



976-2016 ADDENDUM 3

SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) UPGRADING / EXPANSION PROJECT - CONTRACT 4 – SITEWIDE MECHANICAL, ELECTRICAL, CONCRETE AND SITE WORKS

URGENT

**PLEASE FORWARD THIS DOCUMENT TO
WHOEVER IS IN POSSESSION OF THE BID
OPPORTUNITY**

ISSUED: June 27, 2017
BY: Barry Williamson, P.Eng.
TELEPHONE NO. (204) 488-2214 x 73059

**THIS ADDENDUM SHALL BE INCORPORATED
INTO THE BID OPPORTUNITY AND SHALL
FORM A PART OF THE CONTRACT
DOCUMENTS**

Template Version: A20150806

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Bid Opportunity, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 10 of Form A: Bid may render your Bid non-responsive.

PART A – BID SUBMISSION

Replace: 976-2016 Bid Submission with 976-2016 Addendum 3 – Bid Submission. The following is a summary of changes incorporated in the replacement Bid Submission

Form B (R1): Revised Items 13.17, 13.18, 13.19, 13.22, 13.38, 13.39, 13.42, 13.45, 13.46

Form B (R1): Add Items 2.4, 2.5, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 10.15, 13.70, 13.71, 13.72

Form B (R1): Delete Item 13.64

Page numbering on some forms may be changed as a result.

PART B – BIDDING PROCEDURES

Revise: B2.1 to read: The Submission Deadline is 12:00 noon Winnipeg time, July 28, 2017.

PART E - SPECIFICATIONS

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 64 00 SPECIAL PROJECT PROCEDURES

Replace:

Form 102 CERTIFICATE OF SATISFACTORY INSTALLATION

with

Form 102 CERTIFICATE OF SATISFACTORY INSTALLATION – Issued for Addendum No. 3

SECTION 01 91 14 EQUIPMENT TESTING AND FACILITY STARTUP

Replace:

Form 102 CERTIFICATE OF SATISFACTORY INSTALLATION

with

Form 102 CERTIFICATE OF SATISFACTORY INSTALLATION – Issued for Addendum No. 3

DIVISION 04 – MASONRY

SECTION 04 43 00 STONE MASONRY UNITS

Add to:

- | | |
|--------|--|
| 1.1 B. | 3. Water Repellents, Section 07 19 00 Water Repellents |
| 2.1 K. | Water Repellent: Refer to section 07 19 00 |

Revise

- | | |
|-----------------|---|
| 2.1 B. to read: | Stone, General: Hard, durable, well-seasoned and of uniform strength, colour and texture, free of harmful quantities of radiation, or other mineral or organic defects. |
| | 1. Limestone: ASTM C568, smooth face, ashlar course, random lengths and heights, 90 to 100 mm bed thickness, 200 mm course heights, Tyndall Limestone buff colour by Gillis Quarries Limited. |
| | a. Type -1: Split face, ashlar course to match existing, random lengths, 90 to 100 mm bed thickness, 200 mm course heights including joints. |
| | b. Type -2: Smooth Straight face, ashlar course, random lengths, 90 thick, 200 mm course heights including joints. |

DIVISION 05 – METALS

SECTION 05 50 03 METAL FABRICATIONS (MECHANICAL)

Delete:

- | | |
|-----|--|
| 2.5 | SAMPLING SINKS |
| | A. Fabricate sampling sinks as detailed. |
| | B. Fabricate sampling sinks with the following features: |
| | 1. Fabricated from 2 mm thick Type 304 stainless steel. |
| | 2. Continuous welds for joints. |
| | 3. Bowls 600 mm diameter by 340 mm deep with conical bottoms and 75 mm drains. |
| | 4. Anti-splash guard rims. |
| | 5. Flushing spray rings. |
| | 6. 1000 mm flushing hose with hand gun type spray nozzle. |

7. Piping connections of Type 304L stainless steel quick-disconnect couplings by Tri-Canada Ltd.

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

Add:

SECTION 07 19 00 WATER REPELLENT

DIVISION 08 – OPENINGS

SECTION 08 45 00 TRANSLUCENT WALL AND ROOF ASSEMBLIES

Revise

- 2.1 A to read: Acceptable Manufacturers:
1. Kalwall Corp., Manchester, NH., distributed by Consulac Architectural Products, Oakville, Ontario.
 2. Quadwall

DIVISION 22 – PLUMBING

SECTION 22 40 00 PLUMBING FIXTURES

Revise

- 2.3 E.4.b. to read: Manufacturers and Products:
- 1) Ashcroft Dresser Instrument Division, Dresser Industries, Inc.; Type 1008.
 - 2) H.O. Trerice Co.; D80 Series

DIVISION 23 – HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

Replace:

SECTION 23 82 00.04 HOT WATER CONVECTION HEATERS

with

SECTION 23 82 00.04 HOT WATER CONVECTION HEATERS – Issued for Addendum 3

SECTION 23 05 48 VIBRATION ISOLATION FOR HVAC

Add to:

- 2.3 A.4. d. Flex-Hose Co., Inc.

SECTION 23 21 14

HYDRONIC SPECIALTIES

Add to:

- 2.2 P.7. c. Flex-Hose Co., Inc.; Flexzorber NNDFU.

SECTION 23 57 00

HEAT EXCHANGERS FOR HVAC

Add to:

- 2.3 B.5. d. Bell & Gossett; GPX.

DIVISION 26 – ELECTRICAL

SECTION 26 20 00

LOW VOLTAGE AC INDUCTION MOTORS

Add to:

- 2.1 A. 11. SEW-Eurodrive

SECTION 26 27 26

WIRING DEVICES

Revise:

- 2.2 C.8. to read Manufacturers and Products:
a. Lutron: LOS-SIR-HD, heavy duty series.
b. Leviton: ODS15-IDW
c. Or approved equal in accordance with B8 - Substitutes

- 2.2 D.9. to read Manufacturers and Products:
a. Lutron: LOS-CDT Series complete with required PP series powerpack, and wall mounted SO-2BOI series switch..
b. Leviton: OSC10-MOW Series complete with OPP20-OD2 or OSP15-R30 power pack
c. Or approved equal in accordance with B8 - Substitutes

SECTION 26 50 00

LIGHTING

Add to:

PART 2 PRODUCTS.

- 2.6 A. In addition to the luminaire manufacturer, make, models shown drawing 1-0102-ESCH-A002, certain products (as indicated) are approved equals.
1. Type Q: Appleton AMLED87YBH1D//GAM-8-SF
 2. Type EA: Emergi-lite; EF9DM-LA
 3. Type FF: Appleton; LLEDA15BH2

SECTION 26 50 02 CENTRAL EMERGENCY LIGHTING SYSTEM

Add to:

- 2.7 B. Emergi-lite; E1113C3B

SECTION 26 52 02 CENTRAL EMERGENCY LIGHTING SYSTEM

Add to:

- 2.1 A. 11. SEW-Eurodrive

DIVISION 40 – PROCESS INTEGRATION

SECTION 40 27 00.03 CARBON STEEL PIPE AND FITTINGS – GENERAL SERVICE

Revise:

Item	Size	Description
Pipe	600 mm & smaller	Black carbon steel, ASTM A106/A106M Grade B seamless, or ASTM A53/A53M Grade B seamless or ERW, conforming to ASME B36.10M.
	750 mm & larger	Carbon steel, ASTM A283/A283M Grade C, or ASTM A285/A285M Grade C, sheet or coil, fabricated in accordance with AWWA C200 and ASTM A134, straight or spiral seam, conforming to ASME B36.10M.
	Screwed: 50 mm & smaller	Schedule 80.
	Welded: 65 mm to 250 mm	Schedule 40.
	300 mm to 400 mm	Schedule 30.
	450 mm to 600 mm	Schedule 20.
	650 mm & larger	Schedule 20, min. 12.7 mm (1/2 in) wall thickness
Grooved: 60 mm to 150 mm.		Schedule 40
	200 mm to 300 mm	Schedule 30.
	350 mm.	Standard weight, min. 9.5 mm (3/8 in) wall thickness

to read:

Item	Size	Description
Pipe	600 mm & smaller	Black carbon steel, ASTM A106/A106M Grade B seamless, or ASTM A53/A53M Grade B seamless or ERW, conforming to ASME B36.10M.
	750 mm & larger	Carbon steel, ASTM A283/A283M Grade C, or ASTM A285/A285M Grade C, sheet or coil, fabricated in accordance with AWWA C200 and ASTM A134, straight or spiral seam, conforming to ASME B36.10M.
	Screwed: 50 mm & smaller	Schedule 80.

Item	Size	Description
	Welded: 65 mm to 250 mm 300 mm to 400 mm 450 mm to 600 mm 650 mm & larger	Schedule 40. Schedule 30 or standard weight, min. 9.5 mm (3/8 in) wall thickness. Schedule 20 or standard weight, min. 9.5 mm (3/8 in) wall thickness. Schedule 20, min. 12.7 mm (1/2 in) wall thickness
	Grooved: 60 mm to 150 mm. 200 mm to 300 mm 350 mm.	Schedule 40 Schedule 30. Standard weight, min. 9.5 mm (3/8 in) wall thickness

SECTION 40 27 01 PROCESS PIPING SPECIALTIES

Add to:

- 2.2 A.5. e. ElastoValve Rubber Products (EVR); Model TJ-95
- 2.2 B.6. f. ElastoValve Rubber Products (EVR); Model SJ-221
- 2.2 C.7. c. ElastoValve Rubber Products (EVR); Model SJ-205
- 2.4 A.8. f. ElastoValve Rubber Products (EVR); Model MJ-60-M, MJ-60
- 2.4 B.5. e. ElastoValve Rubber Products (EVR); Model TJ-95

Add to:

PROCESS PIPING SCHEDULE

Service Abbrev. [Note 1]	Service Description	Size(s) (mm) [Note 2]	Exposure [Note 3]	Piping Material [Note 4]	Pipe Specification Code	Piping Data Sheet Specification	Thickness, Class, or Schedule [Note 5]	Joints [Note 6]	Design Maximum Operating Pressure (kPag)	Design Temp. Range (deg C)	Test Pressure (kPag) and Type [Note 7]	ASME Code and Fluid Service Category	Lining / Coating [Note 8]	Remarks [Note 9]
FE	Final Effluent	ALL	ALL	SS	SS01	40 27 00.08	See Data Sheet	BW	400	5 - 25	600, H	B31.3, Normal	-- / --	(1),(2)

SECTION 40 27 02 PROCESS VALVES AND OPERATORS

Revise

- 2.5 A.3.b. to read: Manufacturers and Products:
 - 1) Crane; Fig. 426
 - 2) Jenkins; #2285J
 - 3) Or approved equal in accordance with B8.
- 2.5 A.9.a. to read: Bonnetless, full lug body, non-rising stem, working pressure rating of 1000 kPa minimum, bi-directional drip-tight differential pressure rating of 1000 kPa minimum up to 350 mm size and 600 kPa minimum for 400 mm and larger

size, drilled and tapped to ASME B16.5 Class 150 dimensions, round port, resilient seat/seals of EPDM or PTFE, drip-tight shutoff with downstream flange removed (dead-end Service). Rising stem is also acceptable for valves smaller than 350 mm.

