

1. Definitions

1. Remediation Contract: The tender specifications and resultant contract currently posted on the Public Works and Government Services Canada Buy and Sell website for the Remediation of the CAM-E (Keith Bay) Distant Early Warning (DEW) Line Site: <https://buyandsell.gc.ca/procurement-data/tender-notice/PW-NCS-012-10655>
2. CAM-E Remediation Prime Consultant Services: The the work identified in this Statement of Work (SOW) and the identified services for the “Departmental Representative” in the Remediation Contract.
3. The Client: Aboriginal Affairs and Northern Development Canada (AANDC)
4. The Project Authority: Public Works and Government Services Canada (PWGSC) – Environmental Services and Contaminated Sites Management (ESCSM)
5. The Contract Authority: Public Works and Government Services (PWGSC) – Environmental Services Acquisitions Team (ESAT)
6. The Consultant: The Prime Consultant, Departmental Representative, Site Supervisor, full-time representative on-site and Engineer of Record for the CAM-E Remediation Contract responsible for scope of work as defined in this document and the Remediation Contract.

2. Background

The background for the CAM-E site remediation is provided in the current remediation tender specifications currently posted on the Public Works and Government Services Canada website link: <https://buyandsell.gc.ca/procurement-data/tender-notice/PW-NCS-012-10655>

3. Objective

To achieve the objectives of the Remediation Contract, the Project Authority requires, on behalf of the Client, Prime Consultant services to manage, administer, and provide expert review of the work carried out by the remediation Contractor.

The remediation work will be done in accordance with the Remediation Contract and the project goals that are to be addressed while implementing the remediation work for the CAM-E site as generally encompass the following:

1. Minimize human health and safety risks
2. Protect fish, wildlife and vegetation
3. Protect water quality
4. Minimize environmental impacts during remediation
5. Return the site to its original condition where possible
6. Minimize long term care and maintenance
7. Apply overall cost-effectiveness considerations
8. Ensure remediation work is in accordance with remediation contract
9. Ensure the remediation is compliant to the Indian and Northern Affairs Canada (INAC) Abandoned Military Site Remediation Protocol (AMSRP) latest revision

4. Hazards

Hazards that may be encountered at the CAM-E site include but are not limited to the following:

1. Hazardous waste (polychlorinated biphenyls [PCBs], leachable lead paint, batteries, asbestos)
2. Metals/PCB contaminated soil
3. Petroleum Hydrocarbon (PHC) contaminated soil
4. Polycyclic Aromatic Hydrocarbon (PAH) contaminated soil
5. Physical hazards of scattered debris and dilapidated structures
6. Rugged terrain
7. Fuels and lubrication fluids
8. Remote site location
9. Arctic weather conditions
10. Wildlife

5. SCOPE OF WORK

The scope of work includes the work identified in this Statement of Work (SOW) and the identified services for the “Departmental Representative” in the Remediation Contract and applies to the Consultant and any Sub-Consultants or Specialty Consultants disciplines that may be required for the CAM-E Remediation Prime Consultant Services.

5.1. Site Supervision and Contract Administration Services

5.1.1. General

1. Review and be familiar with the Remediation Contract documents and all supporting documents.
2. Provide continuous supervision entire time Contractor is on site
3. Provide all inspections, testing, specialized testing and confirmation sampling as required by Contractor as to not delay remediation work
4. Provide clarification instructions, Contemplated Change Notices, and Change Orders as required.
5. Provide Site Instructions
6. Consider and evaluate any suggestions or modifications to the documents advanced by the Contractor and immediately report these to the Project authority with comments.
7. Convey instructions regarding the required standards of workmanship to the Contractor.
8. Communicate formally with the Contractor via memorandum form only. When this form is issued, the Consultant will immediately file copies with the Project authority.
9. Ensure that the Project authority is notified promptly when key pieces of components of materials and equipment are delivered, so that these parties can arrange for the appropriate personnel to have an opportunity to inspect same prior to installation.
10. Protect Human Remains, Archaeological Remains and Items of Historical Scientific Interest

5.1.2. Supervision

1. Supervise, inspect, co-ordinate and monitor all aspects of the remediation work during the construction, ensure remediation work is in accordance with Remediation Tender Documents and liaise with the Project authority.
2. Supervise, review and approve contractor survey and measurements
3. Provide Work Measurements
4. Be responsible for the measurement of all work to be done on a unit-cost basis.
5. Be responsible for the measurement of percentage completion of lump sum item.
6. Supervise and ensure remediation work is in accordance with Remediation Contract
7. Supervise soil excavation activities, collect confirmation samples, inspect and report of results, confirm compliance to Remediation Contract.

5.1.3. Inspections and Testing

1. Provide inspection for all aspects of the project, maintaining daily records of all work.
2. Inspect the Contractor mobilization and demobilization activities.
3. Accompany the Project authority on inspections and record comments or instructions of the Project authority.
4. Assist in the preparation of all deficiency, Substantial Completion, preliminary, and final reports in collaboration with the Project authority.
5. Conduct Substantial Completion Inspection of site
6. Conduct Final Inspection of site
7. Issue Substantial Completion and final deficiency reports.
8. Assist (if required) in release of holdback upon satisfactory completion.
9. Provide on part-time basis Sub-Consultants or Speciality Consultants required to perform specialized on-site inspections.
10. Provide Specialized Inspection and Testing as required
11. Test materials to meet the specifications, compaction testing, supervision of material placements, confirmation of compliance to all permits and assistance to the Consultant.
12. Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
13. Assess quality of work and identify, in writing to the Project authority, all defects and deficiencies observed at time of such inspections.
14. Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
15. Make on-site observations and spot checks of the work to determine whether the work, materials and equipment conform with the Contract Documents and supplementary documentation.
16. Provide specialized services by Environmental, Geotechnical and Demolition as required during the remediation work and as outlined in the Remediation Contract
17. Assist the Project Authority in briefing the testing firm on required services, distribution of reports, communication lines, etc.
18. Assist the Project authority in evaluating firm's invoices for services performed.
19. Ensure that the tests and inspections required by the Contract Documents are conducted, and should observe these tests and report the results in the daily log.

20. Provide non-resident inspection services by qualified personnel to ensure compliance with Contract Documents. These personnel will be fully knowledgeable with technical and administrative requirements of project.
21. Establish a written understanding with Contractor as to what stages or aspect of the work are to be inspected prior to being covered up.
22. Notify the Project authority if the test results do not meet the specified requirements, or if the Contractor does/do not have tests undertaken as required.

5.1.4. Review and Approve

1. Review and approve As-Built and Record Drawings
2. Review and Approve Contractor's Progress Payments
3. Review and process shop drawings.
4. Review testing methods, data of inspection/testing agencies.
5. Verify quantities of materials received and record work progress through review and verification of Contractor survey data and measurements.
6. Review and approve all test reports and take necessary action with Contractor when work fails to comply with Contract requirements. The Project authority will be immediately notified when tests fail to meet project requirements and when corrective work will affect the schedule.

5.1.5. Site Safety

1. Adhere to Contractor's Site Specific Health and Safety Plan (SSHASP)
2. The Consultant will adhere to the Contractor's Site Specific Health and Safety Plan (SSHASP).
3. Attend Contractor Worker Orientation Seminar
4. In case of emergencies, the Consultant is empowered to stop the work, or give orders to protect the safety of the workers or property and contact the Project authority immediately for further instruction.
5. The Consultant will conduct a Site Safety Survey of the Contractor and the CAM-E Site once during each field season. The Consultant will fill out and submit the Site Safety Survey form located in Appendix A Site Safety Survey.

5.1.6. Work Measurement

1. If work is based on unit prices, The Consultant will measure, review survey measurements and record the quantities for verification of monthly progress claims and the Final Certificate of Completion.
2. When Contemplated Change Notice, Change Orders or Task Authorization are to be issued based on Unit Prices, the Consultant will keep accurate account of the work and record dimensions and quantities.

5.1.7. Meetings

1. The Consultant will arrange, attend and conduct meetings as defined in Remediation Contract, and weekly teleconference meetings throughout the entire construction period. Attendees to include:
 - a. Client Department
 - b. PROJECT AUTHORITY in-house staff, as required
 - c. Consultant.
 - d. Contractors and their Subcontractors.
2. The Consultant will attend the meetings, record the issues and decisions and prepare and distribute minutes to all attendees within two (2) days of the meeting.
3. Attend all Community Meetings with Project Authority, Client, Contractor and Community members. Consultant will record the minutes and distribute them as outlined in the specifications and contractor proposal.
4. Attend all other construction meetings implemented by the Contractor and record subjects of interest, as it pertains to the implementation of the remediation work.

5.1.8. Records and Reporting

5.1.8.1. Daily reporting

1. Record and Report daily site activities
2. Finalize project documentation and accounts.
3. Gather, verify and report information required for Water Licence (WL), Land use Permit (LUP) and all other applicable regulations and licence requirements
4. Review and Report on Contractor's Project Schedule
5. Assess quality of work and identify, in writing to the Project authority, all defects and deficiencies observed at time of such inspections.
6. Monitor the progress of Contractors' work, compliance with all drawings and specifications, time schedules, quality standards and progress reports.
7. Report on Contractors maintaining specified quality and schedules, ensuring that Contractors are monitoring delivery of critical materials and equipment.
8. Any directions, clarifications or deficiency lists will be issued in writing to the Project authority, with a copy to the Contractor.
9. Keep the Project authority informed of the progress and quality of the work and report any defects or deficiencies in the work observed during the course of the site reviews.
10. Report if materials and equipment are being incorporated into the project prior to approval of relative shop drawings or samples.
11. Advise the Contractor of any deficiencies or unapproved deviations via memorandum and report immediately to the Project authority any of these on which the Contractor is/are tardy or refuses to correct.

The Consultant will submit a Daily Report for duration of field work (Example located in Appendix B Daily Report Example) to the Project Authority which is a recording of but not limited to:

1. Weather conditions, particularly unusual weather relative to construction activities in progress.

2. Major material and equipment deliveries.
3. Daily activities and major work done.
4. Health and Safety meetings.
5. Start, stop or completion of activities.
6. Presence of inspection and testing firms, tests taken and results.
7. Unusual site conditions experienced.
8. Significant developments, remarks.
9. Special visitors on-site.
10. Authorities given Contractor to undertake certain or hazardous works.
11. Environmental incidents.
12. Reports.
13. Stop work requests by the Project authority.

