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NOTE:

This waiver submission may include references to proprietary items and brand name products. These references have been retained in order to provide context for the waiver submission. EPA does not evaluate a waiver based on a proprietary item but reviews the performance-based specifications for the project/products. As such, any references to brand or proprietary items are reviewed on an "or equal" basis by EPA.

Items and pages may have been intentionally redacted or excluded by the EPA. Contact CWSRFWaiver@epa.gov for more information if necessary.

February 4, 2021

Ms. Elisabeth Brown
SWRCB Project Manager
State Water Resources Control Board
E-Mail: Elisabeth.Brown@waterboards.ca.gov

Subject: Request for Waiver of AIS Provisions for Small Diameter Stainless Steel Fittings for the Regional Water Recycling Plant No. 5 Liquids Treatment Expansion to 22.5 MGD and Solids Treatment Facility under SWRCB Agreement No 8173-210

Dear Ms. Brown:

The Inland Empire Utilities Agency (IEUA) is requesting a product-specific project waiver of American Iron and Steel (AIS) provisions be issued for ¼-inch to 3-inch diameter Schedule 40 stainless steel pipe fittings for the construction of the Regional Water Recycling Plant No. 5 (RP-5) Expansion Project. In accordance with the United States Environmental Protection Agency (USEPA) memorandum, Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act of 2014, the information required for a waiver to be processed is included below and in the attached documents.

Project Background

IEUA plans to expand its existing RP-5 facility to convert raw wastewater and food waste into low carbon biogas in Chino as part of an extensive \$330 million upgrade project. IEUA will modify and improve the facility, which includes installing new influent pump stations, headworks, primary clarifiers, secondary/tertiary treatment, and off-spec storage to increase its current liquid processing capacity from 15 million gallons per day (MGD) to 22.5 MGD. Additionally, IEUA will upgrade its solids treatment facility, which will be capable of accepting an average of 50,000 gallons of pre-processed slurry per day. The wastewater and solid food waste will be converted to biogas to be used by the plant's two existing co-generation engines or three boilers.

The RP-5 Expansion Project is funded by a loan through the Clean Water State Revolving Loan Fund (CWSRF). The Consolidated Appropriations Act of 2014 includes an "American Iron and Steel" (AIS) provision that requires recipients of CWSRF assistance to use iron and steel products produced in the United States.

The RP-5 Expansion Project includes the installation of ¼-inch to 3-inch diameter Schedule 40 stainless steel pipe fittings for the following systems: Hydrogen Sulfide Removal, RAS Pumps, Pressure Gauges, MBR Filtrate Pumps, MBR Compressed Air, Acid Cleaning, Seal Water, Non potable Water, Potable Water, High Pressure Air, Lube Oil, and Digester Overflow.

The project specifications for stainless steel piping are in Attachment No. 1. The project requires 3,195 fittings for a total cost of [REDACTED]. See Attachment No. 2 for a detailed breakdown. The project

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Shivaji Deshmukh
General Manager

anticipates needing the fittings on or before 4/3/2021 to meet the expected completion date of 1/9/2025.

Location of the project

Regional Water Recycling Plant No. 5
6063 Kimball Avenue
Chino, California 91708

Name and Address of Proposed Supplier

Ferguson Waterworks
1502 Columbia Ave
Riverside, CA 92507

Availability Waiver Request

IEUA has made a good faith effort to solicit bids for domestic iron and steel products as demonstrated by language in requests for proposals, contracts, and communications with the general contractor, as referenced in Attachment No. 3 where the AIS provision contract language was incorporated into the Contract.

Discussions with possible manufacturers and suppliers for the ¼-inch to 3-inch diameter stainless steel fitting suppliers have indicated that none are able to meet both the project specifications and the AIS provisions. Our research indicates that these products are not produced in the U.S. in sufficient and reasonably available quantities and of satisfactory quality to meet the needs of the project.

The General Contractor, W.M. Lyles Co., contacted the following suppliers about the availability of the specified fittings:

- Ferguson Waterworks
- Santa Fe Winwater

However, none of the suppliers contacted could domestically source the pipe fittings in accordance with the contract requirements. Please see manufacturer's statements regarding availability in Attachments No. 4 and No. 5 respectively.

