

ADDENDUM NO. 3 TO THE CONTRACT DOCUMENTS for the construction of

Date: September 5, 2014 Project No.: 486753

# CHEMICAL SYSTEMS AND ACTUATOR IMPROVEMENTS BID # 913 FAYETTE COUNTY WATER SYSTEM FAYETTE COUNTY, GEORGIA

# To All Planholders and/or Prospective Bidders:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the construction of Chemical Systems and Actuator Improvements Bid # 913 dated August 2014 as fully and completely as if the same were fully set forth therein:

#### **Response to Contractor Questions**

Response to Contractor Questions, attached.

# PART 3—SPECIFICATIONS

#### 1. Section 01 31 13, Project Coordination

Page 10, paragraph 1.04.E, after the last sentence ADD the following:

"It is acceptable to mobilize to other locations during the 30-day test period at Crosstown WTP."

Page 10, paragraph 1.04.F.1, after the last sentence ADD the following:

"It is expected that lime in existing silos will be consumed with some minimal material left on the walls and bottom which will require proper cleaning and removal."

Page 10, paragraph 1.04.G.2, after the last sentence ADD the following:

"It is expected that lime in existing silo will be consumed with some minimal material left on the walls and bottom which will require proper cleaning and removal."

# 2. Section 13 34 23, Fabricated Structures

Page 10, paragraph 2.03.G.1 DELETE in its entirety are REPLACE with the following:

"1. Three-phase, four wire, 120/208 volts, 60-Hz. Provide UL listed load center in NEMA 3R rain proof and sleet resistant enclosure mounted on exterior of building. Load center shall be provide with 125A main circuit breaker and feeder breakers as shown on Contract Documents. Panel shall power all components provided with enclosure such as water heater, lights, fan, receptacles and HVAC. Provide four GFI receptacles; three interior, one exterior by the doors. In addition feeder breakers are provided for process equipment mounted in enclosure as shown on Contract Documents. Where indicated on panel schedule in Contract Documents, provide Equipment Ground Fault Interrupter (EGFI) rated breakers. EGFI breakers have ground fault sensor and rated to trip on 30 mA ground fault (UL listed for equipment ground fault protection)."

# 3. Section 26 05 01, Electrical

Page 20, ADD the following new paragraphs:

# "2.20 RECEPTACLES

- A. Receptacle, General Purpose:
  - 1. NEMA WD 1 and FS W-C-596G.
  - 2. Duplex, two-pole, three-wire grounding type with screw type wire terminals.
  - 3. Impact resistant nylon cover and body, with finder grooves in face, unless otherwise indicated.
  - 4. One-piece mounting strap with integral ground contact (rivetless construction).
  - 5. Contact Arrangement: Contact to be made on two sides of each inserted blade without detent.
  - 6. Rating: 125 volts, NEMA WD 1, Configuration 5-20R, 20 amps, unless otherwise indicated.
  - 7. Size: For 2-inch by 4-inch outlet box.
  - 8. Special Features: Provide the following features in comparable devices where indicated:
    - a. Listed weather-resistant per NEC 406.8.
  - 9. Industrial Grade Manufacturers and Products:
    - a. Cooper Arrow Hart; 5362 Series.
    - b. Hubbell Bryant; HBL5362 Series.
    - c. Leviton; 5362 Series.

- B. Receptacle, Ground Fault Circuit Interrupter:
  - 1. Meet requirements of general-purpose receptacle.
  - 2. Listed Class A to UL 943, tripping at 5 mA.
  - 3. Rectangular smooth face with push-to-test and reset buttons.
  - 4. Listed weather-resistant per NEC 406.8.
  - 5. Feed-through Capability: 20 amps.
  - 6. Manufacturers and Products:
    - a. Hubbell Bryant; GFTR20 Series.
    - b. Cooper Arrow Hart WRVGF20 Series.
    - c. Leviton; 7899 Series.

# 2.21 DEVICE PLATES

A. Sectional type plate not permitted.

# B. Metal:

- 1. Material: Specification grade, one-piece, 0.040-inch nominal thickness stainless steel.
- 2. Finish: ASTM A167, Type 302/304, satin.
- 3. Mounting Screw: Oval-head, finish matched to plate.

# C. Cast Metal:

- 1. Material: Copper-free aluminum.
- 2. Screw: Oval-head stainless steel.

