

Return	Bids to	:

Retourner Les Soumissions à : Natural Resources Canada

raymond.thai@canada.ca

Request for Proposal (RFP) Demande de proposition (DDP)

Proposal To: Natural Resources Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition à: Ressources Naturelles Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Issuing Office - Bureau de distribution

Finance and Procurement Management Branch Natural Resources Canada 580 Booth Street, 5th Floor Ottawa, Ontario K1A 0E4

Title – Sujet	
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Laboratory Analysis (Carbon Dioxide Enhanced Oil Recovery (CO2-EOR) in ultra-tight organic-rich shales)

Solicitation No. - No de l'invitation

Date

NRCan-5000060269

July 13, 2021

Requisition Reference No. - Nº de la demande

5000060269

Solicitation Closes – L'invitation prend fin

at - à 02:00 PM (Eastern Daylight Savings Time (EDT))

on - le August 20, 2021

Address Enquiries to: - Adresse toutes questions à:

raymond.thai@canada.ca Telephone No. – No de telephone

(343) 543-7427

Destination - of Goods and Services: Destination - des biens et services:

Natural Resources Canada 3303 33 Street Northwest Calgary, Alberta T2L 2A7

Security – Sécurité

There is no security requirements associated with this requirement.

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

Telephone No.:- No. de téléphone: Facsimile No.: - No. de télécopieur:

Name and Title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Date

Signature		

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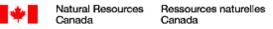
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The Articles contained in this document are mandatory in their entirety, unless otherwise indicated. Acceptance of these Articles, in their entirety, as they appear in this document, is a Mandatory requirement of this RFP. Suppliers submitting a proposal containing statements implying that their proposal is conditional on modification of these clauses or containing terms and conditions that purport to supersede these clauses or derogate from them will be considered non-responsive.

Bidders with concerns regarding the provisions of the Bid Solicitation document (including the Resulting Contract Clauses) should raise such concerns in accordance with the Enquiries provision of this RFP.



PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications and Additional Information: includes the certifications to be provided;
- Part 6 Security and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, and the Basis of Payment.

The Appendixes include the Evaluation Criteria and the Financial Proposal Form.

1.2 Summary

Natural Resources Canada (NRCan) has a requirement for the Laboratory Analysis (Carbon Dioxide Enhanced Oil Recovery (CO2-EOR) in ultra-tight organic-rich shales). The Contractor will possess a research laboratory facility specialized for core flooding shale samples with CO2 and will carry out this work by capturing 3-dimensional (3D) computerized tomography (CT) scans of the samples at different time intervals. As a result, a report will be developed to document the data from the CT scans and experiments as per further defined under Annex "A" – Statement of Work (SOW) of this Request for Proposal (RFP).

This solicitation is intended to award one (1) Contract until March 31, 2022, plus two (2) irrevocable one-year option periods allowing Canada to extend the term of the Contract.

1.2.1 Trade Agreements

The requirement is subject to the provisions of the:

- Canadian Free Trade Agreement (CFTA)
- Canada-Chile Free Trade Agreement (CCFTA)
- Canada-Columbia Free Trade Agreement (CCoFTA)
- Canada-Honduras Free Trade Agreement (CHFTA)
- Canada-Korea Free Trade Agreement (CKFTA)
- Canada-Panama Free Trade Agreement (CPaFTA)
- Canada-Peru Free Trade Agreement (CPFTA)
- Canada-UK Trade Continuity Agreement (Canada-UK TCA)
- Canada-Ukraine Free Trade Agreement (CUFTA)
- Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)
- Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and
- World Trade Organization-Agreement on Government Procurement (WTO-GPA).

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within fifteen (15) working days from receipt of the results of the bid solicitation process. The debriefing will be done in writing, by email.



PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the <u>Standard Acquisition Clauses and Conditions Manual</u> (https://buyandsell.gc.ca/policy-andguidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The **2003** (2020-05-28) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation with the modifications to the text below. If there is a conflict between the provisions of 2003 and this document, this document prevails.

