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Montréal  
Québec  
H5A 1L6  
FAX pour soumissions: (514) 496-3822

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address  
Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**  
Travaux publics et Services gouvernementaux Canada  
Place Bonaventure,  
800 rue de la Gauchetière Ouest  
Voir aux présentes - See herein  
Montréal  
Québec  
H5A 1L6

<b>Title - Sujet</b> Rehabilitation Sambault dump	
<b>Solicitation No. - N° de l'invitation</b> EF928-172441/A	<b>Amendment No. - N° modif.</b> 016
<b>Client Reference No. - N° de référence du client</b> EF928-17-2441	<b>Date</b> 2017-09-06
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$MTC-035-14403	
<b>File No. - N° de dossier</b> MTC-7-40019 (035)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2017-09-18</b>	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Lussier, Joël	<b>Buyer Id - Id de l'acheteur</b> mtc035
<b>Telephone No. - N° de téléphone</b> (514) 496-3862 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

This solicitation amendment **016** is raised for the following changes:

**Q59.** The pilot field test carried out by TechnoRem, the results of which are presented in report PR16-50 of March 2017, does not allow compliance of all discharge criteria in appendix 39.1, notably those concerning selenium and fluoride. These elements could be part of a category of emerging pollutants for which technologies currently available to allow compliance of discharge criteria in appendix 39.1 are relatively limited and/or excessively expensive. Some of these technologies do not yet allow the removal of these contaminants to comply with discharge criteria in appendix 39.1 (close to detection limit). In order to propose a solution that is technically sound and financially interesting for the Client, we ask for an additional period of two months to conduct treatability trials for our proposed treatment system. For information purposes, the maximum concentrations allowed for water intended for human consumption (MDDELCC, regulation respecting the quality of drinking water, appendix 1) are respectively 10 µg/L and 1.5 mg/L for selenium and fluoride. These are 10 times less stringent than discharge criteria in appendix 39.1. If the closing date cannot be postponed, we ask that these two discharge criteria be reviewed.

**A59 :** Considering that selenium concentrations measured during the pilot field test were equal or slightly above the present discharge criteria for this parameter in appendix 39.1 (Canadian Water Quality Guidelines for the Protection of Aquatic Life: value of 1 µg/L), the latter has been modified for selenium only. The selected discharge criteria for selenium has thus been reviewed to a value of 5 µg/L based on the preliminary environmental objectives for releases issued as part of a consultation with the MDDELCC (the modified version of appendix 39.1 will soon be available for download on the [buyandsell.gc.ca](http://buyandsell.gc.ca) website).

As for fluoride, the discharge criteria remains the same for this parameter. With exception of the stabilization pumping period prior to the pilot field test, the fluoride concentrations measured in the final effluent during the treatment pilot field test were below the discharge criteria of appendix 39.1

**Q60.** In the pilot field test study of TechnoRem (PR16-50, March 2017), at Table 7-5, it is indicated that, during the stabilization pumping period and the commissioning period, the dissolved hardness varied between 327 and 665 mg CaCO<sub>3</sub>/L. In the same table, during the treatment period, the dissolved hardness varies between 334000 and 397000 mg CaCO<sub>3</sub>/L. One of these value ranges appears incorrect. Can you point out which value range is the right one?

**A60.** Results presented in Table 7-5 for the "Dissolved hardness" parameter should all be expressed in mg/L. However, values presented for the detection limits and results presented for the treatment period are expressed in µg/L. These results must therefore be divided by 1000 to obtain results expressed in mg/L, which then become comparable to other results presented for this parameter during the stabilization pumping period and the commissioning period.

**Q61.** In the same pilot field test study of TechnoRem (PR16-50, March 2017), no data on dissolved solids seems to be available. Is it possible to obtain information on this parameter?

**A61.** This parameter was not monitored or analyzed during the pilot field test.

**Q62.** In article 39.4.2.5.1, second paragraph, it is required to plan for an additional space of at least 20% inside the building. Does the 20% refer to square meters of floor space? Knowing that adding 20% of surface area does necessarily make such an addition usable, please provide additional information regarding this space (dimensions, insulation, classification, ventilation, use, etc.). Should this additional space be included in our price?

**A62.** The additional space of 20% does refer to building floor space. This additional space must not be isolated from the rest of the building but shall be included in the area where the main treatment equipment are installed, and will therefore have the same characteristics. The configuration of this additional space is left to the care of tenderer but this space must be configured so as to meet requirements of the technical specifications, notably to allow an expansion or the addition of equipment. The price of the tenderer must consider this requirement of the technical specifications.

