SPECIFICATION

DEMOLITION OF SAR BUILDING

BURIN, NL

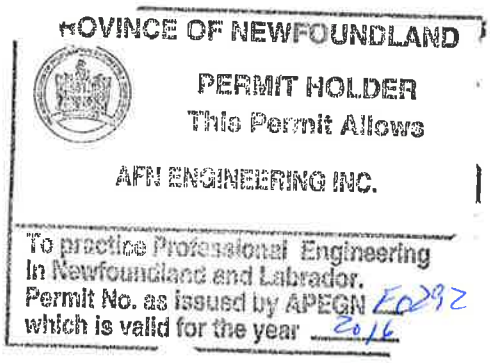
F6879-165010

PREPARED FOR

Department of Fisheries and Oceans,
Real Property, Safety & Security

DATE

July 1, 2016
Revision 1



DRAWING NO	TITLE
C1	Demolition and New Site Plan
C2	Floor Plan of Building to be Removed
C3	Elevations
C4	Section

1.1 SCOPE

.1 The work consists of the furnishing of all plant, labour, equipment and material for demolition and removal of the SAR building in Burin, NL, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract.

.2 Note that the following items are to be removed/salvaged from the building (by the Contractor) and turned over to the Departmental Representative, prior to building demolition:

1. Overhead garage door and opener.
2. All emergency and exit lights.
3. Kitchen and bathroom cabinetry.
4. Overhead light fixtures (if deemed to be in good condition by the Departmental Representative).
5. Heavy duty lift hoist.

Take precautions not to damage any of the above items during salvage operations. If items are damaged through negligence of the Contractor (as determined by the Departmental Representative), they are to be replaced new at the Contractors cost.

.3 The following treated timber is to be purchased new and neatly stockpiled at the site at project completion, for the Departmental Representative's sole future use:

1. 100 pieces of 4″x12″x30′lg. prime #1 douglas fir treated dimensional lumber.

1.2 DESCRIPTION OF WORK

.1 In general, work under this contract consists of, but will not necessarily be limited to, the following:

.1 Demolition, removal and disposal

of the existing building (including all interior contents). Take inventory of materials inside the building during the pre-tender site visit.
.2 Demolition, removal and disposal of the communications towers and chain link fencing, as noted on the drawings.
.3 Backfilling (with new rock/gravel fill topped with granulars) of the footprint of the building after the floor slab has been removed (and after the concrete knee walls have been cut flush with the surrounding wharf deck). Note that all water/sewer lines are to be located and capped prior to demolition activities. Coordinate all electrical disconnects with NL Power (and pay for any applicable CIAC charges).
.4 Supply and installation of stone barricades as noted on the drawings.

Do not proceed with any portion of the demolition work until the Departmental Representative has approved the Contractor's written demolition work plan. Note that there are hazardous building materials that will have to be addressed by the Contractor before demolition work is initiated (refer to Appendix A).

1.3 SITE OF WORK

.1 Work will be carried out at Burin, NL.

1.4 DATUM

.1 If requested by the Contractor, the Departmental Representative will establish a benchmark prior to the start of deconstruction activities.

1.5 FAMILIARIZATION WITH SITE

.1 Before submitting a bid, it is recommended that bidders visit the site and its surroundings to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid or costs to do the work. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.

.2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.

.3 Obtain prior permission from the Departmental Representative before carrying out such site inspection.

1.6 CODES AND STANDARDS

.1 Perform work in accordance with the latest edition of the National Building Code of Canada, and any other code of provincial or local application including all amendments up to project bid closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

1.7 TERM ENGINEER

.1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative.

1.8 SETTING OUT WORK

.1 Set grades and layout work in detail from control points and grades established by Departmental Representative.

.2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.

.3 Provide devices needed to layout and construct work.

.4 Supply such devices required to facilitate Departmental Representative's inspection of work.

.5 Supply stakes and other survey markers required for laying out work.

1.9 COST BREAKDOWN

.1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price.

.2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental Representative.

.3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.

.4 This will be a lump sum project. Individual work items will not be measured separately for payment.

1.10 WORK SCHEDULE

.1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.

.2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.

.3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.

.4 Submit schedule updates on a minimum bi-weekly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.

.5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.

.6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.11 SITE OPERATIONS

.1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. All arrangements for space and access will be made by Contractor.

1.12 PROJECT MEETINGS

.1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.

.2 Project meetings will take place on site of work unless so directed by the Departmental Representative.

.3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.

.4 Have a responsible member of firm present at all project meetings.

1.13 PROTECTION

.1 Store all materials and equipment to be incorporated into work to prevent damage by any means.

.2 Repair or replace all materials damaged in transit or storage to the satisfaction of

Departmental Representative and at no cost to Canada.

1.14 EXISTING SERVICES

.1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to site operations, and tenant operations.

.2 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.

.3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility.

.4 Provide temporary services when directed by Departmental Representative to maintain critical facility systems.

.5 Provide adequate bridging over trenches which cross walkways or roads to permit normal traffic.

.6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.

.7 When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.

1.15 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy each of the following:
.1 Contract Drawings
.2 Specifications
.3 Addenda

.4 Contract and any resulting amendments signed by contracting authority.
.5 Test Reports
.6 Copy of Approved Work Schedule
.7 Site specific Health and Safety Plan and other safety related documents

1.16 PERMITS

.1 Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other Authorities.

.2 Provide appropriate notifications of project to municipal and provincial inspection authorities.

.3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.

.4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

.5 Comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.

1.17 CUTTING, FITTING AND PATCHING

.1 Execute cutting, including excavation, fitting and patching required to make work fit properly.

1.18 ACCEPTANCE

.1 Prior to the issuance of the Certificate of Substantial Performance, in company with Departmental Representative, make a

check of all work. Correct all discrepancies before final inspection and acceptance.

1.19 WORKS COORDINATION

.1 Responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.

.2 Convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.

.3 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.20 CONTRACTOR'S USE OF SITE

.1 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.

.2 Exercise care so as not to obstruct or damage public or private property in the area.

.3 At completion of work, restore area to its

original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

.4 Provide secure laydown area, as required, to accommodate temporary storage of hazardous materials pending removal from the site.

1.21 WORK COMMENCEMENT

.1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan and insurance and bonding documentation, unless otherwise agreed by Departmental Representative.

.2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.

.3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional work force to complete the project within the specified completion time.

.4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after acceptance of bid and replenished as required.

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Product data.

.2 Samples.

.3 Certificates.

1.2 SUBMITTAL GENERAL REQUIREMENTS

.1 Submit to Departmental Representative for review submittals listed, including samples, certificates and other data, as specified in other sections of the Specifications. Note that any and all changes to the contract will have to be approved in writing by the Contracting Authority.

.2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.

.3 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.

.4 Present product data, samples and mock-ups in SI Metric units.

.5 Where items or information is not produced in SI Metric units, provide soft converted values.

.6 Review submittals prior to submission to Departmental Representative. Ensure during

review that necessary requirements have been determined and verified, required field measurements or data have been taken, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.

.1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.

.7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.8 Verify field measurements and affected adjacent work and coordinate.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.

.11 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for resubmission.

.12 Make changes or revision to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental

Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.

.13 Keep one reviewed copy of each submittal document on site for duration of Work.

1.3 PRODUCT DATA

.1 Product data includes drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Submit sufficient copies of product data which are required by the General Contractor and sub-contractors plus 2 copies which will be retained by Departmental Representative. Ensure sufficient numbers are submitted to enable one complete set to be included in each of the maintenance manuals specified, if applicable.

.3 Allow 10 calendar days for Departmental Representative's review of each submission.

.4 Adjustments or corrections made on product data by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative in writing prior to proceeding with Work.

.5 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If product data are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected product data, through same submission procedures indicated above.

.6 Accompany each submission with transmittal letter, containing:
  .1 Date.
  .2 Project title and project number.
  .3 Contractor's name and address.
  .4 Identification and quantity of each product data and sample.
  .5 Other pertinent data.

.7 Submissions shall include:
  .1 Date and revision dates.
  .2 Project title and project number.
  .3 Name and address of:
    .1 Subcontractor.
    .2 Supplier.
    .3 Manufacturer.
  .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  .5 Cross references to particular details of contract drawings and specifications section number for which product data submission addresses.
  .6 Details of appropriate portions of Work.

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

.9 The review of product data by the Departmental Representative or their delegated representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that Public Works and Government Services Canada approves the detail design inherent in the product data, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in product data or of responsibility for meeting all requirements of the construction and

Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 SCHEDULES, PERMITS AND CERTIFICATES

.1 Upon acceptance of bid, submit to Departmental Representative copy of Work Schedule and various other schedules, permits, certification documents and project management plans as specified in other sections of the Specifications.

.2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.

.3 Submission of above documents to be in accordance with Submittal General Requirements procedures specified in this section.

1.1 SECTION INCLUDES

.1 Fire Safety Requirements.

.2 Hot Work Permit.

1.2 RELATED WORK

.1 Section 01 35 29 - Health and Safety Requirements.

1.3 REFERENCES

.1 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
.1 National Fire Code - Standard for Construction Operations – latest edition (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml).
.2 National Fire Code - Standard for Welding and Cutting – latest edition (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/302/page00.shtml).
.3 FCC standards, may also be viewed at the Regional Labour Canada Office located at Baine Johnson Centre, 10 Fort William Place, St. John’s, NL, A1C 1K4; Telephone 1-800-641-4049; fax 1-709-772-5985.

1.4 DEFINITIONS

.1 Hot Work defined as:
.1 Welding work.
.2 Cutting of materials by use of torch or other open flame devices.
.3 Grinding with equipment which produces sparks.

1.5 SUBMITTALS

.1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental

Representative for review, within five (5) calendar days after notification of acceptance of bid.

.2 Submit in accordance with the Submittal General Requirements specified in Section 01 33 00.

1.6 FIRE SAFETY REQUIREMENTS

.1 Implement and follow fire safety measures during Work. Comply with following:
.1 National Fire Code, latest edition.
.2 Fire Protection Standards FCC 301 and FCC 302 – latest edition.
.3 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29 – Health and Safety Requirements.

.2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

1.7 HOT WORK AUTHORIZATION

.1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot work on site.

.2 To obtain authorization submit to Departmental Representative:
.1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
.2 Description of the type and frequency of Hot Work required.
.3 Sample Hot Work Permit to be used.

.3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Departmental Representative will provide authorization to proceed as follows:
.1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
.2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Departmental Representative. Follow Departmental Representative's directives in this regard.

.4 Requirement for individual authorization based on:
.1 Nature or phasing of work;
.2 Risk to Facility operations;
.3 Quantity of various trades needing to perform hot work on project or;
.4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.

.5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.

1.8 HOT WORK PROCEDURES

.1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.

.2 Procedures to include:
.1 Requirement to perform hazard assessment of site and immediate hot work area for each hot work event in accordance with Hazard Assessment and Safety Plan requirements of Section 01 35 29.
.2 Use of a Hot Work Permit system for each

hot work event.
.3 The step by step process of how to prepare and issue permit.
.4 Permit shall be issued by Contractor's site Superintendent, or other authorized person designated by Contractor, granting permission to worker or subcontractor to proceed with hot work.
.5 Provision of a designated person to carryout a Fire Safety Watch for a minimum of 60 minutes immediately upon completion of the hot work.
.6 Compliance with fire safety codes and standards specified herein and occupational health and safety regulations specified in Section 01 35 29.

.3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Clearly label as being the Hot Work Procedures applicable to this contract.

.4 Hot Work Procedures shall clearly establish worker instructions and allocate responsibilities of:
.1 Worker(s),
.2 Authorized person issuing the Hot Work Permit,
.3 Fire Safety Watcher,
.4 Subcontractors and Contractor.

.5 Brief all workers and subcontractors on Hot Work Procedures and Permit system established for project. Stringently enforce compliance.
.1 Failure to comply with the established procedures may result in the issuance of a Non-Compliance Notification at Departmental Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 29.

1.9 HOT WORK PERMIT

.1 Hot Work Permit to include, as a minimum, the following data:
.1 Project name and project number.
.2 Building name, address and specific room or area where hot work will be performed.
.3 Date when permit issued.
.4 Description of hot work type to be performed.
.5 Special precautions required, including type of fire extinguisher needed.
.6 Name and signature of person authorized to issue the permit.
.7 Name of worker (clearly printed) to which the permit is being issued.
.8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time and date, and completion time and date.
.9 Worker signature with date and time upon hot work termination.
.10 Specified time period requiring safety watch.
.11 Name and signature of designated Fire Safety Watcher, complete with time and date when safety watch terminated, certifying that surrounding area was under continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.

.2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.

.3 Each Hot Work Permit to be completed in full and signed as follows:
.1 Authorized person issuing Permit before hot work commences.
.2 Worker upon completion of Hot Work.
.3 Fire Safety Watcher upon termination of safety watch.
.4 Returned to Contractor's Site

Superintendent for safe keeping.

1.10 DOCUMENTS ON SITE

.1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.

.2 Upon request, make available to Departmental Representative or to authorized safety representative for inspection.

1.1 RELATED WORK

.1 Section 01 35 24 - Special Procedures on Fire Safety Requirements.

1.2 DEFINITIONS

.1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

.2 Competent Person: means a person who is:

.1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;

.2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;

.3 Knowledgeable about potential or actual danger to health or safety associated with the Work.

.3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.

.4 PPE: personal protective equipment.

.5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.3 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00.

.2 Submit to Departmental Representative, copies of the following documents

including updates.

.1 Site specific Health and Safety Plan.

.2 Building permit, compliance certification and other permits obtained.

.3 Reports or directives issued by Federal and Provincial Inspectors and other Authorities having jurisdiction.

.4 Accident or incident reports.

.5 WHMIS – MSDS data sheets.

.6 Name of Contractor’s Representative designated to perform health and safety supervision in site.

.7 Certificate of clearance from Workplace Health Safety and Compensation Commission (Assessment Services Department) of Newfoundland and Labrador.

.3 Submit within five (5) work days of notification of Bid Acceptance. Provide one (1) copy.

.4 Departmental Representative will review Health and Safety Plan and provide comments.

.5 The Contractor will revise the Plan as appropriate and resubmit within five (5) work days after receipt of comments.

.6 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.

.7 Submit revisions and updates made to the Plan during the course of Work.

1.4 COMPLIANCE

.1 Comply with the Occupational Health and

REQUIREMENTS

Safety Act for the Province of Newfoundland and Labrador, and the Occupational Health and Safety Regulations made pursuant to the Act.

.2 Comply with Canada Labour Code Part II, (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.

.1 The Canada Labour Code can be viewed at: www.http://laws.justice.gc.ca/en/L-2/

.2 COSH can be viewed at: www.http://laws.justice.gc.ca/eng/SOR-86-304/ne.html.

.3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F).

.3 Observe construction safety measures of:

.1 Part 8 of National Building Code.

.2 Municipal by-laws and ordinances.

.4 In case of conflict or discrepancy between any specified requirements, the more stringent shall apply.

.6 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof through submission of Certificate of Clearance from Workplace Health, Safety and Compensation Commission (Assessment Services Department) of Newfoundland and Labrador.

.7 Obtain and maintain worker medical surveillance documentation where prescribed by legislation or regulation.

1.5 RESPONSIBILITY

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

.2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to work site with safety requirements of Contract Documents, applicable Federal, Provincial, and local by-laws, regulations, and ordinances, and with site specific Health and Safety Plan.

1.6 SITE CONTROL AND ACCESS

.1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.

.1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.

.2 Isolate Work Site from other areas of the premises by use of appropriate means.

.1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.

.2 Post signage at entry points and other

strategic locations indicating restricted access and conditions for access.

.3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.

.3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.

.4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.

.5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

1.7 PROTECTION

.1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.

.2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.8 FILING OF NOTICE

.1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.

1.9 PERMITS

.1 Post permits, licenses and compliance certificates, specified in section 01 10 10, at Work Site.

.2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out applicable portion of work.

1.10 HAZARD ASSESSMENTS

.1 Perform site specific health and safety hazard assessment of the Work and its site.

.2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.

.3 Record results and address in Health and Safety Plan.

.4 Keep documentation on site for entire duration of the Work.

1.11 PROJECT/SITE CONDITIONS

.1 The following are known or potential project related safety hazards at site:

.1 Working around water.
.2 Remote site location.
.3 Wet and slippery conditions.
.4 Inclement weather conditions.
.5 Potential structural weakness of existing structures.
.6 Heavy lifting.
.7 Hazardous building materials (lead paint, asbestos, etc.).
.8 Mould.
.9 Working at heights.
.10 Cutting tools and other construction power tools.

.11 Hazardous materials.
.12 Sharp objects (construction debris).
.13 Electric shock and risk of falling.

.2 Above items shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work.

.3 Include above items into hazard assessment process.

.4 Review the Hazardous Building Material Survey in Appendix A of this specification.

1.12 MEETINGS

.1 Contractor to hold pre-construction health and safety meeting prior to commencement of Work. Ensure attendance of:
.1 Superintendent of Work.
.2 Contractor’s designated Health & Safety Site Representative.
.3 Subcontractor’s Health and Safety Site Representative.
.4 Health and Safety Site Coordinator.

.2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.

.3 Keep documents on site.

1.13 HEALTH AND SAFETY PLAN

.1 Prior to commencement of Work, develop written Health and Safety Plan specific to the work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.

.2 Health and Safety Plan shall include the following components:

.1 List of health risks and safety hazards identified by hazard assessment.

.2 Control measures used to mitigate risks and hazards identified.

.3 On-site Contingency and Emergency Response Plan as specified below.

.4 On-site Communication Plan as specified below.

.5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.

.6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.

.3 On-site Contingency and Emergency Response Plan shall include:

.1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.

.2 Evacuation Plan: site and floor plan layouts showing escape routes, marshaling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and other related data.

.3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.

.4 Emergency Contacts: name and telephone number of officials from:

.1 General Contractor and subcontractors.

.2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.

.3 Local emergency resource organizations.

.4 On-site Communication Plan:

.1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.

.5 Address all activities of the Work including those of subcontractors.

.6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.

.7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

.8 Post copy of the Plan, and updates, prominently on Work Site.

1.14 SAFETY SUPERVISION

.1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.

.2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:

.1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work

.2 Monitor and enforce Contractor's site-specific Health and Safety Plan.

.3 Conduct site safety orientation session to persons granted access to Work Site.

.4 Ensure that persons allowed site access

are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.

.5 Stop the Work as deemed necessary for reasons of health and safety.

.3 Health & Safety Site Representative must:

.1 Be qualified and competent person in occupational health and safety.

.2 Have site-related working experience specific to activities of the Work.

.3 Be on Work Site at all times during execution of the Work.

.4 All supervisory personnel assigned to the Work shall also be competent persons.

.5 Inspections:

.1 Conduct regularly scheduled safety inspections of the Work on a minimum daily basis. Record deficiencies and remedial action taken.

.2 Conduct Formal Inspections on a minimum monthly basis. Use standardized safety inspection forms. Distribute to subcontractors.

.3 Follow-up and ensure corrective measures are taken.

.6 Keep inspection reports and supervision related documentation on site.

1.15 TRAINING

.1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.

.2 Maintain employee records and evidence of training received. Make data available to

Departmental Representative upon request.

.3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

.4 All workers dealing with hazardous materials are required to provide evidence of training, in accordance with Provincial regulations.

1.16 MINIMUM SITE SAFETY RULES

.1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
.1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety glasses safety vest and hearing protection.
.2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
.3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
.4 Obey warning signs and safety tags.

.2 Brief persons of disciplinary protocols to be taken for non compliance. Post rules on site.

1.17 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by

Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

1.18 INCIDENT REPORTING

.1 Investigate and report the following incidents to Departmental Representative:
.1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
.2 Medical aid injuries.
.3 Property damage in excess of $10,000.00.

.2 Submit report in writing.

1.19 HAZARDOUS PRODUCTS

.1 Comply with requirements of Workplace Hazardous Materials Information System WHMIS).

.2 Keep MSDS data sheets for all products delivered to site.
.1 Post on site.
.2 Submit copy to Departmental Representative.

1.20 SITE RECORDS

.1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.

.2 Upon request, make available to Departmental Representative or authorized Safety Officer for inspection.

1.21 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.

.2 Post other documents as specified herein, including:
.1 Site specific Health and Safety Plan.
.2 WHMIS data sheets.

1.1 RELATED WORK

.1 Section 02 41 16 – Sitework, Demolition and Removal.

1.2 DEFINITIONS

.1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

1.3 FIRES/BURNING

.1 Fires/burning of demolition debris is not permitted.

1.4 DISPOSAL OF WASTES AND HAZARDOUS MATERIALS

.1 Do not bury rubbish and waste materials on site.

.2 Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or sanitary sewers or waste landfill sites.

.3 Store, handle and dispose of hazardous materials and hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.

.4 Dispose of construction waste materials and demolition debris, resulting from work, at approved landfill sites only. Carryout such disposal in strict accordance with provincial and municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills.

.5 Establish methods and undertake construction practices which will minimize waste and optimize use of construction materials. Separate at source all construction waste materials, demolition debris and product packaging and delivery containers into

various waste categories in order to maximize recycling abilities of various materials and avoid disposal of debris at landfill site(s) in a "mixed state". Where recycling firms, specializing in recycling of specific materials exist, transport such materials to the recycling facility and avoid disposal at landfill sites.

.6 Communicate with landfill operator prior to commencement of work, to determine what specific construction, demolition and renovation waste materials have been banned from disposal at the landfill and at transfer stations.

1.5 DRAINAGE

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.

.4 Pumped water must meet applicable federal, provincial, and municipal standards before it can be discharged to a surface water body. If regulatory guidelines exceedences are noted, the Departmental Representative has the right to issue stop pumping instructions to the Contractor. Contractor will not be compensated for any delays associated with retrofitting equipment to meet guidelines.

1.6 PERMITS

.1 All guidelines and instructions stated on permits must be strictly adhered to.

1.7 WORK ADJACENT TO WATERWAYS

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in waterways.

.4 At borrow sites, design and construct temporary crossings to minimize erosion to waterways in strict conformance with provincial and federal environmental regulations.

.5 Do not skid logs or construction materials across waterways.

.6 Ensure refueling of any type of equipment does not, either directly or indirectly, create pollution by causing or permitting any leaks or spills.

.7 Maintain equipment in good working condition with no fluid leaks, loose hoses or fittings.

1.8 POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and plant to local authorities emission requirements.

.3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

.4 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for

clean-up.

.5 Report, to Federal and Provincial Department of the Environment, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment. Also notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.

1.9 WILDLIFE PROTECTION

.1 Should sea bird nests be encountered during work, immediately notify Departmental Representative for directives to be followed.
.1 Do not disturb nest site and neighbouring vegetation until nesting is completed.
.2 Minimize work immediately adjacent to such areas until nesting is completed.

1.1 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.2 WATER SUPPLY

.1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.

1.3 SCAFFOLDING

.1 Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CSA797-09.

.2 Erect scaffolding independent of walls. Remove when no longer required.

1.4 CONSTRUCTION SIGN AND NOTICES

.1 Contractor or subcontractor advertisement signboards are not permitted on site.

.2 Only notices of safety or instructions are permitted on site.

.3 Safety and Instruction Signs and Notices:
.1 Signs and notices for safety and instruction shall be in both official languages.

.4 Maintenance and Disposal of Site Signs:
.1 Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.5 REMOVAL OF TEMPORARY FACILITIES	.1	Remove temporary facilities from site when directed by Departmental Representative.

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Barriers.

1.2 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.3 HOARDING

.1 Erect temporary site enclosure if required by governing authorities, using new 1.2 m high snow fence wired to rolled steel "T" bar fence posts spaced at 2.4 m centres. Provide one lockable truck gate. Maintain fence in good repair.

1.4 GUARD RAILS AND BARRICADES

.1 Provide secure, rigid guard rails and barricades around open excavations and along edge of wharf and as required to protect against falls.

.2 Provide as required by governing authorities.

PART 1 - GENERAL

1.1 GENERAL

.1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

.2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.3 Prevent accumulation of wastes which create hazardous conditions.

.4 Provide adequate ventilation during use of volatile or noxious substances.

1.2 CLEANING DURING CONSTRUCTION

.1 Maintain project grounds and public properties in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.

.2 Provide on-site garbage containers for collection of waste materials and debris.

.3 Remove waste materials and debris from site on a daily basis.

1.3 FINAL CLEANING

.1 In preparation for acceptance of the Work perform final cleaning. Contractor required to complete a thorough cleaning of the entire work site, ensuring all loose debris, wood chips, nails, remnants, etc. are removed to the satisfaction of the Departmental Representative.

1.1 SECTION INCLUDES

.1 Project Record Documents as follows:
.1 Inventory of materials removed for off-site disposal, including those materials that were disposed of as hazardous waste and those that were disposed of in the regular waste stream.

1.2 PROJECT RECORD DOCUMENTS

.1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications.

.2 Maintain at site one set of the contract drawings and specifications to record actual “As-Built” site conditions.

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies requirements for demolishing and removing wholly or in part various items designated to be removed or partially removed.

