Public Works and Government Services Canada

Requisition No. EZ897-161031/A

MERX I.D. No. _____

SPECIFICATIONS
for

Whitehorse Airport North Apron Remediation

Whitehorse, YT

Project No. July 2015

APPROVED BY:

Regional Manager ES — Date 2015/08/06

Construction Safety Coordinator — Date 2015-08-07

TENDER:

Project Manager — Date 2015-08-07

Real Property Services Branch, Professional and Technical Services, Pacific Region
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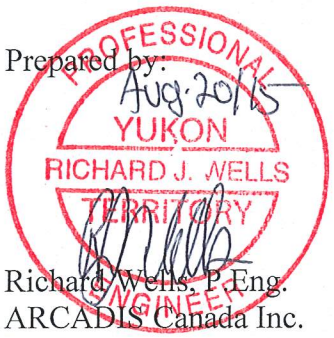
Prepared by:



Aug. 20/15

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ARCADIS Canada Inc.

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Not Used

1.3. Definitions

1.3.1. Contaminated Waste: material where substances occur at concentrations that: (1) are above background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment, or (2) exceed the levels specified in policies and regulations. Includes Special Waste and Non-Special Waste; does not include Non-Contaminated Waste. Relevant regulations, unless otherwise indicated or as determined by Departmental Representative, include:

1.3.1.1. For all sites: Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines and CCME Canada-Wide Standards.

1.3.1.2. For sites in BC: BC Hazardous Waste Regulations, BC Contaminated Sites Regulation.

1.3.1.3. For sites in Yukon: YT Special Waste Regulation, YT Contaminated Sites Regulation.

1.3.2. Disposal Facility: an existing offsite facility located in Canada where waste is placed in or on land and that is designed, constructed and operated to prevent any pollution from being caused by the facility outside the area of the facility. The facility must hold a valid and subsisting permit, certificate, approval, or any other form of authorization issued by a province or territory for the disposal of soil or other material that is Waste Quality. Waste Quality means soil or other material that is not suitable for industrial, commercial, urban park, residential, agricultural, wildlands or any other land use specified in the BC Contaminated Sites Regulation.

1.3.3. 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.

1.3.4. 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; vibrations; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3.5. Environmental Protection Plan: plan developed by the Contractor identifying all environmental risks and mitigation measures, including: personnel requirements,

emergency contacts, environmental protection methods, procedures, and equipment, and emergency response including a Spill Control Plan.

1.3.6. Special Waste: Contaminated Waste which meets the regulatory definition of Special Waste. Includes:

1.3.6.1. Special Waste – Treatable: Special Waste which contains only contaminants which are amenable to treatment.

1.3.6.2. Special Waste – Nontreatable: Special Waste which contains only contaminants which are not amenable to treatment.

1.3.6.3. Special Waste – Comingled: Special Waste which contains some contaminants which are amenable to treatment and some that are not.

1.3.7. Land Farming: a method of reducing the concentrations of hydrocarbon constituents in soil through biodegradation, characterized by spreading contaminated soil over a large surface area in the absence of engineered structures designed to contain the contamination. No active remediation (eg tilling) is required for Land Farming.

1.3.8. Landfill: an existing offsite facility located in Canada where waste is placed in or on land and that is designed, constructed and operated to prevent any pollution from being caused by the facility outside the area of the facility. The facility must hold a valid and subsisting permit, certificate, approval, or any other form of authorization issued by a province or territory for the disposal of waste.

1.3.9. Materials Source Separation Program (MSSP): consists of a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

1.3.10. Non-Contaminated Waste: waste which is not Contaminated Waste. Includes cleared and grubbed vegetation, litter, rubbish, debris, excess construction material, lumber, steel, plastic, concrete, asphalt, and wastewater not treated onsite. Includes surplus or unsuitable material such as topsoil or excavated non-contaminated soil which cannot be reused onsite.

1.3.11. Non-Special Waste: Contaminated Waste which does not meet the regulatory definition of Special Waste. Includes:

1.3.11.1. Non-Special Waste – Treatable: Non-Special Waste which contains only contaminants which are amenable to treatment.

1.3.11.2. Non-Special Waste – Nontreatable: Non-Special Waste which contains only contaminants which are not amenable to treatment.

1.3.11.3. Non-Special Waste – Comingled: Non-Special Waste which contains some contaminants which are amenable to treatment and some that are not.

1.3.12. Relocation: consists of excavating, loading, transporting, unloading, and placing soil or other material from one place on the Site to another.

1.3.13. Removal: consists of collecting, loading, transporting, unloading, and disposal of Non-Contaminated Waste at a Landfill. As determined by Departmental Representative, also includes: reuse onsite rather than disposal, recycling instead of disposal, and treatment in addition to disposal.

1.3.14. Site: area identified on Drawings.

1.3.15. Land Treatment Facility (LTF): an onsite engineered structure designed to contain hydrocarbon contaminated soil while reducing concentrations of hydrocarbon constituents through biodegradation. Examples of soil treatment facilities include biocells, biopiles and windrows but do not include Land Farms. Includes berms, ditches, and filters to contain contaminants.

1.3.16. Treatment Facility: an existing offsite facility located in Canada designed, constructed and operated for the handling or processing of waste in such a manner as to change the physical, chemical or biological character or composition of the waste. The facility must hold a valid and subsisting permit, certificate, approval, or any other form of authorization issued by a province or territory for the treatment of soil or other material that is Waste Quality. Waste Quality means soil or other material that is not suitable for industrial, commercial, urban park, residential, agricultural, wildlands or any other land use specified in the BC Contaminated Sites Regulation.

1.3.17. Waste Audit (WA): relates to projected waste generation. Involves controlled separation of waste.

1.3.18. Waste Reduction Workplan (WRW): a written report which addresses opportunities for reduction, reuse or recycling of materials.

1.4. Work Covered by Contract Documents

1.4.1. Work under this Contract covers Construction of a Remediation by Excavation at Whitehorse International Airport, YT. The Site is identified in the Drawings.

1.4.2. Work to be performed under this Contract includes, but is not limited to, the following items covered further in the Contract Documents:

1.4.2.1. Prime Contractor for Health and Safety at Site.

1.4.2.2. All design activities to complete Work including but not limited to:

1.4.2.2.1. support in place of the utility lines,

1.4.2.2.2. removal and replacement of utilities, and;

1.4.2.2.3. removal and replacement of the utilities may also require pump around options to allow the utilities to be operational during the removal and replacement activities in the work zone.

1.4.2.3. Prepare Site for Work.

1.4.2.4. Plan excavation, including geotechnical shoring and support in place design as required.

1.4.2.5. Excavate and Re-Instate the Aircraft Active Runaway

1.4.2.6. Excavate non-contaminated overburden soil and stockpile.

1.4.2.7. Excavate contaminated soil and stockpile.

1.4.2.8. Excavate non-contaminated waste and stockpile

1.4.2.9. Excavate Special Waste (Non Treatable) and stockpile

1.4.2.10. Load, haul, and deposit contaminated soil to the onsite Land Treatment Facility.

1.4.2.11. Load, haul and dispose non-contaminated waste to an off-site permitted disposal facility.

1.4.2.12. Load haul and dispose Special Waste (Non Treatable) to an off-site permitted disposal facility

1.4.2.13. Restore and close Site.
1.4.2.14. All ancillary activities required to complete Work.
1.4.3. "Green Requirements":
1.4.3.1. Use only environmentally responsible green materials/products with no Volatile Organic Compounds (VOC) emissions or minimum VOC emissions of indoor off-gassing contaminants for improved indoor air quality – subject of Departmental Representative's approval of submitted Materials Safety Data Sheet (MSDS) Product Data.
1.4.3.2. Use materials/products containing highest percentage of recycled and recovered materials practicable – consistent with maintaining cost effective satisfactory levels of competition.
1.4.3.3. Adhere to waste reduction requirement for reuse or recycling of waste materials, thus diverting materials from landfill.
1.4.4. Work not included in Contract comprises such work and services specifically listed as:
1.4.4.1. Not Used.

1.5. Project/Site Conditions
1.5.1. Work at Site will involve contact with contaminated materials including:
1.5.1.1. Hydrocarbons
1.5.2. Complete list of anticipated contaminants and concentration levels on the Site available separately in assessment reports.

1.6. Other Contracts
1.6.1. Another contract is currently in progress at Site.
1.6.2. Other contract is:
1.6.2.1. Environmental consultant.
1.6.3. Further contracts may be awarded while this Contract is in progress.
1.6.4. Cooperate with other contractors in carrying out their respective works and carry out instructions from Departmental Representative.
1.6.5. Coordinate Work with that of other contractors. If any part of Work under this Contract depends for its proper execution or result upon work of another contractor, report promptly to Departmental Representative, in writing, any defects which may interfere with proper execution of this Work.

1.7. Contractor's Use of Site
1.7.1. Use of Site:
1.7.1.1. Exclusive and complete for execution of Work.
1.7.1.2. Assume responsibility for assigned premises for performance of this Work.
1.7.1.3. Be responsible for coordination of all Work activities onsite, including the work of other contractors engaged by the Departmental Representative.
1.7.2. Perform Work in accordance with Contract Documents. Ensure Work is carried out in accordance with indicated phasing.
1.7.3. Do not unreasonably encumber Site with material or equipment.

1.8. Time of Completion

1.8.1. Complete the project by March 31, 2016.

1.9. Hours of Work

1.9.1. Restrictive as follows:

1.9.1.1. Normal weekday working hours are 07:00 to 19:00.

1.9.1.2. Notify Departmental Representative of all after hours work, including weekends and holidays.

1.10. Codes, Bylaws, Standards

1.10.1. Perform Work in accordance with the National Building Code of Canada (NBC), and other required or indicated Codes, Construction Standards and/or any other Code or Bylaw of local application.

1.10.2. Comply with restrictions of applicable local bylaws, rules and regulations enforced at the location concerned. These include:

1.10.2.1. Pollution, waste, or garbage restrictions.

1.10.2.2. Truck, traffic, and road access restrictions.

1.10.2.3. Water, stormwater, and sewer restrictions.

1.10.2.4. Noise restrictions.

1.10.2.5. Signage, fencing, hoarding restrictions.

1.10.2.6. Fire prevention restrictions.

1.10.2.7. Fuel equipment and storage restrictions.

1.10.3. Meet or exceed requirements of Contract Documents, specified standards, codes and referenced documents.

1.10.4. In any case of conflict or discrepancy, the most stringent requirements will apply.

1.11. Security Clearances

1.11.1. Not Used

2. PART 2 - PRODUCTS

2.1. Not Used

2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used

3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Not Used

1.3. Codes

1.3.1. Perform Work to Current Codes, Construction Standards and Bylaws, including Amendments.

1.4. Contract Documents

1.4.1. The Contract Documents, including drawings and specifications, are intended to complement each other, and to provide for and include everything necessary for the completion of the Work.

1.4.2. Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the Work.

1.5. Division of Specifications

1.5.1. The specifications are subdivided in accordance with the current 6-digit National Master Specifications System.

1.5.2. A division may consist of the Work of more than 1 subcontractor. Responsibility for determining which subcontractor provides the labour, material, equipment and services required to complete the Work rests solely with the Contractor.

1.6. Work Schedule

1.6.1. Carry on Work as per indicated “PHASES” and as follows:

1.6.1.1. Within 10 working days after Contract award, provide a “phasing bar chart” and a schedule showing anticipated progress stages and final completion of the Work within the time period required by the Contract Documents. Indicate the following:

1.6.1.1.1. Submission of shop drawings, product data, MSDS sheets and samples.

1.6.1.1.2. Commencement and completion of Work of each section of the specifications or trade for each phase as outlined.

1.6.1.1.3. Final completion date within the time period required by the Contract Documents.

1.6.1.2. Do not change accepted Schedule without notifying Departmental Representative.

1.6.1.3. Interim reviews of Work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.

1.7. Cost Breakdown

1.7.1. Before submitting the first progress claim, submit a breakdown of the Contract lump sum prices in detail as determined by the Departmental Representative and aggregating Contract price.

1.8. Documents Required

1.8.1. Maintain 1 copy each of the following posted at the job Site:
1.8.1.1. Contract drawings.
1.8.1.2. Contract specifications.
1.8.1.3. Addenda or other modifications to Contract Documents.
1.8.1.4. Change orders.
1.8.1.5. Copy of current Work schedule.
1.8.1.6. Reviewed and accepted shop drawings.
1.8.1.7. One set of record drawings and specifications for “as-built” purposes.
1.8.1.8. Field test reports.
1.8.1.9. Reviewed and accepted submissions.
1.8.1.10. Manufacturers’ installation and application instructions (as appropriate).
1.8.1.11. National Building Code of Canada (as appropriate).
1.8.1.12. Current construction standards of workmanship listed in technical Sections (as appropriate).
1.8.1.13. Health and Safety documents.
1.8.1.14. Environmental Protection Plan.
1.8.1.15. Permits and other approvals.

1.9. Regulatory Requirements

1.9.1. Generally, provincial and municipal laws and regulations do not apply on federal lands or to federal undertakings. Soils and other materials that are removed from federal lands may become subject to provincial or municipal laws and regulations.

1.9.2. Provincial or municipal standards may be used in relation to federal lands only as guidelines for the purpose of establishing remediation goals and objectives. The term "standards" is used in this part in order to maintain consistency in terminology throughout this document, and does not imply that standards contained in provincial or municipal laws and regulations apply on federal lands.

1.9.3. Obtain and pay for – Building Permit, Certificates, Licenses and other permit enforced at the location concerned required by regulatory municipal, provincial or federal authorities to complete the Work.

1.9.4. Provide inspection authorities with plans and information required for issue of acceptance certificates.

1.9.5. Furnish inspection certificates in evidence that the Work installed conforms with the requirements of the authority having jurisdiction.

1.10. Examination

1.10.1. Examine Site and be familiar and conversant with existing conditions likely to affect Work, including Contaminated Waste.

