Statement of Work

Jan 07, 2021

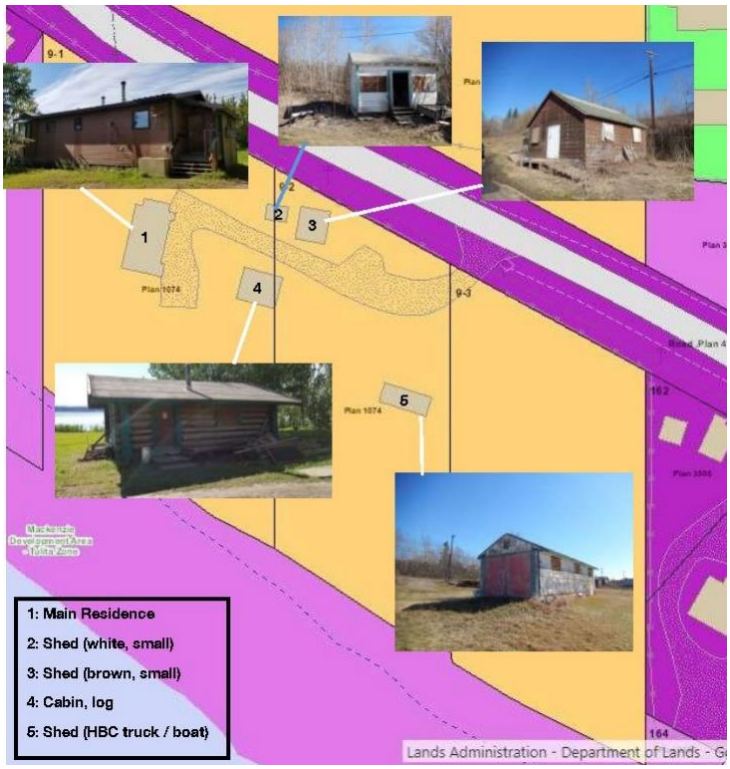
1. INTRODUCTION

Parks Canada Agency (PCA) is initiating work to conduct a Phase II Environmental Site Assessment (ESA), Preliminary Quantitative Risk Assessment (PQRA) Hazardous Building Materials Assessment (HBMA), and Geotechnical Investigation Assessment (GIA), of a developed parcel of land in Tulita, Northwest Territories.

This Statement of Work / Terms of Reference (TOR) is being issued notwithstanding these uncertain times and constantly changing circumstances regarding conducting work and maintaining worker and public health and safety during the COVID-19 pandemic. As you develop your methodology in response to this TOR please consider how local and regional health authority restrictions associated with COVID-19 will affect project delivery as at the time of preparation. The activities included in this TOR are categorized as Type 1 Tasks (Review of Background information and Work Plan) and Type 2 Tasks (Completing the on-site fieldwork), based on whether the tasks could be impacted by current or future COVID-19 travel and/or work restrictions. Separate cost estimates and schedules are required for both task types, as described below. Please also ensure that your cost estimate includes a separate line(s) for COVID-19 related costs, if required, such as additional personal protective equipment (PPE) and social distancing control measures. It is PCA's intention to undertake the following work; however, it is possible that modifications to scope or timelines may be necessary as a result of COVID-19 implications.

1.1 Background Information

The Site consists of three lots with the assigned municipal addresses as 30 and 30A Bear Rock Drive in Tulita, Northwest Territories. The Site, having an area of approximately 1.09 hectares, is bordered by Bear Rock Drive to the north and the Mackenzie River to the south. The property was privately owned and is developed with a main residence and four out buildings.



Building #1 - The main residence is a one-story structure of wood construction with metal-clad roofing. The residence is heated by radiant heater fueled by heating oil and was constructed between 1987 and 1993. Power for the Site is provided via pole-mounted transmission lines located on the north side of the Site. The residence utilizes a cistern for water and septic tank for wastewater.

Two shops are located on Site, one larger approximately 6 metre (m) by 4 m in size (Building #3) and a smaller approximately 4 m by 3 m in size (Building #2). Both are of wood construction with peaked rooves. No heating or water is provided to these structures. A cabin style structure of wood construction (Building #4) with a peaked roof is located near the main residence. The cabin is serviced with power, water and radiant heat. A storage shed (Building #5) is also located on the Site approximately 8 m by 3 m in size. The windows on this structure are boarded up, no power or water is provided. The nearest water body is the Mackenzie River located along the south border of the Site.