- In the complete text content (except Section 1 and 3) Delete: Public Works and Government Services Canada" and Insert: "Natural Resources Canada." Delete: "PWGSC" and Insert: "NRCan"
- Section 2: Delete: "Suppliers are required to" and Insert: "It is suggested that suppliers"
- Subsection 1 of Section 8: Delete entirely
- Under Subsection 2 of Section 20: Not applicable

2.2 Submission of Bids

Bidders must submit all proposals electronically. Given the current constraints on NRCan's networks, the electronic mail system has a limit of 1GB per single message received and a limit of 20GB per conversation. Bidders are asked to contact the Contracting Authority to confirm receipt of their bid. NRCan encourages bidders to submit all bids earlier than the closing time in order to ensure sufficient time to be received in NRCan's server.

It is the Bidders responsibility to ensure that proposals are sent to the following e-mail address, by the time and date indicated on page 1 of this RFP document.

- Send proposals to this email address: <u>raymond.thai@canada.ca</u>
- Contact the **Contracting Authority (Raymond Thai)** at 343-543-7427 by either **telephone call or email** for receipt of bid confirmation.

IMPORTANT

It is requested that you write the following information in "Subject" of the e-mail:

<u>NRCan – 5000060269 – Laboratory Analysis (Carbon Dioxide Enhanced Oil Recovery (CO2-EOR) in</u> <u>ultra-tight organic-rich shales)</u>

Due to the nature of the bid solicitation, bids transmitted by mail or facsimile to NRCan will not be accepted.



NRCan will not assume responsibility for proposals directed to any other location.

The onus is on the Bidder to ensure that the proposal is submitted correctly to the above address. Not complying with the above instructions may result in NRCan's inability to ascertain reception date and/or to consider the bid prior to contract award. Therefore, NRCan reserves the right to reject any proposal not complying with these instructions.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **seven (7)** calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Can ada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Alberta.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

2.5 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least **seven (7)** days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

2.6 Basis for Canada's Ownership of Intellectual Property

Natural Resources Canada has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, on the following reason: as set out in the *Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts*

Where the main purpose of the Crown Procurement Contract, or the deliverables contracted for, is:

• To generate knowledge and information for public dissemination.



PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (1 PDF File)

Section II: Financial Bid (1PDF File) in <u>a separate file and document</u>

Section III: Certifications (1PDF File) in a separate file and document

Prices should appear in the financial bid only. No prices should be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

(a) use 8.5 x 11 inch (216 mm x 279 mm) format;

(b) use a numbering system that corresponds to the bid solicitation.

Section I: Technical Bid

In their technical bid, Bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

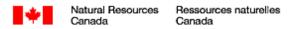
The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Proposal Form in Appendix #2. The total amount of Applicable Taxes must be shown separately.

Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation



Section III: Certifications

Bidders must submit the certifications required under Part 5.



PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

Mandatory and point rated technical evaluation criteria are included in Appendix #1– Evaluation Criteria.

4.2 Basis of Selection

4.2.1 Highest Combined Rating of Technical Merit and Price

- 1. To be declared responsive, a bid must:
 - a. Comply with all the requirements of the bid solicitation;
 - b. Meet all mandatory technical criteria; and
 - c. The rating is performed on a scale of a total of 60 available points.
- 2. Bids not meeting (a) or (b) will be declared non-responsive.
- 3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70% for the technical merit and 30% for the price.
- 4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 70%.
- 5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30%.
- 6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
- 7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.



The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. The total available points equal 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)				
		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score 115/135 89/135 92/135			92/135	
Bid Evaluated Price \$55,000.00 \$50,000.00 \$45,00		\$45,000.00		
Calculations	Technical Merit Score	115/135 x 70 = 59.63	89/135 x 70 = 46.15	92/135 x 70 = 47.70
	Pricing Score	45/55 x 30 = 24.55	45/50 x 30 = 27	45/45 x 30 = 30
Combined Rating 84.18 73.15		77.70		
Overall Rating 1st		1st	3rd	2nd



PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity <u>Provisions of the Standard Instructions (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/1/2003/25#integrity-provisions)</u>, all bidders must provide with their bid, **if applicable**, the Integrity declaration form available on the <u>Forms for the Integrity Regime</u> website (http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame specified will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the <u>Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html</u>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

• Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder or, in the case of a private company, the owners of the company.



- Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).
- Bidders bidding as partnerships do not need to provide lists of names.

Name of Bidder:

OR

Name of each member of the joint venture:

Member 1:	 	
Member 2:	 	
Member 3:	 	
Member 4:	 	

Identification of the administrators/owners:

SURNAME	NAME	TITLE

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the <u>Employment and Social</u> <u>Development Canada (ESDC) - Labour's</u> website. (https://www.canada.ca/en/employment-socialdevelopment/programs/employment-equity/federal-contractor-program.html#).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid "list at the time of contract award.



5.2.3 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability.

5.2.4 Education and Experience

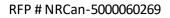
The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

5.2.5 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:



Natural Resources Ressources naturelles Canada Canada

a. an individual;

b. an individual who has incorporated;

c. a partnership made of former public servants; or

d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c. C-17, the *Defence Services Pension Continuation Act*, 1970, c. D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c. R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c. R-11, the *Members of Parliament Retiring Allowances Act*, R.S. 1985, c. M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c. C-8.

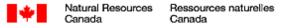
Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? Yes () No ()

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;___
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.



Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes() No()**

If so, the Bidder must provide the following information:

- a. name of former public servant; ______
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;

d. amount of lump sum payment; ______

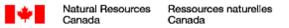
- e. rate of pay on which lump sum payment is based; ______
- f. period of lump sum payment including:
 - start date ______
 - end date ______
 - and number of weeks ______

g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

Professionalfees

Amount

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.



5.2.6 Aboriginal Designation

Who is eligible?

- a) An Aboriginal business, which can be:
 - i. a band as defined by the Indian Act
 - ii. a sole proprietorship
 - iii. a limited company
 - iv. a co-operative
 - v. a partnership
 - vi. a not-for-profit organization

in which Aboriginal persons have at least 51 percent ownership and control,

OR

b. A joint venture consisting of two or more Aboriginal businesses or an Aboriginal business and a non-Aboriginal business(es), provided that the Aboriginal business(es) has at least 51 percent ownership and control of the joint venture.

When an Aboriginal business has six or more full-time employees at the date of submitting the bid, at least thirty-three percent of them must be Aboriginal persons, and this ratio must be maintained throughout the duration of the contract.

The bidder must certify in its submitted bid that it is an Aboriginal business or a joint venture constituted as described above.

Our Company is <u>NOT an Aboriginal Firm</u>, as identified above.
 Our Company is an Aboriginal Firm, as identified above.

Signature of Authorized Representative

Date



PART 6 - SECURITY AND OTHER REQUIREMENTS

6.1 Security Requirements

There are no security requirements associated with this requirement.



PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

7.1 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A" and the Contractor's technical bid entitled _____, dated _____. (*to be completed at contract award*)

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the <u>Standard</u> <u>Acquisition Clauses and Conditions Manual</u> (https://buyandsell.gc.ca/policy-and-guidelines/standardacquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

7.2.1 General Conditions

<u>2010B</u> (2020-05-28), General Conditions – Professional Services - Medium Complexity, apply to and form part of the Contract.

- As applicable, replace references to Public Works and Government Services Canada (PWGSC) with Natural Resources Canada (NRCan).

7.2.2 Supplemental General Conditions

The following clauses apply to this contract:

4007 (2010-08-16), Canada to Own Intellectual Property Rights in Foreground Information.

7.3 Dispute Resolution

Mediation

If a dispute arising from this contract cannot be settled amicably through negotiation, then the parties agree in good faith to submit the dispute to mediation as administered by the Arbitration and Mediation Institute of Canada Inc. (AMIC). The parties acknowledge receipt of the rules of AMIC. The cost of mediation shall be borne equally by the parties.

