

Public Works and Government Services Canada

Specifications for the Environmental Site Remediation

**Aklavik, Northwest Territories –
RCMP Housing Unit - Heating Oil Spill**

Project No.: R.036277.019

Public Works and Government Services Canada

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PART 1 - GENERAL

1.1 Precedence

- .1 Division 1 Sections take precedence over technical specification sections in other Divisions of this specification.

1.2 Background Information

- .1 A heating oil spill occurred from a house within the RCMP housing compound in Aklavik, Northwest Territories. The house is adjacent to the detachment and is building number G037. It is situated approximately 140 metres (m) west/north of Peel Channel.
- .2 The residential home is occupied by the RCMP.
- .3 The surrounding land of the subject property is residential properties within the Hamlet of Aklavik. The material beneath buildings consists of silty, likely local, material, with the house supported by wooden piles installed into the permafrost.
- .4 The topography of the site slopes south-southwest into the back yard of the house affected by the fuel spill. Based on limited testholes and encounter of contaminated groundwater, groundwater flow is expected to also flow towards the south-southwest.
- .5 One reference report is available for review:
 - .1 AECOM 2011. *Remedial Action Plan, Aklavik, Northwest Territories, RCMP Housing Unit – Fuel Spill*. Submitted to Public Works and Government Services Canada.

1.3 Description of Work

- .1 Work of this Contract comprises the site remediation activities at the Aklavik RCMP Detachment including, but not limited to, the following:
 - .1 Preparation of Planning documents and submittals including, but not limited to, Health and Safety Plan (includes On-Site Contingency and Emergency Response Plan, Spill Contingency Plan and Fire Safety Plan).
 - .2 Mobilization and demobilization of all personnel, equipment, support facilities and materials required to complete the Work.
 - .3 Relocate fuel storage tank to a temporary location, re-install tank to original location at completion of remedial work and backfilling.
 - .4 Excavation and containerization of hydrocarbon contaminated soils.
 - .5 Temporary storage as required, transportation and offsite disposal of hydrocarbon contaminated materials.
 - .6 Backfilling and grading of all excavated areas using local borrow material.
 - .7 Import and place topsoil over backfilled areas as well as import and sow grass seed.

- .8 Collection and disposal of onsite wastes, unused materials and waste generated during the completion of the work.

1.4 Potential Additional Work

- .1 The Table "Potential Additional Work" on the "Basis of Payment" form indicates potential additional quantities of unknown work that may or may not be required on-site during the remediation process. None of the quantities and items listed are guaranteed; however, if additional work is required, the rates listed shall be used by the Contractor. Potential Additional Work include but is not limited to:

- .1 Collection, containerization, transport and disposal of unknown contaminated soil.
- .2 Supply of additional materials as directed by Departmental Representative.

1.5 Definitions

- .1 Departmental Representative: Within the context of these Specifications, the term Departmental Representative refers to the person exercising the roles and attributes of Canada under the contract.
- .2 Departmental Representative's Authorized Personnel: Within the context of these Specifications, the term Departmental Representative's Authorized Personnel refers to personnel appointed by Departmental Representative or authorized on-site by Departmental Representative. Departmental Representative's Authorized Personnel provide recommendations/technical guidance to Departmental Representative, as required, for the enforcement of these specifications.
- .3 Contractor: The Contractor procured to undertake the site management and operation services, decontamination/demolition, remediation and restoration work is defined, within the context of these specifications, as the Contractor.
- .4 Contractor's Site Superintendent: Contractor's resident site representative, who is authorized to make decisions on behalf of Contractor.
- .5 Authorities Having Jurisdiction (AHJ): Governmental agency or sub-agency that regulates the codes and standards that are to be met during the remediation processes.

1.6 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.7 On-Site Documents

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Request for clarification and responses.

- .4 Addenda.
- .5 Tasks Authorization.
- .6 Change orders.
- .7 Other modifications to Contract.
- .8 Field test reports.
- .9 Copy of approved Work schedule.
- .10 Copies of any test results.
- .11 Material and Safety Data Sheets Specifications.
- .12 Site Specific Health and Safety Plan (SSHSP) including:
 - i) Spill Contingency Plan.
 - ii) Fire Safety Plan.
 - iii) Emergency Response Plan.
- .13 Environmental Protection Plan.
- .14 Waste disposal Work Plan.
- .15 Copies of permits/approvals and/or authorizations
- .16 Labour conditions and wage schedules.
- .17 All applicable Territorial permits and licenses.
- .18 All applicable Federal permits and licenses.
- .19 Copies of manifests and bills of lading.
- .20 Copies of TDG shipping documents.
- .21 Hazardous Material Audit.
- .22 Workers' Safety and Compensation Commission (WSCC) Notification of Project.
- .23 Letter of Good Standing with WSCC.
- .24 Other documents as specified.
- .25 Environmental Assessment.

1.8 Work Schedule

- .1 Provide and maintain Work Schedule in accordance with instructions of Section 01 32 18 Construction Progress Schedules - Bar (GANNT) Chart.
- .2 Keep the Departmental Representative advised of planned Work activities in accordance with the instructions of Section 01 33 00 - Submittal Procedures.

1.9 Contractor's Use of Site

- .1 Contractor's use of site is restricted to the terms and conditions of the issued permits, and all applicable guidelines and regulations.
- .2 Coordinate use of premises under the direction of the Departmental Representative.
- .3 Use of site shall comply with the environmental requirements of Section 01 35 43 - Environmental Procedures.
- .4 Operations should only occur where entirely necessary to complete the works to reduce effects to nearby soils, vegetation, and resident species. Respect should be given to the natural environment to minimize the footprint of the project.

1.10 Permits and Licenses

- .1 Departmental Representative will apply for all applicable permits relating to federal regulatory agencies, as required. All restrictions and requirements of these apply to Contractor.
- .2 Register, obtain and pay for all required licenses and permits for individual tradesmen employed for Work as referenced in the various Sections of the Contract Specifications.
- .3 Obtain and pay for any other licenses or permits required to perform the activities required on-site.
- .4 Provide supplemental information to the regulators for any necessary license amendments or reporting requirements.
- .5 Pay all costs associated with complying with the requirements for the permits and licenses noted in the above clauses.

1.11 Site Supervision

- .1 Designate Contractor's Site Superintendent to be on-site at all times during construction, to have full authority to make decisions on behalf of the Contractor, to be knowledgeable of the requirements of the contract, and to act upon Departmental Representative's instructions.
- .2 Notify Departmental Representative two (2) weeks in advance of changing the Site Superintendent and provide an updated chain-of-command.

1.12 Additional Drawings

- .1 Departmental Representative may furnish additional drawings to assist with proper execution of the work. These drawings will be issued for clarification only. Such drawings are to have the same meaning and intent as if they were included with plans referred to in Contract documents.

1.13 Substantial Completion

- .1 The contractor shall issue a letter of warranty for review and approval by the Departmental Representative.
- .2 Upon issuance of a Certificate of Substantial Performance and submission of all items specified with these specifications as requirements for achieving Substantial Performance, the Departmental Representative arrange for a site inspection to ascertain that Substantial Performance has been achieved.

- .3 If upon completion of this inspection, it has been shown that Substantial Performance has not been achieved, a new inspection date will be established and a re-inspection will be held at the expense of the contractor.
- .4 Contractor shall insert all specifications, drawings, shop drawings, certificates and warranty into the Tenants' O&M manual.

1.14 Measurement of Payment

- .1 Work under this Contract will be paid for as follows:
 - .1 Lump sum pay items will be paid at the lump sum price tendered for each lump sum item listed in the Basis of Payment Forms.
 - .2 Unit price items will be paid at the unit price tendered for each unit price item listed in the Basis of Payment Forms.
 - .3 Miscellaneous project costs will be paid at the lump sum price tendered for "Balance of Project Costs" (BOPC) on the Basis of Payment Form BOP-1.
 - .4 Level of effort for authorized Potential Additional Work will be negotiated and paid for at firm all-inclusive prices tendered for additional Work on the Basis of Payment Form.
- .2 Unit price items, lump sum items and provisional cost sum items will be paid under the Basis of Pricing of the proposed contract. All other items, whether specifically defined in the specific sections of the Specifications or not, will be paid under Item BOPC-1, Balance of Project Costs, in the Basis of Payment Schedule BOP-1.
- .3 Direct costs include all costs directly attributable to a particular pay item including equipment, operators, materials, equipment maintenance and depreciation, etc. All direct costs for lump sum and unit price items are to be included in the appropriate price item in the Basis of Payment Schedules.
- .4 Indirect costs include all costs not directly attributable to the pay items including profit, supervision, overhead, administration, CGL Insurance, Workers' Safety and Compensation Commission WSCC, Contractor's allowance for equipment repairs and depreciation, and any other relevant costs. All indirect costs associated with specific unit price or lump sum items will be included in Item BOPC-1, Balance of Project Costs, in the Basis of Payment Schedule BOP-1.
- .5 Include costs for work, goods or services required in this section that are not covered by appropriate payment clauses in other sections in Item BOPC-1, Balance of Project Costs, in the Basis of Payment Schedule BOP-1.
- .6 Notify Departmental Representative of planned Work activities in accordance with requirements of Section 01 33 00 - Submittal Procedures, and at least two (2) days in advance of operations to permit required measurements for payment.

- .7 The work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 General

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative are specified under various sections.
- .2 Provide and pay for all transportation and analyses required for all Contractors' samples to an accredited laboratory to meet the requirements specified.

1.2 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Appointment and Payment

- .1 Departmental Representative will appoint and pay for services of testing laboratory required for the following:
 - .1 Confirmatory testing as described in this Section.
 - .2 Testing for the classification of hazardous contaminated soil for licensed disposal facility acceptance requirements.
 - .3 Compaction and gradation testing.
 - .4 Testing associated with the identification and characterization of hazardous waste materials.
 - .5 Testing required for quality assurance.
- .2 Appoint and pay for testing services for quality control of Contractor's own Work including the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing of wash water resulting from all cleaning activities, equipment decontamination.
 - .4 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
 - .5 All tests required by Contractor to prove conformance and quality control of Contractor's Work.
 - .6 Inspection and testing required by the conditions of permits issued for the Work.
 - .7 Testing of contact water from contaminated soil excavations or other areas where water may have come in contact with contaminants as a result of the Contractor's activities.
- .3 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected Work.
- .4 The analytical testing laboratory designated by Contractor to carry out off-site tests to be approved by Departmental Representative and certified by the Canadian Association for Environmental Analytical Laboratories (CAEAL) for the specific tests required and in advance of analytical testing. Submit copies of the laboratory's CAEAL certification to Departmental Representative upon request.

1.4 Contractor's Responsibilities

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to Work to be inspected and tested.
 - .2 Facilitate inspections and tests.
 - .3 Make good Work disturbed by inspection and test.
 - .4 Provide storage on-site for Department Representative's exclusive use to store equipment and prepare samples.
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

1.5 Confirmatory Testing

- .1 Confirmatory samples will be collected by Departmental Representative, and analysis completed by Departmental Representative's testing laboratory as follows:
 - .1 The actual location, frequency and method of testing will be determined by Departmental Representative.
 - .2 Soil sampling will be carried out by Departmental Representative within the perimeter of each contaminated soil excavation and at depth within the completed excavation area, soon after completion of excavation.
- .2 If required, confirmatory testing will be carried out at waste material processing areas to classify and delineate contaminated soil and other materials.
- .3 It is anticipated that test results will be available within approximately fourteen (10) calendar days from the date that samples are transported from the site for laboratory analysis. Deliver samples to Departmental Representative's CAEAL accredited laboratory in Edmonton within two (2) days maximum from the time the samples leave Aklavik, NT.
- .4 Assume all responsibility for samples damaged during transport including all costs for resampling, shipping, analysis and any resulting delays.

1.6 Measurement of Payment

- .1 The provision of Contractor's Testing Requirements, include sampling packaging, handling, off-site transport and testing of Contractor's samples at an accredited laboratory of choice, will be paid as a lump sum under Item 01 29 83-1, Contractor's Testing Requirements including Sampling, Transportation and Analysis at an Accredited Laboratory of choice in the Basis of Payment Schedule.

- .2 Except as indicated above, Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the Work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT).

PART 2 - PRODUCTS

- .1 Not used.

PART 3 - EXECUTION

- .1 Not used.

END OF SECTION

PART 1 – GENERAL

1.1 Definitions

- .1 Project Start-Up Teleconference Meeting: conference call to be held within ten (10) days following Contract Award and to include the Contractor and representatives from RCMP, PWGSC and the Departmental Representative. This meeting will be initiated by PWGSC.
- .2 Pre-Construction Meeting: meeting to be held on-site prior to Contractor Mobilization and to include the Contractor and representatives from RCMP and PWGSC.
- .3 Construction Meeting: meeting to be held on-site as required, but at a minimum of weekly intervals during the course of the work and to include the Contractor, major Sub-Contractors and Departmental Representative.
- .4 Tailgate Meeting: meeting to be held on-site daily during the construction season and to include Contractor and all construction staff.