- 2.5 D.2.c. to read: Provide external and internal fusion-bonded or two-part liquid epoxy coating.
- 2.5 E.1.a.10) to read: The interior and exterior of valves to be coated with a fusion bonded epoxy or two-part liquid epoxy suitable for contact with potable water conforming to the requirements of NSF 61. Coatings to be applied at the valve manufacturing facility.
- 2.5 E.2.c. to read: Cast or ductile iron body, ductile iron disc with Type 304 stainless steel shaft, Buna N rubber seat, and stainless steel seating surface. NSF 61 fusion-bonded epoxy coating or two-part liquid epoxy coating internal/external.
- 2.5 E.3.a. to read: Lug style cast iron or ductile iron body, Type 316 stainless steel disc, Type 316 stainless steel one- or two- piece stem, self-lubricating sleeve type bearing, EPDM replaceable resilient seat suitable for operating temperatures up to 121 degree C, 1035 kPa working pressure rating, bubble-tight at 345 kPa differential pressure, valve body to fit between ASME Class 125/150 flanges.
- 2.5 E.4.a. to read: Lug style, cast iron or ductile iron body, Type 316 stainless steel disc, Type 316 or 18-8 stainless steel one-piece stem, EPDM replaceable resilient seat, heavy-duty self-lubricating sleeve type bushings, NBR stem seal, minimum 1035 kPa working pressure rating, valve body to fit between ASME Class 125/150 flanges.
- 2.5 E.5.a. to read: ASME B16.5 Class 150 lug style, high performance type, Type 316 stainless steel body, Type 316 stainless steel single or double offset disc, Type 316 or 17-4PH stainless steel shaft and taper pins, reinforced PTFE seat, PTFE stem packing, stainless steel with RTFE thrust washer.
- 2.5 F.6.a.to read: AWWA C508, cast or ductile iron body and cover, ASME B16.1 Class 125 flanged ends, reinforced Buna-N flapper with raised seating ring, stainless steel bolting, fusion-bonded or two-part liquid epoxy coating internal/external, with external backflow device and disc position indicator.

Add to:

- 2.5 A.2.b.1) d) Jenkins; #310J
- 2.5 A.3.b.2) d) Jenkins; #993AJ
- 2.5 A.4.b. 3) Jenkins; #454J
- 2.5 A.7.a. 4) Mueller; R2361-6
- 2.5 A.9.g. 5) Fabri; C67S.
- 2.5 A.10.g. 5) Fabri; C67S
- 2.5 B.1.b.1) c) Jenkins; #106BJ

- 2.5 B.1.b.2) b) Jenkins; 106BPJ
- 2.5 B.2.b. 3) Jenkins; #743J
- 2.5 D.1.b. 5) Milliken Millcentric; Series 600
- 2.5 E.3.b. 5) Apollo; #LD141 series
- 6) Pratt; BF2 Series
- 7) DeZurik; BOS model
- 2.5 E.4.b. 6) Apollo; #LD141 series
- 7) DeZurik; BOS model
- 2.5 E.5.b. 6) Apollo; 215L series
- 7) Pratt; HP series
- 2.5 E.6.j. 5) Hydro Gate
- 2.5 G.9.e. 4) Claval; #34 Series
- 2.5 H.1.b. 3) Claval; #PV20 Pinch valve
- 2.5 H.2.b. 3) Trumbull; Non-rising Stem
- 2.5 F.6.c. 7) Claval; 584 series
- 2.7 C.2. e. WD Industrial; #VBK.
- 2.7 D.1. d. Trumbull Industries.
- 2.7 E.5. f. Trumbull Industries
- 2.5 F.2.b. 3) Jenkins; 4475TJ
- 2.5 F.4.b. 3) Jenkins; 587J

Delete from

Self-Contained Valve Schedule:

Description / Location	Tag Number	P&ID Number	Valve Type	Valve Type Number	Size (mm)	Commodity Code	Commodity	Inlet Pressure (kPag) [Note 1]	Outlet Pressure (kPag)	Maximum Flow (L/s)	Remarks
Odour Control Biofilter TK--T210		1-0102-PPID-T201	Vacuum Relief	V738	300	FOA	Foul Air				Set at minus 5000 Pascals
Odour Control Biofilter TK--T220		1-0102-PPID-T201	Vacuum Relief	V738	300	FOA	Foul Air				Set at minus 5000 Pascals
Odour Control Biofilter TK--T230		1-0102-PPID-T201	Vacuum Relief	V738	300	FOA	Foul Air				Set at minus 5000 Pascals

SECTION 40 42 13 PIPING INSULATION

Revise 3.1 A.4. to read:

Service and Insulation Thickness: Refer to Insulation Schedule below and to Process Piping Schedule in Section 40 27 00, Process Piping – General.

Insulation Schedule								
Service Type	Pipe Legend	Thickness	Fluid Temperature (degrees C)*	Insulation	Finish Systems			
					Concealed from View	Indoors Exposed	Outdoors	Buried
Air Low Pressure	ALP	50 mm noise insulation	- 25 to 120	Type 5	Type F3	Type F3	Type F3	N/A
Foul Air (outdoors only)	FOA	50 mm noise insulation	- 25 to 40	Type 5	Type F3	N/A	Type F3	N/A
Flushing Service Water (outdoors only)	FSW	40 mm (up to 100 mm pipe) 50 mm (above 100 mm pipe)	0 to 25	Type 1	Type F3	N/A	Type F3	N/A
Ferric Chloride (outdoors only)	FC	40 mm	0 to 25	Type 1	Type F3	N/A	Type F3	N/A
Scum (buried outdoors only)	SC	75 mm	1 to 25	Type 3	N/A	N/A	N/A	Type 4
Mixed Polymer (buried outdoors only)	MP	75 mm	1 to 25	Type 3	N/A	N/A	N/A	Type 4
Sodium Bisulphite	SBS	25 mm	5 to 25	Type 1	Type F1	Type F1	Type F3	N/A
Sodium Bisulphite	SBS	25 mm	5 to 25	Type 3 (to 300 mm above grade)	N/A	N/A	N/A	Type F4
Sodium Hypochlorite	SHC	25 mm	5 to 25	Type 1	Type F1	Type F1	N/A	N/A
Sodium Hydroxide (heat traced)	SHD	25 mm	15 to 25	Type 1	Type F1	Type F1	N/A	N/A
Heating Systems	HWR, HWS, GS, GR	40 mm (up to 100 mm pipe) 50 mm (above 100 mm pipe)	21 to 121	Type 2	N/A	F1	F3	N/A
Diesel Fuel Supply (outdoors only, heat traced)	DFS	25mm	5 to 15	Type 1	Type F3	N/A	F3	N/A
Potable Water and Domestic Hot Water Systems, Non potable Water	PW, DHW, NPW	25 mm	4 to 60	Type 1	N/A	F1	F3	N/A
Cooling Systems (Condensate chilled water, and refrigerant)	CON, RWL, CWS, CWR, R, CHS, CHR	20 mm (Condensate) 20 mm (Refrigerant) 25 mm (Roof Drain) 40 mm CWS, CWR, CHS, CHR (up to 100 mm pipe) 50 mm CWS, CWR, CHS, CHR (above 100 mm pipe)	4 to 15	Type 1	N/A	F1	F3	N/A

Insulation Schedule								
Service Type	Pipe Legend	Thickness	Fluid Temperature (degrees C)*	Insulation	Finish Systems			
					Concealed from View	Indoors Exposed	Outdoors	Buried
HT-Piping requiring heat tracing	D	Pipe Size: Insulation Thickness Inches: ^a ^b 25 mm (pipe up to 75 mm) 40 mm (pipe from 100 mm to 250 mm)	10 to 40	All Outdoors: Type 1 Insulate and heat trace outside lines 1' above grade. Use Type 3 insulation from 1' above grade to frost depth	N/A	N/A	F3	F4 on Type 3
* Use these fluid temperatures unless otherwise noted in the Process Piping Schedule. a Based upon insulation with glass fiber per ASTM C547, outdoors with 9 L/s wind with 10% safety and no value assigned to cladding or air space at cladding. b Matches the watts per meter in Section 40 41 13, Pipe Heat Tracing								

SECTION 40 95 13

CONTROL PANELS

Add to:

- 1.4 b. 7. For items 2, 3, and 4 above, if these documents are included in the Contract documents, then redline mark-ups are sufficient for shop drawing review purposes. However, this does not negate the Contractor's responsibility for documentation in regards to CSA certification of the panels.

SECTION 40 99 90

PACKAGE CONTROL SYSTEMS

Add to:

- 1.2 D. Coordinate with the Systems Integrator for provision of information on the controls of the packaged system.
- 1.3 B.2. q. Process and Instrumentation Diagrams (P&IDs)
 r. Contact the Contract Administrator for further instructions if an item identified in this clause is not available.