Similar waivers regarding stainless steel fittings have been previously issued by the USEPA for the following projects: City of San Diego's Pump Station No. 2 Power Reliability and Surge Protection Project (Attachment No. 6) and City of Blackfoot Wastewater Treatment Plant (Attachment No. 7)

If you have any questions, please contact me at (909) 993-1545 or via e-mail at jpompa@ieua.org.

Sincerely,

INLAND EMPIRE UTILITIES AGENCY



Jesse Pompa, P.E., BCEE
Manager of Grants

Attachments: Attachment No. 1 – Project Specifications – Section 15010
Attachment No. 2 – Ferguson Waterworks Cost Breakdown
Attachment No. 3 – AIS Contract Language (Project Requirements 13.0)
Attachment No. 4 – Ferguson Waterworks SS Fittings Availability Statement
Attachment No. 5 – Santa Fe Winwater SS Fittings Availability Statement
Attachment No. 6 – EPA AIS Waiver City of San Diego
Attachment No. 7 – EPA AIS Waiver City of Blackfoot

80 as indicated. Fittings for galvanized steel pipe shall be of galvanized malleable iron, with National Pipe Thread (NPT), flanged or grooved ends as indicated. Black pipe may have welded joints, with standard or extra strong welded fittings unless otherwise indicated in the Piping Schedule.

2.03 STAINLESS STEEL PIPE

- A. Stainless steel pipe sizes ½" to 24" shall be 316(L) Schedule 40 pipe ASTM A312, plain beveled, threaded or grooved ends, fittings shall be 316(L) stainless steel Schedule 40 butt weld, threaded or grooved ends, flanges shall be Class 150# ASTM B16.5 flat face, stainless steel ASTM A182 Grade F316L.
- B. Lightweight stainless steel pipe sizes ½" and larger shall be 304L or 316L Schedule 10S pipe conforming to AWWA C200, with 304L or 316L stainless steel butt weld or grooved fittings conforming to AWWA C226, flanges conforming to AWWA C228. Lightweight stainless steel pipe shall be used on aeration/agitation/scouring air/permeate/back pulse/foul air pipe applications as indicated in the Pipe Schedule. Lightweight stainless steel pipe sizes ½" to 2" may be connected with Vic-Press fittings of grade material matching base pipe material.

2.04 HYDRAULIC TUBING

- A. Hydraulic tubing fabricated of fully annealed stainless steel ASTM A269 Grade TP316L, precision seamless. Sizes 1/4" to 3/8" shall have a minimum wall thickness of 0.065" and shall be rated for 6,000 psi operating pressure and 24,000 psi burst pressure. Sizes 1/2" to 3/4" shall have a minimum wall thickness of 0.083" and shall be rated for 6,000 psi operating pressure and 24,000 psi burst pressure. Sizes 1" to 1 1/2" shall have a minimum wall thickness of 0.120" and shall be rated for 3,800 psi operating pressure and 12,000 psi burst pressure.
- B. Hydraulic fittings sizes 1/4" to 1 1/2", fabricated of stainless steel ASTM A276, shall be compression type, two-piece design of the medium pressure tube fittings and adapters shall consist of a female fitting body and preassembled cartridge containing the male nut and color-coded front and back ferrules on a disposable plastic arbor. The medium-pressure tube fitting shall offer a leaktight gas seal and vibration resistance in applications up to 15,000 psig.
- C. Reference Manufacturers, or equal: Swagelock; GVC.

2.05 SANITARY TUBING

- A. Sanitary tubing sizes 1" to 6" fabricated of fully annealed stainless steel ASTM A269 Grade TP316L, seamless.
- B. Sanitary fittings shall be butt weld or type S ferrule end with heavy duty clamp connecting pieces. Tube fittings shall offer a leak tight seal and vibration resistance. Fittings shall be fabricated of 316 stainless steel to ASTM A276.
- C. Fittings gasket shall be suitable for fatty acids and shall be rated for steam at 330°F and 80 psig, Sanifluor® as manufactured by PTI (Process Technologies Inc.), FKM as manufactured by Swagelock, or equal.
- D. Reference Manufacturer, or equal: Smith Cooper International; WCB-FP; Tri-Clover; Swagelock; G & H.