Copies of the Daily Reports are to be provided to the Project authority at the end of the project within the Post Construction Summary Report.

5.1.8.2. Post Construction Summary Report

The Consultant will submit a post construction summary report after the remediation work is completed. An example of the table of contents for the post construction summary report is included in Appendix C Example Table of Contents Post Construction Summary Report

5.1.8.3. Quarterly reporting

The Consultant will fill out and submit Quarterly Reporting each quarter of the year of the project. The required Quarterly Reporting form is located in Appendix D Quarterly Reporting.

5.1.8.4. Inuit Opportunities Consideration (IOC)

Record and Report site Inuit worker hours on site and Inuit Sub Contractor Content (To be provided by Contractor with Each Progress Payment) in accordance with the Remediation Contract Inuit Opportunities Consideration (IOC). Confirm with Contractor Monthly the current IOC hours and IOC Sub Contractor Content and rectify any discrepancies.

5.1.9. Budget/Cash Flow

Once the Project authority has accepted the Contractor's cost breakdown, the Consultant will:

1. Monitor budget/cash flow requirements as required on a site by site basis.
2. Review value of progress of work against the approved cost breakdown. When each trade is regularly reviewed against the Project Schedule and the cost breakdown, it quickly becomes apparent whether the Contractor is on budget and is generating the appropriate cash flow for the work.
3. Record all discrepancies and agreed remedial measures.

5.1.10. Permits Licences and Authorities having Jurisdiction

The consultant will gather, verify and report information required for Water Licence (WL), Land use Permit (LUP) and all other applicable regulations and licence requirements. The permits are not currently available. Example permits and associated requirements are provided in Appendix E Example Land Use Permit and Water License.

5.1.11. Contractor's Project Schedule

The Consultant will:

1. Obtain a Project Schedule from the Contractor as soon as possible after Contract award and ensure proper distribution.
2. Review and advise to ensure that the schedule has detailed components of the work shown separately.
3. Use the schedule as the basis for evaluating the progress of the work, once the Project authority has reviewed the Contractor's Project schedule.
4. Record all discrepancies and agreed remedial measures.
5. Keep accurate records of causes of delays.
6. Make every effort to assist the Contractor to avoid delays.
7. Only the Project authority may authorize any request for Time Extensions. Authorization will be issued in writing.

5.1.12. Shop Drawings

1. The Consultant will review, discuss, record problems and identify agreed remedial action. Monitor and record the progress of shop drawing review. Record parties designated for action and follow up.
2. On completion of project, The Consultant will include copies of reviewed shop drawings to the Project authority as part of the Post Construction Report. The Consultant will ensure that shop drawings include the project number and are recorded in sequence.
3. The Consultant will verify the number of copies of shop drawings required. Consider additional copies for Client's and the Authorities Having Jurisdiction office.
4. Shop drawings will be stamped: "Checked and Certified Correct for Construction" by the Contractor and stamped: "reviewed" before returning to the Contractor.

5.1.13. Site Instructions

1. The Consultant will provide clarifications on Plans and Specifications or site conditions, as required in order that project not be delayed.
2. The Consultant will record Contractor's acknowledgement of receipt of all site instructions, ensure and record that required action does not have an impact on cost or schedule.
3. The Consultant will provide the Project authority information with any additional detail drawings as and when required to properly clarify or interpret the Contract Documents, in a timely manner.

5.1.14. Change Orders

1. The Consultant does not have authority to change the work or the price of the Contract without a Project Authority approved Change Order or instructions in writing from the Project Authority.
2. Change Orders will cover all changes, including those not affecting the cost of the project, such as schedule, substitutions, etc.
3. The Consultant will prepare Contemplated Change Notices (CCN), quotations, reviews and unapproved Change Orders (CO). This includes monitoring and recording the progress of CCN and CO. Work in addition to the current contract will not proceed without written approval from the Project Authority.
4. The Project authority will issue the approved CCN and CO to the Contractor, with a copy to the Consultant.
5. The practice of "trade offs" is not allowed.

5.1.15. Contractor's Progress Payments

1. Each month, the Contractor submits a progress claim for work and materials as required in the Contract. The claims are made by completing the following forms where applicable:
 - a. Request for Payment.
 - b. Cost Breakdown for Unit and/or combined Price Contract or Cost Breakdown for Fixed Price Contract.
 - c. Statutory Declaration: Progress Claim.
2. The Consultant will determine the amounts owing to the Contractor based on the progress of the work and certify payments to the Contractor.
3. The Consultant will review and sign a separate letter recommending payment of the Progress payment (indicating the amount of the approved invoice in dollars) and promptly forward claims to the Department for processing.

5.1.16. Payment for Materials on Site

1. The Contractor may claim for payment of material on site, but not yet incorporated in work.
2. A detailed list, checked and verified by the Consultant, of materials with supplier's invoice showing price of each item will accompany each claim.
3. Items will be listed separately on the Detail Sheet showing the breakdown list and total.

5.1.17. Substantial Completion Inspection

1. The Consultant will verify that all items are correctly stated and ensure that completed documents and any supporting documents are given to the Project authority for processing.
2. Payment requires completion and signing, by the parties concerned, of the following documents:
 - a. Certificate of Substantial Performance,
 - b. Cost Breakdown for Fixed Price Contract, or Cost Breakdown for Unit or Combined Price Contract,

- c. Inspection and Acceptance,
- d. Statutory Declaration Certificate of Substantial Performance,
- e. Worker's Compensation Board Certificate.

5.1.18. Final Inspection

1. The Consultant will inform the Project authority when satisfied that all work under the Contract has been completed, including all deficiency items listed during the Substantial Inspection. The Project authority and the Client will be in attendance for the final inspection.
2. The final payment to Contractor requires completion and signing by the parties concerned, of the following documents:
 - a. Certificate of Completion.
 - b. Cost Breakdown for Fixed Price Contract or Cost Breakdown for Unit and/or Combined Price Contract.
 - c. Inspection and Acceptance.
 - d. Statutory Declaration Certificate of Completion.
 - e. Worker's Compensation Clearance Certificate.
 - f. Trades' Certificates as appropriate.
3. The Consultant will verify that all items are correctly stated and ensure that completed documents and any supporting documents are given to the Project authority for processing.

5.1.19. Post Construction

1. The Contractor is responsible for correcting all defects in the work during the warranty period, except for damage caused by misuse, abuse or neglect by others including the building occupants.
2. The Project authority will promptly notify the Consultant in the event that defects or alleged defects appear in the work of the Contractor.
3. The Consultant will investigate all defects and alleged defects in the work promptly and issue appropriate instructions to the Contractor until all work is satisfactorily completed.

5.1.20. Human Remains, Archaeological Remains and Items of Historical or Scientific Interest

The Consultant will notify the Project authority immediately if such finds are discovered and obtain further instructions on action to be taken.

5.1.21. Risk management

The Consultant will assist the Project authority in:

1. identifying risk elements based on past experience, using a proposed checklist or other available lists

2. qualifying/quantifying probability of risk event and their impact on project or related work (low, medium, high)
3. applying a dollar value to all risk/probability impact events
4. preparing contingency plans for possible changes to the work, budget and schedule
5. prioritizing risk events (i.e. concentrate efforts on risk event with high probability and medium to high impact)
6. developing risk management plan (i.e. evaluate alternatives for mitigation of risks involved)
7. implement risk mitigation on items and approaches approved by the Project authority

5.1.22. Lines of Communication and Coordination

The Project authority is responsible for the project and is the liaison between the Consultant and the Client Department. The Consultant will:

1. Correspond only with the Project authority and not communicate directly with the Client department unless authorized in writing by the Project authority. If so authorized, the Consultant will provide to the Project authority, a copy of any such correspondence and/or summary of discussions with the Client.
2. Ensure that all communications carry PROJECT AUTHORITY's Project Title, Project Number, File Number and name of person to whom correspondence is addressed.
3. Advise the Project authority of any changes that may affect schedule or budget, or are inconsistent with instructions or written approvals previously given or decisions previously agreed to.
4. Detail the extent and reasons for the changes and obtain confirmation in writing as soon as feasible.

During Site Supervision and Construction Contract Administration Services, the Consultant will provide to the Project authority the following:

1. A copy of any correspondence and/or summary of discussions with the Contractor.
2. During all phases of project delivery, the Consultant will:
 - a. Coordinate and assume responsibility for the work of any and all Sub-Consultants and Specialists Consultants retained by the Consultant.
 - b. Ensure clear, accurate and ongoing timely and responsive communication of concept, budget, and scheduling issues.
 - c. Ensure adequate inspection services and provide answers to all Contractors' questions in a timely and responsive manner.

5.1.23. PROJECT AUTHORITY Quality Assurance Reviews

1. The Project authority may conduct Quality Assurance Reviews on reports, drawings, schedules, and costs estimates prepared by the Consultant, in a manner and at stages noted herein. The Consultant will respond in writing to PROJECT AUTHORITY's comments, in a timely manner and will be held accountable for delays if proper and timely responses do not occur.

2. Such reviews are not intended as a check against errors or omissions contained within the documents submitted. The Consultant is responsible for any such errors or omissions, regardless of any review by PROJECT AUTHORITY.
3. While the Project Authority acknowledges the Consultant's obligations to meet project requirements, the project delivery process entitles Project Authority to review the work. Project Authority reserves the right to reject undesirable or unsatisfactory work. The Consultant will obtain the Project authority's acceptances during each of the project stages.
4. Acceptances indicate that, based on a general review of material for specific issues, the material is considered to comply with governmental and departmental objectives and practices and that overall project objectives should be satisfied. The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the terms and conditions of the Contract.
5. The Project authority acceptances do not preclude the possibility that the work may be determined to be unsatisfactory at later stages of review (e.g. there may be more than one (1) draft version of a report required).
6. Acceptances by the Client and other agencies and levels of government will be obtained to supplement the Project authority acceptances. The Consultant will assist the Project authority in securing all such acceptances and adjust all documentation as required by such authorities when securing acceptance.

5.2. Codes and Standards

1. All criteria will be in accordance with the current edition of Canadian Codes and Standards, and, any other relevant Codes as applicable. If territorial, local or municipal codes and bylaws are more stringent, they will take precedence.
2. Regulations, by-laws, and decisions of "Authorities having jurisdiction" will be observed. In cases of overlap, the most stringent will apply.
3. The Consultant will identify and communicate with all jurisdictions applicable to the project.
4. For material properties (both physical and chemical), methods of fabrication, tests, etc., reference should be made to the latest editions of CSA Standards and the Canadian General Standards Board, or to local standards if they are more stringent.