1.2 Administrative

- .1 Responsibilities of Departmental Representative:
 - .1 Schedule and administer project meetings throughout the progress of the Work.
 - .2 Prepare agenda for meetings unless otherwise specified.
 - .3 Preside at meetings unless otherwise specified.
 - .4 Record the meeting minutes unless otherwise specified. Include significant proceedings and decisions. Identify actions by parties.
 - .5 Reproduce and distribute copies of minutes within three (3) days after meetings and transmit to meeting participants, affected parties not in attendance and Departmental Representative.
- .2 Responsibilities of Contractor:
 - .1 Provide physical space and make arrangements for meetings.
 - .2 Representative of Contractor, Sub-Contractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.3 Project Start-up Teleconference Meeting

- .1 PWGSC will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities within ten (10) days after award of Contract. The meeting will be a teleconference between all parties in attendance.
- .2 Departmental Representative, Contractor, RCMP, PWGSC, major Sub-Contractors, field representatives and supervisors will be in attendance.

- .3 Departmental Representative will chair the meeting and take minutes. Meeting will be informal and agenda to include:

- .1 Appointment of official representative of participants in the Work.
- .2 Preliminary Schedule of Work.
- .3 Preliminary Schedule of submission of Work Plan and Cost Breakdown and other submissions.
- .4 Preliminary requirements for temporary facilities, site security, worker accommodations, equipment and proposed method of mobilization and demobilization to minimize disturbances to the environment.
- .5 Set-up of Pre-Construction meeting.

1.4 Pre-Construction Meeting

- .1 PWGSC will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities within ten (10) days after award of Contract. The meeting will be a teleconference between all parties in attendance.
- .2 Departmental Representative, Contractor, RCMP, PWGSC, major Sub-Contractors, field representatives and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .3 Schedule of submission of shop drawings, samples, etc. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .4 Schedule of submission in accordance with Section 01 33 00 - Submittal Procedures including but not limited to:
 - .1 Site Specific Health and Safety Plan (SSHSP).
 - .1 Emergency Response Plan.
 - .2 Spill Contingency Plan.
 - .3 Fire Safety Plan.
 - .4 Environmental Protection Plan.
 - .2 Insurance and transcripts.
 - .3 Equipment to be used by Contractor.
 - .4 Location of equipment and proposed methods for mobilization and demobilization.
 - .5 Delivery schedule of specified equipment.
 - .6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, administrative requirements.
 - .7 Departmental Representative provided products, if any.

- .8 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .9 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .10 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .11 Monthly progress claims, administrative procedures, photographs, hold backs.
- .12 Appointment of inspection and testing agencies or firms.
- .13 Regulatory Issues.
- .14 Aboriginal involvement and reporting.
- .15 Project Photograph requirements.
- .16 Regulatory Review of all permits required to perform Work.

1.5 Construction Meetings

- .1 During course of Work, Departmental Representative will schedule progress meetings as required.
- .2 Contractor, major Sub-contractors involved in Work, and Departmental Representative are to be in attendance.
- .3 Departmental Representative will record minutes of meetings and circulate to attending parties and affected parties not in attendance shortly after meeting.
- .4 Agenda to include:
 - .1 Review and comment on minutes of previous meeting.
 - .2 Regulatory Review.
 - .3 Review of Work progress since previous meeting.
 - .4 Field observations, problems, or conflicts.
 - .5 Problems which impede construction schedule.
 - .6 Review of off-site fabrication delivery schedules
 - .7 Project schedule review, identifying activities that are behind schedule and providing measures to regain slippage.
 - .8 Corrective measures and procedures to regain projected schedule.
 - .9 Revisions to construction Schedule.
 - .10 Progress schedule during succeeding Work period.
 - .11 Review submittal schedules: expedite as required.
 - .12 Maintenance of quality standards.
 - .13 Review proposed changes for affect on construction schedule and on completion date.
 - .14 Health, Safety and Security issues.
 - .15 Correspondence from Authorities Having Jurisdiction (AHJ) or expected visits from AHJ.
 - .16 Other business.

- .5 Contractor to preside over daily tailgate meetings with all construction staff and document minutes with daily reporting requirements.
- .6 Provide written explanations on activities which are overrunning estimated time. If any such activities are on the critical path, indicate what corrective action will be taken to bring them back on Schedule. An updated schedule for activities not meeting schedule must be provided by the Contractor at each Construction Meeting.

1.6 Submittals

- .1 Submit requests for payment for review and for transmittal to Departmental Representative.
- .2 Submit requests for interpretation of Contract Documents and obtain instructions through the Departmental Representative.
- .3 Submit and process substitutions through Departmental Representative.
- .4 Submit and process task authorizations and contemplated change notices through Departmental Representative.
- .5 Deliver closeout submittals for review to Departmental Representative.
- .6 Provide submittals to the Departmental Representative for review. Include submittals as noted in Table 01 33 00-1 in Section 01 33 00 - Submittal Procedures.

1.7 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 Definitions

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar (GANTT) Chart: graphic display of Schedule-related information. In a typical bar chart, activities or other Project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars. Generally Bar Charts should be derived from commercially available computerized Project management systems.
- .3 Baseline: original approved plan (for Project, Work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Sunday, inclusive, will provide seven (7) days Work week and define Schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other Project element. Usually expressed as days or workweeks.
- .6 Milestone: significant event in Project, usually completion of major deliverable.
- .7 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout Project life cycle.

1.2 Requirements

- .1 Develop a practical schedule. Monitor and update the schedule so that it remains within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
 - .1 Completion of all excavation, backfilling and tank installation activities – Sept 1, 2012.
 - .2 Offsite disposal of all contaminated soil and groundwater – March 1, 2013.
 - .3 Completion of all deficiencies (within 1 year following excavation activities) – Sept 1, 2013.

.3 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

.4 Identify tasks that lie on the critical path. Show float where possible.

1.3 Submittals

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit the Bar (GANTT) Chart to Departmental Representative within seven (7) working days of the contract award date.

1.4 Project Schedule

.1 Develop detailed Project Schedule.

.2 Ensure detailed Project Schedule includes, as minimum, milestone and activity types as follows:

.1 Award.

.2 Planning document submittals, Shop Drawings, Samples.

.3 Permits.

.4 Mobilization.

.5 All meetings.

.6 Re-location and re-installation of fuel tank

.7 Excavation and containerization of contaminated soils from below building and in yard.

.8 Regrading.

.9 Installation of f

.10 Interim Certificate of Completion.

.11 Demobilization.

.12 Closeout Submittals.

.13 Final Certificate of Completion.

.3 Submit preliminary construction progress Schedule in accordance with Section 01 33 00 - Submittal Procedures to Departmental Representative coordinated with Departmental Representative's Project Schedule.

.4 After review, revise and resubmit Schedule to comply with revised Project Schedule.

.5 During progress of Work revise and resubmit Schedule as directed by Departmental Representative.

1.5 Project Milestones

.1 At minimum, incorporate the following project milestones into the Project Schedule:

- .1 Mobilization to Site
- .2 Start of work
- .3 Final Completion of all works:

1.6 Project Schedule Reporting

- .1 Update Project Schedule on monthly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.7 Project Meetings

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Contractor to expect and be prepared for and anticipate normal weather conditions and average runoff/flooding in schedule development and during the completion of the work. Weather-related delays beyond what can be reasonably expected will be discussed and negotiated.

1.8 Cost and Quality Controls

- .1 Provide a Contract Work Breakdown Structure (CWBS) based on Contractor's Cost Breakdown and any modifications requested by Departmental Representative as follows:
 - .1 CWBS to be an organization of the Work to be performed, services to be provided and data to be submitted by Contractor, as well as payments to be made to Contractor under the terms of the Contract.
 - .2 The CWBS to clearly define the Work elements of each item of the CWBS.
 - .3 The CWBS to include a breakdown of pay items included under Item BOPC -1, Balance of Project Costs in the Basis of Payment Schedule. All unit price, lump sum, and provisional cost sum allowance pay items included in the Basis of Payment Schedule to also be included in the CWBS.
 - .4 Prepare the CWBS in computerized spreadsheet format compatible with the most recent release of Microsoft Excel software. Provide CWBS in hard copy format.
 - .5 Submit the CWBS within fourteen (14) days following contract award date.

.2 Equipment and Material Control:

- .1 Record status of construction material used, soil volumes and equipment and report daily to Departmental Representative.

.3 Manpower Performance Measures:

- .1 Record and report manpower listing for each company employed under this Contract, including Sub-Contractors, detailing daily person-hours during the current month and cumulative total to date and report upon Departmental Representative's request.
- .2 Provide statistical reporting as required.
- .3 Provide statistics related to lost time accidents upon Departmental Representative's request.
- .4 Monthly Performance Measures Templates are provided at the end of this Section.

1.9 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate the cost of this Work as a separate line item in the Cost Breakdown specified in this Section.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

Project Statistics							
EHS PERFORMANCE							
Safety		Q1	Q2	Q3	Q4	TOTAL TO DATE	EVIDENCE/EXPLANATION
Major Incident	#	0	0	0		0	
Moderate Incident	#	0	0	0		0	
Minor Incident	#	0	0	0		0	
Near misses	#	0	0	0		0	
Incidents, Inspections and Audits		Q1	Q2	Q3	Q4	TOTAL TO DATE	EVIDENCE/EXPLANATION
Environment Incidents	#	0	0	0		0	
	Volume (L) spilled	0	0	0.0		0.0	
Inspections/Audits (external)	# performed	0	0	0		0	
	# non-compliances	0	0	0		0	
Inspections/Audits (internal)	# performed	0	0	0		0	
	# non-compliances	0	0	0		0	
EHS Training (p-hrs)		Q1	Q2	Q3	Q4	TOTAL TO DATE	EVIDENCE/EXPLANATION
Awareness training	EHS policy & procedures	0	0	0		0	
H&S training	HAZWOPER	0	0	0		0	
	WHMIS	0	0	0		0	
	First Aid	0	0	0		0	
	Wildlife safety	0	0	0		0	
	Water safety	0	0	0		0	
	Fire response	0	0	0		0	
	Other	0	0	0		0	
Environmental training	Spills response	0	0	0		0	
	Other	0	0	0		0	
Other corrective actions	New procedures	0	0	0		0	
	Other initiatives	0	0	0		0	
SOCIO-ECONOMIC PERFORMANCE							
Employment		Q1	Q2	Q3	Q4	TOTAL TO DATE	EVIDENCE/EXPLANATION
Total Employment	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Employment - Northern	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Employment - Aboriginal	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Employment - AOC	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Employment - Women	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Workforce Training		Q1	Q2	Q3	Q4	TOTAL TO DATE	EVIDENCE/EXPLANATION
Total Training	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Training - Northern	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Training - Aboriginal	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Training - AOC	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Training - Women	# persons	0	0	0		0	
	p-hrs	0	0	0		0	
Purchase of Goods and Services		Q1	Q2	Q3	Q4	TOTAL TO DATE	EVIDENCE/EXPLANATION
Total Suppliers	# suppliers	0	0	0		0	
	Value (\$)	\$0	\$0	\$0		\$0	
Suppliers - Northern	# suppliers	0	0	0		0	
	Value (\$)	\$0	\$0	\$0		\$0	
Suppliers - Aboriginal	# suppliers	0	0	0		0	
	Value (\$)	\$0	\$0	\$0		\$0	
Suppliers - AOC	# suppliers	0	0	0		0	
	Value (\$)	\$0	\$0	\$0		\$0	
STAKEHOLDER ENGAGEMENT							
Communication Activities						TOTAL TO DATE	EVIDENCE/EXPLANATION
Community Consultation Events	#	0	0	0		0	
	# persons	0	0	0		0	
Media Events	#	0	0	0		0	

PART 1 – GENERAL

1.1 Administrative

- .1 Submit to Departmental Representative all submittals listed for review. Submittal list is bound into specification section and is for information only. Submit with reasonable promptness in accordance with the Submittal Procedures Table and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal is not to proceed until review is complete.
- .3 Present shop drawings and product data, in SI Metric units.
- .4 Where items or information is not produced in SI Metric units, converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to a specific Project will be returned without being examined and will be considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .8 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .9 Keep one reviewed copy of each submission on-site.

1.2 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

.1 Not Used.

PART 3 - EXECUTION

.1 Not Used.