**Q63.** In article 39.4.2.5.1, fifth paragraph: Is the 1.5 m of clearance required when panel doors are open or closed?

**A63.** This article indicates that the Contractor should: « Allow (at least) 1.5 m of clearance around electrical panels when the doors of these panels are open ».

**Q64.** On the cross-sections of plan S23-P001 and on the typical detail for ditches of plan S23-P006, we calculate longitudinal slopes for ditches of approximately 1 %. However, on the plan view of plan S23-P006, it is indicated that the longitudinal slope of ditches must be of 3 % minimum. If we use slopes of 3 %, the ditches will have to be deeper and will not comply with the typical detail for ditches. Please confirm that ditches must have a slope of 1 %.

**A64.** The slope indicated on the plan view of plan S23-P006 must be corrected for a value of 0.3 % instead of 3 %.

**Q65.** With reference to amendment #15, A57, it is required to demonstrate and justify the pumping rate used as hypothesis during design. In the Price table, a lump sum is required for item B.1.3.1 for the whole treatment process. The pumping rate established in the proposed solution will determine the treatment process corresponding to this pumping rate. We understand that the bid deposit based on a given pumping rate will not be considered as a restrictive and conditional bid and will thus be admissible. Please confirm.

**A65.** The solution proposed for the treatment system must allow for compliance of all requirements specified in the technical specifications, notably the treatment of all water extracted by the pumping system proposed by the bidder. A bid meeting these requirements as well as all other requirements specified in the tender documents will be admissible.

**Q66.** In the numerical model of TechnoRem, two hydraulic conductivity zones are used to represent the sandy-gravelly till unit:

**1- Zone 2**

- a. horizontal hydraulic conductivity of  $1.095 \times 10^{-5}$  m/s
- b. vertical hydraulic conductivity of  $1.095 \times 10^{-6}$  m/s

**2- Zone 1**

- a. horizontal hydraulic conductivity of  $1.204 \times 10^{-7}$  m/s
- b. vertical hydraulic conductivity of  $1.204 \times 10^{-8}$  m/s

The two hydraulic conductivity zones seem to overlap the treatment zones where pumping wells must be installed. This choice is important in the design of a system that must achieve a given drawdown (number of pumping wells, distance between wells and pumping rate). According to available information in table 5-5 of report PR15-59-02 of TechnoRem, the geometric mean of hydraulic conductivity values for the sandy-gravelly till unit would be around  $1.54 \times 10^{-6}$  m/s. Of what basis of geological/hydrogeological nature did TechnoRem establish :

- 1- the limits of these two zones?
- 2- the vertical hydraulic conductivity values?

**The hydraulic conductivity and the anisotropy have a significant influence on the number of wells to consider. For now, we have a very limited amount of data on pumping tests for the sandy-gravelly till hydrostratigraphic unit and relatively few slug tests at wells.**

- A66.** The slug tests presented in table 5-5 of report PR15-59-02 of TechnoRem show horizontal hydraulic conductivity values varying between  $3,3 \times 10^{-7}$  m/s and  $3,3 \times 10^{-6}$  m/s, for a geometric mean of  $1,54 \times 10^{-6}$  m/s. These values have been measured near cells C1, C2 et C3, which represent a relatively local characterization in comparison to the site. In addition to these values, results for pumping tests carried out at wells PO-29, PO-30 and PO-33 in 2012 and 2013 (which are mentioned in report PR15-59-02) are considered. These wells are located outside of the cells and indicate horizontal hydraulic conductivity values varying between  $3,2 \times 10^{-7}$  m/s and  $8,92 \times 10^{-5}$  m/s. These results show evidence of the heterogeneity of the sandy-gravelly till unit. Mathematical modelling was based on all these data. During model calibration, a more significant weight was given to hydraulic conductivity values obtained from pumping tests. The slug test allowed to confirm and better outline the less permeable zone in the model (zone 1).

The average hydraulic conductivity for the two zones in the model is  $5,5 \times 10^{-6}$  m/s, which is slightly superior to the geometric mean of  $1,54 \times 10^{-6}$  m/s presented in table 5-5. However, if hydraulic conductivity values from pumping tests are added to values from table 5-5, a geometric mean of  $3,09 \times 10^{-6}$  m/s is obtained, all data considered (slug tests and pumping tests), which is similar to the value of  $5,5 \times 10^{-6}$  m/s of the model.

Concerning the vertical hydraulic conductivity value, it is assumed that it is 10 times lower than the horizontal hydraulic conductivity. This hypothesis is commonly used for mathematical modelling purposes.

