



976-2016 ADDENDUM 2

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 12, 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.

GENERAL

1. The following links are included in this addendum for reference purposes only:

- RFP 123-2014 – [Supply and Delivery of Gas Detection Equipment for the Sewage Treatment Program](#)
- RFP 756-2013 – [Supply of Control System and Motor Control Equipment for the Sewage Treatment Program](#)
- RFP 331-2014 – [Supply and Delivery of Electric Valve Actuators for the Sewage Treatment Program](#)
- RFP 449-2014 – [Supply of Instrumentation for the Sewage Treatment Program](#)

PART E - SPECIFICATIONS

E7. STANDARDIZED GAS DETECTION SYSTEMS

Revise:

E7.6 to read

Primary contact for all quotations and purchases from MSA:

Mr. Lyle Neovard

Account Manager

3200 – 118 Avenue SE

Calgary, AB

T2Z 3X1

Telephone: 1-800-265-1166

Mobile: 306-260-9818

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 35 13 SPECIAL PROJECT PROCEDURES

Revise: 1.1 A to read Obtain and pay for potable water required for construction purposes, leakage testing of liquid retaining structures, Functional Testing, and Performance Testing, unless otherwise specified.

SECTION 01 91 14 EQUIPMENT TESTING AND FACILITY STARTUP

Revise: 3.2 C.2. to read Provide process wastewater and power as required for testing, verification and facility startup, unless otherwise indicated. The Contractor shall obtain and pay for potable water required for leakage testing of liquid retaining structures, Functional Testing, and Performance Testing, and supply and install all chemicals, lubricants, and fuel required for the first fill.

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

Replace: SECTION 23 81 00 Unitary Air- Conditioning Equipment – Issued for Construction with SECTION 23 81 00 – Rev.1 Unitary Air- Conditioning Equipment – Issued for Addendum 2

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

SECTION 28 31 02 MULTIPLEX FIRE ALARM SYSTEM

Add to: 3.1 U. All fire alarm breakers shall be lock-on, complete with red lamicoïd labels in accordance with code requirements

DIVISION 40 – PROCESS INTEGRATION

SECTION 40 27 00.08 STAINLESS STEEL PIPE AND FITTINGS – GENERAL SERVICE

Revise:

Item	Size	Description
Couplings (where indicated)	All	Flexible Sleeve Type: As specified in Section 15205, Process Piping Specialties.

	350 mm & smaller	Grooved End Type: Rigid or flexible joint as indicated, malleable iron ASTM A47 or ductile iron ASTM A536, EPDM gasket, 1725 kPa working pressure. Victaulic; Style 77 (flexible), Style 07 (rigid).
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to read:

Item	Size	Description
Couplings (where indicated)	All	Flexible Sleeve Type: As specified in Section 40 27 01 , Process Piping Specialties.
	350 mm & smaller	Grooved End Type: Rigid or flexible joint as indicated, malleable iron ASTM A47 or ductile iron ASTM A536, EPDM gasket, 1725 kPa working pressure. Victaulic; Style 77 (flexible), Style 07 (rigid).

SECTION 40 27 00.08A STAINLESS STEEL PIPE AND FITTINGS – PROCESS AIR SERVICE

Revise:

Item	Size	Description
Joints	All	Butt-welded; flanged at valves and equipment as required and where shown. 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.

to read:

Item	Size	Description
Joints	All	Butt-welded; flanged at valves and equipment as required and where shown. 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. Where cut grooved coupling are indicated on drawings provide a Schedule 40 spool on pipe ends.

SECTION 40 27 01 PROCESS PIPING SPECIALTIES

Revise:

2.3 C.3 to read Acceptable on pipes 350 mm diameter and smaller only unless cut groove couplings are used.

SECTION 40 27 02 PROCESS VALVES AND OPERATORS

Revise:

40 27 02 Supplement
 Manual Valve Schedule (75 mm and Larger)

Area T – Biofilter / Odour Control

Location/Description	Tag Number	P&ID Number	Valve Type	Valve Type Number	Size (mm)	Commodity Code	Commodity	Remarks
Grit Tank 1 and 2 effluent channel	HV-T101AF	1-0102-PPID-T101	Vol. Control Damper	V960	200	FOA	Foul Air	

to read:

Location/Description	Tag Number	P&ID Number	Valve Type	Valve Type Number	Size (mm)	Commodity Code	Commodity	Remarks
Grit Tank 1 and 2 effluent channel	HV-T101AF	1-0102-PPID-T101	Vol. Control Damper	V960	250	FOA	Foul Air	

Add to:

- 2.5.E.3.b.5) Dezurik BOS
- 2.5.E.4.b.6) Dezurik BOS

SECTION 40 90 00

INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEMS

Revise:

- 1.2 C. to read See the City of Winnipeg Automation Design Guide 612620-0013-40ER-0001 (Appendix FF), Sections 1 to 16 for general design philosophy. Sections 3 and 7 relate to control system network architecture. This document is provided for reference only. All Contractor requirements are contained on the drawings and in the specifications.

SECTION 40 95 13

CONTROL PANELS – ADDENDUM 1

Revise:

- 2.6 CC.2 to read These products were standardized by the City via RFP 756-2013.
- 2.6 CC.4 to read All requests for purchase or quotation shall reference RFP 756-2013 to receive standardized pricing that the City has negotiated with the vendor.
- 2.6 CC.6 to read The Contractor shall supply and install all DCS Migration Cables in accordance with D5 Standardized Goods.

Delete:

- 2.6 CC.7 The cables identified in 6. are not exhaustive of the scope of supply and additional DCS Migration Cables will be required. The Contractor shall supply additional DCS Migration Cables in accordance with D5 Standardized Goods.

DIVISION 41 – MATERIAL PROCESS AND HANLDING EQUIPMENT

SECTION 41 22 23.19 MONORAIL HOIST AND LIFTING DAVIT SYSTEMS

Revise EQUIPMENT AND COMPONENT NUMBERS to read:

<u>ID No.</u>	<u>Equipment Name</u>
CRN-G571/G572	Monorail System No. 1: Grit and Screenings Building – Platform Monorails
CRN-K535	Monorail System No. 2: HRC Building – Gallery Access Monorail
CRN-R535	Monorail System No. 3: Blower Building – Gallery Access Monorail
CRN-S566	Monorail System No. 4: Secondary Clarifiers – Gallery Access Monorail
CRN-S567	Monorail System No. 5: Secondary Clarifiers – Pump Room Monorail
CRN-D535	Monorail System No. 6: Fermenters – Pump Gallery Monorail
N/A	Lifting Davit System No. 1: Portable Confined Space Lifting Davits
N/A	Lifting Davit System No. 2: Portable Equipment Lifting Davit

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

SECTION 43 21 13.13 SCREW-INDUCED FLOW CENTRIFUGAL PUMPS

Revise:

43 21 13.13 Supplement – 1

PUMP DATA SHEET NO. 3

RETURN ACTIVATED SLUDGE PUMPS

to read:

PUMP DATA SHEET NO. 3 RETURN ACTIVATED SLUDGE PUMPS		
Project: <u>City of Winnipeg SEWPCC Upgrading/Expansion Project</u>		
Process/Facility: <u>Secondary Clarifiers</u>		
Service: <u>Return Activated Sludge</u>		
Pump Name: <u>RAS Pumps</u>		
Equipment Tag Number(s): <u>P-S216, P-S217, P-S218</u>		
Manufacturer and Model: (1) <u>Wemco SFH12-Z-1-BFH2W</u>		
(2) <u>Hayward Gordon XCS12C</u>		
(3) _____		
Number of Pumps Required: <u>Three</u>	Pump Type: <u>Screw centrifugal</u>	
Drive Type: <input type="checkbox"/> Constant Speed <input type="checkbox"/> Two Speed <input checked="" type="checkbox"/> Variable Speed		
LIQUID PROPERTIES	OPERATING CONDITIONS	SERVICE CONDITIONS
Name: <u>Return Activated Sludge</u>	Capacity (m ³ /day):	Ambient Temperature (°C):
Fluid Temperature (°C):	Rated: <u>23,800</u> 2nd: <u>14,300</u>	Min: <u>5</u> Max: <u>40</u>