1.10.2. Provide photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims.

1.11. Existing Services

1.11.1. Where Work involves breaking into or connecting to existing services, carry out Work at times determined by the authorities having jurisdiction.
1.11.2. Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
1.11.3. Provide alternative routes for personnel, pedestrian, and vehicular traffic.
1.11.4. Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
1.11.5. Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
1.11.6. Provide temporary services as required to maintain critical building and tenant systems.
1.11.7. Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
1.11.8. Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
1.11.9. Construct barriers as required for safety.

1.12. Setting out of Work

1.12.1. Assume full responsibility for and execute complete layout of Work to locations, lines and elevations indicated.
1.12.2. Provide devices needed to lay out and construct Work.
1.12.3. Supply such devices as templates required to facilitate Departmental Representative's inspection of Work.

1.13. Acceptance of Substrates

1.13.1. Each trade will examine surfaces prepared by others and job conditions which may affect his work, and will report defects to the Departmental Representative. Commencement of Work will imply acceptance of prepared Work or substrate surfaces.

1.14. Quality of Work

1.14.1. Ensure that quality workmanship is performed through use of skilled tradesmen, under supervision of qualified journeyman.
1.14.2. The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code of Canada.
1.14.3. In cases of dispute, decisions as to standard or quality of Work rest solely with the Departmental Representative, whose decision is final.

1.15. Works Coordination

1.15.1. Coordinate work of subtrades.
1.15.1.1. Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
1.15.2. Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
1.15.2.1. Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and carrying out their respective work.
1.15.2.2. Develop coordination drawings when required, illustrating potential interference between work of various trades and distribute to affected parties.
1.15.2.3. Facilitate meeting and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
1.15.2.4. Publish minutes of each meeting.
1.15.2.5. Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
1.15.3. Submit shop drawings and order of prefabricated equipment or rebuilt components only after coordination meeting for such items has taken place.
1.15.4. Work coordination:
1.15.4.1. Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of spatial interference.
1.15.4.2. Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, cutting, patching and removal or replacement of completed Work.
1.15.4.3. Ensure disputes between subcontractors are resolved.
1.15.5. Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.

1.16. Approvals of Shop Drawings, Product Data and Samples
1.16.1. Submit the requested shop drawings, product data, MSDS sheets and samples indicated in each of the technical Sections to the Departmental Representative.
1.16.2. Allow sufficient time for the following:
1.16.2.1. Review of product data.
1.16.2.2. Approval of shop drawings.
1.16.2.3. Review of re-submission.
1.16.2.4. Ordering of accepted material and/or products.

1.17. Relics and Antiquities
1.17.1. Relics and antiquities and items of historical or scientific interest will remain property of Department. Protect such articles and request directives from Departmental Representative.
1.17.2. Give immediate notice to Departmental Representative if evidence of archeological finds are encountered during excavation/construction, and await Departmental Representative's written instructions before proceeding with Work in this area.

1.18. Products Supplied by Departmental Representative

1.18.1. Not Used.

1.19. Testing and Inspection

1.19.1. The Contractor will appoint and pay for the services of testing agency or testing laboratory as specified, and where required for the following:

1.19.1.1. Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.

1.19.1.2. Inspection and testing performed exclusively for Contractor's convenience.

1.19.2. Where tests or inspections by designated testing laboratory reveal Work is not in accordance with the Contract requirements, Contractor will pay costs for additional tests or inspections as the Departmental Representative may require to verify acceptability of correct Work.

1.19.3. Contractor will furnish labour and facilities to:

1.19.3.1. Notify Departmental Representative in advance of planned testing.

1.19.4. Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

1.19.5. Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and reviewed for acceptance by Departmental Representative.

1.19.6. The Departmental Representative may require, and pay for, additional inspection and testing services not included above.

1.19.7. Provide Departmental Representative with 2 copies of testing laboratory reports as soon as they are available.

1.20. As-Built Documents

1.20.1. The Departmental Representative will provide 2 sets of drawings, 2 sets of specifications, and 2 copies of the original AutoCAD files for "as-built" purposes.

1.20.2. As Work progresses, maintain accurate records to show all deviations from the Contract Documents. Note on as-built specifications, drawings and shop drawings as changes occur.

1.21. Cleaning

1.21.1. Daily conduct cleaning and disposal operations. Comply with local ordinances and anti-pollution laws.

1.21.2. Ensure cleanup of the work areas each day after completion of Work.

1.22. Dust Control

1.22.1. Prevent fugitive dust from the Site from interfering with onsite and offsite uses.

1.23. Environmental Protection

1.23.1. Prevent extraneous materials from contaminating air beyond construction area, by providing temporary enclosures during Work.

1.23.2. Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers.

1.23.3. Ensure proper disposal procedures in accordance with all applicable territorial regulations.

1.24. Additional Drawings

1.24.1. The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract Documents.

1.24.2. Upon request, Departmental Representative may furnish up to a maximum of 2 sets of Contract Documents for use by the Contractor at no additional cost. Should more than 2 sets of documents be required the Departmental Representative will provide them at additional cost.

1.25. Smoking Environment

1.25.1. Smoking on the Site is not permitted

1.26. System of Measurement

1.26.1. The metric system of measurement (SI) will be employed on this Contract.

1.27. Familiarization with Site

1.27.1. Before submitting tender become familiar with all conditions likely to affect the cost of the Work.

1.27.2. No claims or change orders will be considered by PWGSC in regard to existing conditions due to the Contractor's lack of familiarity with the Site.

1.28. Submission of Tender

1.28.1. Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract Documents and inspected the Site, and is fully conversant with all conditions.

2. PART 2 - PRODUCTS

2.1. Not Used

2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used

3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures
1.1.1. Not Used

1.2. Action and Informational Submittals
1.2.1. Not Used

1.3. Administrative
1.3.1. Schedule and administer project meetings throughout the progress of the Work at the call of Departmental Representative.
1.3.2. Prepare agenda for meetings.
1.3.3. Distribute written notice with agenda of each meeting 2 working days in advance of meeting date to Departmental Representative.
1.3.4. Provide physical space and make arrangements for meetings.
1.3.5. Preside at meetings.
1.3.6. Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
1.3.7. Reproduce and distribute copies of minutes within 2 working days after meetings and transmit to meeting participants, affected parties not in attendance, and Departmental Representative.
1.3.8. Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.4. Preconstruction Meeting
1.4.1. Within 5 working days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
1.4.2. Departmental Representative, Contractor, Superintendent, major Subcontractors, field inspectors and supervisors will be in attendance.
1.4.3. Establish time and location of meeting and notify parties concerned minimum 3 working days before meeting.
1.4.4. Agenda to include:
1.4.4.1. Appointment of official representative of participants in the Work.
1.4.4.2. Schedule of Work.
1.4.4.3. Schedule of submissions.
1.4.4.4. Requirements for temporary facilities.
1.4.4.5. Site security.
1.4.4.6. Change orders, procedures, approvals required, administrative requirements.
1.4.4.7. Monthly progress claims, administrative procedures, hold backs.
1.4.4.8. Appointment of inspection and testing agencies or firms.

1.5. Progress Meetings
1.5.1. During course of Work schedule progress meetings weekly.

1.5.2. Contractor, Superintendent, major Subcontractors involved in Work, Departmental Representative, and Owner are to be in attendance.
1.5.3. Agenda to include:
1.5.3.1. Review, approval of minutes of previous meeting.
1.5.3.2. Review of Work progress since previous meeting.
1.5.3.3. Field observations, problems, conflicts.
1.5.3.4. Problems which impede construction schedule.
1.5.3.5. Review of offsite fabrication delivery schedules.
1.5.3.6. Corrective measures and procedures to regain projected schedule.
1.5.3.7. Revision to construction schedule.
1.5.3.8. Progress schedule, during succeeding work period.
1.5.3.9. Review submittal schedules: expedite as required.
1.5.3.10. Maintenance of quality standards.
1.5.3.11. Review proposed changes for affect on construction schedule and on completion date.
1.5.3.12. Other business.

1.6. Tailgate Meetings
1.6.1. During the course of the work daily tailgate meetings at the start of each work shift. Multiple meetings will be required if the Contractor intends to work multiple shifts within a 24-hour period.
1.6.2. All construction workers to attend, including Contractor, Superintendent, major Subcontractors, and environmental consultants. Departmental Representative may attend.
1.6.3. Agenda to include:
1.6.3.1. Planned Work activities and environmental considerations for that shift.
1.6.3.2. Coordination activities required between Contractor, Subcontractors, Departmental Representative, and other contractors including environmental consultant.
1.6.3.3. Health and Safety items as identified or otherwise required.

2. PART 2 - PRODUCTS

2.1. Not Used
2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used
3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures
1.1.1. Not Used

1.2. Action and Informational Submittals
1.2.1. Not Used

1.3. Approvals
1.3.1. Approval of shop drawings and samples required by Departmental Representative as indicated.

1.4. General
1.4.1. This Section specifies general requirements and procedures for the Contractor's submissions of shop drawings, product data, samples and other requested submittals to Departmental Representative for review. Additional specific requirements for submissions are specified in individual technical sections.
1.4.2. Present shop drawings, product data and samples in SI Metric units.
1.4.3. Where items or information is not produced in SI Metric units, converted values are acceptable.
1.4.4. Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submissions.
1.4.5. Notify Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents and stating reasons for deviations.
1.4.6. Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review of submission unless Departmental Representative gives written acceptance of specific deviations.
1.4.7. Make any changes in submissions which Departmental Representative may require consistent with Contract Documents and resubmit as determined by Departmental Representative.
1.4.8. Notify Departmental Representative in writing, when resubmitting, of any revisions other than those requested by Departmental Representative.
1.4.9. Do not proceed with Work until relevant submissions are reviewed and accepted by the Departmental Representative.
1.4.10. Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
1.4.11. 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 specific project will be returned without being examined and considered rejected.

1.4.12. Verify field measurements and affected adjacent Work are coordinated.

1.4.13. Adjustments made on submittals by Departmental Representative are not intended to change Contract price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

1.4.14. Keep one reviewed copy of each submission on site.

1.5. Submission Requirements and Submittal List

1.5.1. Coordinate each submission with the requirements of the Work and the Contract Documents. Individual submissions will not be reviewed until:

1.5.1.1. Submissions are complete.

1.5.1.2. All related information is available.

1.5.2. Allow 5 working days for Departmental Representative's review of each submission, unless noted otherwise.

1.5.3. Accompany submissions with transmittal letter, in duplicate, containing:

1.5.3.1. Date.

1.5.3.2. Project title and number.

1.5.3.3. Contractor's name and address.

1.5.3.4. Identification and quantity of each shop drawing, product data and sample.

1.5.3.5. Other pertinent data.

1.5.4. Submissions must include:

1.5.4.1. Date and revision dates.

1.5.4.2. Project title and number.

1.5.4.3. Name and address of:

1.5.4.3.1. Subcontractor.

1.5.4.3.2. Supplier.

1.5.4.3.3. Manufacturer.

1.5.4.4. Contractor's stamp, signed by Contractor's authorized representative, certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

1.5.4.5. Contractor's Professional Engineer or other Qualified Professional to seal submissions. Submissions to include at a minimum 1 hard copy of original ink sealed document.

1.5.4.6. Details of appropriate portions of Work as applicable.

1.5.4.7. After Departmental Representative's review, distribute copies.

1.6. Shop Drawings Submittal List

1.6.1. Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data intended to illustrate details of a portion of the work which are provided to the registered professional of record.

1.6.2. Shop drawings: original drawings or modified standard drawings provided by Contractor to illustrate details of portion of Work which are specific to project requirements.

1.6.3. Maximum sheet size: ANSI E (864 x 1118 mm).

1.6.4. Submit 2 prints of shop drawings for each requirement requested in the specification sections and/or as requested by the Departmental Representative.
1.6.5. Cross-reference shop drawing information to applicable portions of the Contract Documents.
1.6.6. Contractor's Professional Engineer or other Qualified Professional to seal each individual shop drawing.
1.6.7. Contractor's Professional Engineer or other Qualified Professional to seal final design drawings and submit to Departmental Representative upon completion of the construction project. Final design drawings are prepared by a registered professional of record to reflect design changes made during the construction of a building project. Final design drawings are intended to incorporate addenda, change orders and other significant design changes, but not necessarily site instructions.
1.6.8. Shop drawings must include:
1.6.8.1. The original date of issue
1.6.8.2. The dates of all applicable revisions;
1.6.8.3. The project title;
1.6.8.4. The project address;
1.6.8.5. The project number;
1.6.8.6. Wherever applicable, the name(s) of the: Contractor, subcontractors, suppliers, manufacturers, and separate detailers.
1.6.8.7. The sequence number for each shop drawing;
1.6.8.8. Identifications of all products and materials;
1.6.8.9. Relation to adjacent structures or materials;
1.6.8.10. Clearly-identified field dimensions; and
1.6.8.11. Applicable standards.

1.7. Shop Drawings Review

1.7.1. Review of shop drawings by Public Works and Government Services Canada is for the sole purpose of ascertaining conformance with the general concept.
1.7.2. This review will not mean that Public Works and Government Services Canada approves the detail design inherent in the shop drawings, responsibility for which will remain with Contractor submitting same.
1.7.3. This review will not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and Contract Documents.
1.7.4. Without restricting the generality of the foregoing, the Contractor is responsible for:
1.7.4.1. Dimensions to be confirmed and correlated at the job site.
1.7.4.2. Information that pertains solely to fabrication processes or to techniques of construction and installation.
1.7.4.3. Coordination of the Work of all sub-trades.

1.8. Product Data

1.8.1. Product data: manufacturers' catalogue sheets, MSDS sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products or any other specified information.
1.8.2. Delete information not applicable to project.
1.8.3. Supplement standard information to provide details applicable to project.
1.8.4. Cross-reference product data information to applicable portions of Contract Documents.
1.8.5. Submit 2 copies of product data.

