



**STAFF REPORT  
ACTION REQUIRED**

**Amendment to Purchase Order 6022302  
Humber Treatment Plant – Head House Electrical and  
Screen Upgrade and Outdoor Lighting**

<b>Date:</b>	June 8, 2011
<b>To:</b>	Public Works & Infrastructure Committee
<b>From:</b>	Executive Director, Technical Services Director, Purchasing and Materials Management Division
<b>Wards:</b>	Ward 5 – (Etobicoke Lakeshore)
<b>Reference Number:</b>	P:\2011\Cluster B\TEC\PW11021 (AFS#13661)

**SUMMARY**

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The purpose of this report is to request the authority to amend purchase order 6022302 for professional engineering services during construction related to the Humber Treatment Plant – upgrade of head house electrical, screen upgrade and outdoor lighting.

**RECOMMENDATIONS**

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The Executive Director of Technical Services and the Director of Purchasing and Materials Managements recommend that the Public Works & Infrastructure Committee grant authority to:

1. Amend Purchase Order No. 6022302 for professional services with Genivar Ontario Inc. for the provision of general office administration and site supervision services during construction by an additional amount of \$241,000.00 net of all taxes (\$245,241.60 net of HST recoveries) revising the current contract value from \$649,023.80 to \$890,023.80 net of all taxes (\$905,688.22 net of HST recoveries).

## **FINANCIAL IMPACT**

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The purchase order amendment for an additional \$241,000.00 net of all taxes (\$245,241.60 net of HST recoveries) will increase the current contract value from \$649,023.80 to \$890,023.80 net of taxes (\$905,688.22 net of HST recoveries).

Funding for the purchase order amendment is included in the approved 2011 Toronto Water Capital Budget and 2012-2020 Capital Plan in WBS Element CWW030-06 (Head House Upgrades Phase 1). The cash flow requirements for the purchase order amendment is \$50,000 net of HST recoveries in year 2011, \$145,241.60 in 2012 and \$50,000.00 in 2013.

The Deputy City Manager and Chief Financial Officer have reviewed this report and agrees with the financial impact information.

## **BACKGROUND**

The Humber Treatment Plant is a wastewater treatment plant with a design capacity of 473 megalitres per day (ML/d). Currently, the incoming wastewater is initially screened in a Head House facility. After the screening the wastewater is directed to the vortex grit separating units for the south plant and these units are located in the Head House. The screened wastewater is also directed to the North Grit removal building to aerated grit tanks and then subsequently to the north primary tanks. The North Grit Building components were not part of Genivar's original scope of work.

Genivar Ontario Inc. was retained via a consultant selection process through Request for Proposal 9117-06-7146 for the provision of contracted professional services for a) upgrades to the Head House electrical components to bring them into compliance with the National Fire Prevention Authority (NFPA) Regulation 820; b) screen upgrades in the Head House; and c) upgrades of the outdoor lighting at the Humber Treatment Plant. Genivar was issued Purchase Order No. 6022302 for general office administration and site supervision services during construction in the amount of \$188,581.80, excluding all taxes. Due to the urgent need to replace the failing bar screens during the overall design process, it was necessary to tender the bar screen installation contract separately, utilizing the base scope fees. The balance of the base scope design work was completed and tendered, with an overall construction duration of 110 weeks. The Purchase Order was subsequently amended in accordance with the Financial Control By-law in the amount of \$460,442.00 excluding all taxes, for general office administration and site supervision services during construction. The amendment revised the Purchase Order amount to \$649,023.80 excluding all taxes. This was based on one full-time inspector for 110 weeks, which is the tendered construction period quoted by the contractor.

## COMMENTS

During the design for the Head House improvements, Plant Operations requested immediate replacement of the 600V motor control centre (MCC) in the North Grit Building as there had been several recent and unexpected critical failures with the MCC including fires in some 600V motor starters. Replacement was essential to provide a safe working environment for staff and for continued plant operation. Genivar reviewed the options available and the preferred option that meets all safety and regulatory requirements was the construction of a new MCC room adjacent to the existing building. The new building was needed in order to meet the NFPA 820 code requirements for the Electrical Safety Authority (ESA) approval.

In order to construct the new MCC room, key process equipment in the North Grit Building where the MCC is located will have to be taken off line for significant periods of time (i.e. grit tanks and primary clarifiers) which would involve losing significant process capacity in the North Plant. This could affect the Plants ability to meet the effluent requirements in the Ministry of the Environment Certificate of Approval, and result in the risk of charges and fines to the City under the Ontario Water Resources Act. In order to mitigate these concerns the work in the North Grit Building needs to be properly and effectively coordinated with the shutdowns and construction work in the Head House, which is a necessary requirement under the base scope of work. Because of the need to closely co-ordinate the shutdowns and construction work in these two areas, it was essential to include the work in one construction contract, and therefore necessary to incorporate this work into Genivar's design and construction services assignments. The complexity of construction requires continuity and involvement of the engineering consulting firm throughout both the design and construction phases for successful implementation.

Additional engineering fees for services during construction are recommended to address the construction inspection requirements and the coordination of the work in both buildings (i.e. Head House and North Grit Building). Genivar would require an additional field inspector on a part-time basis with specialty electrical expertise which will enhance the overall installation and commissioning of the MCC and will provide valuable project expertise to ensure the safety of the construction and operating staff within this high voltage environment. The estimated cost for this inspection on a part time basis would be \$176,000.00 (110 weeks at 16 hours per week at \$100/hr)

Additional contract administration services related to shop drawing reviews are also requested for the rehabilitation work in the Head House that included the following work that was added during the design phase:

- Uninterrupted Power System (UPS) to ensure key safety components (i.e. lighting and alarms) are operable during a power outage.
- Replacement of existing deteriorated electronic gas detection system to ensure the reliability of the detection devices.

- Provision of a glycol system to ensure the ventilation equipment is operable during cold weather conditions; the current system operates on a hot water process which is highly maintenance intensive and prone to malfunctions.

The estimated cost for the additional engineering services is \$15,000.00.

The total fee increase quoted by Genivar is \$191,000.00 for additional inspection and contract administration services. We also recommend an additional contingency of \$50,000.00 excluding all taxes to cover any unforeseen work.

Based on the above, it is requested that Purchase Order No. 6022302 be amended for an additional \$241,000.00 net of all taxes. The engineering cost related to general office administration and site supervision during construction would therefore be revised from \$649,023.80 to \$890,023.80 net of taxes (\$905,688.22 net of HST recoveries).

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