END OF SECTION

**TABLE 01 33 00-1
CONTRACTOR SUBMITTAL SCHEDULE**

Specification		Description	Date
Section	Title		
01 29 83 - 1.3.4	CAEAL Certified Laboratory	CAEAL Laboratory Certification	Upon Departmental Representative's request
01 32 18 - 1.3.2	Construction Progress Schedules - Bar (GANTT) Chart	Bar (GANTT) Chart	Seven (7) days after contract award
01 32 18 - 1.8.1.5	Construction Progress Schedules - Bar (GANTT) Chart	Contract Work Breakdown Structure (CWBS)	Submit within fourteen (14) days after contract award
01 35 15 - 1.3.2	Special Procedures for Contaminated Sites	Copies of waste disposal manifests	Submit within thirty (30) days of disposal
01 35 15 - 1.3.3	Special Procedures for Contaminated Sites	Off site hazardous material disposal facility, address and credentials	Submit at least ten (10) days prior to the scheduled shipment of the material off-site.
01 35 32 - 1.2.1	Site Specific Health and Safety for Contaminated Sites	Site Specific Health and Safety Plan	Ten (10) days prior to commencement of construction
01 35 32 - 1.16.1	Site Specific Health and Safety for Contaminated Sites	Spill Contingency Plan	Ten (10) days prior to commencement of construction
01 35 32 - 1.17.4	Site Specific Health and Safety for Contaminated Sites	Proof of First Aid credentials	Submit prior to the start of each construction season
01 35 32 - 1.18.1	Site Specific Health and Safety for Contaminated Sites	Accidents and Accident Reports	Immediately report both verbally and followed by a written report within 24 hours of occurrence
01 35 32 - 1.18.2	Site Specific Health and Safety for Contaminated Sites	Claims against Contractor or Sub-Contractor on account of any accidents	Promptly report in writing
01 35 43 - 1.3.1	Environmental Procedures	All required Contractor submittals to satisfy environmental requirements	Submit directly to the responsible agency and Authorities Having Jurisdiction (AHJ)
01 35 43 - 1.3.2	Environmental Procedures	Environmental Protection Plan	Submit directly to the responsible agency and Authorities Having Jurisdiction (AHJ)
01 35 43 - 1.3.3	Environmental Procedures	One complete copy of all submittals and agency approvals	As required
01 41 00 - 1.5.2	Regulatory Requirements	WHMIS MSDS data sheets	Submit upon delivery of materials
01 45 00 -1.4.2	Quality Control	Samples and materials requiring off-site analysis	Submit with reasonable promptness
01 45 00 -1.6.1	Quality Control	Inspection and test reports	Submit results within three (3) days after receipt
01 53 00 - 1.1.6	Mobilization and Demobilization	Mobilization Demobilization Plan	One hard copy and one electronic copy ten (10) days after contract award.
01 77 00 - 1.2.3	Closeout Procedures	Inspection and Declaration - Written Certificate	When ready for final inspection
01 78 00 - 1.5	Closeout Submittals	Record Drawings and other record information	At the completion of work and prior to final inspection
01 78 00 - 1.6.1	Closeout Submittals	Other Records	Prior to completion of the project
02 55 13 - 2.1.1	Contaminated Soil	Details of Contaminated Soil Containers	Prior to commencement of work
02 55 13 - 3.3.4	Contaminated Soil	Inventory Record of container contents	Maintained on site during Work and a summary provided with Closeout Submissions
02 55 13 - 3.3.5	Contaminated Soil	Name of Contaminated Soil Disposal Location	Submit within fourteen (14) days after contract award
02 55 13 - 3.4.5	Contaminated Soil	Name of Contaminated Water Disposal Location	Submit within fourteen (14) days after contract award
35 05 17 - 1.2.3	Aggregate Materials	Location of Proposed Aggregate Source(s)	Seven (7) days prior to commencing production

END OF SECTION

PART 1 - GENERAL

1.1 Definitions

- .1 Processed Wastewater: Wastewater processed through the Wastewater Treatment Facility.
- .2 Treated Wastewater: Processed wastewater which has been tested and shown to be in compliance with applicable discharge criteria and requirements of this Section and Section 01 35 43 - Environmental Procedures.
- .3 Contact Water: Water that has been in physical contact with known Hydrocarbon Contaminated Soil, either in defined Soil excavations or excavated soil in treatment areas or stockpiles.

1.2 Regulatory Requirements

- .1 Comply with federal, provincial, territorial, and local anti-pollution laws, ordinances, codes, and regulations when disposing of waste materials, debris, and rubbish.

1.3 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Copies of waste disposal manifests must be submitted to the Departmental Representative within thirty (30) days of disposal. Note it is the contractor's responsibility to obtain approval to dispose of the contaminated soil and groundwater at an approved offsite facility. In order to satisfy offsite disposal requirements, Contractor to ensure they request all necessary information in a timely manner from the Departmental Representative in order to avoid project delays.
- .3 The address and credentials of the Contractor-selected disposal facilities to be used for hazardous materials encountered on the site that require off-site disposal must be provided to the Departmental Representative at least ten (10) days prior to the scheduled shipment of the material off-site.

1.4 Excavation Dewatering

- .1 Contractor to keep excavations free of water. In the event that contaminated groundwater flows into open excavation or in the event that clean water flows onto contaminated material, water to be collected and disposed of. Departmental Representative to sample water, if water is deemed to be contaminated by a comparison of the laboratory data to the latest version of the **CCME Environmental Quality Guidelines for Freshwater Aquatic Life**. In the event water is proven to be non-contaminated by the Departmental Representative, contractor shall dispose of recovered water in an environmentally responsible fashion; however, this water cannot be disposed of at the work Site.

- .2 Provide pumps and barrels to collect and store collected water.
- .3 Install wastewater storage tanks in locations as directed by Departmental Representative.
- .4 Be responsible for transporting and disposing of water to off-site disposal facility.

1.5 Contaminated Soil Equipment Decontamination

- .1 Decontaminate equipment which comes into direct contact with contaminated soils by steam cleaning or other means acceptable to Departmental Representative in a secure area capable of containing the waste generated by the washing operation.
- .2 Collect and dispose of any contaminated soil that leaks, spills or otherwise leaves the piece of equipment during transport from the area of work to the decontamination area.
- .3 Filter liquid waste resulting from the decontamination operation through an oil-absorbent material. The disposal requirements for the oil-absorbent material are dependent on the results of testing to be carried out by Contractor. Materials used for spill containment must be disposed at an approved off-site disposal facility. Packaging and transportation of oil-absorbent material containing contaminants must be completed in accordance with the Transportation of Dangerous Goods Act.
- .4 Treat any waste soil resulting from the decontamination procedure as contaminated or hydrocarbon contaminated soil, depending on the source of the material, and handle accordingly.

1.6 Water Control

- .1 Maintain excavations free of water.
- .2 Protect site from puddling or running water. Grade site to drain.
- .3 Prevent surface water runoff from leaving Work areas.
- .4 Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially contaminated material, off the site.
- .5 Prevent precipitation from infiltrating or from directly running off stockpiled waste materials. Cover stockpiled waste materials with an impermeable liner during periods of Work stoppage including at end of each working day and periods of heavy precipitation and as directed by the Departmental Representative .
- .6 Direct surface waters that have not contacted potentially contaminated materials to existing surface drainage systems.
- .7 Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.

- .8 Provide, operate, and maintain necessary equipment appropriately sized to keep excavations, staging pads, and other Work areas free from water.
- .9 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.

1.7 Dewatering

- .1 Dewater various parts of Work including, without limitation, excavations, structures, foundations, and Work areas.
- .2 Employ construction methods, plant procedures, and precautions that ensure Work, including excavations, are stable, free from disturbance, and dry.
- .3 Provide sufficient and appropriate labour, plant, and equipment necessary to keep Work free of water including standby equipment necessary to ensure continuous operation of dewatering system.
- .4 Take necessary precautions to prevent uplift of any structure or pipeline and to protect excavations from flooding and damage due to surface runoff.
- .5 Test and analyze water generated from dewatering activities and treat to meet required discharge or disposal criteria.

1.8 Progress Cleaning

- .1 Maintain cleanliness of Work and surrounding site to comply with federal, provincial, territorial, and local fire and safety laws, ordinances, codes, and regulations.
- .2 Coordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

1.9 Final Decontamination

- .1 Perform final decontamination of construction facilities, equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from site.
- .2 Perform decontamination as specified to satisfaction of Departmental Representative. Departmental Representative will direct Contractor to perform additional decontamination if required.

1.10 Removal and Disposal

- .1 Remove surplus materials and temporary facilities from site.
- .2 Dispose of non-contaminated waste materials, litter, debris, and rubbish off site.
- .3 Do not burn rubbish and waste materials on site unless approved by AHJ.
- .4 Do not burn or bury rubbish and waste materials on-site.
- .5 Do not discharge wastes into streams or waterways.
- .6 Dispose of the following materials at the Contractor's Designated Waste Disposal Facility: Debris including excess construction material, non-contaminated litter and rubbish; disposable PPE worn during final cleaning; wastewater removed from wastewater storage tank, wastewater generated from final decontamination operations including wastewater storage tank cleaning; and lumber from decontamination pads.

1.11 Testing

- .1 Carry out and pay for all testing required to obtain approval from selected waste disposal facility for the disposal of contaminated soil and water. Submit records of this testing to Department Representative.

1.12 Measurement of Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate the cost of this Work as a separate line item in the Cost Breakdown specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Piping: Suitable material type, of sufficient diameter and structural thickness for purpose intended; satisfactorily tested for leaks with potable water in presence of Departmental Representative before handling wastewater.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 Site Specific Health and Safety Requirements

- .1 Maintain and complete all health and safety, fire safety, and environmental compliance activities in accordance with applicable sections and Authorities Having Jurisdiction (AHJ).
- .2 Schedule a compliance meeting on an as required basis, as directed by Departmental Representative. Compliance meetings may be held in conjunction with regular meetings.
- .3 The intent of the compliance meeting is to review reporting and inspection requirements to meet the intent of the Safety Act, regulatory, and other requirements as may be required.
- .4 Compliance meetings to be held at the Work site.
- .5 Departmental Representative will record minutes, chair the meeting and distribute minutes to parties of record prior to the next Scheduled meeting.
- .6 Attendees:
 - .1 Contractor: Manager and/or Supervisor(s), representatives of major Sub-Contractors, and others as necessary.
 - .2 Departmental Representative and Departmental Representative's Authorized Personnel, as per Departmental Representative's request.
- .7 Agenda to include:
 - .1 Review and comment on minutes of previous meeting.
 - .2 Review of items of significance that could affect Work.
 - .3 Review of site inspections: Inspect the site on a monthly basis, or more or less often, as determined by the Departmental Representative or as dictated by the AHJ.
 - .4 Identify and record field observations, problems, and conflicts that must be noted in reports required by the AHJ.
 - .5 Identify corrective measures and procedures to regain approval from AHJ.
 - .6 Identification of requirements for maintenance of quality standards needed for compliance with applicable Codes and Legislation.
 - .7 Review of site safety and security issues.
 - .8 Review of environmental and regulatory compliance.
 - .9 Other topics for discussion as appropriate to current status of the Work.

1.2 Submittals

- .1 Submit an electronic copy of the Site Specific Health and Safety Plan no later than ten (10) days prior to construction commencement to the Departmental Representative for review. Any items, which are identified as missing, will be added and the plan revised, so as to incorporate the additional items. The revised safety plan will be submitted to the AHJ for review and recommendations to ensure all elements required by the Safety Act, OSHA Regulations, other AHJ, and Contract Specifications have been addressed.
- .2 All submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .3 The Site Specific Health and Safety Plan will include, but is not limited to the following sections:
 - .1 A Statement of Contractor's Safety Policy.
 - .2 Safety Responsibilities of all on-site personnel.
 - .3 Safe Work Practices and/or Job Procedures.
 - .4 Results of safety and health risk or hazard analysis for construction activities.
 - .5 Procedures for, but not limited to, cold weather survival, remote Work and general worker health and safety.
 - .6 Traffic control plan.
 - .7 Diagrams showing signage and proposed temporary fencing locations.
 - .8 Name and telephone number of Contractor's corporate Safety Officer and on-site Safety Representative.
 - .9 Emergency Response Plan.
 - .10 Spill Contingency Plan.
- .4 The on-site Contingency and Emergency Response Plan is to address standard operating procedures to be implemented during emergency situations.

1.3 Construction Safety Measures

- .1 Observe and enforce construction safety measures required by the latest revisions of: Canada Labour Code, National Building Code of Canada, National Fire Code of Canada, Workers' Safety and Compensation Commission (WSCC), the applicable Occupational Health and Safety Regulations, and Territorial and local statutes and authorities.
- .2 In the event of discrepancies between any requirements of the above listed authorities, the more stringent requirements will govern.
- .3 Comply with all applicable health and safety policies and procedures from AHJ.
- .4 Departmental Representative or his representative has the authority to stop Work on the contract if, in his/her opinion, the Work is being performed in an unsafe manner as required by the applicable safety legislation.