1.9. Samples
1.9.1. For all imported material, provide samples to Departmental Representative prior to material arriving onsite.
1.9.2. Provide samples representative of all material to be imported.
1.9.3. Provide sufficient sample size to allow geotechnical and environmental quality testing.
1.9.4. Do not import material until Departmental Representative has completed and analysed testing.
1.9.5. Departmental Representative will inspect imported material, and will not allow import of material that varies from provided samples.

1.10. Progress Schedule
1.10.1. Submit work schedule and cost breakdown as required.

1.11. Test Results and Inspection Reports
1.11.1. Submit in duplicate test results and inspection reports required.

2. PART 2 - PRODUCTS

2.1. Not Used
2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used
3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Not Used

1.3. Protection of Public Traffic

1.3.1. Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.

1.3.2. Comply with current version of BC Ministry of Transportation Traffic Control Manual for Work on Roadways.

1.3.3. Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, except where other means of road access exist that meet approval of Departmental Representative.

1.4. Informational and Warning Devices

1.4.1. Provide and maintain signs, flashing warning lights, and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.

1.4.2. Supply and erect signs, delineators, barricades and miscellaneous warning devices to BC Ministry of Transportation Traffic Control Manual for Work on Roadways.

1.4.3. Place signs and other devices in locations recommended in BC Ministry of Transportation Traffic Control Manual for Work on Roadways.

1.4.4. Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.

1.4.5. Continually maintain traffic control devices in use:

1.4.5.1. Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.

1.4.5.2. Remove or cover signs which do not apply to conditions existing from day to day.

1.5. Control of Public Traffic

1.5.1. Provide competent flag personnel, trained in accordance with, and properly equipped to BC Ministry of Transportation Traffic Control Manual for Work on Roadways for situations as follows:

1.5.1.1. When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.

1.5.1.2. In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

1.6. Operational Requirements

1.6.1. Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by Departmental Representative to protect and control public traffic, existing conditions for traffic to be restricted as follows:

1.6.1.1. Maintain existing conditions for traffic crossing right-of-way.

2. PART 2 - PRODUCTS

2.1. Not Used

2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used

3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Contaminated Waste Management Plan: within 10 working days after Contract award and prior to mobilization to Site submit plan detailing management of Contaminated Waste. Submit written documentation of weekly Contaminated Waste inspections on a monthly basis.

1.2.2. Submittals for Progress Meetings: make submittals at least 24 hours prior to scheduled progress meetings as follows:

1.2.2.1. Updated progress schedule detailing activities. Include review of progress with respect to previously established dates for starting and stopping various stages of Work, major problems and action taken, injury reports, equipment breakdown, and material removal.

1.2.2.2. Copies of transport manifests, trip tickets, and disposal receipts for waste materials removed from work area.

1.2.2.3. Other information required by Departmental Representative or relevant to agenda for upcoming progress meeting.

1.2.3. Site Layout: within 10 working days after Contract award and prior to mobilization to Site, submit site layout drawings showing existing conditions and facilities, construction facilities and temporary controls provided by Contractor including following:

1.2.3.1. Equipment and personnel decontamination areas.

1.2.3.2. Means of ingress, egress and temporary traffic control facilities.

1.2.3.3. Equipment and material staging areas.

1.2.3.4. Soil stockpile areas.

1.2.3.5. Exclusion Zones, Contaminant Reduction Zones, and other zones specified in Contractor's site-specific Health and Safety Plan.

1.2.3.6. Grading, including contours, required to construct temporary facilities.

1.2.3.7. Wastewater treatment facilities.

1.2.4. Equipment Decontamination Pad: submit equipment decontamination pad design to Departmental Representative for review prior to commencing construction.

1.2.5. Training: within 10 working days after Contract award and prior to mobilization to Site, submit documentation verifying that hazardous materials employees have been trained, tested, and certified to safely and effectively carry out their assigned duties.

1.2.6. Water Treatment Facility: within 10 working days after Contract award and prior to mobilization to Site, submit design, operation procedures, and monitoring and sampling plan of onsite Water Treatment Facility.

1.2.7. Transport Manifests: within 5 working days of offsite transport, submit documentation verifying that material has been transported appropriately, including:
1.2.7.1. Method of transport.
1.2.7.2. Name of transport company.
1.2.7.3. Location, date, and quantity of pick-up.
1.2.7.4. Location, date, and quantity of drop-off.
1.2.8. Certificate of Disposal: within 30 working days of disposal at offsite Disposal Facility, submit documentation verifying that materials have been disposed by Contractor, including:
1.2.8.1. Issued by the Disposal Facility.
1.2.8.2. On company letterhead.
1.2.8.3. Name and location of facility where the material is being disposed.
1.2.8.4. Date and quantity for each shipment received and total quantity received.
1.2.8.5. Signed by identified authorized company representative.
1.2.9. Certificate of Treatment: within 30 working days of treatment at offsite Treatment Facility, submit documentation verifying that materials have been treated by Contractor, including:
1.2.9.1. Issued by the Treatment Facility.
1.2.9.2. On company letterhead.
1.2.9.3. Name and location of facility where the material is being treated.
1.2.9.4. Date and quantity for each shipment received and total quantity received.
1.2.9.5. Date and quantity for each treatment event and total quantity treated.
1.2.9.6. Treatment methodology.
1.2.9.7. Laboratory certificates demonstrating treatment objectives were met.
1.2.9.8. Disposition of treated material.
1.2.9.9. Signed by identified authorized company representative.

1.3. Sequencing and Scheduling

1.3.1. Do not commence Work involving contact with potentially Contaminated Wastes until decontamination facilities are operational and reviewed for acceptance by Departmental Representative.

1.4. Equipment Decontamination Facility

1.4.1. Prior to commencing Work involving equipment contact with potentially Contaminated Wastes, construct equipment decontamination pad to accommodate largest piece of onsite potentially contaminated equipment.
1.4.2. Provide, operate, and maintain necessary equipment, pumps, and piping required to collect and contain equipment decontamination wastewater and sediment and transfer materials to accepted storage facilities.

1.5. Drum Staging Pad

1.5.1. Provide, maintain, and operate drum staging pad as required.
1.5.2. Construct drum staging pad with sump capable of collecting leachate and rain runoff. Place polyethylene sheeting such that sheeting contours over top of

berm, and leachate and runoff from staging pad is conducted solely to sump on staging pad.

1.6. Soil Stockpiling Facilities

1.6.1. Provide, maintain, and operate storage/stockpiling facilities as required.

1.6.2. Segregate non-contaminated soil from contaminated soil.

1.6.3. Store non-contaminated soil excavated only on non-contaminated site surface areas. Ensure no contact between non-contaminated excavated soil and drainage or contaminated water or contaminated soil.

1.6.4. Store excavated, contaminated soil in drums or water-tight temporary storage cells.

1.6.4.1. Install impermeable liner below proposed stockpile locations to prevent contact between stockpile material and ground.

1.6.4.2. Cover stockpiled material when not being worked or sampled to prevent release of airborne dust, vapours, or odours, and to prevent saturation and leachate generation of material.

1.6.4.3. Segregate different suspect material in discrete piles as determined by Departmental Representative.

1.6.4.4. Assist Departmental Representative in collection of stockpile samples for exsitu characterization. Exsitu characterization may take up to 5 working days. No standby charges or delays to be incurred for confirmatory sampling

1.6.4.5. Equip facility with tarps capable of covering stockpiled material until Departmental Representative advises Contractor to dispose of material offsite.

1.7. Design Requirements

1.7.1. Water Treatment Facility:

1.7.1.1. Design and Operating Criteria: design water filtering plant capable of filtering water generated from dewatering excavations and work areas to meet discharge requirements of authority having jurisdiction, capable of removing oil, suspended solids, particulates, and asbestos fibers, and filter water through 5-micron particulate filter prior to discharge.

1.7.1.2. Ensure that discharges from Site are in compliance with applicable permit requirements and limitations.

1.7.1.3. Provide piping to transfer liquid/solid mixtures generated by dewatering operations which require water filtering to water filtering plant.

1.7.1.4. Design water filtering operations capable of receiving liquid/solid mixtures and not causing delay to dewatering operations.

1.7.2. 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.

1.7.3. Installation:

1.7.3.1. Provide labour, materials, and equipment and do Work required for setup and construction of water filtering plant.

1.7.3.2. Cut vegetation to ground level.

1.7.3.3. Install component systems in accordance with installation procedures and as indicated.

1.7.3.4. Following installation of system, implement initial operation test in accordance with procedures developed by Contractor and submitted to Departmental Representative for review.

1.7.3.5. Install piping in accordance with manufacturer's instructions and test for leakage using potable water prior to commencing dewatering and filtering operations.

1.7.4. Initial Testing: performance of water filtering plant provided by Contractor will initially be determined by Departmental Representative as follows:

1.7.4.1. Test run with clean water to ensure it is operating currently and no leaks are occurring

1.7.4.2. Performance verification (contaminant removal) prior to discharge.

1.7.5. Operation:

1.7.5.1. On basis of analytical results obtained by Departmental Representative, make system modifications required for effluent to satisfy effluent criteria, or continue with normal dewatering operations as determined by Departmental Representative.

1.7.5.2. Operate water filtering plant by experienced, qualified personnel in accordance with manufacturer's instructions and procedures submitted by Contractor and reviewed for acceptance by Departmental Representative.

1.7.6. Decommissioning/Dismantling:

1.7.6.1. Decontaminate and remove salvageable components of water filtering plant including water filtering system, pumps, piping, and electrical equipment.

1.7.6.2. Dispose of non-salvageable equipment and materials at accepted offsite disposal facility. Decontaminate salvageable equipment within facility area as required prior to removal from Site.

1.8. Wastewater Storage Tank

1.8.1. Provide, operate, and maintain wastewater storage tanks to store wastewaters.

1.8.2. Wastewater includes handbasin, shower, wastewaters from Personnel Hygiene/Decontamination Facility; water collected from dewatering operations; and water collected from Equipment Decontamination Facility.

1.8.3. Store wastewaters from dewatering operations and Equipment Decontamination Facility in separate tank from wastewater from Personnel Hygiene/Decontamination Facility.

1.8.4. If toilet facilities are provided in Personnel Hygiene/Decontamination Facility, store wastewater from these toilets with wastewater from handbasins, showers, for ultimate disposal offsite.

1.8.5. Discharges: comply with applicable discharge limitations and requirements; do not discharge wastewaters to Site sewer systems that do not conform to or are in violation of such limitations or requirements; and obtain Departmental Representative's approval prior to discharge of wastewater.

1.8.6. Provide pumps and piping to convey collected wastewaters to designated wastewater storage tanks; provide wastewater storage tanks with minimum total

live capacity such that effluent quality can be analyzed and accepted prior to discharge to sanitary sewer system.

1.8.7. Install wastewater storage tanks in locations as determined by Departmental Representative.

1.8.8. Support tank(s) on temporary aboveground foundation(s).

1.8.9. Connect pumps, piping, valves, miscellaneous items, and necessary utilities as required for operation of facilities; and protect tanks, valves, pumps, piping, and miscellaneous items from freezing.

1.8.10. Do not operate wastewater storage tanks until inspected and accepted by Departmental Representative.

1.8.11. Notify Departmental Representative 3 working days minimum in advance of when wastewater storage tank is anticipated to be full.

1.8.11.1. Do not discharge additional liquids to filled tank following sampling by Contractor.

1.8.11.2. Contractor will determine appropriate disposition of wastewaters based on sample analysis.

1.8.12. Transport and dispose of wastewaters at offsite disposal facility as identified by Contractor and reviewed for acceptance by Departmental Representative.

1.9. Vehicular Access and Parking

1.9.1. Maintenance and Use:

1.9.1.1. Prevent contamination of access roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by Departmental Representative; transport and dispose of in appropriate offsite disposal facility. Clean access roads at least once per shift.

1.9.1.2. Departmental Representative may collect soil samples for chemical analyses from traveling surfaces of constructed and existing access routes prior to, during, and upon completion of Work. Excavate and dispose of clean soil contaminated by Contractor's activities at no additional cost or time.

1.10. Dust and Particulate Control

1.10.1. Execute Work by methods to minimize raising dust from construction operations.

1.10.2. Implement and maintain dust and particulate control measures immediately as determined necessary by Departmental Representative during construction and in accordance with regulations.

1.10.3. Provide positive means to prevent airborne dust from dispersing into atmosphere. Use potable water for dust and particulate control.

1.10.4. As minimum, use appropriate covers on trucks hauling fine or dusty material. Use watertight vehicles to haul wet materials.

1.10.5. Prevent dust from spreading to adjacent property sites.

1.10.6. Departmental Representative will stop Work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at

Site, or when air quality monitoring indicates that release of fugitive dusts and particulates into atmosphere equals or exceeds specified levels.

1.10.7. 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 necessary changes to operations prior to resuming excavation, handling, processing, or other Work that may cause release of dusts or particulates at no additional cost or time.

1.11. Pollution Control

1.11.1. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious toxic substances and pollutants produced by construction operations.

1.11.2. Be prepared to intercept, clean up, and dispose of spills or releases that may occur whether on land or water. Maintain materials and equipment required for cleanup of spills or releases readily accessible onsite.

1.11.3. Promptly report spills and releases potentially causing damage to environment to:

1.11.3.1. Authority having jurisdiction or interest in spill or release including conservation authority, water supply authorities, drainage authority, road authority, and fire department.

1.11.3.2. Departmental Representative.

1.11.4. Take immediate action using available resources to contain and mitigate effects on environment and persons from spill or release.

1.11.5. Provide spill response materials including, containers, adsorbent, shovels, and personal protective equipment. Make spill response materials available at all times in which hazardous materials or wastes are being handled or transported. Spill response materials: compatible with type of material being handled.

1.11.6. Volatile Organic Compounds (VOC) Control:

1.11.6.1. In addition to requirements of Health and Safety for Contaminated Sites, monitor air quality for volatile organics at perimeter security locations as approved by Departmental Representative, every hour during contaminated materials excavation and management activities, and maintain log of air quality readings.