PCA acquired the Site in September 2020 to serve as a main office for staff. The Site has been used for as both residential and commercial land uses dating back to the early 1900s. The previous landowner owned the property since the 1950s and used the Site primarily for residential purposes. Prior to the 1950s, the Site was operated as the Fort Norman Trading Post. Historical information collected for that time period indicates former structures including a trading post, windmill and blacksmith shop. There is potential that undocumented spills or leaks associated with equipment and/or chemicals and wastes stored or disposed on the Site may have occurred during this time period.

In December 2019, a Phase I ESA was completed for the site which identified a number of potential environmental concerns pertaining to historical land use; aboveground fuel storage tanks (AST), lead containing paints (LCP) and asbestos-containing materials (ACM). However, the findings outlined in this report were limited by snow coverage and lack of access to building interiors during site inspection. Despite these data gaps, the report concluded that further investigation was not warranted. In an effort to close data gaps and provide a better estimate of the extent of environmental liability, PCA undertook a preliminary investigation to assess the area around the ASTs and hazardous building materials that were identified for the site. The findings of these investigations identified the presence of lead paint on the storage shed and F2 petroleum hydrocarbon (PHC) impacts in the surface soil in the vicinity of the former AST. The results of these preliminary investigations were compiled with information from the Phase I ESA in a screening level review report which concluded that the Site comprised medium environmental risk and a Phase II ESA was recommended in order to further assess the extent of contamination at the Site.

Previous investigations conducted at the Site in Tulita, NWT, are summarized in the following reports:

- Phase I Environmental Site Assessment, 30 and 30A Bear Rock Drive, Tulita, Northwest Territories. Prepared by Wood Environment & Infrastructure Solutions. Report dated December 2019.
- Screening Level Review: 30 and 30a Bear Rock Drive, Tulita, Northwest Territories. Information collected by Parks Canada, Asset Management and Project Delivery, Environmental Management Services and analyzed by ALS Global. Final Report dated July 2020.

The above reports will be provided to the Contractor following award of Contract.

This structures on site are subject to Federal Heritage Buildings Review Office (FHBRO) review currently underway. The Contractor should be aware of the potential FHBRO designations, and be prepared to meet the FHBRO requirements. The Contractor should highlight in their Work Plan, and carry their onsite work with care and not to disturb existing site nor structure components unnecessarily.

If the parcel of land had heritage value it would be as a place of historic importance or as a cultural landscape as determined by PCA. Currently it is in the process of assessing to confirm if there is specific cultural significance for the community and residents of Tulita. The Contractor should highlight in their

Work Plan, and carry their onsite work with care and not to disturb existing site nor structure components unnecessarily.

The Contractor should note that the report may not contain complete document/record reviews and/or complete information. PCA has provided all pertinent documentation when available, but makes no guarantee regarding the status or quality of background documentation.

2. OBJECTIVES

The objective of this work is to improve understanding of the extent of potential impacts to existing structures, soil and groundwater and to evaluate the need for a Remediation/Risk Management (R/RM) plan.

2.1 Work Objectives

The work is for the 4 Areas of Service: Phase II ESA, PQRA, HBMA, and GIA which includes:

- Conduct a Phase II ESA to identify and further delineate contaminants of concern (COCs) in all potentially impacted media.
- Conduct a preliminary quantitative risk assessment for human and ecological receptors if exceedances of applicable guidelines are observed.
- Conduct a Hazardous Building Material Assessment for all structures on Site and also a building off site, and located on 28 MacKenzie Drive, Tulita.
- Weekly updates by e-mail to the PCA Project Manager. Daily updates are required while the field work is being conducted.
- Submit a sampling work plan for review and approval of PCA before going on site.
- Submit a Health and Safety Plan a minimum of one week before going on site.
- Determine contaminant types and concentrations on the property.
- A determination of whether natural habitat suitable for Species at Risk (SAR) exists on or immediately adjacent to the site; and if suitable natural habitat exists, a list of SAR (listed under Schedule 1 of SARA) whose habitat preferences match the current biophysical conditions of the subject site (see additional details in Appendix B).
- Locate all sample locations using GPS at a minimum. Provide GPS accuracy in the report.
- Compare measured concentrations of contaminants with local or regional background concentrations, as well as with applicable guidelines/criteria. Background samples shall be collected within the Site boundaries if possible. The selection of "representative" background locations must be technically defensible and explicitly rationalized by the Contractor in the work plan and assessment report.
- Delineate the spatial extent of contamination on the property in all media and calculate volumes of impacted media.
- Determine the physical, biological and chemical properties of the soil.
- Characterize the subsurface geology of the site.
- Determine whether contamination has migrated.
- Identify site characteristics, which may accelerate and/or impede the migration of the contamination, if present.
- Provide recommendations including the options of no further work or that additional assessment (Phase III ESA, R/RM) is required.
- Calculate the liability associated with the future required work. A cost estimate letter report should be provided under a separate cover.
- Prepare a PQRA report including the finalized problem formulation and recommendations for follow-up work that may include remediation and/or a risk management plan based on the Risk Assessment (RA) outcomes. A minimum of three options shall be presented with the preferred

option presented in the plan. Cost estimates to complete the three options shall be submitted under separate cover. These cost estimates form the Government of Canada liability.