.2 Demolition and removal will consist of, but not necessarily be limited to, the following:

.1 Demolition, removal and disposal of the existing building (including all interior contents). Take inventory of materials inside the building during the pre-tender site visit.
.2 Demolition, removal and disposal of the communications towers and chain link fencing, as noted on the drawings.
.3 Locating all water/sewer lines and capping.
.4 Disconnection of all electrical systems. Coordinate requirements with NL Power (and pay for any applicable CIAC charges).

Do not proceed with any portion of the demolition work until the Departmental Representative has approved the Contractor’s written demolition work plan. Note that there are hazardous building materials that will have to be addressed by the Contractor before demolition work is initiated (refer to Appendix A).

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

3.1 EXECUTION

.1 Inspect site and verify with Departmental Representative objects designated for removal.

.2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.

3.2 REMOVAL

.1 Remove in their entirety all materials and objects specified for removal.

.2 Do not disturb adjacent work designated to remain in place.

3.3 DISPOSAL OF MATERIAL

.1 All demolished materials will become property of contractor and will be removed from site and disposed of to satisfaction of Departmental Representative and in accordance with environmental guidelines. It is the sole responsibility of the contractor to dispose of all demolished materials at an approved disposal site. Ensure that disposal site is approved and willing to accommodate any materials disposed of from work site.

.2 Contractor shall obtain and pay for all necessary permits and disposal fees for use of an approved waste disposal site.

3.4 RESTORATION

.1 Upon completion of work, remove debris, trim surfaces and leave work site in clean condition.

.2 Reinstate areas and existing works outside areas of demolition to conditions that existed prior to commencement of work.

PART 1 - GENERAL

1.1 SCOPE

.1 This specification identifies the hazardous materials that are present in the building to be removed, and the measures required for handling and disposal of the materials. Removal and disposal of the hazardous building materials are the sole responsibility of the Contractor. The Contractor is responsible for determining an approved waste site and paying all associated permitting, dumping and disposal fees.

.2 A Hazardous Buildings Materials Assessment for the Site is appended to these specifications.

1.2 GENERAL

.1 The following hazardous materials are present in the building:

- Lead and mercury based paint (the paint on select surfaces is leachability and at these locations, the paint and substrate, if the paint is not removed, is to be disposed of as hazardous waste).
- Potential asbestos containing pipe insulation concealed behind fixed wall cavities, ceiling plenums and crawl spaces. Should piping insulation or transite wall board be discovered during demolition work, it is to be treated as asbestos and removed in accordance with the governing regulations. Note that the floor tiles and gypsum board wall at the site has been confirmed as not containing asbestos (see Appendix A).
- Mould is present in the building and in this regard, workers should don proper PPE to prevent/reduce

exposure to mould while working within the house.

1.3 PROTECTIVE EQUIPMENT/PROCEDURES

.1 Protective equipment and clothing to be worn by workers and visitors in work area include as a minimum:

.1 Respirator - NIOSH approved and equipped with replaceable P100 HEPA filter cartridges, acceptable to NL Labour Relations and NL OSHA. Respirator must be suitable for the type and level of lead dust and mould spore exposure in the work area. Provide sufficient filters so workers can install new filters following disposal of used filters and before re-entering contaminated areas. Workers must not have facial hair that affects the seal between the respirator and face.
.2 Gloves and eye protection.
.3 Disposable protective clothing that does not readily retain or permit skin contamination, consisting of full body covering including head covering with snug fitting cuffs at wrists, ankles, and neck.
.4 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead/mould contaminated materials. Upon completion of lead/mould abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area.
.5 Eating, drinking, chewing and smoking must not be permitted in the work area. Workers must wash hands and face when leaving the work area.
.6 Workers must be trained in hazards of lead/mercury and mould exposure, personal hygiene, work procedures and the proper use of respirators. Provide proof to Departmental Representative prior to work.

1.4 SUBMITTALS

.1 Before commencing work obtain from the appropriate agency and submit to Departmental Representative all necessary permits for transportation and disposal of hazardous waste. Ensure that waste disposal operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to receive and properly dispose of hazardous waste.

.2 Submit proof satisfactory to Departmental Representative that all employees have had instruction on all hazardous material exposure, respirator use, dress, entry and exit from work areas, and all aspects of work procedures and protective measures.

.3 Submit proof satisfactory to the Departmental Representative that all employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with the respirator that is personally issued.

.4 Submit Workplace Health, Safety and Compensation Commission status and transcription of insurance.

.5 Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-containing paint is removed. Minimum mitigation procedures are defined in the document “Guideline for Lead on Construction Projects, 2011”, published by Ontario’s Ministry of Labour’s Occupational Health and Safety Branch. Note that the Departmental Representative reserves the right to enforce the use of full enclosures during disturbance of any lead paint, in the event the Contractor’s methods

for removing the paint involve abrasive blasting or the use of power tools without an effective dust collection system. Minimum requirements for full enclosures are defined in the document “Guideline for Lead on Construction Projects, 2011”, published by Ontario’s Ministry of Labour’s Occupational Health and Safety Branch.

1.5 INSURANCE

.1 Provide proof of Contractor’s General and Environmental Liability Insurance, specific to cover the hazardous materials known to exist on this site.

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies supply, placement and compaction of rock and gravel fill. Intent is to top-up the area underlying the slab on grade of the building (refer to drawings for assumptions related to amount of rock/gravel fill required).

PART 2 - PRODUCTS

2.1 ROCK FILL

.1 Rock fill will be of hard, durable, evenly graded blasted stone having a maximum diameter of 300 mm in major portion of fill and a maximum diameter of 150 mm in upper 600 mm of rock fill. Fill material will contain not more than 6 percent by weight passing the 25 mm sieve. Rock fill to be evenly graded within the limits specified.

.2 Use of shale rock or slate will not be permitted.

2.2 GRAVEL FILL

.1 Gravel fill will consist of hard, durable, particles of stone mixed with suitable binding material. It shall be free from flat, elongated particles and shall be well graded. When tested by means of laboratory sieves it shall fulfill requirements as follows:

Sieve Size	% by Weight Passing
56 mm	100
16 mm	45-80
4.75 mm	25-55
1.25 mm	10-35
0.300 mm	5-15
0.075 mm	3-8

PART 3 - EXECUTION

3.1 PLACING ROCK FILL

.1 Only rock fill material approved by Departmental Representative will be placed. Material will be placed uniformly across full cross-section in layers not exceeding 300 mm loose depth.

.2 Use suitable earth moving and surface grading equipment to place and spread rock fill in continuous and uniform horizontal layers.

.3 Compact rock fill after each 300 mm lift.

.4 Place rock fill to 350 mm below bottom of finished grade.

3.2 PLACING GRAVEL FILL

.1 Top 300 mm of fill will consist of gravel fill as specified in Clause 2.2.1 of this section.

.2 Place gravel fill in two (2) equal lifts to minimum 95% standard proctor density.

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies the requirements for the supplying, producing and placing crushed gravel for quarried stone as a granular base course to lines, grades and typical cross sections indicated, or as directed by Departmental Representative.

1.2 REFERENCES

.1 ASTM C 117-04, Test method for material finer than 0.075 mm sieve in mineral aggregates by washing.

.2 ASTM C 131-06. Test method for resistance to degradation of small size coarse aggregate by abrasion and impact in the Los Angeles machine.

.3 ASTM C 136-6, Method for sieve analysis of fine and coarse aggregates, CAN/CGSB-8.2-M88, Sieves testing, woven wire, metric..

1.3 DELIVERY, STORAGE AND HANDLING

.1 Deliver and stockpile aggregates as directed by Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Granular base fill (Class “A”) will consist of clean, hard, durable crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp breaks when plotted on a semi-chart.

ASTM Sieve Designation	% Passing

19.0 mm	100
9.51 mm	50-80
4.76 mm	35-60
1.20 mm	15-35
300 um	7-20
75 um	3-6 (Pit Source)
	3-8 (Rock Source)

.2 Physical Requirements for Class “A”:

.1 Liquid Limit ASTM D4318: Maximum 25

.2 Plasticity Index ASTM D4318: Maximum 0

.3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35

.4 Crushed Fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.

.5 CBR: ASSHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.

.3 Granular base fill (Class "B") will consist of clean, hard, durable crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp breaks when plotted on a semi-chart.

ASTM Sieve Designation	% Passing
50.8 mm	100
25.4 mm	50 - 100
4.76 mm	20 - 55
1.20 mm	10 - 35
300 um	5 - 20
75 um	2 - 6 (Pit Source) 2 - 8 (Rock Source)

.4 Physical Requirements for Class “B”:

.1 Liquid Limit ASTM D4318: Maximum 25

.2 Plasticity Index ASTM D4318: Maximum 0

.3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35

.4 Crushed Fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76 mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.

.5 CBR: ASSHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.

.5 Materials from deposits acceptable as to the quality of the particles, but deficient in sizes to provide the required gradation, may be accepted if the contractor furnishes and satisfactorily incorporates into the product supplementary sizes from other sources to produce the required grading. If the deficiencies occur in Class “A” or Class "B" materials, corrections may be attempted by crushing to a smaller maximum particle size. In that event, the Departmental Representative will furnish special grading limits on the actual maximum particle size.

.6 Material shall be considered unsuitable even though particle sizes are within the specified gradation limits if particle shape or any other characteristic precludes satisfactory compaction or fails to provide a roadway suitable for traffic. If, in the opinion of the Departmental Representative, an improved particle shape can be achieved by using a different crushing unit for that proposed by the contractor, then the Contractor shall supply and use a crushing unit of the type directed by the Departmental Representative.

.7 Class “A” and Class "B" shall be processed by crushing and, when necessary, to eliminate surplus fines passing the 4.76 mm sieve, shall be screened and washed.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Place granular base after sub-base surface is inspected and approved by Departmental Representative.

.2 Placing:

.1 Construct granular base to depth and grade in area indicated.

.2 Ensure no frozen material is placed.

.3 Place material only on clean unfrozen surface, free from snow and ice.

.4 The contractor shall place all granular bases in such a manner as to prevent contamination by other materials and to prevent segregation. If, in the opinion of the Departmental Representative, the methods and

techniques used by the Contractor cannot overcome contamination or segregation, then the Departmental Representative may direct a modification in these methods which may require the use of an approved spreader box or other acceptable device.

.5 All granular bases shall be placed in uniform layers such that the thickness of the compacted layer does not exceed 50 mm.

.6 Prior to closing down operations for each working day, all granular materials shall be bladed and compacted to the specified density.

.7 The materials shall be sprayed with water when and as directed by the Departmental Representative, either to aid compaction or reduce dust nuisance or both. When water is added to aid compaction, it shall be applied immediately ahead of the compacting unit

.8 Each layer of granular base shall be bladed shaped and compacted as necessary to produce the required profile and cross-section. The finished surface shall not deviate at any place on a 3 m straight edge by more than 10mm for Class “A” and Class "B". The upper layer shall be maintained to these tolerances and to the specified density until compaction of the contract. This may require keeping the moisture content at the appropriate value during periods of dry weather in addition to regarding and re-compacting as frequently as may be deemed necessary by the Departmental Representative.

.3 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.4 Compaction Equipment:

.1 Compaction equipment to be capable of obtaining required material densities.

.5 Compacting:

.1 All Class “A” and Class "B" materials shall be compacted to not less than 100% of the maximum Standard Proctor Dry Density ASTM D698-07e1 Method D.

.2 Compaction operations shall be carried out as closely as possible behind the placing and spreading operation. At the end of each working day, all materials placed shall have been compacted to the specified density.

.3 Each layer of material shall be graded and compacted as specified before the next layer is placed.

.4 Where necessary to obtain the required compaction, the contractor shall apply sufficient water by means of an approved distributor.

3.2 INSTALLATION

.1 Testing of materials and compaction will be carried out by testing laboratory designated by the Departmental Representative.

.2 Contractor will pay costs for inspection and testing.

.3 Sieve Analysis: proposed granular material will be tested to confirm suitability for intended use and

conformity with specifications.

.4 Frequency of Tests: to be determined by the Departmental Representative.

3.3 TOLERANCES

.1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

3.4 PROTECTION

.1 Maintain finished base in condition conforming to this section until succeeding material is applied or until acceptance by Departmental Representative.

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)
.1 ASTM C117-04, Standard Test Method for Material Finer than 0.075 mm Sieve in Mineral Aggregates by Washing.
.2 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.2 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire.
.2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.3 SUBMITTALS

.1 Submit to Departmental Representative for approval, 4 weeks before blasting, details of proposed blasting operations showing types and quantities of explosives, loading charges and patterns, type of blasting caps, blasting techniques, blast protection measures, time of blasting and other pertinent details. Submit subsequent changes to Departmental Representative before proceeding.

.2 Samples
.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
.2 Inform Departmental Representative of proposed source of materials and provide access for sampling at least 2 weeks prior to commencing Work.
.3 Submit 20 to 70 kg samples representative of quarry, minimum 2 weeks prior to beginning Work.
.4 Ship samples prepaid to Departmental

Representative for approval.

1.4 REGULATORY REQUIREMENTS .1 Comply with municipal, provincial and national codes and regulations relating to project.

PART 2 - PRODUCTS

2.1 ROCK MATERIAL .1 Hard, angular rock free from cracks, seams and other defects which may impair durability.

.2 Relative density, 2.65 minimum.

2.2 STONE BARRICADES .1 New stone barricades to be hard, dense with relative density (formally specific gravity) not less than 2.65, durable quarry stone, free from seams, cracks or other structural defects, to meet following size distribution for use intended.

.2 Stones to be well graded, sizes as indicated on drawings.

PART 3 - EXECUTION

3.1 GENERAL .1 Take precautions not to damage existing properties during hauling of rock materials. Damage to existing roads or other private or public properties will be repaired at the Contractor’s expense.

3.2 PREPARATION .1 Haul roads: construct and maintain haul roads.

3.3 STONE BARRICADES .1 Place stone barricades as sown on drawings or as designated by Departmental Representative.

Appendix A: Hazardous Buildings Material Survey

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Phase I Environmental Site Assessment and Hazardous Building Materials Survey, Canadian Coast Guard Search and Rescue Station (DFRP # 80023), Burin, NL

Prepared for

Public Works and
Government Services Canada
10 Barters Hill
St. John's, NL A1C 5T2

Final Report

File No. 121410853

Date: April 1, 2010

EXECUTIVE SUMMARY

Stantec Consulting Ltd. (Stantec) was retained by Public Works and Government Services Canada (PWGSC), on behalf of Fisheries and Oceans Canada (DFO), Canadian Coast Guard (CCG), to conduct a Phase I Environmental Site Assessment (ESA) and Hazardous Building Materials Survey on the Canadian Coast Guard (CCG) Search and Rescue (SAR) Station (DFRP # 80023) located in Burin, Newfoundland and Labrador (see Drawing No. 121410853-EE-01 in Appendix A). The Phase I ESA included the review of all existing ESA reports for the Site.

The purpose of the Phase I ESA was to identify any actual or potential environmental liabilities associated with the Site that may exist as a result of current or past activities since completion of the previous Phase I ESA (March 2001) and Phase II/III ESA (March 2002).

The hazardous building materials survey was conducted to determine the potential for the presence of hazardous or regulated building materials associated with the Site and to address all gaps and inconsistencies from previous sampling events.

Background

The 2001 Phase I ESA noted several potential environmental issues associated with the site, including: the possible presence of asbestos in floor tiles, potential for the presence of lead based paints and lead in potable water, electrical ballasts that may contain polychlorinated biphenyls (PCBs), the potential for the adjacent soil and sediment contamination with a number of compounds related to petroleum hydrocarbons and creosote treated timbers used to construct the pier. The recommendations from the Phase I ESA were to carry out a sampling and analysis program for the adjacent soil and sediment with analysis for petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), metals and fecal coliforms.

A Phase II/III ESA was carried out in December of 2001 that included sampling of marine sediment, tap water, paint and floor tiles from various locations at the site. In total, four (4) bluish-gray paint samples were collected and three (3) floor tile samples were collected. No exterior paint samples were collected and no ceiling paint samples were collected. Samples of drywall or drywall joint compound were not analyzed for asbestos. The results of the investigation found sediment samples from the water lot that had concentrations of metals, PCBs and PAHs above the CCME Environmental Quality Guidelines for marine sediment. Lead was present in the paint samples collected at concentrations below Federal Hazardous Products Act (HPA) guidelines and asbestos were not present in the floor tiles in the building. The potable water met all drinking water guidelines, with the exception of pH. The Phase II/III ESA recommended a more detailed sediment sampling program for the water lot area.

The Canadian Coast Guard Search and Rescue station is located in Burin, NL and consists of a single story, wood-frame building, as shown on Drawing No. 121410853-EE-02 in Appendix A and Photo 1 in Appendix C. The site consists of three parcels of land: parcel A, parcel B and parcel C and a water lot, parcel F, as provided on the site survey plan and as shown on Drawing

No. 121410853-EE-02 in Appendix A. The building, has a footprint of approximately 341 m^2, was constructed in 1970 and is situated on a finger pier. The finger pier is constructed of concrete cribbing and hardwood timber, with a concrete deck, wood curb stops, and metal mooring bollards.

Site Visit

A site visit was conducted by Mr. Randy Patey of Stantec on February 25, 2010. The Site, the site structure and readily visible portions of the property was examined for the presence of potential sources of environmental contamination. Stantec was not accompanied during the site visits. Field notes collected at the time of the site visit are provided in Appendix B.

Discussion and Conclusions

Phase I ESA

Based on the information gathered and on observations made during this investigation, the Phase I ESA has resulted in the following conclusions:

- Based on a review of previous environmental reports for the Site, sediments in the water lot area (Parcel F) have concentrations of PCBs, PAHs, petroleum hydrocarbons and metals above the applicable guidelines.
- Based on the Environment Canada Species at Risk Web mapping application, two (2) endangered species (Schedule 1 of the SARA Registry) are said to inhabit the waters of Burin Bay. The species included the Blue Whale (Atlantic population) and the North Atlantic Right Whale. Interaction between the two species and the Site is considered possible.
- The fill material and ballast that make up the finger pier may have been imported to the Site. The date of placement and the origin of these materials is not known, but they may date prior to 1949. No exposed soil is present on the site, as the entire site is covered with either the site building, asphalt or concrete.
- The Site is bordered by the Wharf Approach Road and the Oldest Colony Trust heritage building to the west, and the waters of Burin Bay to the north, south and east. It is not expected that any neighbouring properties would cause environmental impacts on the Site.
- The site building could contain hazardous building materials, including asbestos containing materials, PCBs in light ballasts or paints, lead based paints and/or mercury-containing paint. This is further assessed in the hazardous building materials survey presented in Section 5.0 of this report.

Hazardous Building Materials Survey

Based on the information gathered, field observations and laboratory analysis, the hazardous building materials survey has resulted in the following conclusions:

- Results of bulk samples of drywall joint compound and floor tiles collected from within the site building were not found to be ACMs.
- An inspection of the fluorescent light ballasts for PCBs found that the light ballasts present at the Site did not contain PCBs.

- The analytical results indicated that lead was present in fourteen (14) of the sixteen (16) paint samples collected at concentrations ranging from 5 mg/kg in sample PT-BS8 to 8,400 mg/kg in sample PT-BS4. Based on the results of the sampling and analysis, elevated lead concentrations (i.e., greater than 600 mg/kg) are present in four (4) samples: the grey paint on the exterior concrete foundation wall (i.e., PT-BS1), the red paint on the bollards on the pier (i.e., PT-BS2), the light grey paint on the concrete floor in the garage/service area (i.e., PT-BS4) and in the dark grey paint on the roof trusses in the attic area (i.e., PT-BS15).
- Lead leachability analysis was conducted on paint samples PT-BS1, PT-BS2, PT-BS4 and PT-BS15 in order to determine whether this lead paint is leach toxic, such that disposal options can be evaluated for the product. Paint samples PT-BS1 (i.e., 0.6 mg/L) and PT-BS2 (i.e., 0.48 mg/L) had a lead leachate content below the applicable guideline of 5 mg/L Paint samples from the concrete floor in the garage/service area (i.e., PT-BS4) and from the paint on the roof trusses in the attic (i.e., PT-BS15) exceeded the criteria with leachable lead contents of 7.7 mg/L and 11 mg/L, respectively.
- The analytical results indicated that mercury was present in twelve (12) of the sixteen (16) paint samples collected at concentrations ranging from 2 mg/kg in sample PT-BS6, PT-BS7 and PT-BS15 to 83 mg/kg in sample PT-BS12. Based on the results of the sampling and analysis, elevated mercury concentrations (i.e., greater than 10 mg/kg) are present in five (5) samples: light blue wall paint in the electrical room (i.e., PT-BS8), the light grey ceiling paint in the electrical room (i.e., PT-BS9), the white wall paint in the storage area (i.e., PT-BS10), the white ceiling paint in the storage room (i.e. PT-BS12) and the brown wall paint in the kitchen foyer (PT-BS13).
- Mercury leachability analysis was conducted on paint samples PT-BS8, PT-BS9, PT-BS10, PT-BS12 and PT-BS13 in order to determine whether this mercury paint is leach toxic, such that disposal options can be evaluated for the product. The mercury leachate content in paint samples PT-BS8, PT-BS10, PT-BS12 and PT-BS13 was below the applicable guideline of 0.1 mg/L The paint sample from ceiling paint in the electrical room (i.e., PT-BS9), however, exceeded this guideline with a mercury leachate content of 0.19 mg/L.
- The analytical results if sixteen (16) paint samples indicated that PCBs were non-detectable in any of the sixteen (16) paint samples analyzed.

Treasury Board Definition of a Contaminated Site

Based on the definition above and information available from previous environmental investigations, the CCG SAR Station located in Burin, NL has one contaminated site – the water lot property (where sediment samples collected during previous environmental investigations exceeded applicable guidelines).

NCSCS Scoring

The CCME National Classification System for Contaminated Sites (2008) Pre-Screening Checklist was completed. Based on the results of the checklist, the NCSCS worksheet does not need to be completed as there are no known or suspected contamination exceedances. The Pre-screening Checklist is presented in Appendix I.

Recommendations

Based on the conclusions of the current assessment, Stantec offers the following recommendations for the CCG SAR in Burin, NL:

1. Based on a review of previous environmental reports for the Site, sediments in the water lot area (Parcel F) have concentrations of PCBs, PAHs, petroleum hydrocarbons and metals above the applicable guidelines. No further investigation/delineation is required to be carried out on the Site related to the sediment contamination in the water lot portion of the Site. In the event of future dredging in the vicinity of the current and former wharf and/or pier structures, sediment quality and disposal options must be reviewed.

2. Based on the observations and information gathered during the current Phase I ESA of the Site, it was recommended to proceed with a hazardous building materials survey to confirm the presence or absence of lead, mercury and PCBs.

3. Based on the results of testing and visual observations, all drywall joint compounds and vinyl floor tiles do not contain asbestos. Based on the results of testing and visual observations, Stantec recommends that no further work with regards to ACMs is warranted for the site building.
4. Based on the results of the inspection of the fluorescent light ballasts in the building, no further investigation for PCBs-containing light ballasts is warranted for the site building. No other electrical equipment suspected of containing PCBs was observed in the building.
5. Paint finishes that have been identified with greater than 600 mg/kg lead or 10 mg/kg mercury are considered to be lead- and mercury-based, respectively. Suitable precautions and trained personnel should be used for all activities that may disturb lead-containing (i.e., paints similar to samples PT-BS1, PT-BS2, PT-BS4 and PT-BS15) or mercury containing-paints (i.e., paints similar to samples PT-BS8, PT-BS9, PT-BS10, PT-BS12 and PT-BS13) during any renovation or demolition activities.
6. Based on the results of analyses for lead and mercury in paint samples, the building materials from the subject building (with paints intact and in good condition) are considered to be suitable for disposal in a municipal landfill. Because the lead leachate content in the the light grey paint on the concrete floor in the garage/service area (PT-BS4) and the dark grey paint on the roof trusses (PT-BS15) exceeds the applicable guideline, any loose or flaking paint should be considered to be a hazardous material. Because the mercury leachate content in the the light grey ceiling paint from the electrical room (PT-BS15, and visually similar paint in the radio room) exceeds the applicable guideline, any loose or flaking paint should be considered to be a hazardous material.
7. Based on the results of the analyses for PCBs in paint, none of the paint samples analyzed detected concentrations of PCBs and therefore, no remediation or special disposal requirements with regards to PCBs would be warranted for the painted surfaces analyzed.

The statements made in this Executive Summary are subject to the same limitations included in the Closure (Section 8.0), and are to be read in conjunction with the remainder of this report.

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1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Public Works and Government Services Canada (PWGSC), on behalf of Fisheries and Oceans Canada (DFO), Canadian Coast Guard (CCG), to conduct a Phase I Environmental Site Assessment (ESA) and Hazardous Building Materials Survey on the Canadian Coast Guard (CCG) Search and Rescue (SAR) Station (DFRP # 80023) located in Burin, Newfoundland and Labrador (see Drawing No. 121410853-EE-01 in Appendix A), herein referred to as the "Site".

The purpose of the Phase I ESA was to identify any actual or potential environmental liabilities associated with the Site that may exist as a result of current or past activities since completion of the previous Phase I ESA (March 2001) and Phase II/III ESA (March 2002). The Phase I ESA also included the review of all existing ESA reports for the Site.

The hazardous building materials survey was conducted to determine the potential for the presence of hazardous or regulated building materials associated with the Site and to address all gaps and inconsistencies from previous sampling events.