DIVISION 41 – MATERIAL PROCESS AND HANLDING EQUIPMENT

SECTION 41 22 23.19

MONORAIL HOIST AND LIFTING DAVIT SYSTEMS

HOIST/MONORAIL DATA SHEET

MONORAIL SYSTEM NO. 6

Revise:

Equipment Capacity: 2000kg

to read

Equipment Capacity: 1000kg

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION AND STORAGE EQUIPMENT

SECTION 43 11 15.13 MULTISTAGE CENTRIFUGAL BLOWERS

Revise

2.6 A. to read: Single arch, fabric and wire reinforced, flanged elastomer expansion joint, for each blower inlet and outlet connection. Provide concentric reducer type connectors as shown on Drawings.

SECTION 43 12 03 ROTARY LOBE AIR BLOWERS

Revise

2.5 J.1. to read: Pressure spool, reinforced molded EPDM, single arch, expansion joint type with ASME B16.5 Class 125 flanged ends and galvanized retaining rings. Provide concentric reducer type connectors as shown on Drawings.

SECTION 43 21 39.16 CHOPPER PUMPS

Revise:

PUMP DATA SHEET NO. 1

SECONDARY CLARIFIERS SCUM PUMPS

Manufacturer and Model: (1) Vaughan Model HE3L6

to read

Manufacturer and Model: (1) Vaughan Model HE3P6

Revise:

PUMP DATA SHEET NO. 2

FERMENTER RECIRCULATION PUMPS

Manufacturer and Model: (1) Vaughan Model HE4L6 impeller diameter 191 mm

to read

Manufacturer and Model: (1) Vaughan Model HE4K6 impeller diameter 208 mm

DIVISION 46 – WATER AND WASTEWATER EQUIPMENT

SECTION 46 21 11 SCREENING EQUIPMENT

Add to:

- 2.12 B.1.h. 4) If an OIT is supplied, it shall be consistent with the City Document 612620-0015-40ER-0001 "HMI Layout and Animation Plan" and 612620-0014-40ER-0001 "Tagname Identification Standard".

SECTION 46 23 27

CYCLONE SEPARATORS AND GRIT WASHERS

Add to:

- 2.2 A. 3. Veolia/John Meunier
- 2.2 B. Design shown on Drawings is based on first-named manufacturer above. Use of equipment from manufacturer other than first-named manufacturer may require substantial changes to equipment and piping layouts shown on Drawings. All changes to design shown on Drawings that are necessitated by Contractor's selection of other than first-named manufacturer shall be Contractor's responsibility, subject to review and acceptance by the Contract Administrator, and all costs associated with such changes shall be included in Contractor's tender price. No claims from Contractor after award of contract for additional costs associated with such changes will be considered by City. All costs incurred by the Contract Administrator after contract award to review and, if necessary, revise Contractor's proposed changes to design shown on Drawings shall be at Contractor's expense. The Contract Administrator's acceptance of Contractor's proposed changes to design shown on Drawings shall in no way relieve Contractor of responsibility for compliance with specified functional, performance, and contractual requirements. The Contract Administrator will not review any proposed changes to design shown on Drawings prior to contract award.

SECTION 46 33 42

CHEMICAL METERING DIAPHRAGM PUMP SKIDS

Revise

- 2.3 I.8. to read: Pressure switch and pressure gauge with suitable PVDF diaphragm seals (discharge side upstream of ball check valve)

Add to:

- 2.2 I. 10. Flow meter (discharge side)

SECTION 46 33 42.13

CHEMICAL METERING GEAR PUMP SKIDS

Revise

- 2.3 I.8. to read: Pressure switch and pressure gauge with suitable PVDF diaphragm seals (discharge side upstream of ball check valve)

Add to:

- 2.3 I. 9. Removable PVC or PP collection tray to be placed underneath of flushing connections for ease of maintenance.
- 2.3 10. Flow meter (discharge side)
- 2.3 J. Sodium bisulphite pump skid shall be insulated per Section 40 42 13, Piping Insulation.
- K. Sodium hydroxide pump skid shall be insulated per Section 40 42 13, Piping Insulation, and heat traced per Section 40 41 13, Pipe Heat Tracing.

SECTION 46 41 24

FERMENTER MIXERS

Revise

- 2.4 A. to read: Provide removable, FRP with a polished gelcoat impellers, streamlined stress-free body without any mounted or fitted parts.
- 2.1 H. to read: Sludge level in Cell 4 is variable. The hyperboloid mixer shall be provided with a guide bushing and FRP shaft to accommodate the changes in level.

SECTION 46 66 20

UV DISINFECTION SYSTEM

Delete

- 2.20.I.7 Accept the plant flow signal from the plant control system via a 4-20 mA signal.
- 2.20.M.2.c Operator may select one of the two signals for the UV system to use for control.
- 2.20.S.4.a In addition to the UV Equipment Supplier's OIT located on the UV PLC panel, provide program development for complete sets of display screens, and related databases, for loading on the City's PCSS workstations in the plant. The UV vendor shall use the latest version of PLC software for development. Include all data screens such as monitored and controlled points, alarms, alarm history, setup screens, maintenance screens, factory screens, and other screens.
- 2.20.S.4.b The Equipment Supplier shall provide any software development licenses as required for their own use. the City will not provide any software licenses for the development of the HMI.

Revise

- 2.3 E. to read: All manufacturing welds must be acid passivated.
- 2.20.I.10 to read: Controls and monitors channel effluent weir gates. The weir gates are hardwired to the PLC in this panel. Provides remote (Remote-Manual and Remote-Auto) control and monitoring of gates. Monitors weir gate closed limit switch, Hand-Off-Remote selector switch and 4-20 mA position. Controls outlet gate position via 4-20 mA setpoint.

- 2.20.K to read: Panel mounted OIT will be fully replicated in the plant HMI. Coordinate with the Systems Integrator to provide full replication of the OIT on the plant HMI. Provide a means for operators to select either the local OIT or the plant HMI as the active system.
- 2.20.S to read: PLC and OIT Programming
- 2.20.S.1 to read: Provide all PLC and OIT application software programming necessary for a fully functional and operable PLC and OIT system in accordance with the specifications.
- 2.20.S.2 to read: OIT graphics to be consistent with City document 612620-0015-40ER-0001 “HMI Layout and Animation Plan”
- 2.20.S.4 to read: PLC and OIT programs shall have full read/write functionality when turned over to the City.

SECTION 46 71 33

ROTARY DRUM THICKENERS

Revise

- 1.3 B.1.k. to read: Information including data sheets and specifications on manufacturer’s factory prime and finish coating system.
- 2.1 B. to read: System components shall be factory pre-assembled and pre-piped to maximum extent possible. Installation of equipment may require partial disassembly and reassembly of equipment on site. Manufacturer shall provide representative to inspect reassembled equipment where disassembly is required.
- 2.11 A to read: Prepare, prime, and finish coat in accordance with manufacturer’s standard coating system.
- 2.4 B. to read: Equipment shall meet the following performance requirements while operating either continuously or intermittently:

	RDT-D403, RDT-D404	RDT-D415, RDT-D416, RDT-D417
Feed Sludge	WAS	FSL
Minimum Hydraulic Loading Rate per RDT at Maximum Capacity (m ³ /h) ^[1]	80	80
Hydraulic Loading Rate per RDT at Minimum Capacity (m ³ /h) ^[1]	40	40
Minimum Percent Solids Capture (%)	95 ^[2]	95
Thickened Sludge Total Solids Concentration (%)	4 - 6	4 - 6
Maximum Polymer Consumption (kg/tonne DS)	5 - 8 ^[3]	5 - 10 ^[4]

	RDT-D403, RDT-D404	RDT-D415, RDT-D416, RDT-D417
Maximum Wash Water Consumption per RDT (m ³ /h)	8	8
¹ Excluding polymer solution. ² Minimum 90% capture is acceptable when the feed sludge total solids concentration is less than 0.6%. ³ Typically 4-5 kg/tonne DS. Up to 8 kg/tonne DS is acceptable intermittently depending on sludge characteristics. ⁴ Up to 10 kg/tonne DS is acceptable when FSL feed sludge consists entirely of fermented primary sludge.		

APPENDICES

Add to: Appendix E: HRC BOM 976-2016_Addendum_3_Appendix_E_HRC_EquipmentList

Add to:

Appendix X: Breaker Settings Sheets

Document No. A-0102-EDTS-B001 Rev 00:
SETTINGS SHEET
RELAYS AND CIRCUIT BREAKERS

Add: Appendix HH South End Water Pollution Control Centre Bid Opportunity 333-2014 As-Builts

DRAWINGS

Add: 976-2016_Addendum_3-Drawing_Figure-C01-RevA

B – Service Building and Existing Chemical Storage Building

- Replace: 976-2016_Drawing_1-0102-ECBD-B001-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ECBD-B001_Sht001-R01.pdf
- Replace: 976-2016_Drawing_1-0102-ESLD-B001-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ESLD-B001_Sht001-R01.pdf

C – Chemical / Electrical Building

- Replace: 976-2016_Drawing_1-0102-ABDG-C001-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ABDG-C001_Sht001-R01.pdf
- Replace: 976-2016_Drawing_1-0102-ACBD-C016-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ACBD-C016_Sht001-R01.pdf
- Replace: 976-2016_Drawing_1-0102-AGAD-C016-R00.pdf- with 976-2016_Addendum_3-Drawing_1-0102-AGAD-C016-Sht001-R01.pdf
- Replace: 976-2016_Drawing_1-0102-AILD-C001-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-AILD-C001_Sht001-R01.pdf

Replace:	976-2016_Drawing_1-0102-ANET-C002_Sht003-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ANET-C002_Sht003-R01.pdf
Replace:	976-2016_Drawing_1-0102-PGAD-C006-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PGAD-C006-R01.pdf
Replace:	976-2016_Drawing_1-0102-PGAD-C011-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PGAD-C011-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-C001-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-C001-R01.pdf

D – Chlorine Contact Tank and Fermenters, Rotary Drum Thickener Room

Replace:	976-2016_Drawing_1-0102-ESLD-D001_Sht001-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ESLD-D001_Sht001-R01.pdf
Replace:	976-2016_Drawing_1-0102-ESLD-D002_Sht001-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ESLD-D002_Sht001-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-D403-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-D403-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-D404-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-D404-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-D405-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-D405-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-D408-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-D408-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-D409-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-D409-R01.pdf