# D. Weatherproof:

- 1. Receptacle, Weatherproof Type 1:
  - a. Gasketed, cast-aluminum, with individual cap over each receptacle opening.
  - b. Mounting Screw and Cap Spring: Stainless steel.
  - c. Manufacturers and Products:
    - 1) Crouse-Hinds; Type WLRD-1.
    - 2) Appleton; Type FSK-WRD.
- 2. Receptacle, Weatherproof Type 2:
  - a. UL listed for wet location while in use.
  - b. Die cast metal cover.
  - c. Manufacturer and Product: TayMac; Type Multi-Mac."

# 4. Section 40 27 01, Process Piping Specialty

Page 6, 2.07 ADD the following new paragraph and renumber the subsequent paragraphs:

- "A. Strainers, Plastic Piping Systems, 4 Inches and Smaller:
  - 1. Type: Y-pattern PVC body, 150 psi nonshock rated, with screwed PVC cap and Viton seals.
  - 2. End Connections: Screwed or solvent weld, 2 inches and smaller. Class 150 ANSI flanged, 2-1/2 inches and larger.
  - 3. Screen: Heavy-gauge PVC, 1/32-inch mesh, minimum 2 to 1 screen area to pipe size ratio.
  - 4. Manufacturer: Hayward."

# 5. Section 40 27 02, Process Valves and Operators

Page 8, 2.05.E, ADD the following new paragraph and renumber the subsequent paragraphs:

- "1. Type V630 PVC Ball Check Valve 4 Inches and Smaller:
  - a. ASTM D1784, Type 1, Grade 1 polyvinyl chloride body, dual union socket weld ends, rated 150 psi at 73 degrees, and Viton seat and seal.
  - b. Manufacturers and Products:
    - 1) Nibco; Chemtrol Tru Union.
    - 2) ASAHI/America.
    - 3) Spears; True Union."

#### 6. Section 44 42 56.19, Sample Pumps

ADD Section 44 42 56.19, Sample Pumps, attached.

#### **DRAWINGS**

- 1. Drawing 10-C-01 grid location 3C: Extend the hatch depiction for the Trench Cover Retrofit across the roadway.
- 2. Drawing 10-C-02 grid location 3B: Callout for tap on existing 20" W1, replace "4091-305A" with "4027-643X".
- 3. Drawing 10-C-03 grid location 3A: Callout for chemical vaults, revise "(TYP OF 4)" with "(TYP); depict the additional chemical vaults per revised Drawings 10-C-04.
- 4. DELETE Drawing 10-C-04 in its entirety and REPLACE with revised, attached.

PW/DEN001/486753 SEPTEMBER 5, 2014 ©COPYRIGHT 2014 CH2M HILL

ADDENDA 00 91 13 - 4

- 5. Drawing 10-C-04 grid location 3B: Depict a 2" tap with trust block on the 4" W1 near Sodium Permanganate Storage and Feed Facility; add callout "Tap 4" W1. See 4027-640 and 4027-643X."
- 6. Drawing 10-D-02 Note 3: Add "Repaint all piping and appurtenances."
- 7. DELETE Drawing 10-E-02 in its entirety and REPLACE with revised, attached.
- 8. DELETE Drawing 10-SME-04 in its entirety and REPLACE with revised, attached.
- Drawing 10-SME-04 Lake McIntosh Meter Vault: Add callout "Sodium Permanganate Injection Point No. 1" near the future pac injection; add note "3. Relocate magmeter downstream for installation of flanged spool section for sodium permanganate and pac injection taps."
- 10. DELETE Drawing 20-D-01 in its entirety and REPLACE with revised, attached.
- 11. DELETE Drawing 20-D-02 in its entirety and REPLACE with revised, attached.
- 12. DELETE Drawing SD-07 in its entirety and REPLACE with revised attached.

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 3 in the Bid Form or by submitting the Addendum with the bid package. Bid Forms submitted without acknowledgment or without this Addendum will be considered in nonconformance.

# CH2M HILL

Project Manager

Stuart Blakely Jeffcoat, P.E.

Appended hereto and part of Addendum No. 3: Response to Contractor Questions, attached. Section 44 42 56.19, Sample Pumps, attached. Drawing 10-C-04, attached. Drawing 10-E-02, attached. Drawing 20-D-01, attached. Drawing 20-D-02, attached. Drawing SD-07, attached.