1.1 Objectives

The objectives of the program as per the Terms of Reference (TOR) are summarized as follows:

1. Identify and document all actual and potential environmental liabilities that may have resulted from existing and previous land uses or site development activities on and adjacent to the subject property since completion of previous Phase I ESA (March 2001) and Phase II/III ESA (March 2002).
2. Review all existing background documentation, and conduct a gap review of all previous environmental reports to address areas of concern or materials that were not previously assessed or sampled.
3. Identify any present conditions or practices that may represent materially significant environmental risks or liabilities.
4. Sample and identify all suspected potentially hazardous building materials (i.e., lead, mercury and PCBs based paint, asbestos, polychlorinated biphenyl (PCB) containing electrical equipment, mould, etc.)
5. Develop an approach and cost estimate for detailed Phase II/III ESA work at the site (if required) based on the Phase I ESA.

1.2 Scope of Work

Based on requirements outlined in the provided TOR for the Phase I Environmental Site Assessment and Hazardous Building Materials Survey, the following scope of work was completed for the site:

1. Complete a document review of all previous ESA reports in order to identify gaps and areas of concern that were not previously assessed.

2. Complete a Phase I ESA in conjunction with previous ESAs and follow the guidelines and principles established by the Canadian Standards Association in the document *Z768-01 Phase I Environmental Site Assessment*, R2006 to meet objectives 1) and 2).
3. Collect samples of all suspected hazardous building materials (i.e., lead, mercury and PCBs based paint, asbestos, etc.) from the building unless sufficient information already exists. If previous samples were collected from an area and the surface has not changed, no sample is required, however, photographs/location and description is still required. Also, surface condition of sampled areas shall be documented (i.e., flaking/peeling paint, friable/flaking asbestos).
4. Complete a visual inspection of all fungus and mould and record location, collect photographs and identify potential root cause for contamination.
5. Conduct any additional sampling (hazardous building materials or soil) required while on site.
6. Outline approach and cost estimate for any detailed Phase II/III ESA work.

1.3 Federal Contaminated Sites Framework

The Contaminated Sites Management Working Group (CSMWG) was established in 1995 to promote and develop a consistent approach for the management of federal contaminated sites. The CSMWG defines a contaminated site as a site at which substances occur at concentrations above background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment; or where substances occur at concentrations exceeding levels specified in policies and regulations.

As outlined in the document entitled “Federal Approach to Contaminated Sites Management Working Group” (November, 1999), the federal approach is a risk-based approach which incorporates several assessment components which are realized through a 10-step process.

1.4 Regulatory Framework

1.4.1 Phase I ESA

In Newfoundland and Labrador, the roles and powers of the Newfoundland and Labrador Department of the Environment and Conservation (NLDEC) when dealing with contaminated sites are outlined primarily in the Environmental Protection Act (May 2002). The NLDEC has a mandate to deal with situations where there is an adverse effect, or the likelihood of an adverse effect, associated with the presence or discharge of a contaminant. The NLDEC has specifically introduced the Guidance Document for the Management of Impacted Sites (2005) to deal with managing contaminated sites. The Guidance Document for the Management of Impacted Sites is based on a tiered approach to site management. Within this tiered approach, three tiers of increasing technical complexity (Tier I, II and III) are available for the management of impacted sites, all of which provide protection of human health and the environment to achieve the same result of safe site closure. The person responsible, with the assistance of the Site Professional, is able to choose Tier I, II or III depending on the specifics of the site, the contamination, the affected parties and the intended property use after closure. Tier I and II methods result in the selection of contaminant concentrations (clean-up criteria) that are protective of human health

and the environment. Tier III may either result in the selection of clean-up criteria or in the implementation of risk management techniques to reduce or eliminate exposure to the identified contaminants.

As a result of this tiered approach, the clean-up criteria defined under the new guidance document is not as stringent as the criteria included in the former policy directive PPD97-01 and allows for greater flexibility in dealing with contaminated sites. A Phase I ESA is an initial step in the site assessment process, which may lead to the requirement for restoration work if actual or potential sources of environmental contamination are identified.

A Phase I ESA involves a review of any site buildings for the potential presence of hazardous materials related to building components and materials. Specific federal or provincial regulations, guidelines or codes of practice exist for these individual hazardous materials. Where required, this documentation was utilized to determine appropriate conclusions and formulate appropriate recommendations.

1.4.2 Hazardous Building Materials

1.4.2.1 Asbestos-Containing Materials

Asbestos in Newfoundland and Labrador is regulated under the Asbestos Abatement Regulations, the Asbestos Exposure Code Regulations, and the Asbestos Policy Directive (PPD98-03) regarding asbestos waste disposal. The Asbestos Policy Directive requires a Hazardous/Special Waste Disposal Request Form to be submitted to the Government Service Centre, Department of Government Services and Lands to obtain permission to dispose of asbestos waste. Section 3 of the Asbestos Abatement Regulations defines an “asbestos material” as a “material containing greater than 1% asbestos by dry weight”. Where asbestos-containing materials are confirmed to be present in a facility, Section 11 of the Asbestos Abatement Regulations requires that the owner establish and implement a procedure to reduce the exposure of workers to asbestos, which may involve management and/or removal of the material.

1.4.2.2 Lead in Paint

The United States Department of Housing and Urban Development (HUD) Guideline recommends that 0.5 % lead (by weight) or 5,000 parts per million (ppm) lead be used as a guideline for determining whether precautions would be necessary during destructive actions to be performed on painted surfaces. Industry standard considers a particular paint as “lead-containing” if the analytical result of a sample of the paint indicates a concentration of lead in excess of 5,000 ppm (equivalent to 5,000 micrograms (ug) per gram).

In 1976, the lead content in interior paint in Canada was limited to 0.5% by weight (i.e., 5,000 ppm) under the federal Hazardous Products Act. A change to the Surface Coating Materials Regulations (April 2005) under the Hazardous Products Act indicates that the total lead present in a surface coating material (i.e., paint) must not be more than 0.06% by weight (600 ppm).

Stantec is not aware of specific Newfoundland and Labrador regulations with respect to remediation of lead-based paints or disposal of removed lead-based paints. However, provisions of the Environment Protection Act or the Occupational Health and Safety Act may be used by the Occupational Health & Safety Division of the Department of Government Services to require that testing be carried out for lead in paints or for the leachability of lead-based paints, if such testing is considered to be warranted by the OH&S Division. In general, lead-containing paints (i.e., lead content above 600 ppm) that are in good condition do not pose significant risks to human health, unless the paints are disturbed by operations such as grinding or sandblasting.

The Newfoundland Department of Environment and Conservation (NLDEC) has not established specific regulations for the disposal of lead-containing painted materials or removed lead-containing paints (i.e., paints removed from the building materials) in a municipal landfill. NLDEC has adopted an informal criteria of 600 ppm for the disposal of lead-containing painted construction debris in an approved municipal landfill. A leachability test (i.e., TCLP-1311 leachability test with lead analysed on the leachate) is warranted prior to disposal of removed paints if the tested lead concentration in the paint exceeds 600 ppm. If the lead content of the leachate exceeds 5 mg/L, the paint is leach toxic and considered to be a hazardous material. A leachability test is also warranted prior to disposal of demolition debris with intact paints if the calculated bulk lead concentration in the demolition debris (i.e., ratio of the mass of lead in the paint per unit area and the mass of the painted building material per unit area times the concentration of lead in the paint sample) exceeds 600 ppm. If warranted, the leachability tests on demolition debris should be carried out on samples of the substrates with the lead-containing paints intact.

1.4.2.3 Mercury in Paint

A recent change to the Surface Coating Materials Regulations (April 2005) under the Hazardous Products Act indicates that the total mercury present in a surface coating material (i.e., paint) must not be more than 10 mg/kg.

Stantec is not aware of specific Federal or Provincial regulations with respect to remediation of mercury-based paints or disposal of removed mercury-based paints. For disposal of paint containing mercury, the level of mercury within the paint could be compared to the CCME Canadian Soil Quality Guidelines (2006) industrial guidelines for mercury of 50 mg/kg. A leachability test (i.e., TCLP-1311 leachability test with mercury analysed on the leachate) is warranted prior to disposal of removed paints if the tested mercury concentration in the paint exceeds 50 mg/kg. If the mercury content of the leachate exceeds 0.1 mg/L, the paint is leach toxic and considered to be a hazardous material (Environment Canada Table of Metals Leachate Toxicity for mercury leachability). A leachability test is also warranted prior to disposal of demolition debris with intact paints if the calculated bulk mercury concentration in the demolition debris (i.e., ratio of the mass of the paint per unit area and the mass of the painted building material per unit area times the concentration of mercury in the paint sample) exceeds 50 mg/kg. If warranted, the leachability tests on painted demolition debris should be carried out on bulk samples of the demolition debris with the mercury-based paints intact.

1.4.2.4 PCBs in Paint

There are no federal or provincial guidelines with respect to the allowable concentration of PCBs in paint. As a result, the concentration of PCBs in paint samples was compared to the CCME Canadian Soil Quality Guidelines for PCBs in soil at an industrial site (33 mg/kg). Although there is no known guideline for PCB leachate, a leachability test (i.e., TCLP-1311 leachability test with PCBs analysed on the leachate) is warranted prior to disposal of removed paints if the tested PCB concentration in the paint exceeds 33 mg/kg. The leachate would be evaluated based on the presence or absence of a PCB concentration.

2.0 PREVIOUS ENVIRONMENTAL REPORTS

Based on information provided by PWGSC, two (2) previous environmental investigations were carried out at the site:

- Phase I Environmental Site Assessment, DFO Search and Rescue Facility, Burin, NL by Environmental Management Systems Inc. (March 2001).
- Phase II/III Environmental Site Assessment, Canadian Coast Guard Burin Search and Rescue Burin, Newfoundland by AMEC Earth & Environmental (March 2002).

The Phase I ESA noted several potential environmental issues associated with the site, including: the possible presence of asbestos in floor tiles, potential for the presence of lead based paints and lead in potable water, electrical ballasts that may contain PCBs, the potential for the adjacent soil and sediment contamination with a number of compounds related to petroleum hydrocarbons and creosote treated timbers used to construct the pier. The recommendations from the Phase I ESA were to carry out a sampling and analysis program for the adjacent soil and sediment with analysis for petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), metals and fecal coliforms.

A Phase II/III ESA was carried out in December of 2001 that included sampling of marine sediment, tap water, paint and floor tiles from various locations at the site. In total, four (4) bluish-gray paint samples were collected and three (3) floor tile samples were collected. No exterior paint samples were collected and no ceiling paint samples were collected. Samples of drywall or drywall joint compound were not analyzed for asbestos. The results of the investigation found sediment samples from the water lot that had concentrations of metals, PCBs and PAHs above the CCME Environmental Quality Guidelines for marine sediment. Lead was present in the paint samples collected at concentrations below Federal Hazardous Products Act (HPA) guidelines and asbestos were not present in the floor tiles in the building. The potable water met all drinking water guidelines, with the exception of pH. The Phase II/III ESA recommended a more detailed sediment sampling program for the water lot area.

3.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT

3.1 Methodology

3.1.1 Records Review

The applicable search area for the records review included the Site (the Burin CCG SAR Station), properties immediately adjoining the Site and other neighbouring properties where activities considered to be potential sources of environmental contamination were apparent. Information sources obtained and reviewed as part of the records review are listed below.

Summary of Records Reviewed

Source	Information/Contact
Aerial Photography	• 1949, 1966, 1982
Airborne Gamma Ray Spectrometry	• Carson, J.M., Holman, P.B., Ford, K.L., Grant, J.A., and Shives, R.B.K., 2005. Airborne Gamma Ray Spectrometry Compilation, equivalent Uranium Radioactivity Map of Canada; Geological Survey of Canada, 1:5,000,000
Geological and Soil Maps	• O'Driscoll, C.F., Stapleton, G.J. and King, D.W. 1995: Mineral Occurrence Map, Belleoram/St. Lawrence, Newfoundland. Map 95-16. Scale: 1:250 000. Government of Newfoundland and Labrador, Department of Natural Resources, Geological Survey. GS# NFLD/2568
Survey Plan	• "*Plan of Survey Showing Parcels A & B, Land and Land Covered With Water Required by H.M. in right of Canada at Burin, Newfoundland*". Public Works and Government Services Canada. S-2164. Scale: 1:250. August 8, 1988.
PWGSC	• Environmental Management Systems Inc. 2001. Phase I ESA, DFO Search and Rescue Facility, SAR Burin, Newfoundland. March 2001. • AMEC Earth and Environmental Limited. 2002. Phase II/III ESA, Canadian Coast Guard Burin Search and Rescue, Burin, Newfoundland. March 31, 2002. • Floor plans of the Burin SAR Station, dated January 1998
Environment Canada	• Species at Risk Web Mapping Application
Treasury Board of Canada Secretariat	• Directory of Federal Real Property (DFRP) website information

Regulatory requests were submitted to Provincial and Federal departments for this Phase I ESA and are further discussed in Section 3.4.

3.1.2 Site Visit

A site visit was conducted by Mr. Randy Patey, BES, CET of Stantec on February 25, 2010. The site structure and readily visible portions of the property were examined for the presence of potential sources of environmental contamination, such as spills, surface staining, storage and use of chemicals, fuel storage tanks, etc. Mr. Patey was accompanied during the site visit by Mr. Karl Adams, Commanding Officer, CCG. Field notes collected at the time of the site visit are provided in Appendix B.

3.1.3 Interviews

An interview was carried out with Mr. Albert Cavanaugh, Commanding Officer, CCG to determine if there have been any environmental issues at the Site. Mr. Cavanaugh has been working at the subject Site for six years. An environmental questionnaire for Phase I ESAs was completed as part of the interview with Mr. Cavanaugh and is provided in Appendix D. Information gathered during the interview is included in the relevant sections throughout the report.

3.2 Property Information

3.2.1 Property Description

The Canadian Coast Guard Search and Rescue station is located in Burin, NL and consists of a single story, wood-frame building, as shown on Drawing No. 121410853-EE-02 in Appendix A and Photo 1 in Appendix C. The site consists of two parcels of land (Parcel A and Parcel B) and a water lot, Parcel F, as provided on the site survey plan and as shown on Drawing No. 121410853-EE-02 in Appendix A. The building, has a footprint of approximately 341 m^2, was constructed in 1970 and is situated on a finger pier. The finger pier is constructed of concrete cribbing and hardwood timber, with a concrete deck, wood curb stops, and metal mooring bollards.

The building is electrically heated and is serviced by municipal water and septic systems. A septic tank is situated in the northeastern portion of the site under the concrete deck.

Access to the building is via a paved local road and a chain link fence which restricts and controls access to the pier. Burin Harbour bounds the site to the south, west and north. The site is generally flat with a paved parking area in front of the building. Surface drainage is overland toward the southeast direction.

Stantec was provided with a site survey to confirm the actual boundaries of the Site. The approximate area inspected during the site assessment is shown on Drawing No. 121410853-EE-02 in Appendix A. No underwater inspections were completed on the water lot area.

3.2.2 On-Site Buildings and Structures

On-site buildings and structures at the Site consist of a wharf and the CCG SAR Station. The site building and wharf are constructed on a finger pier. The site building is 27.48 m by 12.5 m in area and consists of an office, radio room, training room, storage room and storage area,

kitchen, washroom, entranceway, electrical room and service area, as shown on Drawing No. 121410853-EE-03 in Appendix A. A partial attic exists above the storage area. The building is wood framed construction with a concrete floor. The exterior of the building has vinyl siding and an asphalt-shingled peaked roof.

The various sections of the wharf are constructed of treated timber with concrete decks and filled with crushed rock. Ten (10) bollards and a wheelguard exist around the perimeter of the wharf (refer to Photo 2 in Appendix C). An aboveground fuel storage tank and an aboveground waste oil tank are located on the northern side of the wharf (refer to Photo 3 in Appendix C).

The west side of the site building is covered in asphalt and is used for parking vehicles. The north side of the wharf is enclosed by a chain-link fence. Site access is by an approach road off Seaway Road. Refer to photos 1 to 3 in Appendix C.

The site building and structures appeared to be in fairly good condition at the time of the site visit.

3.2.3 Physical Setting

3.2.3.1 Surficial Geology

Based on field observations, the surficial geology at the site consists of fill material and rock ballast used to construct the finger pier. Sandstone/siltstone bedrock outcrops are present in the vicinity of the subject site.

3.2.3.2 Bedrock Geology

Based on available bedrock geology maps, bedrock in the area of the Site consists of late Proterozoic aged mafic volcanic and sedimentary rocks. The depth to bedrock in the site area is not known.

3.2.3.3 Topography and Regional Drainage

The Site is located directly along the shoreline. The land portion of the Site is relatively flat and consists of an approach that is covered in asphalt. Groundwater flow and regional drainage is expected to be shallow and drain to the south and southeast towards the waters of Burin Bay and the Atlantic Ocean.

3.2.3.4 Surface Water Drainage

The approach road slopes down towards the site and surface of the Site is relatively flat. Storm water is anticipated to drain by overland flow to the southwest, south and southeast towards the waters of Burin Bay.

3.2.4 Adjoining Properties

The Site is bound by the waters of Burin Bay on all sides, except for the north where two commercial properties exist: Oldest Colony Trust (a Heritage Building used for recreational

purposes) and the second is Oldest Colony Trust's storage building (refer to Drawing No. 121410853-EE-02 for adjoining property locations). Photographs of the two adjoining property buildings are shown in Photos 4 and 5 provided in Appendix C. No evidence of actual environmental impact from neighbouring sites was observed on the Site during the site visit. No evidence of other potential environmental impacts from the adjacent properties was observed during the site visit.

3.3 Historical Land Use

3.3.1 Subject Property

Historical land use for the Site and adjoining properties was determined through a site visit and historic aerial photography. Summaries of the historical information are presented below.

Summary of Historical Information

Date/Period	Land Use
1970s	CCG begins operating out of the site building.
1995	Certificate of approval issued for two aboveground fuel oil storage tanks that were self-dyked.
1999	One aboveground fuel oil tank (1994) replaced with a new aboveground fuel oil tank.
2001 – 2002	Phase I ESA and Phase II/III ESA completed for the Site.
2007	One aboveground fuel oil tank (1994) removed and one aboveground waste oil tank installed.

3.3.2 Adjoining Properties

Based on a review of historical aerial photographs, the adjacent building, (now known as the 'Oldest Colony Trust' heritage building), has been present since at least 1949. It was reported that this building was previously used for cold bait storage. The property to the south contained a split-level building until sometime between 1966 to 1982. Since site infrastructure on the neighbouring property is not discernable in the photos, it is assumed the neighbouring property was developed as residential. The court house, formerly located at the corner of the Wharf Approach Road and Seaview Road, was also removed between 1966 and 1982, with only a concrete foundation remaining at present.

3.3.3 Aerial Photo Review

Historical aerial photographs were obtained from the Air Photo and Map Library, located at the Crown Lands Administration Division of the Newfoundland and Labrador Department of Environment and Conservation. Details of the aerial photographs obtained are presented in Table 3.1. Copies of the aerial photographs are provided in Appendix F.

Table 3.1 Summary of Aerial Photography

Year	Comment
1949	Finger pier is present. A structure exists on the finger pier. No boats appear to be tied to the pier. Access to the pier does not appear to be restricted. Adjacent building (now known as 'Oldest Colony Trust') is present.
1966	Finger pier and existing site building are present. The finger pier appears to have been extended southeast into the harbour. Boats are tied up to the north side of the pier. Access to the pier does not appear to be restricted. A split level building is located to the south of the subject Site. Adjacent building (now known as 'Oldest Colony Trust') is present.
1982	Finger pier and existing site building are present. Building may have been expanded since previous air photo. Boats are tied up to the north side of the pier. Access to the pier does not appear to be restricted. The split level building located to the south has been removed. The courthouse located at the corner of the Wharf Approach Road and Seaview Road has been removed with only a concrete foundation left. Adjacent building (now known as 'Oldest Colony Trust') is present.

3.4 Regulatory Request

Stantec requested the Newfoundland and Labrador Government Service Centre (GSC), Department of Government Services, the Department of Environment and Conservation (NLDEC) and Environment Canada to review their records for the Site and advise Stantec in writing on the following:

- Permits (e.g., certificates of approval, storage tank registrations, and/or operating permits) that pertain to activities that may impact the condition of the property (e.g., hazardous waste storage, treatment, and disposal or potential sources of information);
- Past, pending, outstanding or continuing prosecutions, work orders, or control orders, or complaints related to environmental compliance that may impact the condition of the property; and,
- Violations of environmental statutes, regulations, by-laws, approvals and permits that may impact the condition of the property.

A response letter from the GSC dated March 5, 2010 indicated that "to the best of [their] knowledge and on a search of files in the possession of the Government Services Centre, the Department of Government Services is not aware of any outstanding environmental concerns at the [CCG SAR Station]." The letter did note that on October 23, 1995, a Certificate of Approval was issued for the installation of two interconnected 2,312 L capacity aboveground self-dyked fuel storage tanks to be located at CCG SAR in Burin, NL.

A response letter from the NLDEC dated March 8, 2010 indicated that "to the best of [their] knowledge, there are no past, pending, outstanding or ongoing orders or complaints related to compliance nor any matter of environmental significance on file for this property."

A response letter from Environment Canada dated March 4, 2010 indicated that "[they] have found no issues or information pertaining to [their] legislated mandate under the Fisheries Act or The Canadian Environmental Protection Act."

Copies of the regulatory request letters and the response letters are included in Appendix E.

3.5 Species at Risk

The *Species at Risk Act* (SARA) was proclaimed in June 2003, and is part one of a three part Government of Canada strategy for the protection of wildlife species at risk. This three part strategy also includes commitments under the *Accord for the Protection of Species at Risk* and activities under the *Habitat Stewardship Program for Species at Risk*.

In addition, it complements existing laws and agreements to provide for the legal protection of wildlife species and conservation of biological diversity. The Act aims to prevent wildlife species from becoming extinct, and to secure the necessary actions for their recovery. Table 3.2 lists the different risk rankings used under the Act.

Table 3.2 Species at Risk Act (SARA) Rankings

Risk Ranking	Status of Wildlife Species
Extirpated (Schedule 1)	Wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
Endangered (Schedule 1)	Wildlife species that is facing imminent extirpation or extinction.
Threatened (Schedule 1)	Wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.
Species of Special Concern (Schedule 1)	Wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Schedules 2 and 3	The significance criteria category for those species listed on Schedule 2 and 3 as Endangered or Threatened are decided on a case-by-case basis, in consultation with Environment Canada.

The Act recognizes that the protection of wildlife species is a joint responsibility (i.e., more than one government organization) and that all Canadians have a role to play in the protection of wildlife. It applies to all federal lands in Canada; all wildlife species listed as being at risk; and their critical habitat.

As part of the current Phase I ESA, Stantec reviewed Environment Canada's Species at Risk Web Mapping Application (Environment Canada 2007) for the Burin Bay area. The application indicated two (2) mammal Species at Risk and one (1) bird Species at Risk, as listed by SARA, in the vicinity of the Site. This identified Species at Risk include:

- Blue Whale (Atlantic Population) (*Balaenoptera musculus*), Endangered (Schedule 1);
- North Atlantic Right Whale (*Eubalaena glacialis*), Endangered (Schedule 1); and,
- Red Crossbill percna subspecies (*Loxia curvirostra percna)*, Endangered (Schedule 1).

Results of the Species at Risk Web Mapping Application search are provided in Appendix G.

The Blue Whale (Atlantic Population) and North Atlantic Right Whale are both frequently observed in shallow coastal zones; therefore, interaction between these species and the Site is

possible. The Red Crossbill percna subspecies prefers a coniferous habitat (usually unlogged mature forests) and it is unlikely that this species would be present on the Site for extended periods of time as no soil or plants/trees exist on the Site.

3.6 Site Visit and Evaluation of Findings

3.6.1 Current Site Operations

The Site is currently being used as the Canadian Coast Guard Search and Rescue Station. Site activities include launching and retrieving small crafts, CCG training and storing of CCG equipment. The Site has limited access for the public with a chainlink fence enclosing the north side of the finger pier.

The Site and surrounding properties are serviced by municipal water. The site has a septic tank in the north/northeast corner of the Site below the finger pier. It has no disposal field and drains into the harbour. Electrical services are present at the site and are provided via a power line that runs to the site building underground. The buoy lights present on site are solar powered.

3.6.2 Marine Sediment

Based on a review of previous environmental reports for the Site, sediment sampling was conducted in the surrounding water lot by AMEC in 2002. The results of the sediment samples indicated concentrations of metals, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) that were above the applicable guidelines.

It is possible that historical fishing practices and vessel maintenance near the finger pier and the presence of building materials used in the construction of the site infrastructure (i.e., pressure and creosote treated timbers, potential lead, mercury and PCBs in the paint finishes) may have resulted in sediment contamination in the water lot portion of the Site. Historically, items thrown into similar water lot properties include batteries, fuel containers, scrap metals and paint cans.

3.6.3 Waste Generation

3.6.3.1 Solid and Liquid Wastes

No hazardous solid waste generation or storage were identified on the Site during the site visit, with the exception of batteries, which are stored in the office area and recycled or traded for new batteries when required. Sewage is disposed of in a septic tank that is situated in the northeastern portion of the site under the concrete deck.