5.3. Hazardous Materials/Waste Audits and Abatement Monitoring

1. The Consultant will conduct site inspections during abatement as necessary to ensure appropriate abatement procedures are being followed, according to the specifications.
2. The Consultant's responsibilities will include ensuring that the containment area is properly set up.
3. The Consultant will inspect post remediation work areas to determine whether areas are suitably cleaned.

6. Assumptions for Consultant Proposal

The following assumptions will be used by the Consultant for the development of the Financial Proposal:

1. Contractor Schedule and CAT Train path provided in Appendix F Assumed Contractor Schedule and CAT Train
2. Provisional cost sum of \$200,000 for laboratory analysis of confirmation samples.
3. Consultant Inspection of Mobilization and Demobilization Activities:
 - a. Conduct four (4) onsite inspection of the Contractor Mobilization and Demobilization Activities:
 - i. At the completion of the Contractor Mobilization Sea Lift activities while the contractor is still onsite.
 - ii. During the Contractor Mobilization CAT Train Operations
 - iii. At the completion of the Demobilization Sea Lift loading activities while the contractor is still onsite.
 - iv. During the Contractor Demobilization CAT Train Operations
 - b. Assume Consultant costs to Repulse Bay for all inspections.
4. Consultant Confirmation of Contaminated Soil Extents
 - a. The consultant is required to provide personnel to assess, sample and confirm the extents (vertically and horizontally) of the identified contaminated soil on site.
 - b. Assume seven (7) full working days for this activity
 - c. Contractor will provide Tracked Excavator and Operator to Consultant during this activity.

The Consultant financial proposal may be updated based on the actual Contractor Work Plan and Schedule as agreed upon by the Consultant and Project Authority.

7. Project Deliverables:

1. The deliverables include but are not limited to:
 - a. Post Construction Summary Report
 - b. All documentation and submittals provided by Contractor
 - c. Contractor Progress Claim Approval Letters as required
 - d. Quarterly reporting as required
 - e. Site Safety Surveys
 - f. CCNs as Required
 - g. Contractor INUIT OPPORTUNITIES CONSIDERATIONS REPORTING
 - i. Inuit Labour Content
 - ii. Inuit Content for Sub-Contracting/Business Content
 - h. Reporting as Required for LUP, WL and any other AHJ requirements.

8. Potential Additional Work

The following work is not included in the current scope of work and will not be included in the financial portion of the Consultant proposal. However, should, during the course of the remediation activities, additional required remediation work be discovered, the following activities may be required from the Consultant.

8.1. Human Health and Ecological Risk Assessment

1. Based on discovery of potential additional remediation work, Preliminary Quantitative Risk Assessments (PQRA's) may be required. Health Canada has standardized the PQRA requirements to the extent possible through a series of guidance documents. Refer to FCSAP and Health Canada websites or personnel for an up to date list of reference documents.
2. Based upon the complexity and costs associated with additional remediation work, Site Specific Risk Assessments (SSRA's) may be required. In some instances, at the discretion of the Project authority, it may be necessary to proceed directly with an SSRA and not complete a PQRA. Unless specified otherwise, SSRA's are to be completed with a human health and ecological component.
3. Health Canada has produced other relevant guidance material and will continue to produce additional guidance specifically related to this program. Environment Canada will also be providing guidance related to the ecological component of risk assessment.
4. While some proposed guidance material is not available at present, consultants will be expected to use other published material to ensure the production of high quality PQRA's and SSRA's. Individual project terms of reference will update the guidance list as it is released.
5. The factors to be considered in completing the risk assessments include: contaminants of concern, receptor identification, locations, exposure pathways and prediction of contaminant concentrations at receptor locations.
6. A memo outlining the findings of the risk assessment and recommended risk management strategies would be produced. Based on the outcomes of individual risk assessments, the consultant may also be required to complete or revise remedial options analyses and RAPs.

8.2. Geotechnical Assessments

1. Geotechnical Assessments include the collection of geotechnical data to determine the structural integrity and ability of site structures/features.
2. Geotechnical Assessments/Inspections could be used, for example, to identify potential landfill locations, to determine the estimated capacity of borrow areas, or to determine the integrity of a dam.
3. Geotechnical Assessments/Inspections may involve, but are not limited to, testing to determine soil structure, subsurface water, depth to bedrock, soil water content, particle size distributions and moisture density relationship.
4. The assessments would require a written report documenting the results including (colour) figures detailing results.

8.3. Geophysical Assessments

1. Geophysical Assessments are non-intrusive assessments conducted to determine the location of subsurface anomalies and assist in their identification.
2. Geophysical Assessments could involve the use of a variety of subsurface imaging techniques (e.g. Ground penetrating radar (GPR), Electromagnetic (EM) Survey).
3. The assessments would require a written report documenting the results including (colour) figures detailing results

9. Appendix A Site Safety Survey



Site Safety Survey

Section 1

Site #	Site Name	Date of Survey	Time of Survey
Location	Surveyor	Survey of	

Section 2

Yes	No	N/A	Site Health and Safety/Certification Information	Yes	No	N/A	Wildlife Mitigation
			Emergency Response Numbers Present Posted (Posted in a Heavy Traffic Area of Camp)				Wildlife Monitors Present and/or in Contact via Radio Communication with All Working Groups
			Contact List and Location of Site Medic, Medic Facilities and Site Safety Officer posted				Wildlife Monitors Carrying Firearms are FAC certified
			Site Specific Health and Safety Plan Present and Available Complete with: <ul style="list-style-type: none">• Emergency Response Plan• Wildlife Management Plan• Spill Contingency Plan				Wildlife Management Plan in Place, to include but not limited to: <ul style="list-style-type: none">• Proper waste storage and disposal• Proper fishing/hunting policies posted and implemented
			Land Use Permit Posted				Wildlife Encounter Procedures in Place
			Water License Posted				Wildlife Monitor Firearms Have Been Tested and are Functional
			Camp Rules Posted				Wildlife Monitor Firearms are stored properly when not in use
			Camp Electrical/Fire Inspection Certificate Posted				Non Lethal implements provided to Wildlife Monitors:
			Record of All Workers on Site Having Taken Worker Orientation Seminar (WOS)				
			Other:				Other:
Comments:				Comments:			
Yes	No	N/A	Training and Certification	Yes	No	N/A	Hazardous Materials Storage
			All Workers/Working Groups Have Radio Communication Capability.				Placards in Place
			Workers Present Know Where Site Specific Health and Safety Plan is Available on Site.				Person to Complete TDG Coordination and Forms has TDG Certification
			Workers have Required Training for Assigned Work Activities:				Hazardous material storage: inventory and storage areas are logged
			First Aid				PCB Storage Area:
			TDG –				Storage Area Secure
			WHMIS –				Authorized Personnel Only
			Asbestos				PCB Binder Up to date
			HAZWOPER –				
			PCB Abatement				
			Demolition Specialization				
			Other:				Other:
Comments:				Comments:			
Yes	No	N/A	Environmental	Yes	No	N/A	WHMIS
			No Visible Oil Releases and/or Staining Present				No Unlabelled Chemicals Observed
			Waste Management Program in Place				MSDS sheets available
			Housekeeping Program in Place/Clean and Orderly				Products Effectively Stored and Anchored (Where Applicable)
			Spill Kits Available				Flammables Stored in Secure Non-Combustible Cabinet
			Other:				Other:
Comments:				Comments:			



Yes	No	N/A	Fuel and Materials Storage	Yes	No	N/A	Compressed Gas & Propane Cylinders
			Secondary Containment Provided for Fuel Storage where required				Stored Upright and Secured
			Tanks Labeled with EC Registration Stickers				Caps in Place When Not in Use
			Properly Sized Spill Kit Available, as per LUP				Removed from Work Area When Empty
			Racks and Shelves Provided				Shut off at Bottle When Not Used
			Storage Areas Orderly				Equipment and Hoses in Good Repair
			Stacked Material Secured				Stored Away from Electrical Contact
			Pallets Stacked Securely				Not Stored in Stairways and Egress Routes
			Chemicals Properly Labeled and Properly Secured				Flashback Arrestors in Place
			Single Walled Tanks below Volume Threshold Requiring Secondary Containment, as per LUP				No Smoking Sign Posted and/or properly identified
			No Bottom Feed Tanks Present				Storage Racks Are Noncombustible (Steel)
			Fuel Tanks Are Protected from Traffic				
			Other:				Other:
Comments:				Comments:			
Yes	No	N/A	Vehicles and Mobile Equipment	Yes	No	N/A	Fire Prevention
			Equipment Maintenance Program in Place				Emergency Fire Equipment Available
			Warning devices operative (lights, back-up alarms)				Trained Fire Response Personnel in Place
			Speed limit observed				Extinguishers Available/Adequate and Identified
			Extinguishers Installed/Inspected				"No Smoking" Posted As Required
			Daily Pre-Operation Inspections Conducted (Log books completed /Walk Around Procedures)				Fire Drills Conducted
							Combustibles Properly Stored
			Two-Way Radios in Use				Smoking in Designated Areas Only
			Hand Signal Procedures in Place				Fire Alarm System in Place
			Hand Signal Procedures in Place				Fire extinguishers tested monthly (check to see if they are Labeled, charged and in working condition)
			Vehicles Are Generally Clean (Windows Free from Dust/Mud)				Fire blankets available where required
			Beacon and Buggy Whips Present on Vehicles (*Required at Mines Act Sites)				Records of fire extinguishers being serviced available
			Wheel Chocks in Place When Equipment in Park(*Required at Mines Act Sites)				Protection from welding flash in place
			Other:				Other:
Comments:				Comments:			
Yes	No	N/A	At Risk Behaviors	Yes	No	N/A	Other Requirements/Specialties etc.
			Failing to Use Adequate Personal Protection Equipment				Confined Spaces Identified
			Working Unsafely				Accident Prevention, Investigation and Reporting Program Apparent and in Place
			Unsafe Use of Tools or Equipment				Records of Safety Meetings and Tailgate Meetings Present
			Unsafe Conditions Present (please list)				Proper welding procedures in place
			Visible Signs of Drugs or Alcohol Use				Proactive HSE Items/Programs in Place
			Camp Rules not being followed				Racks and shelves provided
							Storage areas orderly
							Stretcher on site
							Appropriate Emergency Medical Transportation available on-site
							Adequate First Aid supplies present and First Aid attendant on site