PUMP DATA SHEET NO. 3		
RETURN ACTIVATED SLUDGE PUMPS		
Min: <u>5</u> Normal: <u>10-20</u> Max: <u>25</u>	Total Dynamic Head (m):	Relative Humidity (%):
Specific Gravity: <u>1.0-1.02</u> @ <u>20</u> °C	Rated: <u>8.5</u> 2nd: <u>4.0</u>	Min: <u>0</u> Max: <u>100</u>
Vapour Pressure (kPa): <u>2.5</u> @ <u>20</u> °C		Altitude (m): <u>228</u>
Viscosity (cp): <u>1.0-25</u> @ <u>20</u> °C		<input checked="" type="checkbox"/> Indoor <input checked="" type="checkbox"/> Heated
pH: <u>6.5-7.5</u>		<input type="checkbox"/> Outdoor <input type="checkbox"/> Unheated
Total Suspended Solids (% by wt.): <u>0.1-1.0</u>	NPSH Available (m):	Area Electrical Classification:
Corrosion/Erosion/Abrasion Caused By:		Rated: <u>13.5</u>
Remarks: _____	Remarks: _____	Remarks: _____
_____	_____	_____
_____	_____	_____
PERFORMANCE REQUIREMENTS (manufacturer to supply missing data)		
Max. Pump Speed (rpm): <u>900</u>	Min. Shut-off Head (m): <u>11</u>	Factory Testing:
Min. Pump Speed (rpm): <u>550</u>	Min. Solids Passage (mm): <u>100</u>	<input checked="" type="checkbox"/> Functional <input checked="" type="checkbox"/> Performance
Speed at Rated Capacity (rpm): <u>±860</u>	Min. NPSH Margin Ratio: <u>1.5</u>	Field Testing:
Min. Hyd. Eff. at Rated Capacity (%): <u>75</u>	Min. Continuous Flow (m ³ /d): <u>5,000</u>	<input checked="" type="checkbox"/> Functional <input checked="" type="checkbox"/> Performance
Max. Power at Rated Capacity (kW):		Hydrostatic Test Pressure (kPag):
		<u>150% of pump shut-off head</u>
Remarks: _____		

SECTION 43 21 13.19 NON-CLOG DRY-PIT CENTRIFUGAL PUMPS

Revise

43 21 13.19 Supplement – 1

PUMP DATA SHEET NO. 1

RAW SEWAGE PUMP P-G102

to read:

PUMP DATA SHEET NO. 1	
RAW SEWAGE PUMP P-G102	
Project: <u>City of Winnipeg SEWPCC Upgrading/Expansion Project</u>	
Process/Facility: <u>Raw Sewage Pumping Station</u>	
Service: <u>Raw Sewage</u>	
Pump Name: <u>Raw Sewage Pump No. 2</u>	
Equipment Tag Number(s): <u>P-G102</u>	
Manufacturer and Model: (1) <u>Flowserve/Worthington; MN Series</u>	
(2) <u>Pentair/Fairbanks Nijhuis; 2400 Series</u>	
(3) _____	
Number of Pumps Required: <u>One</u>	Pump Type: <u>Non-clog dry pit centrifugal</u>
Drive Type: <input type="checkbox"/> Constant Speed <input type="checkbox"/> Two Speed <input checked="" type="checkbox"/> Variable Speed	

- b. Radial Vane Designs: Hydraulic design shall be such that fluid flow is directed to impeller periphery where it is deflected by rim incorporated into impeller or by wear ring incorporated into impeller backplate.

2.5 E to read: Impeller Backplate: Replaceable wearplate of Ni Hard shall be provided in back of impeller.

Revise:

43 21 13.29 - 2

PUMP DATA SHEET NO. 1 (cont'd)

GRIT SLURRY PUMPS P-G323, P-G324, P-G325

to read:

PUMP DATA SHEET NO. 1 (cont'd)							
GRIT SLURRY PUMPS P-G323, P-G324, P-G325							
PUMP CONSTRUCTION DETAILS							
Nozzles					Miscellaneous Connections		
	NPS (mm)	ANSI Class	Facing	Location		Size (mm)	Location
Suction	100	125	FF	End	Drain		
Discharge	100	125	FF	Top	Vent		
Impeller: Type: <u>Recessed, cupped</u> Diameter (in): <u>TBD by mfr</u>		Packing: Type: <u>n/a</u> Manufacturer: <u>n/a</u> Size/No. of Rings: <u>n/a</u>			Bearings: Radial (type/No.): <u>Mfr's standard</u> Thrust (type/no.): <u>Mfr's standard</u> Min. ABMA B-10 Life: <u>100,000 hrs</u> Lubrication: <input type="checkbox"/> Grease <input checked="" type="checkbox"/> Oil		
Casing Mount: <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Centerline <input type="checkbox"/> Near Centerline <input checked="" type="checkbox"/> Foot <input type="checkbox"/> Bracket		Mechanical Seal: Type: <u>As specified</u> Manufacturer: <u>Mfr's standard</u> Model: <u>Mfr's standard</u> Lubrication: <u>Seal water</u>			Shaft Coupling: Type: <u>n/a</u> Manufacturer: <u>n/a</u> Model: <u>n/a</u>		
Motor Coupling: <input type="checkbox"/> Direct <input type="checkbox"/> Line shaft <input checked="" type="checkbox"/> V-belt (side) <input type="checkbox"/> V-belt (overhead)							
Vent and Drain Connections: <input type="checkbox"/> Tapped and plugged							
Suction and Discharge Gauge Connections: <input type="checkbox"/> Tapped and plugged							
Remarks: _____ _____							
MATERIALS OF CONSTRUCTION							
Pump Casing: <u>ASTM A532 Class I, Type A</u>		Bearing Housing: <u>ASTM A48 Class 25</u>			Shaft: <u>ASTM A108 Grade 1045</u>		
Wear Plate: <u>ASTM A532 Class I, Type A</u>					Shaft Sleeve: <u>ASTM A582 Type 416</u>		
Suction Piece: <u>ASTM A532 Class I, Type A</u>							
Impeller: <u>ASTM A532 Class I, Type A</u>							
Remarks: <u>Pump casing, wear plate, suction piece, and impeller shall be Ni-Hard, min. 600 BHN.</u>							

PUMP DATA SHEET NO. 1 (cont'd) GRIT SLURRY PUMPS P-G323, P-G324, P-G325
ADDITIONAL REQUIREMENTS

Revise:

43 21 13.29 - 5

PUMP DATA SHEET NO. 2 (cont'd)

GRIT SLURRY PUMPS P-G335, P-G336

to read:

PUMP DATA SHEET NO. 2 (cont'd) GRIT SLURRY PUMPS P-G335, P-G336						
PUMP CONSTRUCTION DETAILS						
Nozzles					Miscellaneous Connections	
	NPS (mm)	ANSI Class	Facing	Location		Size (mm)
Suction	100	125	FF	End	Drain	
Discharge	100	125	FF	Top	Vent	
Impeller: Type: <u>Recessed, cupped</u> Diameter (in): <u>TBD by mfr</u>		Packing: Type: <u>n/a</u> Manufacturer: <u>n/a</u> Size/No. of Rings: <u>n/a</u>			Bearings: Radial (type/No.): <u>Mfr's standard</u> Thrust (type/no.): <u>Mfr's standard</u> Min. ABMA B-10 Life: <u>100,000 hrs</u> Lubrication: <input type="checkbox"/> Grease <input checked="" type="checkbox"/> Oil	
Casing Mount: <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Centerline <input type="checkbox"/> Near Centerline <input checked="" type="checkbox"/> Foot <input type="checkbox"/> Bracket		Mechanical Seal: Type: <u>As specified</u> Manufacturer: <u>Mfr's standard</u> Model: <u>Mfr's standard</u> Lubrication: <u>Seal water</u>			Shaft Coupling: Type: <u>n/a</u> Manufacturer: <u>n/a</u> Model: <u>n/a</u>	
Motor Coupling: <input type="checkbox"/> Direct <input type="checkbox"/> Line shaft <input checked="" type="checkbox"/> V-belt (side) <input type="checkbox"/> V-belt (overhead)						
Vent and Drain Connections: <input type="checkbox"/> Tapped and plugged						
Suction and Discharge Gauge Connections: <input type="checkbox"/> Tapped and plugged						
Remarks: _____						
MATERIALS OF CONSTRUCTION						
Pump Casing: <u>ASTM A532 Class I, Type A</u>		Bearing Housing: <u>ASTM A48 Class 25</u>			Shaft: <u>ASTM A108 Grade 1045</u>	
Wear Plate: <u>ASTM A532 Class I, Type A</u>					Shaft Sleeve: <u>ASTM A582 Type 416</u>	
Suction Piece: <u>ASTM A532 Class I, Type A</u>						
Impeller: <u>ASTM A532 Class I, Type A</u>						

PUMP DATA SHEET NO. 2 (cont'd) GRIT SLURRY PUMPS P-G335, P-G336		
Remarks: <u>Pump casing, wear plate, suction piece, and impeller shall be Ni-Hard, min. 600 BHN.</u>		
ADDITIONAL REQUIREMENTS		

Revise:

43 21 13.29 - 8

PUMP DATA SHEET NO. 3 (cont'd)

PRIMARY SLUDGE PUMPS P-P105, P-P106, P-P111, P-P116

to read:

PUMP DATA SHEET NO. 3 (cont'd) PRIMARY SLUDGE PUMPS P-P105, P-P106, P-P111, P-P116						
PUMP CONSTRUCTION DETAILS						
Nozzles					Miscellaneous Connections	
	NPS (mm)	ANSI Class	Facing	Location		Size (mm)
Suction	100	125	FF	End	Drain	
Discharge	100	125	FF	Top	Vent	
Impeller: Type: <u>Recessed, radial vane</u> Diameter (in): <u>TBD by mfr</u>		Packing: Type: <u>n/a</u> Manufacturer: <u>n/a</u> Size/No. of Rings: <u>n/a</u>			Bearings: Radial (type/No.): <u>Mfr's standard</u> Thrust (type/no.): <u>Mfr's standard</u> Min. ABMA B-10 Life: <u>100,000 hrs</u> Lubrication: <input type="checkbox"/> Grease <input checked="" type="checkbox"/> Oil	
Casing Mount: <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Centerline <input type="checkbox"/> Near Centerline <input checked="" type="checkbox"/> Foot <input type="checkbox"/> Bracket		Mechanical Seal: Type: <u>As specified</u> Manufacturer: <u>Mfr's standard</u> Model: <u>Mfr's standard</u> Lubrication: <u>Seal water</u>			Shaft Coupling: Type: <u>n/a</u> Manufacturer: <u>n/a</u> Model: <u>n/a</u>	
Motor Coupling: <input checked="" type="checkbox"/> Direct <input type="checkbox"/> Line shaft <input type="checkbox"/> V-belt (side) <input type="checkbox"/> V-belt (overhead)						
Vent and Drain Connections: <input type="checkbox"/> Tapped and plugged						
Suction and Discharge Gauge Connections: <input type="checkbox"/> Tapped and plugged						
Remarks: _____						
MATERIALS OF CONSTRUCTION						
Pump Casing: <u>ASTM A532 Class I, Type A</u>		Bearing Housing: <u>ASTM A48 Class 25</u>			Shaft: <u>ASTM A108 Grade 1045</u>	
Wear Plate: <u>ASTM A532 Class I, Type A</u>					Shaft Sleeve: <u>ASTM A582 Type 416</u>	

PUMP DATA SHEET NO. 3 (cont'd)		
PRIMARY SLUDGE PUMPS P-P105, P-P106, P-P111, P-P116		
Suction Piece: <u>ASTM A532 Class I, Type A</u>		
Impeller: <u>ASTM A532 Class I, Type A</u>		
Remarks: <u>Pump casing, wear plate, suction piece, and impeller shall be Ni-Hard, min. 600 BHN.</u>		
ADDITIONAL REQUIREMENTS		

SECTION 43 21 39.16 CHOPPER PUMPS

Revise:

- 2.2 B. to read: Casing and Back Pull-Out Plate: The pump casing shall be of volute design, spiraling outward to the class 125 ANSI Flanged centerline discharge. Back pull-out design shall incorporate either shims or jacking bolts for accurate adjustment of impeller-to-cutter bar clearance, and shall allow removal of pump components without requiring disconnection of casing from inlet or discharge piping.
- 2.2 C. to read: Impeller: Shall be open or semi-open type with pump out vanes to reduce seal area pressure. Chopping/maceration of materials shall be accomplished by the action of cupped and sharpened leading edges of the impeller blades moving across the cutter bar at the intake openings.
- 2.2 E. to read: Cutter Nut/Deflector Nut: The impeller shall be secured to the shaft using a cutter nut or deflector nut, designed to cut stringy materials and prevent binding using a raised, rotating cutting groove/teeth.

Revise:

**PUMP DATA SHEET NO. 1
 SECONDARY CLARIFIERS SCUM PUMPS**

- Manufacturer and Model: (2) Hayward Gordon XCS10C
- to read:
- Manufacturer and Model: (2) Hayward Gordon CHOPX4A

Revise:

**PUMP DATA SHEET NO. 2
 FERMENTER RECIRCULATION PUMPS**

- Manufacturer and Model: (2) Hayward Gordon XCS10C impeller diameter 203 mm
- to read:

Manufacturer and Model: (2) Hayward Gordon CHOPX4A impeller diameter 203 mm

SECTION 43 40 02 FIBERGLASS REINFORCED PLASTIC TANK

Delete: 2.4 G.2.c. Tank insulation: fiberglass, 25mm thick

Revise:
 2.4 G.2.d. to read: c. Heater to be rated for 600V supply.
 2.4 G.2.e. to read: d. Nema 4X terminal box with high limit auto reset thermostat. Provide fail-safe voltage free contact for high temperature alarm for use by the Plant Control System

SECTION 43 40 03 PROCESS ELECTRIC WATER HEATER

Revise: EQUIPMENT AND COMPONENT NUMBERS to read:

<u>ID No.</u>	<u>Equipment Description</u>
TK-G533	Hot Water Heater

Revise: 2.3 A. to read: Equipment shall be suitable for the following conditions of service:

	TK-G533	
Fluid Handled	Plant effluent	
Temperature (degrees C)	5 - 25	
Specific Gravity	1.0	
pH	6 - 8	
Suspended Solids (mg/L)	2 - 30	
Maximum Particle Size (microns)	150	
Inlet Pressure (kPa)	500 - 700	

Revise: 2.4 A. to read: Equipment shall be designed for the following requirements:

	TK-G533	
Actual Storage Capacity (L)	1,900	
Heater Input Capacity (kW)	15	
Recovery Rating at 56 degrees C Temperature Rise (L/hr)	235	
Outlet Temperature (degrees C)	50	
Tank Orientation	Vertical	
Water Inlet/Outlet Connection Size (mm NPT)	50	
Tank Diameter (mm)	1,220	

Power Supply (voltage/phase/Hz)	600/3/60	
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DIVISION 46 – WATER AND WASTEWATER EQUIPMENT

SECTION 46 21 11 SCREENING EQUIPMENT

Add to:

- 1.3 B.1. j. Documentation certifying that screens supplied meet specified minimum removal efficiency (screenings capture ratio) in accordance with UK Water Industry Research (UKWIR) performance test procedures.
- 2.12 B.1. k. PLC and OIT (if supplied) programs shall have full read/write functionality when turned over to the City.
- 2.12 B.3. i. PLC and OIT (if supplied) programs shall have full read/write functionality when turned over to the City.