Hazardous liquid waste (i.e., waste oil) generated by the rescue boat is stored in an aboveground 2,273 L double walled steel waste oil tank, located on the finger pier on the north side of the building (refer to Photo 6 in Appendix C). No fuel pipelines are associated with the waste oil tank. The waste oil is reportedly collected by a licensed waste oil disposal company such as Pardy's Waste Management and Industrial Services on an as-needed basis.

3.6.3.2 Wastewater Discharges, Drains and Sumps

Strip drains and floor drains were observed to be present in the garage portion of the building. These drain directly to the harbour. No staining in the area of the drains was noted during the site visit.

3.6.3.3 Air Discharges

No sources of air emissions that are suspected to result in residual contamination to the property were identified to be present on the Site.

3.7 Fuels, Chemicals and Waste Storage

3.7.1 Storage Tanks

A 6,819 L aboveground steel fuel oil storage tank (as shown in Figure 121410853-EE-03 in Appendix A and Photo 7 in Appendix C) and a 2,273 L aboveground steel waste oil tank are located in the fenced portion of the pier (as shown in as shown in Figure 121410853-EE-03 in Appendix A and Photo 6 in Appendix C). The tanks are labelled as being installed in 1999 and 2007, respectively. Both tanks appeared to be in good condition and no visible staining in the area of the tanks was noted during the site visit. No fill or vent pipes, or other indicators of potential abandoned USTs were observed on the Site. Oil spill equipment (i.e., containment boom, zodiac, absorbent booms, etc.) are stored in the garage.

A 900 L aboveground steel fuel oil storage tank (although not owned by DFO/CCG) is located on parcel A and is associated with the Oldest Colony Trust heritage building. The tank appeared to be in good condition.

3.7.2 Storage Containers

Chemicals (i.e., paints, paint thinners, glycol, lube oil, etc.) were observed in small containers (i.e., less than 4 L) in a chemical storage locker in the garage area (refer to Photo 8 in Appendix C). An additional fire proof chemical storage locker was observed on the pier inside the fenced area adjacent to the aboveground fuel oil storage tank, which contained gasoline for the Zodiac and a gasoline mix (refer to Photo 9 in Appendix C). Oxgen (O_2) and acetylene tanks were stored in the garage. Household cleaning products are stored in the small storage room. The chemicals observed were stored in original containers and packaging. No evidence of spills or stains was observed on the Site at the time of the site visit. No other chemical or petroleum hydrocarbon products were observed to be stored on the Site.

3.8 Building Systems and Equipment

3.8.1 Heating and Cooling Systems

Heating for the site building was electric baseboard. No cooling systems were identified to be present on the Site at the time of the site visit. Hot water is supplied via a 60 gallon electric water boiler located in the kitchen area.

3.8.2 Hydraulic Equipment

A portable electric portable hydraulic hoist (battery operated) was observed in the garage area. No staining in the area of the hoist was noted during the site visit.

3.8.3 Other Equipment

A 15-horsepower Mercury Marine® outboard motor was stored overhead in the garage area. It has reportedly never been used. Various power tools and hand tools, a barbeque, a snowblower and pumps are also stored in the garage area.

Four (4) survival air tanks and three (3) oxygen tanks were stored in the small storage room.

3.9 Exterior Site Observations

3.9.1 Surface Features

The finger pier surface is covered by concrete and the parking area at the west side of the site building/finger pier is asphalt-covered. No exposed soil exists at the site for all parcels of land. No stained surficial materials or distressed vegetation were observed on the Site at the time of the site visit. No watercourses (other than the on-site water lot), ditches, pits or lagoons were identified on the Site. Limited standing water was observed in the asphalt parking area. No sheen was observed on the standing water (refer to Photo 10 in Appendix C).

3.9.2 Fill Materials

The fill material and ballast that make up the finger pier may have been imported to the Site. The date of placement and the origin of these materials is not known, but they may date prior to 1949. No exposed soil is present on the site, as the entire site is covered with either the site building, asphalt or concrete.

3.9.3 Wells

No abandoned or existing wells (water, oil, gas or disposal) were identified to be present on the Site at the time of the site visit.

3.10 Hazardous Materials

Stantec conducted a hazardous building materials survey at the site for the potential presence of hazardous materials during the site visit. These substances (i.e., asbestos, polychlorinated biphenyls, lead, mercury, etc.) are regulated through federal or provincial regulations and may represent a health concern, and/or require proper handling, storage and disposal. Descriptions of the different types of hazardous materials that may be present in the site building are discussed below. For further information, including samples collected during the site visit, refer to the hazardous building materials survey in Section 5.0.

3.10.1 Asbestos-Containing Materials (ACMs)

The common use of friable (crumbles easily by hand pressure) asbestos-containing materials (ACMs) in construction generally ceased voluntarily in the mid 1970s and was banned through legislation in the mid-late 1980s. Asbestos was used in thousands of building products; and, the common uses of friable ACMs included boiler and pipe insulation, and spray-on fireproofing. Asbestos was also used in many manufactured products such as floor tiles, ceiling tiles, transite cement products and other various construction materials. Some cement drain piping currently used in the construction of buildings still contains asbestos (non-friable). Vermiculite used as insulation may be contaminated with asbestos fibres.

Based on the type of building materials observed on the interior of the building at the time of the site visit (i.e., floor tiles and drywall compounds), it is possible that ACMs are present on the Site. No other potential sources of ACMs were identified during the Site visit. The roofing material of the site building was asphalt shingles and was reported to have been replaced in 2007; therefore, it unlikely contains ACMs.

3.10.2 Polychlorinated Biphenyls (PCBs)

From the 1930s to the 1970s, PCBs were widely used as coolants and lubricants for electrical equipment, including transformers and capacitors, and in a number of industrial materials, including sealing and caulking compounds, inks and paint additives. The use of PCBs was prohibited in heat transfer and electrical equipment installed after September 1, 1977, and in transformers and capacitors installed after July 1, 1980.

Based on the age of the site building, it is possible that PCBs may be present in paint or in light ballasts present within the building. No oil-filled transformers or other suspected PCB-containing equipment was observed on the Site.

3.10.3 Lead-Based Materials

In 1976, the lead content in interior paint was limited to 0.5% by weight under the federal Hazardous Products Act. Lead based water supply pipes were used more than 50 years ago. Between 1930 and 1986, most buildings used copper pipe with lead-solder joints. Other lead-based products include wall shielding (x-ray rooms).

Based on the age of the current structures on the Site, it is possible that the potable water system contains lead solders and lead paint is present within the building and on the wheelguards/bollards around the pier. All paints observed on the Site were in fair to good condition and would not be expected to pose significant risks to site users even if they contain lead. No other potential lead-based materials were observed at the Site at the time of the site visit.

3.10.4 Mercury-Based Materials

Despite its toxic nature, mercury has been used in a range of products in order to take advantage of its unique properties to conduct electricity, measure temperature and pressure,

and to act as a fungicide, preservative and disinfectant. Mercury use has been in decline in recent years. Some of the products used in buildings that may contain mercury include latex and oil based paints and thermostats.

Mercury was historically used in paints as an anti-microbial pesticide to prevent mould growth. This practice ceased more than 10 years ago. However, it is possible that paint in buildings more than 10 years old may contain small quantities of mercury.

No suspected mercury-containing thermostats were observed in the site building. No other possible mercury-containing equipment was observed in the site building. Based on the age of the structures on the Site, it is possible that some of the paints may be mercury-containing.

3.10.5 Urea Formaldehyde Foam Insulation (UFFI)

Urea Formaldehyde Foam Insulation (UFFI) was used as an insulation product for existing houses between the mid-1970s and its ban in Canada in 1980. It was not commonly used for commercial or industrial buildings.

Due to the age and intended use (i.e., commercial) of the CCG SAR Station, UFFI is not expected to be a concern on the Site. No evidence of UFFI was observed on Site during the site visit; however, intrusive inspections of wall cavities for UFFI was not performed.

3.10.6 Ozone-Depleting Substances (ODSs)

Refrigeration and air conditioning equipment in place before 1998 may contain refrigerants containing Ozone-depleting Substances. Non-ODS refrigerants have been developed and are available to replace these materials in newer equipment.

A refrigerator is located in the kitchen of the site building, but it is about 5 years old and likely does not contain ODSs.

3.11 Special Attention Items

Stantec reviewed the Site for the potential presence of the following items during the site visit. These materials are not regulated. However, through limited research and heightened awareness, these items have been identified to potentially pose an environmental concern with respect to adverse human health effect.

3.11.1 Radon Gas

Radon is an odourless, invisible gas that occurs naturally as a result of the normal radioactive decay of uranium in bedrock and soil. Since no indoor radon gas measurement data is available for the property, the potential for radon gas generation is inferred based on geology, and uranium concentrations in the local bedrock and soils.

The area of the site is underlain by Late Proterozoic-age mafic volcanic and sedimentary rocks. These rock types are typically considered to have low radon gas generation potential due to their inherent low uranium contents. Provincial government lake sediment geochemistry data

for the area of the Site confirm the low uranium content of the underlying mafic volcanic and sedimentary rocks, with an average uranium concentration of 0.6 ppm determined for lake sediments in the area. In addition, a review of available airborne radiometric data for the area of the Site indicates low surface radioactivity concentrations (i.e., < 1 ppm uranium equivalent) further indicating the low potential for radon gas generation on the properties (Carson *et al*., 2005).

3.11.2 Mould

The growth of mould in indoor environments is typically due to a moisture problem related to building envelope or mechanical system deficiencies or design, and can produce adverse health effects. There is no practical way to eliminate all mould and mould spores in the indoor environment. The way to control mould is to control moisture.

No visual evidence of water stained materials or suspected mould growth was observed on the Site at the time of the site visit.

3.11.3 Electromagnetic Frequencies (EMFs)

Electrical currents induce electromagnetic fields. No scientific data supports definitive answers to questions about the existence or non-existence of health risks related to electromagnetic fields.

No high-voltage transmission lines or electrical substations, which could generate significant electromagnetic fields, were identified on or adjacent to the Site during the site visit.

3.11.4 Noise and Vibration

The effects of noise and vibration on human health vary according to the susceptibility of the individual exposed, the nature of the noise/vibration and whether exposure occurs in the working environment or in the home.

No major or persistent sources of noise and vibration were identified to be present on the Site at the time of the site visit.

4.0 CONCLUSIONS AND RECOMMENDATIONS OF THE PHASE I ENVIRONMENTAL SITE ASSESSMENT

4.1 Conclusions

Based on the information gathered and on observations made during this investigation, the Phase I ESA has resulted in the following conclusions:

- Based on a review of previous environmental reports for the Site, sediments in the water lot area (Parcel F) have concentrations of PCBs, PAHs, petroleum hydrocarbons and metals above the applicable guidelines.

- Based on the Environment Canada Species at Risk Web mapping application, two (2) endangered species (Schedule 1 of the SARA Registry) are said to inhabit the waters of Burin Bay. The species included the Blue Whale (Atlantic population) and the North Atlantic Right Whale. Interaction between the two species and the Site is considered possible.
- The fill material and ballast that make up the finger pier may have been imported to the Site. The date of placement and the origin of these materials is not known, but they may date prior to 1949. No exposed soil is present on the site, as the entire site is covered with either the site building, asphalt or concrete.
- The Site is bordered by the Wharf Approach Road and the Oldest Colony Trust heritage building to the west, and the waters of Burin Bay to the north, south and east. It is not expected that any neighbouring properties would cause environmental impacts on the Site.
- The site building could contain hazardous building materials, including asbestos containing materials, PCBs in light ballasts or paints, lead based paints and/or mercury-containing paint. This is further assessed in the hazardous building materials survey presented in Section 5.0 of this report.

4.2 Recommendations

No further investigation/delineation is required to be carried out on the Site related to the sediment contamination in the water lot portion of the Site. In the event of future dredging in the vicinity of the current and former wharf and/or pier structures, sediment quality and disposal options must be reviewed.

Based on the observations and information gathered during the current Phase I ESA of the Site, it was recommended to proceed with a hazardous building materials survey to confirm the presence or absence of asbestos, lead, mercury and PCBs.

5.0 HAZARDOUS BUILDING MATERIALS SURVEY

5.1 Asbestos Containing Materials (ACMs)

5.1.1 Scope and Methodology

Stantec's scope of work included an Asbestos Survey in the subject building, including confirmatory sampling, identification of the locations of confirmed asbestos-containing materials (ACMs), classification of the condition of the ACMs, and approximate quantification of the amounts of ACMs (if confirmed to be present).

The scope of the Asbestos Survey did not include collection of air samples in the workplace for determination of the amount of airborne fibres, or an assessment of the likelihood of exposure of building occupants to asbestos. This scope of work meets most of the requirements of Section 10 (Workplace Assessment) of the Asbestos Abatement Regulations (Newfoundland and Labrador Regulation 111/98). Stantec's scope of work did not include the preparation of an

Asbestos Management Plan (if necessary) or the preparation of site-specific specifications or tender documents for the removal of ACMs (if necessary).

The Asbestos Survey was conducted during the site visit on February 25, 2010. Eight (8) samples (i.e., BM-BS1 to BM-BS8) of suspected ACMs were collected in the building. Refer to Table 5-1 for the description of the samples and the sample locations. Where possible, suspected ACMs in the building were noted as being visually similar to materials observed elsewhere in the building. Representative bulk samples were collected of vinyl floor tiles and drywall joint compound. All bulk samples were submitted to LEX Scientific Inc. of Guelph, ON for confirmatory analyses of asbestos content and type. During the sampling, a visual determination of the condition of the material, the accessibility, contact potential, exposure and friability was made in each room. All materials were observed to be in good condition at the time of the assessment.

Upon entry into the building, a visual identification of both friable (i.e., can easily be crumbled or pulverized by manual pressure) and non-friable potential ACMs was performed. The specifics of the potential ACMs including their condition, location and degree of friability were documented.

Sampling of ACMs was conducted in accordance with asbestos sampling protocols to ensure that the person taking the samples and any building occupants were not exposed to airborne asbestos fibres.

The following definitions were used in assessing the degree of friability and condition of ACMs:

Friability:

HIGH	Readily releases airborne fibres where brushed against or otherwise disturbed (i.e., sprayed fireproofing, stipple)
MEDIUM	Stable if left untouched or protective coating is undisturbed. However, easily releases airborne fibres once the protective coating is punctured or otherwise damaged (i.e., aircell pipe insulation, magblock boiler insulation)
LOW	Stable if left untouched or protective coating is undisturbed. Requires some degree of effort to release airborne fibres once the protective coating is damaged or otherwise disturbed (i.e., parging on pipe elbows, fittings and valves, gaskets, suspended ceiling tiles)
NONE	Asbestos fibres contained in a stable matrix, unlikely to release airborne asbestos if damaged or otherwise disturbed (i.e., floor tile, drywall joint filler compound, plaster, hardboard, exterior shingles)

Condition:

GOOD	No exposed friable ACMs, protective coating not damaged
FAIR	Minor damages to protective coating or exposure of ACMs

POOR Damaged or fallen asbestos material, hazard of worker exposure to asbestos

The survey and sampling of ACMs was generally limited to readily visible or easily accessible materials inside the subject building. At the time of the site visit, all normally accessible interior areas of the building were accessible to Stantec for inspection. As the building materials were generally in good condition, there was limited intrusive sampling conducted to prevent damage to the building materials. The asbestos assessment did not include any intrusive sampling of the roofing materials on the building as the asphalt shingles were replaced in 2007 and therefore it unlikely contains asbestos.

5.1.2 Asbestos Results

During the visual inspection on February 25, 2010, eight (8) bulk samples of possible ACMs were collected in the subject building (as shown on Drawing No. 121410853-EE-03 in Appendix A) and submitted to LEX Scientific Inc. of Guelph, ON.

Detailed laboratory test results are included in Appendix H. Asbestos was confirmed to not be present in any of the eight (8) samples submitted. A summary of the bulk samples submitted, the sample analyses, the locations of visually similar materials and material condition (if applicable) is included in Table 5.1.

Table 5.1 Results of Asbestos Survey

Sample Number	Sample Description and Location	Sample Analysis Results	Visually Similar Material Locations	Material Condition	Photograph of Sample Location
BM-BS1	Grey drywall joint compound (wall) - Service Area	No asbestos concentration	Not applicable	Not applicable	Photo 11, Appendix C
BM-BS2	Grey drywall joint compound (ceiling) - Service Area	No asbestos concentration	Not applicable	Not applicable	Photo 11, Appendix C
BM-BS3	Beige 12" x 12" vinyl floor tile - Storage Area	No asbestos concentration	Not applicable	Not applicable	Photo 27, Appendix C
BM-BS4	Grey drywall joint compound - Storage Area	No asbestos concentration	Not applicable	Not applicable	Photo 27, Appendix C
BM-BS5	Green/Black 12" x 12" vinyl floor tile - Hallway	No asbestos concentration	• office; • kitchen; • kitchen foyer; • entrance off the kitchen; and, • storage room	Not applicable	Photo 13, Appendix C
BM-BS6	Grey/Green drywall joint compound - Storage Room (Exercise Room)	No asbestos concentration	Not applicable	Not applicable	Photo 14, Appendix C
BM-BS7	Grey drywall joint compound - Storage Room (Exercise Room)	No asbestos concentration	Not applicable	Not applicable	Photo 12, Appendix C

Sample Number	Sample Description and Location	Sample Analysis Results	Visually Similar Material Locations	Material Condition	Photograph of Sample Location
BM-BS8	Grey drywall joint compound - Storage Area (field duplicate of sample BM-BS4)	No asbestos concentration	Not applicable	Not applicable	Photo 12, Appendix C

5.1.3 Discussion of Asbestos Results

No friable or non-friable asbestos were confirmed to be present in the building. No other potential ACMs were observed in the building areas that were accessed.

5.1.4 Recommendations - Asbestos

1. Based on the results of testing and visual observations, all drywall joint compounds and vinyl floor tiles do not contain asbestos.
2. Based on the results of testing and visual observations, Stantec recommends that no further work with regards to ACMs is warranted for the site building.

5.2 Light Ballast Inspection

5.2.1 Scope and Methodology

Stantec's scope of work was to perform an inspection of 34 fluorescent light ballasts in the subject building for identification of potentially PCBs-containing light ballasts. The light ballast inspection was carried out during the site visit on February 25, 2010. All of the light ballasts were inspected within the building. Refer to Table 5-2 for the locations of the fluorescent ballasts.

The power supply was turned off at the subject fluorescent light fixture before the protective light cover was removed. Working from a ladder, the light cover and fluorescent light tube were removed to provide access to the light ballast for inspection. Because of the location of the manufacturer's code and date code, it was not necessary to remove the ballast from the fixture to carry out the inspection.

The manufacturer's name and manufacturer's code were recorded for the inspected ballasts. The information obtained from the light ballast was compared to information in an Environmental Protection Services report EPS 2/CC/2 *Identification of Lamp Ballasts Containing PCBs* to determine whether or not the ballast contained PCBs. The light was put back into service, following the inspection.

Manufacturer's codes and date codes are not always legible on fluorescent light ballasts. If there is a mixture of older PCB-containing light ballasts and newer PCB-free light ballasts in a building, and it is not possible to read the manufacturer's codes or date codes on a particular ballast, it is good environmental practice that the subject ballast be considered to contain PCBs.

5.2.2 Results of Light Ballast Inspection

Table 5.2 describes the location of the 34 inspected light ballasts, the observed manufacturer's name, manufacturer's code, and/or date code. Table 5.2 also indicates whether the inspected ballast is confirmed to contain PCBs, confirmed to be PCB-free or assumed to contain PCBs due to the absence of date codes and/or manufacturer's markings. The locations of the light ballasts within the site building are shown on Drawing No. 121410853-EE-05 in Appendix A.

Table 5.2 Results of Inspection of Fluorescent Light Ballasts

Ballast Location	Number of Light Ballasts Present	Observed Manufacturer's Information	PCB Status	Photograph of Ballast Location
Garage	5	Sylvania Magnetic Ballast MB2x40/120 RS	Ballasts were marked "No PCBs".	Photo 11, Appendix C
Electrical Room	1	Sylvania Magnetic Ballast MB2x40/120 RS	Ballast was marked "No PCBs".	Photo 15, Appendix C
Entrance/Storage Room	1	Sylvania Magnetic Ballast MB2x40/120 RS	Ballast was marked "No PCBs".	Photo 16, Appendix C
Radio Room	1	Sylvania Magnetic Ballast MB2x40/120 RS	Ballast was marked "No PCBs".	Photo 17, Appendix C
Office	4	Sylvania Magnetic Ballast MB2x40/120 RS	Ballasts were marked "No PCBs".	Photos 18 and 19, Appendix C
Hallway	3	Sylvania Magnetic Ballast MB2x40/120 RS	Ballasts were marked "No PCBs".	Photo 13, Appendix C
Training Room	4	Sylvania Magnetic Ballast MB2x40/120 RS	Ballasts were marked "No PCBs".	Photo 20, Appendix C
Storage Room/Exercise Room	2	Advance RCN-4P32-SC Rapid Start Ballast	Ballasts were marked "No PCBs".	Photo 14, Appendix C
Foyer off Kitchen	3	Universal – could not make out numbers	Ballasts were marked "No PCBs".	Photo 21, Appendix C
Kitchen	2	Advance RCN-4P32-SC Rapid Start Ballast	Ballasts were marked "No PCBs".	Photo 22, Appendix C
Washroom	1	Advance RCN-4P32-SC Rapid Start Ballast	Ballast was marked "No PCBs".	Photo 23, Appendix C
Entrance off Kitchen	1	Advance RCN-4P32-SC Rapid Start Ballast	Ballast was marked "No PCBs".	Photo 24, Appendix C
Attic (above entire building)	9	Advance RC-2SP40-TP Rapid Start Ballast	Ballasts were marked "No PCBs"	Photo 25, Appendix C

5.2.3 Discussion – Light Ballast Inspection

An inspection of thirty-four (34) fluorescent light ballasts within the building was carried out during the Hazardous Building Materials Survey completed at the site. Based on the manufacturer's markings, the fluorescent light ballasts were identified not to contain PCBs.

5.2.4 Recommendations – Light Ballast Inspection

Based on the results of the inspection of the fluorescent light ballasts in the building, no further investigation for PCBs-containing light ballasts is warranted for the site building. No other electrical equipment suspected of containing PCBs was observed in the building.

5.3 Paint Sampling

An inspection of paints in the subject building was carried out on February 25, 2010. The paint colours, paint condition and substrate were noted for all areas accessed. Sixteen (16) samples (i.e., PT-BS1 to PT-BS16, which includes one field duplicate) of paints were collected within the building and on exterior portions of the Site. Refer to Table 5-3 for the description of the paint samples and the sample locations. Where possible, paint colours in the building were noted as being visually similar to colours observed elsewhere in the building. All paint samples were submitted to Maxxam Analytics of Bedford, NS for confirmatory analyses of lead, mercury and PCBs. Most of the painted surfaces observed were in good condition.

5.3.1 Results of Paint Analysis

On February 25, 2010, a total of sixteen (16) bulk samples (including one (1) field duplicate) of paints from the interior of the building and finger pier were collected and were forwarded to the laboratory to be analyzed for lead, mercury and PCBs content. Table 5.3 provides a summary of the paint sample locations, the paint condition and areas with visually similar paint. The locations of paint samples collected are also shown on Drawing Nos. 121410853-EE-02 and 121410853-EE-03 in Appendix A.

Table 5.3 Paint Sample Description and Location

Sample No.	Sample Location, Color and Substrate	Paint Condition	Areas with Visually Similar Paint	Photograph of Location
PT-BS1	Grey paint on exterior concrete - Foundation Wall	Fair - good; 10% flaking	N/A	Photo 2, Appendix C
PT-BS2	Red paint on bollard - Pier	Fair - good; 5% flaking	N/A	Photo 2, Appendix C
PT-BS3	Yellow paint on traffic rail (wheelguard) - Pier (paint is on pressure treated timber)	Fair - good; 5-10% flaking	N/A	Photo 5, Appendix C
PT-BS4	Light grey paint on concrete floor - Garage/Service Area	Good; 1-2% flaking	N/A	Photo 11, Appendix C
PT-BS5	Light blue paint on drywall (wall) – Garage/Service Area	Good	• Entrance/Storage Area • Hallway	Photo 11, Appendix C
PT-BS6	White paint on gyproc ceiling – Garage/Service Area	Good	• Entrance/Storage Area • Hallway	Photo 11, Appendix C
PT-BS7	Dark grey floor paint - Electrical Room	Good	• Entrance/Storage Area	Photo 15, Appendix C
PT-BS8	Light blue paint on drywall (wall) - Electrical Room	Good	• Radio Room • Storage Room/Exercise Room	Photo 15, Appendix C
PT-BS9	Light grey paint on ceiling - Electrical Room	Good	• Radio Room	Photo 15, Appendix C
PT-BS10	White paint on drywall (wall) - Storage Area	Good	N/A	Photo 26, Appendix C

Sample No.	Sample Location, Color and Substrate	Paint Condition	Areas with Visually Similar Paint	Photograph of Location
PT-BS11	Light green paint on drywall (wall) - Storage Room/Exercise Room	Good	• Entrance off Kitchen	Photo 14, Appendix C
PT-BS12	White paint on drywall (ceiling) - Storage Room	Good	• Kitchen • Kitchen foyer • Entrance off kitchen	Photo 22, Appendix C
PT-BS13	Brown paint on drywall (wall) - Kitchen Foyer	Good	• Kitchen	Photo 24, Appendix C
PT-BS14	Yellow paint on drywall (wall) - washroom	Good	N/A	Photo 23, Appendix C
PT-BS15	Dark grey paint on roof truss - Attic	Good	N/A	Photo 25, Appendix C
PT-BS16	Field duplicate of PT-BS5	Good	N/A	N/A

5.3.2 Discussion – Paint Analysis

A total of sixteen (16) bulk samples of paints from the interior of the building and the finger pier were collected and analyzed for lead, mercury and PCBs content. The results of the laboratory analysis are summarized in Table 5.4. The laboratory analytical reports from Maxxam Analytics Inc. are presented in Appendix H.