							Proper First Aid station
			Other:				Other:
Comments:				Comments:			
Yes	No	N/A	<u>Personal Protection</u>	Yes	No	N/A	<u>General</u>
			Hard hats				Tool box meeting being held
			Eye protection				Emergency procedures posted
			Hearing protection				Eye wash and showers available if needed
			Face shield				Neat and orderly appearance of area
			Respirators and masks				Lunchroom of required size and clean
			Safety harness/lanyards				Designated smoking area identified
			Footwear				
			Other:				Other:
Comments:				Comments:			

Section 3 Noted Issue Details

Location on Site	Issue Type	Description	Suggested Action	Priority Ranking	Suggestion Adopted by Contractor Date	Status	Status Details
General Comments:							

The signatures below acknowledge receipt of this Site Visit Observation Report prepared by the undersigned
Departmental Representative:

Departmental Representative	Signature
PC/C' s Superintendent	Signature
PC/C' s Business Name	
Regional Safety Officer	Signature

10. Appendix B Daily Report Example

Project Daily Report

Client:	PWGSC	Report No.:	48
Project:	CAM-A Environmental Site Remediation		
Project No.:	60300481	PWGSC Project No.:	R.040716
Contractor:	E. Gruben's Transport Ltd.	Site Superintendent:	Lee Visutski
Location:	CAM A (Sturt Point)		
Day:	Friday	Date:	July 18, 2014
Temperature:	5 C 3 C	From:	7:00 AM 7:00 PM
Report by:	Amber Zilinsky	Weather:	Rain, windy (>55 kph with gusts >90 kph)

Number of Personnel On-Site :

Company	Total # Workers	Total # Inuit - Beneficiary of the NLCA	Notes
AECOM	2	0	
EGT	14	7	
PWGSC or AANDC	0	0	
Total	16	7	
Accidents/Incidents/H&S Issues			
None			
Description			
Site Services and Maintenance			
Regular camp services being provided.			
Road Maintenance: General road maintenance ongoing.			
Remediation			
Granular Production: Borrow development at BA-13.			
Demolition / Hazmat Removal: None.			
Waste Collection & Disposal: None.			
Buried Debris Areas: Landfill regrade underway (Landfill A).			
Contaminated Soil Excavation: Tier II soil excavation completed to approximate design limits; waiting confirmatory sample results before backfilling. Type B soil excavation completed to approximate design limits; confirmatory sampling indicates further excavaton required.			
Type B PHC Soil Treatment: Soil samples submitted to laboratory; confirmatory sampling indicates soils are below applicable objectives.			
Other: Transport of various materials from Camp Area to beach area and TSA for eventual barge transport. Transport of excess granular material from BA-15 to barge landing.			
Communications/Submissions			
None			
Environmental Inspection			
None.			
Notes			
Flights: None			
Casual meals: None			
Wildlife sightings: Various Birds (Geese, Gulls, Ducks and Sandpipers), Rabbits			

Vehicles and Heavy Equipment Use:

No	Description	Comments	Hrs
1	CAT D6M Dozer	Landfill A Regrade	12
1	Komatsu PX31 Dozer	Landfill A (idle)	0
1	CAT 330 Excavator	Loading for Landfill Regrade	12
1	CAT 950G Loader	Camp Area (idle)	0
1	CAT 950B Loader	Camp Area (idle)	0
1	Kenworth Fuel Truck	Refuelling Runs	2
1	Tow-Behind Packer	Landfill A (idle)	0
1	Terex TA-27 Rock Truck	Landfill A Regrade	12
1	Terex TA-27 Rock Truck	Landfill A Regrade	12
1	Ford F250 Flat-Deck Pickup w/ Water Tank	Water Run	2
4	Ford F350 Pickup	Various Use Throughout Site	12
3	Quad ATV	Various Use Throughout Site	12
1	Quad ATV	Various Use Throughout Site	12
1	John Deere Gator ATV	Various Use Throughout Site	12
1	Kubota ATV	Various Use Throughout Site	12
1	Kubota ATV	Various Use Throughout Site	12

Project Daily Photo Record:



Picture 1: Landfill A Regrade.



Picture 2: Borrow Area BA-13.



Picture 3: Transport of Excess Material from BA-15.



Picture 4: Barge Landing Restoration.

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Construction Summary Report**

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12. Appendix D Quarterly Reporting

Supplier Name	AOC Employment Target (%)

Notes:

- 1) For supplier internal resources, please enter "Supplier Internal Resource". For subcontractor's resources, please enter the relevant subcontractor's name.
- 2) Please enter a unique identifier (employee initials, employee ID etc) for each employee. Please do not enter employee names to ensure privacy.
- 3) Please enter an "x" into the most appropriate category.
- 4) Please enter total employment hours and training hours in increments no smaller than 15 minutes. Please specify the current quarter.

Worksheet 2 - Suppliers

Supplier Name	AOC Employment Target (%)

[illegible]

Notes:

- 1) For supplier internal costs, please enter "Supplier Internal Costs". For costs relating to a supplier's subcontractor, please enter the relevant subcontractor's name.
2) Please enter an "x" into the most appropriate category.
3) Please enter the current quarter.
4) Please enter an "x" if the supplier / subcontractor was utilized in the current quarter.

Worksheet 3 - Project Statistics

Supplier Name

Categories	Metrics	Quarter: ____ ¹
EHS Performance		
Incidents, Inspections and Audits		
Safety Incidents	Major Incident	# of incidents
	Moderate Incident	# of incidents
	Minor Incident	# of incidents
	Near misses	# of near misses
Environmental Incidents	Environmental Incidents	# of incidents
		Spill Volume (L)
Inspections / Audits	Inspections/Audits (external)	# performed
		# non-compliances
	Inspections/Audits (internal)	# performed
		# non-compliances
Other Corrective Actions	New procedures	# procedures
	Other initiatives	# initiatives
Consultations, Engagements and Media Events		
Events	Consultations	#
		# persons
	Community Engagements	#
		# persons
	Media Events	#

Notes:

1) Please specify the current quarter, and enter metrics values in this column.

Glossary

Term:	Definition:
Aboriginal Employee	Section 35 of the Constitution Act recognizes three groups of Aboriginal people (Indians, Métis and Inuit) as descendants of the original inhabitants of North America. For the purposes of the socio-economic employment and training data, the Aboriginal Employee categories include First Nation, Inuit and/or Métis individuals who are working, either on-site or off-site, performing services related to the project for a contractor, subcontractor or supplier who has a contract with AANDC or PWGSC to do work related to the project. Aboriginal employees of AANDC or PWGSC are not included in this category.
Aboriginal Opportunities Consideration (AOC)	Point-rated evaluation criteria used within a competitive solicitation process which evaluate Bidders on the basis of the type and extent of commitments made to maximizing Aboriginal participation within the resulting contract work. Bidders are required to submit an AOC proposal demonstrating their proposed approach to implementing this component. Upon Award, the successful Bidder's proposed AOC target become a firm commitment under the contract.
Aboriginal Supplier	As defined by the Procurement Strategy for Aboriginal Business, an enterprise that is: a sole proprietorship, limited company, co-operative, or not-for-profit organization in which Aboriginal persons have majority ownership and control (meaning at least 51 percent), and in which, in the case of a business enterprise with six or more full time employees, at least 33 percent of the full-time employees are Aboriginal persons; or, a joint venture or consortium in which an Aboriginal business or Aboriginal businesses as defined above have at least 51 percent ownership and control.
Awareness – EHS Policy and Procedures Training	General training, provided to all individuals working on the project site, related to the Environmental Health and Safety (EHS) policies and procedures that apply to the site
Environmental Incident	A release or spill that is reportable as stipulated in federal or territorial legislation or in a license or permit applicable to the project. Resources to determine whether a spill or release needs to be reported can be found through the following resources: <ul style="list-style-type: none"> • Yukon – See Schedule A of the Spill Regulations of the Environment Act. Please see: http://www.env.gov.yk.ca/environment-you/spills.php • Northwest Territories – See Schedule B of the Spill Contingency Planning and Reporting Regulations. Please see: https://www.justice.gov.nt.ca/en/files/legislation/environmental-protection/environmental-protection.r2.pdf • Nunavut - See Schedule B of the Spill Contingency Planning and Reporting Regulations. Please see: http://www.justice.gov.nu.ca/apps/fetch/download.aspx?file=%2fapps%2fuploads%2ffiles%2fconsolidated+law%2foriginal%2fenvironmental+protection+act%2f633404216383300000-662918185-reg558.pdf • Federal – For releases, Sections 95, 169, 179 and 212 of the Canadian Environmental Protection Act, 1999 (CEPA, 1999). For environmental emergencies, Section 201 of CEPA, 1999. For an unauthorized deposit of a deleterious substance in water frequented by fish or a serious and imminent danger of such an occurrence, Subsection 38(5) of the Fisheries Act. Please see: https://www.ec.gc.ca/ee-ue/default.asp?lang=En&n=EED2E58C-1
First Aid Training	Emergency First Aid, Wilderness First Aid, Cardiopulmonary Resuscitation (CPR) Level C training provided to all individuals working on the project site.
HAZWOPER Training	Occupational Safety and Health Administration (OSHA, USA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training provided to all individuals working on the project site.
Inspections/Audits (external)	An environmental, health and safety site inspection or audit performed by a third party expert (e.g. a representative of an authority that has jurisdiction over the site or a consultant hired by AANDC).
Inspections/Audits (internal)	An environmental, health and safety site inspection or audit performed by AANDC staff.
Major Incident	An incident resulting from activities performed at the project site that results in a severe and irreversible disability, impairment, injury, illness or fatality to an individual or individuals.
Media Events	Any radio, television, social media, Internet or newspaper reports and/or media tours that cover the project.
Minor Incident	An incident resulting from activities performed at the project site that results in injury or illness that inconveniences an individual or individuals.
Moderate Incident	An incident resulting from activities performed at the project site that results in a reversible disability, impairment, injury or illness that temporarily alters the lives of an individual or individuals.
Near Misses	An unplanned incident resulting from activities performed at the project site, which did not result in any disability, impairment, injury, illness or fatality, but had the potential to do so.
Northern Employee	A person with permanent residence of greater than six months in any of the three territories. Does not include employees of AANDC or PWGSC.
Northern Supplier	A company with a head office, or other regional office, in any of the three territories.
Quarter	Q1 = April to June (inclusive), Q2 = July to September (inclusive), Q3 = October to December (inclusive), Q4 = January to March (inclusive)
WHMIS Training	Workplace Hazardous Materials Information System (WHMIS) training provided to all individuals working on the project site.
Consultation	Formal Consultations that fulfill the Duty to Consult requirements related to the potential or established Aboriginal or Treaty rights recognized and affirmed in section 35 of the Constitution Act, 1982. The specific requirements for formal Consultation are outlined in the Government of Canada document: Aboriginal Consultation and Accommodation Updated Guidelines for Federal Officials to Fulfill the Duty to Consult (March 2011). Please see: http://www.aadnc-aandc.gc.ca/eng/1100100014664/1100100014675