- .5 Prepare and coordinate a Contingency and Emergency Response Plan that meets the regulatory requirements of the Safety Act, that it identifies the closest hospital and outlines an emergency response plan and identifies contact people/numbers in the event of fire, medical, or environmental emergencies.
- .6 Verify that emergency procedures including appropriate First aid facilities and First Aid personnel are in place at the Work Site. First aid facilities and First Aid personnel must be in compliance with the *Safety Act* of the Northwest Territories.
- .7 Verify that procedures meet the WSCC and Human Resource and Skills Development Canada requirements.
- .8 Develop, as part of Site Specific Health and Safety Plan, written Contaminated Site Working and Decontamination procedures. Working procedures to outline personal protective equipment (PPE) requirements for various parts of site and for different operations.
- .9 Working Procedures and Decontamination procedures consistent with requirements OSHA's 29 CFR 1910.120 HAZWOPER and territorial environmental regulations for:
 - .1 Working activities, where employees are likely to be exposed to 50% of Threshold Limit Values (TLV) listed by American Conference of Governmental Hygienists (ACGIH), TLVs and BEIs based on documentation of Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEI) 2004 and amendments thereto.
- .10 Hazardous Material Discovery
 - .1 Immediately stop Work and notify Departmental Representative for further instructions with respect to abatement procedures required for asbestos conditions encountered when Work occurs in areas having materials resembling asbestos during course of Work.

1.4 Filing of Notice

- .1 File Notice of Work with Federal and Territorial AHJ prior to commencement of Work.

1.5 Regulatory Requirements

- .1 Comply with specified standards, regulations and orders of AHJ to ensure safe operations at site.

1.6 Responsibility

- .1 Be responsible for safety of persons and property on-site and for protection of public off-site and environment to extent that they may be affected by the site and conduct of Work.

- .2 Control access to the site. Persons with business at the site and who are not Contractor's employees must be briefed on site specific health and safety issues and be provided with a copy of the Site Specific Health and Safety Plan.
- .3 Contractor may refuse access to the site to any person not complying with site specific health and safety standards.
- .4 Comply with and enforce compliance by employees with safety requirements of contract documents, applicable federal, territorial and local statutes, regulations and ordinances, Worker Orientation Seminar, and with Site Specific Health and Safety Plan:
 - .1 Conduct appropriate safety training for all personnel working on the site.
 - .2 Conduct workplace safety inspections for all Work activities.
 - .3 Maintain a log of first aid and safety supplies, and notify appropriate personnel for restocking after each incident, and periodical restocking to replace out dated or consumable (headache medicines, bandages) products.
 - .4 Maintain signage, fencing and traffic controls in good working order.

1.7 Hazardous Communication Requirements

- .1 Comply with Work Site Hazardous Materials Information System Regulations of the AHJ.
- .2 Provide Departmental Representative with Material Safety Data Sheets (MSDS) and documentation on any "hazardous" chemical that Contractor or Contractor Representatives plan to bring onto site; bound in one place and stored in accordance with the Site Specific Health and Safety Plan.

1.8 Unforeseen Hazards

- .1 Should any unforeseen or peculiar safety related factor, hazard, or condition become evident, stop Work, assess, take steps to mitigate if necessary at that time and immediately advise Departmental Representative verbally and in writing.
- .2 Monitor potential low oxygen and Lower Explosive Limits areas with oxygen/LEL monitor if workers are working in and around area. These areas include but are not limited to trenches, excavations and areas near machinery exhaust.

1.9 Safety and Hygiene

- .1 Provide training for all persons entering the site in accordance with specified personnel training requirements, maintain log of who was trained, what training was provided and by whom the training was conducted.
- .2 Personal Protective Equipment (PPE):
 - .1 Furnish site personnel with appropriate PPE as required by legislation.
 - .2 Verify that safety equipment and protective clothing is kept clean and well maintained.

- .3 All clothing and personal protective equipment used on-site shall remain on-site, to be either decontaminated or disposed of. No Work clothing is to leave Work site without having been properly decontaminated.
 - .4 Outline and designate PPE for each site and Work activity in accordance with AHJ.
- .3 Develop written PPE care and use procedures to be included in the Site Specific Health and Safety Plan and verify that procedures are strictly followed by site personnel including, but not limited to, the following:
- .1 Provisions for prescription eyeglasses with side shields worn as safety glasses and do not permit contact lenses on-site within Work zones.
 - .2 Provisions for footwear are steel toed safety shoes or boots and are covered by rubber overshoes when entering or working in potentially contaminated Work areas.
 - .3 Dispose of or decontaminate PPE worn on-site at end of each workday.
 - .4 Decontaminate reusable PPE before reissuing.
 - .5 Provisions for decontamination arising from entry or exit into contaminated areas.
- .4 Heat Stress/Cold Stress: Implement heat stress and cold stress monitoring program as applicable and include in Site Specific Health and Safety Plan.
- .5 Personnel Hygiene and Personnel Decontamination Procedures: provide minimum as follows:
- .1 Suitable containers for storage and disposal of used disposable PPE.
 - .2 Potable water and suitable sanitation facility.
 - .3 Provisions for proper disposal of contaminated PPE.

1.10 Site Communication

- .1 Post emergency numbers near site telephones.
- .2 Train personnel in the use of "buddy" system.
- .3 Provide alarm system to notify employees of site emergency situations or to stop Work activities if necessary. Identify emergency stations.

1.11 Safety Meeting

- .1 Conduct task specific safety meetings (toolbox) as per Project requirements and as directed by Departmental Representative.
- .2 Conduct safety meetings with workers engaged in outdoor Work under summer or winter conditions. Topics must include hot and cold stress, exhaustion, snowmobile safety, buddy systems, and any other items inherent in working outdoors.

- .3 Conduct mandatory daily safety meetings for personnel, and additionally as required by special or Work related conditions; include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new site conditions as encountered. Hold additional safety meetings on an as needed basis or as specified by the AHJ. Keep records of meetings on file.

1.12 Fuel Management

- .1 All vehicle and equipment refuelling must be conducted by appropriately trained personnel using the appropriate personal protective equipment in a manner which meets or exceeds regulatory requirements including using drip pans.
- .2 Records of fuel usage by activity must be maintained.
- .3 All fuel transports including mobile refuelling trucks and fuel transport to stationary equipment, such as generators or pumps or distributed storage areas, must occur in approved (CSA) containers with the notification and consent of site safety personnel.

1.13 Vehicle and Equipment Usage

- .1 Seatbelts must be worn at all times when vehicle or equipment is in operation.
- .2 Speed limits must be set and obeyed.
- .3 If road conditions are unsafe or marginally unsafe, maintain roads to acceptable standards. Do not risk property damage or injury.
- .4 Perform vehicle maintenance and lubrication of equipment in a manner that avoids spillage of fuels, oils, grease and coolants and is in accordance with Vehicle Manufacturer Specifications. When refuelling equipment, use leak free containers and reinforced rip and puncture proof hoses and nozzles. Remain in attendance for duration of refuelling operation, and ensure that all storage container outlets are properly sealed after use.
- .5 Place drip pans under stationary equipment with potential leaks.

1.14 Flammable Liquids

- .1 The handling, storage and use of flammable liquids will be governed by the current National Fire Code of Canada.
- .2 Flammable liquids such as gasoline, kerosene and naphtha may be kept for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable liquids exceeding 45 litres for Work purposes requires permission of the permitting authority.

- .3 Do not transfer flammable liquids in the vicinity of open flames or any type of heat-producing devices.
- .4 Do not use flammable liquids having a flash point below 38°C such as naphtha or gasoline as solvents or cleaning agents.
- .5 Store flammable waste liquids, for disposal, in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and Departmental Representative is to be notified when disposal is required.
- .6 Dispose of all flammable liquids in accordance with all applicable environmental regulations and with the requirements of Section 02 61 33 - Hazardous Waste Material.

1.15 Storage and Handling of Fuel

- .1 Locate fuel storage areas with input from the Departmental Representative and RCMP.
- .2 Inspect fuel storage and dispensing facilities daily. Make available fire fighting and spill response equipment for immediate access at each fuel storage location.
- .3 Store all barrels containing fuel and /or hazardous materials in an elevated position, either on their side with bungs facing 9 and 3 o'clock position, or on pallets, upright, and banded.
- .4 All barrels to be individually identified. Label will be to industry standards and will provide all information necessary for health and safety and environmental purposes. Make available, to all personnel, Material Safety Data Sheets for all materials maintained at site or along right-of-ways.
- .5 Treat all waste petroleum products, including used oil filters, as hazardous materials.
- .6 Conduct regular inspections of all machinery hydraulic, fuel and cooling systems. Repair leaks immediately.
- .7 Pre-assemble and maintain emergency spill equipment, store fuel as per the National Fire Code for Outdoor Fuel Storage (Section 3.3.4). Maintain spill mats or pan under mobile fuelling containers and a spill kit at the refuelling area.
- .8 Remove all full and empty barrels, fuel storage facilities and associated materials and equipment from site at conclusion of Work.

1.16 Spill Contingency Plan

- .1 Submit to Departmental Representative for review and comment ten (10) days prior to construction, a detailed Spill Contingency Plan. Identify response capabilities by detailing response times, and types and volumes of spills to which Contractor can respond. Following information is required as a minimum:

- .1 A description of pre-emergency planning.
- .2 Personnel roles, lines of authority and communication, emergency phone numbers.
- .3 Emergency alerting and response procedures.
- .4 Evacuation routes and procedures, safe distances and places of refuge.
- .5 Directions/methods of getting to nearest medical facility.
- .6 Emergency decontamination procedures.
- .7 Emergency medical treatment and First-Aid.
- .8 Emergency equipment and materials.
- .9 Emergency protective equipment.
- .10 Procedures for reporting incidents, and
- .11 Spill response and containment plans for all materials that could potentially be spilled.

1.17 Medical

- .1 Provide and maintain first aid and medical care and facilities for all workers as required by the Statutes of the Safety Act of the Northwest Territories.
- .2 Provide the appropriate first aid kit, based on the number of workers, in accordance with the Safety Act of the Northwest Territories.
- .3 Establish an emergency response plan acceptable to Departmental Representative, for the removal of any injured person to medical facilities or a doctor's care in accordance with applicable legislative and regulatory requirements.
- .4 Provide proof of First Aid credentials to Departmental Representative prior to the start of each construction season. Provide the appropriate number of first aid attendants on site in accordance with the AHJ.
- .5 Emergency and First Aid Equipment:
 - .1 Locate and maintain emergency and first aid equipment in appropriate location on site including first aid kit to accommodate number of site personnel; portable emergency eye wash; fire protection equipment as required by legislation.
 - .2 Locate sufficient self contained breathing apparatus units; blankets and towels; stretcher; and one (1) hand held emergency siren in all confined access locations.
 - .3 Provide a minimum of one (1) qualified first aid attendant on site at all times when Work activities are in progress; duties of first aid attendant may be shared with other light duty Work related activities.

1.18 Accidents and Accident Reports

- .1 Immediately report, verbally, followed by a written report within 24 hours, to Departmental Representative, all accidents of any sort arising out of or in connection with the performance of the Work, giving full details and statements of witnesses. If death or serious injuries or damages are caused, report the accident promptly to Departmental Representative by telephone or facsimile in addition to any report required under federal and territorial laws and regulations.
- .2 If a claim is made by anyone against the Contractor or Sub-Contractor on account of any accident, promptly report the facts in writing to Departmental Representative, giving full details of the claim.

1.19 Security

- .1 Limit site access only to persons employed on the Project. Unauthorized persons will be permitted on site only with the approval of Departmental Representative or Contractor.
- .2 Secure the perimeters of all excavations to prevent public access whenever unattended.

1.20 Fire Safety

- .1 Provide all fire prevention, fire protection and fire fighting services at the Project site.
- .2 Ensure that any Sub-Contractors and other Contractor personnel on-site are briefed on fire safety requirements and are familiar with the fire prevention, fire protection and fire fighting program.
- .3 The fire safety program to meet or exceed the most recent editions of the following codes and standards:
 - .1 Safety Code of the Northwest Territories.
 - .2 National Fire Code of Canada.
 - .3 Canada Labour Code.

1.21 Reporting Fires

- .1 A person discovering a fire and all fire related incidents is to report immediately, by fastest available means, to Departmental Representative and site superintendent.
- .2 A person discovering a fire will if possible, remain in the vicinity to direct fire fighting personnel.

1.22 Fire Extinguishers

- .1 Provide and maintain fire extinguishers in sufficient quantity to protect, in an emergency, the Work in progress and the physical plant on-site.

1.23 Smoking Precautions

- .1 Do not permit smoking in the Work area. Respect all wishes of the RCMP in regards to acceptable smoking locations on RCMP property.
- .2 Provide and place signs indicating that smoking is prohibited in the Work area.
- .3 Signs prohibiting smoking is to be in English and the local dialect and is to have black lettering not less than 50 mm high, with a 12 mm wide stroke on a yellow background. In lieu of lettering, symbols of not less than 150 mm by 150 mm may be used.

1.24 Rubbish and Waste Materials

- .1 Rubbish and waste materials are to be kept to a minimum.
- .2 Storage:
 - .1 Extreme care is required where it is necessary to store oily waste in Work areas to ensure maximum possible cleanliness and safety.
 - .2 Greasy or oily rags or materials subject to spontaneous combustion are to be disposed of as hazardous material in accordance with Section 02 61 33 - Hazardous Waste Material.