Arbitration

If the parties cannot resolve the dispute through mediation within sixty (60) days, the parties agree to submit the dispute to arbitration pursuant to the Commercial Arbitration Act (Canada). The party requesting such arbitration shall do so by written notice to the other party/parties. The cost of the arbitration and fees of the arbitrator shall be borne equally by the parties. The arbitration shall take



place in the city where the contractor carries on business before a single arbitrator to be chosen jointly by the parties. If the parties cannot agree on the choice of arbitrator within thirty (30) days of written notice to submit the dispute to arbitration, each party will choose a representative who will select the arbitrator.

The parties may determine the procedure to be followed by the arbitrator in conducting the proceedings, or may ask the arbitrator to do so. The arbitrator shall issue a written award within thirty (30) days of hearing the parties. The award may be entered in any court having jurisdiction and enforced as a judgment of that court.

Meaning of "Dispute"

The parties agree that the word "dispute" in this clause refers to a dispute of fact or of law, other than a dispute of public law.

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will, on request or consent of the parties to participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term and condition of this contract and their consent to bear the cost of such process, provide to the parties a proposal for an alternative dispute resolution process to resolve their dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at <u>boa.opo@boa.opo.gc.ca</u>.

7.4 Security Requirements

7.4.1 There is no security requirement applicable to this Contract.

7.5 Term of Contract

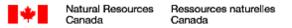
7.5.1 Period of the Contract

The period of the Contract is from date of Contract Award to March 31, 2022.

7.5.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to **two** (2) additional **one (1)** year period(s) 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 least **five** (5) calendar days 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.



7.6 Authorities

7.6.1 Contracting Authority

The Contracting Authority for the Contract is:

Name:Raymond ThaiTitle:Procurement SpecialistOrganization:Natural Resources CanadaAddress:580 Booth Street, Ottawa, ON K1A 0E4Cellphone:343-543-7427E-mail address:raymond.thai@canada.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

7.6.2 **Project Authority (**to be provided at contract award)

The Project Authority for the Contract is:

Name:
Title <i>:</i>
Organization:
Address:
Telephone:
E-mail address:

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however, the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

7.6.3 Contractor's Representative (to be provided at contract award)

Name:
Title <i>:</i>
Organization:
Address:
Telephone:
E-mail address

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7.7 Proactive Disclosure of Contracts with Former Public Servants

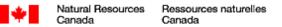
By providing information on its status, with respect to being a former public servant in receipt of a <u>Public Service Superannuation Act</u> (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with <u>Contracting Policy Notice: 2012-2</u> of the Treasury Board Secretariat of Canada.

7.8 Payment

7.8.1 Basis of Payment – Limitation of Expenditure

7.8.1.1 Limitation of Expenditure

- 1. Canada's total liability to the Contractor under the Contract must not exceed \$_____. *(to be inserted at contract award)* Customs duties are included and Applicable Taxes are extra.
- 2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
 - a. when it is 75 percent committed, or
 - b. four (4) months before the contract expiry date, or
 - c. as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work, whichever comes first.
- 3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.



7.8.2 Method of Payment

Monthly Payments

Canada will pay the Contractor on a monthly basis for work performed during the month covered by the invoice in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work performed has been accepted by Canada.

7.9 Invoicing Instructions

Due to Covid-19, NRCan will only accept invoices as follows:

E-mail: nrcan.invoiceimaging-servicedimageriedesfactures.rncan@canada.ca Note: Attach "PDF" file. No other formats will be accepted

Please do not submit invoices using more than one method as this will not expedite payment.

Invoices and all documents relating to a contract must be submitted on the Contractor's own form and shall bear the Contract number: ______ (to be provided at contract award)

Invoicing Instructions to suppliers: http://www.nrcan.gc.ca/procurement/3485

7.10 Certifications

7.10.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

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7.11 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Alberta.