13. Appendix E Example Land Use Permit and Water License



P.O. Box 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

File No.: **1BR-DPI1217**

October 18, 2012

Natalie Plato, Director
Stephen Hooey, Project Manager
Department of Indian Affairs and Northern Development
Contaminated Sites Division
P.O. Box 2200
Iqaluit, NU X0A 0H0
E-mail: natalie.plato@aandc.gc.ca
Email: Stephen.hooey@aandc.gc.ca

RE: NWB LICENCE No. 1BR-DPI1217

Dear Ms. Plato and Mr. Hooey:

Please find attached Licence No. **1BR-DPI1217** issued to the Department of Indian Affairs and Northern Development ((DIAND) or Indian and Northern Affairs Canada (INAC) or Aboriginal Affairs and Northern Development Canada (AANDC)) by the Nunavut Water Board (NWB) under **Motion #: 2012-B1-008** pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee will be in contravention of the Nunavut Land Claims Agreement. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three (3) months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in

the public's interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment; however, a minimum of sixty (60) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing

The NWB strongly recommends that the Licensee consult the comments received from interested persons on issues identified. These comments are attached for your information.¹

Sincerely,



Thomas Kabloona
Nunavut Water Board
Chair

TK/sj/pb

Enclosure: Licence No. **1BR-DPI1217**
Comments – AANDC, EC

Cc: Qikiqtani Distribution List

¹ Aboriginal Affairs and Northern Development Canada (AANDC), May 30, 2012 and July 23, 2012; and Environment Canada (EC), May 30, 2012 and July 20, 2012.



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 1BR-DPI1217

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a new Licence received on February 29, 2012 and made by:

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT (DIAND)

to allow for the use of water and disposal of waste during camp operations and site remediation activities associated with the Durban Island (FOX-E) and Padloping Island Remediation Projects. The Durban Island and Padloping Island project sites are located 95 and 75 kilometres, respectively, southeast of Qikiqtarjuaq within the Qikiqtani Region of Nunavut, generally at the following geographical coordinates:

Latitude: 67°05'08" N	Longitude: 62°12'20" W
Latitude: 67°06'08" N	Longitude: 62°08'22" W
Latitude: 67°05'28" N	Longitude: 62°05'49" W
Latitude: 67°04'02" N	Longitude: 62°10'50" W (Durban Island Project Extents)
Latitude: 67°02'52" N	Longitude: 62°45'05" W
Latitude: 67°02'52" N	Longitude: 62°42'50" W
Latitude: 67°02'22" N	Longitude: 62°40'54" W
Latitude: 67°02'04" N	Longitude: 62°44'22" W (Padloping Island Project Extents)
Latitude: 67°04'20" N	Longitude: 62°10'30" W (Durban Island Camp – Option 1)
Latitude: 67°05'51" N	Longitude: 62°08'10" W (Durban Island Camp – Option 2)
Latitude: 67°02'15" N	Longitude: 62°42'45" W (Padloping Island Camp)

DECISION

After having been satisfied that the application was for a location within an area in which there is no Land Use Plan² and subject to a 12.4.4(a) Screening Decision by the Nunavut Impact Review Board³ in accordance with Article 12 of the *Nunavut Land Claim Agreement* (NLCA), the NWB decided that the application could proceed through the regulatory process. In accordance with s.55.1 of the

² NPC Conformity Determination, February 28, 2012.

³ NIRB Screening Decision, April 30, 2012.

Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA) and Article 13 of the NLCA, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the NLCA and of the NWNSRTA, decided to waive the requirement to hold a public hearing and determined that:

Licence Number 1BR-DPI1217 be issued subject to the terms and conditions contained therein. (Motion #: 2012-B1-008)

SIGNED this 18th day of October 2012 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board
Chair

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INTRODUCTION

The Durban Island and Padloping Island Remediation Projects are located on southeast Baffin Island within the Qikiqtani Region of Nunavut. Durban and Padloping Islands are situated approximately 95 and 75 kilometres, respectively, southeast of the Hamlet of Qikiqtarjuaq. The Durban Island Project site is a former Intermediate Distant Early Warning (DEW) Line site, constructed in 1957 by the Department of National Defence and operated until 1963. In 1965, following abandonment, the site became the responsibility of Indian and Northern Affairs Canada (INAC). The Padloping Island Remediation Project site contains a former weather station, constructed by the United States Air Force in 1943. The site was subsequently operated by the Canadian Department of Transportation and it eventually closed in 1956.

In the summer of 2010, AECOM completed Phase III Environmental Site Assessments (ESA) for both sites following which Remedial Action Plans (RAP) were developed. To assist in achieving the objectives outlined in the RAP, AANDC (Applicant or Proponent) submitted to the Nunavut Water Board (NWB) for consideration a water licence application (Application) in support of the following activities proposed for the Durban (FOX-E) Island and Padloping Island Remediation Projects, which are scheduled to commence in 2012:

- Mobilization of equipment and supplies to site by sealift and helicopter to Padloping and Durban Islands;
- Construction of a main camp on Durban Island and a secondary camp on Padloping Island;
- Construction of a sewage lagoon at both sites;
- Excavation of borrow materials for road construction and site grading;
- Upgrades to the steep road at Durban Island and smaller access roads on Padloping Island;
- Collection, sorting and crushing of barrels and debris from both sites;
- Packaging and stockpiling of hazardous and non-hazardous waste for removal by sealift;
- Removal of the remains of two barges near the shoreline on Padloping Island;
- Removal of various buried debris from Padloping Island and regarding of excavated areas;
- Construction of a hydrocarbon treatment ‘landfarms’ on Durban Island and Padloping Islands; and
- Demobilization from both sites, including removal of all stockpiled material.

PROCEDURAL HISTORY

The NWB received the following documents, as part of the Application from AANDC, in support of the Durban (FOX-E) Island and Padloping Island Remediation Projects:

- Cover letter dated February 24, 2012, received February 28, 2012;
- General Water Licence Application, received February 28, 2012;
- Durban Island & Padloping Island Remediation Project Description, English & Inuktitut;
- Executive Summaries, English & Inuktitut;
- Remediation Action Plan, received February 28, 2012;
- Durban Island Phase III ESA, received March 29, 2012;
- Padloping Phase III ESA, received March 29, 2012;

- Confirmation from NPC no conformity required, dated February 28, 2012;
- Application to NIRB, English and Inuktitut, dated February 28, 2012; and
- NIRB Notice of Part 4 Screening, dated March 22, 2012

On April 30, 2012 the Board distributed the Application to interested persons for a thirty-day comment and/or review period with the deadline for submission being set for May 30, 2012. Prior to the deadline for comments, submissions were received from AANDC Water Resources Division and Environment Canada (EC). AANDC – Water Resources Division recommended that the proponent submit for Board approval the Spill Contingency Plan(s) for the project before commencing remediation activities. EC provided several comments and recommendations aimed at ensuring that any potential adverse effects of the project are minimized.

On July 27, 2012, the Applicant submitted a copy of the Spill Contingency Plan (SCP) for the project, which the NWB distributed to interested parties for comments/review. Comments related to the SCP were received from AANDC and EC.

The proposed remediation project consists of two independent and separate sites; however, the proponent has requested that the Board consider issuing one licence that would capture the scope of activities under both of the sites. To support its position, the proponent stated that given the proximity of the two sites, a single licence will assist in allowing for efficiencies and cost saving that can be realized by awarding a combined contract for the remediation of the sites.

It should be noted that it is very unusual for the Board to issue one licence for two project sites that are not inextricably linked to each other. However, given that the proponent has chosen the “Walk-Away” option so as to minimize the scope of facilities and or activities associated with remediating the sites and that the proponent will be awarding a single contract for both project sites which may require overlapping of contractor personnel, camp use and waste disposal activities, the Board has decided to issue one licence for this particular case. However, the Board does not encourage and is not inclined to consider a similar type of approach in the future.

GENERAL CONSIDERATIONS

A. Term of the Licence

In accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* s. 45, the NWB may issue a licence for a term not exceeding twenty-five years. The applicant requested a five-year term for this licence, which the NWB believes is consistent with and appropriate for the type of activities proposed in the application. The Board has therefore granted the five-year term that the Licensee requested.

B. Annual Report

Under the reporting section in the Licence, Part B, Item 1, the Licensee is required to submit, on an annual basis, a report that pertains to water use and waste deposition. This information is made available to interested persons upon request. In addition, the NWB maintains annual reporting information in its public registry, and copies of annual reports can be accessed by the

public through the NWB's ftp site using the following link (username: "public" and password: "registry"): http://www.nunavutwaterboard.org/en/public_registry

C. Water Use

The proponent has requested thirty-six (36) cubic metres of water *per* day for domestic and miscellaneous uses as identified in the application for the Durban Island and Padloping Island Remediation Projects, received February 29, 2012: 18 cubic metres of water to be allocated to each of the project sites. Water for the purposes outlined in the application will be obtained from a fresh water lake proximal to the secondary camp facility on Padloping Island and from two streams and a blast hole proximal to the main camp facility on Durban Island. The NWB has determined that the quantity of water that is requested is appropriate for the type of undertaking and has set maximum water use for all purposes under this Licence at thirty-six (36) cubic metres *per* day under Part C, Item 1 of the Licence.