Spplr Sort Order	Take Off Order	Page no.	Pipe System	Area	SYS #	E/B/S	Grp # (1)	ion ess	Qty	Unit LF EA	Size 1 dia. (inch)	Size 2 dia. (inch)	Unit Length (ft)	PRICING										
														Area	Description	Details	Notes	Pipe Material	Lining	Coating	Spec Section	Vendor	Unit Price \$	EXTENSION \$
8257	9457	51-180	Non-Potable Water	Gas Purification System	MB-18	E	30		16	EA	0.25			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8315	9461	51-180	Non-Potable Water	Gas Purification System	MB-18	E	30		4	EA	0.25			Threaded Tee				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8328	9458	51-180	Non-Potable Water	Gas Purification System	MB-18	E	30		12	EA	0.25			Threaded Union				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8275	9110	41-61	Instrument Air	MBR System	MB-10	E	30		60	EA	0.5			Threaded Cap		58 for testing		316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8277	9029	Spec 11177-3	Non-Potable Water	RAS/WAS Pump Station	MB-11	E	30		3	EA	0.5			Threaded Coupling				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8278	9251	41-53	MBR Filtrate	Pipe Gallery	MB-16	E	29		32	EA	0.5			Threaded Coupling				316 SST- SCH. 10S	N NG	(UNCC)	15010	RGUSA	\$	
8161	4434	1,2,3/ 5M-112	N/A	STANDARD DETAIL- 1,2,3/ 5M-112	147-SS	E	30		33	EA	0.5			90 Threaded Elbow	2&3/ 5M-112			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8258	9026	Spec 11177-3	Non-Potable Water	RAS/WAS Pump Station	MB-11	E	30		18	EA	0.5			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8259	9249	41-53	MBR Filtrate	Pipe Gallery	MB-16	E	29		32	EA	0.5			90 Threaded Elbow				316 SST- SCH. 10S	N NG	(UNCC)	15010	RGUSA	\$	
8316	9028	Spec 11177-3	Non-Potable Water	RAS/WAS Pump Station	MB-11	E	30		12	EA	0.5			Threaded Tee				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8317	9117	41-61	Instrument Air	MBR System	MB-10	E	30		3	EA	0.5			Threaded Tee				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8186	4467	4/ I-33	N/A	STANDARD DETAIL- 4/ I-33	150-SS	E	30		24	EA	0.5	0.25		Reducer Bushing	4/ I-33			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8187	4473	5/ I-33	N/A	STANDARD DETAIL- 5/ I-33	151-SS	E	30		4	EA	0.5	0.25		Reducer Bushing	5/ I-33			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8188	8568	I-33	N/A	Pressure Gauge/Switch combo	38-PS	E	30		16	EA	0.5	0.25		Reducer Bushing				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
		ADDED FROM REVIEW- ALFREDO		STANDARD DETAIL- 4I/33	ADDED- WML AB				6	EA	0.5	0.25		Reducer Bushing								FERGUSA	\$	
8218	4435	1,2,3/ 5M-112	N/A	STANDARD DETAIL- 1,2,3/ 5M-112	147-SS	E	30		99	EA	0.5			Threaded Union	2&3/ 5M-112			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8329	9027	Spec 11177-3	Non-Potable Water	RAS/WAS Pump Station	MB-11	E	30		18	EA	0.5			Threaded Union				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8330	9250	41-53	MBR Filtrate	Pipe Gallery	MB-16	E	29		8	EA	0.5			Threaded Union				316 SST- SCH. 10S	N NG	(UNCC)	15010	RGUSA	\$	
8162	2247	5M-41, -43, -45, -46, -54	W3	W3- NON INSULATED W3 ACID DIGSTR BLDG	82-SS	E	30		1	EA	0.75			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8163	2647	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E	30		1	EA	0.75			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
