Corporate Finance Department
Materials Management Division

529-2020 ADDENDUM 2

PROFESSIONAL CONSULTING SERVICES FOR INVASIVE MUSSEL CONTROL SYSTEMS

ISSUED: September 14, 2020
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URGENT

PLEASE FORWARD THIS DOCUMENT TO WHOEVER IS IN POSSESSION OF THE REQUEST FOR PROPOSAL

THIS ADDENDUM SHALL BE INCORPORATED INTO THE REQUEST FOR PROPOSAL AND SHALL FORM A PART OF THE CONTRACT DOCUMENTS

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

PART D –

SUPPLEMENTAL CONDITIONS

Revise: D21.1(a) to read: Meeting to present the proposed invasive mussel control systems for the Deacon Reservoirs and SLAIF to the Regulators as detailed in D11 within one hundred fifty (150) Business Days from the pre-commencement meeting;

APPENDICES

Add: Appendix_K Photograph Log

QUESTIONS AND ANSWERS

Q1: What are the implications/requirements regarding the transportation of material and equipment on the GWWD rail line?

A1: The requirement of item D19.4 is for the Consultant to have the necessary insurance for the transportation of their own vehicles, equipment, or materials or their Subconsultants/sub-contractors own vehicles, equipment, or materials that they bring into the Shoal Lake Aqueduct Intake on the GWWD rail line during the execution of their Work. Vehicles, equipment, and materials provided by other contracts or by the City of Winnipeg are not included with the Consultants insurance requirements.

August 27, 2020 Deacon Reservoir Site Investigation

Q2: What is the specification of the sulphuric acid currently in use at the Water Treatment Plant?

A2: The Water Treatment Plant currently uses 93% sulphuric acid with a specific gravity of 1.83.

Q3: What is the operation of the supernate pump in the residuals handling area?

A3: The pumping system consists of one constant volume pump and two variable speed pumps, that operate on level controls. The supernate is pumped into the A-Section of the Aqueduct, back to the inlet of Deacon Reservoirs Cell 2 and 4. Each pump is sized to accommodate the flow requirements for the residuals handling supernate. The design flow for the three pumps is 290 litres per second at a total discharge head of 18 metres.

Q4: What infrastructure is currently in the existing Ammonia Room?

A4: The existing dosing skid would not be suitable for dosing sulphuric acid and would have to be replaced. The existing piping in the room from the tanks to the pump skid is welded 316 stainless steel schedule 40S for 75 mm and under and schedule 10S for 100 mm to 200 mm. The ammonia room contains two tanks fabricated to the following specification:

Design Standard	API STD 650, Appendix J/S Edition 10, 1998
Year Manufactured	2007
Diameter and Height (millimetres)	3,000 x 5,500
Capacity (based on Ammonia)	243 BBL (38,800 litres)
Maximum Specific Gravity	0.925
Design Liquid Height (millimetres)	5,000
Design Pressure	atmospheric
Maximum Operating Temperature (ºC)	40
Shell Thickness (millimetres)	6.4
Material	316L stainless steel

The space has a dedicated ventilation system sized for a complete air change every 12 minutes.

The containment structure within the existing room is sized to hold 110% of the volume of one tank.

Q5: How are the Deacon Reservoirs drained?

A5: The two northern reservoirs (Cells 1 and Cell 2) and the two southern reservoirs (Cells 3 and 4) can be drained through two drainage structures that are adjacent to Highway 207. From these structures the water is pumped up to discharge swales that tie into the floodway. The reservoirs and discharge structures have no infrastructure in place to de-chlorinate the discharge.

Q6: Has the existing Sulphuric Acid Room at Deacon experienced any deterioration from the storage of sulphuric acid in the space?

A6: To date no significant deterioration of the existing Sulphuric Acid Room at Deacon has been noticed. The room is currently ventilated at a complete air change every 12 minutes with 100 percent outside air which is conditioned during the heating season.

September 2, 2020 Shoal Lake Site Investigation

Q7: What is the existing sodium hypochlorite dosing system at Shoal Lake Aqueduct Intake?