G – Headworks

Replace:	976-2016_Drawing_1-0102-ACBD-G026_Sht002-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ACBD-G026_Sht002-R01.pdf
Replace:	976-2016_Drawing_1-0102-ACBD-G029_Sht001-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ACBD-G029_Sht001-R01.pdf
Replace:	976-2016_Drawing_1-0102-ACBD-G032_Sht002-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ACBD-G032_Sht002-R01.pdf
Replace:	976-2016_Drawing_1-0102-ACBD-G053_Sht001-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-ACBD-G053_Sht001-R01.pdf
Replace:	976-2016_Drawing_1-0102-AILD-G907-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-AILD-G907_Sht001-R01.pdf
Replace:	976-2016_Drawing_1-0102-MGAD-G501-R03.pdf	with	976-2016_Addendum_3-Drawing_1-0102-MGAD-G501-R04.pdf
Replace:	976-2016_Drawing_1-0102-MGAD-G502-R03.pdf	with	976-2016_Addendum_3-Drawing_1-0102-MGAD-G502-R04.pdf
Replace:	976-2016_Drawing_1-0102-MGAD-G503-R03.pdf	with	976-2016_Addendum_3-Drawing_1-0102-MGAD-G503-R04.pdf
Replace:	976-2016_Drawing_1-0102-PPID-G201-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-G201-R01.pdf
Replace:	976-2016_Drawing_1-0102-PPID-G303-R00.pdf	with	976-2016_Addendum_3-Drawing_1-0102-PPID-G303-R01.pdf

Replace: 976-2016_Drawing_1-0102-PPID-G609-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PPID-G609-R01.pdf
Replace: 976-2016_Drawing_1-0102-PPID-G621-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PPID-G621-R01.pdf

K – High Rate Clarification

Replace: 976-2016_Drawing_1-0102-ACBD-K016_Sht002-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ACBD-K016_Sht002-R01.pdf
Replace: 976-2016_Drawing_1-0102-PGAD-K004-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-K004-R03.pdf
Replace: 976-2016_Drawing_1-0102-PGAD-K011-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-K011-R04.pdf

M – Administrative Building and Septage Facility

Replace: 976-2016_Drawing_1-0102-ACBD-M906-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ACBD-M906_Sht001-R01.pdf
Replace: 976-2016_Drawing_1-0102-BGAD-M004-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-M004-R01.pdf
Replace: 976-2016_Drawing_1-0102-BGAD-M006-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-M006-R01.pdf
Replace: 976-2016_Drawing_1-0102-BSCH-M001-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-BSCH-M001-R01.pdf

P – Primary Clarifiers

Replace: 976-2016_Drawing_1-0102-ACBD-P001-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ACBD-P001_Sht001-R01.pdf
Replace: 976-2016_Drawing_1-0102-ACBD-P008-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ACBD-P008_Sht001-R01.pdf
Replace: 976-2016_Drawing_1-0102-BGAD-P001-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-P001-R04.pdf
Replace: 976-2016_Drawing_1-0102-BGAD-P002-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-P002-R04.pdf
Replace: 976-2016_Drawing_1-0102-BGAD-PD51-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-PD51-R04.pdf
Replace: 976-2016_Drawing_1-0102-MGAD-P602-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-MGAD-P602-R01.pdf
Replace: 976-2016_Drawing_1-0102-MGAD-PD51-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-MGAD-PD51-R04.pdf
Replace: 976-2016_Drawing_1-0102-PGAD-P002-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-P002-R01.pdf
Replace: 976-2016_Drawing_1-0102-PGAD-P003-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-P003-R01.pdf
Replace: 976-2016_Drawing_1-0102-PGAD-P004-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-P004-R01.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-P006-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-P006-R01.pdf

R – BNR Facility (Bioreactors & Blower Bldg)

Replace: 976-2016_Drawing_1-0102-BGAD-R005-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-R005-R01.pdf

Replace: 976-2016_Drawing_1-0102-BGAD-R008-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-BGAD-R008-R01.pdf

Replace: 976-2016_Drawing_1-0102-MGAD-R509-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-MGAD-R509-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R001-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R001-R03.pdf

Replace: 976-2016_Addendum_2-Drawing_1-0102-PGAD-R003-R05.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R003-R06.pdf

Replace: 976-2016_Addendum_2-Drawing_1-0102-PGAD-R004-R05.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R004-R06.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R005-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R005-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R007-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R007-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R008-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R008-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R009-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R009-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R011-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R011-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R012-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R012-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R013-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R013-R03.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R017-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R017-R04.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-R018-R02.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-R018-R03.pdf

Replace: 976-2016_Drawing_1-0102-PPID-R602-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PPID-R602-R01.pdf

Replace: 976-2016_Drawing_1-0102-SGAD-R013-R04.pdf with 976-2016_Addendum_3-Drawing_1-0102-SGAD-R013-R05.pdf

Replace: 976-2016_Drawing_1-0102-SGAD-R014-R05.pdf with 976-2016_Addendum_3-Drawing_1-0102-SGAD-R014-R06.pdf

Replace: 976-2016_Drawing_1-0102-SGAD-R022-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-SGAD-R022-R04.pdf

S - Secondary Clarifiers

Replace: 976-2016_Drawing_1-0102-ACBD-S022-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-ACBD-S022_Sht001-R01.pdf

Replace: 976-2016_Drawing_1-0102-PGAD-S002-R03.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-S002-R04.pdf
Replace: 976-2016_Drawing_1-0102-PGAD-S003-R04.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-S003-R05.pdf
Replace: 976-2016_Drawing_1-0102-SGAD-S033-R05.pdf with 976-2016_Addendum_3-Drawing_1-0102-SGAD-S033-R06.pdf
Add: 976-2016_Addendum_3-Drawing_1-0102-BGAD-SD50-R00.pdf

T - Biofilter

Replace: 976-2016_Drawing_1-0102-PGAD-T005-R00.pdf with 976-2016_Addendum_3-Drawing_1-0102-PGAD-T005-R01.pdf

Y – Yard / Electrical Substation

Replace: 976-2016_Drawing_1-0102-CUTY-Y001_Sht004-R00.pdf with 976-2016_Drawing_1-0102-CUTY-Y001_Sht004-R01.pdf

QUESTIONS AND ANSWERS

- Q1: Section 3.1 of 40 27 02 outlines when an extension stem with 2" nut, or chainwheel should be used based on elevations. If there is no detailed sectional drawing showing the valve actuator, what are we to assume for the actuator? For example, for some plug valves, a section view is not provided. In those cases, how are we to know if they are 2" nuts, handwheels or chainwheels?
- A1: All valves are either shown in the exact position on the drawings or located on pipes for which the elevation is shown.
- Q2: The following valves are missing from the equipment list and GA drawings but on PPID drawings. What type of plug valves are these and what kind of actuators?
- HV-R101F, HV-R102A and HV-R103A on drawing 1-0102-PPID-R101
 - HV-R140D, HV-R140E and HV-R140F on drawing 1-0102-PPID-R103
 - HV-R122A, HV-R123A and HV-R-121F on drawing 1-0102-PPID-R105
- A2: The above listed valves will be supplied and installed under a different contract (ongoing Contract 3).
- Q3: Where do we assume buried service? Is there anything in the drawings or specifications that would indicate this? In most cases, a buried service valve would be shown in a drawing with an extension stem. It appears no extension stems are shown in the drawings for any of the plug valves.
- A3: Extension stems are not shown on the drawings. A detailed review of the specs and drawings is necessary for understanding the valve requirements.

Q4: Spec section 40 27 02 - Type V150 Knife gate valves states that valves shall have a non-rising stem and valves over 350 mm should be provided with a bevel gear operator, while type V155 states rising stem with bevel gear actuator. All knife gate valves in GA drawings are showing a handwheel actuator with a rising stem. How do we identify for each knife gate whether its should be a handwheel with a rising stem, a bevel gear with non-rising stem, a 2" nut or chainwheel? Are we to follow the criteria laid out in Section 3.1 for actuator types based on elevations?

A4: A detailed review of the specs and drawings is necessary for understanding the valve requirements.

Q5: W-K111 and W-K121 are on GA drawings 1-0102-PGAD-K002/007 but not on the equipment list. It appears that they might be the same gates on PPID drawings 1-0102-PPID-K102/K104 which have tag numbers HV-K110A and HV-K120A. Can you please advise if this is correct?

A5: Yes this is correct. The tags on drawings 1-0102-PGAD-K002 will be corrected in this addendum.

Q6: Please confirm that stop log SL-S100N on equipment list and PPID drawing 1-0102-PPID-S101 is the same as SL-S100T on GA drawing 1-0102-PGAD-S007? If any of the gates listed above are new items and are not currently listed on the detailed slide gate schedule, please provide all necessary technical information provided within this schedule for these gates. For example, assembly style, rising or non-rising stem, actuator details, etc.

A6: The tag on drawings 1-0102-PGAD-S007 will be corrected in this addendum. Technical information on the gates is located in the specification.

Q7: Per the Slide gate schedule, slide gate SG-R123A is 1000x1500 mm. However on GA drawing 1-0102-PGAD-R004 it shows this gate being 1200x1200 mm. Which size should this slide gate be?

A7: Slide gate SG-R123A shall be 1000x1500 mm per slide gate schedule.

Q8: Per section 2.5.E.1.a.9 of 40 27 02: Are we to provide handwheels for all AWWA butterfly valves? For remaining butterfly valve types are we to follow Section 3.1 with regards to actuator type or should they be handwheels? If there is no detailed sectional drawing showing the valve actuator, what are we to assume for the actuator?

A8: A detailed review of the specs and drawings is necessary for understanding the valve requirements. All valves should be provided with electric or manual actuators as specified.