7737	5268	CY-10	3W	POC 301 to POC 304, between Power Center 4 & 5	MC-46	B	32		2	EA	0.75			90 Threaded Elbow				HDPE	N NG	(UNCC)	15010	RGUSA	\$	
8208	4466	4/ I-33	N/A	STANDARD DETAIL- 4/ I-33	150-SS	E	30		24	EA	0.75			Threaded Cap	4/ I-33			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
		ADDED FROM REVIEW- ALFREDO		STANDARD DETAIL- 4I/33	ADDED- WML AB				6	EA	0.75			Threaded Cap								FERGUSA	\$	
7918	626	4M-03, -05	ALP	ALP- AERATION BASIN WIDE Y-WALL DROPS	34-SS	S	28	1.5	128	EA	0.75			Threaded Plug	NOTE#2/ 4M-11			304 SST- SCH. 10S	N NG	(UNCC)	15010	RGUSA	\$	
7919	631	4M-03, -05	ALP	ALP- AERATION BASIN NARROW Y-WALL DROPS	35-SS	S	28	1.5	28	EA	0.75			Threaded Plug	NOTE#2/ 4M-11			304 SST- SCH. 10S	N NG	(UNCC)	15010	RGUSA	\$	
8209	2248	5M-41, -43, -45, -46, -54	W3	W3- NON INSULATED W3 ACID DIGSTR BLDG	82-SS	E	30		2	EA	0.75			Threaded Tee				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8210	4465	4/ I-33	N/A	STANDARD DETAIL- 4/ I-33	150-SS	E	30		24	EA	0.75			Threaded Tee	4/ I-33			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8219	2249	5M-41, -43, -45, -46, -54	W3	W3- NON INSULATED W3 ACID DIGSTR BLDG	82-SS	E	30		1	EA	0.75			Threaded Union				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8220	2646	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E	30		1	EA	0.75			Threaded Union				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
7732	5267	CY-10	3W	POC 301 to POC 304, between Power Center 4 & 5	MC-46	B	32		4	EA	0.75			45 Threaded Elbow				HDPE	N NG	(UNCC)	15010	RGUSA	\$	
7968	3824	3M-11, -16	PI	PI- SLUDGE LEVEL BOX @ PRIM CLARIFIERS	123-SS	S	30		8	EA	1			Threaded Close Nipple				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8164	2208	5M-42, -43, -44, -45, -46, -49, -50, -54	W3	W3- INSULATED 3" W3 ACID DIGSTR BLDG	81-SS	E	30	1.5	1	EA	1			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8165	2661	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E	30		4	EA	1			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8166	3826	3M-11, -16	PI	PI- SLUDGE LEVEL BOX @ PRIM CLARIFIERS	123-SS	S	30		20	EA	1			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8167	3869	5M-44, -51	DOF	DOF- DOF FLUSHING @ ACID DIGSTR	127-SS	E	30		6	EA	1			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8168	4078	5M-12, -13, -18, -20	AHP	AHP- AHP LOOP @ THCK BLDG	133-SS	E	29		12	EA	1			90 Threaded Elbow				316 SST- SCH. 10S	N NG	(UNCC)	15010	RGUSA	\$	
8169	4391	1ABDE, 2, 3/ M-10	N/A	STANDARD DETAIL- 1ABDE, 2, 3/ M-10	143-SS	E	30		18	EA	1			90 Threaded Elbow	1ABDE/ M-10			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
8170	4405	1CF, 2, 3/ M-10	N/A	STANDARD DETAIL- 1CF, 2, 3/ M-10	144-SS	E	30		14	EA	1			90 Threaded Elbow	1CF/ M-10			316 SST- SCH. 40/ STD	N NG	(UNCC)	15010	RGUSA	\$	
7738	5008	CY-02	3W	POC 225 to POC 221 - Eastside of Fine Screens	MC-36	B	32		2	EA	1			90 Threaded Elbow				HDPE	N NG	(UNCC)	15010	RGUSA	\$	
7739	5185	CY-09	3W	POC 308 to Dewatering Building	MC-43	B	32		5	EA	1			90 Threaded Elbow				HDPE	N NG	(				