- Prepare a Phase II ESA report which details the subsurface investigation activities, findings and recommendations.
- Complete a HBMA report as an appendix to the Phase II ESA. Tabular format that contains quantities, locations, condition, substrate, and any other pertinent information, including figures and/or drawings, would suffice.

3. SCOPE OF WORK

3.1 Document Review

Upon award of the contract, the Contractor shall review pertinent documentation related to the site and complete the document review process to determine if discrepancies and/or gaps in the site history and information are found. These shall be reported to the PCA Project Manager and detailed in the submitted reports.

3.2 Proposed Work Plan & Project Cost Breakdown

Upon contract award and prior to the Contractor performing sampling and analysis activities, the PCA Project Manager must review and approve the Work Plan (WP) submitted as a component of the Contractor's Proposal, changes to the proposed work plan may be request by PCA Project Manager.

The Contractor shall develop an appropriate work plan and sampling/analysis program based on:

i) Types and concentrations of known/potential contaminants;
ii) Probable sources of contamination;
iii) Location of water resources;
iv) Proximity of environmental sensitivities, receptors and identified exposure pathways; and
v) Known topographical, geological and hydrogeological information about the site.

The sampling and analysis program shall include as a minimum:

i) Equipment, instrumentation, company to be used including utility locates;
ii) A work/travel schedule including major milestones and project completion date (i.e., final report submission);
iii) Sampling/monitoring procedures and methodologies for soil;
iv) Sample storage, transportation, and chain of custody protocols;
v) The laboratory selected to conduct analyses of all samples. The selected laboratory must be certified by the Canadian Association for Laboratory Accreditation (CALA). The proposed laboratory program in the WP will include verification that the selected analytical methods will have minimum detection limits that are less than the applicable environmental quality guideline or standard on which the numerical comparison will be based. A list of chemical species to be examined, detection limits, and QA/QC procedures shall be included.
vi) The Contractor shall include in their WP the provision for batch duplicates, field blanks, travel blanks and reference samples at appropriate intervals; and
vii) Plans for handling any investigation derived waste including site clean-up and disposal of any waste materials.

The Phase II ESA shall be conducted in accordance with CCME, Health Canada, Environment and Climate Change Canada and Fisheries and Oceans Canada guidance and the CSA Standards Z768 and Z769-00 for Phase I and Phase II Environmental Site Assessments (R2008 2016 and 2013 respectively).

The Contractor is responsible for completing all utility locates, including private locates, prior to any intrusive investigations on the property in order to avoid damage to any utility including at a minimum all electrical, phone, cable, water/storm/sewer, heating/cooling supply lines, gas and any other underground and/or aboveground utility. Copies of utility plans collected shall be included in the appendices of the report for future reference. The name of the utility locate company shall be provided in the report.

The Contractor is responsible for repairing all damaged surfaces (for example: grass, asphalt, concrete, foundations, gravel roads) arising from the site investigation activities. If the work has the potential to damage other site features, such as fences, trees, bollards and other infrastructure, prior approval is required from the PCA Project Manager in order to proceed with the investigation activities and to ensure that appropriate remedial/mitigation measures will have been established. No vegetation shall be removed from the investigation area without prior approval from the PCA Project Manager. Disturbance to the project area shall be minimized to the greatest extent possible.

The Contractor is responsible for the disposal of all waste generated during the assessment.

3.2.1 The Consultant will prepare a cost breakdown and timetable outlining the relevant cost and associated fees for completion of the work as per firm prices at Annex B of the Contract.