Revise

- 1.5 A. to read: Provide manufacturer's extended guarantee or warranty in writing, with the City named as beneficiary, as special guarantee. Special guarantee shall provide for correction, or at option of the City, removal and replacement of Work specified in this Specification section found defective during period of 5 years after date of Substantial Performance. Duties and obligations for correction or removal and replacement of defective Work shall be as specified in General Conditions. The cost of the special guarantee shall be included in the Bid Price.
- 2.4 B.2. to read: Maximum Flow Rate per Screen: 140 ML/d with downstream liquid depth of 1500 mm.
- 2.5 A.2. to read: Removal Efficiency: Minimum 79 percent screenings capture ratio.
- 2.5 A.3.a to read: 270 mm at 105 ML/d per screen with flow passage area 40 percent blocked and downstream liquid depth of 1750 mm.
- 2.12 B.1.f. to read: Programmable logic controller (PLC) for all screen functions. PLC to be a Schneider M580 PLC, no exceptions.
- 2.12 B.1.h. to read: Operator Controls and Indicators:
 - 1) LOCAL/OFF/REMOTE selector switch
 - 2) EMERGENCY STOP pushbutton
 - 3) For other controls and indicators, provide either an Operator Interface Terminal (OIT) or pushbuttons and lights. OIT to be a Schneider XBT or GTO with size of 12 inches or greater, no exceptions. Pushbuttons and lights, if provided, shall include, but not be limited to the following:
 - a) System RESET pushbutton
 - b) LOCAL MODE indicating light
 - c) Screen RUNNING indicating light
 - d) System FAULT indicating light
 - e) Channel Level HIGH indicating light

- f) Channel Level Differential HIGH indicating light
 - g) Hot Wash RUNNING indicating light
- 2.12 B.3.d. Programmable logic controller (PLC) for all washer/compactor functions. PLC to be a Schneider M580 PLC, no exceptions.
- 2.12 B.3.f. Operator Controls and Indicators:
- 1) LOCAL/OFF/REMOTE selector switch
 - 2) EMERGENCY STOP pushbutton
 - 3) For other controls and indicators, provide either an Operator Interface Terminal (OIT) or pushbuttons and lights. OIT to be a Schneider XBT or GTO with size of 12 inches or greater, no exceptions. Pushbuttons and lights, if provided, shall include, but not be limited to the following:
 - a) System RESET pushbutton
 - b) LOCAL MODE indicating light
 - c) Washer/Compactor RUNNING indicating light
 - d) System FAULT indicating light
 - e) Inlet Hopper Level HIGH indicating light
 - f) Inlet Hopper Level HIGH HIGH indicating light

Delete:

- 2.12 B.1.i.2) Provide all required inputs and outputs for interfacing with washer/compactors control panels.

Revise:

- 2.12 B.1.i.3). to read:
- 2) Plant PCS Interface:
 - a) Provide clearly labeled terminals for interface to plant PCS, including but not limited to:
 - (1) Dry contact, with less than 2 mA minimum switching current at 24 VDC, for plant PCS discrete input signals:
 - (a) "Remote Mode" (CP in REMOTE mode and LCP in REMOTE mode).
 - (b) "Screen Running".
 - (c) "System Ready".
 - (d) "System Fault".
 - (e) "Hot Wash Running".
 - (2) 24 VDC relay coil for plant PCS discrete output signals:
 - (a) "Run Enable" command.
 - (b) "Hot Wash Start" command.
 - b) Provide Modbus TCP interface to plant PCS for monitoring all statuses, set-points, and alarms, including but not limited to:
 - (1) Screen drive VFD speed and status.

- (2) Brush drive motor status.
- (3) Wash water valve status.
- (4) Screen channel downstream level.
- (5) Screen channel upstream level.
- (6) Screen channel differential level.
- (7) Screen channel high upstream level status.
- (8) Screen channel high differential level set-point.
- (9) Screen channel low differential level set-point.
- (10) Screen repeat cycle time set-point.
- (11) Screen run time set-point.
- (12) Hot wash run time set-point.

Delete:

2.12 B.3.g.2) Provide all required inputs and outputs for interfacing with washer/compactors control panels.

Revise:

2.12 B.3.g.3). to
read:

- 2) Plant PCS Interface:
 - a) Provide clearly labeled terminals for interface to plant PCS, including but not limited to:
 - (1) Dry contact, with less than 2 mA minimum switching current at 24 VDC, for plant PCS discrete input signals:
 - (a) "Remote Mode" (CP in REMOTE mode and LCP in REMOTE mode).
 - (b) "Washer/Compactor Running".
 - (c) "System Ready".
 - (d) "System Fault".
 - (e) "Inlet Hopper Level High-High".
 - (2) 24 VDC relay coil for plant PCS discrete output signals:
 - (c) "Run Enable" command.
 - b) Provide Modbus TCP interface to plant PCS for monitoring all statuses, set-points, and alarms, including but not limited to:
 - (1) Drive motor status.
 - (2) Wash water valve status.
 - (3) Inlet hopper high level status.
 - (4) Inlet hopper high-high level alarm.
 - (5) Automatic clearing sequence mode.
 - (6) Washer/compactor run time set-point.
 - (7) Washer/compactor accumulated run time set-point.

Delete:

- 3.4 C.4. Demonstrate compliance with specified performance requirements. If equipment fails to meet performance requirements, modify equipment as required and repeat testing until compliance is demonstrated.

Revise:

- 3.4 C.5. to read: 4. Heater to be rated for 600V supply. Use of plant instrumentation is allowed for tests. Provide additional instrumentation as required to obtain required test data.
- 3.4 C.6. to read: 5. Test Records and Report: Prepare and submit complete test report along with test records.

SECTION 46 23 27 CYCLONE SEPARATORS AND GRIT WASHERS

Revise EQUIPMENT AND COMPONENT NUMBERS to read:

<u>ID No.</u>	<u>Equipment Description</u>
GRP-G341	Grit Classifier
CYC-G341-1	Cyclone
CYC-G341-2	Cyclone
CYC-G341-3	Cyclone
GRP-G342	Grit Classifier
CYC-G342-1	Cyclone
CYC-G342-2	Cyclone
CYC-G342-3	Cyclone

SECTION 46 33 33.03 DRY POLYMER MAKE DOWN AND FEED SYSTEMS

Revise:

2.1 to read

Dry Polymer Make Down and Feed Systems	Polymer Type	Dry Polymer Feed Rates	Make Down Concentration	Post Dilution Concentration	Operation
FPS/HRC Polymer Make Down S-C404	Cationic	34.7 kg/day (average) 273 kg/day (maximum)	0.25%	0.2%	24 hr/day
WAS Polymer Make Down S-C424	Cationic	30.2 kg/day (average) 43.5 kg/day (maximum)	0.25%	0.2%	24 hr/day

HRC Polymer Make Down S-C444	Cationic	22 kg/day (average) 540 kg/day (maximum)	0.25%	0.05%	24 hr/day and intermittently for wet weather flow treatment
Secondary Clarifier Polymer Make Down S-C464	Cationic	47.5 kg/day (average) 113 kg/day (maximum)	0.25%	0.02%	24 hr/day

2.9 A.2. to read: Pumps shall provide a constant flow rate for a particular drive speed. Pumps' speed shall be kept at a maximum of 450 rpm.