# **END OF ADDENDUM**

PW/DEN001/486753 SEPTEMBER 5, 2014 ©COPYRIGHT 2014 CH2M HILL ADDENDA 00 91 13 - 5

# Chemical Systems and Actuator Improvements Project: Response to Contractor Questions

	Spec Section / Drawing	Question/Remark	Response
1	Spec Section 01 31 13 1.04.2.E-	The specs state that all work must be substantially complete at one site prior to moving on to the next. Does this include the 30 day operational test period? In other words, can we mobilize and begin construction at the next location during the 30 day test?	See Addendum No. 3.
2	General	Regarding the demolition of the existing lime slurry tanks, what is the estimated amount of slurry left in the tanks to be demolished?	See Addendum No. 3.
3	Drawings 10-C-01 and 10-C-02	Note 5 on Sheet 10-C-01 states the Lime Silo is to be demolished, Note 6 on Sheet 10-C-02 states the lime silo is to remain. Please clarify.	Notes make reference to either the pre-lime (Chemical Bldg.) or the post-lime silo (Filter Bldg.).
4	Drawing 10-C-01	Please verify that the trench cover retrofit is not supposed to be done in the drive (Sheet 10-C-01)	See Addendum No. 3.
5	Drawing 10-C-01	What is the width of the trench cover?	See DWG 10-D-04 Existing Chemical Trench Demolition Detail.
6	General	The condition of the existing asphalt is not very good, but the plans only show some patching. Please confirm we are to patch cut areas only.	Replace asphalt pavement as required for new work only.

# SECTION 44 42 56.19 SAMPLE PUMPS

# PART 1 GENERAL

#### 1.01 DEFINITIONS

A. Terminology pertaining to pumping unit performance and construction shall conform to the ratings and nomenclature of the Hydraulic Institute Standards.

#### 1.02 SUBMITTALS

- A. Shop Drawings:
  - 1. Provide make, model, weight, and horsepower of each equipment assembly.
  - 2. Complete catalog information, descriptive literature, specifications, and identification of materials of construction. Seal, coupling, and bearing literature shall be included with the pump information.
  - 3. Performance data curves showing head, capacity, horsepower demand, and pump efficiency over the entire operating range of the pump, from shutoff to maximum capacity.
  - 4. Detailed mechanical and electrical drawings showing the equipment dimensions, size, and locations of connections.
  - 5. Complete motor nameplate data, as defined by NEMA, motor manufacturer, and including any motor modifications.
- B. Quality Control Submittals:
  - 1. Special shipping, storage and protection, and handling instructions.
  - 2. Manufacturer's printed installation instructions.
  - 3. Operation and Maintenance Manual.
  - 4. Service records for maintenance performed during construction.
  - 5. Field Test Reports.

# PART 2 PRODUCTS

#### 2.01 GENERAL

- A. Coordinate pump requirements with drive and motor manufacturer and be responsible for pump, drive, and motor requirements.
- B. Pump design shall be single-stage, end suction close-coupled, frame mounted, leak-proof, seal-less magnetic drive design.

PW/DEN001/486753 SEPTEMBER 5, 2014 ©COPYRIGHT 2014 CH2M HILL

#### 486753A.GN1

# 2.02 MANUFACTURERS

- A. Little Giant.
- B. Iwaki-Walchem.
- C. Fybroc.

#### 2.03 PUMP CONSTRUCTION AND DESIGN

- A. Casing: All wetted parts (casing, impeller, O-rings, bushing, etc.,) shall be constructed of the materials specified on the Pump Data Sheet and suitable for intended application.
- B. Drive:
  - 1. Provide pump coupled to motor through a seal-less magnetic drive.
  - 2. Drive to consist of drive magnet, impeller magnet, impeller magnet housing, and motor bracket.
  - 3. Provide O-ring seal between impeller magnet housing and pump casing.
  - 4. Drive magnet to be completely isolated from pumped fluid.
  - 5. Drive magnet to act as clutch to prevent motor overload.
  - 6. Motors as specified in Section 26 05 01, Electrical.
  - 7. Baseplate: Provide foot mounted baseplate suitable for supporting motor and close coupled pump.

#### 2.04 ACCESSORIES

- A. Equipment Identification Plate: 16-gauge, Type 316 stainless steel with 1/4-inch die-stamped equipment tag number securely mounted in a readily visible location.
- B. Anchor Bolts: Type 316 stainless steel, sized by equipment manufacturer, 1/2-inch minimum diameter, and as specified in Section 05 50 00, Metal Fabrications.

#### 2.05 FACTORY FINISHING

- A. Exposed metal surfaces of equipment and accessories specified herein shall be prepared, primed, and finish painted with the manufacturer's standard protective coating.
- B. Finish color shall be manufacturer's standard.
- C. Nonferrous and corrosion-resistant ferrous allows such as copper, bronze, monel, aluminum, chromium plate, and stainless steel need not be coated.