- Total cost estimate for completing the Phase II ESA divided into tasks
  - Cost estimate for all travel disbursements.
  - Cost estimate for all other disbursements
- Total cost estimate for completing the Preliminary Quantitative Risk Assessment divided into tasks
  - Cost estimate for all travel disbursements.
  - Cost estimate for all other disbursements
- Total cost estimate for completing the Hazardous Building Materials Assessment divided into tasks
  - Cost estimate for all travel disbursements.
  - Cost estimate for all other disbursements
- Total cost estimate for completing the Geotechnical Investigation Assessment divided into tasks
  - Cost estimate for all travel disbursements.
  - Cost estimate for all other disbursements

Any deviations from the Scope of Work outlined in the WP or impacts to costs shall be immediately communicated to the PCA Project Manager. Additional work cannot proceed until approval has been granted by the PCA Project Manager. Any changes to the Contract must be authorized in writing by the Contracting Authority.

3.3 Phase II ESA Data Interpretation

Based on the field investigation the Contractor shall:

i) determine the volume of contaminated soil on the site (e.g., plume delineation);
ii) determine the likelihood of Contaminants of Concern impacting adjacent properties;
iii) determine the rate and direction of contaminant migration based on the subsurface geology/hydrogeology and the physical and chemical properties of the soil and/or groundwater (if applicable);
iv) indicate whether the biological, physical and chemical properties of the soil are contributing to the degradation of any contaminants in-situ;
v) calculate the liability; and
vi) interpret the results and provide recommendations including R/RM option analysis, if required.

3.4 Preliminary Quantitative Risk Assessment

A human health Risk Assessment (RA) will be conducted in compliance with the most recent Health Canada guidance. An ecological RA will be conducted in compliance with the most recent Environment and Climate Change (ECCC) guidance. The first step of the risk assessment will be the preparation and submission of the problem formulation for the human health and ecological components including as a minimum: description of the conceptual model, identification of receptors/valued ecosystem components, assessment endpoints and measured endpoints. In addition to the preceding elements, the problem formulation will also address:

1. Statistics to be used as point estimates of contaminant concentrations in the various media;
2. The fate and transport models used to predict concentrations in exposure media not directly assessed;
3. Criteria to be used to screen contaminants of potential concern;
4. Suitability of default soil ingestion and dermal soil loading rates;
5. How short term or intermittent receptor exposure will be amortized;
6. Hazard quotients (HQ) and/or incremental lifetime cancer risks (ILCR) with justification;
7. How background and off-site exposure affects the assessment;
8. Presence of rare or threatened species and their effect on the RA approach;
9. The implications of habitat suitability and home/forage range in the exposure assessment for ecological receptors; and
10. Identification and justification of wildlife toxicity reference values including techniques for inter-species extrapolation.

Upon written approval of the problem formulation by the PCA Project Manager, the Contractor will complete the RA in accordance with the methods, reporting standards and toxicological reference values outlined in (as a minimum):

- CCME, 1996. A Framework for Ecological Risk Assessment – General Guidance.
- CCME, 1996, Guidance Manual for Developing Site-specific Soil Quality Remediation Objectives for Contaminated Sites in Canada.
- Environment and Climate Change Canada, 2012a. Federal Contaminated Sites Action Plan (FCSAP) Ecological Risk Assessment Guidance.
- Health Canada, 2012. Federal Contaminated Site Risk Assessment in Canada, Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0.
- Health Canada, 2010. Federal Contaminated Site Risk Assessment in Canada Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0.
- Health Canada, 2010. Federal Contaminated Site Risk Assessment in Canada Part III: Guidance on Peer Review of a Human Health Risk Assessment for Federal Contaminated Sites in Canada.
- Health Canada, 2007c (version 1.0). Federal Contaminated Sites Guidance on Human Health Risk Assessment in Canada Part V: Guidance on Complex Human Health Site-Specific Risk Assessment (HHSSRA).
- Including all updated documentation and recently published documentation from HC, CCME, ECCC including all standards and guidelines.

Based upon the findings of the PQRA, the Contractor shall determine the NCSCS score for the Site using the most recent Canadian Council of Ministers of the Environment (CCME) NCSCS scoring sheets. The Tool for Risk Assessment Validation (TRAV) in the FCSAP Site Closure Tool (SCT) is to be completed for the site upon completion of the PQRA.

Based upon the findings of the PQRA and the NCSCS, the Contractor shall provide recommendations (and associated indicative cost estimates) for follow-up work at the site (as required) and/or specify where findings indicate that site remediation is not required. In the event that site remediation is required, a minimum of 3 options (and associated cost estimates) must be provided.