Spplr Sort Order	Take Off Order	Page no.	Pipe System	Area	SYS #	E/B/S	Weld Grp # (I)	ion ess	Qty	Unit LF EA	Size 1 dia. (inch)	Size 2 dia. (inch)	Unit Length (ft)	Area	Description	Details	Notes	Pipe Material	Lining	Coating	Spec Section	Vendor	Unit Price \$	EXTENSION \$
8274	7386	PDI/PDIT and P/I's	Instruments	Main/Dewatering and Centrate	35-DO			30	26	EA	1	0.5			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8028	8228	5P-21, 23	W3	Non-pot PW from BG to bibbs first fir Dwtlr to bibbs second floor	24-PS	E		30	4	EA	1				Reducer Bushing	Hose Bibb Det 1A/M-10		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8029	8286	5P-21, 23	W4	Non-pot PW from BG hose bibbs first fir dwtlr to second floor bibbs. Connect to my bid item 19	25-PS	E		30	8	EA	1				Reducer Bushing	Hose Bibb Det 1A/M-10		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8030	8437	5M-122,123	W3	4" S corner of Dwtlr to S corner of Truck load out w/ 2" branches to Dwtlr second fir hose bibbs	33-PS	E		30	10	EA	1				Reducer Bushing	Hose Bibb Det 1E/M-10	Add 14	316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8031	8518	5M-148-157	W3	4" S corner of Truck load throughout the entire building	36-PS	E		30	17	EA	1				Reducer Bushing	Hose Bibb Det 1E/M-10		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8032	8531	5M-148-157	W3	4" S corner of Truck load throughout the entire building	36-PS	E		30	7	EA	1				Reducer Bushing	Hose Bibb Det 1B/M-10		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8033	8545	5M-148-157	W3	4" S corner of Truck load throughout the entire building	36-PS	E		30	7	EA	1				Reducer Bushing	Hose Bibb Det 1C/M-10		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8184	8561	I-30	N/A	Pressure Guage w/ diaphragm seal	37-PS	E		30	19	EA	1	0.75			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8185	8565	I-33	N/A	Pressure Guage/Switch combo	38-PS	E		30	18	EA	1	0.75			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
		ADDED FROM REVIEW- ALFREDO		STANDARD DETAIL- 4I/33	ADDED- WML AB				6	EA	1	0.75			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8313	9115	4I-61	Instrument Air	MBR System	MB-10	E		30	62	EA	1	0.5			Threaded Reducing Coupling			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8221	1736	5M- 44, -51	W3	W3- INSTRUMENT FLUSH @ ACID DIGSTR STANDPIPE	73-SS	E		30	6	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8222	2656	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	5	EA	1				Threaded Union		START DROP TO EVAP COOLING	316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8223	3821	3M-11, -16	PI	PI- SLUDGE LEVEL BOX @ PRIM CLARIFIERS	123-SS	S		30	18	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8224	3868	5M-44, -51	DOF	DOF- DOF FLUSHING @ ACID DIGSTR	127-SS	E		30	8	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8225	4019	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E		30	4	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8226	4077	5M-12, -13, -18, -20	AHP	AHP- AHP LOOP @ THCK BLDG	133-SS	E		29	20	EA	1				Threaded Union			316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
8227	4407	1CF, 2, 3/ M-10	N/A	STANDARD DETAIL- 1CF, 2, 3/ M-10	144-SS	E		30	14	EA	1				Threaded Union	1CF/ M-10		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8228	4431	1,2,3/ 5M-112	N/A	STANDARD DETAIL- 1,2,3/ 5M-112	147-SS	E		30	11	EA	1				Threaded Union	2&3/ 5M-112		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
7819	5184	CY-09	3W	POC 308 to Dewatering Building	MC-43	B		32	8	EA	1				Threaded Union	HDPE		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
7820	5492	CY-05	CD - Chemical Drain	Existing Foul Air PS to New Liquid Drainer MH, 4 on M-12	MC-59	B		32	2	EA	1				Threaded Union	HDPE		316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
7821	5949	CY-09, 11	Digester Gas (DG)	Gas Purification System to Flare	MC-87	B		29	2	EA	1				Threaded Union			316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
7822	5965	CY-09	Air High Pressure (AHP)	POC 131 to Trucking Loading	MC-88	B		29	4	EA	1				Threaded Union			316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
7823	5982	CY-08, 08, 09	Air High Pressure (AHP)	Thickening Bld to Existing Blower & Digester Building	MC-89	B		29	10	EA	1				Threaded Union			316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
7824	6000	CY-10, 11	Air High Pressure (AHP)	POC 512 to Blower Building	MC-90	B		29	6	EA	1				Threaded Union			316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
7825	6525	CY-05	3W	3W - Main Odor Control Facility to POC 468	MC-127	B		12	4	EA	1				Threaded Union	PVC- SCH. 80		316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
7826	6549	CY-11	3W	3W - Warehouses (Add 9)	MC-128	B		12	16	EA	1		1		Threaded Union	PVC- SCH. 80		316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
