

## 722-2018 ADDENDUM 5

### NORTH END SEWAGE TREATMENT PLANT (NEWPCC) DIGESTER 11 RELINING

#### **URGENT**

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

ISSUED: January 21, 2019  
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**THIS ADDENDUM SHALL BE INCORPORATED  
INTO THE BID OPPORTUNITY AND SHALL  
FORM A PART OF THE CONTRACT  
DOCUMENTS**

Template Version: A20160708

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**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.**

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#### **PART B – BIDDING PROCEDURES**

Add: B13.3(d) The Bidder and/or any proposed Subcontractor shall comply with the qualifications outlined in E7.1.

#### **PART E – SPECIFICATIONS**

Revise: E2.2 to read:

E2.2 The major components of the Work are as follows:

- a) Digester No. 11
  - (i) Preparation of the top 4 metres of the interior wall, roof, column capitals and gas dome surfaces.
  - (ii) Repair of voids and severe cracks in the roof and walls. Note this item will apply to the entire interior wall surface as required.
  - (iii) Installation of required terminations.
  - (iv) Application of Concrete Repair Mortar (Tnemec Series 217 or approved substitute in accordance with B7) over areas of deep concrete deterioration (over 6.5 mm) in the top 4 metres of the interior wall, roof, column capitals and gas dome surfaces.
  - (v) Surface preparation of the cured Concrete Repair Mortar in areas where epoxy modified filler/surfacer (Tnemec **Series 218** or approved substitute in accordance with B7) will be applied over it.
  - (vi) Application of epoxy modified filler/surfacer (Tnemec **Series 218** or approved substitute in accordance with B7) over the top 4 metres of the interior wall, roof, column capitals and gas dome surfaces.
  - (vii) **Application of the epoxy lining system over the top 4 metres of the interior wall and all column capital, roof and gas dome surfaces.**
  - (viii) Conduct air testing of the digester in accordance with CSA B149.6, CSA 149.6 Annex A and this specification, **after the application of epoxy lining system is complete.**
  - (ix) Repair areas of air leakage if the digester fails the air test and repeat until air test is successful.
  - (x) Providing all necessary environmental controls necessary to comply with the CSM's requirements for storage, application and curing of all specified materials.
  - (xi) Providing all testing as required in this specification.

- Revise: E7.1(c) to read: The LSA shall be a firm with at least five (5) years of experience properly preparing concrete substrates by ultrahigh-pressure waterjetting and abrasive blast cleaning as well as applying specialty spray applied epoxy coating and lining materials over concrete substrates in corrosive environments. This experience requirement shall be documented **by providing references (contact name, telephone number and email address) for at least five (5) projects completed by the LSA within the last five (5) years.**
- Revise: E7.3(s) to read: Conduct adhesion testing in accordance with ASTM D7234 in **Digester 11** at a minimum of three (3) locations on the roof and three (3) locations on the wall. The locations tested shall be representative of all surfaces. Repair of these locations will be the Contractor's responsibility in accordance with the CSM's recommendations at no additional cost to the City. Each test location shall consist of three separate adhesion tests within a 300 mm by 300 mm area. The Contractor shall be responsible for lining system removal and replacement in areas demonstrating unacceptable adhesion.
- Revise: E8.14(b) to read: Quality Control Plan that includes an I&TP and PCP's for all of the Work and complies with Paragraph **E7.2**.
- Revise: E8.14(j) to read: **Upon request by the Contract Administrator**, submit documentation evidencing work experience of **the following**:
- (i) Project superintendent, supervisors, abrasive blasters, and lining applicators **in accordance with E7.1(b).**
  - (ii) **LSA in accordance with E7.1(c).**
- Add: E8.14(q): Submit the air tightness test data within three (3) days of completing the test. Submit the data complete with sketches showing data collection locations for review by the Contract Administrator.
- Revise: E14.2(a) to read: The Contractor shall obtain from the manufacturer its warranty that the restoration and lining products provided **are capable of successful performance in the intended service conditions and** will be free from defects in formulated or manufactured material quality which could cause the installed work to fail. Said warranty, containing no exclusions or limitations, shall be in a form acceptable to, and for the benefit of the City, and shall be submitted by the Contractor as a condition of final payment. The Coating System Manufacturer's Warranty shall be provided on the CSM's letterhead and shall be signed and dated by a company officer of the CSM.
- Revise: E17.1(b)(ii) to read: Partial circumferential platforms to provide access to the interior walls of the **digester along** the entire work area. The vertical distance between platforms shall be approximately 2200 mm and approximately the horizontal distance of 460 mm off the digester walls. The top of the first platform below the bottom of the ceiling platform shall be 2200 m below the bottom of the ceiling platform.
- Revise: E18.1 to read: Prior to performing overall surface preparation work on steel and concrete substrates, perform all work necessary to complete all detail treatment for lining system termination as shown on the attached detail drawings. The following table defines all of the terminations which were identified and the drawing with which the termination detail must comply. The Contractor shall be responsible for verifying that no additional termination details are required. Any terminations that are not included in the following table, shall conform to the standard termination details required by the CSM. Drawings of these additional terminations and CSM's approval shall be submitted to and approved by the Contract Administrator.