3.5 Hazardous Materials and Designated Substance Survey

The purpose of the survey is to identify Hazardous Materials and Designated Substances through visual observation and bulk sampling. The scope of work will include the following work tasks and services:

1. To conduct an intrusive comprehensive survey of all interior and exterior accessible surfaces of the building. Also to identify, locate and quantify all related Hazardous Materials:
    a. asbestos-containing materials (ACM),
    b. lead-based paint,
    c. chemical storage and handling,
    d. mercury,
    e. silica,
    f. ozone-depleting substances,
    g. radioactive materials,
    h. polychlorinated biphenyls (PCB),
    i. biological hazards, including mould,
    j. rodents droppings,
    k. any additional observation and/or testing identified during the course of the work and pre-authorized by PCA.
2. To bulk sample materials (average 50 samples per building) suspected to contain a hazardous material.
3. To document observations made with regards to Hazardous Materials identified.
4. To prepare a comprehensive report documenting Hazardous Materials identified through observations and analytical findings, and provide recommendations and cost estimates for removal before building decommissioning, or during (alongside) of building decommissioning.

The Contractor shall conduct the assessment in accordance with the current editions of the following:

- Northwest Territories Asbestos Safety Regulation;
- Northwest Territories Guideline for the Management of Waste Asbestos;
- Northwest Territories Guideline for the Management of Waste Lead and Lead Paint; and,
- Guidelines for the General Management of Hazardous Waste in the Northwest Territories.

Note: There is electricity and/or lighting to two of the five buildings on site, but if any specialized lighting is required, it is the responsibility of the Contractor to provide. Sample gathering in dark, cold, wet, unstable and structurally unsafe conditions, with mould and ACM exposed areas may be encountered and present dangerous conditions during the survey.

3.6 Geotechnical Investigation Assessment

The purpose of the Geotechnical Investigation Assessment is to investigate the geotechnical information through visual observation and bulk sampling. The scope of work will include the following work tasks and services:

1. Conduct site investigations to determine proper foundation characteristics for the building as per the following:
    a. Sample the soil conditions either through test pits or drilling to determine soil conditions in the foundation including:
        i. Sieve analysis and soil gradation
        ii. Atterberg limits
        iii. Salinity
        iv. Bearing capacity
        v. Depth of permafrost
        vi. Depth of active zone
    b. Follow the “geotechnical Site Investigation Guidelines for Building Foundations in Permafrost” – Department of Public Works and Services - NWT

3.7 Project Team

Any changes, additions, deletions to the project team identified in the Contractor proposal must be requested of and pre-approved by the PCA Project Manager.

4. SCHEDULING AND REPORTING

4.1 Schedule

The Contractor shall maintain the project schedule that is agreed upon with the PCA Project Manager at the project initiation. The project schedule will adhere to the following milestone completion dates for this project:

Tentative

Contract Award	Week of Feb 1, 2021
Project Initiation/Kick-off Meeting	Week of Feb 8, 2021
Completion of Field Activities	Week of Mar 8, 2021
Submission of Draft Report	Week of Mar 15, 2021
Submission of Final Report	Week of Mar 22, 2021

*Exceptions will be made if the Contractor encounters difficulties arranging for the field work due to COVID-19.

In the case that COVID-19 restrictions are in effect and the Contractor is not permitted to visit the site, “Type 2 Tasks” (related to site visit / field work) will commence within 2 weeks of restrictions being lifted, or within an agreed upon timeframe with PCA. The Contractor’s schedule should indicate potential date(s) for Go/No go decisions for Type 2 Tasks, as applicable.

Regarding the schedule, the Contractor is advised that a two-week period shall be included in the timetable at the end of the draft report submission to allow the PCA Project Manager to review and provide comments on the report, and to discuss any project adjustments. Once comments are received on the draft report, the Contractor must finalize the report and submit the final report within one week.

Note: The final invoice for the project MUST be submitted within two weeks of accepting the final report. This schedule will be strictly adhered to. Any delays must be submitted to the PCA Project Manager in writing for approval immediately.

4.2 Reports

4.2.1 The Phase II ESA report shall include the following:

i) All results and comments related to work completed (i.e., document review, work plan and data analysis);
ii) Summary data tables which compare results of laboratory analyses with applicable guidelines;
iii) Site plans showing exploration locations and/or findings;

iv) An assessment of the chemical data and the potential site risks from residual contamination;
v) Discussion of all QA/QC data;
vi) Detailed sampling methodology;
vii) Borehole/Monitoring well logs;
viii) Original laboratory data and Chain of Custody Forms;
ix) Pictures; and
x) Recommendations including R/RM options (minimum 2 options) and associated indicative costs.