1.25 Hazardous Substances

- .1 If the work entails the use of any toxic or hazardous materials or chemicals, or otherwise creates a hazard to life, safety or health, work is to be in accordance with the National Fire Code of Canada, Occupational Health and Safety Legislation, and WHMIS.

1.26 Questions and/or Clarifications

- .1 Direct any questions or clarification to the Departmental Representative.

1.27 Unique Hazards

- .1 Ensure workers receive training specific to the PPE requirements for working with site-specific unique hazards including safe handling, disposal and emergency procedures.

1.28 Measurement of Payment

- .1 All costs for the preparation and completion of the Site Specific Health and Safety Plan are to be included in the lump sum price paid for under Item 01 35 32-1, as indicated in Basis of Payment Schedule BOP-1. The lump sum price for the Site Specific Health and Safety Plan for Aklavik RCMP will be paid after a satisfactory Site Specific Health and Safety Plan has been submitted to the Departmental Representative.

- .2 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 Definitions

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2 Regulatory Overview

- .1 Comply with all applicable environmental laws, regulations and requirements of Federal, Territorial and other regional authorities, and acquire and comply with such permits, approvals and authorizations as may be required.
- .2 Comply with and be subject to those permits and approvals obtained from Departmental Representative to conduct the Work.
- .3 Comply with Project's Environmental Assessment including table of mitigative measures.

1.3 Submittals

- .1 Submit all required Contractor submittals to satisfy environmental requirements directly to the responsible agency and Authorities Having Jurisdiction (AHJ).
- .2 Contractor to submit Environmental Protection Plan that that incorporates all of the mitigative measures outlined in the Environmental Assessment within fourteen (14) working days of the contract award date.
- .3 Submit one complete copy of all submittals and agency approvals to Departmental Representative.
- .4 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4 Relics and Antiquities

- .1 Relics, antiquities and items of historical or scientific interest such as cairns, tent rings, commemorative plaques, inscribed tablets, and similar objects found on-site will remain the property of the appropriate AHJ.
- .2 Give immediate notice to Departmental Representative if evidence of archaeological finds are encountered during construction/remediation activities, and await Departmental Representative's written instructions before proceeding with Work in this area.

- .3 Protect archaeological finds and similar objects found during course of Work.

1.5 Site Maintenance

- .1 Keep the site free from the accumulation of waste materials and debris as specified in this section.
- .2 Upon completion of the work, clean away and dispose of all surplus material, supplies, rubbish and temporary works leaving the site neat and tidy to the requirements of Departmental Representative.
- .3 Proposed locations for stockpile or container placement on the RCMP property must be reviewed by the Departmental Representative and agreed to by the RCMP prior to placement. Stored material and loading activities must not impede RCMP operations.

1.6 Disposal of Wastes

- .1 Do not bury rubbish and waste materials on-site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways.

1.7 Site Clearing and Plant Protection

- .1 Protect vegetation, including plants on site and adjacent properties, where indicated.
- .2 Minimize stripping of topsoil and vegetation.

1.8 Erosion and Sediment Control

- .1 Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas, from stockpiles, staging areas, and other Work areas. Prevent erosion and sedimentation.
- .2 Minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical. Strip vegetation, re-grade, or otherwise develop in such a way as to minimize erosion. Remove accumulated sediment resulting from construction activity from adjoining surfaces, drainage systems, and water courses, and repair damage caused by soil erosion and sedimentation, as directed by Departmental Representative.
- .3 Provide and maintain temporary measures, which may include, but are not limited to, silt fences, drains, berms, terracing, temporary drainage piping, and any other construction required to prevent erosion and migration of silt, mud, sediment, and other debris off site or to other areas of site where damage might result, or that might otherwise be required by Laws and Regulations. Make sediment control measures available during construction. Place silt fences and/or hay or straw bales in ditches to prevent sediments from escaping from ditch terminations.

- .4 Plan construction procedures to avoid damage to Work or equipment encroachment onto water bodies or drainage ditch banks. In the event of damage, promptly take action to mitigate effects. Restore affected bank or water body to pre-existing condition.
- .5 Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- .6 If soil and debris from site accumulate in low areas, ditches, or other areas where in the Departmental Representative's determination it is undesirable, remove accumulation and restore area to original condition.

1.9 Work Adjacent to Waterways

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.

1.10 Dust and Particulate Control

- .1 Execute Work by methods to minimize raising dust from decontamination operations. Implement and maintain dust and particulate control measures as determined necessary by applicable regulations and standards during Work and in accordance with AHJ.
 - .2 Provide positive means to prevent airborne dust from dispersing into atmosphere. The use of oil for dust control is prohibited.
 - .3 Prevent dust from spreading to beyond the immediate work area.
 - .4 Departmental Representative or designate may stop work at any time when Contractor's control of dusts and particulates is inadequate for worker exposure relative to indoor conditions when air quality monitoring indicates that release of fugitive dusts and particulates into the work area equals or exceeds specified levels.
 - .5 If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, stop work. Contractor must discuss procedures that Contractor proposes to resolve problem. Make all necessary changes to operations prior to resuming work that may cause release of dusts or particulates.
- .1 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

1.11 Environmental Protection Supplies

- .1 Comply with federal and territorial fisheries and environmental protection legislation, including preventing the loss or destruction of fish habitat, and minimizing the impact of sedimentation, siltation or otherwise causing a degradation in water quality.

- .2 Provide a minimum of 25 lineal metres, and as required, of 200 mm diameter hydrophobic, sorbent booms. These materials are to be used as necessary to prevent the migration of hydrocarbons, particularly when loading or unloading from barges or from other forms of transportation.
- .3 Supply, transport, install and maintain erosion, sediment and drainage controls necessary to complete the work in accordance with the requirements of Departmental Representative.
- .4 At the completion of construction, dispose of used absorbent boom in accordance with Section 02 61 33 - Hazardous Waste Material.
- .5 Unused Erosion, Sediment and Drainage Control supplies are to remain the property of Departmental Representative until completion of the Contract.
- .6 Provide inventory of environmental protection supplies prior to mobilization.

1.12 Notification

- .1 Departmental Representative will notify Contractor in writing of observed non-compliance with Federal, Provincial or Municipal environmental laws or regulations, permits, etc.
- .2 Contractor, after receipt of such notice, will inform Departmental Representative of proposed corrective action and take such action after review and comment by Departmental Representative.
- .3 Departmental Representative will issue stop order of Work until satisfactory corrective action has been taken.
- .4 No time extensions granted, or equitable adjustments allowed, to Contractor for such suspensions.

1.13 Measurement for Payment

- .1 Include all direct costs for the development of an Environmental Protection Plan as well as for the supply and transport of the specified Environmental Protection Supplies including the silt fence and the sorbent booms and all necessary stakes and connecting hardware in the lump sum price for Environmental Protection Supplies, Item 01 35 43-1, as indicated in the Basis of Payment Schedule BOP-1.
- .2 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

2.1 Hydrophobic Sorbent Boom

- .1 200 mm dia. Polypropylene Material.
- .2 Minimum gallons absorbed per 3 m length: 50 L.

PART 3 - EXECUTION

3.1 Temporary Erosion Sedimentation Control

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff to adjacent properties, according to requirements of AHJ.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during Work.
- .3 Implement erosion control methods as directed by Departmental Representative.

3.2 Installation:

- .1 Construct temporary erosion control items as indicated. Actual alignment and/or location of various items as directed by Departmental Representative.
- .2 Check erosion and sediment control measures weekly after each rainfall; check daily during prolonged rainfall.
- .3 Prior to or during construction, Departmental Representative may require the installation or construction of improvements to prevent or correct temporary conditions on site. Improvements may include berms, grading, retaining walls, and other measures appropriate to the specific condition. Temporary improvements must remain in place and in operation as necessary or until otherwise directed by Departmental Representative.
- .4 Unless indicated or directed by Departmental Representative, remove temporary erosion and sediment control devices upon completion of Work. Spread accumulated sediments to form a suitable surface for seeding or dispose of, and shape area to permit natural drainage to satisfaction of Departmental Representative. Materials once removed become property of Contractor.

END OF SECTION

PART 1 – GENERAL

1.1 References and Codes

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.
- .3 Work in accordance with the Specifications and meet or exceed all codes, standards and regulations applicable to the Work and issued under the authority of the Government of Canada and the Government of the NWT. Advise Departmental Representative of any discrepancies in the codes, standards and regulations applicable to the Work.

1.2 References and Codes - Federal

- .1 Meet or exceed the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Canada as follows:
 - .1 Canada Labour Code Part 11-Occupational Health and Safety (R.S. 1985, c.L-2).
 - .2 Canada Mining Regulations (C.R.C.C. 1516).
 - .3 Canada Occupational Health and Safety Regulations (SOR/86-304).
 - .4 Canadian Environmental Protection Act, PCB Regulations (SOR/2008-273).
 - .5 Controlled Products Regulations (SOR/88-66) a.SOR/2001-254.
 - .6 Inter-provincial Movement of Hazardous Waste Regulations (SOR/2002-301).
 - .7 National Fire Code of Canada, 1995 a. 2002, updated 2010.
 - .8 Ozone Depleting Substances Regulations, 1998 (SOR/99-7).
 - .9 Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c.34) a.1999, c.31.
 - .10 Transportation of Dangerous Goods Regulations (SOR/2001-286) a.SOR/2003-400.
 - .11 Territorial Land Use Regulations (C.R.C., c.1524) a.98-430.
 - .12 Storage Tank System for Petroleum Products & Allied Petroleum Products Regulations (SOR / 2008-197).
 - .13 Migratory Birds Convention Act, 1994.
 - .14 Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products, 1994 CCME.
 - .15 Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (Environment Canada (EC)) 2008
 - .16 Canadian Environmental Quality Guidelines for the Protection of Environmental and Human Health, 1999, updated 2009.
 - .17 Canadian Environmental Protection Act (EC, 1999).
 - .18 Contaminated Sites Management Policy (INAC, 2002).
 - .19 Northern Affairs Contaminated Sites Management Policy (INAC, 2002).
 - .20 A Federal Approach to Contaminated Sites (CSMWG, 2002).
 - .21 Risk Management Guidance Document (INAC, 2006).

- .22 Contaminated Sites Cost Estimating Guide (INAC, 2007).
- .23 Treasury Board Policy on Management of Real Property (TB, 2006)
- .24 Risk Management Tool & Reporting Tool User Guide (INAC, 2007)
- .25 Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil (CCME, 2008).
- .26 Environment, Health & Safety Management System Manual (INAC, 2008).
- .27 Environment, Health & Safety Standard Operating Procedures Manual (INAC, 2008).
- .28 Environment, Health & Safety Control Framework, Northern Contaminated Sites Program (INAC, 2008).
- .29 Environment, Health & Safety Audit Program Guide (INAC, 2008).
- .30 Construction Project Safety Management Guide, 5th Edition (PWGSC, 2008).
- .31 PCB Regulations (EC, 2008).
- .32 Abandoned Military Site Remediation Protocol (INAC, 2009)
- .33 Guidelines for Canadian Drinking Water Quality, April 2007, updated 2010.
- .34 Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments, April 1976.
- .35 Environmental Health and Safety Management System Manual, INAC 2006.

1.3 References and Codes – Northwest Territories

- .1 Meet or exceed the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Nunavut and the Northwest Territories as follows:
 - .1 Environmental Protection Act (R.S.N.W.T. 1988, c. E-7) a. 1998, c.21, c.24.
 - .2 Public Health Act, R.S.N.W.T. 1988, c.P-12.
 - .3 Spill Contingency Planning and Reporting Regulations R-068-93.
 - .4 Fire Prevention Act, R.S.N.W.T. 1988, c.F-6.
 - .5 Transportation of Dangerous Goods Act (1990 S.N.W.T. 1990, c.36).
 - .6 Used Oil and Waste Fuel Management Regulations, November 2003.
 - .7 Work Site Hazardous Materials Information System Regulations (R.R.N.W.T. 1990, c.S-2).
 - .8 Guideline for the General Management of Hazardous Waste in the NWT. February 1998.
 - .9 Guideline for Industrial Waste Discharges in the NWT, April 2004
 - .10 Homeowner's Guide to Oil Tanks, GNWT, Department of Environment and Natural Resources, April 2010.

1.4 Hazardous Material Discovery

- .1 Stop Work immediately and notify Departmental Representative upon discovery of following materials during course of Work:
 - .1 Designated substances such as PCBs, asbestos, and mercury.
 - .2 Unknown and/or potentially hazardous substances.
 - .3 Items that may have archaeological, cultural or scientific significance.

.2 Work at site may involve contact with:

.1 PHC (total petroleum hydrocarbons) impacted soils and water.

1.5 WHMIS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada.

.2 Deliver copies of MSDS data sheets to Departmental Representative upon delivery of materials.