2.10 L.2. to read: Provide all wiring for equipment located on polymer make down skid to the associated control panel. For supplied loose items such as mixers and level transmitters, coordinate onsite wiring with the Electrical Contractor.

Add to:

- 2.9 A. 6. Manufacturers:
- a. Seepex
 - b. Moyno

SECTION 46 33 42

CHEMICAL METERING DIAPHRAGM PUMP SKIDS

Revise

2.3 E. to read: All piping and fittings shall be Chemflare, PVC or CPVC (as shown on the drawings). Either pipe and fittings material selection shall not violate the maximum skids dimensions listed in 2.3.A. Piping shall be supported in accordance with relevant piping standards and shall not bear weight or horizontal thrust on the pumps.

SECTION 46 33 42.13

CHEMICAL METERING GEAR PUMP SKIDS

Revise

2.3 E. to read: All piping and fittings shall be Chemflare, PVC or CPVC (as shown on the drawings). Either pipe and fittings material selection shall not violate the maximum skids dimensions listed in 2.3.A. Piping shall be supported in accordance with relevant piping standards and shall not bear weight or horizontal thrust on the pumps.

SECTION 46 41 23 SUBMERSIBLE MIXERS

Revise:

MIXER DATA SHEET
 SUBMERSIBLE MIXERS FOR BIOREACTORS IN ANAEROBIC AND POST AERATION ZONES

Equipment Tag Number(s):

Bioreactor no.1: MXR-R152-1, MXR-R152-2, MXR-R152-3, MXR-R152-4, MXR-R154-1, MXR-R154-2.

Bioreactor no.2: MXR-R162-1, MXR-R162-2, MXR-R162-3, MXR-R162-4, MXR-R164-1, MXR-R164-2.

Bioreactor no.3: MXR-R172-1, MXR-R172-2, MXR-R172-3, MXR-R172-4, MXR-R174-1, MXR-R174-2

to read:

Equipment Tag Number(s):

Bioreactor no.1: MXR-R152-1, MXR-R152-2, MXR-R152-3, MXR-R152-4, MXR-R155-1, MXR-R155-2.

Bioreactor no.2: MXR-R162-1, MXR-R162-2, MXR-R162-3, MXR-R162-4, MXR-R165-1, MXR-R165-2.

Bioreactor no.3: MXR-R172-1, MXR-R172-2, MXR-R172-3, MXR-R172-4, MXR-R175-1, MXR-R175-2.

SECTION 46 71 33 ROTARY DRUM THICKENERS

Revise:

2.3 D. to read: Feed sludge shall be conditioned with polymer prior to thickening. Post-diluted polymer solution having a concentration of approximately 0.2% active polymer will be supplied to each RDT 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	95
Thickened Sludge Total Solids Concentration (%)	4 – 6	4 – 6
Maximum Polymer Consumption (kg/tonne DS)	5	10 ^[2]
Maximum Wash Water Consumption per RDT (m ³ /h)	8	8

¹ Excluding polymer solution.

² Up to 10 kg/tonne DS is acceptable only when FSL feed sludge consists entirely of fermented primary sludge.

3.3 C.7.a. to read: Perform one test at maximum hydraulic capacity for eight hours continuous duration, and one test at 50 percent capacity for eight hours continuous duration. Specified performance requirements shall be met provided that feed sludge characteristics are within ranges specified herein under Conditions of Service for full duration of each test. See below for procedure if feed sludge characteristics are not within ranges specified. Specified performance requirements shall be met at both maximum hydraulic capacity and minimum hydraulic capacity.

APPENDICES

Add: Appendix GG South End Water Pollution Control Centre Chemical/Generator Building Excavation As-Built

Replace:

Appendix X: Breaker Settings Sheets

Document No. A-0102-EDTS-G001 Rev 00:	with	Document No. A-0102-EDTS-G001 Rev 01:
SETTINGS SHEET		SETTINGS SHEET
RELAYS AND CIRCUIT BREAKERS		RELAYS AND CIRCUIT BREAKERS

DRAWINGS

A – General or Process Area is Non-Applicable

Replace:	976-2016_Drawing_1-0102-EDTL-A002_Sht001-R00	with	976-2016_Addendum_2-Drawing_1-0102-EDTL-A002_Sht001-R01
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C – Chemical / Electrical Building

Replace:	976-2016_Drawing_1-0102-AGAD-C014_Sht001-R00	with	976-2016_Addendum_2-Drawing_1-0102-AGAD-C014_Sht001-R01
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G – Headworks

Replace:	976-2016_Drawing_1-0102-ESLD-G004_Sht001-R00	with	976-2016_Addendum_2-Drawing_1-0102-ESLD-G004_Sht001-R01
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Replace:	976-2016_Drawing_1-0102-ESLD-G005_Sht001-R00	with	976-2016_Addendum_2-Drawing_1-0102-ESLD-G005_Sht001-R01
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Replace:	976_2016_Drawing_1-0102-PPID-G203-R00	with	976_2016_Addendum_2-Drawing_1-0102-PPID-G203-R01
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K – High Rate Clarification

Replace:	976_2016_Drawing_1-0102-PGAD-K002-R02	with	976_2016_Addendum_2-Drawing_1-0102-PGAD-K002-R03
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Replace:	976_2016_Drawing_1-0102-PGAD-K006-R02	with	976_2016_Addendum_2-Drawing_1-0102-PGAD-K006-R03
Replace:	976_2016_Drawing_1-0102-PGAD-K007-R02	with	976_2016_Addendum_2-Drawing_1-0102-PGAD-K007-R03
Replace:	976_2016_Drawing_1-0102-PGAD-K011-R02	with	976_2016_Addendum_2-Drawing_1-0102-PGAD-K011-R03
Replace:	976_2016_Drawing_1-0102-SGAD-K003-R03	with	976_2016_Addendum_2-Drawing_10102-SGAD-K003-R04
Replace:	976_2016_Drawing_1-0102-SGAD-K016-R03	with	976_2016_Addendum_2-Drawing_10102-SGAD-K016-R04

P – Primary Clarifiers

Replace:	976-2016_Drawing_1-0102-SGAD-P001-R03	with	976-2016_Addendum_2-Drawing_1-0102-SGAD-P001-R04
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R – BNR Facility (Bioreactors & Blower Bldg)

Replace:	976-2016_Drawing_1-0102-AGAD-R003_Sht001-R00	with	976-2016_Addendum_2-Drawing_1-0102-AGAD-R003_Sht001-R01
Replace:	976-2016_Drawing_1-0102-PGAD-R002-R04	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-R002-R05
Replace:	976-2016_Drawing_1-0102-PGAD-R003-R04	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-R003-R05
Replace:	976-2016_Drawing_1-0102-PGAD-R004-R04	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-R004-R05

S - Secondary Clarifiers

Replace:	976-2016_Drawing_1-0102-ESCH-S001_Sht001-R00	with	976-2016_Addendum_2-Drawing_1-0102-ESCH-S001_Sht001-R01
Replace:	976-2016_Drawing_1-0102-PGAD-S007-R03	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-S007-R04
Replace:	976-2016_Drawing_1-0102-PGAD-S014-R03	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-S014-R04

T - Biofilter

Replace:	976-2016_Drawing_1-0102-PGAD-T002-R00	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-T002-R01
Replace:	976-2016_Drawing_1-0102-PGAD-T004-R00	with	976-2016_Addendum_2-Drawing_1-0102-PGAD-T004-R01
Replace:	976-2016_Drawing_1-0102-PPID-T101-R00	with	976-2016_Addendum_2-Drawing_1-0102-PPID-T101-R01