The analytical data shall be compared to all applicable Federal guidelines including:

- Canadian Council of Ministers of the Environment (CCME) Canada Wide Standards for Petroleum Hydrocarbons in Soil (CWS for PHC in Soil)
- CCME Environmental Quality Guidelines (EQG)
- Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites
- HC Canadian Drinking Water Quality Guidelines, and
- Other criteria as requested by the PCA Project Manager.

The Contractor should use their judgment and provide the rationale for criteria selection in the report.

The report shall provide all the documentation, including all references and photographs used to support the findings and conclusions. Applicable federal, provincial, local legislation and published guidelines used as a basis for findings or conclusions shall be referenced.

Note: Costs associated with proposed R/RM options or further site assessment must be provided under separate cover.

4.2.2 The PQRA report shall include the following:

i) Data Gap Analysis letter report.
ii) If data gaps need to be addressed for the integrity of the RA then a Work Plan letter report will be required. PCA Project Manager will review and provide written approval to proceed. Once the field work has been completed, a draft and final report detailing the data gap analysis, Work Plan, and the findings of the field work will be required. The report shall provide documentation that shall include references, original lab results, borehole/monitoring well logs, field notes, photographs, and calculations at a minimum to support the findings and conclusions. Applicable federal, territorial and civic legislation and published guidelines used as a basis for findings or conclusions shall be referenced.
iii) If the results of the field work require, a summary meeting will be held to inform PCA and PCA of required actions based on the field work.
iv) Problem Formulation draft report. If there are issues in the problem formulation, then an issue meeting will be held.
v) Draft and Final Risk Assessment including the finalized problem formulation.
vi) Cost Estimate Letter Report.

4.2.3 The HBMA report shall include the following:

i) introduction,
ii) scope of work,
iii) regulations and guidelines,
iv) methodology,
v) results,
vi) discussion,
vii) conclusion, and

viii) recommendations, including remedial/abatement options (minimum 2 options) and associated indicative costs.
ix) with appendix to provide additional information:
   a. APPENDIX A – Classification, Condition, and Accessibility
   b. APPENDIX B – Laboratory Certificates of Analysis – Asbestos and Lead
   c. APPENDIX C – Floor Plans
   d. APPENDIX D – Room-by-Room Inventory
   e. APPENDIX E – Photographic Log
   f. APPENDIX F – Budget Estimates for remediation

The analytical data shall be compared to all applicable Federal guidelines including:

- Hazard Prevention Program (HPP) that follows Part II - Occupational Health and Safety of the Canada Labour Code (CLC) CCME Environmental Quality Guidelines (EQG)
- The Canadian Environmental Protection Agency (CEPA), 1999
- Federal Halocarbon Regulations (FHR), 2003,
- NWT Occupational Health and Safety (NWT OH&S), and
- Other criteria as requested by the PCA Project Manager.

The Contractor should use their judgment and provide the rationale for criteria selection in the report.

The report shall provide all the documentation, including all references and photographs used to support the findings and conclusions. Applicable federal, provincial, local legislation and published guidelines used as a basis for findings or conclusions shall be referenced.

4.2.4 Geotechnical Investigation Assessment Report shall include the following:

- Include the soil parameters for the foundation including soil type and expected bearing capacity for the soil in the foundation
- Depth of permafrost under the foundation and the depth of the active zone in the foundation area
- Concerns regarding climate change and prediction of changes to the permafrost level and active zone and potential impacts to the foundation.

4.3 Report Format

The Contractor shall format the Phase II ESA Report, Hazardous Building Materials Assessment, Geotechnical Investigation Assessment, as follows:

1.0 Executive Summary
2.0 Table of Contents
3.0 Introduction
4.0 Background Information
5.0 Regulatory Guidelines
6.0 Investigation Methodology
7.0 Investigation Results
8.0 Discussion
9.0 Conclusion/Recommendations
10.0 Limitations
11.0 References

APPENDICES
- Figures and Site Plans
  Including but not limited to:
  - Location Plan
  - Site Plan

  - Borehole Plan
  - Contaminant Delineation
- Tables
- Site Photographs
- Utility Locates
- Health and Safety Plan
- Safety meeting minutes and sign-in sheets
- NCSCS Scoring Sheets
- Borehole/Monitoring Well Logs
- Laboratory Reports including chromatograms and Chain of Custody
- Hazardous Building Materials Assessment Report
- Other applicable appendices

Additional sections and appendices may be added if necessary.