1.11.6.2. If air quality monitoring indicates that release of volatile organics in air at site boundary exceeds Level C of Personnel Protective Equipment threshold for air quality, implement corrective actions to control volatile organics.

1.11.6.3. If actions are not sufficient to control release of volatile organics within 1/2 hour of identification of air quality problem, suspend work resulting in excessive volatile organic emissions. Departmental Representative and Contractor to discuss additional methods that Contractor proposes to control release of volatile organics.

1.11.6.4. Make necessary changes at no additional cost to Departmental Representative prior to resuming Work.

1.12. Equipment Decontamination

1.12.1. Commence Work involving equipment contact with potentially Contaminated Waste only after Equipment Decontamination Facility is operational.

1.12.2. Decontaminate equipment after working in potentially contaminated work areas and prior to subsequent Work or travel on clean areas.

1.12.3. Perform equipment decontamination on Contractor-constructed equipment decontamination pad.

1.12.4. At minimum, perform following steps during equipment decontamination: mechanically remove packed dirt, grit, and debris by scraping and brushing without using steam or high-pressure water to reduce amount of water needed and to reduce amount of contaminated rinsate generated.

1.12.5. If required as determined by Departmental Representative use high-pressure, low-volume, hot water or steam supplemented by detergents or solvents as appropriate. Pay particular attention to tire treads, equipment tracks, springs, joints, sprockets, and undercarriages. Scrub surfaces with long handle scrub brushes and cleaning agent. Rinse off and collect cleaning agent. Air dry equipment in Clean Zone before removing from Site or travelling on clean areas. Perform assessment as determined by Departmental Representative to determine effectiveness of decontamination.

1.12.6. Each piece of equipment will be inspected by Departmental Representative after decontamination and prior to removal from Site and/or travel on clean areas. Departmental Representative will have right to require additional decontamination to be completed if deemed necessary.

1.12.7. Take appropriate measures necessary to minimize drift of mist and spray during decontamination including provision of wind screens.

1.12.8. Collect decontamination wastewaters and sediments which accumulate on equipment decontamination pad. Transfer wastewaters to designated wastewater storage tank.

1.12.9. Transfer sediments to soil staging area.

1.12.10. Furnish and equip personnel engaged in equipment decontamination with protective equipment including suitable disposable clothing, respiratory protection, and face shields.

1.12.11. Have on hand sufficient pumping equipment, of adequate pumping capacity and associated machinery and piping in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment. Maintain piping and connections in good condition and leak-free.

1.13. Water Control

1.13.1. Maintain excavations free of water.

1.13.2. Protect Site from puddling or running water. Grade Site to drain. Provide water barriers as necessary to protect Site from soil erosion.

1.13.3. Prevent surface water runoff from leaving work areas.

1.13.4. Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially Contaminated Waste, offsite or to municipal sewers.
1.13.5. Prevent precipitation from infiltrating or from directly running off stockpiled materials. Cover stockpiled materials with an impermeable liner during periods of Work stoppage including at end of each working day and as determined by Departmental Representative.
1.13.6. Direct surface waters that have not contacted potentially Contaminated Wastes to surface drainage systems.
1.13.7. Control surface drainage including ensuring that gutters are kept open, water is not allowed across or over pavements or sidewalks except through accepted pipes or properly constructed troughs, and runoff from unstabilized areas is intercepted and diverted to suitable outlet.
1.13.8. Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.
1.13.9. Provide, operate, and maintain necessary equipment appropriately sized to keep excavations, staging pads, and other work areas free from water.
1.13.10. Contain water from stockpiled materials. Transfer potentially contaminated surface waters to wastewater storage tanks separate from wastewater from Personnel Hygiene/Decontamination Facility.
1.13.11. 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.
1.13.12. Contain and collect wastewaters and transfer such collected wastewaters to Contractor –supplied wastewater storage tanks.

1.14. Dewatering

1.14.1. Dewater various parts of Work including, without limitation, excavations, structures, foundations, and work areas.
1.14.2. Employ construction methods, plant procedures, and precautions that ensure Work, including excavations, are stable, free from disturbance, and dry.
1.14.3. Dewatering Methods: includes sheeting and shoring; groundwater control systems; surface or free water control systems employing ditches, diversions, drains, pipes and/or pumps; and other measures necessary to enable Work to be carried out in dry conditions.
1.14.4. 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.
1.14.5. Take precautions necessary to prevent uplift of structure or pipeline and to protect excavations from flooding and damage due to surface runoff.
1.14.6. Test and analyze water generated from dewatering activities and treat to meet required discharge or disposal criteria.

1.15. Erosion and Sediment Control

1.15.1. 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.

1.15.2. Minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical. Strip vegetation, regrade, or otherwise develop 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 determined by Departmental Representative.

1.15.3. Provide and maintain temporary measures which may include, silt fences, hay or straw bales, ditches, geotextiles, drains, berms, terracing, riprap, temporary drainage piping, sedimentation basins, vegetative cover, dikes, and other construction required to prevent erosion and migration of silt, mud, sediment, and other debris offsite 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.

1.15.4. Hay or Straw Bale: wire bound or string tied; securely anchored by at least 2 stakes or rebars driven through bale 300 mm to 450 mm into ground; chinked (filled by wedging) with hay or straw to prevent water from escaping between bales; and entrenched minimum of 100 mm into ground.

1.15.5. Silt Fence: assembled, ready to install unit consisting of geotextile attached to driveable posts. Geotextile: uniform in texture and appearance, having no defects, flaws, or tears that would affect its physical properties; and contain sufficient ultraviolet ray inhibitor and stabilizers to provide minimum 2-year service life from outdoor exposure.

1.15.6. Net Backing: industrial polypropylene mesh joined to geotextile at both top and bottom with double stitching of heavy-duty cord, with minimum width of 750 mm.

1.15.7. Posts: sharpened wood, approximately 50 mm square, protruding below bottom of geotextile to allow minimum 450 mm embedment; post spacing 2.4 m maximum. Securely fasten each post to geotextile and net backing using suitable staples.

1.15.8. Plan construction procedures to avoid damage to Work or equipment encroachment onto water bodies or drainage ditch banks. In event of damage, promptly take action to mitigate effects. Restore affected bank or water body to existing condition.

1.15.9. Installation:

1.15.9.1. Construct temporary erosion control items as required.

1.15.9.2. Do not construct bale barriers and silt fence in flowing streams or in swales.

1.15.9.3. Check erosion and sediment control measures weekly after each rainfall; during prolonged rainfall check daily.

1.15.9.4. Bales and/or silt fence may be removed at beginning of work day, replace at end of work day.

1.15.9.5. Whenever sedimentation is caused by stripping vegetation, regrading, or other development, remove it from adjoining surfaces, drainage systems, and watercourses, and repair damage as quickly as possible.

1.15.9.6. Prior to or during construction, Departmental Representative may require installation or construction of improvements to prevent or correct temporary conditions onsite. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, planting, retaining walls, culverts, pipes, guardrails, temporary roads, and other measures appropriate to specific condition. Temporary improvements must remain in place and in operation as necessary or until otherwise determined by Departmental Representative.

1.15.9.7. Repair damaged bales, end runs, and undercutting beneath bales.

1.15.9.8. Unless requested 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.

1.15.10. Construct fill areas by selective placement to avoid erosive surface silts or clays.

1.15.11. Do not disturb existing embankments or embankment protection.

1.15.12. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

1.15.13. If soil and debris from Site accumulate in low areas, storm sewers, roadways, gutters, ditches, or other areas where in Departmental Representative's determination it is undesirable, remove accumulation and restore area to original condition.

1.16. Progress Cleaning

1.16.1. Maintain cleanliness of Work and surrounding site to comply with federal, provincial, and local fire and safety laws, ordinances, codes, and regulations.

1.16.2. Coordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

1.17. Final Decontamination

1.17.1. Perform final decontamination of construction facilities, equipment, and materials which may have come in contact with potentially Contaminated Wastes prior to removal from Site.

1.17.2. Perform decontamination as specified to satisfaction of Departmental Representative. Contractor to perform additional decontamination if required.

1.18. General Removal

1.18.1. Remove all waste within Work areas as determined by Departmental Representative.

1.18.2. The Contractor becomes the owner of, and is responsible for, any soil or other material once it is loaded on a vehicle, barge, or other vessel for transport offsite.

1.18.3. Remove surplus materials and temporary facilities from Site.
1.18.4. Dispose waste materials, litter, debris, and rubbish offsite.
1.18.5. Do not burn or bury rubbish and waste materials onsite.
1.18.6. Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
1.18.7. Do not discharge wastes into streams or waterways.
1.18.8. Dispose of following materials at appropriate Landfill identified by Contractor and accepted by Departmental Representative:
1.18.8.1. Non-Contaminated Waste.
1.18.8.2. Disposable PPE worn during final cleaning.
1.18.8.3. Wastewater removed from wastewater storage tank.
1.18.8.4. Wastewater generated from final decontamination operations including wastewater storage tank cleaning.
1.18.8.5. Non-Contaminated lumber from decontamination pads.
1.18.9. Wastewater sample and analysis: Contractor will perform sampling and analysis of stored wastewater for disposal purposes prior to removal from Site. Results of analyses will determine appropriate methods of disposal. Upon receipt of analytical results, transfer tank contents without spills or release, to water treatment facility or offsite disposal facility, as appropriate. Following completion of tank emptying, decontaminate tank interior with steam or high-pressure water wash supplemented by detergent. Dispose of tank decontamination water with tank contents.
1.18.10. Minimize generation of Special Waste to maximum extent practicable. Take necessary precautions to avoid mixing Non-Contaminated Waste and Contaminated Waste.
1.18.11. Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
1.18.11.1. Hazardous Waste recycled in manner constituting disposal;
1.18.11.2. Hazardous Waste burned for energy recovery;
1.18.11.3. Lead-acid battery recycling;
1.18.11.4. Hazardous Waste with economically recoverable precious metals.

1.19. Contaminated Waste Removal

1.19.1. Contaminated Waste will be segregated, transported, treated, and disposed into the following classifications as determined by the Departmental Representative:
1.19.1.1. Special Waste – Treatable: This material must be treated at a Treatment Facility prior to disposal at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.
1.19.1.2. Special Waste – Nontreatable: This material must be disposed at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.
1.19.1.3. Special Waste – Comingled: This material must be treated at a Treatment Facility prior to disposal at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.

1.19.1.4. Non-Special Waste – Treatable: This material must be treated at a Treatment Facility prior to disposal at a Disposal Facility unless otherwise indicated or determined by Departmental Representative. This material may be treated at an onsite Land Treatment Facility as appropriate.

1.19.1.5. Non-Special Waste – Nontreatable: This material must be disposed at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.

1.19.1.6. Non-Special Waste – Comingled: This material must be treated at a Treatment Facility prior to disposal at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.

1.19.2. Contaminated Waste Transport: transport offsite using appropriate containers.

1.19.2.1. Transport material offsite as soon as practical. Do not unreasonably stockpile material onsite.

1.19.2.2. Cover material while being transported to prevent release of airborne dust, vapours, or odours, and to prevent saturation and leachate generation of material.

1.19.2.3. Manifest all material removed from Site documenting movement, interim storage and treatment, and final destination.

1.19.3. Contaminated Waste Treatment: treat offsite at Treatment Facility identified by Contractor and accepted Departmental Representative.

1.19.3.1. Treat material offsite as soon as practical. Do not unreasonably stockpile material offsite.

1.19.3.2. Material treated must subsequently be disposed of at a Disposal Facility after treatment.

1.19.3.3. Certificate of Treatment required for all material treated offsite.

1.19.3.4. Treatment includes bioremediation, thermal desorption, and incineration. Treatment does not include blending, mixing, or dilution.

1.19.3.5. If proposed Treatment Facility is not acceptable to Departmental Representative, Contractor must identify an alternate Treatment Facility that is acceptable.

1.19.4. Contaminated Waste Disposal: dispose offsite at Disposal Facility identified by Contractor and accepted Departmental Representative.

1.19.4.1. Dispose material offsite as soon as practical. Do not unreasonably stockpile material offsite.

1.19.4.2. Material sent to a Disposal Facility must be permanently stored at that facility.

1.19.4.3. Certificate of Disposal required for all material disposed offsite.

1.19.4.4. If proposed Disposal Facility is not acceptable to Departmental Representative, Contractor must identify an alternate Disposal Facility that is acceptable.

1.20. Record Keeping

1.20.1. Maintain adequate records to support information provided to Departmental Representative regarding exception reports, annual reports, and biennial reports.

1.20.2. Maintain asbestos waste shipment records for minimum of 3 years from date of shipment or longer period required by applicable law or regulation.
1.20.3. Maintain bills of ladings for minimum of 375 days from date of shipment or longer period required by applicable law or regulation.

2. PART 2 - PRODUCTS

2.1. Not Used
2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used
3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Submit to Departmental Representative submittals listed for review.
1.2.2. Work effected by submittal will not proceed until review is complete.
1.2.3. Submit the following:
1.2.3.1. Health and Safety Plan.
1.2.3.2. Copies of reports or directions issued by Federal and Provincial health and safety inspectors.
1.2.3.3. Copies of incident and accident reports.
1.2.3.4. Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
1.2.3.5. Emergency Procedures.
1.2.4. The Departmental Representative will review the Contractor's site-specific project Health and Safety Plan and emergency procedures, and provide comments to the Contractor within 5 working days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative.
1.2.5. Medical surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
1.2.6. Submission of the Health and Safety Plan, and any revised version, to the Departmental Representative is for information and reference purposes only. It will not:
1.2.6.1. Be construed to imply approval by the Departmental Representative.
1.2.6.2. Be interpreted as a warranty of being complete, accurate and legislatively compliant.
1.2.6.3. Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

1.3. References

1.3.1. Government of Canada:
1.3.1.1. Canada Labour Code - Part II
1.3.1.2. Canada Occupational Health and Safety Regulations
1.3.2. National Building Code of Canada (NBC):
1.3.2.1. Part 8, Safety Measures at Construction and Demolition Sites.
1.3.3. Canadian Standards Association (CSA) as amended:
1.3.3.1. CSA Z797-2009 Code of Practice for Access Scaffold
1.3.3.2. CSA S269.1-1975 (R2003) Falsework for Construction Purposes

1.3.3.3. CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures
1.3.4. Fire Protection Engineering Services, HRSDC:
1.3.4.1. FCC No. 301, Standard for Construction Operations
1.3.4.2. FCC No. 302, Standard for Welding and Cutting
1.3.5. American National Standards Institute (ANSI):
1.3.5.1. ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems
1.3.6. Province of British Columbia:
1.3.6.1. Workers Compensation Act Part 3-Occupational Health and Safety
1.3.6.2. Occupational Health and Safety Regulation
1.3.7. Yukon Territory
1.3.7.1. Occupational Health and Safety Act, R.S.Y.

