



REQUEST FOR PROPOSALS (“RFP”)

Project **Search Project Phase III
Airborne Magnetic and Radiometric Survey**

Date Issued: **Monday, May 1st, 2017**

**Submission
Deadline:** **12:00 noon Pacific Time
Monday, May 15th, 2017 (the “Submission Deadline”)**

Enquiries: **Christa Pellett, Geoscience BC Project Manager
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(the “RFP Process Manager”)**

THE ORGANIZATION

Geoscience BC is an independent, non-profit organization that generates earth science information in partnership with First Nations, local communities, governments, academia and the resource sector. This vital information is made available to the public to encourage investment in sustainable resource projects and support informed resource management decisions for the benefit of all British Columbians. We gratefully acknowledge the financial support of the province of British Columbia.

INTRODUCTION

The Search Project, launched in 2015, is designed to stimulate new mineral exploration activity and to enhance the success of existing exploration activities in central British Columbia. This project has been designed to develop a better understanding of mineral potential by collecting new geophysical and geochemical data, and integrating the results into new geoscience products.

Geoscience BC is seeking a qualified contractor to undertake a helicopter-borne airborne magnetic and radiometric geophysical survey over the Search Phase III Project area (the “Project”). The Project will be located in a relatively remote region of northcentral and northeastern British Columbia and cover approximately 9600 km². Data acquisition and processing of data is to be completed in 2017.

Geoscience BC encourages contractors to explore the use of local services when developing a proposal.

CONFIRMATION OF INTEREST

Interested parties (each a “Proponent”) who intend to submit a Proposal in response to this RFP shall confirm their intention and provide a single point of contact, phone number, fax number and e-mail address to the RFP Process Manager at Geoscience BC.

Proponents that indicate this interest will be provided with shapefiles of the Project boundary.

PROJECT SPECIFICATIONS AND DETAILS

Proponents providing a response to the RFP may propose alterations to these specifications taking into account Geoscience BC’s objective to acquire high quality aeromagnetic and radiometric data. These will be considered on their merits.

The selected Proponent to deliver the services outlined in this RFP (the “Principle Proponent”) shall provide all of the necessary facilities, equipment, backup equipment, materials, competent and experienced personnel and supervisory and administrative support to complete the Project.

Airborne Data Acquisition Specifications:

The data acquisition specifications are:

- (a) The survey shall acquire magnetic data and radiometric data. Horizontal gradient magnetic data is desirable and should be included in the proposal if available.
- (b) The collection of high quality magnetic data is the focus of this Project: the collection of

radiometric data should not dictate flight scheduling, altitudes or flight paths.

- (c) The survey location is available as ESRI Shapefiles that will be made available to Proponents who confirm their interest in providing a Proposal.
- (d) Flight line spacing shall be 250 m with flight lines oriented 55° on a UTM-based grid. Tie lines will be flown perpendicular to flight lines at an average spacing of 2500 m and be designed to maximize the usefulness of tie points.
- (e) Flight lines shall not deviate from the planned flight line by more than 50 m over a distance of 1500 m.
- (f) The desired ground clearance is 80 m.
- (g) Altitude during survey operations will be controlled within 15 m, providing tie-line fits of less than 30 m.
- (h) Any tie-line with more than 10% of the tie-line intersections not meeting this specification must be reflown.
- (i) The Proponent should optimize any drape surface proposed and recognize that cost is one parameter that is considered in the award of a contract.
- (j) The Proponent may propose a constant elevation survey and recognize that cost is one parameter that is considered in the award of a contract.
- (k) The magnetic data will be delivered as 10 samples per second. A noise envelope of 0.1 nanoteslas is required.
- (l) Multiple base station magnetic recorders shall be operated within the survey area to provide a magnetic storm record and data for diurnal correction. The number of stations and their location will be determined the Principle Proponent. Survey operations must be restricted to periods of low geomagnetic activity. Using the method of chords on the geomagnetic base station record, the non-linearity of the diurnal activity over any five-minute period shall not exceed 10 nanoteslas. The base stations will be located in a suitable location away from sources of local magnetic interference.
- (m) All coordinates will be delivered as latitude and longitude, and as UTM eastings and northings in the NAD83 datum (for both zones 9 and 10).
- (n) Daily progress reports briefly summarizing progress and any acquisition problems or delays.
- (o) Weekly updates that incorporate the Principle Proponent's QA/QC procedures in an accessible format of:
 - a. Line kilometers flown,
 - b. Flight line paths completed (ESRI format),
 - c. Weather and magnetic diurnal variation/magnetic storm events,
 - d. Data quality issues or out of specification issues (such as deviation for safety reasons) will be summarized,
 - e. Preliminary data
- (p) Backup equipment must be readily available with adequate spares on site and at the

company's home office. Replacement of major equipment, not on site, must be completed within 3 days.