- Q9: Section 2.1.1 of 40 27 02 states factory mount operator, actuator and accessories, while Section E.6 states that it will be the contractor's responsibility for the integration of the valve with the valve actuator. Please advise what we should be following. Please advise for the slide gates as well.
- A9: All electrically actuated valves and gates shall be supplied as coordinated/integrated/tested units prior to delivery to site.
- Q10: The following mud valves are missing from the manual valve equipment list but are shown on the drawings listed below. Please advise extension length, number of stem guides and actuator type required.
- HV-R400H on drawing 1-0102-PPID-R108
 - HV-R140C on drawing 1-0102-PGAD-R007
 - HV-R130A and HV-R130B on drawing 1-0102-PPID-R10
- A10: The above listed valves will be supplied and installed under a different contract (ongoing Contract 3).
- Q11: Do the two mud valves located in area K-HRC building with tag numbers XY-K1131 and XY-K1231 require manual or electric actuators? Per valve Type V915 Mud valves - the valves are to have a 2" nut, however these valves are located in the electrical motor actuated valve schedule. These valves are not shown in the GA drawings. It appears that on drawing 1-0102-PGADK006 that one of the mud valves is located there, however the tag number is showing FG-K113 (flap valve). Please specify the extension length, number of stem guides and actuator type required.
- A11: The above listed valves require an electric actuator per schedule.
- Q12: Please confirm that all accessories such as floor stands, extension stems, floor boxes etc can be supplied by the valve manufacturer that is supplying the valve. DeZurik is not listed as approved for all accessories.
- A12: Floor stands, extension stems, floor boxes can be supplied by the valve manufacturer provided they comply with specification.
- Q13: Are MG1 motors required for the cranes?
- A13: Yes.
- Q14: Item E9.5.9: The Systems Integrator shall provide a facility for each FAT within the limits of the City of Winnipeg. Does this apply to the control panel FATs or just the software FATs?
- A14: This applies to the software FAT, not the control panel FATs.

Q15: Item E5.7: Is it mandatory that all Schneider products be purchased from the distributors in Winnipeg as listed? Or can they be purchased from distributors in Alberta or Ontario?

A15: Contact the Schneider / Eecol representative listed in the Bid Opportunity. The representative will be able to advise if arrangements can be made regarding delivery via alternate distributors.

Q16: Schneider Electric is listed as one of the approved Systems Integrator and also listed as a supplier from which the Systems Integrator is to purchase equipment. Has the City already secured preferred pricing from Schneider that will be extended to all the Systems Integrators?

A16: Please refer to D6.2. The City's agreements with the Standardization Vendors define the prices at which the Standardization Vendors must sell the Standardized Goods to the Contractor.

Q17: Section 46 23 23 - Item 1.2.B.f: Since the HeadCell will be submerged underwater during operation and grouted into place in a concrete tank below grade after installation, seismic calculations shall not be supplied for this equipment. Please clarify that these will not be required.

A17: Seismic calculations are not required.

Q18: Drawing 1-0102-PPID-G301: For the HeadCell fluidizing lines, Hydro shall supply one 1" bronze globe valve, one 1" bronze ball valve, and one 1" acrylic flowmeter for each unit. All other instrumentation and valving shown will be supplied by others. Please call out this delineation of supply responsibility.

A18: Coordination of supply responsibility is between the vendor and the Contractor.

Q19: Part D Supplemental Conditions D25.1: Question: When will the HeadCells be expected to ship in the project timeline considering Total Performance is by December 31, 2021? Please provide this timing, as this will affect costs associated with warranty coverage.

A19: Coordination of delivery and installation is between the vendor and the Contractor.

Q20: Please clarify that for all Branch connections as listed on page 2 of this piping spec that the mechanical contractor is to supply smooth bore manufactured reducing tees. Or is it acceptable to provide stub ins for all large bore pipe branch connections.

A20: Reducing tees shall be supplied with smooth bore. Stub ins are not acceptable

- Q21: Based on section 40 27 02 - Type V150 knife gate valves, all valves are to have a non-rising stem. Knife gate valves will only have a non-rising stem if they have bevel gear actuators. However, the spec states that bevel gear actuators are only required for valves over 350 mm. All the drawings are showing valves with a rising stem, with the stem rising through the center of the handwheel. I have attached drawings of both examples, non-rising stem w/ bevel gear and rising stem with standard handwheel. Please advise what we are to quote as the specification has contradicting statements. The spec says one thing and drawings show another. I assume what you would be looking for for all valves under 350mm is the standard handwheel with rising stem, shown in drawing A67512 attached.
- A21: The drawings use valve models from a CAD library and shall not be used for valve details. The specification calls for non-rising stem and bevel gear for valves larger than 350 mm. These two specification items are not contradictory. If a non-rising stem valve requires a bevel gear then it needs to be provided irrespective of valve size.
- Q22: This specification states "All SS flanges shall be ASTM A182/A182M, Grade F316L, ASME B16.5 or B16.47 Class 150 or Class 300, Slip on or Weld neck" Drawings make no reference to Class rating. Can a piping Line List be supplied that shows the correct pressure rating of flanges per system?
- A22: Class 150 is the default class for flanges unless a higher pressure class is needed per the piping schedule test pressures listed.
- Q23: Drawing ACBD-M906 sheet 001 BOM item 6 shows one AMPLA server. This item does not show on the panel views and is not shown on the facility HMI Architecture or in the Standardized Goods by Schneider Electric. Can you comment on the requirement? Server hardware only supplied loose not in panel?
- A23: This is a typo. The AMPLA server reference has been removed in this addendum.
- Q24: Few of the Local Control Panels (LCP) listed on the Automation Equipment list have panel design drawings and BOM's. Should we assume any panel drawings will be vendor supplied and therefore no panel supply responsibility for SI/Contractor?
- A24: In general, LCP panels without a panel layout and BOM will not be part of the SI/Contractor's scope, however, refer to the drawings and specifications for complete details.
- Q25: NP-?906 panels (where ?=Area) are shown in Automation Equipment List, some network drawings and referred to as admin network panels. No panel design drawings and BOM's for these panels are in the package. Are these panels supplied by others or existing?

- A25: These panels are to be supplied by the Contractor. See specification 40 95 53 Section 2.7. All wiring to these panels is to be as shown on the drawings. However, the City will provide, install and connect the equipment within these panels.
- Q26: It stated that the butterfly valves type V510 for channel aeration shall be supplied by coarse bubble air suppliers as per specification item 2.3.J in 46 51 21 .13. However, it is out of vendor's scope of supply as per detail 4027-624 in drawing 1-0102-PPID-A006. Please clarify scope of supply of the butterfly valves for channel aeration.
- A26: The butterfly valves can be supplied by either the coarse bubble aeration supplier or the valve supplier. Coordination is required between the vendor and the contractor. The valve type and location shall be per specification.
- Q27: There is 100-PD-PV02 pipe in drawing 1-0102-PPID-C001. Could you please supply pipe specification for this PV02?
- A27: The piping shall be schedule 80 PVC (Pipe Specification Code PV01). This has been revised in this addendum.
- Q28: Please advise if a UPS battery backup is required in each main control panel, or if UPS power will be supplied to each main control panel from a Central UPS provided by others. .
- A28: UPS battery backup in each main control panel is not required. Control power is to be generated within the main control panel from the 600V power feeding the control panel. No external UPS power will be provided.
- Q29: Specification 40 99 90 requires a Managed Ethernet Switch to be provided as the Moxa EDS-G512E-4GSFP. Please advise if each main control panel requires a Managed Ethernet Switch. If a managed Ethernet switch is required by the vendor for the operation of their packaged system, the standard of acceptance is the Moxa EDS-G512.
- A29: If a managed switch is not required by the vendor, an unmanaged switch is acceptable and can be the vendor's standard.
- Q30: Please confirm the scope of spare OEM control panel components to be 1-Lot of Extra Material spare parts defined in 40 99 90-1.4. Please advise if spare parts outlined in any other specification sections will apply to the OEM control panels.
- A30: Spare parts requirements in other specifications sections will not apply to packaged system control panels.

- Q31: Please confirm the OEM supplier will not be required to provide a licenses copy of PLC software or OIT software. Please confirm all software licenses are provided by others.
- A31: This is a coordination issue with the Contractor. Software licenses are required as per specification 40 95 34; however, if the vendor is providing Schneider equipment, the licenses may have been included by the Systems Integrator.
- Q32: Please confirm if the OEM control panel supplier will need to participate in onsite pre-construction / programming workshops, or if this is only applicable to the Systems Integrator.
- A32: Programming workshops are only applicable to the Systems Integrator. Manufacturer's site services are listed in 46 21 11 3.5 A.
- Q33: Please confirm if the OEM control panel supplier will need to perform a factory acceptance test witnessed by the Owner/Engineer, or if this is only applicable to the Systems Integrator's Process control panels.
- A33: Testing requirements for OEM control panel supplier are only as specified in 46 21 11. The Contract Administrator has the option of witnessing the tests conducted at the factory
- Q34: Please confirm if the OEM control panel OIT will need to follow the City of Winnipeg HMI Layout and Automation Plan, or if this is only applicable to the Plant HMI provided by the Systems Integrator.
- A34: The OIT shall be consistent with the City of Winnipeg HMI Layout and Animation Plan. The specification will be revised in this next addendum to include this.
- Q35: Please confirm if the OEM control panel OIT programming will need to follow any additional City of Winnipeg programming covenant standards.
- A35: No additional standards besides those already listed.
- Q36: Please confirm if the OEM control panel PLC program will need to follow the City of Winnipeg PLC Tag Naming Plan, or if this is only applicable to the Systems Integrator's Process control panels.
- A36: The OIT program should be consistent with the City of Winnipeg Tag Name Standard. The specification has been revised in this addendum to include this.

Q37: Please confirm if the OEM control panel PLC programming will need to follow any additional City of Winnipeg programming covenant standards or site provided base load files.

A37: No additional standards besides those already listed.

Q38: Please confirm if the OEM control panel PLC program will need to be submitted for review and approval.

A38: No submittal required to Contract Administrator but coordination with the Systems Integrator for provision of information is required.

Q39: Please confirm if the OEM control panel manufacturer will be required to provide the following submittals for review and approval: PID for Screening Equipment

A39: Yes, this has been clarified in this addendum.