Table 5.4 Summary of Paint Analysis Results

Sample No.	Sample Location, Color and Substrate	Paint Condition	Approximate Amount	Lead Content (mg/kg)[1]	Lead Leachate Content (mg/L)[2]	Mercury Content (mg/kg)[3]	Mercury Leachate Content (mg/L)[4]	PCBs (mg/kg)[5]
PT-BS1	Grey paint on exterior concrete - Foundation Wall	Fair - good; 10% flaking	120 m^2	**2,100**	0.6	nd	N/A	nd
PT-BS2	Red paint on bollard - Pier	Fair - good; 5% flaking	10 m^2	**1,100**	0.48	nd	N/A	nd
PT-BS3	Yellow paint on traffic rail (wheelguard) - Pier (paint is on pressure treated timber)	Fair - good; 5-10% flaking	N/A	15	N/A	nd*	N/A	nd
PT-BS4	Light grey paint on concrete floor - Garage/Service Area	Good; 1-2% flaking	158 m^2	**8,400**	**7.7**	nd	N/A	nd
PT-BS5	Light blue paint on drywall (wall) – Garage/Service Area	Good	N/A	34	N/A	9	N/A	nd
PT-BS6	White paint on gyproc ceiling – Garage/Service Area	Good	N/A	nd*	N/A	2	N/A	nd
PT-BS7	Dark grey floor paint - Electrical Room	Good	N/A	200	N/A	2	N/A	nd
PT-BS8	Light blue paint on drywall (wall) - Electrical Room	Good	40 m^2	5	N/A	**45**	0.055	nd
PT-BS9	Light grey paint on ceiling - Electrical Room	Good	44 m^2	nd	N/A	**42**	**0.19**	nd
PT-BS10	White paint on drywall (wall) - Storage Area	Good	18 m^2	140	N/A	**16**	0.095	nd
PT-BS11	Light green paint on drywall (wall) - Storage Room/Exercise Room	Good	N/A	400	N/A	7	N/A	nd
PT-BS12	White paint on drywall (ceiling) - Storage Room	Good	39 m^2	350	N/A	**83**	0.044	nd
PT-BS13	Brown paint on drywall (wall) - Kitchen Foyer	Good	36 m^2	6	N/A	**11**	0.00046	nd
PT-BS14	Yellow paint on drywall (wall) - washroom	Good	N/A	250	N/A	9	N/A	nd
PT-BS15	Dark grey paint on roof truss - Attic	Good	225 m^2	**4,800**	**11**	2	N/A	nd
PT-BS16	Field duplicate of PT-BS5	Good	N/A	17	N/A	9	N/A	nd
RDL				5	-	1	-	5
Regulatory Criteria				**600**	**5**	**10**	**0.1**	**33**

Notes:
N/A – not applicable
nd – not detected above RDL shown
RDL = reportable detection limit
1. NLDEC informal criteria of 600 ppm for the disposal of lead-containing painted construction debris in an approved municipal landfill; based on the CCME Industrial Soil Quality Guideline.
2. Criteria for lead leachate analysis based on NL Government Service Centre guidance document titled “Leachable Toxic Waste, Testing and Disposal, GD-PPD-26.1.
3. Criteria of 10 mg/kg for mercury containing paints from Surface Coating Materials Regulations (April 2005) under the Hazardous Products Act
4. Criteria for mercury leachate analysis based on NL Government Service Centre guidance document titled “Leachable Toxic Waste, Testing and Disposal, GD-PPD-26.1.
5. Criteria for PCBs analysis based on Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines (2007)
"*" = elevated reporting limit due to low sample weight used in digestion.
Bold = sample exceeds applicable guideline

5.3.2.1 Lead in Paint

The analytical results indicated that lead was present in fourteen (14) of the paint samples at concentrations ranging from 5 mg/kg in sample PT-BS8 to 8,400 mg/kg in sample PT-BS4. Based on the results of the sampling and analysis, elevated lead concentrations (i.e., greater than 600 mg/kg) are present in four (4) samples: the grey paint on the exterior concrete foundation wall (i.e., PT-BS1), the red paint on the bollards on the pier (i.e., PT-BS2), the light grey paint on the concrete floor in the garage/service area (i.e., PT-BS4) and in the dark grey paint on the roof trusses in the attic area (i.e., PT-BS15).

The exterior lead paints PT-BS1 (grey paint on exterior concrete foundation wall) and PT-BS2 (red paint on bollard on pier) were generally in fair to good condition with approximately 10% and 5% flaking in each area, respectively. The interior lead paints PT-BS4 (light grey paint on concrete floor in the garage/service area) and PT-BS15 (dark grey paint on roof truss in the attic) were in generally good condition and were well-bonded. Lead-containing paints that are in good condition do not pose significant risks to human health, unless the paints are disturbed by operations such as grinding, cutting or sand blasting. It is recommended that suitable precautions and approved contractors be used for the handling and disposal of confirmed lead-containing paints during any renovation or demolition activities.

Lead leachability analysis was conducted on 4 paint samples (PT-BS1, PT-BS2, PT-BS4 and PT-BS15) in order to determine whether these lead paints are leachable or not and disposal options can be evaluated for the products. Paint samples PT-BS1 (i.e., 0.6 mg/L, grey paint on the exterior concrete foundation wall) and PT-BS2 (i.e., 0.48 mg/L, red paint on bollard on the pier) had lead leachate contents below the applicable guideline of 5 mg/L as set out by the Newfoundland and Labrador Government Services Centre document entitled “Leachable Toxic Waste, Testing and Disposal, GD-PPD-26.1.

Paint samples from the concrete floor in the garage/service area (i.e., PT-BS4) and from the paint on the roof trusses in the attic (i.e., PT-BS15) exceeded the criteria with leachable lead contents of 7.7 mg/L and 11 mg/L, respectively. Since the concentration of lead leachate in these paints is at levels considered hazardous, in the absence of further rationalization (i.e., dilute with substrate), these paints, if removed from the Site, must be disposed of as hazardous waste. However, the painted concrete floor within the service/garage area and the painted roof trusses in the attic in the site building may not be considered a hazardous material if the paint is intact and well bonded to the demolition material when disposed of. Due to the sufficiently low lead content in paint samples PT-BS4 and PT-BS15, the calculated bulk lead concentration (i.e., the ratio of the mass of the paint per unit area and the mass of the painted building material per unit area times the concentration of lead in the paint sample) for any well bonded paint on these building materials from the areas where these samples were collected would be less than 600 mg/kg and would, therefore, not be considered lead-based material for the purposes of disposal. Any loose or flaking paint in these areas would be considered hazardous material for the purposes of disposal.

5.3.2.2 Mercury in Paint

The analytical results indicated that mercury was present in twelve (12) of the paint samples at concentrations ranging from 2 mg/kg in sample PT-BS6, PT-BS7 and PT-BS15 to 83 mg/kg in sample PT-BS12. Based on the results of the sampling and analysis, elevated mercury concentrations (i.e., greater than 10 mg/kg) are present in five (5) samples: light blue wall paint in the electrical room (i.e., PT-BS8), the light grey ceiling paint in the electrical room (i.e., PT-BS9), the white wall paint in the storage area (i.e., PT-BS10), the white ceiling paint in the storage room (i.e. PT-BS12) and the brown wall paint in the kitchen foyer (PT-BS13).

The mercury-containing paints PT-BS8, PT-BS9, PT-BS10, PT-BS12 and PT-BS13 were generally in good condition with no flaking. Mercury-containing paints that are in good condition do not pose significant risks to human health, unless the paints are disturbed by operations such as grinding, cutting or sand blasting. It is recommended that suitable precautions and approved contractors be used for the handling and disposal of confirmed mercury-containing paints during any renovation or demolition activities.

Mercury leachability analysis was conducted on paint samples PT-BS8, PT-BS9, PT-BS10, PT-BS12 and PT-BS13 in order to determine whether these mercury paints are leachable or not and disposal options can be evaluated for the products. The mercury leachate contents in paint samples PT-BS8, PT-BS10, PT-BS12 and PT-BS13 were below the applicable guideline of 0.1 mg/L as set out by the Newfoundland and Labrador Government Services Centre document entitled “Leachable Toxic Waste, Testing and Disposal, GD-PPD-26.1. The paint sample from ceiling paint in the electrical room (i.e., PT-BS9), however, slightly exceeded this guideline with a mercury leachate content of 0.19 mg/L.

Since the concentration of mercury leachate in this paint is at a level considered hazardous, in the absence of further rationalization (i.e., dilute with metal substrate), this paint, if removed from the Site, must be disposed of as hazardous waste. However, the ceiling paint in the Electrical Room in the site building may not be considered a hazardous material if the paint is intact and well bonded to the gyproc at the time of disposal. Due to the sufficiently low mercury content in paint sample PT-BS9, the calculated bulk mercury concentration (i.e., the ratio of the mass of the paint per unit area and the mass of the painted gyproc material per unit area times the concentration of mercury in the paint sample) for any well bonded paint on gyproc material from the area where the sample was collected would be less than 10 mg/kg and would, therefore, not be considered a mercury-containing material for the purposes of disposal. Any loose or flaking paint in these areas would be considered hazardous material for the purposes of disposal.

5.3.2.3 PCBs in Paint

The analytical results indicated that PCBs were non-detectable in all of the sixteen (16) paint samples analyzed.

5.3.3 Recommendations – Paint Analysis

The recommendations of the paint analysis are as follows:

1) Paint finishes that have been identified with greater than 600 mg/kg lead or 10 mg/kg mercury are considered to be lead- and mercury-based, respectively. Suitable precautions and trained personnel should be used for all activities that may disturb lead-containing (i.e., paints similar to samples PT-BS1, PT-BS2, PT-BS4 and PT-BS15) or mercury containing-paints (i.e., paints similar to samples PT-BS8, PT-BS9, PT-BS10, PT-BS12 and PT-BS13) during any renovation or demolition activities.
2) Based on the results of analyses for lead and mercury in paint samples, the building materials from the subject building (with paints intact and in good condition) are considered to be suitable for disposal in a municipal landfill. Because the lead leachate content in the the light grey paint on the concrete floor in the garage/service area (PT-BS4) and the dark grey paint on the roof trusses (PT-BS15) exceeds the applicable guideline, any loose or flaking paint should be considered to be a hazardous material. Because the mercury leachate content in the the light grey ceiling paint from the electrical room (PT-BS15, and visually similar paint in the radio room) exceeds the applicable guideline, any loose or flaking paint should be considered to be a hazardous material.
3) Based on the results of the analyses for PCBs in paint, none of the paint samples analyzed detected concentrations of PCBs and therefore, no remediation or special disposal requirements with regards to PCBs would be warranted for the painted surfaces analyzed.

6.0 SPECIAL REPORTING REQUIREMENTS

6.1 Treasury Board Definition of a Contaminated Site

The Government of Canada is actively involved in environmental remediation across Canada. The Treasury Board Secretariat has developed two policies that mandate the management and reporting for contaminated sites: The *2002 Policy on Accounting for Costs and Liabilities Related to Contaminated Sites* and the *2000 Contaminated Sites Inventory* Policy. The *2002 Policy on Accounting for Costs and Liabilities Related to Contaminated Sites* requires all federal departments to account for all costs and liabilities related to management and remediation of their contaminated sites. Departments are to report these costs to the Treasury Board Secretariat on an annual basis. The current program is being implemented by PWGSC in order to meet the above noted objectives provided by the Treasury Board Secretariat.

A contaminated site is defined by Health Canada and the Treasury Board of Canada as one at which substances occur at concentrations:

- Above background (normally occurring) levels and pose or are likely to pose an immediate or long-term hazard to human health or the environment; or,
- Exceeding levels specified in policies and regulations.

A property can have several contaminated sites. Each contaminated site must be identified and labelled so that this area can be classified using the NCSCS system, and can be managed accordingly. Each 'contaminated site' on a property is defined in relation to an actual source of contamination and the distance between that contaminated area with other contaminated areas on the property. The following general guidelines will apply in determining whether an area of known contamination will be defined as a 'contaminated site' and will be labelled distinctly as such:

- One actual or potential source is impacting one (or more) different areas regardless of the distance between impacted areas = one site
- Two or more actual or potential sources are impacting the same approximate area and sources and impacted areas are < 30 m apart = one site
- Two or more actual or potential sources are impacting the same approximate area and sources are > 30 m apart = one site
- Two (or more) actual or potential sources are impacting two different areas and sources and impacted areas are < 30 m apart = one site
- Two (or more) actual or potential sources are impacting two different areas and sources and impacted areas are > 30 m apart = two (or more) sites

Based on the definition above and information available from previous environmental investigations, the CCG SAR Station located in Burin, NL has one contaminated site – the water lot property, Parcel F (where sediment samples collected during previous environmental investigations exceeded applicable guidelines).

6.2 NCSCS Classification

The Canadian Council of Ministers of the Environment (CCME) National Classification System for Contaminated Sites (NCSCS) is a method for evaluating contaminated sites according to their current or potential adverse impact on human health and the environment. The NCSCS was developed to establish a rational and scientifically defensible system for comparable assessment of contaminated sites across Canada.

The NCSCS was developed in 1992 based on a review of provincial, territorial and international methods for classifying contaminated sites. With increased knowledge on risk assessment techniques and experience in the suitability of the system, the NCSCS has been updated. In 2008, a revised NCSCS spreadsheet was issued, which supersedes the 1992 document. It incorporates much of the original NCSCS system and also the changes made in the Federal Contaminated Sites Action Plan Contaminated Site Classification System (Franz Environmental, 2005; referred to as FSCAP), which was also based on the 1992 NCSCS.

The NCSCS is not designed to provide a general or quantitative risk assessment, but rather is a tool specifically for the classification and general prioritization of contaminated sites. The system screens sites with respect to the need for further action to protect human health and the environment.

Hazards, or potential hazards, at a site are evaluated by scoring site characteristics that can be grouped under one of three categories:

- Contaminant Characteristics: the relative hazard of contaminants present at a site.
- Exposure Pathways: the route a contaminant may follow (e.g., groundwater, surface water, direct contact, and/or air) to a receptor.
- Receptors: living beings or resources that may be exposed to and affected by contamination (e.g., humans, plants, animals or environmental resources).

6.2.1 NCSCS Site Classification Categories

Sites assessed under the NCS are not ranked relative to one another. Sites are classified on their individual characteristics and are placed into classes (Class 1, 2, 3 or N) according to their priority for action, or Class I (for sites that require further information before they can be classified). The classification groupings and descriptions defined in the NCS Classification System are as follows:

- **Class 1** (Score 70 to 100): High Priority for Action

  "The available information indicates that action (e.g., further site characterization, risk management, remediation, etc.) is required to address existing concerns. Typically, Class 1 sites show a tendency of high concern for several factors and measured or observed impacts have been documented."

- **Class 2** (Score 50 to 69.9): Medium Priority for Action

  "The available information indicates that there is high potential for adverse off-site impacts, although the threat to human health and the environment is generally not imminent. There is probably no indication of off-site contamination, however, the potential was rated high and therefore some action is likely required."

- **Class 3 (**Score 37 to 49.9): Low Priority for Action

  "The available information indicates that this site is currently not a high concern. However, additional investigation may be carried out to confirm the site classification, and some degree of action may be required."

- **Class N** (Score <37): No Priority for Action

  "The available information indicates there is probably no significant environmental impact or human health threats. There is likely no need for action unless new information becomes available indicating greater concerns, in which case the site should be re-examined."

- **Class I** (> 15% of Responses = "Do Not Know"): Insufficient Information

  "There is insufficient information to classify the site. In this event, additional information is required to address data gaps."

Within each priority category, further refinement of the relative classification of sites may be necessary. Firm conclusions about the need for remedial action will still depend on a number of factors including planned long-term use or redevelopment of the site, application of

contaminated site criteria and relevant/site-specific objectives of the jurisdiction in which the site is located, local issues, availability of technology and remediation costs.

6.2.2 NCSCS Score

The CCME National Classification System for Contaminated Sites (2008) Pre-Screening Checklist was completed. Based on the results of the checklist, the NCSCS worksheet does not need to be completed as there are no known or suspected contamination exceedances. The Pre-screening Checklist is presented in Appendix I.

7.0 RECOMMENDATIONS

Based on the conclusions of the current assessment, Stantec offers the following recommendations for the CCG SAR in Burin, NL:

1. Based on a review of previous environmental reports for the Site, sediments in the water lot area (Parcel F) have concentrations of PCBs, PAHs, petroleum hydrocarbons and metals above the applicable guidelines. No further investigation/delineation is required to be carried out on the Site related to the sediment contamination in the water lot portion of the Site. In the event of future dredging in the vicinity of the current and former wharf and/or pier structures, sediment quality and disposal options must be reviewed.

2. Based on the observations and information gathered during the current Phase I ESA of the Site, it was recommended to proceed with a hazardous building materials survey to confirm the presence or absence of lead, mercury and PCBs.

3. Based on the results of testing and visual observations, all drywall joint compounds and vinyl floor tiles do not contain asbestos. Based on the results of testing and visual observations, Stantec recommends that no further work with regards to ACMs is warranted for the site building.
4. Based on the results of the inspection of the fluorescent light ballasts in the building, no further investigation for PCBs-containing light ballasts is warranted for the site building. No other electrical equipment suspected of containing PCBs was observed in the building.
5. Paint finishes that have been identified with greater than 600 mg/kg lead or 10 mg/kg mercury are considered to be lead- and mercury-based, respectively. Suitable precautions and trained personnel should be used for all activities that may disturb lead-containing (i.e., paints similar to samples PT-BS1, PT-BS2, PT-BS4 and PT-BS15) or mercury containing-paints (i.e., paints similar to samples PT-BS8, PT-BS9, PT-BS10, PT-BS12 and PT-BS13) during any renovation or demolition activities.
6. Based on the results of analyses for lead and mercury in paint samples, the building materials from the subject building (with paints intact and in good condition) are considered to be suitable for disposal in a municipal landfill. Because the lead leachate content in the the light grey paint on the concrete floor in the garage/service area (PT-BS4) and the dark grey paint on the roof trusses (PT-BS15) exceeds the applicable guideline, any loose or flaking paint should be considered to be a hazardous material. Because the mercury

leachate content in the the light grey ceiling paint from the electrical room (PT-BS15, and visually similar paint in the radio room) exceeds the applicable guideline, any loose or flaking paint should be considered to be a hazardous material.

7. Based on the results of the analyses for PCBs in paint, none of the paint samples analyzed detected concentrations of PCBs and therefore, no remediation or special disposal requirements with regards to PCBs would be warranted for the painted surfaces analyzed.

8.0 CLOSURE

This report is for the exclusive use of Fisheries and Oceans Canada and Public Works and Government Services Canada and the Canadian Coast Guard, and no other party shall have any right to rely on any service provided by Stantec without prior written consent from Fisheries and Oceans Canada, Public Works and Government Services Canada and Stantec.

All parties are subject to the same limit of liability as agreed to in the Stantec Standard Terms and Conditions. Any use which a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

Some of the information presented in this report was provided through existing documents and interviews. Although attempts were made, whenever possible, to obtain a minimum of two confirmatory sources of information, Stantec in certain instances has been required to assume that the information provided is accurate.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Stantec based on the data obtained during the assessment. Due to the nature of assessment and the limited data available, Stantec cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be construed as legal advice.

Since the purpose of a Phase I ESA is to identify evidence of potential or actual contamination, the identification of site conditions which may pose a non-environmental risk to buildings or people on the Site is beyond the scope of this assessment. (Examples include but are not limited to underground mine workings, volcanic or earthquake activities, severe weather, and/or flood plains in the area.) Stantec accepts no responsibility for damages, if any, suffered as a result of any non-environmental risk.

The conclusions presented in this report represent the best technical judgement of Stantec based on the data obtained from the work. The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations. The extent of the limited area depends on the soil and groundwater conditions, as

well as the history of the site reflecting natural, construction and other activities. In addition, analysis has been carried out for a limited number of chemical parameters, and it should not be inferred that other chemical species are not present.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, we request that this information be brought to our attention so that we may reassess the conclusions provided herein. This report was prepared by Erin Cullen, M.E.Sc., EIT, and reviewed by Paula Brennan, M.A.Sc., P.Eng.

Respectfully submitted,

STANTEC CONSULTING LTD.

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9.0 REFERENCES

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NL Asbestos Abatement Regulations (111/98) under the Occupational Health & Safety Act (RSNL 1990 Chapter o-3)

APPENDIX A

Drawings

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

PROJECT TITLE: PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZMAT, CCG SAR STATION, BURIN, NL (DFRP#80023)

DRAWING TITLE: SITE LOCATION PLAN

SCALE: 1:50,000	DATE: MAR. 19, 2010
DRAWN BY: N.M.	CHECKED BY: PB
EDITED BY: -	REV. No. 0
DRAWING No: 121410853-EE-01	
CAD FILE: 121410853-EE-01.DWG	

Stantec

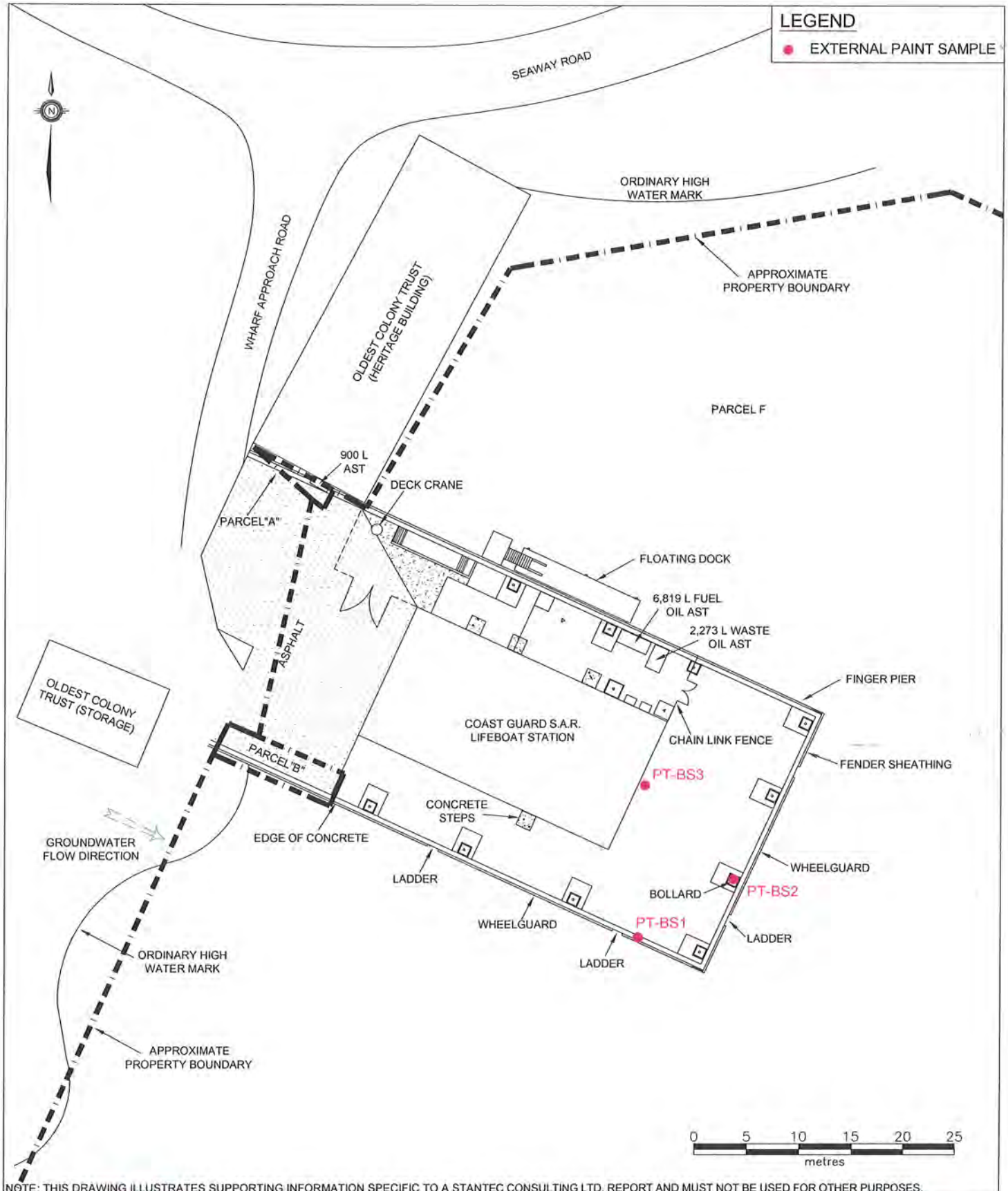
19MAR10 9:00AM

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada	SCALE: 1:1000
	DATE: MAR. 31, 2010
	DRAWN BY: N.M.
	CHECKED BY: TB
PROJECT TITLE: PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZMAT, CCG SAR STATION, BURIN, NL (DFRP#80023)	EDITED BY: -
	REV. No. 0
DRAWING TITLE: SITE PLAN	DRAWING No: 121410853-EE-02
	CAD FILE: 121410853-EE-02.DWG