QUESTIONS AND ANSWERS

- Q1: This request is for 22 actuators and general specifications indicate there must be Qty 2 “hand-held configuration units” (We call them “setting tools”) every 10 actuators provided. We have included Qty 1 only. Do you require extra setting tools? If so, how many?
- A1: The specification requirement will remain. Four (4) setting tools will be provided for 22 actuators.
- Q2: Are the mud valves supposed to be electrically actuated or manually? In the valve spec it states that valve is to have a 50mm nut but per the valve list it is to have an O/C electric actuator.
- A2: The mud valves XV-K1131 and XV-K1231 are both electrically actuated with actuators XY-K1131 and XY-K1231, respectively. The mud valves have non-rising stems and the operating nuts are not required for these valves since they have electric actuators.
- Q3: I can't locate these two mud valves in the GA drawings. It appears that in drawing 1-0102-PGAD-K006 that one of the mud valves is located there, but it has the tag number FG-K113 (flap valve). Please confirm that this is the mud valve.
- A3: Drawing 1-0102-PGAD-K006 has been revised as the valve and stem shown is for the mud valve XV-K1131, not FG-K113 (flap valve).
- Q4: Section 43 21 13.13 – Screw Induced Flow Centrifugal Pumps. PDF Page 14: Comment on flowrate being incorrect for P-S216,17,18.
- A4: The unit for the flow rate should read m³/day and has been corrected in this addendum.
- Q5: Section 43 21 39.16 – Chopper Pumps. PDF Page 3: Wording changes recommended for Clauses 2.2,B,C,E,F. PDF Page 7: Hayward Gordon model name correction to CHOPX4A. PDF Page 10: Hayward Gordon model name correction to CHOPX4A.
- A5: Pump model and specification modifications have been addressed in this addendum.
- Q6: 46 71 33 2.1.B: Mechanical drawings 91-0102-PGAD-D003, D009 and D010 indicate that the rotary drum thickeners, flocculation tanks and sludge hoppers are installed as separate components on the building structure, and are not skid-mounted. Please confirm the requirements

- A6: The specification states "skid-mounted ... to maximum extent possible". The layout shown on the drawings is based on Alfa Laval's equipment which is not entirely skid mounted. Other manufacturers' equipment may be different from that shown on the Drawings.
- Q7: 46 71 33 2.3.C: The Hydraulic Loading to RDTs (total) for Peak day is 55-120 m³/h, which indicates a maximum hydraulic load of 60 m³/h. However, the performance requirements in 2.4.B specify Hydraulic Loading at Maximum Capacity of 80 m³/h. Since this is a significant difference in maximum values, please confirm the performance requirements.
- A7: The design intent for the WAS RDTs is that the majority of the average flow condition (45-95 m³/h) be handled with only one RDT in operation, so an RDT capacity of 80 m³/h is required as specified.
- Q8: 46 71 33 2.3.D: We assume that it's meant 2 g/l active, or 0.2% active polymer. Please confirm.
- A8: This should be 0.2% active polymer, and has been clarified in this addendum.
- Q9: 46 71 33 2.4: What is the feed solids concentration which applies to the performance requirements for WAS and FSL? Does the maximum polymer consumption apply to the Hydraulic Loading Rate per RDT at Minimum Capacity or Hydraulic Loading per RDT at Maximum Capacity?
- A9: Up to 10 kg/tonne DS is acceptable only when FSL feed sludge consists entirely of fermented primary sludge. This has been clarified in this addendum.
- Q10: 46 71 33 2.9.A.1: Please confirm if all control panels drawings shall be signed by a registered electrical Manitoba Engineer. Please confirm if C-UL panel certification is acceptable or if CSA certification is required.
- A10: The Specifications do not require that the control panel shop drawings be signed by a professional engineer registered in the province of Manitoba. The control panels must be CSA-certified and have a CSA sticker affixed to the panel as specified in Section 40 99 90 Package Control Systems.
- Q11: 46 71 33 3.3.A.2: Please confirm if control panels FAT procedures shall be signed by a registered electrical Manitoba Engineer. Please confirm if control panel FAT is to be witnessed by City's engineering staff or Engineer's staff (if so, please confirm that incurred travelling costs are not required to be covered by the supplier?)
- A11: The Specifications do not require the equipment manufacturer's control panel FAT procedures to be signed by a professional engineer registered in the province of Manitoba. The Specifications do not require the equipment manufacturer's control panel FAT to be witnessed by the City or the Engineer.

- Q12: 46 21 11 1.5.A: Please clarify if the extended guarantee or warranty shall be provided as an adder.
- A12: The cost of the special guarantee shall be included in the Bid Price. This has been clarified in this addendum.
- Q13: 46 21 11 2.4.A.1.c: Could you provide the site constraints dimensions (doors, elevators, stairways,...) to better evaluate the sections maximum size?
- A13: Bidders may schedule additional site visits to determine for themselves the available access openings and constraints.
- Q14: 46 21 11 2.4.B.2: This item mentions downstream liquid depth of 1750 mm at 140 ML/d. Item 2.5.A.3.b mentions 1500 mm for the same flow. Please clarify which one applies.
- A14: This has been clarified in this addendum.
- Q15: 46 21 11 2.5.A.2: Industry standard (as per UKWIR classification) is based on Screenings Capture Ratio, as a mass balance between screenings upstream of the screen and screenings downstream of the screen. 6 mm perforated type screens are rated between 66 to 85%. 100% removal can't be achieved by any type of fine screen. We suggest the above range to be added to the specifications.
- A15: This has been clarified in this addendum.
- Q16: 46 21 11 2.12.B.1.f: Please confirm brand/model of PLC and OIT to be used on Screens and Washer/Compactors Main Control Panels. Based on other sections requirements on the project, we expect Schneider M580 PLCs and Schneider XBT or GTO with size of 12 inches or greater OIT.
- A16: PLC shall be a Schneider M580 PLC. Either an OIT or pushbuttons and lights will be acceptable. If an OIT is provided, it shall be a Schneider XBT or GTO with size of 12 inches or greater. Specification has been revised in this addendum.
- Q17: 46 21 11 2.12.A.1: Please confirm if all control panels drawings shall be signed by a registered electrical Manitoba Engineer. Please confirm if C-UL panel certification is acceptable or if CSA certification is required
- A17: The Specifications do not require that the control panel shop drawings be signed by a professional engineer registered in the province of Manitoba. The control panels must be CSA-certified and have a CSA sticker affixed to the panel as specified in Section 40 99 90 Package Control Systems.

Q18: 46 21 11 2.16.B: Please confirm if control panels FAT procedures shall be signed by a registered electrical Manitoba Engineer. Please confirm if control panel FAT is to be witnessed by City's engineering staff or Engineer's staff (if so, please confirm that incurred travelling costs are not required to be covered by the supplier?)

A18: The Specifications do not require the equipment manufacturer's control panel FAT procedures to be signed by a professional engineer registered in the province of Manitoba. The Specifications do not require the equipment manufacturer's control panel FAT to be witnessed by the City or the Engineer.

Q19: 46 21 11 3.4.C.4: Could you clarify which performance requirements will be tested and associated procedures?

A19: This has been clarified in this addendum.

Q20: SPEC Section 412213.19.1 tag no for secondary clarifier -gallery access monorail is CRN-571, while it is tagged as CRN-S566 in datasheet. Which tag No. should be applied;

A20: Tag CRN-S566 shall be used as indicated in datasheet. This has been updated in this addendum.

Q21: SPEC Section 412213.19.1 tag no for secondary clarifier -gallery access monorail is CRN-572, while it is tagged as CRN-S567 in datasheet. Which tag No. should be applied;

A21: Tag CRN-S567 shall be used as indicated in datasheet. This has been updated in this addendum.

Q22: SPEC Section 432112.23 tag no for building drainage pump is P-S590, while it is tagged as P-S595 in data sheet. Which tag No. should be applied;

A22: The correct tag for the Building Drainage Sump Pump in question is P-S595. This was updated in Addendum 1.