Q40: Valves found on P&ID but not on valve list. Please confirm requirements

- P&ID -Vol 5A S Secondary Clarifiers – 136 1-0102-PPID-S105, 137 1-0102-PPID-S106
- 300-HV-S140C - 1-0102-PPID-S105 - Eccentric plug - V405-PD
- 300-HV-S150C - 1-0102-PPID-S106 - Eccentric plug - V405-PD

A40: Plug valves 300-HV-S140C and 300-HV-S150C are supplied and installed by Bid Op 899-2015 (Contract 3) contractor.

Q41: On drawing 1-0102-PGAD-S002 it shows 150 & 200-FE- SS01. In the process piping Schedule the symbol FE is not listed. Please supply FE schedule. Please clarify

A41: FE is "Final Effluent". The piping schedule has been amended to include this.

Q42: Please confirm that knife gate valves with a rising stem can be used on valves under 350 mm.

A42: Yes, they can be used. This has been clarified in this addendum.

Q43: Section 40 27 00, piping specification 40 27 00.08. The specification calls for SS external stiffening rings to be installed on pipe 750mm and larger every 2 meters. Please confirm if these are required on all exposed piping systems.

A43: Stiffening rings are required as specified

- Q44: Section 40 27 00, piping specification 40 27 00.08A. The specification calls for SS external stiffening rings to be installed on pipe 600mm and larger every 2 meters. Please confirm if these are required on all exposed piping systems.
- A44: Stiffening rings are required as specified
- Q45: Section 46 41 24 3.1.C.5.a - [We] believe that the only way to get an independent result when running the Mixer Performance Tests is to perform it without Flow through the tank. Incoming Flow either assists a poorly designed mixer OR can sometimes skew the Sample Data if the feed solids vary in concentration during the test. It is strongly recommended to perform the TSS test without flow and 30 minutes of mixer operation in order to define homogeneity within the tank.
- A45: The flow to the fermenter tank is small compared to the size of the tank. Spec to remain as issued. The TSS samples can be taken away from the influence of the influent flows, but the mixer energy requirement is in large part dictated by the need to blend (not just homogenize) the various flows that enter the tanks.
- Q46: Section 46 41 24 3.1.C.5.b: It appears that the concrete cover over this tank will prevent taking samples from 4 Vertical lines/locations?. The drawings do not show if there are 4 sample ports drilled around the tank cover to pull samples correctly. Please confirm if there are 4 acceptable locations to take samples through the cover.
- A46: Samples will be taken from the available openings. Supplier to assume that it is possible to take samples in any location for the design of the mixer.
- Q47: On drawing(s) 1-0102-PPID-R-201, R-202, R-203 drawing note 1 states" INTERCONNECTING PIPING BY CONTRACTOR" which alludes to the Contractor supplying the piping shown within the vendor package. Control Valves XV-R2025, R2035, R2045, R2055, R2065 show in the valve schedule as being vendor supplied but do not show a size for these valves. The PPID drawings show this as a branch pipe to the blower discharge piping, again without any size noted. Please clarify by drawing what the actual configuration of this blow off piping and silencer will be, – whether the blow off is a branch pipe from the discharge or a separate pipe directly from the blower – and where the blower discharge is expected to terminate – within the blower room or up to the roof of the bioreactors and if up to the roof where on the roof these terminations will be.
- A47: The Contractor shall coordinate with the blower vendor the exact supply details. Normally piping inside the blower enclosure is supplied by the vendor. Please check with the blower vendor the size of the blow off valves and other details. The blow off piping discharges immediately above the blower enclosure. See drawings.

- Q48: On drawing 1-0102-PGAD-K011 there is a line designated 150-PD-DI01 (near sludge pump No 2). The process piping schedule in section 40 27 00 Supplement indicates that all PD lines are to be SS01. What is material type DI01?
- A48: The process drain piping should be in stainless steel (SS01). This has been corrected in this addendum.
- Q49: Valves found on Valve List, not on P&ID Please confirm if required
- 75-HV-C418C - 1-0102-PPID-C404 - Ball - V330-MP
 - 300 - - 1-0102-PPID-T201 - Vacuum Relief - V738 - FOA
 - 300 - - 1-0102-PPID-T201 - Vacuum Relief - V738 - FOA
 - 300 - - 1-0102-PPID-T201 - Vacuum Relief - V738 - FOA
- A49: The 75 mm PVC Valve C418C is not required. The vacuum relief valves V738 are shown twice in the valve schedule and will be corrected.
- Q50: Would Standard Weight pipe be allowed in place of Schedule 20 pipe? RFI #4 response allowed for the use of Standard Weight fittings in place of Schedule 20 fittings (which are un-available) however Standard Weight fittings can not mate to Schedule 20 pipe without cost prohibitive modifications.
- A50: Standard weight pipe is acceptable in lieu of Schedule 20 pipe for sizes 450 mm to 600 mm only. Standard weight pipe is also acceptable in lieu of Schedule 30 pipe for sizes 300 mm to 400 mm. Pipe and shop-fabricated fittings in sizes 650 mm and larger are to be Schedule 20 (minimum 12.7 mm wall thickness) as specified in Section 40 27 00.03 Carbon Steel Pipe and Fittings – General Service. This has been included in this addendum.
- Q51: Please specify the depth of the media in the Bioreactor tanks, also specify how many super sacs the media is coming in with a weight per sac?
- A51: Depth of media can vary. 5,400 cubic metres is to be installed and divided among the three bioreactors. Each bag can contain between 1 to 2.8 cubic metres and weigh between 200 to 600 kg.
- Q52: Please clarify if the scum transfer screens shown on drawing 1-0102-PPID-R102 are the same as detail 2 shown in Appendix 976-2016 drawing F10100. If so are these items supplied by the owner.
- A52: Yes they are the same. Supplied by the City's vendor.

- Q53: On drawing 1-0102-ECRT-R001 sheet 1 it states that the contractor is to utilize the roxtec cable seal system installed in contract C3, please clarify if it was just the frame installed or if all the modules were also installed in the frame in contract C3.
- A53: This Roxtec seal for cables from the service transformer was to include all the seals as well. This was intended to be sealed under C3, as the building penetration is below grade, and we did not want water to ingress into the building between contracts C3 and C4. Under C4, this will need to be modified, to suit the cables from the transformer.
- Q54: Please provide panel schedule for panel B on drawing EGAD-UD01.
- A54: Per the single line drawing ESLD-U001, Panel B is to be retagged as PNL-U712. PNL-U712 details are shown on drawing ESCH-U001. If further information is required, please contact the contract administrator to arrange a site visit to look at it.
- Q55: We wanted to confirm the PRV set pressure for the Sludge Transfer Pumps (P-S401, P-S402). Can you please confirm if the PRV is set at 3 bar for these two pumps?
- A55: The pressure relief range is 320 to 400 kPa is as indicated in the valve schedule. However, vendor to note that the Sludge Transfer Pumps (P-S401, P-S402) are required to be able to develop 510 kPa of differential pressure as noted in the pump specification.
- Q56: Division 26 – Lightning Protection.
- a. Reference Drawing: 1-0102-EGRD-P002. Please confirm the parameters of the lightning protection analysis the Contractor is expected to produce. Typically, the design is created in accordance with recognized installation standards, but a “detailed lightning protection system analysis” is not commonly provided.
 - b. The drawing details, specifications, drawings notes all show different sized conductors (e.g. 4 AWG conductors, 1 AWG conductors). Please confirm if UL for Canada listed Class I copper and aluminum conductors satisfy all requirements for this project.
 - c. We do not believe that the Odour Control stack is properly protected, therefore, cannot provide a zone of protection for the structures beneath it. Please provide direction.
 - d. For rooftop aluminum connections, are UL for Canada listed aluminum mechanical fittings (e.g. splicers) considered compression connectors? Mechanical fittings are typical for the rooftop portion of lightning protection installations.
- A56: a. There are other requirements as described in section 26 41 13 of the specification. The detailed lightning protection system analysis and design shall be performed by an engineer with experience in this field, and be based on the standards referred to on the drawings and in the specification.

- b. Per the specification, the class is to be as required to suit the facilities. Many of the facilities are less than 25 meters in height. Review the drawings for the exact height of all facilities.
- c. The intent is to use the Odor Control Stack as a lightning terminal to provide a zone of protection to some adjacent facilities. See dwg EGRD-B001. It is our understanding that this stack is metallic, is continuous, and is of the required thickness to act as a lightning terminal in accordance with CSA B72, section 9.17.
- d. Certified, listed, mechanical compression connectors and fittings are acceptable where indicated in accordance with the specifications and drawings. Look at AGRD-A003, AGRD-A004 for some additional information, which may clarify what you are asking.

Q57: SECTION 40 90 00 INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEMS: Are there PLC/HMI templates that can be made available from the City of Winnipeg. The City standards are quite specific and having a template available will make a large difference in the cost.

A57: There are no templates that are available.

Q58: SECTION 40 90 00 INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEMS: Can you please provide us the data historization.

A58: The setup and implementation of the historian will be by the Systems Integrator. It will be a Schneider Vijeo historian.

Q59: Section 21 05 48 - 6, 3.3 Vibration Control And Seismic-Restraint Device Installation (for Fire-Suppression Piping and Equipment): Please advise if the requirement for vibration control and seismic-restraint applies to piping systems other than Fire Suppression Piping

A59: Section 21 05 48 does not apply to piping other than Fire Suppression Piping. Piping supports shall follow spec 40 05 15 Piping and Cable Tray support Systems.

Q60: Section 40 42 13 Piping Insulation, Insulation Schedule page 5, Heating Systems, HWR/HWS: Schedule indicates insulation type 2 (fiberglass) and insulation finish type F2 (paint) for indoors exposed – is this the correct finish for this system or should this be type F1 (PVC)?

A60: The finish should be type F1 (PVC). This will be corrected by addendum.