Stantec

31MAR10 11:00AM



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

PROJECT TITLE: PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZMAT, CCG SAR STATION, BURIN, NL (DFRP#80023)

DRAWING TITLE: DETAILED SITE PLAN

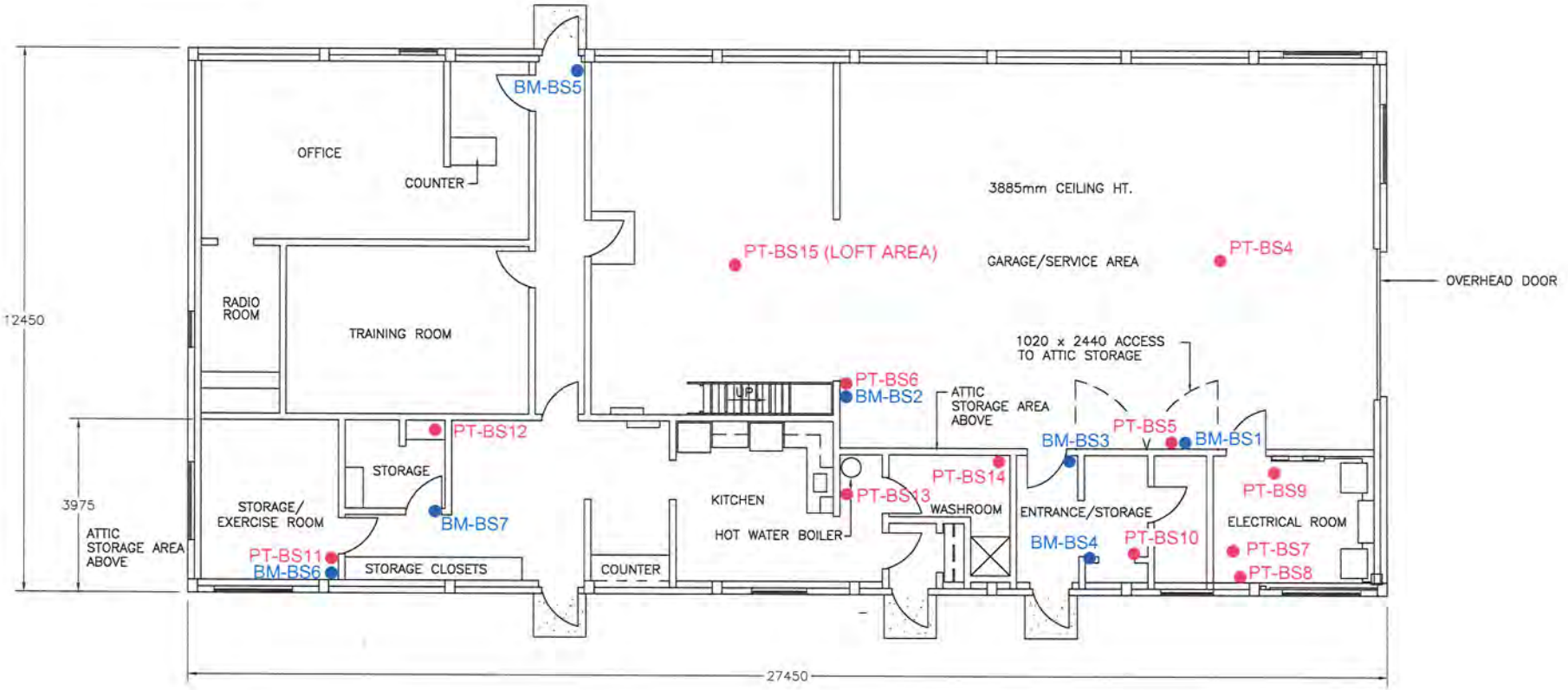
SCALE: 1:500	DATE: MAR. 31, 2010
DRAWN BY: N.M.	CHECKED BY: JB
EDITED BY: -	REV. No. 0
DRAWING No: 121410853-EE-03	
CAD FILE: 121410853-EE-03.DWG	

Stantec

31MAR10 11:00AM

LEGEND

- BULK SAMPLE - ASBESTOS
- PAINT SAMPLE



FLOOR PLAN

NOTE:
ATTIC STORAGE AREA RUNS ENTIRE LENGTH OF BUILDING AS INDICATED.

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

PROJECT TITLE: PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZMAT, CCG SAR STATION, BURIN, NL (DFRP#80023)

DRAWING TITLE: SAMPLE LOCATION PLAN

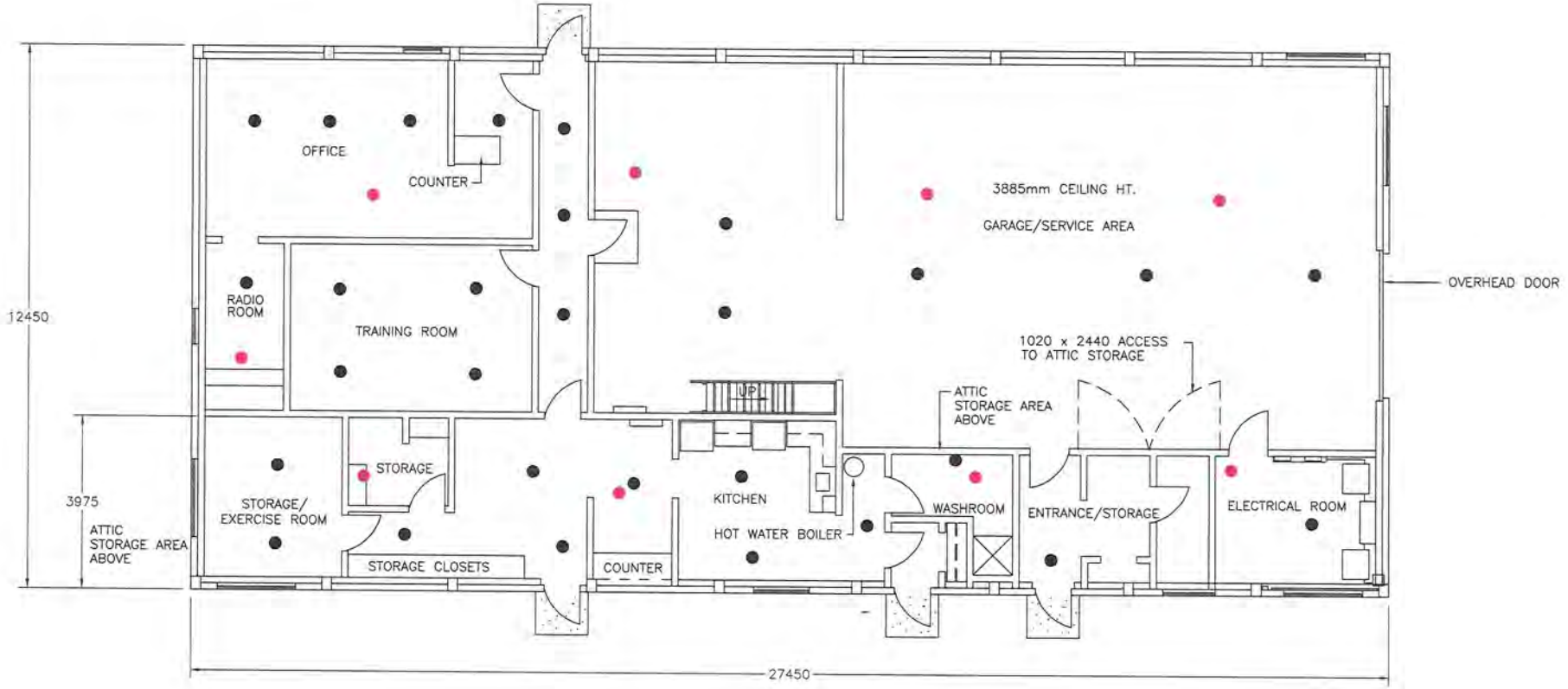
SCALE: NTS	DATE: MAR. 19, 2010
DRAWN BY: N.M.	CHECKED BY: JB
EDITED BY: -	REV. No: 0
DRAWING No: 121410853-EE-04	
CAD FILE: 121410853-EE-04.DWG	

Stantec

19MAR10 9:00AM

LEGEND

- LIGHT BALLAST LOCATION - MAIN FLOOR
- LIGHT BALLAST LOCATION - ATTIC AREA



FLOOR PLAN

NOTE:
ATTIC STORAGE AREA RUNS ENTIRE LENGTH OF BUILDING AS INDICATED.

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

PROJECT TITLE: PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZMAT, CCG SAR STATION, BURIN, NL (DFRP#80023)

DRAWING TITLE: LIGHT BALLAST INSPECTION LOCATION PLAN

SCALE: NTS	DATE: MAR. 19, 2010
DRAWN BY: N.M.	CHECKED BY: PB
EDITED BY: -	REV. No. 0
DRAWING No: 121410853-EE-05	
CAD FILE: 121410853-EE-05.DWG	

Stantec

19MAR10 9:00AM

APPENDIX B

Field Notes

Project # 121410853

Site contact (interview) Karl Adams 891-1610

- SAR Base 0800 - 16:30 ± 24 hr stndby. by Pager 24/7.

- Waste oil tank 2.273L (500gal) AST for waste oil generated by fast Rescue boat (Cotter) Jackman.

- 6219 ~~6300~~ L Main fuel tank. on Wharf AST.

- 2 tanks only on site

Feb 24/10

Chemical's storage (Paints, thinners, glycol Lube oil, etc) all in small containers ie 4l jugs all kept in chemical storage locker in main Sled Garage.

/ other chemical locker on wharf (fire proof) which contains. gas (zodiac) and gas mix.

FIELD

121410 853

Buoy lights kept on site (Solar Panel).

15 hp Mercury Outboard motor over head. not use (Never).

O_2 & Acetylene tanks stored in main garage

1 200 L Plastic drum in garage which stores oil spill kit

Several ABC fire extinguishers in Bldg.

welder on site

feb 24/00

Power tools and hand tools in garage

trailer in garage which stores oil spill equipment ie (containment boom, zodiac, absorbant boom etc).

1 electric (portable) hydraulic lift in garage

1 pressure washer in garage

Snowblower

BBQ

FIELD

12/4/10 853

4 100 L drums ~~with~~ which contain SAR Pumps.

Storage Rm (small one)

4 Survive Air tank
#3 O_2 tanks

household cleaners.

bottle water.

feb 24/10

Kitchen

fridge / stove
water cooler
ice maker

60 gal elec. hot water boiler

1214 10853

Exterior

- Asphalt parking Area
- ODIs colony trust (Heritage Bldg) at a 900 L AST.
  - to the N
- storage Bldg for old Colony trust is to west. No fuel tnk noted
- White vinyl siding with wood sheeting. (old ~~clap~~ siding was removed prior to vinyl install.).
- There is a conc slab on grade with a 0.5 m high conc. wall then siding. Conc wall is painted grey and paint is

1214 10853 Feb 24/20

in fair - good cond. ~10% flaking

PT-BS1 grey PA-4 off conc wall

Wharf deck is conc with PT timber traffic barrier and side railings.

TOD traffic rail is painted yellow on S & W sides of wharf.

PT-BS3 is off traffic rail 10x10 PT timber

Paint is in fair - good condition with ~5-10% flaking.

FIELD

1914 10853 [illegible]

There are 10 bollards on the South [illegible] side of the [illegible] [illegible] red [illegible] [illegible] [illegible] [illegible] 5% flaking.

[Pt 1 - Bs 2] red [illegible] ... bollard.

[illegible] incandescent

Some kind of Env study done in the fall of 2009 by a [illegible] from Ed Bernards. [illegible] don't know [illegible] [illegible]

(CCG) real property

[illegible] Casper [illegible] [illegible] [illegible] [illegible] [illegible] talk [illegible] history of Bldg

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] of [illegible]

121410853 Feb 25 '10

- No wells observed in area; all municipal

- Site has a septic tank and town water. Septic tank has no disposal field and drains to HR

30% Asphalt
35% Conc
35% Bldg.
} Site

No stains on soil observed

1x 2273 L waste oil tank on NE side of wharf.

1x 6819 L fuel oil tank on NE side of Wharf.

FIELD

1214 10853

GARAGE (Service Area)

Floor is a light grey Paint on cone with ~1-2% flaking (good cat

PT-BS4 light grey Floor Paint

Walls are a light blue Paint on gyproc

PT-BS5 light blue wall Paint

BM-BS1 drywall compound at wall.

Ceiling is a white on gyproc

PT-BS6 white ceiling paint

BM-BS2 drywall compound on corner of ceiling.

Checked two light ballasts

2x Sylvania NO PCB

FIELD

121410.853 Feb 25/10

Electrical Rm.

dark grey ~~to~~ plywood floor well bonded

b.

baby blue walls ~~on~~ Paint on gyproc well bonded

Light grey ~~paint~~ paint on ceilg gyproc well bonded

1 dry transformer

1 flourescent light - Sylvania NO PCB -

PT-BS7 dark grey Floor Paint

PT-BS8 baby blue wall Paint

PT-BS9 Light grey ceiling Paint

Entrance / storage

white ceiling Paint on gyproc Vls to garage PT-BS6

light blue Paint on gyproc Vls to PT-BS5

12" beige floor tile + a 1m x 2m section of plywood floor PT. to grey Vls to PT-BS7

BM-BS3 12" beige floor tile

BM-BS4 Drywall compound on Wall

Storage Area is white Paint on wall

PT-BS10

FIELD

Entrance / Storage Con't - Feb 25/10

1 ballast checked
Sylvania NO PCB

Mir Com fire Panel
FA - 300 Series.

Last inspected March 1/09
by Fire - Tech Systems.

121410853

Radio Rm

Carpet on floor
Seems to be
wood Sub floor
(confirmed in HALL)

two walls are baby
blue paint on gyprox
U/S to PC - 1558

1 wall is laminated
gyproc (new type).

Ceiling is white
gyproc.

1 ballast (flourescent light)
Sylvania NO PCB

12/4/10 8:53

Office

all carpet floor except 1 section that leads to Hallway ~ 1.5 x 1.5m VIs to green sparkle 12" tile VIs to Hallway.

walls are [illegible] finish Gyprock

ceiling is white, Gyprock

4 flourescent lights.

1 Sylvania No PCB.

Feb 25/10.

Hallway.

floors are a green sparkle 12" floor tile.

walls are a light blue paint on Gyproc VIs to garage. (PT-BS5)

Ceiling is a white paint VIs to garage (PT-BS6)

BM-BS5 green 12" sparkle floor tile in Hallway.

3 flourecent lights

1 sylvania No PCB

121410853.

Feb 25/10

Training Rm

Laminate flooring

Laminate Gyproc ?

White Paint on Gyproc Ceiling.

4 flourescent lights.
/ Sylvania No PCB.

Storage Rm (Exercise Rm)

green speckle 12" floor tile V/S to BM-B55

light green wall paint on gyproc

white gyproc Paint on ceilings

2 flourescent lights,
/ advance No PCB.

BM-B56 drywall compound off wall.

PT-B511 light green wall paint

1214108853 Feb 15/10

Storage Rm

green speckle floor tile V/S to BM-BS5

baby blue wall paint V/S to PT-BS8

White ~~ceiling~~ ceiling paint on gyproc ceiling

BM-BS7 drywall co. paint off Ceiling

PT-BS12 ~~to~~ White Ceiling Paint

Foyer off kitchen

green speckle floor tile V/S to BM-BS5

Baby blue paint on 2 walls gyproc V/S to PT-BS8

3 walls light green paint on gyproc V/S to PT-BS11

3 flourescent lights

White Ceiling paint on gyproc V/S to PT-BS12

FIELD

121410853. Feb25/10

green speckle 12"
floor tile.

brown paint on gyproc
walls.

white ceiling paint
on gyproc Vls
to PT-BS12

3 Flouresent lights
1 universal no PCB.

PT-BS13 brown paint
on wall

Washroom

green speckle floor tile
Vls to BM-BS5.

yellow wall paint on
gyproc

white ceiling paint on
gyproc

1 flouresent light

PT-BS14 yellow
wall paint

Feb 25/10

Entrance off Kitchen

12" green speckle floor trim

light green wall paint on Gyproc VIS to PT-BS11

White ceiling paint on Gyproc VIS to PT-BS12

1 fluorescent light

Light above entire length of Bldg.

~ 4 m high @ centre and 1 m high @ sides

- fibreglass insulation insulation absent on ceilings

Unpainted floor deck

- fibreglass insul absent in wall cavity

Unpainted wall studs

Flourescent lighting

~ to 9 lights.

1 adjacent No PCB

FIELD

12/4/10 853

Roof Deck and joists
(Roof) are dark
grey in color

Unit is very Well backed
Had to remove wood with
Paint to sample

PT - BS15 dark grey
Paint on
Roof truss

Storage in this area
includes

- empty 200L Plastic drums
- motors, Pumps
- rope
- absorbant boom
- 2 20L pails Lube oil

Note

Roof is Asphalt
Shingles and reported
to be recently
re done in ~~2008~~
2007

Phase I ESA Field Inspection Form

General Information

Project Number: 12/4/10853. Proposal Number: Proposal date:

Client Name: PWGSC.

Site Address: CCG. Burin.

City: Burin Province: NL.

Site Assessor: Randy Patey. Senior Reviewer:

Site visit date: Feb 24/25. Draft report date: Final report date:

Current Site Activities: SAR.

Site Contact		**Client Contact**	
Name:	Karl Adams.	Name:	Ronald Wall.
Company:	CCG.	Company:	CGG.
Phone:	891-1610.	Address:	
Cellular:		Phone:	772-6215
Years with Company:	5 yrs. 1yr @ this site.	Fax:	

Site Specific Information

Date of construction: 1970's

Assumed groundwater flow direction: SE.

Client specific modifications/templates:

Enhancements:

Previous Reports		**Simultaneous Investigations**	
☑ Phase I ESA	☐ Geotech	☐ Phase I ESA	☐ Geotech
☑ Phase II ESA	☐ PCA	☐ Phase II ESA	☐ PCA
☐ Hazmat	☐ IAQ/mold	☑ Hazmat	☐ IAQ/mold
☐ Other:		☐ Other:	

Reason for Conducting Phase I

☐ Acquisition	☐ Disposition	☑ Redevelopment
☐ Mortgage refinancing	☐ Rezoning	☐ Baseline due diligence

Interviews

Name	Position	Company	Years with Site	Phone Number
Karl Adams	↳ CP	CCG.	/	871 1610.

QUICK CHECKLIST OF ON-SITE CONCERNS

	Yes	No	Unknown
1.a Hazardous solid waste generation or disposal	€	€ ✓	€ waste oil
1.b Hazardous liquid waste generation or disposal	€ ✓	€	€
1.c Floor drains	€ ✓	€	€
1.d Hazardous waste collection sumps	€	€ ✓	€
1.e Dewatering sumps	€	€ ✓	€
1.f Air discharges	€	€ ✓	€
1.g Odours	€	€ ✓	€
2.a Underground storage tanks	€	€ ✓	€
2.b Aboveground storage tanks	€ ✓	€	€
2.c Other chemical storage	€	€ ✓	€
3.a Hydraulic equipment (hoists, elevators, compactors)	€ ✓	€	€
3.b Surface staining	€	€ ✓	€
3.c Imported fill materials	€ ✓	€	€
3.d Landfilling Activities (past or present)	€ ✓	€	€
3.e Wells (water, oil, gas, disposal, monitoring)	€	€ ✓	€
3.f Septic system	€ ✓	€	€
4.a Asbestos containing materials	€	€	€ ✓
4.b Polychlorinated biphenyls (PCBs)	€	€	€ ✓
4.c Lead containing materials	€	€	€ ✓
4.d Urea formaldehyde foam insulation (UFFI)	€	€	€ ✓
4.e Ozone depleting substances	€ ✓	€	€
5.a Radon gas	€	€	€ ✓
5.b Mold	€	€ ✓	€
5.c Indoor air quality issues	€	€ ✓	€
5.d High voltage electrical transmission lines	€	€ ✓	€
5.e Electrical substations	€	€ ✓	€
5.f Noise	€	€ ✓	€
6. Vehicle service facility/Gas Station	€	€ ✓	€
7. Drycleaner	€	€ ✓	€
8. Rail lines	€	€ ✓	€

For Yes and Unknown, detail sheet must be completed.

Buildings

Building ID			
# of Levels	1		
Basement	NO.		
Area	see drawing		
Year Built	1970s.		
Renovations	?		
Building Use	SAR.		

Tenants

Address/Unit	Occupant	Activity
CCG		

Utility Providers	
Water:	☑ Municipal ☐ Site not serviced ☐ Services adjacent ☐ Well
Storm and Sanitary Sewers:	☐ Municipal ☐ Site not serviced ☐ Services adjacent ☑ Septic system Location:
Electricity:	☑ Local Utility ☐ Site not serviced ☐ Service available ☐ Generator
Natural Gas:	☐ Local Gas Company ☑ Site not serviced ☐ Local service adjacent

Physical Setting Sources	
Site surfaces	☐ Bare soil _____% ☐ Rough vegetation _____% ☐ Treed _____% ☐ Gravel _____% ☐ Asphalt 30 % ☐ Landscaped _____% ☐ Other: Bldg 35% · Conc Wlk 35%
Storm water	☐ On-site catch basins ☑ Infiltration and/or overland flow. ☐ Other
Slope	☑ no predominant slope. ☐ Slopes down slightly to the _____. ☐ Slopes down steeply to the _____.
Surface Features	☐ Staining ☐ Stressed vegetation ☑ Watercourses ☐ Pits ☐ Lagoons ☐ Ditches ☐ Standing water ☐ Snow cover ☐ None ☐ Other:

Heating and Cooling

☐ No heating or cooling systems are present on the Site, as the Site is undeveloped

Heating	Electric
Cooling	ND.

Historical Land Use

Period	Use
?	Coastal Shed.

Adjoining Property Information

Direction	Land Use	Tenants (with addresses)
North	ODFST Colony Trust Heritage	1 400 AST observed. - previously used as cold bait storage facility (1900s?)
South	Water	
East	Water	
West NW	ODFST Colony Trust Heritage	

Phase I ESA Field Inspection Form
Detail 1 Wastes

Solid Waste	
Hazardous ☐ NONE	Non-Hazardous ☐ NONE
☑ Batteries ☐ Tires ☐ Medical	☐ Domestic ☐ Recycling ☐ Cardboard
Contractor: recycled.	Contractor:
Frequency: When needed	Frequency:

Liquid Waste	
Hazardous ☐ NONE	Non-Hazardous ☐ NONE
☐ Dry cleaning Chemicals ☐ Waste Oil ☐ Process Effluent	☐ Domestic ☐ Process effluent
Contractor:	Discharge: ☐ Municipal Sewer ☐ Septic ☐ Other
Frequency:	

Drains and Sumps ☐ NONE

	Location	Discharge	Maintenance Schedule
Drains			
Collection Sumps			
Dewatering Sumps			
Oil Water Separator			
Grease Trap			

Air Discharges and Odours ☐ NONE

	Location
Odour	
Fume Hood	
Chimney	

Phase I ESA Field Inspection Form
Detail 2 Storage

USTs ☐ NONE

Contents	Type of Tank	Cathodic Protection	Approx. Volume	Age	Location	Use

ASTs ☐ NONE

Content	Type of Tank	Protection/ Secondary Containment	Approx. Volume L	Age	Location	Use
diesel	DW Steel.	DW	6819	11	N/NE	Refueling Station
W/O.	DW Steel.	DW.	2273	3	N/NE	W/O Containment

Other Storage Containers ☐ NONE

Content	Approx. Quantity	Approx. Volume	Type of Container	Location	Use

Phase I ESA Field Inspection Form
Detail 3 Features

Hydraulic Equipment ☐ NONE

	Location	Age	Staining
In ground Hydraulic hoists			
Above ground Hydraulic hoists	garage	?	No.
Hydraulic elevators Age			
Loading Docks			
Compactors			
Other:			

Electrical.

Surface Staining ☐ NONE

Location	Size	Suspected source

Fill Materials ☐ NONE

☐ Imported fill from a known "ok" source ☐ Imported fill from a known "not ok" source

☑ Imported fill from an unknown source ballast for wharf.

☐ Other:

Landfilling ☐ NONE

Location:	Approx. Volume:
Types of Materials:	Stressed Vegetation:
Dates: to	Staining:

Wells ☐ NONE

	Number	Location		Number	Location
☐ Water			☐ Gas		
☐ Oil			☐ Disposal		
☐ Monitoring			☐ Other		

Septic System ☐ NONE

Location	Age	Approximate Size
N/NE.	?	?