- (q) Pre-survey tests such as lag, compensation, radar and barometric altimeters will be delivered to Geoscience BC upon completion.

Safety, Environmental, and Community Requirements

- (a) The Principle Proponent shall provide an acceptable safety plan to Geoscience BC prior to the start of the Project.
- (b) The Principle Proponent may be asked to schedule or alter flight activities to lessen impact in sensitive wildlife habitat areas or legal entry hunting activities.
- (c) The Principle Proponent may be asked to participate with Geoscience BC on outreach and engagement activities in local communities in the vicinity of the Project.
- (d) The Principle Proponent shall strive to utilize local services where possible.

Data Processing Specifications and Project Deliverables:

The Principle Proponent shall deliver a final logistics and processing report with accompanying maps and digital data that includes:

- (a) Two (2) print copies and a digital copy in PDF format of a report that includes:
 - (i) A report number supplied by Geoscience BC;
 - (ii) The name and location of the survey;
 - (iii) The name and address of the Principle Proponent, the phone and fax numbers of the company and the date of the survey;
 - (iv) A list of contents;
 - (v) Information on processing strategy, testing and selection of final processing parameters.
 - a. Details of individual processing steps applied;
 - b. A summary of specific problems encountered during processing and solutions developed.
 - c. All corrections applied during the data reduction period with documentation and the data provided in a manner such that each correction can be examined and removed if desired by future users of the data. For example, data corrections may comprise aircraft heading corrections, position lag corrections, adjustments for vertical sensor position, diurnal corrections, tie line corrections, micro-levelling corrections and IGRF removal. These will be individually documented in the digital data base supplied as a final deliverable. A current IGRF model shall be used and documented.
- (b) Survey data will be provided as both a digital Geosoft database (*.GDB) and ASCII format archive (*.XYZ).
 - Magnetic Data (GDB and XYZ)
 - Radiometric Data (GDB and XYZ)
 - Flight line path delivered at ESRI Shapefile

The data processing flow from raw to final data will be documented and delivered in separate database channels. The data delivery must include a fully processed magnetic data channel (just prior to any control line levelling) that is suitable for 3D magnetic inversions.

(c) Image and Grid files in Geosoft grid (.grd), Portable Network Graphics (.png), and Georeferenced images (.tiff) formats (using a naming format to be provided by Geoscience BC) for the following parameters:

<u>Data Type</u>	<u>Parameter</u>
Magnetic Data	Total Magnetic Intensity (TMI)
	Residual Magnetic Intensity (RMI)
	First Vertical Derivative
	Analytic Signal of RMI
	Horizontal Magnetic Gradient (if available)
	Gradient Enhanced Products if gradients available
	Reduced to Pole of Residual Magnetic Intensity
	Tilt Angle of Reduced to Pole of Residual Magnetic Intensity
	Residual Magnetic Intensity levelled to GSC data
Base Mapping	Processed Digital Elevation Model
Radiometric Data	Natural Air Absorbed Dose Rate
	Corrected Total Counts
	Corrected Potassium Concentration
	Corrected Uranium Concentration
	Corrected Thorium Concentration
	Equivalent Uranium/Equivalent Thorium ratio
	Equivalent Uranium/Potassium ratio
	Equivalent Thorium/Potassium ratio

(d) Digital (.pdf) and (2) copies of paper maps at a regional scale where the survey is displayed on single sheet (e.g. 1:500,000) in a template/style to be approved by Geoscience BC for the following parameters:

- Residual Magnetic Field
- First Vertical Derivative

- Air Absorbed Dose Rate
 - Ternary image of K-eTh-eU radioelements
 - Digital Elevation Model
- (e) Digital maps (e.g. .pdf format) at a scale suitable for project-level interpretations (e.g. 1:100,000) in a template/style to be approved by Geoscience BC for the following parameters:
- Residual Magnetic Field
 - First Vertical Derivative
 - Air Absorbed Dose Rate
 - Ternary image of K-eTh-eU radioelements
 - Digital Elevation Model

Deadline for Final Deliverables

Final processed data and reports must be delivered to Geoscience BC by December 1st, 2017. A penalty may be assessed for late delivery of the final deliverables where no external factors contributed to the delay.

