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**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**  
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86 Clarence Street, 2nd floor  
Kingston  
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K7L 1X3

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| <b>Title - Sujet</b><br>Gas Chromatograph  |  |
| <b>Solicitation No. - N° de l'invitation</b><br>31184-200216/A   | <b>Amendment No. - N° modif.</b><br>001      |
| <b>Client Reference No. - N° de référence du client</b><br>31184-200216  | <b>Date</b><br>2020-02-21                    |
| <b>GETS Reference No. - N° de référence de SEAG</b><br>PW-\$KIN-630-8023   |  |
| <b>File No. - N° de dossier</b><br>KIN-9-52191 (630)   | <b>CCC No./N° CCC - FMS No./N° VME</b>       |
| <b>Solicitation Closes - L'invitation prend fin</b><br><b>at - à 02:00 PM</b><br><b>on - le 2020-03-06</b>   |  |
| <b>Time Zone</b><br><b>Fuseau horaire</b><br>Eastern Standard Time<br>EST  |  |
| <b>F.O.B. - F.A.B.</b><br><b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/> |  |
| <b>Address Enquiries to: - Adresser toutes questions à:</b><br>Holt, Judy  | <b>Buyer Id - Id de l'acheteur</b><br>kin630 |
| <b>Telephone No. - N° de téléphone</b><br>(613) 536-4995 ( )   | <b>FAX No. - N° de FAX</b><br>(613) 545-8067 |
| <b>Destination - of Goods, Services, and Construction:</b><br><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><br><b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>   |  |
| <b>Telephone No. - N° de téléphone</b><br><b>Facsimile No. - N° de télécopieur</b>   |  |
| <b>Name and title of person authorized to sign on behalf of Vendor/Firm</b><br><b>(type or print)</b><br><b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b><br><b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b> |  |
| <b>Signature</b>   | <b>Date</b>                                  |

*This amendment is issued to solicitation 31184-200216/A to answer the following questions and to make the following changes:*

Old closing date and time: 2 March 2020, 2:00pm EST

**New closing date at time: 6 March 2020, 2:00pm EST**

**A. Questions from Industry and answers from Canada:**

**Question 1** - In reference to Annex "A" line item b: The Annex requested a "catalytic converter". Does it refer to the Methanizer for the FID detector which uses an Ni Catalyst to convert CO and CO<sub>2</sub> to methane? Please clarify.

**Response** - Yes, the methanizer will enable the detection of low levels of CO and CO<sub>2</sub>

**Question 2** - In reference to Annex "A" line items #c and #e: Could you please clarify what the sample source or matrix is? Is it comprised of only those components or is there a bulk matrix gas?

**Response** - The samples will be a mixture of the gas mentioned at line c and e. The GC will be used to analyze the products formed from the conversion of CO<sub>2</sub> so maybe products are expected.

**Question 3** - In reference to Annex "A" line item k: When you say liquid injection, what is the liquid? What type of sample will be analyzed as a liquid and what compounds will be present?

**Response** - The liquid is a solution containing some salts (KCO<sub>3</sub>, for example), and other products like ethanol, and other alcohols.

**Question 4** - Does NRC require installation and training or just delivery?

**Response** - As per the RFP, this is for the supply and delivery of the Gas Chromatograph only.

**Question 5** - Section 2.0 (e) states that FIDmeth detects H<sub>2</sub>, however FID's do not detect H<sub>2</sub>. We assume this will be measured by the TCD but could you please clarify?

**Response** - Please see section B, item 1 below.

**Question 6** - Section 2.0 (f) states GC must contain a 0.5m-Haysep-D precolumn, a 2m-MoleSieve 5A column and a 2m-Haysep column. What is the letter ie. type of 2m Haysep that you are requesting?

**Response** - Please see section B, item 2 below.

**Question 7** - Do you require resolution of acetylene separate from ethylene? The proposed columns in Section 2.0 (f) most likely will not provide that separation.

**Response** - Detection of acetylene is not required.

**Question 8** - Are you expecting any trace sulfurs in your samples (for example H<sub>2</sub>S)? If so even trace concentrations will poison the methanizer (catalytic converter). A methanizer bypass valve can avoid this, but is not being requested.

**Response** - Trace sulfurs are not expected in the samples.

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**Question 9** - What sensitivity do you need for CO and CO2?

**Response** – The CO and CO2 lower detection limit must be of 1 ppm until 50,000 ppm.

**Question 10** - Would you like the mol sieve column situated in an independent oven to have it be continuously conditioned independent of the Haysep columns? Mol sieve columns need to be baked out/conditioned at higher temperatures than Haysep's can handle. In the proposed configuration the mol sieve would need to be removed, connected to a carrier gas supply in a separate oven, and baked out to restore separation efficiency.

**Response** – No, it is not required to have the mol sieve column situated in an independent oven.

**Question 11** – Re Item C: Why is a TCD necessary to detect C1-C6 Hydrocarbons? The requested FID could be used for these hydrocarbons. Is this acceptable?

**Response** – No, a TCD is necessary.

**Question 12** – Re Item E: H2 is referenced for detection on the FID, this is not possible.

**Response** - Please see section B, item 1 below.

**Question 13** – Re Item G: are pneumatically actuated valves acceptable?

**Response** – No, pneumatically actuated valves are not acceptable.

**Question 14** - Re Item I: Can you clarify the request for Nitrogen & Argon as the carrier? Oxygen and Nitrogen are going to have poor detection limits with N2 and Argon as a carrier.

**Response** - Hydrogen needs to be measured so He can't be used as a carrier gas, which is why we are requesting N2 and Argon.

**Question 15** – Re Item T: is the intent to have a dual channel system? It is unclear if this is a request for TCD/FID/Methanizer in series with a single injection? Please clarify if possible.

**Response** - One injection leads to the detection using the TCD AND FID detector.

## **B. Amendments to the Request for Proposal document:**

### **1. Under Annex A, item 2.0 (e)**

*Delete in it's entirety and replace with the following:*

(e) The FID<sub>meth</sub> must be able to detect CO, CO2, methane, ethane, and hydrocarbons from C<sub>1</sub> until C<sub>6</sub> from 1 ppm to 50,000 ppm.

### **2. Under Annex A, item 2.0 (f)**

*Delete in it's entirety and replace with the following:*

(f) The GC must contain a 0.5m-Haysep-D precolumn, a 2m-MoleSieve 5A column and a 2m-Haysep-D column.