1.6 Submittals

.1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.7 Measurement for Payment

.1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate the cost of this Work as a separate line item in the Cost Breakdown specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

.1 Not Used.

PART 3 - EXECUTION

.1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 Inspection

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative, instructions, or law, of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative is to pay cost of examination and replacement.

1.2 Submittals

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Access to Work

- .1 Co-operate to provide reasonable facilities for such access.

1.4 Procedures

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.

1.5 Rejected Work

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by the Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's Work damaged by such removals or replacements promptly.

- .3 If in the opinion of the Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.6 Reports

- .1 Submit three (3) copies of inspection and test reports to Departmental Representative within three (3) days of Contractor receipt.

1.7 Measurement for Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate the cost of this Work as a separate line item in the Cost Breakdown specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 General

- .1 Provide all labour, equipment and materials, and performance of all Work necessary for mobilization to, and demobilization from site. This will include all the Departmental Representative provided supplies, equipment and material.
- .2 Mobilization to include transportation to site of Contractor's labour, equipment, materials, and assembling, erecting, and preparing site in readiness to start Work, all in accordance with Contractor's Schedule.
- .3 Demobilization to include dismantling and removal from site, of all Contractor's equipment, and materials, waste resulting from cleanup of site and transportation of labour from site.
- .4 Decontaminate and clean all equipment used on the Project prior to demobilization. All machinery and equipment must be cleaned before being brought to the site to ensure no plant matter or seeds from invasive species are introduced to the site.
- .5 Do not mobilize to the site without written authorization from the Departmental Representative.
- .6 Summarize the proposed mode, route, equipment, labour and all other requirements for the mobilization and demobilization of all required equipment, materials, waste and personnel to complete the remediation of the project, as indicated in these specifications, in a Mobilization and Demobilization Plan. Submit the Mobilization and Demobilization Plan to the Departmental Representative a maximum of ten (10) days after contract award.
- .7 All mobilization and demobilization methods to comply with the requirements of all applicable codes, standards, guidelines and permits, approvals and/or authorizations.
- .8 A Post-Demobilization site visit will be required as part of the Post-Demobilization Inspection as per Section 01 77 00 - Closeout Procedures.

1.2 Submittals

- .1 Submit Mobilization and Demobilization Plan in accordance with Section 01 33 00 - Submittal Procedure for review by Departmental Representative.
- .2 Submit to Departmental Representative, an electronic copy of the Mobilization and Demobilization Plan, ten (10) days after contract award.

1.3 Measurement of Payment

- .1 All costs for Mobilization to the Aklavik RCMP Site of all equipment and materials, including the submission of the Mobilization and Demobilization Plan, are to be included in the lump sum price for Mobilization, Item 01 53 00-1, as indicated in the Basis of Payment Schedule BOP-1. The lump sum price for mobilization is to include all labour, equipment, materials, meals, accommodation, flights and any other costs necessary to undertake work required.

- .2 All costs for Demobilization from Aklavik RCMP Site of all equipment and materials are to be included in the lump sum price for Demobilization, Item 01 53 00-2, as indicated in the Basis of Payment Schedule BOP-1. The lump sum price for Demobilization is to include all labour equipment, materials, meals, accommodation, flights and any other costs necessary to undertake the work required. Payment for Demobilization will be made after satisfactory cleanup of the site, removal from the site of all equipment, materials, and contaminated soils as indicated, and submission to Departmental Representative of all Contractor submittals.
- .3 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 Description

- .1 This Section specifies requirements for temporary barriers and signage during remediation activities.

1.2 Installation and Removal

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.
- .3 Confirm with the Departmental Representative and RCMP locations and installation schedule three days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

1.3 Guard Rails and Barricades

- .1 Provide secure, rigid guard rails and barricades around deep excavations, as required.

1.4 Signage

- .1 Provide all signage in language that can be understood by the community and workers on the site (English and/or local dialects, as needed).
- .2 Provide signage on all barricades fences identifying the locations of excavations and outlining the hazard.
- .3 Provide signage to outline detours, and direct the public to services and RCMP entrances potentially obscured by barricade fences, as required.
- .4 Post signs warning of construction zone on any major transportation routes in the vicinity of the remediation activities; post construction speed limits, as required.
- .5 Provide orientation to workers and post signage as needed to identify locations where the public could potentially be at risk, so construction vehicles need to proceed with caution, such as, but not limited to, school zones, playgrounds, pedestrian crossings, recreational fields and community buildings.

1.5 Dust Control

- .1 Provide dust controls, such as tight screens/partitions or watering to localize dust generating activities, and for protection of workers, finished areas of Work and public, as needed. All controls must comply with applicable permits.
- .2 Maintain and relocate protection until such work is complete.

1.6 Access to the Site

- .1 Provide and maintain access roads, sidewalk crossings, ramps, and detachment/house accesses, as may be required for access to Work, private residences, and public services.

1.7 Public Access

- .1 Provide and maintain barricades and signage as required to perform Work and protect public.

1.8 Fire Routes

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.9 Protection of Building Finishes

- .2 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .3 Provide necessary screens, covers, and hoardings.

1.10 Protection of Permafrost

- .1 Provide shade so excavated areas are not subject to direct sunshine.
- .2 Provide necessary screens, covers, wood frames and hoardings.

1.11 Measurement for Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate the cost of this work as a separate line item in the cost breakdown specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 Closeout Procedures

- .1 Notify Departmental Representative when Work is considered ready for substantial performance.
- .2 Accompany Departmental Representative on preliminary inspection to determine items listed for completion or correction.
- .3 Comply with Departmental Representative's instructions for correction of items of Work listed in executed Certificate of Substantial Completion.
- .4 Notify Departmental Representative of instructions for completion of items of Work determined in Departmental Representative's final inspection.

1.2 Inspection and Declaration

- .1 Contractor's Inspection: Contractor and all Sub-Contractors to conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
- .3 Completion: submit written certificate that the following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

1.3 Measurement of Payment

- .1 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

.1 Not Used.

PART 3 - EXECUTION

.1 Not Used.

END OF SECTION

PART 1 – GENERAL

1.1 Format

- .1 Present information and data in an organized format.

1.2 Contents of Final Submission

- .1 Table of Contents: provide title of project;
 - .1 Date of submission; names,
 - .2 Addresses, and telephone numbers of Contractor with name of responsible parties,
 - .3 Schedule of products and systems, indexed to content of volume,
 - .4 Summary of Health and Safety issues, Environmental issues and performance indicators,
 - .5 Photographs of construction progress; present sequentially and indicate the date and photo description beneath each photograph,
 - .6 Copies of all waste manifests and transportation records.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .4 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified.
 - .1 Conformance or non-conformance with Contract Documents.

1.3 As-Builts

- .1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Task Authorizations
 - .5 Change Orders and other modifications to the Contract.
- .2 Label record documents and file in accordance with Section number listings in List of Contents
- .3 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

- .4 Keep record documents and samples available for inspection by Departmental Representative.

1.4 Recording Actual Site Conditions

- .1 Record information drawings provided by Departmental Representative.
- .2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .3 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
- .4 References to related shop drawings and modifications, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by Task Authorization, Change Order or Field Order.
- .5 Specifications: legibly mark each item to record actual construction, including:
 - .1 Changes made by Task Authorization, Addenda and change orders.

1.5 Record Drawings

- .1 Departmental Representative will provide to Contractor, two sets of white prints for record drawing purposes.
- .2 Maintain Project record drawings and record accurately, deviations from Contract documents on one set of prints.
- .3 Record changes in red.
- .4 At completion of Project and prior to final inspection, neatly transfer record notations to second set of drawings and submit both sets to Departmental Representative. Forward information on completed areas at the end of the construction season.

1.6 Other Records

- .1 Prior to completion of Project, submit the following to the Departmental Representative:
 - .1 Copies of all documents and permits obtained by the Contractor.
 - .2 Results of all testing carried out by the Contractor.

- .3 Any other pertinent information.
 - .4 Copies of all shipping documents identifying the shipper, the receiver and all carriers involved in the transport of materials.
 - .5 Information as required by all applicable permits, other applicable regulatory bodies and AHJ.
- .2 Consolidate the above information in one document and submit one (1) hard copy and one (1) electronic copy to the Departmental Representative.

1.7 Measurement for Payment

- .1 All direct costs for the Project Record Documents are to be included in the lump sum price for Project Record Documents, Item 01 78 00-1, as indicated in the Basis of Payment Schedule BOP-1.
- .2 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 Description

- .1 This Section specifies the requirements for the excavation, handling, containerization and disposal of contaminated soils.
- .2 The following activities are considered incidental to the work and will not be measured separately:
 - .1 Equipment decontamination.
 - .2 Dewatering of ponded contaminated soil areas, as required.
 - .3 Provision of all necessary safety equipment and clothing.
 - .4 Removal and containerization of contaminated soil from contaminated soil areas.
 - .5 Installation of environmental controls.

1.2 Definitions

- .1 Petroleum Hydrocarbons (PHC): Hydrocarbon products described by laboratory analyses as lubricating oil and grease, fuel oil, diesel and/or gasoline.
- .2 Hydrocarbon Contaminated Soil: Soil exceeding the concentrations of benzene, toluene, ethylbenzene, xylenes or hydrocarbon fractions F1, F2, F3, or F4 as outlined in the the Canadian Council of Ministers of the Environment (CCME) Environmental Quality Guidelines (Soil and Water, 2010), as well as the CCME Canada-Wide Standard for Petroleum Hydrocarbons in Soil (2001).
- .3 Free Product: Non-aqueous petroleum hydrocarbon phase in association with, but physically unmixed from, surface water, ground water or soil.
- .4 Clean Soil: Soil that has been sampled, analyzed, and determined to have contaminant concentrations below those outlined in this section.
- .5 Contaminated Soil Containers: Lined soil storage bags with an interior volume of 1 m³ or collapsible wooden containers with an interior volume of 2.3 m³ and suitable for the storage and shipping contaminated soil by ground or sea.
- .6 Contractor's Designated Waste Storage Facility: a location where contaminated soil containers can be stored securely prior to shipping offsite. Location will require approval from Departmental Representative.

1.3 Qualifications

- .1 Be thoroughly familiar with and knowledgeable about existing site conditions, scope of work and requirements of the Specification.
- .2 Only Contractor's personnel capable of demonstrating a history of satisfactory experience in the area of hazardous waste management and who can satisfy Federal and Territorial requirements will be permitted to carry out the work of this Section.

- .3 Contractor's personnel trained as described in this Section are to instruct and direct all workers with respect to the waste management procedures and labour and safety practices to be followed in carrying out the work.
- .4 Provide workers, Departmental Representative, and Departmental Representative's Authorized Personnel with protection appropriate to the potential type and level of exposure. Establish specific safety protocols in the Site Specific Health and Safety Plan prior to commencing clean up activities.
- .5 Provide suitable safety clothing and equipment as required during the course of the work.

1.4 Site Conditions

- .1 Suspend operations whenever climatic conditions are unsatisfactory for excavating or regrading to conform with this Specification.
- .2 After occurrence of heavy rains, do not operate equipment in designated areas until the material has dried sufficiently to prevent excessive rutting.
- .3 Contractor is advised that the ground in low-lying areas may often be saturated. Dewater saturated ground and ponded areas as required, complying with this Section.
- .4 Prior to the commencement of the work, remove debris, snow, ice and standing water from areas to be excavated.
- .5 During excavation of contaminated soil, maintain a stable excavation and dewater as required or as directed by Departmental Representative.
- .6 Remove and store wooden walkway and wooden stair case that provides access to the house. Items are to be stored in a secure location and reinstalled after the completion of the excavation and backfilling activities. Contractor to replace items in the event that they become damaged and not acceptable for reuse or as directed by Departmental Representative.

1.5 Protection

- .1 Environmental protection measures are to be in accordance with the requirements specified in Section 01 35 15 - Special Project Procedures for Contaminated Sites and Section 01 35 43 - Environmental Procedures.
- .2 Recovered groundwater may not be released to the environment, unless authorized by the Departmental Representative. Contractor to be prepared to collect recovered contact water and dispose offsite.
- .3 All equipment must be maintained in proper running order to prevent leaking or spilling of potentially hazardous or toxic products. This includes hydraulic fluid, diesel, gasoline and other petroleum products.

.4 Machinery must be operated efficiently, to ensure that noise and air quality issues are short-term and local.

.5 Protect permafrost while excavations are open with the use of tarps and shade screens.

1.6 Personnel Protection

.1 Some areas designated for cleanup under this contract involve soils which contain hydrocarbons, which are considered hazardous to human health.

.2 When working with hydrocarbons, and other contaminants, workers are to wear protective clothing and equipment acceptable to Labour Canada or Territorial Labour Department as suitable for exposure in the work area. Follow National Institute for Occupational Safety and Health (NIOSH) guidelines in providing protection for on-site personnel including contract employees and subcontractor, Department Representative and other authorized site personnel. Provide details of protective clothing and equipment required for each work area in the Site Specific Health and Safety Plan as required by Section 01 35 32 - Health and Safety Plan.