8331	9112	4I-61	Instrument Air	MBR System	MB-10	E		30	10	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8332	9119	4I-61	Instrument Air	MBR System	MB-10	E		30	8	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8333	9127	15000-24	Instrument Air	MBR System	MB-10	E		30	10	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8157	10502	5M-83, 5I-87	W3	Gas Ph Dig 1-4 U-Tube assembly Flush Water	22-AB	E		30	18	EA	1				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
20152	20152	ADDED FROM REVIEW- ALFREDO	DG	Threaded Nipple x 90 x nipple x tee x nipple x PRV	ADD 55-AB				1	EA	1				90 Threaded Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
7995	2654	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	22	EA	1.25		1		90 Mipt x Mipt Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8171	2649	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	3	EA	1.25				90 Threaded Elbow		HTR BLOW OFF	316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8229	2652	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	3	EA	1.25				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8172	3429	5M-19, -21, -23, -30, -31	W4	W4- WATER FOR POLYMER @ THICKENING BLDG	112-SS	E		30	20	EA	1.5				90 Threaded Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8173	4046	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E		30	10	EA	1.5				90 Threaded Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8263	9495	5M-160	Glycol	Gas Purification System	MB-20	B		30	20	EA	1.5				90 Threaded Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8179	297	2M-32, -33, -34	W3	W3- WATER TO SCRNING WASH COMPCT @ HW	17-SS	E		12	1	EA	1.5	1			Reducer Bushing	PVC- SCH. 80	NING (EPOXY)	316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8195	2640	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	2	EA	1.5	0.75			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8214	2638	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	1	EA	1.5				Threaded Tee			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8204	3436	5M-19, -21, -23, -30, -31	W4	W4- WATER FOR POLYMER @ THICKENING BLDG	112-SS	E		30	2	EA	1.5				Threaded Cap			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8281	9497	5M-160	Glycol	Gas Purification System	MB-20	B		30	6	EA	1.5				Threaded Coupling			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
7996	2636	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	1	EA	1.5		41		90 Mipt x Mipt Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8230	3430	5M-19, -21, -23, -30, -31	W4	W4- WATER FOR POLYMER @ THICKENING BLDG	112-SS	E		30	10	EA	1.5				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8231	4044	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E		30	10	EA	1.5				Threaded Union			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
7754	5412	CY-11	NG	POC 322 to Flares	MC-53	B		8	5	EA	2				Threaded Coupling	Sch 40		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8122	8114	5M-124,133-134,137	LO	Lube oil from Cent 1-5 to lube pmp/storage unit	21-PS	E		30	24	EA	2				Threaded Coupling			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8282	9103	4I-61	Instrument Air	MBR System	MB-10	E		30	23	EA	2				Threaded Coupling			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
20219	20219	ADDED FROM REVIEW- ALFREDO	W3	TH x TH SST 22 1/2 deg elbow	ADD 57-AB				8	EA	2				45 Threaded Elbow			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8201	998	2M-50, -51, -52, -53	W3	W3- HW FINE SCREENS HOSE STATIONS	49-SS	E			4	EA	2	1			Reducer Bushing			316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUS	\$	
8178	1847	5M-47, -48, -51, -52	DG	DG- ACID PHASE DIGESTER GAS	70-SS	E		29	2	EA	2	1.5			Reducer Bushing	5/ 5M-112		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8199	1735	5M-44, -51	W3	W3- INSTRUMENT FLUSH @ ACID DIGSTR STANDPIPE	73-SS	E		30	2	EA	2	1			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8190	2273	5M-41, -43, -45, -46, -54	W3	W3- NON INSULATED W3 ACID DIGSTR BLDG	82-SS	E		30	2	EA	2	1			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8197	2631	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	1	EA	2	1			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8198	2634	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	1	EA	2	1.5			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8196	2643	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E		30	1	EA	2	0.75			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8192	4034	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E		30	5	EA	2	1			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8193	4042	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E		30	10	EA	2	1.5			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
8200	4060	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E		30	2	EA	2	1			Reducer Bushing			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUS	\$	
7753	4845	CY-02, 05, 08, 10, 11	Sump Pump Discharge (SPD)	Headworks to Plant Drain Pump Station	MC-4	B		4	4															