7.12 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions <u>4007</u> (2010-08-16) Canada to Own Intellectual Property Rights in Foreground Information);
- (c) the general conditions 2010B (2020-05-28), Professional Services Medium Complexity;
- (d) Annex "A", Statement of Work;
- (e) Annex "B", Basis of Payment;
- (f) the Contractor's bid dated _____, (to be inserted at contract award)

7.13 Foreign Nationals (Canadian or Foreign Contractor)

SACC Manual clause A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)

OR

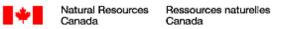
SACC Manual clause A2001C (2006-06-16) Foreign Nationals (Foreign Contractor)

7.14 Insurance

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

7.15 Contract Administration

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will review a complaint filed by [*the supplier <u>or</u> the contractor <u>or</u> the name of the entity awarded this contract*] respecting administration of this contract if the requirements of Subsection 22.2(1) of the *Department of Public Works and Government Services Act* and Sections 15 and 16 of the *Procurement Ombudsman Regulations* have been met, and the interpretation and application of the terms and conditions and the scope of the work of this contract are not in dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at <u>boa.opo@boa.opo.gc.ca</u>.



ANNEX "A" - STATEMENT OF WORK

SW1.0 TITLE

Laboratory Analysis: Carbon Dioxide Enhanced Oil Recovery (CO2-EOR) in ultra-tight organic-rich shales.

SW2.0 OBJECTIVES

The objective of this requirement is for the Contractor to perform a set of experiments with the goal of examining carbon dioxide (CO2) flow behavior at micron and submicron scales within organic-rich sedimentary rocks. The primary aim is to study CO2 flow in ultra-tight organic-rich shale deposits. In particular, the interest is in understanding the governing fundamentals of CO2 permeation in naturally fractured shale. Ultimately, the results should explain CO2 potential in penetrating nano-pores hosting the hydrocarbon in shale; and hence, an attempt in assessing the CO2-Enhanced Oil/Gas Recovery potential in these deposits as well as their potential for carbon capture and storage (CCS).

SW3.0 PROJECT REQUIREMENTS

The work should address several key questions from the scientific and practical points of view in relation to the objectives mentioned above. These questions are:

- i. The ability of supercritical and subcritical CO₂ in accessing the matrix pores in shale under reservoir conditions
- ii. Reaction and structural changes of different shale samples with injected CO₂
- iii. The diffusive and dispersive nature of flow in heterogeneous porous media
- iv. Injectivity and pressure build-up during injection into un-stimulated samples

These are vital questions in evaluating CO_2 -EOR and CCS. The first and second questions is an attempt to understand where (in the formation) the injected CO_2 goes, and what will be its long-term behavior. The last two questions are directly related to the operational limitation in the field ap plication. The work is experimental, and the contractor must have specialized setup for core flooding shale samples with CO_2 while simultaneously taking 3-dimensional computerized tomography (CT) scans of the samples at different time intervals. The visualization at the micron or sub-micron scale will be used to study CO_2 permeation into shales as well as reaction of the samples with the injected CO_2 . Natural Resources Canada (NRCan) will coordinate and carry out several characterization tests on samples collected from major Canadian unconventional tight/shale resources across the Western Canada (Duvernay, Montney, and Bakken formations). The characterization results will be used to identify the most suitable samples for core flooding experiments.

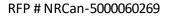
SW3.1 Tasks, Deliverables, Milestones and Schedule

Task #1: Project Start-Up

The first task is a kick-off meeting through teleconference within one week of the start of the contract. The purpose of the meeting is for:

• The Project Authority and the Contractor to discuss the details of the work.

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- The Project Authority to provide background information, contact information and other materials to the Contractor and vice versa.
- Discuss questions that the Contractor or Project Authority might have.