.3 Supply sufficient quantities of designated protection equipment to fit all site personnel including Departmental Representative and authorized visitors. Educate workers as to risks, and train in safe work practices.

1.7 Measurement for Payment

.1 The supply and transport to the site of shipping containers to be used for containerizing Hydrocarbon Contaminated Soil will be measured for payment by the quantity of Contaminated Soil removed. Supply of appropriate contaminated soil containers to Aklavik RCMP will be paid under Item 02 55 13-1 in Basis of Payment Schedule BOP-1.

.2 The excavation of Hydrocarbon Contaminated Soil, will be measured for payment by the cubic metre (m³) of contaminated soil as determined from field measurements collected by the Departmental Representative of the excavation. Recovered contaminated water for offsite disposal will be measured by the cubic metre (m³) as determined from field measurements collected by the Departmental Representative.

.3 The scope of work for Item 02 55 13-2, Hydrocarbon Contaminated Soil Excavation, Containerization, Hauling and Offsite Disposal:

.1 Excavation of Hydrocarbon Contaminated Soil from the contaminated soil area as indicated on drawings and as directed by the Departmental Representative.

.2 Handling and containerization of hydrocarbon contaminated soil at the remediation site.

.3 Transporting the containers of contaminated soil to the contractors designated hydrocarbon contaminated soil disposal location. In the event that the containers need to be stored prior to offsite hauling and disposal, contractor is responsible for providing secure storage location. Storage on RCMP facilities is not permitted.

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- .4 Off-site transportation and tipping of contaminated soil at the contractors designated approved waste disposal facility. Contractor will be required to provide proof of disposal such as waste manifests or landfill scale tickets.
 - .5 Incidental items, for which additional payments will not be made, include additional excavations beyond the identified limits, handling, or transportation of contaminated soils between stockpiles or process areas.
-
- .4 The supply of fill and backfilling of the excavated area will be paid by Item 02 55 13-3 Supply, Placement and Reshaping of Imported Fill. The quantity measurement will match the quantity measured for Item 02 55 13-2. The scope of work for this item includes:
 - .1 The supply and placement of fill to replace the excavated soils.
 - .2 Reshaping of the fill to meet the requirements of Section 31 22 15 Grading.
 - .5 The supply of containers as well as the collection and offsite disposal of recovered groundwater is included in this contract. Payment will be made according to the volume of water recovered. In the event the recovered groundwater is confirmed by analytical testing to be contaminated, contractors will be required to dispose of water at an approved facility. Contractors to provide proof of disposal such as waste manifests or proof of acceptance at an approved disposal facility. Payment will be paid under Item 02 55 13-4 in Basis of Payment Schedule BOP-1 for contaminated water only. In the event recovered water is confirmed to be non-contaminated, contractor will be responsible for offsite disposal.
 - .6 No extra payment will be made for soil removed from beyond the specified limits of excavation, unless such removal has been specifically directed by the Departmental Representative. The volume of contaminated soil excavation beyond the specified limits that have been approved by Departmental Representative will be determined by survey.
 - .7 All costs associated with the cleanup or treatment of contamination of areas within or surrounding the contaminated soil handling areas due to the migration of contaminants from those areas as a result of Contractor's actions or inactions are to become the responsibility of Contractor. These costs are to include all costs of investigation to determine the extent of contamination migration, as well as soil excavation and treatment costs.
 - .8 The following activities are considered incidental to the work identified by Items 02 55 13-1 through 02 55 13-4 in the Basis of Payment Schedules BOP-1 and will not be measured separately:
 - .1 Preparation of container inventory summarizing the contents of the Assembly of Contaminated soil containers and recovered water containers.
 - .2 Provision of all necessary safety equipment and clothing.
 - .3 Any necessary excavation to facilitate the testing of contaminated soils by the Departmental Representative.
 - .4 Equipment decontamination including preparation and operation of the equipment decontamination area.
 - .5 Provision of all necessary safety equipment and clothing, as specified in Section 01 35 32-Site Specific Health and Safety Plan.

- .6 On-site transport of containerized soil and water to the transport staging area.
 - .7 Any requirements of local municipal or territorial permits.
 - .8 Grading of backfilled excavations to prevent ponding and blend in with the surrounding terrain, as directed by Departmental Representative.
 - .9 All work required to remove and reinstall wood walkway and wood stairs to house.
 - .10 All work related to the relocation and re-installation of the onsite storage tank.
 - .11 Supply and installation of rigid insulation to be placed in excavated areas below fill materials.
- .9 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs for Aklavik RCMP Site in Basis of Payment Schedule BOP-1. Indicate the cost of this work as a separate line item in the cost breakdown specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

2.1 Materials

- .1 Contaminated Soil Containers: In accordance with all requirements of the TDG Acts and Regulations. Submit details of the Contaminated Soil Containers to Departmental Representative for review prior to commencement of the work.
- .2 Environmental Protection Supplies: as per Section 01 35 43 - Environmental Procedures.

PART 3 - EXECUTION

3.1 Excavation of Contaminated Soil

- .1 Layout and excavate areas of contaminated soil to the limits shown on Drawings. All layouts are to be field verified by Departmental Representative prior to excavation.
- .2 Remove all surface debris prior to excavation. Debris located below building to be relocated to in order to not interfere with work activities.
- .3 Contractor to disconnect existing fuel storage tank, tank to be agreed upon temporarily storage tank location. Contractor to re-connected to supply line going into residential home. Tank stand to be anchored/supported according to manufactures directions. Tank to be re-connected to house supply line according to code requirements. Contractor to responsible to ensure home has access to continuous supply of fuel. Upon completion of backfilling operation, Contractor to relocate tank to original location and install tank according to manufactures instructions and according to code requirements. Concrete blocks are permitted to be re-used. Contractor responsible for the cleanup of any fuel spilled on the ground during the tank re-location phases.
- .4 Dewater ponded contaminated soil areas, as required. Maintain soil excavations free of standing water during soil removal, confirmatory sampling and backfilling activities. Comply with the requirements of the Wastewater Discharge Criteria indicated in Section 01 35 15 - Special Project Procedures for Contaminated Sites.

- .5 Place the Contaminated Soil in Contaminated Soil Containers as described in this Section.
- .6 Decontaminate the equipment and tools used for the excavation of Hydrocarbon Contaminated Soil in accordance with Section 01 35 15 - Special Project Procedures for Contaminated Site before commencing contaminated soil excavation at another location.
- .7 Do not operate equipment in contaminated soil areas that have been excavated until Departmental Representative has confirmed, based on the results of confirmatory testing, that no further excavation of contaminated soil in the area is required.
- .8 Work practices must prevent the movement of dust and fines into any surface water or wetland. Excavation activities must be conducted in a manner that minimizes physical changes to soils remain small and localized. Cover excavated areas with tarps to help reduce melting of permafrost.
- .9 Stockpiles must be placed to avoid burying or destroying vegetation and to avoid silt washing into water bodies or wetlands.

3.2 Erosion, Sediment and Drainage Controls

- .1 Prior to commencement of the work, install temporary erosion, sediment and drainage controls to prevent siltation and disruption of water bodies in accordance with this Section and Section 01 35 15 - Special Project Procedures for Contaminated Sites and Section 01 35 43 - Environmental Procedures.
- .2 Erosion, sediment and drainage controls are to be maintained during all stages of work.
- .3 Do not remove erosion, sediment and drainage controls, until directed by Departmental Representative.

3.3 Containerization, Storage and Offsite Disposal Contaminated Soil

- .1 Assemble, load, and secure Contaminated Soil Containers according to manufacturers recommendations. Do not exceed containers specified load limit. Do not transport off-site loaded containers that have suffered structural damage during handling or transport.
- .2 Provide a numbering system and maintain an inventory of all contaminated soil containers with contaminated soil to be transported and disposed of off-site.
- .3 Label all containers, using spray paint or other means, with the container number and contents.
- .4 Submit to Departmental Representative, a copy of the inventory of the contents of each container.

- .5 Dispose of containers of petroleum contaminated soil and water at an approved offsite facility. Contractor to submit name of disposal facility to Departmental Representative within two weeks of contractor award. Contractors will be required to provide proof of disposal such as waste manifests or proof of acceptance at an approved disposal facility.

3.4 Containerization, Storage and Offsite Disposal of Recovered Water

- .1 Assemble, load, and secure contaminated water containers according to manufacturers recommendations. Do not exceed containers specified load limit. Do not transport off-site loaded containers that have suffered structural damage during handling or transport.
- .2 Provide a numbering system and maintain an inventory of all contaminated water containers with contaminated soil to be transported and disposed of off-site.
- .3 Label all containers, using spray paint or other means, with the container number and contents.
- .4 Submit to Departmental Representative, a copy of the inventory of the contents of each container.
- .5 Dispose of containers of petroleum contaminated water at an approved offsite facility. Contractor to submit name of disposal facility to Departmental Representative within two weeks of contractor award. Contractors will be required to provide proof of disposal such as waste manifests or proof of acceptance at an approved disposal facility.

END OF SECTION

PART 1 - GENERAL

1.1 Summary

.1 Section Includes:

- .1 Materials and installation for light fuel oil piping from oil tanks to fuel oil burning equipment.

1.2 References

.1 American Society of Mechanical Engineers (ASME)

- .1 ASME-B16.3-98, Malleable-Iron Threaded Fittings.
- .2 ASME-B16.9-01, Factory-Made Wrought Steel Butt welding Fittings.

.2 American Society for Testing and Materials International (ASTM)

- .1 ASTM A47/A47M-99, Standard Specification for Ferritic Malleable Iron Castings.
- .2 ASTM A53/A53M-04, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless.
- .3 ASTM B61-02, Standard Specification for Steam or Valve Bronze Castings.
- .4 ASTM B75M-99, Standard Specification for Seamless Copper Tube.

.3 Canadian Standards Association (CSA International)

- .1 CSA-B139-09, Installation Code for Oil Burning Equipment.
- .2 CSA-B140.0-03, Oil Burning Equipment: General Requirements.

1.3 Submittals

.1 Product Data:

- .1 Submit manufacturer's printed product literature, specifications and datasheet for piping, fittings and equipment.

1.4 Measurement for Payment

- .1 Work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule BOP-1. Indicate the cost of this Work as a separate line item in the Cost Breakdown specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

2.1 Fill Vent and Carrier Pipe

- .1 Steel: to ASTM A53/A53M, Schedule 40, continuous weld or electric resistance welded, screwed.

2.2 Jointing Material

- .1 Screwed fittings: teflon tape.

2.3 Fittings

- .1 Steel:
 - .1 Malleable iron: screwed, banded, Class 150 to ASME-B16.3.
 - .2 Welding: butt-welding to ASME-B16.9.
 - .3 Unions: malleable iron, brass to iron, ground seat, screwed, to ASTM A47/A47M.
 - .4 Nipples: Schedule 40, to ASTM A53/A53M.

2.4 Gate Valves

- .1 NPS 2 and under, screwed bonnet:
 - .1 Rising stem: to MSS-SP-80, Class 125, 860 kPa, bronze body, solid wedge disc.
 - .2 Acceptable material: KITZ, Crane, FNW.

PART 3 - EXECUTION

3.1 Piping

- .1 Install fuel oil tank in the locations according to the project phase as shown on the drawings.
- .2 Install oil-piping system in accordance with CAN/CSA-B139 and CAN/CSA-B140.0.
- .3 Slope piping down in direction of storage tank unless otherwise indicated.
- .4 Provide leak and vapour proof caulking/sealant at tank connections.
- .5 Vent, suction piping outside building:
 - .1 Steel piping at tank discharge c/w union and gate valve.
 - .2 Grading: slope piping at 1% minimum back to tank.
 - .3 Provide 1800 mm braided stainless steel hose suitable for fuel oil.
 - .4 Paint piping with one coat of red oxide primer and two coats of safety red in a controlled environment before shipping to site. Touch up on site if necessary.

.6 Piping at outside tank:

- .1 Vent: extend into tank and terminate less than 25 mm from top. Terminate open end 3600 mm above grade with return bend and removable 10 mesh copper screen.

3.2 Valves

- .1 Install valves with stems upright or horizontal.

3.3 Field Quality Control

- .1 Test system in accordance with CAN/CSA-B139 and CAN/CSA-B140.0 and authorities having jurisdiction.
- .2 Isolate tanks from piping pressure tests.

END OF SECTION

PART 1 - GENERAL

1.1 Description

- .1 This Section specifies general requirements for the processing of aggregates to be incorporated into the work as granular fill.
- .2 It is anticipated that there will be no requirement for crushing of granular materials to satisfy gradation specifications. There may be requirements to select, blend, and/or screen granular materials to satisfy gradation specifications as indicated in this Section. Moisture conditioning of material from borrow sources may be required.

