Drop Tube**	**Dome**	
Indoors	**Vent**	**1"**	**Vent to Outside**	**Dome**	
1.9 S.G.	**Level**				

6.0 Inspection and Test Procedures

Full ASTM testing & documentation shall include:

Gel Test (Crosslink only), Impact testing, Hydrostatic Test,

Light Test, Wall Thickness Report.

Hydrostatic testing shall be done on all tanks to ensure a leak proof seal on all installed fittings and a certificate of compliance shall be sent with the tank. Impact test shall be performed in accordance with ASTM D 1998-96. The degree of crosslinking shall be performed in accordance with ASTM D 1998-96. The minimum acceptable crosslink percentage shall be 75%. Tank wall thickness must be measured in increments of two-foot elevations at 0°, 90°, 180° and 270°. Measurements will record the entire wall thickness from sidewall bottom to sidewall top and will include vessel dome and base.

IV Installation

A. Contractor shall furnish all equipment needed to remove existing chlorine gas, poly orthophosphate, potassium permanganate, and poly aluminum chloride equipment and replace with new proposed feed equipment. Contractor shall coordinate with the end user on the shutdown of the water treatment plant. Due to this being the only source of water production, contractor shall include a temporary feed system provided the work cannot be completed without loss of supply pressure.

B. Chemical piping shall be schedule 80 PVC. Valves shall be Asahi type 21 true union ball valves with elastomers suitable for each chemical.

C. Contractor shall furnish a new pipe saddle and corporation stop with a removable injection quill. The corporation stop assembly shall be Teflon lined PVC with a stainless-steel safety chain.

D. Contractor shall provide a 1-year warranty on all plumbing and mounting hardware as well as honor any factory warranties longer than a span of 1 year.

E. Contractor shall furnish 1,500 gallons of sodium hydroxide 50%, 1,000 gallons of sodium hypochlorite 12.5%, 550 gallons of Aqua Hawk 15057J, 165 gallons of sodium permanganate

20%, and 165 gallons of Aqua Gold 170 for startup. Contractor will transfer remaining chemicals into new bulk storage tank.

F. Contractor shall install conduit underground with Kynar tubing sleeved inside for containment from newly proposed chemical building to inject points. Above ground connections shall be joined by a junction box with leak valve located on the bottom side.

G. Contractor shall include 4-20mA wiring from existing flowmeter to newly proposed chemical building. 120VAC terminations and connection shall be supplied by licensed electrician proposed in separate bid.