Phase I ESA Field Inspection Form
Detail 4 Hazardous Materials

Asbestos-Containing Materials (ACMs) --mid 1970s (1990s) ☐ NONE

☑ Based on the age of the site building, ACMs may be present.

☐ Previous Asbestos Survey ☐ None ☐ Friable ☐ Non friable

☐ Other:

Polychlorinated Biphenyls (PCBs) --September 1971 ☐ NONE

☐ Oil-filled transformers

Locations: Stickers:

☑ Fluorescent light fixtures

☐ PCB storage

☐ Previous PCB Survey

☐ Other:

Lead-Based Materials -1976 ☐ NONE

☑ Based on the age of the site building, lead-based products may be present.

☐ X-Ray walls

☐ Lead Acid Batteries

☐ Previous Lead Survey

☐ Other:

Urea Formaldehyde Foam Insulation (UFFI) -1980 ☐ NONE

☑ Based on the age of the site building, it is possible that UFFI may be present on site. No evidence of the application of UFFI was observed during the site visit.

☐ Other:

Ozone-Depleting Substances (ODSs) ☐ NONE

☐ Air Conditioning equipment

☑ Refrigeration equipment

☐ Halon System

Phase I ESA Field Inspection Form
Detail 5 Special Attention Items

Radon Gas	☐ NONE
☐ No visible bedrock	
☑ Visible bedrock – Type: Sandstone / Siltstone	
☐ Previous Radon Assessment	
☐ On-site occupied basement	

Microbial Contamination (Mold)	~~☐ NONE~~
☐ Suspected mold growth – Location:	
☐ Water Leak – Location:	
☐ Water staining – Location:	
☐ Previous Mold Assessment	
☐ Other:	

Electromagnetic Fields (EMFs)	~~☐ NONE~~
☐ Electrical substation	
☐ High voltage transmission line	
☐ Other:	

Noise and Vibration	~~☐ NONE~~
☐ Noise – Source:	
☐ Vibration – Source:	

PHASE I ESA FIELD INSPECTION FORM
Vehicle Service Facility/Gas Station

Hazardous Waste Generation/Storage	☐ NONE
☐ New automotive oil/fluids	
Location:	
Delivery contractor:	
Frequency:	
☐ Used automotive oil/fluids	
Location:	
Removal contractor:	
Frequency:	
☑ Batteries	
Location: Recycled & traded for	
Removal contractor: new when required.	
Frequency:	
☐ Used oil filters	
Location:	
Removal contractor:	
Frequency:	
☐ Tires	
Location:	
Removal contractor:	
Frequency:	
☐ Other:	
Location:	
Removal contractor:	
Frequency:	

Drains and Sumps ☐ NONE

☐ Strip drains/trenches/grit interceptors

Location:

Discharges to:

Maintenance contractor:

Frequency:

☐ Other Floor Drains

Location: Garage

Discharges to:

Maintenance contractor: to the

Frequency:

☐ Waste Collection Sumps

Location:

Number or Chambers:

Discharges to:

Maintenance contractor:

Frequency:

☐ Oil/Water Separator

Location:

Number or Chambers:

Receives water from:

Discharges to:

Maintenance contractor:

Frequency:

Hydraulic Hoists ☐ NONE

Type: ☐ Underground ☐ Aboveground

Number:

Location:

Maintenance contractor:

Frequency:

Hydraulic Oil Top ups:

Tanks and Containers ☐ NONE

Content	Type of Tank	Protection (cathodic/vehicle etc.)	Approx. Volume	Location	Use

Stains, Spills and Odours ☐ NONE

Spills

Product:

Location:

Quantity:

Clean Up Procedures:

Reports:

Stains

Location:

Size:

Source:

Cracks in the floor

Location:

Nearby concerns:

Odour

Location:

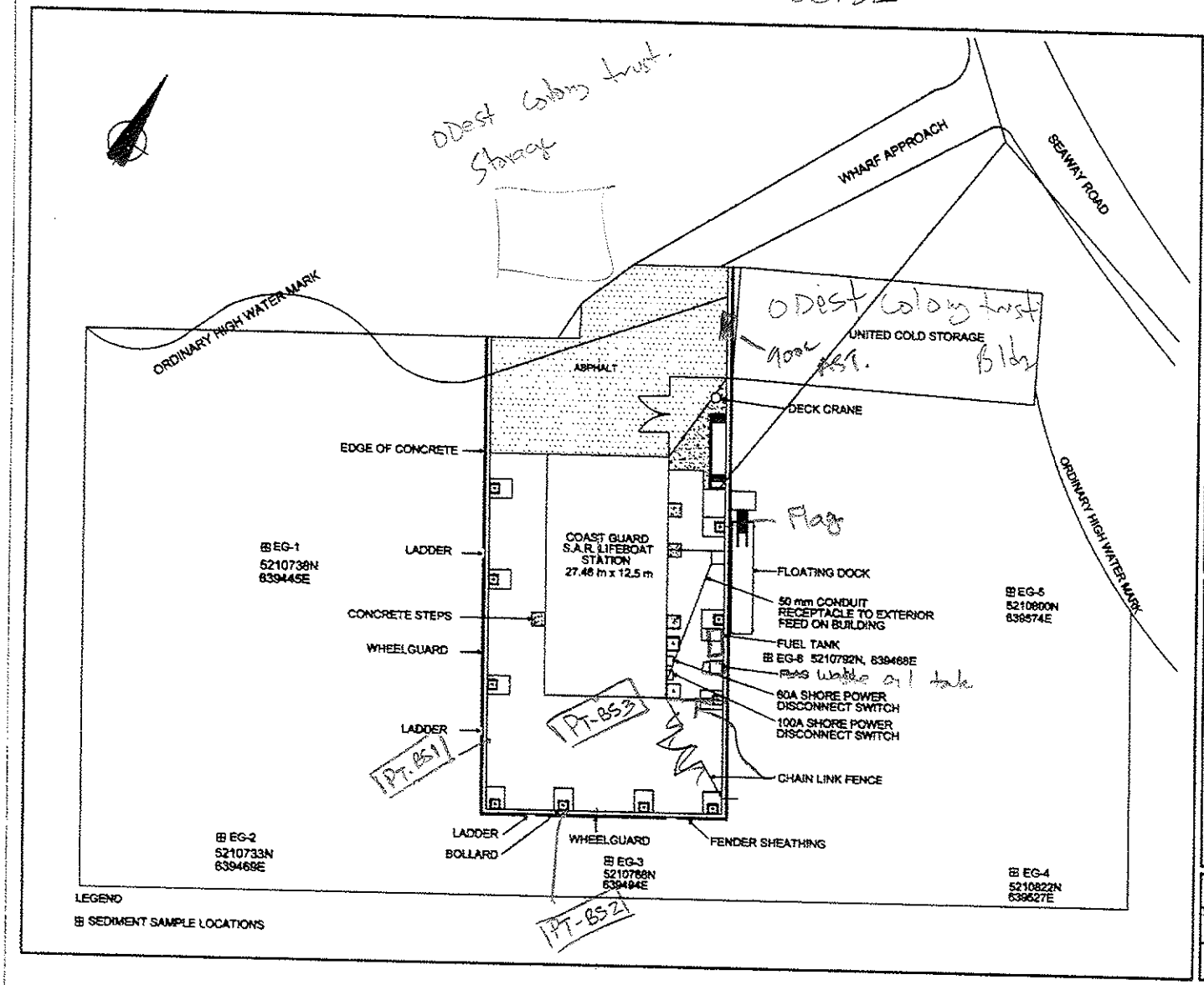
Type:

PHASE I ESA FIELD INSPECTION FORM
Dry Cleaner

Interview Questions		
Name:	Position:	Years with:
How long has the drycleaner been operating as at this location?		
How old is the machine?		
Who maintains the machine?		
How often is the machine maintained?		
How is new chemical added to the machine?		
Who adds the new chemical to the machine?		
Who delivers new chemical?		
How often is new chemical delivered?		
How is the waste chemical removed from the machine?		
Who removes the waste chemical from the machine?		
How often is the waste chemical removed from the machine?		
How often is waste chemical picked up?		
Where is the waste chemical stored before it is picked up?		
Have there been any spills or leaks?		
What generation of machine is it?		

(1) BMI DW Steel Tk
Waste oil
2057
(Year) 2007
2273L

(1) BMI DW Steel fuel tk.
C-27762
1999
6819L



NOTES:
SIX SAMPLES: ANALYSES AS SHOWN
TPH - NO BTEX, JUST PURGEABLES
EG: SEDIMENT SAMPLING LOCATION USING ECKMAN GRAB SAMPLER

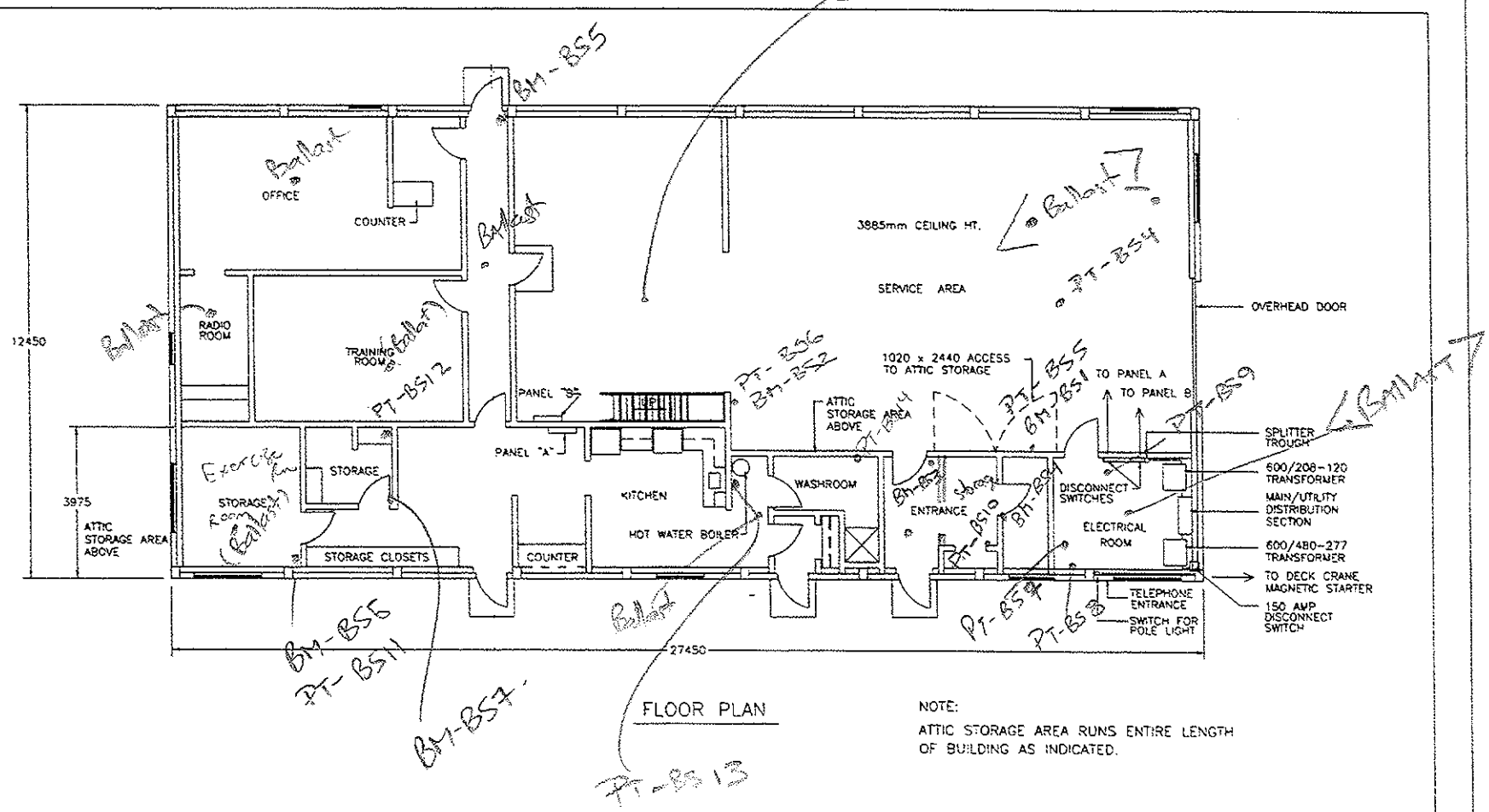
CONSULTANT

CLIENT
PUBLIC WORKS & GOVERNMENT SERVICES CANADA, CANADIAN COAST GUARD, AND BURIN SEARCH & RESUE

PROJECT
PHASE II/III ENVIRONMENTAL SITE ASSESSMENT
BURIN S.A.R. WHARF

TITLE
SEDIMENT SAMPLING LOCATIONS

DRAWN BY: JY	REVIEWED BY: RW
SCALE: 0 5 10 m	PROJECT NO.: TF07615
DATE: MARCH 31, 02	FIGURE NO.: 3



FLOOR PLAN

NOTE:
ATTIC STORAGE AREA RUNS ENTIRE LENGTH OF BUILDING AS INDICATED.

Fisheries and Oceans / Pêches et Océans — Real Property / Services Immobiliers	drawing title–dessin titre: FLOOR PLAN	drawn–dessiné: JANETTE DWYER; checked–vérifié; approved–approuvé
site: BURIN S.A.R. STATION	scale–échelle: 1:100; date–date: JAN. 1998	project no.; drawing no.–no du dessin: 01M0302F01401

APPENDIX C

Site Photographs

Photo 1: Canadian Coast Guard Search and Rescue Station, Burin, NL, facing southeast.

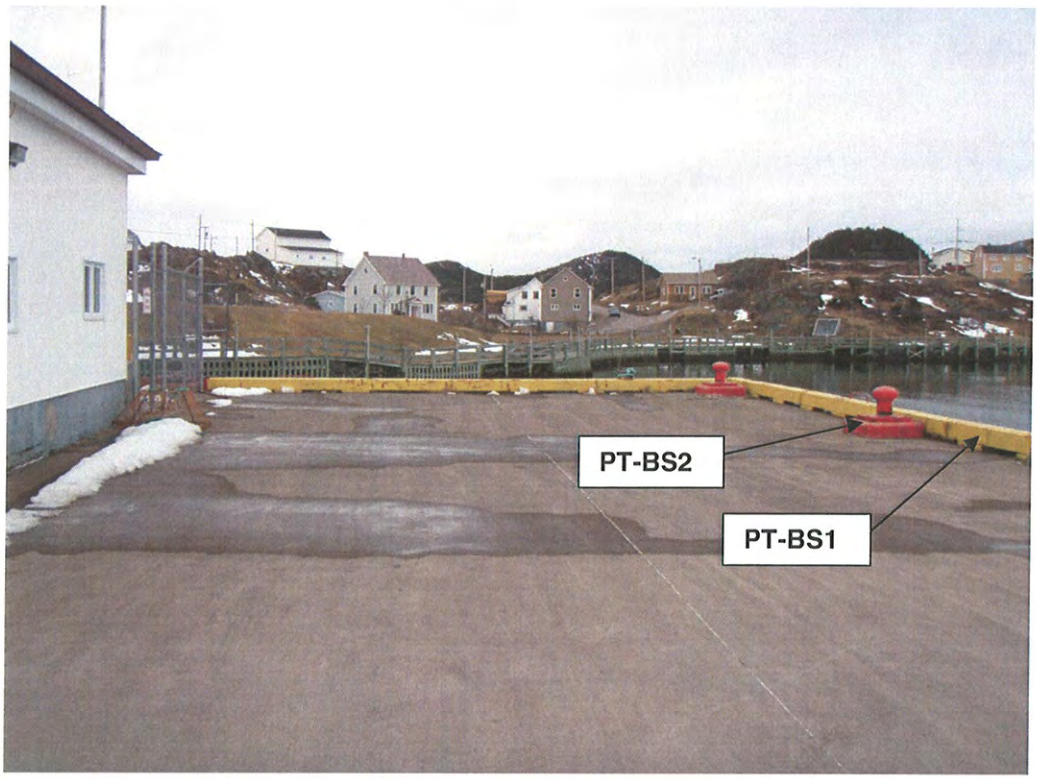


Photo 2: Concrete wharf deck showing yellow wheel guard and red bollards, facing northeast.

Photo 3: Waste oil AST and fuel oil AST located on the north side of the wharf, looking northwest.

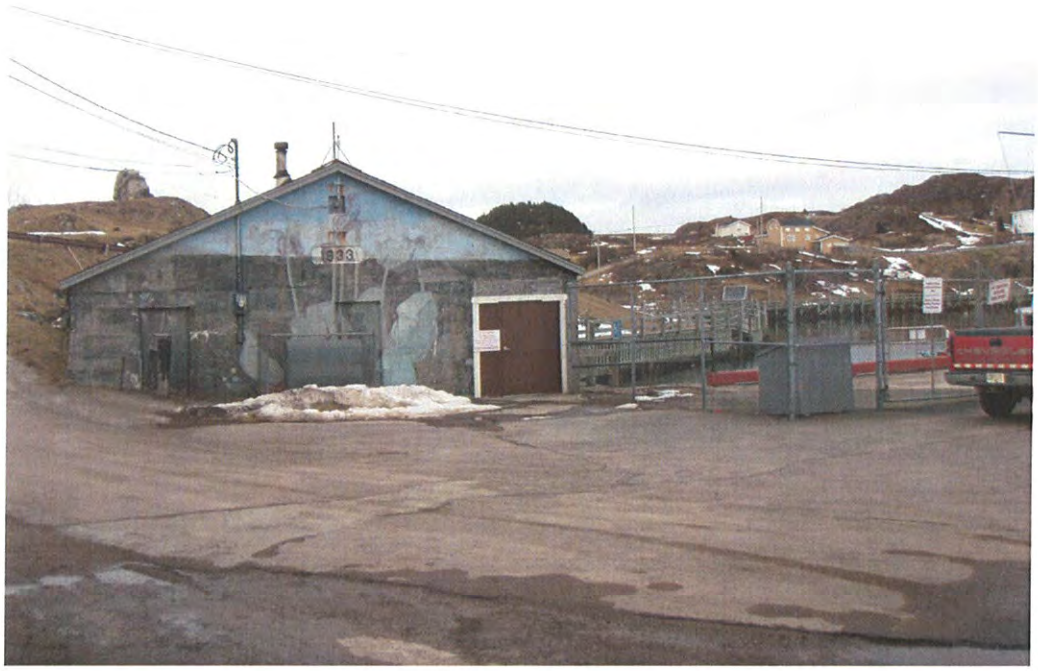


Photo 4: 'Oldest Colony Trust' heritage building located adjacent to the CCG SAR property, facing northeast.

Photo 5: 'Oldest Colony Trust' storage building located on the north side of the Wharf Access Road, facing norhtwest.

Photo 6: 2,273 L waste oil tank located on the northeastern side of the wharf. Photo taken looking northeast.

Photo 7: 6,819 L fuel oil tank located on the northeastern side of the wharf. Photo taken looking southeast.

Photo 8: Chemical storage locker located inside the garage area of the Site building.

Photo 9: Location of chemical storage locker on the wharf. Photo taken looking north.

Photo 10: Standing water observed in asphalt parking area, looking southeast.

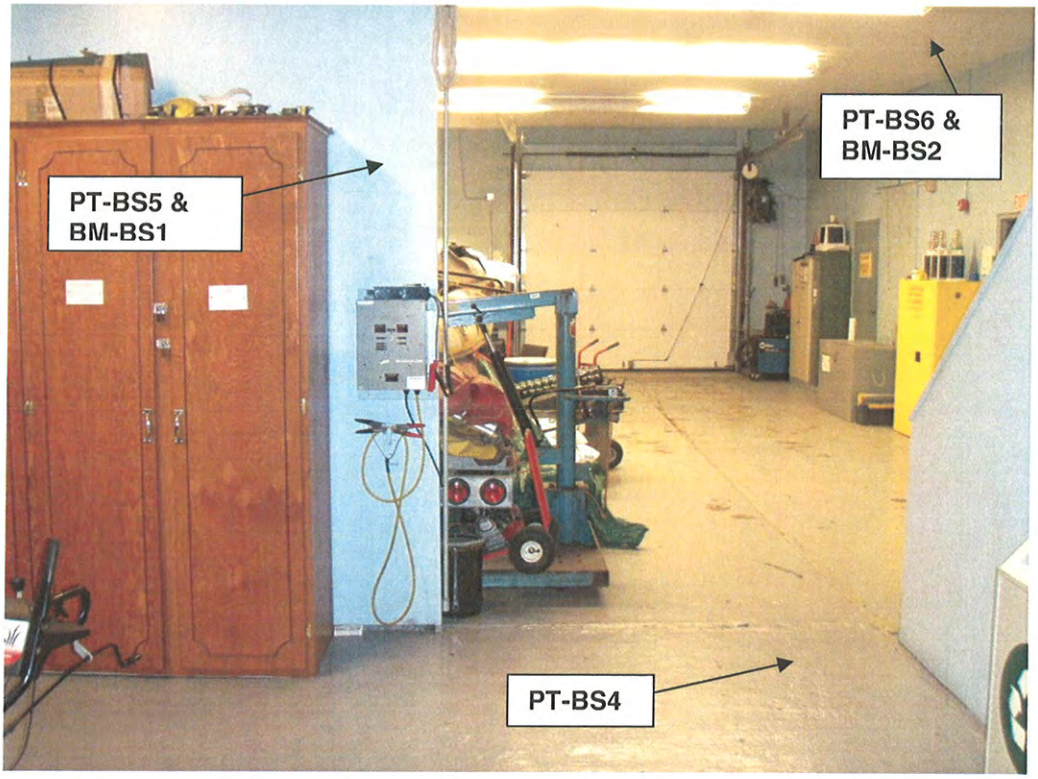


Photo 11: Service/Garage area.

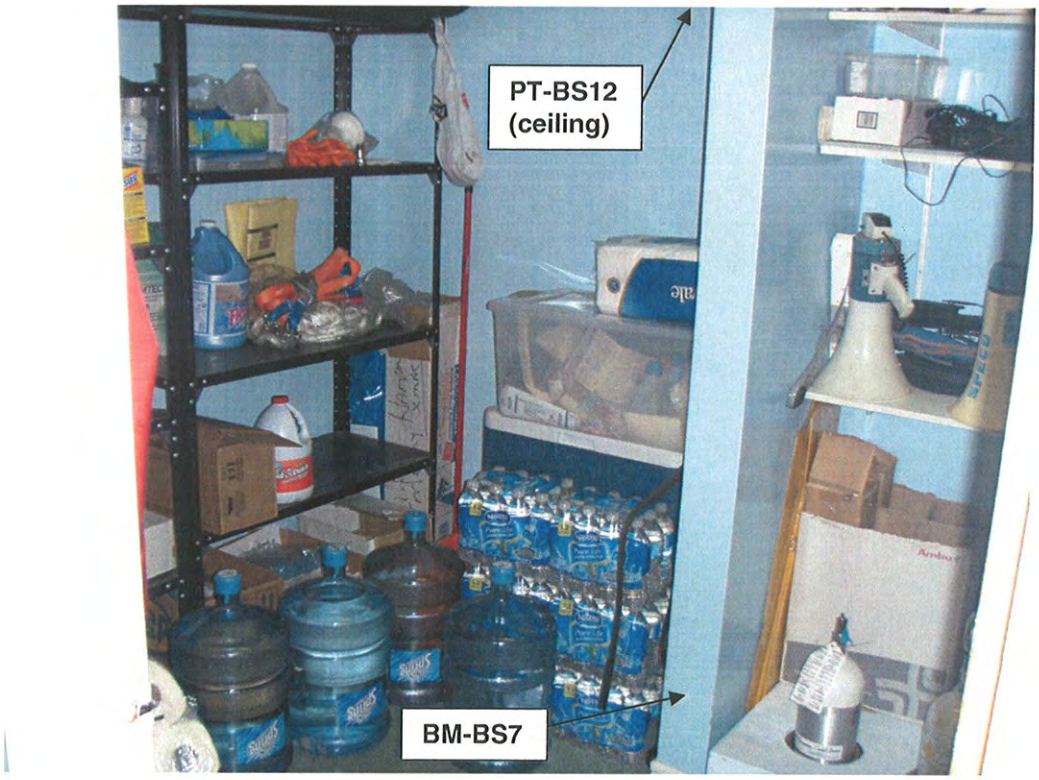


Photo 12: Beige floor tile in Storage Area.