Q61: Please clarify the following: Section 40 42 13 – Piping Insulation page 5 - Insulation Schedule, Pipe Legend V, VTA: Is it your intent to insulate the complete vent to atmosphere system from start to finish? The finish schedule calls for type F3 (aluminum jacket) on concealed piping and no finish on indoor exposed piping – Is this correct?

A61: V, VTA cwill be deleted by addendum.

Q62: Section 40 27 00.08A and 40 27 08 Process Air Service SS Pipe and Fittings: Both material specs refer to the 316L SS pipe to be pickled and passivated as per ASTM 380. Is there a requirement to have this pipe passivated again once all welding has been completed? If so, please provide a pickling and passivation spec.

A62: Yes piping shall be passivated after welding is complete. Passivation shall be per the ASTM A380. The spec is in the ASTM standard.

Q63: Reference Drawings 1-0102-PGAD-G011 & 1-0102-PGAD-G012:

- a. Refer to the annotated drawing 1-0102-PGAD-G011, attached. The drawing indicates a type of coupling or flange required at the fittings. It appears in the 3D model that these may be drawing anomalies. Please confirm if these are required and if so, what type of connections are they?
- b. The above condition applies to the GRS-CS01 system as well, shown on drawing 1-0102-PGAD-G012

A63: The joints on the PD piping are butt-welded. The joints on the GRS piping are grooved. Refer to the Process Piping Schedule in Section 40 27 00 Process Piping – General for the type of joints required for each piping system.

Q64: Section 01.50.00 Temporary Facilities and Controls, Part 2 Products 2.3 H Temporary Clarifier 2 RAS Pump, Spec calls for "Horizontal Split Case Centrifugal Pump", however drawing "temporary RAS line modifications Figure 2" shows an End Suction Centrifugal Pump. Our historic records suggest existing RAS pumps are a Worthington Model 12MC pump, which is an End Suction Centrifugal Pump design suited for RAS pumping and appears confirmed by what we see in this drawing. In addition, we highly recommend that a Horizontal Split Case Centrifugal Pump is not suited to RAS pumping, permanent or temporary. Is the request for a Horizontal Split Case Centrifugal Pump in error? Please confirm.

A64: The temporary RAS pump should be "end suction centrifugal".

Q65: Vol 2A drawing 1-0102-PGAD-G007 all blowers show a reference to "Concentric Rubber Reducers" of differing sizes. PPID G306 shows these reducers outside the package limits with flex connectors shown inside the limits; G307 shows flex connectors inside the package limits and NO reducers. Please confirm whether the Concentric Rubber reducers are in fact intended to be the flex connectors and if so whether it will be considered to be in the scope of supply of the Mechanical Contractor or if they are to supplied with the vendor package?

A65: The concentric rubber reducers are intended to be the flexible connectors. The flexible connectors are specified in Section 43 11 15.13 Multistage Centrifugal Blowers and Section 43 12 03 Rotary Lobe Air Blowers.

Q66: In Vol 3 A drawing 1-0102-PGAD-P003 & 1-0102-PGAD-P004 it shows STD detail 0330-056 but no detail as to what type it is to be. As per 1-0102-SDTL-A008 is it Type E or Type F? Please clarify

A66: The equipment pads should be Type F.

Q67: In Vol 3A, drawing 1-0102-PGAD-P006 Process Primary Clarifiers Section C, it shows STD 4027-605B. On drawing 1-0102-PDTL-A006 Process Standard Details (5) it show STD 4027-605A, but not STC 4027-605B. Please Clarify.

A67: The detail reference should be 4027-605A.

Q68: In Vol 3A, drawing 1-0102-PGAD-P002, 750mm FOA pipe thru roof see detail 6 on drawing BDTL-A006. Reviewing drawing BDTL-006 detail 6 is for Pipe support/ Stone Veneer (Existing Exterior Wall) Please Clarify

A68: Detail reference is incorrect. Please refer to detail 5 on drawing BDTL-A006. This has been updated in this addendum.

Q69: Please confirm Size & Type of valve found on P&ID (all are shown in Vendor Supplied Package) N/A-XV-R2015 - 1-0102-PPID-R201 - N/A - N/A - ALP, N/A-XV-R2025 - 1-0102-PPID-R201 - N/A - N/A - ALP, N/A-XV-R2035 - 1-0102-PPID-R202 - N/A - N/A - ALP, N/A-XV-R2045 - 1-0102-PPID-R202 - N/A - N/A - ALP, N/A-XV-R2055 - 1-0102-PPID-R203 - N/A - N/A - ALP, N/A-XV-R2065 - 1-0102-PPID-R203 - N/A - N/A - ALP

A69: The size and type of the actuated blower bypass (blow-off) valves which are included in the process air blower vendor packages are to be confirmed by the contractor with the blower vendor

Q70: On drawing 1-0102-PGAD-R010 near grids 5r & Br on the 450mm ALP system is a reference to 'CUT GROOVED FLEXIBLE VICTAULIC TYP' Upon reviewing the SS03 specification this pipe is not interpreted to be a pipe wall thickness (316L Schedule 10S ASTM A778) that would permit cut grooving. Please clarify if this is a typing error and if a rolled grooved coupling would be acceptable?

A70: Please refer to Addendum 2. A schedule 40 spool is required at pipe end. Only a cut groove coupling is acceptable.

Q71: In regards to the same drawing reference and system above these couplings are defined as typical; is this meant as typical near an anchor or as a typical joining method for this pipe. Please clarify what is meant.

- A71: The cut groove coupling is only required where shown. Typical means at the location where the same type of coupling symbol is shown.
- Q72: Once again with reference to the above drawing and system the specifications for SS03 state "Where indicated on Drawings and where required for thermal expansion and contraction of piping, provide flexible sleeve type couplings as specified in Section 40 27 01, Process Piping Specialties". Spec. 40 27 01 2.3.2 c) suggests that flexible couplings are to be Straub; Straub-Flex. For the flexible couplings mentioned on the drawings as Victaulic is the Straub type in fact the desired coupling and please show where these couplings are to be installed.
- A72: The drawings show/call for the type of coupling required (e.g., grooved coupling, flexible sleeve coupling, or cut groove coupling).
- Q73: On drawing 1-0102-MGAD-P602 Vol 3A, it shows 25-HWS-C101 & 25-HWR-C101 to the new AHU-B610. The Plumbing Piping Schedule Section 22 10 01 does not have a spec for HWS/HWR, nor is it listed in the Process Pipe Schedule. Also, the piping material C101 refers to hub less cast iron pipe and fittings. Please provide a Piping Schedule for HWS/HWR. Please clarify.
- A73: Please refer to Hydronic Piping Schedule in Section 23 21 13. The pipe material should be CS21 as indicated in the schedule. This has been addressed in this addendum.
- Q74: On drawing 1-0102-PGAD-C011 there is a reference to drawing PGAD-C016 (under the Bypass Channel). The drawing PGAD-C016 does not appear to be in the tender package, please provide this drawing or the correct reference.
- A74: The reference should be to drawing 1-0102-PDTL-C001. This has been updated in this addendum.
- Q75: On drawing 1-0102-PGAD-C006 there is also a reference to drawing PGAD-C016 below the Chemical Loading Platform. Please provide drawing PGAD-C016.
- A75: The reference should be to drawing 1-0102-PDTL-C001. This has been updated in this addendum.
- Q76: On drawing 1-0102-MGAD-P601 it shows a hydronic heater tagged- HGT-G694. This heater is not listed in spec section 23 80 00 Terminal Heating and Cooling Units. Is this unit existing or should it be added to section 230 82 00? Please Clarify.
- A76: The heater HTR-G694 is a new hot water convection heater. This addendum adds this heater to the Hot Water Convection Heater under Section 23 82 00.

Q77: See Specification Section 03 05 10 Cast-In-Place Concrete. Item 1.5 A. reads 'Separate and recycle waste material'. Is this a LEED project? If not, why are these specific materials to be separated and recycled?

A77: This is not a LEED project, however, these materials are to be recycled for good environmental stewardship.

Q78: See Specification Section 03 39 00, Item 3.9 Schedule of Concrete Finishes. Type W-3A (Controlled Permeability Form Liner) is called up for Exterior Wall Surfaces: Backfilled. Is this correct? Why would form liner be required on surfaces to be backfilled?

A78: Yes, this is correct. The form liner will provide a denser surface, reduced permeability, and increased freeze/thaw resistance.

Q79: Please provide a structural detail for the gap between the double wall in the Chemical /Electrical building. Architectural detail 4 on drawing 1-0102-BDTL-C004 indicates batt insulation to the top of the wall, but an air gap below? An air gap is not possible to construct. Shall there be rigid insulation in this gap for the balance of the wall?

A79: Provide expansion joint material per specifications, Section 03 15 00 Concrete Joints and Accessories.

Q80: See Specification Section 03 39 00, Item 3.9 Schedule of Concrete Finishes. Exterior Wall and Interior Wall Surfaces are indicated. What finish is required at exterior nonwall vertical surfaces such as duct banks?

A80: For vertical surfaces of duct banks, provide basic W-1 finish.

Q81: Shall CW2030 be used for building backfill? It is not listed in the Spec. Ref. column of the tender form for those items. Specification section E17 refers to building excavation, but there is no E series or NMS specification for building backfill.

A81: See structural sections for backfill requirements around buildings.

Q82: See specification section 02 82 11, Item F. The last sentence reads, "Prior to tender, the Contractor shall be solely responsible to obtain and verify quantities and locations on-site and confirm that all known asbestos-containing materials have been included in the lump sum bid". This seems unreasonable at time of tender. Is it possible to co-ordinate separate site visits for quantification of the abatement required? This could potentially take more than one day.

A82: A specific visit can be accommodated. Please contact the contract administrator to arrange.

