

### **1. Advance Contract Award Notice (ACAN)**

An ACAN is a public notice indicating to the supplier community that a department or agency intends to award a contract for goods, services or construction to a pre-identified supplier, thereby allowing other suppliers to signal their interest in bidding, by submitting a statement of capabilities. If no supplier submits a statement of capabilities that meets the requirements set out in the ACAN, on or before the closing date stated in the ACAN, the contracting officer may then proceed with the award to the pre-identified supplier.

### **2. Definition of the requirement**

The Department of Environment Canada has a requirement for the provision of expert advice and critical analysis relevant to nanomaterials in soils.

### **3. Scope of Work**

The work will involve the following:

1. Consultation Meetings
  - i. Discussion and summary of analytical data (including review of quality assurance / quality control (QA/QC)) derived from ICP-MS, SP-ICP-MS and Cu<sup>2+</sup> ion activity (e.g., ISE) measurements pertaining to the fate of different trace metallic nanomaterial forms (e.g., across differentially coated nanomaterials) in soils.
  - ii. Critical review and discussion of project objectives for the chemical and toxicological evaluation of different metallic nanomaterials (e.g., differentially coated Cu nanomaterials) in soils, given the current state of science.
2. Critical Review of Data and Written Contribution to Scientific Communications
  - i. Discussion and summary of analytical data (including review of quality assurance / quality control (QA/QC)) derived from ICP-MS, SP-ICP-MS and Cu<sup>2+</sup> ion activity (e.g., ISE) measurements pertaining to the fate of different trace metallic nanomaterial forms (e.g., across differentially coated nanomaterials) in soils.
  - ii. Critical review and discussion of project objectives for the chemical and toxicological evaluation of different metallic nanomaterials (e.g., differentially coated Cu nanomaterials) in soils, given the current state of science.
  - iii. Provision of review comments and preparation of manuscript relevant to the phytotoxicity of CuO nanomaterials to plant species in soils; written contribution includes summarizing analytical data, and interpreting the data in the context of nanomaterial transformation and bioavailability in soil. This information will then be used to link with sections relevant to ecotoxicological tests.
  - iv. Provision of critical review comments and written contribution to a manuscript detailing the fate and impact on soil invertebrate species in biosolid-amended and non-amended soils impacted by CuO nanomaterials; aspects include critical review of analytical data derived through SP-ICP-MS and ISE measurements.
  - v. Provision of critical review comments and written contribution to a manuscript detailing the bioaccumulation potential of CuO nanomaterials in biosolid-amended and non-amended soils in earthworms; aspects include critical

review of analytical data derived through SP-ICP-MS and ISE measurements, as well as tissue accumulation data.

- vi. Review of analytical protocols and data associated with exposure measures of total, dissolved or 'bioavailable' Ce and dispersible nanoparticulate Ce in biosolid-amended and non-amended soils derived from invertebrate and microbial studies; and provision of input and expertise to ECCC technical staff on technical aspects associated with equipment and protocol use.
- vii. Provision of critical review comments and written contribution to a manuscript for the characterization and fate of CeO<sub>2</sub> nanoparticles, as well as Ce(NO<sub>3</sub>)<sub>2</sub> in biosolid-amended and non-amended soils relative to soil invertebrate and microbial ecotoxicity data.
- viii. Critical review of study design including the recommendation of suitable analytical protocols and approach to the evaluation of the 'bioavailability' and toxicity of multiple CuO nanomaterials, coated with different chemical substances, to soil invertebrates and microbial communities ; this includes review and analysis of analytical methods and data derived from different methods of analyses (e.g., SP-ICP-MS, ion activity (ISE), TEM, DLS, etc.)

#### **4. Criteria for assessment of the Statement of Capabilities (Minimum Essential Requirements)**

Any interested supplier must demonstrate by way of a statement of capabilities that it meets the following requirements:

1. At least a doctoral degree, with research encompassing soil-metal interactions and bioavailability.
2. At least five (5) published research articles, wherein the Contractor is first author, encompassing soil-metal interactions, developed methodology for the analysis of metal or metallic nanomaterial speciation in soil, and implications for bioavailability and/or ecotoxicity.
3. At least twelve (12) years of demonstrated experience researching trace metal bioavailability and/or ecotoxicity in soils, specific to terrestrial plants and/or soil macro-organisms
4. At least five (5) years of demonstrated experience researching the fate and ecotoxicity of metallic nanomaterials in soils and biosolid-amended soils, with specialization with copper and cerium oxides.
5. At least five (5) years demonstrated experience in the development of analytical protocols for the extraction, optimization and analysis of metallic nanomaterials in soils and biosolids using Single-Particle Inductively Coupled Mass Spectroscopy (SP-ICP-MS).
6. At least twelve (12) years demonstrated experience in the development of analytical protocols for the extraction, optimization and analysis of metal ion activity and bioavailability in soils and biosolid matrices using techniques such Ion Selective Electrodes (ISE) and other ion exchange techniques.
7. At least twelve (12) years demonstrated experience in developing analytical protocols suited to the extraction of and analysis of trace metal and metallic

nanomaterials, including metal speciation, in soil and biosolid matrices, as well as tissue.

8. Must be willing to come on-site for meetings.

#### **5. Applicability of the trade agreement(s) to the procurement**

This procurement is NOT subject to trade agreements.

#### **6. Set-aside under the Procurement Strategy for Aboriginal Business**

This procurement is NOT subject to a set-aside.

#### **7. Comprehensive Land Claims Agreement**

This procurement is NOT subject to the CLCA.

#### **8. Justification for the Pre-Identified Supplier**

The selected provider meets all requirements and is the sole provider who can provide the scientific support required of the work. The work requires specialized knowledge and a skill-set specific to soil chemistry, and the behaviour of trace level metallic nanomaterials in soil

#### **9. Government Contracts Regulations Exception(s)**

The following exception(s) to the *Government Contracts Regulations* is (are) invoked for this procurement under subsection 6(d), Only One Supplier is Capable of Performing the Work.

#### **10. Trade Agreement-Exclusions and/or Limited Tendering Reasons**

This Procurement is not subject to Trade Agreements.

#### **11. Ownership of Intellectual Property**

Intellectual property will remain with the Crown (Public Domain Clause: 6.4.1) based on the following grounds: the main purpose of the Contract, or of the deliverables contracted for, is to generate knowledge and information for public dissemination. Notwithstanding the above, the parties signing this contract agree that sharing of the data that is produced during this contract is an essential requirement of this contract. Therefore, the parties signing this contract agree that data generated from the studies conducted during this contract will be used for the purposes of meeting reporting obligations (including dissemination to public access websites) or drafting of manuscripts, or for any other purposes agreed upon by the parties, and will be shared between the parties for a time sufficient to complete these activities, following which the data will be deposited with, archived by, and accessible to the scientific authority. The parties agree that part of the function of the contract is to disseminate information and the parties shall not be restricted in their use of the Intellectual Property generated during this contract for research and educational purposes subject only to confidentiality provisions which continue to remain in effect after termination of this Contract.

#### **12. Period of the proposed contract or delivery date**

1. The proposed contract is for a period of 7 months, from September 1, 2019 to March 31, 2020.
2. The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to three (3) additional years under the same conditions. The

Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at any time before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

### **13. Cost estimate of the proposed contract**

The estimated value of the contract, including option(s), is \$88,000 + GST/HST.

Base Year (including travel)	= \$22,000
Option Year 1 (including travel)	= \$22,000
Option Year 2 (including travel)	= \$22,000
Option Year 3 (including travel)	= \$22,000
Total	= \$88,000

(i.e., maximum \$21K for professional services and \$1K for meeting travel).

### **14. Name and address of the pre-identified supplier**

Dina Schwertfeger, Ph.D. (Renewable Resources)  
310 Rue Main, Hudson, Quebec, J0P 1H0

### **15. Suppliers' right to submit a statement of capabilities**

Suppliers who consider themselves fully qualified and available to provide the goods, services or construction services described in the ACAN may submit a statement of capabilities in writing to the contact person identified in this notice on or before the closing date of this notice. The statement of capabilities must clearly demonstrate how the supplier meets the advertised requirements.

### **16. Closing date for a submission of a statement of capabilities**

The closing date and time for accepting statements of capabilities is 14:00 Atlantic Standard Time on August 20, 2019.

### **17. Inquiries and submissions of statement of capabilities**

Any inquiries or submissions of statement of capabilities can be submitted to:

Alyssa Festeryga  
Procurement Officer  
Procurement & Contracting Services  
Environment and Climate Change Canada  
17th Floor, 45 Alderney Drive, Dartmouth NS B2Y 2N6  
Email: [alyssa.festeryga@canada.ca](mailto:alyssa.festeryga@canada.ca)  
Phone Number: 902-426-9150