CONTENT OF PROPOSAL

Proposals should contain the following information:

- (a) A summary of the Proponent's relevant past project work, including any previous projects completed for Geoscience BC.
- (b) A timeline for the Project, including an undertaking to start the Project in a timely manner.
- (c) A specification of the airborne system to be used, including the aircraft, system geometry, compensation system and equipment specifications. The most recent magnetic compensation test for the proposed aircraft will be included.
- (d) For radiometric data acquisition, preliminary calibration numbers for the system indicating the sensitivity of the system at different altitudes should be supplied. A formal calibration is not required at this stage.
- (e) The operational specifications of the aircraft proposed, including rate of climb, and airspeed.
- (f) A summary of pilot experience, including the number of hours a pilot has flying geophysical surveys in low-level mountainous terrain.
- (g) A digital copy of the drape surface (in Geosoft grid format) proposed to be flown, and a histogram of the expected ground clearances over the survey area. Note that different drape options may be proposed, taking into account that a more aggressive drape may provide more useful data, but may incur higher costs.
- (h) Supporting information and rationale if a constant elevation survey is proposed.
- (i) A specification of the data processing methodology to be used. The data processing flow from raw to final data will be documented in separate database channels. A list of proposed database channels will be provided.
- (j) An all-inclusive price for the survey in Canadian dollars including all mobilization,

logistical support and aircraft costs, and including the final presentation of the data in maps and digital formats.

- (k) An all-inclusive price per line kilometer in Canadian dollars to fly additional line kilometers. The Principle Proponent will be obliged to fly additional line kilometers up to an additional 25% of the total contracted line kilometers if Geoscience BC should desire to do so. Further increases in the size of the survey will be by mutual agreement.
- (l) In the event of delays due to weather, a standby cost may be proposed after 45 days of standby. Then once a standby charge has been incurred, Geoscience BC may terminate the contract pro-rata.
- (m) Project initiation and completion timelines
- (n) A commitment to work with local businesses/services in/near the project area.

The submission of standard business development or promotional materials published corporate profiles, annual reports, standard marketing or sales brochures and other like materials is discouraged.

Each Proponent is solely responsible for conducting their own independent research, due diligence, and any other work or investigation, and seeking any independent advice necessary for the preparation of the Proposal. Nothing in this RFP is intended to relieve the Proponents from forming their own opinions and conclusions with respect to the matters addressed in this RFP.

SUBMISSION OF PROPOSALS

Proposals will be accepted in the form of an electronic submission in PDF format to RFP Process Manager. Proposals will not be returned and will be kept confidential.

REQUESTS FOR FURTHER INFORMATION AND ENQUIRIES

Requests for further information, clarification or for any other purpose related to this RFP throughout the solicitation period shall:

- (a) Be directed in writing only, by email, to the RFP Process Manager
- (b) Be made at least two (2) working days prior to the Submission Deadline
- (c) Not contact or attempt to contact any Geoscience BC officer, employee, subcontractor, agent, representative, consultant or volunteer with respect to this RFP, other than the RFP Process Manager
- (d) Not contact or attempt to contact any other prospective Proponent except for the purpose of discussing the possibility of submitting a Proposal as a Joint Venture.
- (e) Be summarized and shared with all Proponents where answers to enquiries are relevant to the submission of the proposals and in the interest of ensuring equality of information among Proponents

RFP CLOSING DATE AND TIME EXTENSION OF THE SUBMISSION DEADLINE

Proposals will be accepted by the time and date indicated on page 1 of this RFP document. Original proposals submitted after the deadline will not be accepted. Each Proponent shall be responsible for the timely delivery of its original proposal. All components of a proposal must be received by the Submission Deadline.

A Proponent request for a time extension to the RFP Submission Deadline WILL NOT be considered as a result of enquiries received within two (2) working days of the Submission Deadline.

Geoscience BC may extend the Submission Deadline by issuing an Addendum prior to the Submission Deadline. Proponents who have confirmed their intention to submit a Proposal will be advised directly of any extension to the Submission Deadline.

VALIDITY OF PROPOSAL

Any cost estimates associated with the proposals must remain valid for acceptance for a period of not less than ninety (90) days after the Submission Deadline of the RFP. After the RFP closing date, no amendments to the proposal will be accepted. However, during the evaluation Geoscience BC may require clarification from or conduct interviews with the Proponents.

AMENDMENT OF PROPOSAL

A Proponent may amend its Proposal prior to the Submission Deadline by withdrawing its original Proposal and submitting a revised Proposal.

Geoscience BC may, in its sole discretion, seek clarification of any matter in a Proposal in any manner it considers appropriate including investigating the abilities and experience of a Proponent, seeking information from other parties about a Proponent, requiring Proponents to submit supplementary documentation and seeking a Proponent's acknowledgement of Geoscience BC's interpretation of the Proponent's Proposal.