Task #2: Planning phase

The Contractor will perform the CO2 core flooding tests while imaging the samples using micro-CT scanners at their labs. The Contractor and NRCan will collaboratively to plan a test matrix for maximizing the success chance and productivity of the work. Test matrix includes sample preparation procedure, test conditions (pressure and temperature), and injection and monitoring requirements. Samples will be provided by NRCan.

Task #3: Execution phase

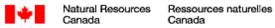
The Contractor will perform the planned experiments on the samples provided by NRCan from task #2. Tests included injecting CO2 in core plugs drilled from shale samples at specified pressure and temperature, while the sample is imaged periodically using micro-CT scanners for monitoring CO2-rock interaction. Additionally, differential pressure and flow rate of CO2 must be monitored and reported. The execution phase involves:

- Preparing core plugs and treating them, if necessary, at the Contractors laboratory.
- Tests will be done by the Contractor at their place of business (laboratory).
- Performing the core flooding experiments and taking micro-CT scans of the samples at different times.
- Preliminary data/image pre-processing using the software of the Contractor.

Task #4: Completion phase

The fourth task is the final version of all the deliverables. Deliverables of the project are:

- Data of core flooding shale samples with supercritical CO2 and CT scanned images of various shale samples under reservoir pressure and temperature.
 - \circ Details of experiments and procedures must accompany the data.
 - Multiple CT scans of the same samples at different times of CO2 injection are required.
 - \circ $\:$ Micro-CT tomograms and associated metadata of the CO2 injection tests.
 - Flow related parameters (flow rate and pressure).
 - Presentations (PowerPoint) and reports (PDF or Microsoft Word) of the summary of the experimental data analysis.



SCHEDULE

Tasks	Deliverables	Schedule
#1 Project Start-Up	Kick-off meeting (teleconference)	1 week after contract award
#2 Planning Phase		By March 31, 2022
#3 Execution Phase		By March 31, 2022
#4 Completion	 Delivering data and taking part in data analysis. The data requirements are: Details of experiments and procedures must accompany the data. Multiple CT scans of the same samples at different times of CO₂ injection are required. CT tomograms and associated metadata of the CO₂ injection tests. Flow related parameters (flow rate and pressure). Presentations (PowerPoint) and reports (PDF or Microsoft Word) of the summary of the experimental data analysis 	By March 31, 2022

SW3.2 Method and Source of Acceptance

All deliverables are to be delivered electronically in English. The report is to be submitted both in Adobe Portable Document Format (PDF), Microsoft Word format or LaTeX document (.tex).

The page format for reports shall be letter (8.5"x11") sized paper.

The presentation is to be provided in PDF and PowerPoint.

All the test data must be transferred to NRCan through Google Drive or Dropbox, both in which will not provide access or links to NRCans server.

SW4.0 OTHER TERMS AND CONDITIONS OF THE SOW

SW4.1 Contractors Obligations

In addition to the obligations outlined in Section 3 of this Statement of Work, the Contractor must:

1. return all materials belonging to NRCan upon completion of the Contract;

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- 2. submit all written reports in hard copy and electronic Microsoft Word format
- 3. attend meeting with stakeholders, if necessary;
- 4. participate in teleconferences, as needed;
- 5. attend meeting at NRCan sites, if required; and/or,
- 6. maintain all documentation in a secure area.

In satisfying the requirements of this agreement, the Recipient is encouraged to comply with the provisions and intent of the NRCan Scientific Integrity Policy (SIP) and to discharge its contractual obligations in support of research, science, or related activities in a manner consistent with all relevant NRCan SIP provisions. For more information on the Scientific Integrity Policy, please visit the NRCan website at: https://www.nrcan.gc.ca/science-data/scientific-integrity-nrcan/21663

SW 4.2 Location of Work and Delivery Point

All work is to be completed at the Contractor's place of business (laboratory site). The deliverables (draft and final) will be submitted by email or other suitable means (Google Drive and/or Dropbox) to NRCan's project authority.

SW 4.3 Language

The language of the work deliverables is English.