D. Deposit of Waste

Borrow Sources and Quarries

The Licensee has indicated that Borrow Materials and quarry sources will be required for road construction and site grading activities. Conditions have been included in the Licence, under Part D, requiring that geochemical analyses be carried out on potential borrow sources and quarry sites to determine acid generating and metal leaching potential prior to the use of such materials. In cases where it is determined that the materials are suitable for use, the Licensee is required to implement adequate drainage control measures at the sites used to source aggregates so as to prevent or minimized sediment loading into nearby freshwater water bodies.

Non-Hazardous Waste

The Licensee has stated that non-hazardous waste, including solid waste and buried debris, will be packaged and shipped off-site for disposal at approved facilities the southern Canada. As a result, the scope of remediation activities does not include the construction of non-hazardous waste landfills. Conditions have been included under Part D in the Licence to ensure that appropriate measures are developed and implemented for the storage and shipment of waste originating from both projects.

Hazardous Waste

The Licensee has proposed to package and ship to approved facilities in the south all hazardous waste including waste oil, items contaminated with PCBs and heavy metals, and Tier I and Tier II contaminated soil. It should be noted that all hazardous wastes must be handled in accordance with applicable regulations including the *Transportation of Dangerous Goods Act*. The Licensee is required, under Part D to dispose of all hazardous substances and/or materials at approved facilities.

Landfarm

According to information provided in the application, the Proponent plans to construct a Hydrocarbon Impacted Soil Facility (Landfarm Facility) on each of the project sites, Durban Island and Padloping Island, to treat Type B hydrocarbon contaminated soil. It is anticipated that

soil from each Landfarm Facility will be treated to meet criteria specified in INAC's *Abandoned Military Site Remediation Protocol* (2009). Requirements for each Landfarm Facility have been included under Part D in the Licence. In addition, for-construction engineering design drawings for each facility are required at least sixty (60) days prior to construction under Part H, Item 1 in the Licence.

Sewage Disposal Facility

The Licensee has proposed to construct a two-cell Sewage Treatment Facility (Sewage Lagoons) at the Durban Island Project site and the Padloping Island Project site, to treat sewage and greywater generated by personnel carrying out the remediation activities for the sites. Criteria governing the quality of the effluent are included under Part D, Item 11 in this Licence. For-construction engineering design drawings are required for each Sewage Treatment Facility at least sixty (60) days prior to construction as indicated under Part H, Item 1

E. Spill Contingency Planning

Subsequent to submitting the water licence application, the Proponent submitted a Spill Contingency Plan (SCP) under Part I, Item 1, which the Board has approved under this Licence. The Licensee is required to submit with the 2012 Annual Report an addendum to the Spill Contingency Plan that addresses the comments provided by intervening parties during the public review period for the plan.

F. Abandonment and Restoration

The Board has approved, under Part J, Item 1, the Plan entitled "Remedial Action Plan FOX-E, Durban Island Intermediate Dew Line Site," dated March 2011 and the "Final Remediation Action Plan, Padloping Island, Former US Coast Guard Weather Station," dated March 2011, that were submitted as additional information with the application. The Licensee is required to submit to the Board for review, any revision to the Plans undertaken throughout the life of the project.

G. Monitoring

Conditions have been included within the Licence, under Part K, requiring the Licensee to install Monitoring Stations at the Sewage Treatment Facility, waste segregation and storage area(s), Landfarm Facility, and Water Supply Facility. In addition, the Licensee is required to submit to the Board for review, a Quality Assurance/Quality Control (QA/QC) Plan. The Plan must receive approval from an analyst confirming that the plan is acceptable. All of the monitoring results and analyses involving the results are to be provided to the NWB as part of the annual reporting requirements. This requirement is included under Part K in the Licence.

Although the "Walk Away" option has been selected, the Board has, nevertheless, included under Part K, Item 1 in the Licence, a condition requiring the Licensee to submit, if necessary, a Long-Term Monitoring Plan to the Board for approval at least sixty (60) days prior to initiating long-term monitoring activities.

H. Operations and Maintenance

The Licensee is required to submit to the Board for approval, under Part E, Item 2, at least sixty (60) days prior to the commissioning of each Landfarm Facility, Sewage Treatment Facility, and Water Supply Facility, an Operation and Maintenance (O&M) Manual that includes O&M procedures for operating the facilities approved under this Licence.

The Board, having considered the Application, interveners' comments and the nature of the undertaking, has accordingly set terms and conditions in this Licence to govern the use of water and the disposal of wastes during the proposed undertaking.



NUNAVUT WATER BOARD WATER LICENCE

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT (DIAND)

(Licensee)

P.O. BOX 2200, IQALUIT, NUNAVUT X0A 0H0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water for a period subject to restrictions and conditions contained within this licence:

Licence Number/Type: **1BR-DPI1217 Type "B"**

Water Management Area: NUNAVUT 05

Location: FOX-E DURBAN ISLAND AND PADLOPING ISLAND
REMEDICATION PROJECTS
QIKIQTANI REGION, NUNAVUT

Classification: INDUSTRIAL – TYPE "B"

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not
to Exceed: THIRTY-SIX (36) CUBIC METRES *PER* DAY

Date of Licence Issuance: OCTOBER 18, 2012

Expiry of Licence: OCTOBER 31, 2017

This Licence, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

**Thomas Kabloona,
Nunavut Water Board, Chair**

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the disposal of waste for an undertaking classified as Industrial at the Durban Island and Padloping Island Remediation Projects. The Durban Island and Padloping Island Project sites are located approximately 90 and 75 kilometres, respectively, southeast of Qikiqtuarq, within the Qikiqtani Region, Nunavut.

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Nunavut Waters and Nunavut Surface Rights Tribunal Act, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and;
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this Licence: 1BR-DPI1217

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**Amendment**” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“**Analyst**” means an Analyst designated by the Minister under Section 85 (1) of the *Act*;

“**Appurtenant undertaking**” means an undertaking in relation to which a use of waters or a deposit of waste is permitted by a licence issued by the Board;

“Board” means the Nunavut Water Board established under the *Nunavut Land Claims Agreement*;

“Borrow Sources” mean sources of aggregates used for the development of roads and site other infrastructure and/or for purposes as described in the “Abandon Military Site Remediation Protocol” (INAC 2009);

“Chief Administrative Officer” means the Executive Director of the Nunavut Water Board;

“Effluent” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond or following a treatment process;

“Engineer” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“Final Discharge Point” means the point at which the Licensee no longer exerts care and/or control over the quality and/or quantity of the effluent from a treatment process;

“Greywater” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“Hazardous waste” means waste classified as “hazardous” by Nunavut Territorial or Federal Legislation, or as “dangerous goods” under the *Transportation of Dangerous Goods Act* at the time of clean-up;

“Inspector” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“Landfarm Facility” means the facility designed and constructed to bio-remediate Type B soil at the Durban Island Project site, as described in the application received February 29, 2012;

“Landfarm Facility” means the facility designed and constructed to bio-remediate Type B soil at the Padloping Island Project site, as described in the application received February 29, 2012;

“Licensee” means the individual or organization to which Licence 1BR- DPI1217 Type “B” is issued or assigned;

“Modification” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but

does not include an expansion;

“Monitoring Program” means a program established to collect data on surface water and groundwater quality to assess impacts to the environment of an appurtenant undertaking.

“Nunavut Land Claims Agreement” (NLCA) means the “*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*,” including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Regulations” means the *Northwest Territories Water Regulations* sor/93-303 8th June, 1993, omitting Section 5, Water Use or Waste Deposit without a Licence;

“Sewage” means all toilet wastes and greywater;

“Sewage Treatment Facility” comprises the area and engineered structures designed for the containment and/or treatment of sewage generated at the Durban Island Project site as outlined in the application received February 29, 2012;

“Sewage Treatment Facility” comprises the area and engineered structures designed for the containment and/or treatment of sewage generated at the Padloping Island Project site as described in the application received February 29, 2012;

“Solid Waste” means non-hazardous waste and Type-A soil;

“Spill Contingency Plan” means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

“Sump” means an excavation in impermeable soil for the purpose of catching or storing water or waste;

Tier I Soil means soil containing contaminant concentrations within the types and ranges defined as DCC Tier I in Appendix E of the NTI Agreement, including its preamble and schedules, and any amendments made pursuant to that agreement (see Table No.1);

Tier II Soil means soil containing contaminant concentrations within the types and ranges defined as DCC Tier II in Appendix E of the NTI Agreement including its preamble and schedules, and any amendments to made pursuant to that agreement (see Table No.1);

“Type A Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of lubricating oil and grease (F3 – F4 Fractions);

“Type B Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of fuel oil and/or diesel fuel and /or gasoline (F1 – F2 Fractions);

“Toilet Wastes” means all human excreta and associated products, but does not include greywater;

“Waste” means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

Water Supply Facility” consisting of intake structure, transport equipment and other infrastructure designed to collect and supply water for the Durban Island Project site as described in the Water Licence Application for the Durban Island and Padloping Island Remediation Projects, received February 29, 2012;

Water Supply Facility” consisting of intake structure, transport equipment and other infrastructure designed to collect and supply water for the Padloping Island Project site as described in the Water Licence Application for the Durban Island and Padloping Island Remediation Projects received February 29, 2012;

“Waste Disposal Facilities” means all facilities designated for the disposal and/or treatment of waste including the Sewage Treatment Facility and Landfarm Facility as described in the Water Licence Application received February 29, 2012;

3. **Enforcement**

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the appurtenant undertaking with the Board no later than March 31st of the year following the calendar year being reported which shall contain the following information:
 - a. The monthly and annual quantities (in cubic metres) of fresh water obtained from all sources;
 - b. The monthly and annual quantities (in cubic metres) of treated sewage discharged;
 - c. The monthly and annual quantities (in cubic metres) of material deposited in each on-site Landfarm Facility;
 - d. A summary of all waste backhauled to any community in Nunavut required under Part D, Items 5;
 - e. A summary of any construction work, modification and major maintenance work (including as-built diagrams) carried out on each Landfarm Facility, Sewage Treatment Facility and Water Supply Facility, and any other facility approved under the Licence;
 - f. Tabular summaries for all data and information generated under the “Monitoring Program”;
 - g. An analysis of data collected during the “Monitoring Program” and a brief description of any future studies planned by the Licensee;
 - h. A summary of remediation work undertaken during the year and an outline of work anticipated for the following year;
 - i. A summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - j. A list of unauthorized discharges and summary of follow-up actions taken;
 - k. Any revisions to the approved Plan entitled “Remedial Action Plan, FOX-E, Durban Island Intermediate DEW Line Site” dated March 2011 and the “Final Remediation Action Plan Padloping Island Former Coast Guard Weather Station,” dated March 2011;
 - l. Any revisions to the site specific, Spill Contingency Plan, submitted under Part I, Item 1;
 - m. If applicable, a description of any trenches and sumps excavated, including but not limited to the following: GPS coordinates, dimensions, depth below active layer, and secondary containment features;
 - n. A public consultation/participation report describing consultation with local organizations and the residents of the nearby communities;
 - o. A brief summary of work done to address concerns or deficiencies listed in inspection reports and/or compliance reports prepared by an Inspector;
 - p. An executive summary, in English and Inuktitut, of all plans, reports, or studies conducted under this Licence; and
 - q. Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.