- Q67. In order to provide the best technical solution at the best price, wouldn't it be more advantageous to establish that wells in excess of the number specified in the Price table for comparison purposes be paid on a unit basis if pumping tests and modelling required in the tender demonstrate that a higher number of wells is required to achieve the drawdown criteria and those related to the zones of contribution.**

- A67.** For tender purposes, the number of wells to consider for price estimation at items B.1.2.1 to B.1.2.7 of the Price table are those indicated in the Price table. However, as mentioned in the technical specifications, the Contractor remains responsible for the design of the pumping system, including determining the number and the location of wells to install. The Contractor must therefore demonstrate and justify in its offer the number of wells he proposes, whether this number is different or not from the number indicated in the Price table. The number of wells in excess of the number of wells indicated in the Price table will be paid based of the unit price provided by the tenderer in its offer.

- Q68. In the complementary characterization, environmental monitoring and rehabilitation scenario development report of TechnoRem (December 2016), figures 14-1 to 14-6 present different modelling results for the hydraulic confinement of contamination plumes, both for the till and underlying bedrock units. The simulated pumping rates for hydraulic confinement are also mentioned. A total pumping rate of 123 m<sup>3</sup>/d, from which 63 m<sup>3</sup>/d come from granular deposits and 60 m<sup>3</sup>/d come from bedrock, are suggested. IN relation with answer A51 of amendment no. 15 which mentions that bidder are responsible for the demonstration and justification of the confinement and the pumping rate in the bidding process, what is the level of confidence of PWGSC regarding simulated results proposed in the report of January 2016 ?**

- A68.** The tenderers have at their disposal all the raw data available allowing them to establish their own interpretation of results from the various tests and surveys carried out by TechnoRem. PWGSC will not indicated a « level of confidence » for these results. As indicated in previous answers, the tenderers will have to make up their own opinion and interpretation of these results and, if they find it relevant, will have to propose and demonstrate a different interpretation in their technical offer.

**Q69. In figure 14-4 of the January 2016 report, maximum drawdowns of 16 m for the sandy-gravelly till unit are illustrated on the plan view. However, in figure 14-5, the maximum simulated drawdowns presented in cross-section would be around 10 m, thus located at the top of the till unit. Is it possible to clarify and /or validate our interpretation?**

**A69.** The plan view in figure 14-4 presents drawdowns for the superficial water table (in waste material and clayey-silty till), which corresponds to the light blue line in figure 14-5. The figure 14-5 distinguishes drawdowns for the superficial water table (in waste material and clayey-silty till) from drawdowns for the deeper water table (in sandy-gravelly till). These two water tables are not at the same elevation in static conditions. Thus, a drawdown of 16 m is reached for the superficial water table but for the deeper water table, the drawdown is around 10 m. This difference comes from the reference level used (static level for the superficial water table/ static level for the deeper water table). However, in the end, water levels for the two water tables reach the same elevation in the zone targeted for pumping.

**Q70. Following review of available data, a total of 4 short term pumping tests have been identified (PO-29 (bedrock ; 6 h), PO-33 (SG Till ; 6h), PO-30 (SG Till; 6h), PO-82 (bedrock; 24 h)). Is it possible to validate the number of pumping tests? Have there been other test carried out?**

**A70.** The number of pumping tests mentioned is correct. No other test were carried out.

**Q71. In relation to previous questions and the level of effort required for the demonstration and justification of confinement and pumping rate in the context of the tender process, is it possible to have an extension for the bid deposit?**

**A71.** PWGSC believes that the additional five (5) weeks given for bid deposit is sufficient for the preparation of bids.

**Q72. For the sake of clarity, a table of contents, as well as a list of figures and tables would be added to the technical offer. Can we consider that these pages are excluded from the maximum number of pages (28 pages) specified in the tender and already transmitted amendments?**

**A72.** Yes, the pages related to the table of content and the lists of tables and figures can be excluded from the maximum number of pages specified in the tender documents.

**Q73. Considering answer A55 presented in response to question 49 in the last amendment, is it possible to add 2 pages to the maximum number allotted for section 5.2.2.3 of the tender in order to present the required information in section 54.1.6?**

**A73.** The maximum number of pages for the presentation of the description of the preliminary System design (section 5.2.2.3.1) must be changed for seven (7) pages. The maximum number of pages for the entire offer must be modified for 29 pages. The requirements for offer format, presented in section 4.3, remain unchanged.

**Q74. In order to offer the most economical solution, is it possible to consider an exterior metallic wall siding for the building instead of materials mentioned in section 21.3.2.2.2?**

**A74.** The only siding materials accepted are those specified in the technical specifications.

**Q75. Can the specifications for pumping wells and monitoring wells such as borehole and screen diameter be modified or must we follow exactly the specifications of section 9 of appendix A of the technical specifications?**

**A75.** The specifications for wells described in the technical specifications, notably in section 9, must be respected.

**\*\*\* All other terms and conditions of the original solicitation remain unchanged \*\*\***