ANNEX "B" - BASIS OF PAYMENT

(to be completed at contract award)



APPENDIX "#1" - EVALUATION CRITERIA

The Mandatory Criteria listed below will be evaluated on a simple pass/fail basis. Proposals which fail to meet the mandatory criteria will be deemed non-responsive.

Bidders are advised to address each criterion in sufficient depth to permit a complete requisite analysis and assessment by the evaluation team. Proposals failing to adequately respond to the mandatory criteria may be excluded from further considerations. The proposal should address each of the criteria in the order in which they appear.

Bidders are advised that only listing experience without providing any supporting data to describe responsibilities, duties and relevance to the criteria will not be considered demonstrated for the purpose of this evaluation. **Bidders are requested to cross reference the mandatory technical and point-rated criteria** in a concise format by using page, paragraph(s) & sub-paragraphs as applicable to their supporting technical documentation.

The Bidder should provide complete details as to where, when (month and year) and how (through which activities/responsibilities) the stated qualifications/experience were obtained. Experience gained during formal education shall not be considered work experience. All criteria for work experience shall be obtained in a legitimate work environment as opposed to an educational setting. Co-op terms are considered work experience provided they are related to the required services.

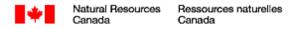
Bidders are also advised that the month(s) of experience listed for a project whose time frame overlaps that of another referenced project will only be counted once. For example: project one time frame is July 2001 to December 2001; project two time frame is October 2001 to January 2002; the total months of experience for these two project references is seven (7) months.

Canada will only evaluate one (1) resource. In the event more than one (1) resource is proposed, Natural Resources Canada (NRCan) will evaluate based on the order presented in the proposal.



MANDATORY TECHNICAL CRITERIA

ltem	Mandatory Requirements	Proposal Page #
M1	The Bidder's proposed resource MUST have a Doctor of Philosophy (Ph.D.) degree in engineering, physical sciences, geology, or geosciences, demonstrated by providing proof of education* (copy of the degree).	
	*The list of recognized organizations can be found on the Canadian Information Centre for International Credentials website: <u>http://www.cicic.ca/2/home.canada</u>	
M2	The Bidder's proposed resource MUST have a minimum of ten (10) years of experience conducting research related to carbon dioxide (CO2) storage or enhanced oil recovery using carbon dioxide in tight or unconventional resources, demonstrated by providing ten (10) * scientific publications.	
	*Within the last twenty (20) years from the date of bid solicitation closing on page #1 of the RFP.	
M3	The Bidder MUST have the facility to capture three-dimensional (3D) micro-computerized tomography (CT) scan images of shale samples ^{**} at different time intervals, while injecting carbon dioxide, demonstrated [*] by providing a description of their facility OR by providing a copy of published research findings using their facility.	
	*The provided description of the Bidder's facility or copy of published research finding using the Bidder's facility details the capability to capture images of rock samples under reservoir conditions at micron and sub-micro scales while injecting CO ₂ , and the processing of images using algorithms.	
	**Shale samples: Pressure and temperature must match the reservoir condition (80-120°C and 1500-5000 psi).	



POINT RATED CRITERIA

The criteria contained herein will be used by NRCan to evaluate each proposal that has met all of the mandatory criteria.

Proposals will be evaluated based on the following criteria:

Item	Rated Requirements	Points Breakdown	Max Points	Cross reference to Resume and/or Proposal Page #
R1	Points will be awarded for experience over the mandatory (M2). M2: The Bidder's proposed resource MUST have a minimum of ten (10) years of experience conducting research related to geoscience, carbon dioxide (CO ₂) storage and enhanced oil recovery in tight or unconventional resources, demonstrated by providing a minimum of ten (10)* scientific publications. *Within the last twenty (20) years from the date of bid solicitation closing on page #1 of the RFP.	 ≥19 - 20 years of experience -20 pts ≥18 - 19 years of experience -18 pts ≥17 - 18 years of experience -16 pts ≥16 - 17 years of experience -14 pts ≥15 - 16 years of experience -12 pts ≥14 - 15 years of experience -10 pts ≥13 - 14 years of experience -8 pts ≥ 12 - 13 years of experience -6 pts ≥ 11 - 12 years of experience -4 pts 10+ years of experience -2 pts 	20	