# 2.06 SOURCE QUALITY CONTROL

- A. Functional Test: Perform the manufacturer's standard test on equipment.
- B. Motor Test: See Section 26 05 01, Electrical.

# PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Install in accordance with manufacturer's printed instructions.
- B. Level base by means of steel wedges (steel plates and steel shims). Wedge taper not greater than 1/4 inch per foot. Use double wedges to provide a level bearing surface for the pump and driver base. Accomplish wedging so that there is no change of level or springing of the baseplate when the anchor bolts are tightened.
- C. Adjust pump assemblies such that the driving units are properly aligned, plumb, and level with the driven units and all interconnecting shafts and couplings. Do not compensate for misalignment by use of flexible couplings.
- D. Connect suction and discharge piping without imposing strain to pump flanges.
- E. Anchor Bolts: Accurately place using equipment templates and as specified in Section 05 50 00, Metal Fabrications.

#### 3.02 FIELD QUALITY CONTROL

- A. Functional Tests: Conduct on each pump.
  - 1. Alignment: Test complete assemblies for correct rotation, proper alignment and connection, and quiet operation.
  - 2. Flow Output: Measured by storage volumes.

#### 3.03 SUPPLEMENTS

- A. The supplements listed below, following "END OF SECTION," are part of this Specification.
  - 1. Section 44 42 56.19-01: Raw Water Sample Pump.

# **END OF SECTION**

PW/DEN001/486753 SEPTEMBER 5, 2014 ©COPYRIGHT 2014 CH2M HILL SAMPLE PUMPS 44 42 56.19 - 3

#### SAMPLE PUMP DATA SHEET, 44 42 56.19-01

Tag Numbers: \_\_\_\_\_

Pump Name: <u>Raw Water Sample Pump</u>

Manufacturer and Model Number: (1) Little Giant

(1) Little Giant
(2) IWAKI (MD-70RZ)
(3) Fybroc

# **SERVICE CONDITIONS**

Liquid Pumped (Material and Percent): <u>Raw Water</u> Pumping Temperature (Fahrenheit): Max <u>80</u>° Min <u>35</u>° Specific Gravity at 60° F: <u>1.00</u> pH: <u>6-7</u> Abrasive (Y/N) <u>N</u> Possible Scale Buildup (Y/N) <u>N</u>

# **PERFORMANCE REQUIREMENTS**

Capacity (US gpm): Rated <u>3.0 @ 49 ft.</u> Maximum Shutoff Pressure (ft): <u>66</u> Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): <u>N/A</u> Max. Pump Speed at Rated Capacity (rpm): <u>3,400</u> Constant (Y/N) <u>Y</u> Adjustable (Y/N) <u>N</u>

# **DESIGN AND MATERIALS**

Standard Design  $(Y/N) \underline{Y}$ Frame-mounted  $(Y/N) \underline{Y}$ Connection: Inlet:  $\underline{34}$ -inch NPTMOutlet:  $\underline{34}$ -inch NPTM

#### SAMPLE PUMP DATA SHEET, 44 42 56.19-01

Tag Numbers: **DRIVE MOTOR** (see Section 26 05 01, Electrical) Horsepower: <u>2/7</u> Voltage: <u>115</u> Phase: <u>1</u> Synchronous Speed (rpm): \_\_\_\_\_ Frequency: 60-Hz Service Factor: 1.0 Motor nameplate horsepower shall not be exceeded at any head-capacity point on the pump curve. Enclosure: DIP \_\_\_\_ EXP \_\_\_ ODP \_\_\_ TEFC \_\_X \_\_ CISD-TEFC \_\_\_\_\_ TENV \_\_\_ WPI \_\_\_\_ WPII SUBM Mounting Type: Horizontal  $\underline{Y}$  Nonreverse Ratchet (Y/N) N TESTING Pump Test: Factory Functional (Y/N) <u>N</u> Factory Performance (Y/N) <u>N</u> Factory Hydrostatic Casing Pressure Test (Y/N) N Other \_\_\_\_\_ Field Functional (Y/N) Y Field Performance (Y/N) N Field Vibration (Y/N) N Motor Test: Short Commercial (Y/N) N Other \_\_\_\_\_

**NOTES:** Furnish sample pump with 5 ft of flexible power cable with plug (NEMA 5-15P or 5-20P) for device to be wired to electrical outlet.