Spplr Sort Order	Take Off Order	Page no.	Pipe System	Area	SYS #	E/B/S	Weld Grp # 0	ion ess	Qty	Unit LF EA	Size 1 dia. (inch)	Size 2 dia. (inch)	Unit Length (ft)	PRICING											
														Area	Description	Details	Notes	Pipe Material	Lining	Coating	Spec	Vendor	Unit Price \$	EXTENSION \$	
8174	1733	5M-44, -51	W3	W3- INSTRUMENT FLUSH @ ACID DIGSTR STANDPIPE	73-SS	E	30		5	EA	2			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8175	4045	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E	30		10	EA	2			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8109	8083	CY-09 5I-135 5M-126,127,129	W4	W4 from SW corner of DWB to Poly blend units 1-5 and Pols/Stru tote area 1st and 2nd floor	19-PS	E	30		16	EA	2			45 Threaded Elbow	Hose Bibb Det 1F/M-10	Add 14		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8123	8113	5M-124,133-134,137	LO	Lube oil from Cent 1-5 to lube pmp/storage unit	21-PS	E	30		12	EA	2			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8205	1105	2M-50, -51, -52, -53	HWS/W3	HWS/W3- BOOSTER PUMP DISCHARGE	54-SS	E	28	1	1	EA	2			Threaded Cap				304 SST- SCH. 10S			15010	RGUSA	\$		
8068	8365	5P-26	W3	Truck Loading non-potable water	29-PS	E	30		16	EA	2			90 Threaded Elbow				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
7817	4644	CY-02, 05, 08, 10, 11	Sump Pump Discharge (SPD)	Headworks to Plant Drain Pump Station	MC-4	B	4		4	EA	2			Threaded Tee				D	MIC E	S TOP	15010	RGUSA	\$		
7818	5414	CY-11	NG	POC 322 to Flares	MC-53	B	8		3	EA	2			Threaded Tee	Sch 40			HDPE	N NG 6	(UNCC)	15010	RGUSA	\$		
8323	7014	3I-40/41/42	SAMPLE	On BFT's	5-DO	E	30		18	EA	2			Threaded Tee	At BFT's	At BFT's		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8324	7103	3I-44	DRAIN	P Trap Pipe to Matt's Drains	14-DO	E	30		8	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8325	7184	5I-180 & 5M-175	D	P-Traps at Demister and Fans	22-DO	E	30		3	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8326	7204	5I-180 & 5M-176/177	D	P-Traps at Tanks	24-DO	E	30		3	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8146	7269	5I-150 & 5M-168	W3	Plant Water to support nozzles at top of tanks.	29-DO	E	30		20	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8060	8042	CY-09 5I-135 5M-126,127,129	W4	W4 from SW corner of DWB to Poly blend units 1-5 and Pols/Stru tote area 1st and 2nd floor	19-PS	E	30		2	EA	2			Threaded Tee	Hose Bibb Det 1A/M-10	Add 14		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8061	8056	CY-09 5I-135 5M-126,127,129	W4	W4 from SW corner of DWB to Poly blend units 1-5 and Pols/Stru tote area 1st and 2nd floor	19-PS	E	30		2	EA	2			Threaded Tee	Hose Bibb Det 1B/M-10	Add 14		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8062	8070	CY-09 5I-135 5M-126,127,129	W4	W4 from SW corner of DWB to Poly blend units 1-5 and Pols/Stru tote area 1st and 2nd floor	19-PS	E	30		8	EA	2			Threaded Tee	Hose Bibb Det 1F/M-10	Add 14		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8124	8110	5M-124,133-134,137	LO	Lube oil from Cent 1-5 to lube pmp/storage unit	21-PS	E	30		1	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8063	8225	5P-21, 23	W3	Non-pot PW from BG to bibbs first fir Dwtr to bibbs second floor	24-PS	E	30		8	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8064	8227	5P-21, 23	W3	Non-pot PW from BG to bibbs first fir Dwtr to bibbs second floor	24-PS	E	30		4	EA	2			Threaded Tee	Hose Bibb Det 1A/M-10			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8065	8261	5P-21, 23	W4	Non-pot PW from BG hose bibbs first fir dwtr to second floor bibbs. Connect to my bid item 19	25-PS	E	30		8	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8066	8265	