<b>Digester 11</b>				
Location	Number	Size (Approx.)	Description	Drawing Reference
Roof	3	24 in. dia.	Flush SS penetrations. Two north of the gas dome and 1 south.	Section 2

Roof	2	18 in. dia.	Flush stainless SS penetrations.	Section 2
Roof	2	12 in. dia.	Flanged CS pipes projecting approx. 36 in.	Section 3
Roof	2	24 in. dia.	Flush SS penetrations adjacent to the wall on opposite sides of the tank.	Section 2
Roof	1	48 in. dia.	Flush SS penetration adjacent to east wall.	Section 2
Roof	1	6 in. dia.	Flush SS penetration.	Section 2
Roof	1	7 ft. square	Gas dome in approximate center of roof.	Section 4
Gas Dome	1		Embedded angle at top edge of dome.	Section 4
Gas Dome	1		Square flange plate around pipe penetration.	Section 4
Shell	3	8 in. dia.	Flanged SS penetration. Approx. 8 in. projection.	Section 3
Shell	6	8 in. dia.	Apparent CI penetrations. Approx. 6 in. projection.	Section 3
Shell	1	8 in. dia.	Bell joint for 8 in. CI or CS pipe embedded in wall.	Section 3
Shell			Termination at the coating line <b>four (4) metres</b> down shell.	Section 6
Roof/Shell			All interior corners	Section 5
Roof/Shell			All exterior corners	Detail A

Revise: E20.1(a) to read: All previous coatings (with the exception of residue within cracks or voids) have been removed from **Digester 11** with the exception of 4 test patches, each approximately 0.4 square metres, on the roof. The Contractor shall completely remove the coating from these voids, cracks and test patches as a part of the concrete surface preparation.

Revise: E29.2(c)(x) to read: ASTM C1538 - Acceptable adhesion test results. The average of the three tests (excluding cohesive failure of the concrete) shall be reported as a single value. **The** average of each three-test group shall be a minimum of 1.4 MPa (and at least 85% of the failure plane within the resurfacing mortar or concrete).

Revise: E32.2 to read: Protective Lining System Thickness Requirements are as follows:

Surface	Coating*	Dry Film Thickness
Roof and Top <b>4 Metres</b> of the Wall	Tnemec Series 217	Scrub Coat
	Tnemec Series 217	As required to build up to the original concrete contour
	Tnemec <b>Series 218</b>	2mm to 13 mm Max 7 mm lifts
	Tnemec <b>Series G436</b>	80 mils to 100 mils in one (1) or two (2) coats

Surface	Coating*	Dry Film Thickness
Deeply Deteriorated Concrete (more than 13 mm of surfacer required)	Tnemec Series 215	2 mm to 3 mm on abandoned metallic embedments
	Tnemec Series 217	Scrub Coat
	Tnemec Series 217	As required to build up the deteriorated area to the original concrete contour
	Tnemec <b>Series G436</b>	80 mils to 100 mils in one (1) or two (2) coats

Surface	Coating*	Dry Film Thickness
Mildly Deteriorated or Original Concrete (less than 13 mm)	Tnemec Series 215	2 mm to 3 mm on abandoned metallic embedments
	Tnemec <b>Series 218</b>	2 mm to 13 mm Max 7 mm lifts
	Tnemec <b>Series G436</b>	80 mils to 100 mils in one (1) or two (2) coats

Surface	Coating*	Dry Film Thickness
Metallic Surfaces (in accordance with Contract Administrator's coating termination drawings)	Tnemec <b>Series G435</b> – Glaze Coat	20 mils to 30 mils

\*All specified products in this table may be replaced by an approved substitute in accordance with B7.

## QUESTIONS AND ANSWERS

- Q1 The top 4 metres has been identified as within the scope of work in E2.2. Termination point has been identified 3 metres down in E18.1. Please clarify which measurement is to be used.
- A1 The termination shall be at the bottom of the coated area which is 4 metres from the top of the shell.
- Q2 Confirm that the areas on walls to be coated are the top 4 metres (not 3 metres).
- A2 The area to be coated includes the top 4 metres of the digester walls.
- Q3 The spec refers to SHT coatings. Please confirm that work is limited to Digester 11 only.
- A3 The work is limited to Digester 11 only. The sludge holding tanks are not included in this contract.
- Q4 Confirm that Form B Item 1 does not include any crack repairs or void repairs.
- A4 Form B Item 1 Tank Relining Work should not include any pricing for Crack Repair or Void Repair. Crack Repair costs should only be provided under Item 2 and Void Repair only under Item 3.
- Q5 Please clarify that all the work on the digester walls below 4 metres is covered under unit rates only – and not under Form B Item 1.
- A5 The work on the digester walls below 4 metres will be paid based on Form B Item 2 Crack Repair and Item 3 Void Repair.
- Q6 Clause E18.4 has a requirement for 10 hold point letters from the CSM as per requirements in E7.4. There does not appear to be 10 hold points identified in E7.4. Please clarify.
- A6 The number of hold point letters shall be determined by the number of hold point inspections required. The items required to be inspected and certified by the CSM are detailed in E7.4. The number of inspections in order to accomplish this will be dictated by the approach taken by the Contractor. For instance, if the entire concrete surface is prepared and all terminations are installed prior to resurfacing, then these items could be addressed in one site visit by the CSM. If the Contractor phases this work, additional visits may be necessary.
- Q7 Specification E7.3 clause M identifies adhesion testing requirements in accordance with ASTM C1583. Clause states "The contractor shall be responsible for lining system removal and replacement in areas demonstrating unacceptable adhesion." Please identify what is considered unacceptable adhesion values, or pass / fail values.
- A7 Please see E29 Acceptance Criteria.

- Q8 Please confirm what documents are required to be submitted with the form of tender re: contractor qualifications.
- A8 Documents outlining contractor qualifications should not be submitted with the Bid. The relevant documents will be requested from Bidders during the Bid evaluation period.