APPLICABLE LAWS

Any contracts subsequently negotiated and awarded with respect to this RFP shall be interpreted and governed, and the relations between the Parties determined, by the laws in force in the province of British Columbia and the parties attorn to the jurisdiction of the British Columbia courts.

RIGHTS OF GEOSCIENCE BC

Geoscience BC reserves the right to:

- (a) Reject any or all proposals received in response to this RFP
- (b) Enter into negotiations with one or more Bidders on any or all aspects of its proposal;
- (c) Accept any proposal in whole or in part;
- (d) Cancel and/or reissue this requirement at any time;

- (e) Award one or more contracts;
- (f) Verify any or all information provided with respect to this requirement;
- (g) Award contracts without competition for follow-on-work if any, to the successful Proponent for this requirement;
- (h) Reduce or increase the overall RFP scope by up to 25%.

INFORMATION PROVIDED BY GEOSCIENCE BC

No representation or warranty, expressed or implied, is made and no responsibility of any kind is accepted by Geoscience BC, or its advisors, employees, consultants or agents, for the completeness or accuracy of any information contained in the RFP Documents or that is provided during the RFP process or contract negotiation process, or under a contract that may be entered into, if any.

CHANGES TO THE RFP DOCUMENTS

Geoscience BC may, prior to the Submission Deadline, without liability, cost or penalty, alter the Submission Deadline and amend or supplement the RFP Documents by Addenda only. No other communications of any kind whatsoever will modify the RFP Documents.

COSTS OF PROPOSAL

The Proponent shall bear all costs and expenses with respect to the preparation and submission of its Proposal and any other activity pertaining to its Proposal, including its participation in the RFP process and contract negotiation, if any. Geoscience BC shall not be liable to pay any such costs/expenses regardless of the conduct or the outcome of the RFP process.

CONFIDENTIALITY

Geoscience BC and its partners will take all reasonable precautions to maintain the confidentiality of the information submitted by the Proponents, subject to any disclosure required by law. Geoscience BC reserves the right, however, to disclose the Proposal to employees, servants, agents, advisors and consultants of Geoscience BC and its partners and affiliates for the purpose of assisting Geoscience BC in evaluating the Proposal. The employees, servants, agents, advisors and consultants of Geoscience BC and its partners and affiliates will not be liable for any damages resulting from any disclosure before, during or after the issuance of this RFP and the submission of a Proposal.

Proponents will take all reasonable precautions to maintain the confidentiality of any information provided by Geoscience BC, subject to any disclosure required by law. Proponents reserve the right, however, to disclose the Proposal to employees, the servants, agents, advisors and consultants of the Proponent and its affiliates for the purpose of assisting the Proponent in preparing the Proposal.

NO PUBLIC STATEMENTS

Recipients of and Proponents to this RFP shall not issue any public statement or news release pertaining to this RFP without the prior written consent of Geoscience BC.

ABSENCE OF CONTRACTUAL OBLIGATIONS DURING RFP PROCESS

Geoscience BC shall have no obligation to enter into a contract with a Proponent in respect of the provision of Services that are the subject of this RFP. Geoscience BC shall only have obligations to a Proponent if it decides to execute a written agreement with a Proponent and such obligations shall be in accordance with the terms and conditions of that agreement as finalized between Geoscience BC and the Proponent.

Geoscience BC may, in its sole discretion, for any reason and at any time, take any action in respect of the Proposals it receives including:

- (a) Entering into further discussions or clarification meetings with one or more of the Proponents;
- (b) Entering into any contract or contract negotiations with one or more of the Proponents;
- (c) Inviting any of the Proponents to participate in another competitive process to carry out the Services;
- (d) Requesting one or more of the Proponents to supplement and resubmit their Proposal;
- (e) Accepting or rejecting any Proposal;
- (f) Annulling this RFP process and rejecting all Proposals; or
- (g) Annulling this RFP process and commencing a new process;

at any time without incurring any liability to any Proponent and without any obligation to inform Proponents of the reasons for Geoscience BC's actions. Nothing in this subsection or elsewhere in the RFP Documents shall impact or affect the validity of (a) and (b).

METHOD OF SELECTION

Geoscience BC shall, in its sole discretion, use any evaluation criteria (whether subjective or objective), it deems suitable to evaluate the Proposals. In the event that Geoscience BC selects a Proponent for the provision of the Services, Geoscience BC will notify each Proponent in writing, and Geoscience BC's method of selecting the Proponents will remain confidential to Geoscience BC.

AGREEMENTS

Geoscience BC will confirm the business arrangement in the form of a Geoscience BC Project Agreement or contract provided by the Principle Proponent to be drafted after selection of the successful Proponent(s).