1.4. Regulatory Requirements

1.4.1. Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at Site.
1.4.2. In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

1.5. Worker's Compensation Board Coverage

1.5.1. Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the Work.
1.5.2. Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

1.6. Compliance with Regulations

1.6.1. PWGSC may terminate the Contract without liability to PWGSC where the Contractor, in the opinion of PWGSC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
1.6.2. It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the Work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

1.7. Responsibility

1.7.1. Assume responsibility as the Prime Contractor for Work under this contract.
1.7.1.1. Be responsible for health and safety of persons onsite, safety of property onsite and for protection of persons adjacent to Site and environment to extent that they may be affected by conduct of Work.
1.7.1.2. Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable Federal, Provincial, Territorial and local

statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8. Health and Safety Coordinator

1.8.1. The Health and Safety Coordinator must:

1.8.1.1. Be responsible for completing all health and safety training, and ensuring that personnel that do not successfully complete the required training are not permitted to enter the Site to perform Work.

1.8.1.2. Be responsible for implementing, daily enforcing, and monitoring the site-specific Health and Safety Plan.

1.8.1.3. Be on Site during execution of Work.

1.9. General Conditions

1.9.1. Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.

1.9.2. Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site:

1.9.2.1. Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.

1.9.2.2. Secure Site at night time or provide security guard as deemed necessary to protect Site against entry.

1.10. Project/Site Conditions

1.10.1. Work at Site will involve contact with contaminants identified in Specifications and environmental reports.

1.11. Work Permits

1.11.1. Obtain speciality permits related to project before start of Work.

1.12. Filing of Notice

1.12.1. The Prime Contractor is to complete and submit a Notice of Project as required by Provincial or Territorial authorities.

1.12.2. Provide copies of all notices to the Departmental Representative.

1.13. Health and Safety Plan

1.13.1. Conduct a site-specific hazard assessment based on review of Contract Documents, required Work, and project Site. Identify any known and potential health risks and safety hazards.

1.13.2. Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:

1.13.2.1. Primary requirements:

1.13.2.1.1. Contractor's safety policy.

1.13.2.1.2. Identification of applicable compliance obligations.

1.13.2.1.3. Definition of responsibilities for project safety/organization chart for project.
1.13.2.1.4. General safety rules for project.
1.13.2.1.5. Job-specific safe work, procedures.
1.13.2.1.6. Inspection policy and procedures.
1.13.2.1.7. Incident reporting and investigation policy and procedures.
1.13.2.1.8. Occupational Health and Safety Committee/Representative procedures.
1.13.2.1.9. Occupational Health and Safety meetings.
1.13.2.1.10. Occupational Health and Safety communications and record keeping procedures.
1.13.2.2. Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the Work.
1.13.2.3. List hazardous materials to be brought onsite as required by Work.
1.13.2.4. Indicate Engineering and administrative control measures to be implemented at the Site for managing identified risks and hazards.
1.13.2.5. Identify personal protective equipment (PPE) to be used by workers.
1.13.2.6. Identify personnel and alternates responsible for site safety and health.
1.13.2.7. Identify personnel training requirements and training plan, including site orientation for new workers.
1.13.3. Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
1.13.4. Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.
1.13.5. Departmental Representative's review: the review of Health and Safety Plan by Public Works and Government Services Canada (PWGSC) will not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract Documents.

1.14. Emergency Procedures

1.14.1. List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (ie names/telephone numbers) of:
1.14.1.1. Designated personnel from own company.
1.14.1.2. Regulatory agencies applicable to Work and as per legislated regulations.
1.14.1.3. Local emergency resources.
1.14.1.4. Departmental Representative and site staff.
1.14.2. Include the following provisions in the emergency procedures:
1.14.2.1. Notify workers and the first-aid attendant, of the nature and location of the emergency.
1.14.2.2. Evacuate all workers safely.
1.14.2.3. Check and confirm the safe evacuation of all workers.
1.14.2.4. Notify the fire department or other emergency responders.

1.14.2.5. Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
1.14.2.6. Notify Departmental Representative and site staff.
1.14.3. Provide written rescue/evacuation procedures as required for, but not limited to:
1.14.3.1. Work at high angles.
1.14.3.2. Work in confined spaces or where there is a risk of entrapment.
1.14.3.3. Work with hazardous substances.
1.14.3.4. Underground work.
1.14.3.5. Work on, over, under and adjacent to water.
1.14.3.6. Workplaces where there are persons who require physical assistance to be moved.
1.14.4. Design and mark emergency exit routes to provide quick and unimpeded exit.
1.14.5. Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

1.15. Hazardous Products

1.15.1. 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 (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.
1.15.2. Where use of hazardous and toxic products cannot be avoided:
1.15.2.1. Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as required.
1.15.2.2. In conjunction with Departmental Representative, schedule to carry out Work during "off hours" when tenants have left the building.
1.15.2.3. Provide adequate means of ventilation as required.

1.16. Unforeseen Hazards

1.16.1. Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the Work, immediately stop Work and advise the Departmental Representative verbally and in writing.

1.17. Posted Documents

1.17.1. Post legible versions of the following documents onsite:
1.17.1.1. Health and Safety Plan.
1.17.1.2. Sequence of Work.
1.17.1.3. Emergency procedures.
1.17.1.4. Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
1.17.1.5. Notice of Project.
1.17.1.6. Floor plans or site plans.
1.17.1.7. Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.

1.17.1.8. Workplace Hazardous Materials Information System (WHMIS) documents.
1.17.1.9. Material Safety Data Sheets (MSDS).
1.17.1.10. List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
1.17.2. Post all Material Safety Data Sheets (MSDS) onsite, in a common area, visible to all workers and in locations accessible to tenants when Work of this Contract includes construction activities adjacent to occupied areas.
1.17.3. Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as accepted by the Departmental Representative.

1.18. Meetings
1.18.1. Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.
1.18.2. Ensure all site personnel attend a daily health and safety “tailgate” or “toolbox” meeting, which will include:
1.18.2.1. Sign-in of all attendees.
1.18.2.2. Planned Work activities and environmental considerations for that shift.
1.18.2.3. Hazards associated with these Work activities, including environmental hazards (eg potential for hypothermia, heat exhaustion, heat stroke).
1.18.2.4. Appropriate job-specific safe work procedures.
1.18.2.5. Required personal protective equipment (PPE).
1.18.2.6. Appropriate emergency procedures.
1.18.3. Retain records of all health and safety meetings onsite during Work, and retain as corporate records for a minimum of 7 years after Work is completed.

1.19. Correction of Non-Compliance
1.19.1. Immediately address health and safety non-compliance issues identified by the Departmental Representative.
1.19.2. Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.
1.19.3. The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order”.

1.20. Utility Clearance
1.20.1. The Contractor is solely responsible for utility clearance.
1.20.2. The Contractor will not reply upon drawings or other information provided with utility locations.

1.21. Personal Protective Equipment Program
1.21.1. Submit Personal Protective Equipment (PPE) program addressing:
1.21.1.1. Donning and doffing procedures.
1.21.1.2. PPE selection based upon Site hazards.

1.21.1.3. PPE use and limitations of equipment.
1.21.1.4. Work mission duration, PPE maintenance and storage.
1.21.1.5. PPE decontamination and disposal.
1.21.1.6. PPE inspection procedures prior to, during, and after use.
1.21.1.7. Evaluation of effectiveness of PPE program, and limitations during temperature extremes, and other appropriate medical considerations.
1.21.1.8. Medical surveillance requirements for personnel assigned to work at Site.
1.21.1.9. Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment.
1.21.1.10. Site control measures employed at Site including site map, site work zones, use of 'buddy system', site communications including site security, alerting means for emergencies, standard operating procedures or safe work practices, and identification of nearest medical assistance.
1.21.1.11. Decontamination procedures for both personnel and equipment.
1.21.1.12. Emergency response requirements addressing: pre-emergency planning, personnel roles, lines of authority and communication, emergency recognition and prevention, safe distances and places of refuge, site security and control, evacuation routes and procedures, decontamination procedures not covered under decontamination section, emergency medical treatment and first aid, emergency alerting and response procedures, critique of response and follow-up, PPE and emergency equipment, site topography, layout, prevailing weather conditions, and procedures for reporting incidents to local, provincial, or federal agencies.
1.21.1.13. Written respiratory protection program for project activities.
1.21.1.14. Procedures dealing with heat and/or cold stress.
1.21.1.15. Spill containment program if drummed waste material is generated, excavated, stored, or managed onsite.

1.22. Offsite Contingency and Emergency Response Plan

1.22.1. Prior to commencing Work involving handling of hazardous materials, develop offsite Contingency and Emergency Response Plan.
1.22.2. Plan must provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from Site.

1.23. Personnel Health, Safety, and Hygiene

1.23.1. Training: ensure personnel entering Site are trained in accordance with specified personnel training requirements. Training session must be completed by Health and Safety Officer.
1.23.2. Levels of Protection: establish levels of protection for each Work area based on planned activity and location of activity.
1.23.3. Personal Protective Equipment:

1.23.3.1. Furnish site personnel with appropriate PPE as specified above. Ensure that safety equipment and protective clothing is kept clean and maintained.
1.23.4. Develop protective equipment usage procedures and ensure that procedures are strictly followed by site personnel; include following procedures as minimum:
1.23.4.1. Ensure prescription eyeglasses worn are safety glasses and do not permit contact lenses onsite within work zones.
1.23.4.2. Ensure footwear is steel-toed safety shoes or boots and is covered by rubber overshoes when entering or working in potentially contaminated work areas.
1.23.4.3. Dispose of or decontaminate PPE worn onsite at end of each workday.
1.23.4.4. Decontaminate reusable PPE before reissuing.
1.23.4.5. Ensure site personnel have passed respirator fit test prior to entering potentially contaminated work areas.
1.23.4.6. Ensure facial hair does not interfere with proper respirator fit.
1.23.5. Respiratory Protection:
1.23.5.1. Provide site personnel with extensive training in usage and limitations of, and qualitative fit testing for, air purifying and supplied-air respirators in accordance with specified regulations.
1.23.5.2. Develop, implement, and maintain respirator program.
1.23.5.3. Monitor, evaluate, and provide respiratory protection for site personnel.
1.23.5.4. Ensure levels of protection as listed have been chosen consistent with site-specific potential airborne hazards associated with major contaminants identified onsite.
1.23.5.5. In absence of additional air monitoring information or substance identification, retain an industrial hygiene specialist to determine minimum levels of respiratory protection required.
1.23.5.6. Immediately notify Departmental Representative when level of respiratory protection required increases.
1.23.5.7. Ensure appropriate respiratory protection during Work activities. As minimum requirement, ensure that persons entering potentially contaminated work areas are supplied with and use appropriate respiratory protection.
1.23.6. Heat Stress/Cold Stress: implement heat stress or cold stress monitoring program as applicable and include in site-specific Health and Safety Plan.
1.23.7. Personnel Hygiene and Personnel Decontamination Procedures. Provide minimum as follows:
1.23.7.1. Suitable containers for storage and disposal of used disposable PPE.
1.23.7.2. Potable water and suitable sanitation facility.
1.23.8. Emergency and First-Aid Equipment:
1.23.8.1. Locate and maintain emergency and first-aid equipment in appropriate location onsite including first-aid kit to accommodate number of site personnel; portable emergency eye wash; two 9 kg ABC type dry chemical fire extinguishers.
1.23.9. Site Communications:
1.23.9.1. Post emergency numbers near site telephones.
1.23.9.2. Ensure personnel use of "buddy" system and develop hand signal system appropriate for site activities.

1.23.9.3. Provide employee alarm system to notify employees of site emergency situations or to stop Work activities if necessary.
1.23.9.4. Furnish selected personnel with 2-way radios.
1.23.9.5. Safety Meetings: 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 as-needed basis.

2. PART 2 - PRODUCTS

2.1. Not Used
2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used
3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Within 10 working days after Contract award and prior to mobilization to Site, submit Environmental Protection Plan for review by Departmental Representative.

1.3. Environmental Protection Plan

1.3.1. Ensure Environmental Protection Plan includes comprehensive overview of known or potential environmental issues to be addressed during construction.

1.3.2. Comply with:

1.3.2.1. Federal, Provincial, Municipal, permit, and contractual environmental requirements.

1.3.2.2. Regulatory guidelines and best management practices.

1.3.2.3. Relevant Environmental Management Plans.

1.3.3. Address topics at level of detail commensurate with environmental issue and required construction tasks. Include methods, procedures, and equipment.

1.3.4. Include in Environmental Protection Plan:

1.3.4.1. Names of persons responsible for ensuring adherence to Environmental Protection Plan.

1.3.4.2. Names and qualifications of persons responsible for manifesting material to be removed from Site.

1.3.4.3. Names and qualifications of persons responsible for training site personnel.

1.3.4.4. Descriptions of environmental protection personnel training program.

1.3.4.5. Communications Plan identifying emergency contact list and conditions for implementing emergency contact. Emergency contact to include: Contractor emergency response team, Departmental Representative and alternate, Owner and alternate, Federal, Provincial, and Municipal emergency contacts.

1.3.4.6. Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

1.3.4.7. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials onsite.