The comprehensive PQRA report (that builds from the problem formulation) will document the input data, methods, and results of the RA. The report shall include and adequately address the eleven sections recommended by Health Canada in the RA guidance as well as sections on the NCSCS scoring and recommendations for further work (if required and minimum 3 options). The same shall be completed for the ERA. There shall be one report that encompasses both the Human Health and Ecological parts. PCA Project Manager would prefer one section of the report to address the HHRA and another section to address the ERA as follows:

1.0 Executive Summary
2.0 Table of Contents
3.0 Introduction
4.0 Description of property/site, including summary of site investigations and data on contaminant concentrations in environmental media
5.0 Problem formulation (as previously submitted for review)
6.0 Exposure assessment, including worked examples and all supporting data and assumptions (These can be included as appendices.)
7.0 Toxicity assessment, including toxicity summary for each COPC
8.0 Risk characterization
9.0 Uncertainties and data gaps
10.0 CCME NCSC Scoring
11.0 Treasury Board Liability
12.0 Conclusions and discussion
13.0 Recommendations
14.0 References

The appendices for the PQRA report should include site characterization data, HHRA and ERA Calculations, Toxicological Profiles and the Quality Assurance/ Quality Control program for sample collection and analysis.

The Contractor should refer to the various guidance documents and supplemental guidance documents issued by Health Canada, ECCC and CCME for further information and details concerning the expected content of each section of the risk assessment report.

The report must undergo an internal senior technical peer review to ensure all data from the environmental site investigation(s) are correct, appropriate human health-based screening guidelines are used, and calculations are correct. The Health Canada problem formulation checklist (HC, 2012) can be completed as part of the internal peer review. The report should be self-contained, including all data necessary for a reviewer to evaluate the RA.

The report should clearly describe any aspects of the RA that deviate from the referenced protocols and guidance documents, and it should document all assumptions made by the Contractor. Although no further data collection is contemplated at this stage, the report should contain recommendations with respect to further work, such as further data collection if required, more detailed risk assessment and remediation, and/or risk management proposals. In particular, the report should identify any issues representing significant risks to human health that may require immediate mitigation action.

The Contractor shall calculate the Treasury Board liability (indicative costs) for the site. The report shall clearly identify the basis for all findings. Copies of all documents (including worksheets) and findings should be presented within the report appendices.

4.4 Report Submission

The Contractor shall prepare and submit one digital copy of the draft versions of the Phase II ESA, Hazardous Building Materials Assessment, Geotechnical Investigation Assessment, and the PQRA Reports. Two digital copies of the final versions shall be submitted to the PCA Project Manager. Digital copies of the final reports shall include a copy of the report in its entirety (text, tables, photos, drawings, appendices) in an editable .pdf format. Additionally, a copy of the report text in Microsoft Word (.doc), tables in Microsoft Excel (.xls), photographs in jpeg (.jpg), and drawings in AutoCad format must also be provided. USB sticks must be labeled to identify the report title, version (final or draft), date and location (at a minimum).

All Final Reports must be reviewed, signed and sealed by the senior engineer, registered in NWT of the disciplines of the required services.

Note: The draft reports shall be submitted as if they were the final reports. If PCA Project Manager determines that the reports do not meet the objectives outlined in the TOR, the Contractor will be responsible for revising the draft reports until they are satisfactory, with no additional costs incurred.

Note: Justification for any draft report comments that cannot or will not be addressed by the Contractor in the final reports must be provided to PCA Project Manager in writing prior to submission of the final reports.

5. Project COMMUNICATION

The Contractor shall be responsible for preparing minutes of any meetings and providing copies to all participants.

The Contractor's assigned project manager shall be responsible for the scheduled execution of the Contract and coordination with the PCA Project Manager. Changes to the designated project manager may be made only with prior approval from PCA Project Manager. The project manager shall have the experience and capability to be responsible for the overall supervision of work and serve as liaison between the Contractor and the PCA Project Manager for all work required under this contract, unless alternate arrangements are agreed upon by both parties.

Note: The Contractor must not discuss any actual or potential environmental concerns identified at the time of the site visit any member of the public, nor media. Please direct all enquiries to the PCA Project Manager.

6. SPECIAL REQUIREMENTS

Unless provided otherwise in the Contract, the Work or any part of the Work belongs to Canada after delivery and acceptance by or on behalf of Canada.

The Statement of Limitations in the final report shall not contradict Contract General Conditions.

6.1 COVID-19

It is the responsibility of the Contractor to determine how the work outlined in this TOR can be delivered in accordance with the restrictions of the Provincial/Territorial regulator concerning public health emergencies declared within the jurisdiction or any specific restrictions within municipal or provincial jurisdictions.