- r. The results of any sampling and testing carried out on fish and shellfish within specific areas of the project extent that are aimed at assessing the impacts of the project on those organisms.
- 2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
- 3. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes as required by the Monitoring Program under Part K.
- 4. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.
- 5. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
- 6. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans are to be submitted in the form of an Addendum to be included with the Annual Report.
- 7. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
- 8. The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate areas identifying the locations and the "Monitoring Program Stations" for each Landfarm Facility, Sewage Treatment Facility, Water Supply Facility and all other facilities authorized under this Licence. All postings shall be in the Official Languages of Nunavut.
- 9. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:

(a) **Manager of Licensing:**
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338

Fax: (867) 360-6369
Email: licensing@nunavutwaterboard.org

(b) **Inspector Contact:**
Water Resources Officer
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4298
Fax: (867) 979-6445

10. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
11. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing.
12. This Licence is not assignable except as provided in Section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain water for camp use and/or miscellaneous purposes from a fresh water supply lake proximal to the Padloping Island project site and from two streams and a blast hole proximal to the Durban Island Project site as stated in the application received February 29, 2012. Total water use for the Durban Island project site shall not exceed 18 cubic metres per day and total water use for the Padloping Island Project site shall not exceed 18 cubic metres per day. The maximum quantity of water allowed for all purposes under this Licence shall not exceed thirty-six (36) cubic metres per day.
2. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that there is no entrainment of fish and shall withdraw water at a rate such that fish do not become impinged on the screen.
3. The Licensee shall not remove any material from below the ordinary high water mark of any water body.
4. If the Licensee requires water in sufficient volume that the source water body may be drawn down the Licensee shall, at least thirty (30) days prior to commencement of use of water, submit to the Board for approval in writing, the following: volume required, hydrological overview of the water body, details of impacts and proposed mitigation measures.
5. The Licensee shall implement sediment and erosion control measures to prevent the deposition of dust and/or sediment into the Water Supply Lake, arising from contractor activities or on-site vehicular travel.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty-one (31) metres from the ordinary high water mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise approved by the Board in writing.
2. The Licensee is authorized to dispose of all acceptable food waste, paper waste and untreated wood products in an incinerator.
3. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding waters, unless otherwise approved by the Board in writing.
4. The Licensee shall transport in accordance with applicable regulations all hazardous and non-hazardous wastes generated and originating from the Durban Island and Padloping Island Remediation Projects for disposal and/or treatment at appropriately licensed facilities in southern, or as otherwise approved by the board in writing. .
5. The Licensee shall provide to the Board, documented authorization from any community in Nunavut receiving waste from the Durban Island and Padloping Island Remediation Projects prior to backhauling any waste for storage or disposal.
6. The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste and include this information within the Annual Report, under Part B, Item 1. These records shall be made available to an Inspector upon request. The Licensee shall not transport Hazardous Wastes prior to registering with the Government of Nunavut as a waste generator and utilizing the prescribed manifests.
7. The Licensee shall direct all Sewage generated from camp operations to the Sewage Treatment Facilities described in the Licence application received February 29, 2012 or as otherwise approved by the Board in writing.
8. During camp setup and construction of the Sewage Treatment Facilities, the Licensee may contain all camp Sewage in a sump. The sump shall be located at a distance of at least thirty-one (31) meters above the ordinary high water mark of any water body, treated with lime and covered with native material to achieve the pre-existing natural contours of the land prior to abandonment. The location shall be included in the Annual Report, as per Part B, Item 1.
9. The Licensee shall direct all Type B, light hydrocarbon contaminated soil to the appropriate onsite Landfarm Facility on Durban Island and Padloping Island for

treatment in accordance with the information provided the Application received February 29, 2012 or as otherwise approved by the Board in writing.

10. The Licensee shall provide notice to an Inspector at least ten (10) days prior to initiating any decant or discharge from any Sewage Treatment Facility, Landfarm Facility and areas designated for segregating and storing wastes.
11. All waste discharged from the Final Discharge Point of the Sewage Treatment Facility at Monitoring Program Stations DPI-10 and DPI-11 shall not exceed the following Effluent quality limits:

Parameter	Maximum Allowable Concentration
BOD ₅	80 mg/kg
Total Suspended Solids	100 mg/kg
Faecal Coliforms	1 x 10 ⁴ CFU/100 mL
pH	6.0 to 9.0 (pH units)
Oil and Grease	No visible sheen

12. The Licensee shall collect and temporarily store in preparation for future disposal all water generated from the storage and segregation of solid waste, demolition rinse water resulting from decontamination processes or procedures and water derived from borrow pits, quarry sites and excavation activities.
13. The Licensee shall ensure that all water associated with dewatering of contaminated soil areas and/or water within the perimeter of the Landfarm Facilities, solid waste segregation and storage area(s), demolition rinse water, water from quarry sites, Borrow Sources and seepage from Monitoring Program Stations, meet the following Effluent discharge criteria prior to being released:

Parameter	Maximum Allowable Concentration (µg/L)
pH	6 to 9 (pH units)
Oil and Grease	5000
Arsenic (total)	100
Cadmium (dissolved)	10
Chromium (dissolved)	100
Cobalt (dissolved)	50
Copper (dissolved)	200
Lead (dissolved)	50
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Phenols	20
Zinc (total)	500

14. If the Effluent referred to in Part D, Item 11, and Item 13 does not meet the discharge criteria stipulated in this Licence, it shall be considered hazardous waste and disposed off-site at an approved facility or as otherwise approved by the board in writing.
15. The discharge location for all treated effluents described in Part D, Items 11, and 13, shall be located at a minimum of thirty-one (31) metres from the ordinary high water mark of any water body and where direct flow into a water body is not possible and no additional impacts are created.
16. The Licensee shall sample and provide, as part of its Annual Report, the results of laboratory analyses carried out on materials from potential Borrow Sources prior to use as construction materials. Borrow Sources containing materials that possess acid generating and metal leaching characteristics cannot be used as construction materials for the remediation projects.
17. All water collected from excavated areas including borrow pits shall be pumped to an area as described in Part D, Item 12, or as otherwise approved by the Board in writing.
18. The Licensee shall provide proper storage, transport and disposal off site at an approved facility of all non-hazardous and hazardous waste materials identified in the Application received February 29, 2012, including Tier II Soil, items contaminated with heavy metals and waste oil generated through construction and remediation activities, or as otherwise approved by the Board in writing.
19. The Licensee shall not mix or blend soils that exceed the maximum levels of Tier II criteria for the expressed purpose of attaining the specific limits of Tier I as listed under Table No.1.
20. The Licensee shall dispose of all soils containing substances in excess of Tier II criteria, as indicated in Table No.1, by collection, containment and shipment off-site to a licensed disposal facility.
21. The Licensee shall, for the purposes of monitoring impacts to water, install ground water monitoring wells, at least one up-gradient and one down-gradient of each of the Landfarm Facility identified in the Application received February 29, 2012.
22. The Licensee shall dispose of any material coated with Polychlorinated Biphenyl (PCB) - amended paints, hazardous materials and soils containing contaminants in excess of Canadian Environmental Protection Act (CEPA) Guidelines, off site at an approved treatment facility in accordance with the application received February 29, 2012.

PART E: CONDITIONS APPLYING TO THE UNDERTAKING

1. The Licensee is allowed to use material from Borrow sources for the purposes specified in the “Remedial Action Plan FOX-E, Durban Island Intermediate DEW Line Site” dated March 2011 and the “Final Remediation Action Plan, Padloping Island, Former US Coast Guard Weather Station,” dated March 2011, provided that those Borrow Sources are approved by an Inspector, free of contaminants and satisfies the requirement of Part D, Item 16 of this Licence.
2. The Licensee shall submit to the Board for approval, within sixty (60) days prior to commissioning, an Operation and Maintenance Manual for all facilities constructed under the Durban Island and Padloping Island Remediation Projects, including the Sewage Treatment Facility, Landfarm Facility and Water Supply Facility. The manual shall be prepared in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (1996).
3. The Operations and Maintenance Manual referred to in Part E, Item 2 shall address the following items with respect to the Landfarm Facility, Sewage Treatment Facility and Water Supply facility:
 - a. Feasibility of alternative disposal methods and sites;
 - b. Operation and maintenance procedures for each facility;
 - c. Runoff diversion and management;
 - d. Soil Quality Remediation Objectives (SQRO's);
 - e. Monitoring program for both water and soil; and
 - f. Closure alternatives for the management of sludge from the Sewage Treatment Facility
4. The Licensee shall, upon the failure of any constructed facilities, repair such facilities immediately to the appropriate standards as recommended by an Engineer.
5. The Licensee shall implement proper handling, storage and transportation procedures for hazardous materials during clean-up activities.
6. The Licensee shall minimize disturbance to terrain, permafrost and drainage during extraction of granular material, development and closure of site infrastructure, movement of contractor's equipment and personnel around the site and removal of site debris.
7. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
8. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

9. The Licensee shall design and construct all stream crossings to minimize erosion and/or deposition of waste into water.
10. The Licensee shall ensure that existing creek channels are maintained at their normal width and depth to the extent possible, during and after construction.
11. Granular materials and rock rip-rap used for any temporary stream crossings, approaches or as may be required for bank stabilization must be obtained from sources satisfying the requirements of Part E, Item 1. Such material must not be removed or gathered from below the ordinary high water mark of a creek, stream or from any water body.
12. All sites affected by construction or removal activities shall be stabilized, landscaped as necessary, and suitable erosion control measures implemented to minimize sediment deposition into watercourses located on or adjacent to the site.
13. The Licensee shall restore and stabilize all areas affected by the undertaking upon completion of the work.
14. The Licensee shall not deposit any waste in any body of water, or on the banks thereof, which may impair the quality, quantity, or flow of water.
15. Areas designated for waste disposal shall be located at a minimum of thirty-one (31) metres from the ordinary high water mark of any body of water, unless otherwise authorized.
16. The Licensee shall dispose of all scrap metal, discarded machinery and parts, and other bulky material in a manner that conforms to the Remedial Action Plan that was submitted with the Licence Application.