1.3.4.8. Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Ensure plans include measures to minimize amount of mud transported onto paved public

roads by vehicles or runoff. Trucks and truck traffic must comply with all Federal, Provincial, and Municipal laws and regulations.

1.3.4.9. Work Area Plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Ensure plan includes measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.

1.3.4.10. Spill Control Plan including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance. Identify locations and contents of spill kits.

1.3.4.11. Solid Non-Contaminated Waste Disposal Plan identifying methods and locations for solid waste disposal including clearing waste.

1.3.4.12. Air Pollution Control Plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project Site. Include procedures if air pollution do not comply with appropriate levels, there are public complaints, or if onsite or offsite damage occurs.

1.3.4.13. Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

1.3.4.14. Waste Water Management Plan identifying methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

1.3.4.15. Historical, Archaeological, Cultural Resources, Biological Resources and Wetlands Plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands. Include procedures if previously unknown historical, archaeological, cultural resources are discovered during Work.

1.3.4.16. Noise and Vibration Control Plan identifying methods and procedures for preventing, monitoring, and controlling noise and vibration for compliance with Federal, Provincial, and Municipal laws and regulations. Include procedures if noise or vibrations do not comply with appropriate levels, there are public complaints, or if onsite or offsite damage occurs.

1.4. Fires

1.4.1. Fires and burning of rubbish onsite not permitted.

1.5. Drainage

1.5.1. Provide Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls provided. Ensure plan includes monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

1.5.2. Provide temporary drainage and pumping required to keep excavations and Site free from water.
1.5.3. Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.
1.5.4. Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.6. Site Clearing and Plant Protection
1.6.1. Protect trees and plants onsite and adjacent properties as required.
1.6.2. Wrap in burlap, trees and shrubs adjacent to construction Work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m minimum.
1.6.3. Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
1.6.4. Minimize stripping of topsoil and vegetation.
1.6.5. Restrict tree removal to areas required or designated by Departmental Representative.

1.7. Work Adjacent to Waterways
1.7.1. Guidelines and Practices
1.7.1.1. Follow practices described in Fisheries and Oceans Canada (September 1993) Land Development Guidelines for the Protection of Aquatic Habitat.
1.7.1.2. Follow practices described in BC Ministry of Environment (March 2004) Standards and Best Practices for Instream Works.
1.7.2. General
1.7.2.1. Construction equipment to be operated on land only.
1.7.2.2. Do not use waterway beds for borrow material.
1.7.2.3. Waterways to be free of excavated fill, waste material and debris.
1.7.2.4. Design and construct temporary crossings to minimize erosion to waterways.
1.7.2.5. Do not skid logs or construction materials across waterways.
1.7.2.6. Avoid spawning beds when constructing temporary crossings of waterways.
1.7.3. Machinery
1.7.3.1. Ensure all hydraulic machinery to be used instream uses environmentally sensitive hydraulic fluids which are non-toxic to aquatic life, and which are readily or inherently bio-degradable
1.7.3.2. Place oil drip trays or absorbent materials (eg pads) under any heavy equipment working within the Fisheries Sensitive Zone adjacent to the watercourse to ensure there is no potential for contamination of the streambanks or watercourse resulting from leaks or drip off machinery. Ensure that there is no potential for oil, grease or other deleterious substances to enter any watercourse, ravine or storm sewer system.
1.7.3.3. All equipment and machinery working within 15 meters of any watercourse must be in good working condition (power washed) and free of leaks or

excess oil and grease. No fuels, lubricants, construction wastes or other deleterious substances may enter any watercourse at any time.

1.7.4. Watercourse Maintenance

1.7.4.1. Unless otherwise indicated, care must be taken not to disturb streamside or riparian vegetation. Important in-water aquatic vegetation, such as cattails, will not be disturbed.

1.7.4.2. Unless otherwise indicated, there must be no disturbance to the watercourse bank or the root systems of vegetation growing on the watercourse banks.

1.7.5. Sediment Control and Deleterious Substances

1.7.5.1. All work must be undertaken and completed in such a manner to prevent the release of silt, sediment or sediment laden water, raw concrete or concrete leachate, or any other deleterious substances to any ditch, watercourse, ravine or storm sewer system.

1.7.5.2. Construction and excavation wastes, overburden, soil, concrete, concrete leachate, grout, oil, grease or any other substance deleterious to aquatic life must be disposed of or placed in a manner that will prevent their entry into any watercourse, ravine or storm sewer system.

1.7.5.3. All excavated material must be removed from the Site or placed in a stable area above the high water mark of the watercourse, as far as possible from the channel, and protected from erosion by mitigating measures including temporary covering exposed soil with: polyethylene tarps, geotextile fabric, hydro-seed or planting vegetation. Material that is moved offsite must be disposed of in such a manner as to prevent its entry into any ditch, watercourse, wetland, floodplain, ravine or storm sewer system.

1.7.5.4. Unless otherwise indicated, any fill used must be inert material, free from contaminants and must be placed so that it will not gain entry into any ditch, watercourse, wetland, floodplain, ravine or storm sewer system.

1.7.5.5. No fill is to be stockpiled on marsh or marsh fringe areas.

1.7.6. Unless otherwise indicated, at a minimum sediment plumes must meet:

1.7.6.1. When background is less than or equal to 50 nephelometric turbidity units (NTU), induced turbidity must not exceed 5 NTU above the background value.

1.7.6.2. When background is greater than 50 NTU, induced turbidity must not exceed the background value by more than 10% of the background value.

1.7.6.3. When background is less than or equal to 100 milligrams per liter (mg/L) non-filterable residue (NFR or TSS), induced NFR or TSS must not exceed 10 mg/L above background value.

1.7.6.4. When background is greater than 100 mg/L NFR or TSS, induced NFR or TSS must not exceed the background level by more than 10 % of the background value.

1.8. Pollution Control

1.8.1. Maintain temporary erosion and pollution control features installed under this Contract.

1.8.2. Control emissions from equipment and plant to local authorities' emission requirements.
1.8.3. Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
1.8.4. Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
1.8.5. Spill kits and containment are to be maintained onsite and ready for deployment in the event of spills, leaks, or other releases.
1.8.5.1. Spill kits are to include sufficient quantities of absorbent material.
1.8.5.2. Spill kits are to be in close proximity to machinery.
1.8.5.3. During the Work there are to be trained and qualified personnel available that are ready to deploy spill kits when necessary.
1.8.6. The Contractor is responsible for all costs associated with a spill, leak, or other release of a deleterious substance as a result of their Work. This will include costs of spill response equipment and materials, associated sampling and analysis, and any required restoration of the impacted area.
1.8.7. Do not store fuel on the Site other than tanks forming part of the equipment.
1.8.8. Contractor to regularly inspect all machinery on the Site to ensure it is in good repair and free of leaks.

1.9. Notification
1.9.1. Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws, regulations, permits, or other environmental procedure violations.
1.9.2. Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for acceptance by Departmental Representative.
1.9.2.1. Do not take action until after receipt of written acceptance by Departmental Representative.
1.9.3. Departmental Representative will issue stop order of Work until satisfactory corrective action has been taken.
1.9.4. No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

2. PART 2 - PRODUCTS

2.1. Not Used
2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used
3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures
1.1.1. Not Used

1.2. Action and Informational Submittals
1.2.1. Not Used

1.3. Access and Delivery
1.3.1. Only the designated entrance may be used for access to Site.
1.3.1.1. Maintain for duration of Contract.
1.3.1.2. Make good damage resulting from Contractor's use.
1.3.2. Use of the Site will be granted to the Contractor through the Departmental Representative.
1.3.2.1. Parking of private vehicles is not permitted on the Site.

1.4. Installation and Removal
1.4.1. Provide temporary utilities controls in order to execute work expeditiously.
1.4.2. Remove from site all such work after use.

1.5. Dewatering
1.5.1. Provide temporary drainage and pumping facilities to keep excavations and Site free from standing water.

1.6. Storage Facilities
1.6.1. Storage space will be limited to the area of construction.

1.7. Power
1.7.1. Power is not available at existing Site and must be supplied at no cost.

1.8. Water Supply
1.8.1. Water supply is not available at existing Site and must be supplied at no cost.

1.9. Sanitary Facilities
1.9.1. Sanitary facilities are not available at existing Site and must be supplied at no cost.

1.10. Removal of Temporary Facilities
1.10.1. Remove temporary facilities from Site when determined by the Departmental Representative.

1.11. Signs and Notices
1.11.1. Signs and notices for safety and instruction will be in both official languages or graphic symbols conforming to CAN/CSA-Z321.

1.11.2. Maintain accepted signs and notices in good condition for duration of project, and dispose of offsite on completion of project or when determined by Departmental Representative.

1.12. Fire Protection

1.12.1. Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.

2. PART 2 - PRODUCTS

2.1. Not Used

2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used

3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Not Used

1.3. Products/Material and Equipment

1.3.1. Use NEW products/material and equipment unless otherwise specified. The term "products" is referred to throughout the specifications.

1.3.2. Use products of 1 manufacturer for material and equipment of the same type or classification unless otherwise specified.

1.3.3. Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.

1.3.4. Notify Departmental Representative in writing of any conflict between these specifications and manufacturer's instructions. Departmental Representative will designate which document is to be followed.

1.3.5. Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.

1.3.6. Prevent damage, adulteration and soiling of products during delivery, handling and storage. Immediately remove rejected products from Site.

1.3.7. Store products in accordance with suppliers' instructions.

1.4. Quality of Products

1.4.1. Products, materials and equipment (referred to as products) incorporated into Work will be new, not damaged or defective, and of the best quality (compatible with the specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of the products provided.

1.4.2. Defective products will be rejected regardless of previous inspections.

1.4.2.1. Inspection does not relieve responsibility, but is precaution against oversight or error.

1.4.2.2. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

1.4.3. Retain purchase orders, invoices and other documents to prove that all products utilized in this Contract meet the requirements of the specifications. Produce documents when requested by the Departmental Representative.

1.4.4. Should any dispute arise as to quality or fitness of products, the decision rests strictly with the Departmental Representative based upon the requirements of the Contract Documents.

1.4.5. Unless otherwise indicated, maintain uniformity of manufacture for any particular or like item throughout the Site.

1.4.6. Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5. Availability of Products

1.5.1. Immediately upon signing the Contract, review product delivery requirements and anticipate foreseeable supply delays for any items.

1.5.2. If delays in supply of products are foreseeable, notify Departmental Representative of such in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of the Work.

1.5.3. In event of failure to notify Departmental Representative at the start of Work and should it subsequently appear that the Work may be delayed for such reason, the Departmental Representative reserves the right to substitute more readily available products of similar character, at no increase in either the Contract price or the Contract time.

1.6. Manufacturer's Instructions

1.6.1. Unless otherwise indicated, install or erect products in accordance with the manufacturer's instructions.

1.6.1.1. Do not rely on labels or enclosures provided with products.

1.6.1.2. Obtain written instructions directly from the manufacturer.

1.6.2. Notify Departmental Representative in writing of conflicts between the specifications and the manufacturer's instructions so that the Departmental Representative may establish the course of action.

1.6.3. Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Departmental Representative to require removal and re-installation at no increase in either the Contract price of the Contract time.

1.7. Contractor's Options for Selection of Products for Tendering

1.7.1. Products are specified by "Prescriptive" specifications: select any product meeting or exceeding specifications.

1.7.2. Products specified under "Acceptable Products" (used for complex Mechanical or Electrical Systems): select any one of the indicated manufacturers, or any other manufacturer meeting or exceeding the Prescriptive specifications and indicated Products.

1.7.3. Products specified by performance and referenced standard: select any product meeting or exceeding the referenced standard.

1.7.4. Products specified to meet particular design requirements or to match existing materials: use only material specified Approved Product. Alternative products may be considered provided full technical data is received in writing by Departmental Representative in accordance with "Special Instructions to Tenderers".

1.7.5. When products are specified by a referenced standard or by Performance specifications, upon request of Departmental Representative obtain from

manufacturer and independent laboratory report showing that the product meets or exceeds the specified requirements.

1.8. Substitution After Contract Award

1.8.1. No substitutions are permitted without prior written approval of the Departmental Representative.

1.8.2. Proposals for substitution may only be submitted after Contract award. Such request must include statements of respective costs of items originally specified and the proposed substitution.

1.8.3. Proposals will be considered by the Departmental Representative if:

1.8.3.1. products selected by tenderer from those specified are not available;

1.8.3.2. delivery date of products selected from those specified would unduly delay completion of Contract, or

1.8.3.3. alternative product to that specified, which is brought to the attention of considered by Departmental Representative as equivalent to the product specified, and will result in a credit to the Contract amount.

1.8.4. Should the proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other Work on the project. Pay for design or drawing changes required as result of substitution.

1.8.5. Amounts of all credits arising from approval of the substitutions will be determined by the Departmental Representative, and the Contract price will be reduced accordingly.

1.9. Storage, Handling and Protection

1.9.1. Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

1.9.2. Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

1.9.3. Store products subject to damage from weather in weatherproof enclosures.

1.9.4. Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.10. Transportation

1.10.1. Pay costs of transportation of products required in performance of Work.

1.11. Quality of Work

1.11.1. Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.

1.11.2. Do not employ anyone unskilled in their required duties.

1.11.3. Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.12. Coordination

1.12.1. Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

1.13. Remedial Work

1.13.1. Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

1.13.2. Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

2. PART 2 - PRODUCTS

2.1. Not Used

2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used

3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Not Used

1.3. Materials Source Separation

1.3.1. Before project start-up, prepare Materials Source Separation Program. Provide separate containers for reusable and/or recyclable materials of the following:

1.3.1.1. Gypsum board.

1.3.1.2. Metals.

1.3.1.3. Wood.

1.3.1.4. Plastics.

1.3.1.5. Other materials as indicated in technical sections.

1.3.2. Implement Materials Source Separation Program for waste generated on project in compliance with accepted methods and as accepted by Departmental Representative.