Q23: There are disposal bins TK-G233/G234 in P&ID 1-0102-PPID-G203. Are supply and installation these bins scope of work this bid?

A23: The disposal bins G233 and G234 are supplied by others.

Q24: Cyclone G341/342 are tagged with GRP in specification section 46 23 27-1. Therefore, they are tagged with CYC in drawing P&ID 1-0102-PPID-G305. Which tag should be applied for cyclone?

A24: The Tags "CYC-G" should be applied for the cyclones associated with the Grit Classifiers as shown on P&ID 1-0102-PPID-G305. The specification has been updated in this addendum.

Q25: There is a 1900 L electrical hot water heater (Tag no. TK-G533) in P&ID drawing 1-0102-PPID-G508. But there is no specification for this tagged tank. There is same type of electrical heater in specification section 43 40 03. But it is for equipment tagged TK-G504. Are these two equipment refer to same equipment? If it is, which tag No. should be applied?

A25: Yes this is the same tank. This is clarified in this addendum.

Q26: There are 4 hot water pumps (P-B671/672/673/674) need to be replaced. These are pumps under DIV 23. However, there is no price item for DIV 23 under area A 2.0 in form B. Could you Please add price item for this section?

A26: This Line item will be added in the next addendum.

Q27: It is 250-FOA-SS01 from grit tank 1 and 2 effluent channel in drawing 1-0102-PGAD-G013. Therefore, it is 200-FOA-SS01 in drawing 1-0102-PPID-T101. Which size should apply?

A27: 250 mm is the correct size. We have clarified in this addendum.

Q28: FOA main for grit tank TK-G321/322 and effluent channel is 300-FOA-SS01 in drawing 1-0102-PGAD-G013. It is 250-FOA-SS01 in drawing 1-0102-PPID-T101. Which size should apply?

A28: 300 mm is the correct size. We have clarified in this addendum.

Q29: It shows 250-WAS-SS01 suction for pump P-R201/R302/R303 in drawing 1-0102-PGAD-R002, however, it is 150-WAS-SS01 in drawing 1-0102-PPID-R301. Please instruct which size should apply?

A29: Pump suction piping is 150 mm. The note on drawing 1-0102-PGAD-R002 has been corrected in this addendum.

Q30: There are many pipes pass through pipe gallery in drawing 1-0102-PGAD-T002, however, but these pipes are not showed in the section drawings. Could you please supply section drawing to show pipe right side of grid line 16?

A30: Elevations of piping are shown; however, an additional section (on 1-0102-PGAD-T004-R01) has been provided in this addendum for clarity.

Q31: Drawing 1-0102-PGAD-S014 is detail for 900-ML-SS01 connecting ML channel to clarifiers. There seems difference between detail F and detail G. Could you please define the boundary of new and existing?

- A31: The portions of the 900-ML-SS01 that are embedded in concrete will be installed under another contract. This is clarified in this addendum.
- Q32: Supplemental Conditions item D6.2 indicates a contract exist between the City and the Standardized Vender specifying pricing and general terms of supply. The Contractor is required to enter into an agreement with the Standardized Vender based upon those terms. Please provide the General Terms of Supply for review by the Contractor.
- A32: Links to the standardized contracts has been included in this addendum.
- Q33: Reference Facility Area C- Chemical & Electrical Building; please provide as built drawings indicating the existing excavation grades.
- A33: This has been included in this addendum as Appendix GG.
- Q34: Reference section 01 79 00 1.6.A, table of training: Please confirm if the supplier of the temporary screen is required to attend site to provide training on the operation of the equipment, as well as the duration required.
- A34: The Contractor is responsible for operating the temporary screen; therefore, training for City staff in its operation is not required.
- Q35: Reference Form B- Prices: There are various Mechanical, HVAC systems etc. shown on the Process PPID's and associated plans. Please confirm the value associated with this work should be within the building mechanical equipment payment items and not the process payment items.
- A35: Please include all mechanical and HVAC systems under the "Building Mechanical Equipment" line items shown on Form B.
- Q36: During the recent site walk through, it was noted an excessive amount of waste materials and debris has accumulated in the excavation of what will be the Chemical and Electrical Building. Please confirm this debris will be removed prior to Contract 4 Mobilization.
- A36: This debris will be removed before Contract 4 (Bid Op 976-2016) mobilization.
- Q37: Reference: Drawing SGAD – R040: Please indicate where on the Bid Submission, Form B: Prices, the value of Electrical Cable Trenches be included.

A37: 13.2 Supply and Install Electrical Duct Banks

Q38: Reference: Drawing SGAD – S035: Please indicate where on the Bid Submission, Form B: Prices, the value of Electrical Cable Trenches be included.

A38: 13.2 Supply and Install Electrical Duct Banks

Q39: Reference Section 46 46 01, item 1.1.B and drg PPID-K-30, the Ballast Addition System; a. We presume this is the Hydra Sand Installation, Appendix I, please confirm. b. Are we to provide media for this system as part of the first fill? If so please confirm what the media specification is.

A39: Yes, the Ballast Addition System shown in drawings 1-0102-PPID-K301 is the Hydra-Sand system shown in Appendix I. First fill of microsand will be provided by Veolia Water Solutions & Technologies.

Q40: Reference section 43 11 15.15, Gearless Turbo Blowers, unique APG-Neuros; a. Items 1.1.B.2.c & d have cooling options, please confirm if required. b. Drg PGAD-R013 has two case options, please confirm what is required. c. Drg PPID-R201 et al, note 2, Vendor specific fan, please confirm if required.

A40: Piped inlet enclosure cooling is required. On drawing PGAD-R013 Case 1 applies for the specified vendor. Vendor to supply a fan on the enclosure cooling discharge if necessary as noted.

Q41: Where the various specification sections calls for equipment to have factory and witness testing, and is not called for the City or the Contract Administrator to be present, please confirm that it is acceptable for these to be done by the suppliers representative.

A41: The City or the Contract Administrator shall be given the opportunity to attend FATs and will attend at their discretion.

Q42: Reference section 43 40 03, TK-G504, 1900L, 15Kw and drg PPID-6508, TK-G533, 1900L, 15kw, these appear to be the same piece of equipment, please confirm.

A42: Yes this is the same piece of equipment and has been clarified in this addendum.

Q43: Reference dwg PPID-D405 / D408 / D409: Please provide the details of note 1.

A43: The "Note 1" reference is a typo and can be ignored. Drawing will be updated in the next addendum.

- Q44: Reference drawing PPID-G203, please confirm the Disposal Bins G233 & G234 are not contractor supplied and installed.
- A44: Confirmed . The disposal bins G233 ad G234 are supplied by others.
- Q45: Reference section 01 50 00, item 3.8, figure 3: The final tie-in is not clear as it appears that we remove a fabricated steel reducer and replace it with a fabricated reducing tee. Please confirm the size/requirements.
- A45: The following refers to Temporary RAS Line modifications Figure 3 (picture) : Existing 450 mm RAS line to be removed from the connection to the 750 mm header to the shown flange (right end of the screened pipesection). The 750 mm RAS line will be reused to convey RAS to the new BNR tanks, but the connection shown on Fig 3. will be capped with a blind flange at the left end of the screened section and as shown on the drawings. The 450 mm temporary RAS main will be tied (temporarily) to the flange connection shown at the end of the right screened section of the existing 450 mm line.
- Q46: Reference dwgs PGAD-R010 to R012: The drawings reference a cut grooved flexible coupling for the ALP-SS03 system. Please confirm this connection, considering the specification 40 27 00.08A for Sch 10s pipe. Possible options could be AGS roll groove or Sch 40 spool (BE x GR). Please confirm.
- A46: The cut grooved flexible couplings for ALP-SS03 are only required at the indicated locations. The roll grooved couplings are not acceptable as substitutes. Schedule 40 spools shall be provided. This has been clarified in this addendum.
- Q47: 46 33 33.03 2.6.B: Is the pressure reducing valve and constant flow regulator the same thing?
- A47: This shall be determined by the supplier to suit their equipment design and operation.
- Q48: 46 33 33.03 2.7.A: Aging tanks: all 4000 L, regardless of sizing of system. Issue: not big enough for 2 systems: HRC and FRS/HRS
- A48: Noted. At peak flow, aging time will be reduced. This is acceptable for process.
- Q49: 46 33 33.03 2.8.B: Shall Bulk Bag structural frame calculations be stamped with Manitoba Eng. Seal
- A49: Yes.