1.2 Source Approval

- .1 Source of materials to be incorporated into work requires review and comment by Departmental Representative.
- .2 Defined borrow areas and stockpiles are to be used.
- .3 Inform Departmental Representative of proposed source of aggregates and provide access for sampling and samples at least seven (7) days prior to commencing production. Departmental Representative will conduct confirmatory testing of borrow material, if required, to determine if any contamination is present.
- .4 If in the opinion of Departmental Representative, materials from the proposed source do not meet, or cannot reasonably be processed to meet specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.
- .5 Acceptance of a material at source does not preclude future rejection if it is subsequently found to lack uniformity, or if it fails to conform to requirements specified, or if its field performance is found to be unsatisfactory.

1.3 Measurement for Payment

- .1 All work under this section, except for the supply and placement of organic topsoil will be paid under Item 02 55 14-3. The supply and placement of topsoil will be paid under Item 31 22 33-1 Site Restoration.

PART 2 - PRODUCTS

2.1 Materials

- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material or other deleterious substances.
- .2 Flat and elongated particles are those whose greatest dimension exceeds five times their least dimension.

- .3 Coarse aggregates satisfying requirements of applicable section are to be composed of naturally formed particles of stone.
- .4 Native Earth Fill Material
 - .1 Native Excavated Material: Clean, native excavated soil, free from organic matter, frozen materials, stones larger than 75 mm, building debris and other foreign substances.
 - .2 Imported Clay: inorganic fine grained soil, free from organic matter, stones larger than 50 mm, building debris, and other foreign substances.
- .5 Type 3 Granular Fill:
 - .1 Type 3 Granular Fill consists of granular pit-run material, with a maximum particle size of 200 mm, from identified borrow sources and is generally used for:
 - .1 regrading low areas as indicated;
 - .2 backfill for contaminated soil and landfill waste excavations;
 - .3 general site grading requirements.
 - .2 Type 3 Granular Fill may be designated by Departmental Representative as a suitable alternative for other material types, but cannot be used without permission.
- .6 Materials classified as unsuitable will include:
 - .1 Non-uniform material of widely varying moisture density characteristics.
 - .2 Soils with moisture content exceeding optimum moisture by 5% or more.
 - .3 Soils containing organic material, snow, ice or other deleterious material which would hamper the achievement of the desired compaction.

PART 3 - EXECUTION

3.1 Handling

- .1 Handle and transport aggregates to avoid segregation, contamination and degradation.

END OF SECTION

PART 1 - GENERAL

1.1 Description

.1 This Section specifies requirements for:

- .1 Backfilling depressions created by the removal of contaminated soil, and general site areas requiring backfilling and reshaping.

1.2 Definitions

- .1 Reshaping: The levelling and grading, to a maximum depth of 600 millimetres (mm), including the movement of boulders, of designated areas to blend with the natural terrain and provide positive drainage. Reshaping does not require the supply and placement of additional granular fill material.
- .2 Granular Fill: Type 2 material as specified in Section 31 05 17 - Fill Materials
- .3 General Fill: Type 3 Granular Fill used for regrading low areas and to replace excavated contaminated soil.
- .4 SPMDD: Standard Proctor Maximum Dry Density determined by the Standard Proctor Method in accordance with ASTM D698 and applicable if less than 30% of the material is retained on the ASTM 19 millimetre sieve. Corrected Maximum Dry Density is applicable if more than 30% of the material is retained on the ASTM 19 millimetre sieve.
- .5 Fill Material: Material obtained from approved areas and required for backfill requirements.
- .6 Rigid Insulation: High-Density Polystyrene (HI-40), same as Polystyrene, Type 4, except compressive strength shall be minimum 275 kPa, thickness 50 mm.

1.3 Site Conditions

- .1 Suspend operations whenever climatic conditions are unsatisfactory for grading to conform with this Specification.
- .2 Do not operate equipment in work areas until the material has dried sufficiently to prevent excessive rutting.
- .3 Areas to be backfilled or reshaped are to be free from debris and excessive snow, ice or standing water.
- .4 Contractor is advised that soft ground conditions may exist.

1.4 Protection

- .1 Prevent damage to benchmarks, existing buildings, surface or underground service or utility lines, which are to remain in place. Immediately repair any damage to the above or replace the above in the event of damage, at no cost to Departmental Representative.

- .2 Protect and do not disturb spawning beds and breeding grounds during excavation, loading, and transportation of hydrocarbon-contaminated soil.
- .3 Prior to placement of fill materials, install rigid insulation (High Density Polystyrene) on base and walls of excavated area. Fill materials to be placed directly on top of rigid insulation. Cut and trim insulation to fit around corners. Take care to prevent cutting sheet membrane. Butt joints tightly.
- .4 Environmental protection measures are to be in accordance with the requirements specified in Section 01 35 43 - Environmental Procedures.

1.5 Measurement For Payment

- .1 The supply and placement of organic topsoil as well as seed shall will be paid under item 31 22 15-1 Site Restoration. The quantity will be based on measurements of the restored area as determined by the Departmental Representative.
- .2 Backfilling and compaction of the Contaminated Soil Excavation, as described in this Section, will not be measured separately for payment and is considered incidental to Item 02 55 13-3 in the Basis of Payment Schedule.
- .3 Except as indicated above, work under this section will not be measured. Include all costs in Item BOPC-1, Balance of Project Costs in the Basis of Payment Schedule. Indicate cost of the work of this section as a separate line item in the Contract Work Breakdown Structure (CWBS) specified in Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

PART 2 - PRODUCTS

2.1 Grass Seed

- .1 Supply one bag (25kg) of High Arctic Seed or Parks Naturalization Mix comprised of:
 - 35% Fairway Crested Wheatgrass
 - 20% Nakiska Sheeps Fescue
 - 20% Durar Hard fescue,
 - 10% Nakiska Sheeps Fescue,
 - 10% Norlac Red Clover
 - 10% Birdsfoot Trefoil
 - 5% Perennial Rye Grass
- .2 Deliver seed in original containers showing analysis of seed mixture, percentage pure seed, year of production, date when bagged and location, net mass, percent germination, and name and address of supplier.

PART 3 - EXECUTION

3.1 Site Preparation

- .1 Remove all debris from the area to be backfilled or reshaped.
- .2 Identify areas of ground disturbance for Reshaping and discuss with Departmental Representative.

3.2 Reshaping

- .1 Make use of material within the area designated for reshaping to provide a surface that is smooth and compact with firm slopes.
- .2 Reshape backfill material at a 10:1 slope with positive drainage away from below the building and away from the house. Blend the edges into the natural contours.

3.3 Backfilling and Compaction of Fill Material

- .1 Haul Fill Material from borrow sources to designated areas.
- .2 Handle and transport Fill Material to avoid segregation, contamination and degradation.
- .3 Do not proceed with backfilling operations until Departmental Representative has inspected excavation and determined that no further excavation is required. Departmental Representative may delay the approval to backfill the excavated area until analytical test results are available. Protect permafrost from melting by covering excavated areas with tarps and with shade screens.
- .4 Commence backfilling of excavated soil areas within one (1) day of receipt of confirmatory sampling results indicating no further excavation in the area is required. Costs for any extra work caused as a result of leaving excavations open longer will be the responsibility of Contractor.
- .5 All Fill Materials are to be placed in an unfrozen state. Fill Material is to be free from debris, snow and ice. Do not place Fill Material if the outside air temperature is below 0°C, unless otherwise specified or directed by Departmental Representative.
- .6 Place specified backfill material in uniform horizontal layers in depths to grades indicated. Compact each layer before placing succeeding layer.
- .7 For fill depths greater than 800 mm, place Fill Material in lifts not exceeding 400 mm in loose thickness. For fill depths greater than 400 mm and less than 800 mm, place material in two lifts of equal depth. For fill depths less than 400 mm, place material in one lift.
- .8 If granular fill has dried out prematurely due to weather conditions, scarify surface, adjust moisture condition and re-compact at Departmental Representative's discretion.

- .9 Compaction equipment must be capable of obtaining required densities uniformly in materials on project. Hand equipment must be available for compaction in areas where large equipment can not access and around instrumentation. Tracked or tired equipment may be substituted for dedicated compaction equipment, provided it can demonstrate satisfactory compactive effort.
- .10 Maintain natural drainage patterns, unless otherwise directed, and fill depressions to avoid any ponding of water adjacent to embankments.
- .11 Maintain a crowned surface during construction to ensure ready runoff of surface water. Drain low areas before placing material.
- .12 Base layer below storage tank (extending 1 m in a lateral direction) from the edge of the tank shall consist of 0.5 m of compacted gravel fill overlying compacted subgrade. Gravel to be compacted to 100% Standard Proctor Dry Density. All other fill areas to be compacted to 98 % Standard Proctor Dry Density.
- .13 Other areas can be backfilled with gravel fill or approved native fill material.

3.4 Topsoil Placement and Seeding

- .1 Import and place 100 mm organic topsoil on top of fill materials. Topsoil not required in filled areas located below residential building or below aboveground storage tank.
- .2 Topsoil must be free of subsoil, clay lumps, stones, live plants, roots, sticks or other extraneous matter
- .3 The Consultant shall approve the subgrade prior to placing topsoil and approve finished grade before the Contractor proceeds with the next phase of work.
- .4 Do not place topsoil when either topsoil or subgrade is frozen, excessively wet, extremely dry, or in a condition inhibiting proper grading, cultivation, or compaction.
- .5 Spread topsoil uniformly on prepared subsoil to achieve a minimum compacted or settled depth of 100 mm.
- .6 Cultivate topsoil to a depth of 75 mm, breaking down lumps. Remove stones larger than 50 mm, weeds, roots and other foreign matter.
- .7 Manually spread topsoil around trees and plants to prevent damage by grading and levelling equipment.
- .8 Fine grade to eliminate rough or low areas and to ensure positive drainage.
- .9 Final topsoil grades for seeded areas shall be flush to finished grade at surface structures, i.e. manholes, sidewalks and curbs.
- .10 No seeding shall be done on frozen soil or when condition are not favourable for successful seed germination.

- .11 Sow at the rate of 3 kg/100 m², during calm weather and when soil moisture content is adequate for germination.
- .12 Rake or harrow seeded areas.
- .13 Water seeded areas with a fine spray to avoid seed washout. Water to provide a minimum penetration depth of 50 mm. Prior to snowfall, water as required to maintain seeded areas in a moist condition to promote seed germination.

END OF SECTION

PART 1 - GENERAL

1.1 Section Includes

- .1 Materials and installation for fibre reinforced aboveground fuel oil storage tanks.

1.2 References

- .1 Canadian Council of Ministers of the Environment (CCME).
 - .1 CCME-PN1326-2004, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.
- .2 Canadian Standards Association (CSA)/CSA International.
 - .1 CAN/CSA-B139-00, Installation Code for Oil Burning Equipment.
- .3 National Research Council/Institute for Research in Construction.
 - .1 NRCC 38727, National Fire Code of Canada (NFC)-2005.

1.3 Submittals

- .1 Indicate details of installation.
- .2 Shop drawings to detail and indicate following as applicable to project requirements. Submit manufacturer's product data to supplement shop drawings.
 - .1 Tank capacity.
 - .2 Size and location of fittings.
 - .3 Decals, type size and location.
 - .4 Accessories: provide details and manufacturers product data.
 - .5 Anchors: description, material, size and locations.
 - .6 Level gauging: type and locations, include:
 - .1 Provide details and manufacturer's product data.

1.4 Measurement for Payment

- .1 Payment for the disconnection, installation of the tank at a temporary location as well as the re-installation of the fuel tank at its original location is to be paid according to Item 33 56 13-1. This item shall include all costs to move the storage tank, to temporary and final locations as well as for the preparation of the ground surface. The transferring of all fuel in the tank shall be included in the this payment item.

PART 2 - PRODUCTS

2.1 Existing Storage Tank: ZCL Home Heating Oil Tank

- .1 Double walled fibreglass tank, ULC labelled, with approximately 1100 L capacity, dimensions to be approximately 610 mm wide by 2025 mm long by 1345 high.
- .2 Connections: 5 minimum.
- .3 Tank to be shipped without stand.

2.2 Piping, Valves and Fittings

- .1 In accordance with Section 23 11 13 - Facility Fuel Oil Piping.
- .2 Piping located below product level shall be equipped with a 25 mm diameter fusible link valve to automatically shut off at storage tank.
- .3 Tank level gauging and indicator.
 - .1 Mechanical, direct reading device with 50 mm size dial.

PART 3 - EXECUTION

3.1 Installation

- .1 Install tanks in accordance with CAN/CSA-B139 and National Fire Code of Canada and manufacturer's recommendations.
- .2 Install tanks using licensed trained certified installers.
- .3 Calibrate level gauge system.
- .4 Test tank for leaks to requirements of CSA-B139-09.
- .5 Tank shall be mechanically fastened to the existing concrete pads.
- .6 Tank shall be mechanical fastened to the building.
- .7 Install tank on level ground.

END OF SECTION