PLOT DATE: 9/4/2014

[P44] UTILITY PAD MOUNTED METER SOCKET INSTALLED BY CONTRACTOR [P44] — – 125A 208V, 3PHASE SERVICE ENTRANCE CIRCUIT BREAKER NEMA 4X ENCLOSURE СВ [P44] -– LOAD CENTER PROVIDE AS PART OF BUILDING SYSTEM. SEE SPECIFICATION LP

3

# SODIUM PERMANGANATE ONE-LINE DIAGRAM

2

1

PANEL	L: LP			LOCA	TION:	(PRC	VIDE	D BY BUILDING SYSTEM VENDER	)		
SERVI	CE VO	LTAGE	E: 208/120V	PHAS	E: 3			WIRE:4			
TOTAL	LOAD	KVA:	32.6	BUS S	SIZE:	125		MAIN SIZE: 125	TYPE:	MCB	
REMA	RKS: *	PROV	IDE EGFI RATED BREAKERS	NEUT	RAL: I	FULL		MOUNTING: SURFACE			
LO	AD IN K	(VA		BKR	CKT	СКТ	BKR		LOA	D IN K	VA
Α	В	С	CIRCUIT DESCRIPTION	A/P	NO.	NO.	A/P	CIRCUIT DESCRIPTION	Α	В	С
7.0			HAVC UNIT	40/3	1	2	20/1	RECEPTACLES	0.7		
	7.0				3	4	20/1	EXTERIOR LIGHT		0.2	
		7.0			5	6	20/1	INTERIOR LIGHTS			0.4
3.0			WATER HEATER	40/2	7	8	20/1	SAFETY SHOWER FSH	0.2		
	3.0				9	10	20/1	ALARM STROBE LIGHTS		0.3	
			SPARE	30/2	11	12	20/1	CHEMICAL PUMP P-682-1			0.4
					13	14	20/1	CHEMICAL PUMP P-682-2	0.4		
	0.2		HEAT TRACE	20/1*	15	16	20/1	CP-680		1.0	
$\sim$	$\sim$	0.2	HEALTBACE	20/1*	17	18	20/1	EX FAN			0.5
0.9	, v	~ ~	RECEPT-SAMPLE PUMP	20/1	19	20	20/1	LIT-682-1,LI-682-2	0.2		
10.9	10.2	7.2							1.5	1.5	1.3

4

5

6

CHORENCE CROSSTOWN WTP - ONE RELECTRICAL R	IILL® LINE DIAGRAM	6600 FEACHTREE DUNWOODY ROAD 400 EMBASSY ROW, SUITE 600 ATLANTA, GA, 30328 PH: 770-604-9095 CHEMICAL SYSTEMS AND ACTUATOR IMPROVEMENTS FAYETTE COUNTY WATER SYSTEM FAYETTE COUNTY, GEORGIA	Degen	19/2014 АD DATE DATE	DENDUM 3 OMESSE	REVISION DHK PV KESKA	DVPD 4	APRTON	
---	-----------------------	--	-------	-------------------------	--------------------	-----------------------------	--------	--------	--





PLOT TIME: 4:43:32 PM



PLOT TIME: 4:58:55 PM



				DM HW	BY APVD	APVD	1 DIAZ E MINCHEW EPOPERTY OF ©CH2M HILL 2014. ALL RIGHTS RESERVED.
2				1 09/2014 ADDENDUM 3	NO. DATE REVISION	DSGN DR CHK	E MINCHEW M HALES M HALES M NORPORATION OF PROVESSIONAL SERVICE. IS THE NORPORATER PROJECT WITHOUT OF PROFESSIONAL SERVICE. IS THE
		6600 PEACHTREE DUNWOODY ROAD 400 EMBASSY ROW, SUITE 600 ATLANTA, GA, 30328 PH: 770-604-9095	CHEMICAL SYSTEMS AND	ACTUATOR IMPROVEMENTS	FAYETTE COUNTY WATER SYSTEM	FAYETTE COUNTY, GEORGIA	E OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS IN CHAM HILL AND IS NOT TO BE LISED IN WHOLE OF
		CH2MHILL	PROCESS MECHANICAL	SOUTH FAYETTE WTP	CHEMICAL BUILDING	DEMOLITION DETAILS	REUS
1E: 020-D-1002_486753.dgn	PLOT DATE: 9/4/2014	UE BAR OR DATE PROJ DWG SHEET PLOT		SCAL INCH RAWIN	-E ON NG. JST 41 20 of 8:00	- 201 8675 )-D-C	