1.3.3. Locate containers in locations, to facilitate deposit of materials without hindering daily operations.

1.3.4. Locate separated materials in areas which minimize material damage.

1.4. Diversion of Materials

1.4.1. Create a list of materials to be separated from the general waste stream and stockpiled in separate containers, to the approval of the Departmental Representative and consistent with applicable fire regulations.

1.4.1.1. Mark containers.

1.4.1.2. Provide instruction on disposal practices.

1.5. Storage, Handling and Application

1.5.1. Do Work in compliance with Waste Reduction Workplan.

1.5.2. Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

1.5.3. Materials in separated condition: collect, handle, store onsite, and transport offsite to an accepted and authorized recycling facility.

1.5.4. Materials must be immediately separated into required categories for reuse or recycling.

1.5.5. Unless specified otherwise, materials for removal become the Contractor's property.

1.5.6. Onsite sale of salvaged/recyclable material is not permitted.

1.5.7. Provide Departmental Representative with receipts indicating quantity of material delivered to landfill.

1.5.8. Provide Departmental Representative with receipts indicating quantity and type of materials sent for recycling.

2. PART 2 - PRODUCTS

2.1. Not Used

2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used

3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.2.2. Revise content of documents as required before final submittal.

1.2.3. Phasing of submission:

1.2.3.1. 2 weeks before substantial performance of the Work for construction, submit to Departmental Representative as-built documents.

1.2.4. Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

1.3. As-Built Documents

1.3.1. Contract drawings and shop drawings: legibly mark each item to record actual construction, including:

1.3.1.1. Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

1.3.1.2. Field changes of dimension and detail.

1.3.1.3. Changes made by change orders.

1.3.1.4. Details not on original Contract drawings.

1.3.1.5. References to related shop drawings and modifications.

1.3.2. Contract Specifications: legibly mark each item to record actual "Workmanship of Construction", including:

1.3.2.1. Manufacturer, trade name, and catalogue number of each "Product/Material" actually installed, particularly optional items and substitute items.

1.3.2.2. Changes made by addenda and change orders.

1.3.3. As-built information:

1.3.3.1. Record changes in red ink.

1.3.3.2. Mark on 1 set of drawings, specifications and shop drawings at completion of project and, before final inspection, neatly transfer notations to second set.

1.3.3.3. Provide 1 set of CDs in AutoCAD 14 file format with all as-built information on the CDs.

1.3.3.4. Submit all sets for the Departmental Representative.

1.4. Completion

1.4.1. Submit a written certificate that the following have been performed:

1.4.1.1. Work has been completed and inspected for compliance with the Contract Documents.

1.4.1.2. Defects have been corrected and deficiencies have been completed.

1.4.1.3. Equipment and systems have been tested, adjusted and balanced, and are fully operational.

1.4.1.4. Certificates required by the Fire Commissioner of Canada, and utility companies have been submitted.
1.4.1.5. Operation of systems has been demonstrated to the personnel indicated by the Departmental Representative.
1.4.1.6. Work is complete and ready for final inspection.

2. PART 2 - PRODUCTS

2.1. Not Used
2.1.1. Not Used

3. PART 3 - EXECUTION

3.1. Not Used
3.1.1. Not Used

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Mobilization will be paid in accordance with lump sum price established for mobilizing all necessary equipment, materials, supplies, facilities, and personnel to Site. Includes pre-mobilization submittals, insurance, bonding, and permits.

1.1.2. Demobilization will be paid in accordance with lump sum price established for demobilizing all equipment, materials, supplies, facilities, and personnel from the Site, decontaminating all equipment prior to removal from Site, preparing Site for closure, as-built documents, and completion submittals.

1.1.3. Site Facilities Provision will be paid in accordance with lump sum price established to temporarily provide, design, and erect all infrastructure, including temporary structures and facilities, sanitary facilities, roadways, security, and services.

1.1.4. Site Facilities Operation will be paid in accordance with unit rate price established for time to operate and maintain all infrastructure, including temporary structures and facilities, sanitary facilities, roadways, security, and services. Includes meetings, progress submittals, traffic control, health and safety, environmental protection, and cleaning. Includes living out allowances, including travel, room and board.

1.1.5. Standby will be paid in accordance with unit rate price established for time Work is unable to proceed due to non-specified delays caused solely by the Departmental Representative. Reviews, sampling, or other work conducted by Departmental Representative which have a time duration identified will not result in an increase in either the Contract price or the Contract time.

1.1.6. Site Preparation will be paid in accordance with lump sum price established to prepare the Site for planned construction works, including clear and grubbing, and utility location, rerouting, and protection. Includes Removal of any incidental or generated material.

1.1.7. Site Closure will be paid in accordance with lump sum price established to restore the Site to make suitable for post-remediation use. Includes Removal of any incidental or generated material.

1.2. Action and Informational Submittals

1.2.1. Imported fill material: 5 working days prior to bringing material onto Site, submit documentation verifying that material is acceptable for import and intended use, including:

1.2.1.1. Grain-size distribution information.

1.2.1.2. Chemical analyses for Potential Contaminants of Concern, including metals.

1.2.1.3. Testing to be performed by a qualified professional at sufficient frequency to characterize all material imported to Site. Test using appropriate guidelines and practices.

1.2.1.4. Perform additional as required by Departmental Representative.

1.2.1.5. Facilitate testing by Departmental Representative.

1.3. Sequencing

1.3.1. When floating free phase substance is present, remove free phase from saturated soil without further contaminating soil or groundwater prior to commencing other construction Work.

1.3.2. Decontaminate equipment used in construction procedures before removing equipment from job site.

1.4. Maintenance

1.4.1. Access roads:

1.4.1.1. Maintain Access Roads as follows:

1.4.1.1.1. Obtain permission to use existing roads to access Site.

1.4.1.1.2. Maintain and clean roads for duration of Work.

1.4.1.1.3. Control mud and dust from road.

1.4.1.1.4. Repair damage incurred from use of roads.

1.4.1.1.5. Provide photographic documentation of roads used by construction vehicles before, during and after Work.

1.5. Existing Conditions

1.5.1. Buried services:

1.5.1.1. Before commencing Work establish location of buried services on and adjacent to Site.

1.5.1.2. Utility maps for the Whitehorse Airport indicate that an active sanitary service line is present in the excavation area, and that a potentially abandoned storm service line is also present in the excavation area. The Contractor should provide a civil design for excavation around these services, which must be approved by the City of Whitehorse, and should provide five site inspections. The storm service line should be assumed to be active until confirmed otherwise.

1.5.1.3. The Contractor should provide a plan to either support in place 80 m of sanitary sewer line and 80m of storm service line (to be reinstated following excavation), or to pump around/remove and replace both services.

1.5.1.4. Arrange with appropriate authority for relocation of buried services that interfere with execution of Work: pay costs of relocating services.

1.5.1.5. Remove obsolete buried services within 2 m of foundations: cap cut-offs.

1.5.1.6. Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

1.5.1.7. Prior to beginning Work that may disrupt utilities, notify applicable Departmental Representative and authorities having jurisdiction and establish location and state of use of buried utilities and structures. Clearly mark such locations to prevent disturbance during Work.

1.5.1.8. As appropriate, confirm locations of buried utilities by independent utility locator and hand test excavations and/or soil hydrovac methods.

1.5.1.9. Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.

1.5.1.10. Record location of maintained, re-routed and abandoned underground lines. Registered surveyor to provide as-built drawings of all services to Departmental Representative.
1.5.1.11. Retain an appropriately qualified professional to prepare a report for pipe inspection commissioning or re-instatement.
1.5.1.12. Confirm locations of recent excavations adjacent to area of excavation.
1.5.2. Existing buildings and surface features:
1.5.2.1. Conduct condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, rail tracks, pavement, roads, survey bench marks, monuments and other features which may be affected by Work.
1.5.2.2. Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair.
1.5.2.3. Where required for excavation, cut roots or branches.

2. PART 2 - PRODUCTS

2.1. Materials

2.1.1. Imported fill material to meet the following minimum requirements:
2.1.1.1. Gradations to be within limits specified when tested to ASTM C117 (Test Method for Material Finer Than 75-µm (No. 200) Sieve in Mineral Aggregate by Washing) and ASTM C136 (Test Method for Sieve Analysis of Fine and Coarse Aggregates). Sieve sizes to SCC CAN/CGSB-8.1 (Sieves, Testing, Woven Wire, Inch Series) and CAN/CGSB-8.2 (Sieves, Testing, Woven Wire, Metric).
2.1.1.2. Imported fill material to be granular aggregate composed of inert, clean, tough, durable particles of crushed rock, gravel, sand and fines capable of withstanding the deleterious effects of exposure to water, freeze-thaw, handling, spreading and compacting. The aggregate particles will be uniform in quality and free from clay lumps, wood and free from an excess of flat or elongated pieces.
2.1.1.3. Imported fill material must meet the standards in Column III (Soil Relocation to Agricultural Land), Schedule 7 (Standards Triggering Contaminated Soil Relocation Agreements), BC Contaminated Sites Regulation. Any backfill material which has a discrete sample exceeding these standards will be removed and replaced by the Contractor, and an alternate source of backfill must be provided.

2.2. Equipment

2.2.1. Temporary barriers and enclosures as required.
2.2.2. Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.
2.2.3. Trucks:
2.2.3.1. Cleaned meticulously between loads of contaminated soil and clean fill.
2.2.3.2. Cleaned meticulously at end of work day.

2.2.3.3. Cover truck bodies with tarpaulins during transportation.
2.2.3.4. Use watertight truck bodies for transporting contaminated soil.
2.2.4. Safety equipment.

3. PART 3 - EXECUTION

3.1. Examination

3.1.1. Site Verification of Conditions
3.1.1.1. Determine condition of existing Site and requirements to make the Site suitable for Work.

3.2. Site Preparation

3.2.1. Mobilize all necessary equipment, materials, and personnel to the Site.
3.2.2. Remove and dispose all surface Non-Contaminated Waste at a Landfill to allow access for Work.
3.2.3. Clear and grubbing of the Site to allow access for Work.
3.2.3.1. Clearing consists of removing Non-Contaminated Waste vegetation above existing ground surface to facilitate Work. Includes: cutting off trees and brush vegetative growth, felled trees, previously uprooted trees and stumps. Dispose of Non-Contaminated Waste at a Landfill or reuse onsite as determined by Departmental Representative.
3.2.3.2. Grubbing consists of excavation of Non-Contaminated Waste below existing ground surface to facilitate Work. Includes: stumps, roots, boulders and rock fragments. Dispose of Non-Contaminated Waste at a Landfill or reuse onsite as determined by Departmental Representative.
3.2.4. Construct, operate and maintain all infrastructure, including temporary structures and facilities, sanitary facilities, roadways, security, and services.
3.2.5. Remove obstructions, ice and snow, from surfaces to be worked.
3.2.6. Protection:
3.2.6.1. Protect existing features with temporary barriers and enclosures and applicable local regulations.
3.2.6.2. Keep excavations clean, free of standing water, and loose soil.
3.2.6.3. Where soil is subject to significant volume change due to change in moisture content, cover and protect.
3.2.6.4. Protect natural and man-made features required to remain undisturbed. Unless otherwise required or located in an area to be occupied by new construction, protect existing trees from damage.
3.2.6.5. Protect buried services that are required to remain undisturbed.
3.2.6.6. Protect existing monitoring wells such that they can be used for future monitoring of subsurface conditions.
3.2.6.7. Manage recovered water according to contamination level and provincial/municipal/territory regulations.
3.2.6.8. Provide temporary structures to divert flow of surface waters from excavation.

3.2.6.9. Provide safety measures to ensure worker and public safety.

3.3. Cleaning

3.3.1. Waste Management: separate waste materials for reuse and recycling.

3.3.2. Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal..

3.4. Site Closure

3.4.1. Clean permanent access roads of contamination resulting from project activity as required or at request of Departmental Representative.

3.4.2. Decontaminate equipment used in construction processes and remove from sites at end of construction activities.

3.4.3. Remove all temporary structures.

3.4.4. Demobilize all necessary equipment, materials, and personnel from Site.

3.4.5. Remove all Non-Contaminated Waste generated from Work and dispose at a Landfill.

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Water Treatment Plant Provision will be paid in accordance with lump sum price established to design, temporarily provide, and erect Water Treatment Plant, including all ancillary tanks, storage containers, equipment and piping to collect, store, treat, and discharge contaminated or potentially contaminated water.

1.1.2. Water Treatment Plant Operation will be paid in accordance with unit rate price established for time to operate and maintain Water Treatment Plant, including all ancillary equipment and piping to collect, store, treat, and discharge contaminated or potentially contaminated water. Includes consumables for water treatment. No separate payment for standby time.

1.1.3. Ground surface by stripping and segregating, topsoil, concrete, asphalt; import granular soil and will be paid in accordance with unit rate price. The price will include the stripping and removal, stockpiling and segregation of the materials.

1.1.4. Excavating will be paid in accordance with unit rate price established for insitu volume removed as surveyed by Departmental Representative. Excavation includes provide and maintain dewatering pumping. Excavation includes onsite transport and stockpiling. Interim tracking may use truck counts or other method acceptable to Departmental Representative; final volumes calculated by surveying. The excavation will involve the following type of material

1.1.4.1. Excavation of non-contaminated soil

1.1.4.2. Excavation of Contaminated Waste

1.1.4.3. Excavation of contaminated soil

1.1.4.4. Excavation of Special Waste (Non-Treatable)

1.1.5. Transportation of Material will be paid in accordance with unit rate price established for insitu volume removed as surveyed by Departmental Representative. Transportation include loading, hauling and unloading of materials to the destination. The Interim tracking may use truck counts or other method acceptable to Departmental Representative. The transporting will involve the following type of materials

1.1.5.1. Transport of Non-Contaminated Soil

1.1.5.2. Transport of Non-Contaminated Waste

1.1.5.3. Transport of Contaminated Soil

1.1.5.4. Transport **of** Special Waste (Non-Treatable)

1.1.6. Disposal will be paid in accordance with unit rate price established for weight identified at receiving offsite facility. The transporting will involve the following type of materials

1.1.6.1. Disposal of Non-Contaminated Waste

1.1.6.2. Disposal **of** Special Waste (Non-Treatable)

1.1.7. Backfilling will be paid in accordance with unit rate price established for compacted, graded volume emplaced as surveyed by Departmental Representative. Backfilling placing, grading and compacting. Progress

payments may use truck counts or other method acceptable to Departmental Representative. Interim tracking may use truck counts or other method acceptable to Departmental Representative; final volumes calculated by surveying.