PART F: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND OPERATIONS

1. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.
2. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
3. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of water, ice or snow, and shall be removed prior to spring break-up.

4. With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into any water body is prohibited. These materials shall be disposed of above the ordinary high water mark in such a fashion that they do not enter the water.

PART G: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill for the purpose of installing monitoring wells, thermistors or other monitoring equipment.
2. The Licensee shall restore all drill holes and disturbed areas to natural conditions immediately upon completion of the projects. The restoration of drill holes must include the removal of any drill casing materials and the capping of holes with a permanent seal.

PART H: CONDITIONS APPLYING TO CONSTRUCTION AND MODIFICATIONS

1. The Licensee shall provide to the Board for review, within sixty (60) days prior to the construction of the, Landfarm Facility, Sewage Treatment Facility and the Water Supply Facility intake structure, complete for-construction engineering design drawings, signed and stamped by an Engineer. These designs shall consider, siting, operation, monitoring, sampling and analytical methods, decommissioning and closure options and plans for the proposed Facilities.
2. The Licensee shall provide to the Board, within ninety (90) days of completion of construction, as-built plans and drawings of the facilities referred to in this Licence. These plans and drawings shall be stamped by an Engineer.
3. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and/or Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - b. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
 - c. such Modifications are consistent with the NIRB Screening Decision;
 - d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - e. the Board has not rejected the proposed Modifications.
4. Modifications, for which all of the conditions referred to in Part H, Item 3 have not been met, can be carried out only with written approval from the Board.

5. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Board has approved the Plan entitled “Environmental Site Remediation at Fox-E-Durban Island and Padloping Island, Nunavut Spill Contingency Plan” dated June 2012 that was submitted as additional information subsequent to the submission of the Application.
2. The Licensee shall submit together with the 2012 Annual Report, an Addendum to the Plan referred to in Part I, Item 1, in the format set out by the Consolidation of Spill Contingency Planning and Reporting Regulations, R-068-93, to address minor issues identified by AANDC and EC during the review of the original plan such as:
 - a. Inclusion of a detailed topographic map depicting nearby water bodies, spill response equipment and other relevant information;
 - b. Inclusion of a copy of the NT-NU spill report form; and
 - c. Amending the definition of reportable spills to reflect the definition in AANDC’s *Guidelines for Spill contingency Planning* (2007).
3. The Licensee shall ensure that any chemicals, petroleum products or wastes associated with the project do not enter water. All sumps and fuel caches shall be located a minimum of thirty-one (31) metres above the ordinary high water mark of any adjacent water body and inspected on a regular basis. The Licensee is encouraged to use some form of secondary containment on fuel and chemical storage facilities associated with this undertaking.
4. The Licensee shall ensure that any equipment maintenance and servicing be conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage fluids, waste and contain potential spills.
5. If during the term of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a. Employ the Approved Spill Contingency Plan;
 - b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the AANDC Water Resources Inspector at (867) 975-4295; and
 - c. Submit to the AANDC Water Resources Inspector on each occurrence, a detailed report including the GPS location, no later than thirty (30) days after initially reporting the event.

PART J: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Board has approved the Plan entitled “Remedial Action Plan FOX-E, Durban Island Intermediate DEW Line Site” dated March 2011 and the “Final Remediation Action Plan, Padloping Island, Former US Coast Guard Weather Station”, dated March 2011 and received as part of the Application on February 29, 2012.
2. The Licensee shall complete all restoration work for the temporary camp facilities and waste disposal activities not included under Part J, Item 1 of this Licence, prior to the expiry of this Licence.
3. The Licensee shall backfill and restore, all temporary containment sumps, to the pre-existing natural contours of the land.
4. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work, and restored as practically as possible to a pre-disturbed state.

PART K: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. If there is a need for long-term monitoring, the Licensee shall submit to the Board for approval, at least sixty (60) days prior to initiating any long-term monitoring activities, a Post-closure Monitoring Plan for the project sites. The plan shall include information on long-term monitored of the Waste Disposal Facilities, stability of the sites and the need for thermal and ground water monitoring.
2. The Licensee shall maintain Monitoring Program Stations at the following locations:

Monitoring Program Station Number	Description	Status
DPI-1	Raw water supply intake at the fresh water lake proximal to Padloping Island project site.	Active (Volume)
DPI-2a	Raw water supply stream (no.1) proximal to Durban Island project site.	Active (Volume)
DPI-2b	Raw water supply stream (no. 2) proximal to Durban Island project site.	Active (Volume)
DPI-3	Raw water from blast hole proximal to Durban Island project site.	Active (Volume)
DPI-4	Final Point of Discharge from the Padloping Island Landfarm Facility	Active (Water Quality)
DPI-5	Monitoring Well installed up-gradient of the Padloping Island Land Farm Facility	Active (Water Quality)

DPI-6	Monitoring well installed down-gradient of the Padloping Island Land Farm Facility	Active (Water Quality)
DPI-7	Final Point of Discharge from the Durban Island Landfarm Facility	Active (Water Quality)
DPI-8	Monitoring Well installed up-gradient of the Durban Island Land Farm Facility	Active (Water Quality)
DPI-9	Monitoring well installed down-gradient of the Durban Island Land Farm Facility	Active (Water Quality)
DPI-10	Final Discharge Point from the Padloping Island Sewage Treatment Facility,	Active (Water Quality)
DPI-11	Final Discharge Point from the Durban Island Sewage Treatment Facility,	Active (Water Quality)
DPI-12	Final Point of Discharge from the Solid Waste Segregation and Storage Areas	Active (Water Quality)

3. The Licensee shall measure and record in cubic metres the daily quantities of water utilized for camp operations, for all purposes at the intake of the Water Supply Facility, Monitoring Program Station DPI-1, DPI-2a, DPI-2b and DPI-3.
4. The Licensee shall measure and record in cubic metres, the daily quantities of effluent discharged from the Waste Disposal Facilities at monitoring stations DPI-4, DPI-7, DPI-10, DPI-11 and DPI-12
5. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of water are utilized for all purposes.
6. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with camp operations are deposited.
7. The Licensee shall monitor compliance with respect to Part D Item 11, by collecting a representative composite sample once at the beginning of discharge upon initial release and prior to the end of discharge, from the Final Discharge Point of each Sewage Treatment Facility at Monitoring Program stations DPI-10 and DPI-11.
8. The Licensee shall monitor compliance with respect to Part D Item 13 by collecting a representative composite sample from a minimum of 5% of the total volume to be released from the relevant Final Discharge Points identified in Part K, Item 2 of this Licence.

9. The Licensee shall monitor groundwater quality proximal to each Landfarm Facility by collecting representative samples from all relevant monitoring wells installed under Part K, Item 2. Samples shall be analyzed for the parameters listed under Part D, Item 13.
10. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board.
11. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing
12. The Licensee shall submit to the Board for information, at least ninety (90) days prior to releasing any Effluent, a Quality Assurance/Quality Control Plan that conforms to the guidance document *Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class "B" Licensees in Collecting Representative Water Samples in the Field and for Submission of a QAQC Plan* INAC (1996). The Plan shall be acceptable to an accredited laboratory and include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under the Licence.

Table No.1
(From INAC Abandoned Military Site Remediation Protocol)
DEW Line Clean-up Criteria (DCC)^a

Substance	DCC Tier I ^{bc} (mg/L)	DCC Tier II ^d (mg/L)
Arsenic	-	30
Cadmium	-	5.0
Chromium	-	250
Cobalt	-	50
Copper		100
Lead	200	500
Mercury	-	2.0
Nickel	-	100
Zinc	-	500
PCB's	1.0	5.0

a. These criteria were adopted specifically for the cleanup of Arctic DEW Line Sites from the 1991 versions of the Quebec Soil Contamination Indicators and the Canadian Council of Ministers of the Environment Interim Canadian Environmental Criteria for Contaminated Sites.

b. Soil criteria are given in parts per million, ppm.

c. Soils containing lead and/or PCBs at concentrations in excess of DCC I, but less than DCC II, may be landfilled,

d. Soils containing one or more substrates in excess of DCC II must be containerized - i.e. removed in a manner which precludes contact with the Arctic ecosystem.



Land Administration
P.O. Box 100
IQALUIT, NU X0A 0H0
Phone: 867-975-4275
FAX: 867-975-4286

Your file - Votre référence

Our file - Notre référence

July 31st, 2014

DIAND – Contaminated Sites
P.O. Box 2200
Iqaluit, NU
X0A 0H0

Dear Natalie Plato:

Re: Land Use Permit #N2012X0011
Type of Operation: Site Remediation
Location: Durban & Padloping Islands, Baffin, NU, NTS 16M

This will confirm that the above land use permit is hereby extended from July 13th, 2014, to August 13th, 2015.

This will also confirm the issuance of Quarry Permit 2014QP0027.

All conditions annexed to land use permit N2012X0011 will apply to this extension.

Sincerely,

Rebecca Leighfield
A/Manager, Land Administration

cc: Manager, Field Operations
RMO - Baffin

14. Appendix F Assumed Contractor Schedule and CAT Train

ID	Task Name	Start	Finish	3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quarter			1st Quarter		
				Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	May	
1	Remediation Contract Tender	Wed 19/08/15	Tue 05/04/16																														
15	Departmental Representative	Tue 05/01/16	Mon 21/03/16																														
19	Remedation	Wed 15/06/16	Thu 17/10/19																														
20	Sea Lift Marshaling Deadlii	Wed 15/06/16	Wed 15/06/16																														
21	Mobilization Sea Lift	Tue 23/08/16	Mon 03/10/16																														
22	Mobilization Cat Train	Wed 15/02/17	Tue 28/03/17																														
23	Field Season 1	Sat 01/07/17	Fri 01/09/17																														
24	Field Season 2	Mon 02/07/18	Sat 01/09/18																														
25	Demobilization Cat Train	Fri 15/02/19	Thu 28/03/19																														
26	Demobilization Sea Lift	Fri 06/09/19	Thu 17/10/19																														