ltem	Rated Requirements	Points Breakdown	Max Points	Cross reference to Resume and/or Proposal Page #
R2	 The Bidder's research facility should offer the following capabilities*: Multiscale imaging capability Core plug preparation and treatment tools Analyzing digital rock data using data processing methods (for example: pore network extraction) *Demonstrated by providing a copy** of published research findings, which was completed using the Bidder's testing facility OR providing a detailed description (including model of instrument) of the Bidder's research facility capabilities. 	 **NRCan reserves the right to not evaluate more than one (1) copy of the published research findings OR detailed description (including model of instrument) of the Bidder's research facility capabilities. In the event more than one (1) copy is submitted, NRCan will evaluate based on the order presented in the proposal. A maximum of thirty (30) points will be awarded. Addresses multiscale imaging capability – 10 pts Addresses core preparation and treatment facility – 10 pts Addresses analyzing digital rock data using data processing methods (for example: pore network extraction) - 10 pts 	30	
R3	The Bidder's proposed resource should possess a research background in digital rock studies , demonstrated by providing a copy of published peer reviewed journal articles within the technical proposal.	Bidder's proposed resource possesses a research background in digital rock studies – 10 pts Bidder's proposed resource does not possess a research background in digital rock studies – 0 pt	10	
Total Points Available:				



APPENDIX "#2" – FINANCIAL PROPOSAL FORM

Limitation of Expenditure – Firm per diem Rate

The all-inclusive firm **per diem** rate for the completion of this project is in Canadian funds and does not include applicable taxes

Initial Contract Period: Date of Contract Award – March 31, 2022

А	В	С	D (BxC)
Proposed resource	Firm Daily Rate Rate **	Estimated Level of Effort (number of days) *	Total Amount
Tasks #1-4 of the Statement of Work (SOW)	\$	44 days	\$
	\$		
	(Taxes Excluded)		

*Level of effort presented herein is used for evaluation purposes only and it is not a commitment by Canada.

**For any errors in the calculation, the <u>per diem</u> rate schedule will be upheld.

Any estimated level of effort specified in the Pricing Details detailed above is provided for financial proposal evaluation purposes only. It is only an approximation of the requirements and is not to be considered as a contract guarantee nor as a commitment by NRCan to respect those estimated in any resulting contract.



Option Period #1: April 1, 2022 – March 31, 2023

Α	В	С	D (BxC)
Proposed resource	Firm Daily Rate Rate **	Estimated Level of Effort (number of days) *	Total Amount
Tasks #1-4 of the Statement of Work (SOW)	\$	44 days	\$
	\$		
			(Taxes Excluded)

*Level of effort presented herein is used for evaluation purposes only and it is not a commitment by Canada.

**For any errors in the calculation, the <u>per diem</u> rate schedule will be upheld.

Any estimated level of effort specified in the Pricing Details detailed above is provided for financial proposal evaluation purposes only. It is only an approximation of the requirements and is not to be considered as a contract guarantee nor as a commitment by NRCan to respect those estimated in any resulting contract.

Option Period #2: April 1, 2023 – March 31, 2024

А	В	С	D (BxC)
Proposed resource	Firm Daily Rate Rate **	Estimated Level of Effort (number of days) *	Total Amount
Tasks #1-4 of the Statement of Work (SOW)	\$	44 days	\$
	\$		
	(Taxes Excluded)		

*Level of effort presented herein is used for evaluation purposes only and it is not a commitment by Canada.

**For any errors in the calculation, the <u>per diem</u> rate schedule will be upheld.

Any estimated level of effort specified in the Pricing Details detailed above is provided for financial proposal evaluation purposes only. It is only an approximation of the requirements and is not to be considered as a contract guarantee nor as a commitment by NRCan to respect those estimated in any resulting contract.