1.1.8. Restoration will be paid in accordance with unit rate price established for surface area restored as surveyed by Departmental Representative. Measurement will not include areas unnecessarily disturbed, though these areas are required to be restored.

1.1.9. Purchase and Transport of non contaminated soil for backfill. This will be paid will be paid in accordance with unit rate price established for the purchase, hauling and unloading of the material as surveyed by Departmental Representative. Progress payments may use truck counts or other method acceptable to Departmental Representative.

1.2. Action and Informational Submittals

1.2.1. Excavation Plan: within 10 working days after Contract award and prior to mobilization to Site, submit documentation describing excavation plan, including:

1.2.1.1. Excavation slopes.

1.2.1.2. Excavation shoring.

1.2.1.3. Retain a suitably qualified professional to prepare a geotechnical design for shoring/trenching to allow personnel to enter excavation.

1.2.1.4. Support of structures.

1.2.1.5. Backfilling requirements. Must meet or exceed requirements identified.

1.2.1.6. Procedures for excavations adjacent to utilities or other structures if the excavation has the potential to impact utility or other structure.

1.2.1.7. Excavation plan must be sealed by sealed by a Professional Engineer who is registered in relevant jurisdiction as required by soil conditions, excavation depth, shoring type, or support type.

2. PART 2 - PRODUCTS

2.1. Materials

2.1.1. Backfill material to meet the gradations identified.

3. PART 3 - EXECUTION

3.1. Site Preparation

3.1.1. Ensure that all Works comply with the final sealed design documents as prepared by the Contractor's Professional Engineer. Contractor's Professional Engineer to visit Site as required.

3.2. Surface Stripping

3.2.1. Begin surface stripping once authorization was provided by Departmental Representative.

3.2.2. Prepare ground surface by stripping and segregating, topsoil, concrete, asphalt; import granular soil.

3.2.3. The segregated materials will be disposed according at location approved by Departmental Representative.

3.2.4.

3.3. Cofferdams, Shoring, Bracing, and Underpinning

3.3.1. Maintain sides and slopes of excavations in safe condition by appropriate methods and in accordance with relevant regulations.

3.3.2. Obtain permit from authority having jurisdiction for temporary diversion of water course.

3.3.3. Construct temporary Works to depths, heights and locations as required.

3.3.4. During backfill operation:

3.3.4.1. Unless otherwise indicated or determined by Departmental Representative, remove sheeting and shoring from excavations.

3.3.4.2. Do not remove bracing until backfilling has reached respective levels of such bracing.

3.3.4.3. Pull sheeting in increments that will ensure compacted backfill is maintained at elevation at least 500 mm above toe of sheeting.

3.3.5. When sheeting is required to remain in place, cut off tops at ground elevation or elevations as required.

3.3.6. Upon completion of excavation:

3.3.6.1. Remove cofferdams, shoring and bracing.

3.3.6.2. Remove excess materials from Site and restore watercourses as required.

3.4. Dewatering and Heave Protection

3.4.1. Keep excavations free of water while Work is in progress.

3.4.2. Provide for Departmental Representative details of proposed dewatering or heave prevention methods, including dikes, well points, and sheet pile cut-offs.

3.4.3. Avoid excavation below groundwater table if quick condition or heave is likely to occur.

3.4.3.1. Prevent piping or bottom heave of excavations by groundwater lowering, sheet pile cut-offs, or other means.

3.4.4. Protect open excavations against flooding and damage due to surface run-off.

3.4.5. Dispose of water to accepted collection and in manner not detrimental to public and private property, or portion of Work completed or under construction.

3.4.5.1. Provide and maintain temporary drainage ditches and other diversions outside of excavation limits.

3.5. Water Treatment

3.5.1. Collect water that has, or potentially has, come into contact with contaminated soil including excavation and stockpile areas, or is otherwise potentially contaminated from Work activities.

3.5.2. Treat collected water at Water Treatment Plant to meet federal, provincial, and municipal laws and regulations.

3.6. Excavation

3.6.1. Advise Departmental Representative at least 5 working days in advance of excavation operations.

3.6.2. Excavate to lines, grades, elevations and dimensions as required in Drawings.

3.6.3. Depths shown are approximate and final excavation depths to be determined based on field conditions as determined by Departmental Representative.

3.6.4. Excavation must not interfere with bearing capacity of adjacent foundations.

3.6.5. Keep excavated and stockpiled materials safe distance away from edge of trench.

3.6.6. Restrict vehicle operations directly adjacent to open trenches.

3.6.7. Temporary fencings and lighting should be erected to restrict public entry to the open trenches and as required by Transport Canada.

3.6.8. Segregate excavated material as follows:

3.6.8.1. Non-Contaminated soil to be reused as backfill. Must be recommended by Contractor's Professional Engineer and accepted by Departmental Representative.

3.6.8.2. Non-Contaminated Waste. Includes surplus or unsuitable excavated non-contaminated soil which cannot be reused onsite.

3.6.8.3. Contaminated Soil.

3.6.9. Do not obstruct flow of surface drainage or natural watercourses.

3.6.10. Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

3.6.11. Notify Departmental Representative when bottom of excavation is reached.

3.6.12. Obtain Departmental Representative approval of completed excavation.

3.6.13. Do not begin backfilling or filling operations until confirmatory sampling, analysis, and assessment has been completed by Departmental Representative. Confirmatory sampling, analysis, and assessment may take up to 5 working days. No standby charges or delays to be incurred for confirmatory sampling.

3.6.14. Do not begin backfilling or filling operations until surveying has been completed by Departmental Representative.

3.6.14.1. Disputed volumes will only be considered if supported by written report by a Land Surveyor registered in relevant jurisdiction at no additional cost or time.

3.7. Fill Types and Compaction

3.7.1. Use only backfill material which has been recommended by the Contractor's Professional Engineer and has previously been submitted and accepted by Departmental Representative.

3.7.2. Compact material as required to ensure no long term settlement and is suitable for planned post-remediation use:

3.7.2.1. Compact each layer of material to the more stringent of Excavation Plan or Drawings.

3.7.2.2. Compact to minimum 95% of corrected maximum dry density for other area

3.7.2.3. Compaction densities are percentages of maximum densities obtained from ASTM D698 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))).

3.7.2.4. For backfill around the sanitary sewer service line and/or the storm service line, pipe bedding backfill material must be used. Compaction testing of this material must be completed by an appropriately qualified professional.

3.8. Backfilling

3.8.1. Do not proceed with backfilling operations until completion of following:

3.8.1.1. Departmental Representative has inspected and accepted excavation limits based on survey data and confirmatory sampling results.

3.8.1.2. Departmental Representative has inspected and accepted backfill material. Suspect backfill material may be sampled for geotechnical and environmental quality. Backfill material sampling may take up to 5 working days. No standby charges or delays to be incurred for backfill material sampling.

3.8.1.3. Departmental Representative has inspected and accepted compaction results for previous lift.

3.8.1.4. Removal of shoring and bracing; backfilling of voids with satisfactory soil material.

3.8.2. Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.

3.8.3. Do not use backfill material which is frozen or contains ice, snow or debris.

3.8.4. Place backfill material in uniform layers not exceeding 150 mm compacted thickness. Compact each layer before placing succeeding layer.

3.8.5. Notify Departmental Representative when final backfill grade is reached.

3.8.6. Do not begin subsequent Work until surveying has been completed by Departmental Representative.

3.8.6.1. Disputed volumes will only be considered if supported by written report by a Land Surveyor registered in relevant jurisdiction at no additional cost or time.

3.9. Restoration

3.9.1. Upon completion of Work, remove Non-Contaminated Waste materials and debris, trim slopes, and correct defects as determined by Departmental Representative.

3.9.2. Reinstate non-landscaped areas to elevation which existed before excavation unless otherwise required. Revegetate disturbed areas, including excavated area and stockpile area, with fertilizer and seed mixture appropriate for location. Reference current version of BC Ministry of Transportation and Infrastructure Standard Specifications for Highway Construction, Section "Revegetation

Seeding". No overspray is to occur onto equipment, roadways, utilities, structures, waterbodies, or environmentally sensitive areas.

3.9.3. Reinstate surface grading to give Site same appearance as before remediation Work. Provide a minimum slope of 1 Horizontal: 1 Vertical as accepted by Departmental Representative.

3.9.4. Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

3.9.5. Regrade contaminated soil within Land Treatment Facility to allow water to drain off of Land Treatment Facility.

3.9.6. Repair and Maintenance of Access Road, equipment staging areas, access pads, as required, On-Site Treatment Facility Loading ramps and maintaining access across the top of the soil stockpile

3.10. Transportation

3.10.1. The following type of materials will be transported to the destinations as determined by Departmental Representative.

3.10.1.1. Non-Contaminated Soil – Transport from the excavation and stockpile to an area within 500 meters from the excavation. Later, transport the material back to the excavation and use as backfill

3.10.1.2. Non-Contaminated Waste – Transport from the site to an off-site disposal facility approved by Departmental Representative

3.10.1.3. Contaminated Soil – Transport, from the site to the on-site Land treatment facility (LTF) as shown on drawings and place and level the materials in the LTFs as determine by Departmental Representative

3.10.1.4. Special Waste (Non Treatable) - Transport from the excavation to an off-site disposal facility approved by Departmental Representative

3.10.1.5. Non-Contaminated Soil from LTF – Transport the material from the LTF to the excavation, location of the non contaminated soil stockpile is shown in drawings.

3.10.2. Purchase and Transport of non-contaminated soil, the source of this material to be approved by Departmental Representative to be suitable for the use of backfill.

3.10.3. Material must be weighed by a scale certified by Measurement Canada. Certification and all weigh scale slips to be provided to Departmental Representative.

3.10.3.1. Departmental Representative may require testing of weigh scale, or require a different weigh scale be used at no additional cost or time.

3.11. Disposal

3.11.1. Dispose all non-Contaminated Waste to an offsite Disposal Facility approved by Departmental Representative.

3.11.2. Dispose all Special waste (non treatable) at an offsite Disposal Facility based on contaminants as determined by Departmental Representative.

3.11.3. Material must be weighed by a scale certified by Measurement Canada. Certification and all weigh scale slips to be provided to Departmental Representative.

3.11.3.1. Departmental Representative may require testing of weigh scale, or require a different weigh scale be used at no additional cost or time.

3.12. Purchase and Transport Non-Contaminated Soil for Backfill

3.12.1. Purchase and Transport Non-Contaminated soil for backfill as approved by Department Representative

3.12.2. The material provided to be less than 25 mm in dia. with less than 5% passing the 0.075 mm Sieve).

3.12.3. Material must be weighed by a scale certified by Measurement Canada. Certification and all weigh scale slips to be provided to Departmental Representative.

3.12.3.1. Departmental Representative may require testing of weigh scale, or require a different weigh scale be used at no additional cost or time.

END OF SECTION

1. PART 1 - GENERAL

1.1. Measurement Procedures

1.1.1. Not Used

1.2. Action and Informational Submittals

1.2.1. Not Used

1.3. Delivery Storage and Handling

1.3.1. During delivery and storage, protect geo-membranes from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, dust, debris and rodents.

1.4. Waste Management and Disposal

1.4.1. Remove from site and dispose of packaging materials at appropriate recycling facilities.

1.5. Installation

1.5.1. Maintain area of installation free of water and snow accumulations.

1.5.2. Prepare excessively soft supporting material as directed by Departmental Representative.

1.5.3. Do not proceed with panel placement and seaming when ambient temperatures are below minus 5 degrees C or above 40 degrees C, during precipitation, in presence of excessive moisture (eg. fog, dew), nor in presence of high winds.

1.5.4. Place and seam panels in accordance with manufacturer's recommendations on graded surface. Minimize wrinkles, avoid scratches and crimps to geomembranes and avoid damage to supporting material.

1.5.5. Protect installed membrane from displacement, damage or deterioration before, during and after placement of material layers.

1.5.6. Replace damaged, torn or permanently twisted panels to approval of PWGSC Representative. Remove rejected damaged panels from site.

1.5.7. Keep field seaming to minimum. Locate field seams up and down slopes, with no horizontal field seam less than 1.5 m beyond toe of slope.

1.5.8. Keep seam area clean and free of moisture, dust, dirt, debris and foreign material.

1.5.9. Make field seam samples in accordance with requirements described in PART 2 on fragment pieces of geo-membrane and test to verify that seaming conditions are adequate.

1.5.10. Test field seams as seaming work progresses by non-destructive methods over their full length. Repair seams which do not pass non-destructive test. Reconstruct seam between failed location and any passed test location, until non-destructive testing is successful.

1.5.11. Repair minor tears and pinholes by patching until non-destructive testing is successful. Patches to be round or oval in shape, made of same geomembrane material, and extend minimum of 75 mm beyond edge of defect.

1.6. Cleaning

1.6.1. Remove debris from Project site and dispose of debris in an environmentally responsible and legal manner.

1.7. Protection

1.7.1. Do not permit vehicular traffic directly on membrane.

2. PART 2 - PRODUCTS

2.1. Materials

2.1.1. Liner: minimum 20-mil hydrocarbon and UV resistant synthetic material with welded seams (eg Linear Low Density Polyethylene (LLDPE), polyolefin, or PVC alloy polymeric coated) or to meet equivalent material specifications. See attached material specifications.

2.1.2. Seams: welded in accordance with manufacturer's recommendations.

4. PART 3 - EXECUTION

4.1. Not Used

4.1.1. Not Used

END OF SECTION