A7: The chlorine system has been retrofitted with an interim sodium hypochlorite dosing system which is used to control biofilm in the Shoal Lake Aqueduct. The two pumps have been sized for duty/standby operation at flow rates for invasive mussel control as outlined in the 2017 AECOM report - Preliminary Design of Mussel Control at the Shoal Lake Intake Facility. Due to the current lower sodium hypochlorite requirements for biofilm control 12.5% sodium hypochlorite is transported out to the Shoal Lake Aqueduct Intake using three 1,000 litre totes which are manifolded together and connected into the dosing pumps. The three 1,000 litre totes are suitable for two weeks of operation.

Q8: What are the other chlorine operations within City of Winnipeg Water Treatment System?

A8: The Deacon Water Treatment Plant receives 12.5% sodium hypochlorite which is diluted down to 0.8% concentration. The 0.8% solution is then dosed post filtration. The three Regional Pumping Stations in Winnipeg utilize chlorine tonners to re-chlorinate the treated water to maintain the regulated residual chlorine levels in the distribution system.

Q9: What work will be required for the Shoal Lake De-Chlorination Building?

A9: The sulphur dioxide dosing systems are to be decommissioned and demolished. Both the Chlorine Building and De-Chlorination Building require maintenance upgrades that are outlined in the 2012 AECOM Shoal Lake Aqueduct Intake Facility Assessment – Site Inspections and Assessment report.

Q10: What are the Health Canada regulations regarding using Chlorine as a pesticide?

A10: Health Canada has a maximum allowable dosage of 5.0 mg/L at the headwall. The anticipated system requirement to maintain a residual back at the Deacon Reservoirs is in excess this dosage. The balance of the chlorine dose would be made up at the dosing point adjacent to the Chlorine Building in the existing manhole.

Q11: What are the anticipated upgrades for a dosing system using chlorine tonners and a dosing system using sodium hypochlorite?

A11: The anticipated scope of the upgrades is outlined in the RFP, specifically items D14 and D15.

Q12: Will a geotechnical investigation be required?

A12: A geotechnical investigation has been conducted by Trek Geotechnical south of the existing Chlorine Building. Refer to the documents in Appendix A.

Q13: What methods are anticipated for handling the waste streams from the diesel engines cooling water systems and the backwash systems for the rotary screens?

A13: Item D15 of the RFP outlines that the cooling systems should be switched to a closed loop system and the backwash cycle for the rotary screens should be interlocked with the chlorine dosing system to prevent chlorinated water from the headwall being discharged back to the environment.

Q13: What is the existing routing of the chlorinated feedwater water piping at Shoal Lake Aqueduct Intake?

A13: The routing of the existing chlorinated feedwater piping from the Chlorine Building to the dosing points are indicated on the following historical drawings:

D-3809 Underground Piping Details

D-3810 Aqueduct Section and Details

Q14: What is the information for the electrical feeds for the Chlorine and De-Chlorination Building at Shoal Lake Aqueduct Intake?

A14: The Shoal Lake Aqueduct Intake Chlorine Building and De-Chlorination Building are feed from PL-3 (800A – 208/3 ph) in the Electrical Room of the Intake:

Chlorine Building breaker: 250A - 208V/3 ph – 4/0 AWG

Dechlorine Building breaker: 150A – 208V/3 ph – 4/0 AWG

Q15: What upgrades are required to the service water for Chlorine Building?

A15: The upgrades could potentially include a recirculation system to avoid freezing during the winter and prevent stagnation of water within the piping.

Q16: Is the system analysis for the chlorine dosing system to be based solely on a capital cost assessment for Shoal Lake Aqueduct Intake?

A16: The Shoal Lake Aqueduct Intake chlorine dosing system assessment should be based on capital and operating costs, operational staffing requirements and the project management risk assessment outlined in the RFP.

General

Q17: The SCADA/PLC systems at the Shoal Lake Aqueduct Intake and Deacon Water Treatment Plant are currently being updated under a separate contract, how will this impact this Work?

A17: The anticipated upgrades are anticipated for 2022 at Shoal Lake Aqueduct Intake and the Deacon Water Treatment Plant at a later date. The Work of the separate contract will only involve current systems at the facilities. Any additional systems required for the invasive mussel control system (e.g. additional I/O requirements, component additions, etc.) shall be the responsibility of this Contract.