5P-21, 23	W4	Non-pot PW from BG hose bibbs first fir dwtr to second floor bibbs. Connect to my bid item 19	25-PS	E	30		8	EA	2			Threaded Tee	Hose Bibb Det 1A/M-10			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8067	8351	5P-26	W3	Truck Loading non-potable water	29-PS	E	30		4	EA	2			Threaded Tee	Hose Bibb Det 1A/M-10			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8321	9106	4I-61	Instrument Air	MBR System	MB-10	E	30		22	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8154	10511	5M-83, 5I-67	W3	Gas Ph Dig 1-4 U-Tube assembly Flush Water	22-AB	E	30		4	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8040	8223	5P-21, 23	W3	Non-pot PW from BG to bibbs first fir Dwtr to bibbs second floor	24-PS	E	30		20	EA	2			Threaded Coupling				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8041	8259	5P-21, 23	W4	Non-pot PW from BG hose bibbs first fir dwtr to second floor bibbs. Connect to my bid item 19	25-PS	E	30		20	EA	2			Threaded Coupling				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8249	7001	3I-40/41/42	SAMPLE	At Demisters to support PDf's	2-DO	E	30		6	EA	2			45 Threaded Elbow		Upstream BFT's		316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8250	7052	3I-44 & 3M-43	FAD	At Demisters to support PDf's	9-DO	E	30		8	EA	2			45 Threaded Elbow				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8215	1734	5M-44, -51	W3	W3- INSTRUMENT FLUSH @ ACID DIGSTR STANDPIPE	73-SS	E	30		4	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8216	2630	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E	30		1	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8217	4032	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E	30		25	EA	2			Threaded Tee				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8232	1081	2M-50, -51, -52, -53	HWS/W3	HWS/W3- BOOSTER PUMP DISCHARGE	54-SS	E	28	1	8	EA	2			Threaded Union				304 SST- SCH. 10S			15010	RGUSA	\$		
8233	1110	2M-50, -51, -52, -53	HWS/W3	HWS/W3- BOOSTER PUMP DISCHARGE	54-SS	E	28	1	4	EA	2			Threaded Union				304 SST- SCH. 10S			15010	RGUSA	\$		
8234	1729	5M-44, -51	W3	W3- INSTRUMENT FLUSH @ ACID DIGSTR STANDPIPE	73-SS	E	30		6	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8235	2272	5M-41, -43, -45, -46, -54	W3	W3- NON INSULATED W3 ACID DIGSTR BLDG	82-SS	E	30		2	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8236	2623	5M-41, -435P-40, -42P-01	W1	W1- POTABLE WATER ACID DIGSTR BLDG	88-SS	E	30		7	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8237	3622	5M-14, -18, -19, -20, -21, -28	TSO	BSD/TSO- THK SLGGE PMP DISCHARGE @ THCK BLDG	119-SS	E	30		2	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8238	3987	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E	30		9	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8239	4029	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E	30		5	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8240	4033	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E	30		25	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8241	4054	5M-14, -19, -20, -21, -30	W3	W3- W3 LOOP @ THCK BLDG	132-SS	E	30		4	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8242	4076	5M-12, -13, -18, -20	AHP	AHP- AHP LOOP @ THCK BLDG	133-SS	E	29		2	EA	2			Threaded Union				316 SST- SCH. 10S	N NG 6	(UNCC)	15010	RGUSA	\$		
8243	4381	10/ M-07	N/A	STANDARD DETAIL- 10/ M-07	142-SS	E	30		12	EA	2			Threaded Union	10/ M-07			316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8337	7058	3I-44 & 3M-43	FAD	At Demisters to support PDf's	9-DO	E	30		4	EA	2			Threaded Union				316 SST- SCH. 40/ STD	N NG 6	(UNCC)	15010	RGUSA	\$		
8338	7088	3I-45	MISC	Small bore at																					