The proposed scope of work is to be separated into two types of tasks based on whether the tasks could be impacted by current or future COVID-19 restrictions.

- Type 1 Tasks: Work that can be completed without impact from COVID-19 travel and social distancing restrictions (e.g., desktop work such as document reviews, Health & Safety plans, planning & logistics, etc.)

- Type 2 Tasks: Work that could be impacted, delayed or halted by COVID-19 travel and social distancing restrictions (e.g., travel, field work). Note: Please indicate if some/all Type 2 Task risks could be mitigated by using local resources.

Under the circumstances that the Contractor, or PCA deem that the work is not safe to human health or the work is not permitted by other authorities, the Type 2 Tasks may be postponed to a later agreed upon date or cancelled. If Type 2 Tasks cannot be completed before the scheduled contract end date, the contract will be amended to only include work up to the end of Type 1 Tasks.

COVID-19 risks and mitigations (pertaining to employees, contractors and/or the public) must be included within the Health & Safety Plan. It is the responsibility of the Contractor to be aware of the restrictions of the Provincial/Territorial regulator concerning public health emergencies declared within the jurisdiction or any specific restrictions within municipal or provincial jurisdictions.

The Contractor must review PCA's COVID-19 Guidance for Permitting Non-PCA Employees Access to a PCA Facility prior to the site visit. This document will be provided to the Contractor upon award of the contract.

6.2 General

The Contractor shall use the metric system for calculations, drawings, specifications, etc.

6.3 Contractor Services

The Contractor shall perform all work required to accomplish the 4 Areas of Service required: Phase II Environmental Site Assessment, Hazardous Building Materials Assessment, Geotechnical Investigation Assessment, and the Preliminary Quantitative Risk Assessment for this project. All work shall be performed in an environmentally acceptable manner conforming to existing applicable Federal, Provincial/Territory and Municipal regulations and guidelines. The Contractor shall furnish all services, labor, materials, supplies, permits and equipment required to conduct this project.

6.4 Confidentiality

It is understood and agreed that the Contractor shall, during and after the effective period of this contract, treat as confidential and not divulge, unless authorized in writing by the PCA Project Manager, any information obtained in the course of the performance of the ensuing contract. Refer any queries regarding this project from the public, news media or other to the PCA Project Manager.

6.5 Health and Safety

The Contractor shall be responsible for ensuring the health and safety of all personnel at the site. Accordingly, a health and safety plan shall be developed prior to commencing any work at the subject properties and implemented during the field activities. The Contractor shall provide a description of the plan in the project proposal, and provide the PCA Project Manager with the H&S Plan one week prior to mobilizing to the site.

Note – The Health and Safety Plan shall include precautions and mitigations related to the hazard of contracting and spreading COVID-19 disease. It is the responsibility of the Contractor to be aware of and adhere to all Federal, Provincial/Territorial and Municipal health requirements and restrictions pertaining to COVID-19. The Contractor shall update their Health and Safety plans as conditions change.

6.5 Method of Payment

All invoices shall be submitted to the PCA Project Manager on a monthly basis in electronic format. The final invoice shall be submitted within two weeks of submitting the final reports.

The PCA Invoice Summary Sheet (to be provided to the Contractor) shall be provided with all invoices.

6.6 Weather

Weather shall be a key factor in determining when site work will proceed. To avoid impacts to the schedule and/or budget, the Contractor should use all available information to make this determination, and not proceed if the forecast is unfavourable.

6.7 Site Management/Maintenance

The sites shall be maintained in a clean and safe manner during the course of the project. The Contractor shall provide temporary barricades, barriers, warning signs in locations where work is adjacent to areas used by public or government staff.

The Contractor shall ensure that the site is left in a suitable manner to minimize inconvenience, clutter or hazard. Should the Contractor fail to leave the site in a clean and safe condition, the PCA Project Manager shall hire someone to do the necessary work and charge the costs to the Contractor.

The Contractor shall restore the site facilities and landscaping to their original condition at the completion of the site work.

The Contractor will not install or allow to be installed any advertising on the premises.

The Contractor will be responsible for repairing any damage to surfaces, structures, fittings or furnishings, which results from work carried out under this contract. The repairs will be done to the satisfaction of the PCA Property Manager.

The Contractor will remove all waste derived during the assessment in an environmentally acceptable manner conforming to existing applicable Federal, Provincial, and Municipal Acts, Regulations and Guidelines.

6.8 Construction Permits

It will be the responsibility of the Contractor under the scope of the awarded contract, to acquire all necessary permits and permissions needed to complete this project.