Q50: 46 33 33.03 2.8.D: Can integral conical hopper suited with lip seal (which eliminates risk of spillage) be acceptable in lieu of hygienic clamp ?

A50: Yes, if this serves the same purpose and an improved feature in comparison to the hygienic clamp.

Q51: 46 33 33.03 2.9.A.1: Confirm acceptable supplier.

A51: Seepex and Moyno. This has been clarified in this addendum.

Q52: 46 33 33.03 2.9.A.2: Maximum recommended pump speed is 450 rpm (to prevent polymer solution shearing). Please confirm if maximum acceptable speed is maintained at 1750 rpm or changed to 450 rpm ?

A52: A change to 450 rpm has been included in this addendum.

Q53: 46 33 33.03 2.9.B.3: Shall pumps skid structural frame be welded in accordance with CWB standards

A53: Yes.

Q54: 46 33 33.03 2.9.B.3: Shall pumps skid structural frame calculations be stamped with Manitoba Eng. Seal

A54: Yes.

Q55: 46 33 33.03 2.10.B: Please confirm if IEC rated motor starters (Allen-Bradley) are acceptable in lieu of NEMA rated motor starters

A55: No, IEC components are not acceptable. All starters to be NEMA rated Schneider Electric starters.

Q56: 46 33 33.03 2.10.L.2: Please confirm that "Onsite wiring" is to be provided by electrical contractor (i.e. and not by equipment supplier)

A56: Correct. This has been clarified in this addendum.

Q57: 46 33 33.03 2.11.6: Please confirm if redundant 24 VDC is mandatory.

A57: Redundant 24 VDC power supplies are mandatory.

- Q58: 46 33 33.03 2.6.A: Please confirm if flexible hose can be provided in lieu of rigid PVC schedule 80 piping for wetting cone and eductor connections
- A58: Yes this is acceptable. Flexible hose shall be installed and clamped neatly on skid.
- Q59: 46 33 33.03 2.8: Please confirm the allowable height or confirm any height restrictions for the bulk bag handling system.
- A59: There are no height restrictions.
- Q60: 46 33 33.03 2.8.C: Please confirm if bag agitators/punchers shall be provided to prevent polymer bridging in bulk bags under moisty environment. If so, shall operating logic be integrated in polymer make-up control panel ?
- A60: Please provide bag agitators. Yes, operating logic to be integrated in polymer make-up control panel.
- Q61: 46 33 33.03 2.7.A: This system has a mixing tank of 11,000L and two (2) 4000 L aging tanks. Aging tanks are smaller than mixing. Please confirm if we can have aging tanks to be 5500L?
- A61: We have space restrictions where the aging tanks shall be installed. Yes, if proposed aging tanks of 5,500 L can fit within the concrete pad as shown on contract drawings and 3m height restriction from floor to ceiling. If not, please provide 4,000 L tanks as specified.
- Q62: 46 33 33.03 2.7.B: Please confirm if FRP tanks manufacturer is to be selected by Polymer system supplier or if we shall follow acceptable FRP tanks supplier as specified. Note that specified FRP tank suppliers are for underground FRP tanks (which may not be able to deliver vertical FRP tanks as required for polymer mixing and storage).
- A62: FRP tanks for polymer mixing/aging tanks can be selected by the polymer system supplier.
- Q63: 46 33 33.03: Please confirm if polymer activation sensor or in-line viscosity meter are to be provided by suppliers to confirm real-time polymer activation status
- A63: Yes, either activation sensor or in-line viscosity meter shall be provided.
- Q64: 46 33 33.03 2.11.C.1: Please confirm if VFD will be installed on feed skid by skid vendor.
- A64: The VFDs for the polymer pump skids are located in the MCCs and not within the skid vendors scope. The VFDs (if any) for the polymer make down system are to be provided by the polymer make down system vendor.

Q65: DWG 1-0102-EMCL-C401: Please specify who will supply and install disconnect switch. Pre-wiring of disconnect switch to motor and LCP: by who?

A65: This is a coordination item between the equipment supplier and the Contractor. Our preference is for this to be pre-wired, and pre-installed, as long as there are no interferences (eg/ disconnect switch should be installed in a reasonable location so as not to interfere with the building). LCP wiring and E-stop system should be supplied and installed by the Pump Skid Vendor.

Q66: 46 33 33.03 1.3.B.4: Please confirm which liquid category applies. Skid to be registered or not?

A66: Skid does not need to be registered. ASME B31.3 applies.

Q67: 46 33 42 1.3.B.4: Please confirm which liquid category applies. Skid to be registered or not?

A67: Skid does not need to be registered. ASME B31.3 applies.

Q68: 46 33 42 2.3.C: Shall skid structural frame be welded in accordance with CWB standards?

A68: Yes.

Q69: 46 33 42 2.3.C: Shall skid structural frame calculations be stamped with Manitoba Eng. Seal

A69: Yes.

Q70: 46 33 42 2.8.A: Please confirm is VFD will be installed on feed skid by skid vendor.

A70: The VFDs for the pump skids are located in the MCCs and not within the skid vendors scope. VFDs that are Electrical Contractor supplied are shown on the ECBD drawings - such as ECBD-C001 and ECBD-C002. VFDs that are shown located inside an MCC are supplied by the Electrical Contractor via the MCC (schneider) supplier.

Q71: DWG 1-0102-EMCL-C107: Please specify who will supply and install disconnect switch. Pre-wiring of disconnect switch to motor and LCP: by who?

A71: This is a coordination item between the equipment supplier and the Contractor. Our preference is for this to be pre-wired, and pre-installed, as long as there are no interferences (eg/ disconnect switch should be installed in a reasonable location so as not to interfere with the building). LCP internal wiring and external skid mounted E-Stop switch should be supplied and installed by the Pump Skid Vendor.

Q72: 46 33 42.13 1.3.B.4: Please confirm which liquid category applies. Skid to be registered or not?

A72: Skid does not need to be registered. ASME B31.3 applies.

Q73: 46 33 42.13 2.3.C: Shall skid structural frame be welded in accordance with CWB standards?

A73: Yes.

Q74: 46 33 42.13 2.3.C: Shall skid structural frame calculations be stamped with Manitoba Eng. Seal

A74: Yes.

Q75: DWG 1-0102-EMCL-C107: Please specify who will supply and install disconnect switch on pump skid. Pre-wiring of disconnect switch to motor and LCP: by who?

A75: This is a coordination item between the equipment supplier and the Contractor. Our preference is for this to be pre-wired, and pre-installed, as long as there are no interferences (eg/ disconnect switch should be installed in a reasonable location so as not to interfere with the building). LCP internal wiring and external skid mounted E-Stop switch should be supplied and installed by the Pump Skid Vendor.

Q76: There does not appear to be a control panel layout or any information related to what components are to be included in Blower MCP CP-R200. Can you provide this information.

A76: The provision of the Blower MCP panel CP-R200 will be by the Blower manufacturer as part of their packaged system and is not within the Systems Integrator's scope of work. Vendors should be contacted for details of the requirements.

Q77: 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?

A77: This applies to the software FAT, not the control panel FATs.

Q78: 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?

- A78: 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.
- Q79: 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?
- A79: 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.