- Q83: See specification section 12 50 00, Item 2.8. This section states that one unit of the Control Console (CC-1) is required for Control Room No. M123. Drawing No: 1-102-BGAD-M003 also shows one unit, however, the Furniture Schedule on the same page states that two units of CC-1 are required. Please clarify the quantity of CC-1 units.
- A83: Only one Unit is required.
- Q84: Drawing 1-0102-SGAD-S030 Section M notes CMU in fill after cable installation, but drawing 1-0102-SGAD-S033 Section U shows the same in fill as NIC. Please clarify.
- A84: In fill is in contract.
- Q85: Please review the scope of work (Tyndal stone removal) indicated on drawing BGAD-PD52. It would appear this work should have already been completed for the High Rate Clarifier Structure construction. Please clarify.
- A85: Work already completed in previous contract.
- Q86: The room finish schedule on Vol13, BSCH-M001 shows all the existing Men's Locker Rm walls to receive a tiled finish. The asterisk referencing the finish note is only shown on the west wall. It is our understanding that the men's locker is to receive a tiled finish on the walls and floor only in the shower area, please confirm.
- A86: The ceiling material, finish and height have been updated in this addendum.
- Q87: Drawing BGAD-M004 shows the existing ceiling tile and grid structures in the Administration Buildings Locker Room to remain however the demolition notes say the drop ceiling is removed. The room finish schedule says to ceramic tile the ceiling while the drawing sections show an acoustic tile drop ceiling. Please advise which is correct.
- A87: The drawing has been updated in this addendum to reflect a suspended tile ceiling system.
- Q88: The Fermenters Pump Gallery Monorail is indicated to be a 2 tonne capacity by the Data Sheet in section 41 22 23.19, however drawing SGAD-D003 indicates a 1 tonne capacity. Please clarify the capacity required for the monorail located at the Fermenters.
- A88: The monorail should have 1000 kg capacity. The datasheet has been corrected in this addendum.
- Q89: Reference section 05 50 03, item 2.5; Please provide a drawing to clarify the following

- a. B.3, Bowls; how many as the drawing only shows a symbol for one sink
- b. B.4, Anti-Splash Guard Rim; what is required, height, around what etc.
- c. B.5, Flushing Spray Rings; what is required, noting that there is no FSW to the sinks
- d. B.7, quick disconnect; does this refer to the sample lines and/or the hose"

A89: Item 2.5 has been deleted from the specifications in this addendum.

Q90: Reference section 46 41 23, please confirm or provide the data sheet for R1551- & 2

A90: Please refer to Addendum 2 for information on the data sheets.

Q91: Reference drawing PGAD-G004, please confirm the Flexible Sleeves as shown on the 750/900-RS-CS01 are sufficient for the Pump and XV-G1211 to comply with drawing PAAA-A001, note 10

A91: This will be clarified by addendum.

Q92: Reference drawing PGAD-K004, there is an adjustable weir in tank TK-K121; please confirm where we can find further information regarding the weir.

A92: The stainless steel scum weir plate shall be supplied per specification section 46 43 79 Weir and baffle plates. Drawing PGAD-K004 has been updated to include a weir plate detail.

Q93: Reference section 40 27 01, please confirm the type and quantity for the Spray nozzle/s on drawing PPID-K106 (after FV-K1511)

A93: Only one nozzle is required and shall be Spraying Systems Co. Model SPIRALJET 3/8-HHSJX-SS-90-30 which is the same type of nozzle to be used for the fermenters per Section 40 27 01.

Q94: Reference NAC Constructors RFI #1, question 25, if applicable, please confirm the pipe specification code

A94: The RAS line Material is HDPE.

Q95: Reference drawings PGAD-R003 & R018, please provide the missing detail for SA-116 (Sample Sink, detail 1, PDTL-R002)

A95: See revised drawings in this addendum.

- Q96: Section 46 66 20 2.3.A - Please note [we] use 304 and 316 SST, not L low carbon steel. Please advise if this will be acceptable.
- A96: All wetted metal components shall be Type 316L SST. All other stainless steel components shall be Type 304L or 316L stainless steel.
- Q97: Section 46 66 20 2.3.E - Please note as a standard practice, all welds are mechanically cleaned using a SST brush after welding and left to air passivate. Please confirm that this meets the requirement of the specification.
- A97: All manufacturing welds must be acid passivated. The specification has been modified in this addendum for clarification.
- Q98: Section 46 66 20 2.5 F Please note we will operate the system at ~100% power levels to achieve specified dose in section 2.4.D at peak conditions.
- A98: UV system design shall incorporate UV equipment factors (2.4.D) and according to 2.2.C. See 3.3.C for Guaranteed Performance Testing.
- Q99: Section 46 66 20 2.5.F.1.c. - Please note [we] have a completed 3rd party validation for our proposed system. Please advise if this can be submitted instead of completing costly onsite validation.
- A99: Validation shall be completed on installed equipment.
- Q100: Section 46 66 20 2.7. A. Please note the material is 316 SST, not L low carbon steel. Please advise if this will be acceptable.
- A100: All wetted metal components shall be Type 316L SST. All other stainless steel components shall be Type 304L or 316L stainless steel.
- Q101: Section 46 66 20 2.12 C. Please note [we] do not provide channel covers. This would typically be provided by contractor. Please advise if this will be acceptable.
- A101: Channel covers are required. Vendor to coordinate cover supply with General Contractor.
- Q102: Section 46 66 20 2.20 I. 2. [Our] PLC panels are 36" or 915mm wide. 2 panels installed beside each other exceed the maximum wall length of 1200mm available. Is it possible to install the PLCs perpendicular to the wall

area available? OR, see 2.2.B above. We do not require the indicated number of PDC's. If this is acceptable then our panels fit the available, albeit greater than 1200 mm, space.

A102: A maximum wall length of 1200mm is available for each system control center cabinet.

Q103: Section 46 66 20 2.20.I.4. Please note only (1) SCC is required. Please advise if the 2nd SCC is for redundancy.

A103: System is to provide complete redundancy in event one channel, including controls, is out of service.

Q104: Section 46 66 20 2.20 K. Please note [we] prefer to maintain control of the system, via the UV PLC located at the equipment. Will this be acceptable?

A104: Set points and duty commands shall be enterable from the plant PCS. Refer to 2.20.I.8.

Q105: Section 46 66 20 3.3.C.4. Guaranteed Performance Testing (GPT). Please confirm who is covering the cost of analysis.

A105: Vendor to coordinate the cost of GPT including analysis with the General Contractor.

Q106: Section 46 66 20 2.20.T. Please note [we] are providing separate control box to place high & low level relay & electrode relays. Please advise if this will be acceptable.

A106: Provide relay for level element in the UV PDC.

Q107: Section 46 66 20 2.20.I.8 - This section requires custom control over SCADA. These functionalities are usually done on the HMI only. Please advise if this will be acceptable.

A107: Set points and duty commands shall be enterable from the plant PCS. Refer to 2.20.K.

Q108: Section 46 66 20 2.20.S.4.A - Is the requirement to provide our HMI development file or is something more than this required?

A108: Vendor shall provide operator screens, software, etc to install on plant PCS. Software shall be developed to operator on plant PCS.

Q109: Section 40 99 90 1.3.B.2 - D and O are not available for the [our product]. Controls Philosophy provides functional description (not pictorial)

A109: Provide trouble shooting guide/table showing potential causes of shutdowns/failures. Provide step-by-step operating procedures/sequences.

Q110: Section 40 99 90 2.1.I. Please note [our] standard is galvanized mild steel, not painted. Please advise if this be acceptable.

A110: Component mounting plates shall be painted.

Q111: The drawings don't seem to indicate cable management between the PDC's and the banks. Do you have a concept in place to deal with cable management?

A111: See 2.18.E. and drawings 1-0102-ECTR-U001, 1-0102-EGAD-U003, and 1-0102-AGAD-U001 for general cable tray layout. Vendor to coordinate overhead cable tray location with General Contractor to suit vendor equipment. Location of cable drops shall not interfere with access and maintenance of UV equipment including gates, stop logs, etc

Q112: Section 46 66 20 Part 1.2 D & E – the 2003 NWRI guidelines referenced relate to wastewater reuse applications and focus on higher dose applications (50, 80 and 100 mJ/cm², depending on the pretreatment), and have been succeeded by the 2006 US EPA's UVDGM guidelines (Ultraviolet Disinfection Guidance Manual for the Final Long Term 2 Enhanced Surface Water Treatment Rule). Please confirm that the bioassay validation may be based on the UVDGM guidelines, as it applies directly to secondary treatment and the dose required for this application.

A112: Bioassay Dose is defined per NWRI.

Q113: Section 46 66 20 Part 1.7 A – Please confirm if the UV warranty commences upon substantial performance of the UV system.

A113: Warranty commences after substantial performance has been awarded.

Q114: Section 46 66 20 2.12 – It is typical for the contractor to supply all of the grating for the plant for consistency – please confirm if the UV channel grating may be supplied by the Contractor Channel covers are required but may be supplied by contractor.

A114: Vendor to coordinate cover supply with General Contractor.

Q115: Section 46 66 20 Part 2.20.I.5 – Please confirm that each UV channel is to operate independently, as this is not typical. Will each channel receive a dedicated plant flow signal and be in operation all the time? Is any programming required to link the 2 PLCs?

A115: System is to provide complete redundancy in event one channel, including controls, is out of service.

Q116: Section 46 66 20 Part 2.20.I.8 – Please confirm the intention of the manual intensity setting. We incorporate the real time intensity reading into the active control of the UV system.

A116: Manual intensity setting is for manual setpoint of lamp intensity which is maintained independent of transmissivity, flow, etc. (i.e. non-modulating intensity)

Q117: Section 46 66 20 Part 3.3.A.3 – Please confirm that the equipment warranty starts when the system is commissioned and put into operation.

A117: Warranty commences after substantial performance has been awarded.

Q118: System Integration: Do we need to include the software and configuration of the power metering equipment?

A118: Yes.

Q119: System Inegration: Do we need to include any cyber security services including but not limited to Cyber Security Assessment, Network Security, firewalls and firewalls programming?

A119: Yes, as it relates to the installation of the equipment.

Q120: Do we need to include any configuration related to the MDT Asset Management Server & Clients? DTM's, etc...

A120: Yes, for integration with Unity Pro.

Q121: Do we need to provide new detailed cabinet drawings or will redlined mark-up drawings be sufficient?

A121: If these documents are included in the Contract documents, then red line mark-ups are sufficient for shop drawing review purposes. The specification has been revised to this effect.