Photo 13 Hallway showing green/black floor tile

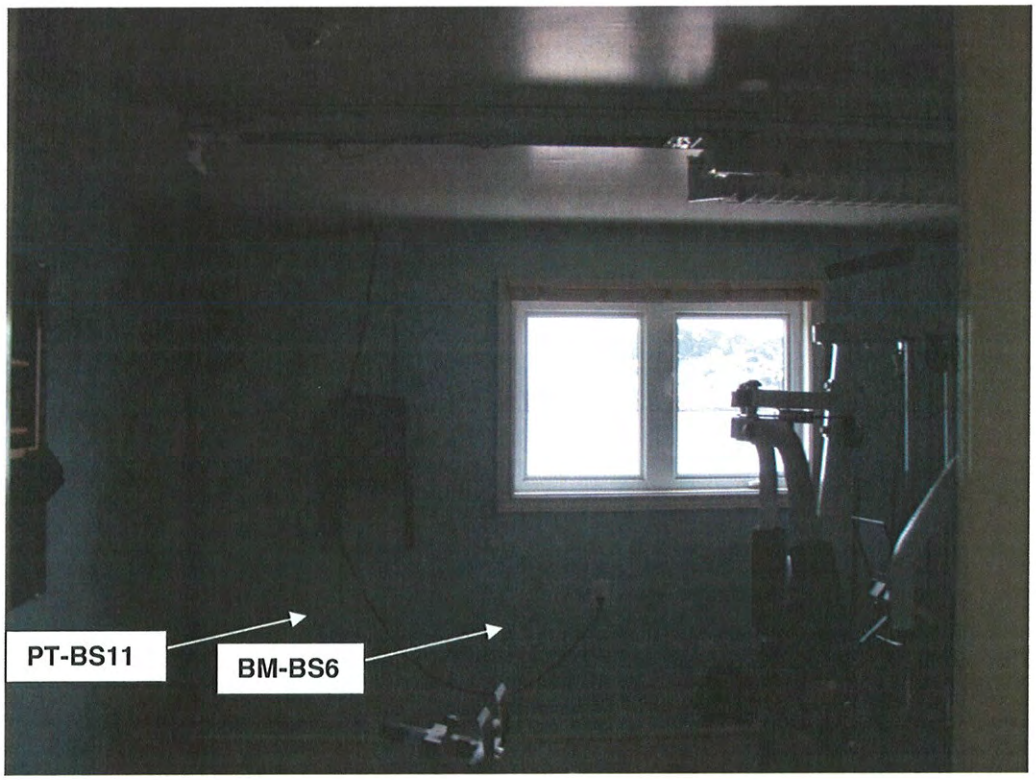


Photo 14: Exercise (Storage) Room

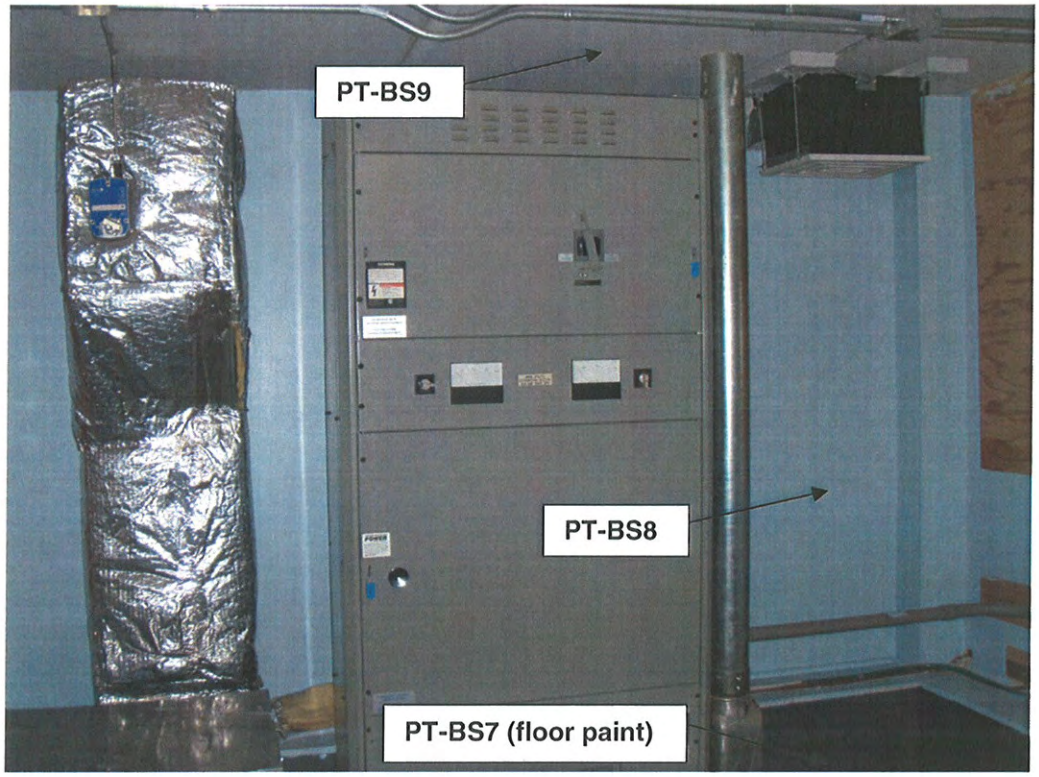


Photo 15: Electrical Room

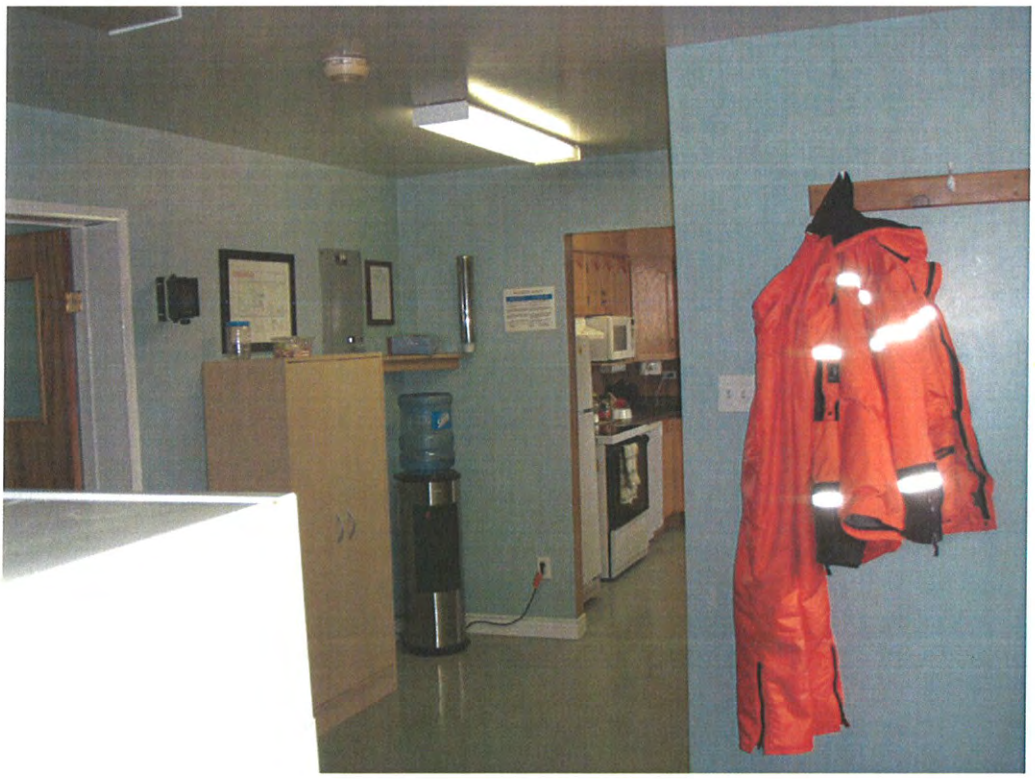


Photo 16: Entrance/Storage Room

Photo 17: Radio Room

Photo 18: Office – looking northwest

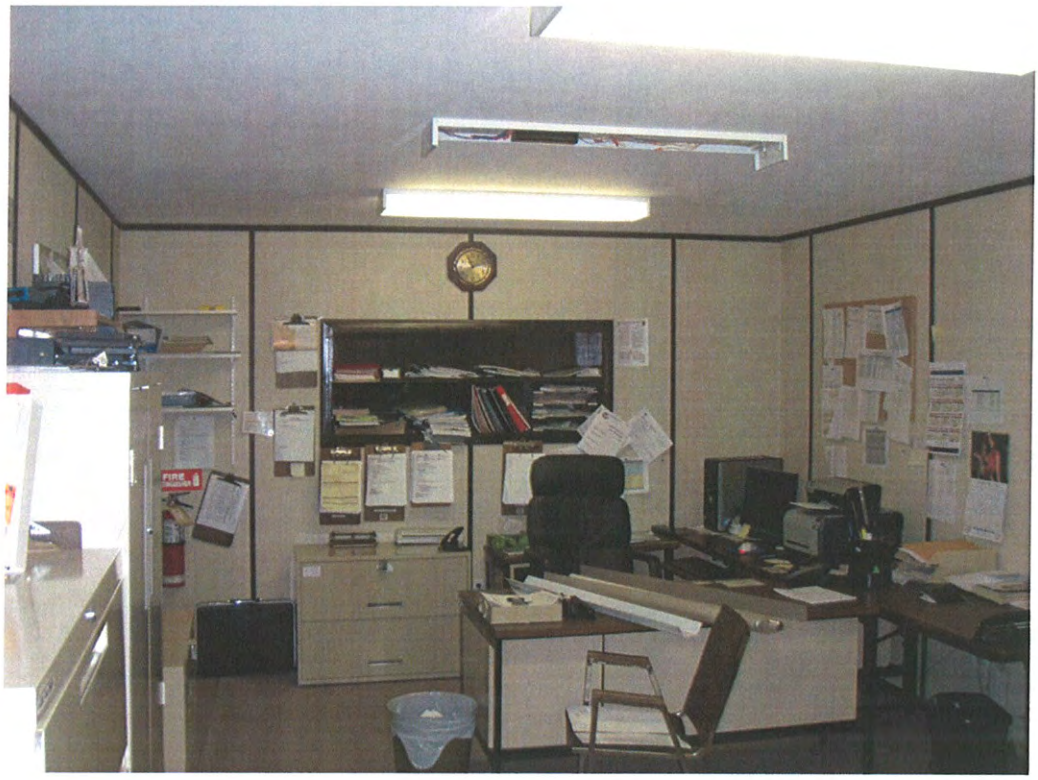


Photo 19: Office – looking southeast

Photo 20: Training Room

Photo 21: Foyer off Kitchen

Photo 22: Kitchen

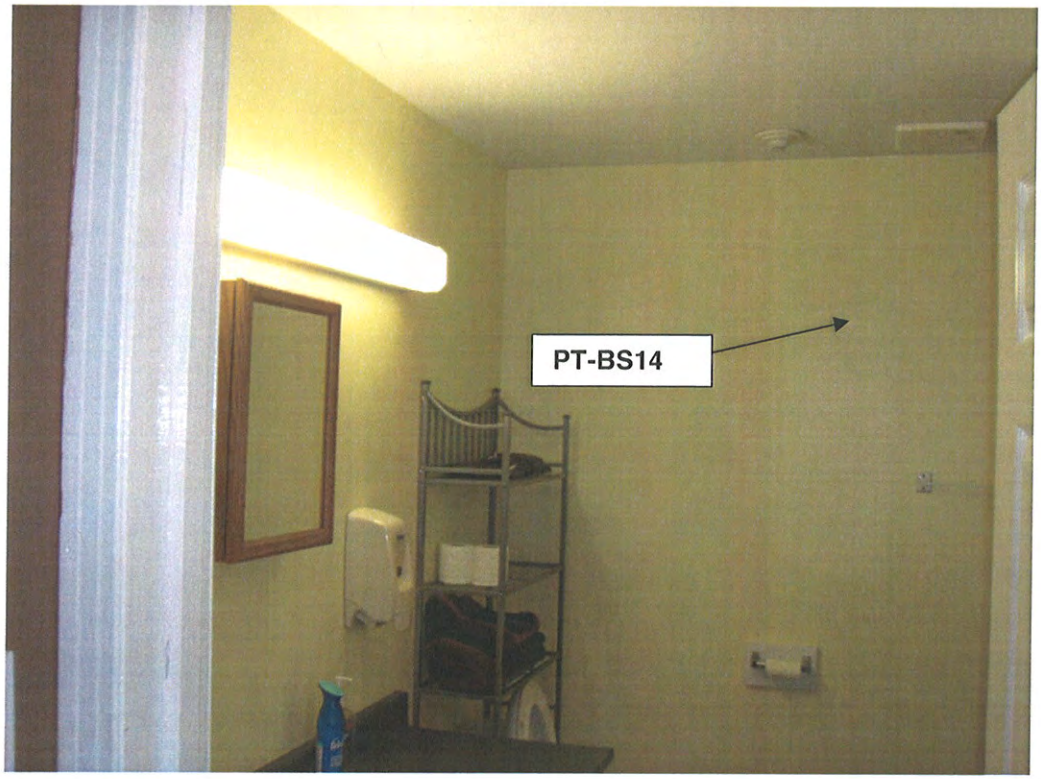


Photo 23: Washroom

Photo 24: Entrance off Kitchen

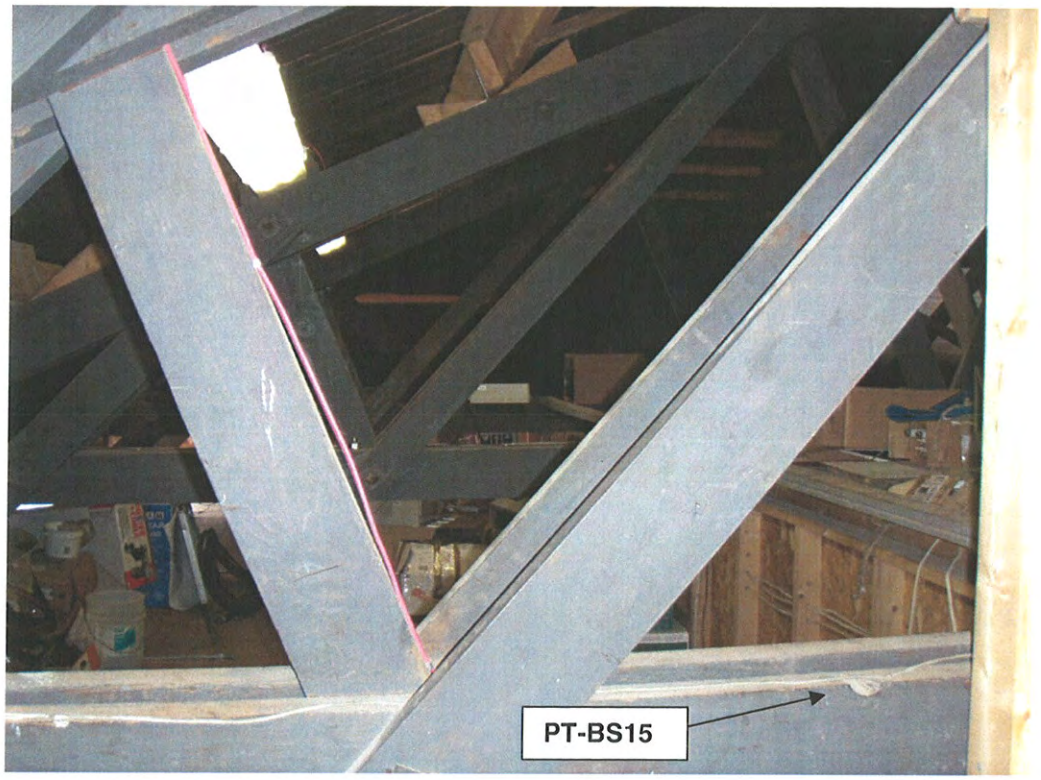


Photo 25: Attic

Photo 26: Storage Area

Photo 27: Entrance/Storage near Electrical Room

APPENDIX D

Interview Log

Jacques Whitford Stantec Limited
607 Torbay Road
St. John's, NL A1A 5B6

Stantec

ENVIRONMENTAL QUESTIONNAIRE FOR ENVIRONMENTAL SITE ASSESSMENTS

March 15 2010

Please respond to every question. If not applicable, please indicate so. Where space is inadequate, please attach pages or write in margins.

Site Owner/Client: PWGSC - Canadian Coast Guard (DFO)
Property Address: Burin, NL

1 Site History

1.1 Present Site Usage

Present Site Owner: CCG
Owned Since (Date): 1970s (?) CCG operated a radio room at the site; took over entire building ≈ 1990s (?)
Site Usage: Search and Rescue Station (SAR)

1.2 Previous Site Usage

Previous Site Owner: Unknown
Owned (Dates): Finger pier has been in place an estimated 100 years.
Site Usage: Locals have always referred to the pier as "Government Wharf"
Prior to 1972 (?) building was used as a storage shed for coastal vessels.

Previous Site Owner: n/a
Owned (Dates):
Site Usage:

Previous Site Owner: n/a
Owned (Dates):
Site Usage:

1.3 Current Adjacent Sites Usage

Site Usage (North): Oldest Colony Trust - Recreational
Site Usage (South): Harbour
Site Usage (West): "
Site Usage (East): "

1.4 Previous Adjacent Sites Usage

Site Usage and dates (North) Cold bait storage

Site Usage and dates (South) Harbour

Site Usage and dates (West) Harbour

Site Usage and dates (East) Harbour

1.5 Present Buildings on Site

No. of Buildings 1

Name of Buildings Search and Rescue Station

Usage of Buildings Coast Guard, education, SAR

Total area (m^2) each building 341 m^2

Dates of Construction 1970s (?)

Dates of Extensions unknown

Building Construction timber

No. of Stories 1

Basements? n/a

1.6 Previous Buildings on Site

No. of Buildings N/A

Name of Buildings

Usage of Buildings

Locations of each building

Dates of Construction

Dates of Removal

Total area (m^2) each building

Building Construction

No. of Stories

Basements?

1.7 Site

Site area (hectares) 1.2469 hectares (land area)

Date site acquired Reportedly CCA began operating a radio room in the site building around 1971

Survey and legal description available? yes

1.8 Exterior Site Surfaces

Approx. % of surface covered by asphalt 30%

Dates asphalt paving installed unknown

Approx. % of surface covered by concrete 35%

Dates concrete installed 1960s (?)

Approx. % of surface covered by gravel n/a

Approx. % of surface covered by grass n/a

Approx. % of surface covered by shrubs and trees n/a

2 Storage Tanks and Chemicals

2.1 Existing Underground Storage Tanks (USTs)

No. of USTs ---------- N/A

Usage of each UST ----------

Capacity of each UST ----------

Material of Construction each UST ----------

Location of each UST ----------

Age of each UST ----------

Overfill protection systems on each UST? ----------

Leak detection systems on each UST? ----------

Corrosion prevention systems on each UST? ----------

UST registration info available? ----------

UST inspection or testing info available? ----------

2.2 Previous USTs

No. of previous USTs ---------- N/A

Usage of each UST ----------

Capacity of each UST ----------

Material of Construction each UST ----------

Location of each UST ----------

Date of installation of each UST ----------

Date of removal of each UST ----------

Overfill protection systems on each UST? ----------

Leak detection systems on each UST? ----------

Corrosion prevention systems on each UST? n/A

UST registration info available?

UST inspection or testing info available?

Was UST removal documented?

Were confirmatory soil samples tested in UST areas?

2.3 Existing Aboveground Storage Tanks (ASTs)

No. of ASTs 2

Usage of each AST 1- waste oil ; 1- fuel oil

Capacity of each AST 1x 2273L ; 1x 6819 L

Material of Construction each AST Double wall steel

Location of each AST south side of finger pier

Age of each AST 2007 + 1999

Secondary containment systems on each UST? no

AST registration info available? BMI 2057 + BMI C-277621

AST inspection or testing info available? no

Any propane storage tanks on site? no

Capacity of propane storage tanks n/a

Owner of propane storage tanks n/a

2.4 Previous ASTs

No. of previous ASTs 2 x 2,300 L

Usage of each AST fuel oil storage

Capacity of each AST 2300 L

Material of Construction each AST steel

Location of each AST --north side of finger pier--

Date of installation of each AST 1994--

Date of removal of each AST ?--

Secondary containment systems on each AST? yes, dyked.--

AST registration info available? GAP95-K0069--

AST inspection or testing info available? n/a--

2.4 Existing Dispensers and Fuel Pipelines

Any fuel dispensers/pump islands? --------------------N/A - fuel tank connects directly to boat.

Locations of fuel dispensers/pump islands N/A--

Age of fuel dispensers/pump islands --

Any aboveground fuel pipelines? --

Locations of aboveground fuel pipelines --

Age of aboveground fuel pipelines --

Any underground fuel pipelines? --

Locations of underground fuel pipelines --

Age of underground fuel pipelines --

Materials of underground fuel pipelines --

Any leak detection system on u/g pipelines? --

2.5 Previous Dispensers and Fuel Pipelines

Any previous fuel dispensers/pump islands? --------N/A--

Locations of fuel dispensers/pump islands --

Date fuel dispensers/pump islands installed --

Date fuel dispensers/pump islands removed --

Any previous aboveground fuel pipelines? N/A

Locations of aboveground fuel pipelines

Date aboveground fuel pipelines installed

Date aboveground fuel pipelines removed

Any previous underground fuel pipelines?

Locations of underground fuel pipelines

Date underground fuel pipelines installed

Date underground fuel pipelines removed

Materials of underground fuel pipelines

Any leak detection system on u/g pipelines?

2.6 Existing Chemical Storage Tanks

Any existing chemical storage tanks on site? Oa + acetylene tanks

Chemicals stored in tanks O2, acetylene

Locations of storage tanks main garage area

Secondary containment systems around tanks? no

2.6 Previous Chemical Storage Tanks

Any previous chemical storage tanks on site? N/A

Chemicals stored in tanks

Locations of storage tanks

Secondary containment systems around tanks?

Date tanks installed

Date tanks removed

2.7 Other Chemical Storage

Any chemical storage (small containers/drums) areas on site? yes

Locations of storage areas chemical locker in garage + outside beside ASTs

Chemical products stored gasoline, paints, thinner, glycol, lube oil

Any petroleum products (small containers/drums) storage areas on site? yes

Locations of storage areas gasoline + gasoline mix located in locker outside (adjacent to ASTs)

Petroleum products stored gasoline, lube oil

3 Heating, Ventilation and Air Conditioning

Type of existing heating systems in site buildings baseboard electric heat

Type of previous heating systems in site buildings n/a

Ventilation system in site buildings? n/a

Air conditioning system in site buildings? n/a

Any leakage of refrigerants from A/C system? n/a

4 Solid Waste Disposal

Current disposal method for solid non-hazardous waste garbage collection (1 per week)

Current disposal method for lead-acid batteries stored + traded for new

Current disposal method for tires n/a

Current disposal method for oil filters and oily rags plastic bin

Any recycle programs on site? n/a

Any hazardous or special solid wastes stored or generated on site? n/a

Any historic storage/disposal of solid wastes on site? n/a

5 Liquid Waste Disposal

Current disposal method for waste oil AST - not connected to building

Historic disposal method for waste oil n/a

Current disposal method for antifreeze/coolant n/a

Historic waste disposal method for antifreeze/coolant

Current disposal method for solvents/paints/thinners

Historic disposal method for solvents/paints/thinners

Any other existing liquid wastes?

Any other historic liquid wastes?

6 Site Services

Source of potable water municipal

Any existing on-site drinking water wells? no

Any historic on-site drinking water wells? no

Locations of any on-site drinking water wells n/a

Sanitary sewer to municipal sewer system? septic

Any active on-site septic systems? yes

Any historic on-site septic systems? unknown

Locations of any on-site septic systems down gradient - drains to Harbour (no disposal field)

Storm sewer to municipal sewer system? n/a

On-site catch basins? n/a

On-site catch basins discharge to n/a

Floor drains in site buildings? yes - garage area

Floor drains discharge to Harbour

Aboveground electrical on site? hydro pole on northwest side of wharf Access rd.

Underground electrical on site? yes

Aboveground telephone on site? no

Underground telephone on site? yes

Underground fibre optic cable on site? n/a

7 Present Wastewater Systems on Site

Location of floor drain systems on site garage - one drain

Floor drains discharge to harbour

Age of floor drains unknown

Frequency of inspection/cleaning of floor drains n/a

Are records available? n/a

Locations of oil/water separators on site n/a

Oil/water separators discharge to n/a

Age of oil/water separators n/a

Frequency of inspection/cleaning of separator n/a

Are records available? n/a

Locations of sumps on site n/a - SAR pumps on site

Sumps discharge to n/a

Age of sumps n/a

Frequency of inspection/cleaning of sumps n/a

Are records available? n/a

Locations of any other wastewater systems on site n/a

Other wastewater systems discharge to n/a

Age of other waste water systems n/a

Frequency of inspection/cleaning of other wastewater systems n/a

Are records available? n/a

Are permits in place for any wastewater systems? n/a

Is any monitoring of site wastewater chemistry carried out? n/a

8 Historic Wastewater Systems on Site

Location of historic floor drain systems on site n/a

Floor drains discharged to

Date floor drains installed

Date floor drains removed or abandoned

Are records available?

Locations of historic oil/water separators on site

Oil/water separators discharged to

Date oil/water separators installed

Date oil/water separators removed or abandoned

Are records available?

Locations of historic sumps on site

Sumps discharged to

Date sumps installed

Date sumps removed or abandoned

Are records available?

Locations of any other historic wastewater systems on site

Other wastewater systems discharged to

Date other waste water systems installed ---------- n/a ----------

Date other wastewater systems removed or abandoned ----------

Are records available? ----------

Were permits in place for any historic wastewater systems? ----------

Was any historic monitoring of site wastewater chemistry carried out? ----------

9 Existing Hydraulic Lifts and Hoists

No. of hydraulic lifts/hoists on site ---------- 1 x 3 tonne portable electric hydraulic lift (12 V battery) ----------

No. of hydraulic lifts/hoists with underground components ---------- n/a ----------

Locations of hydraulic lifts/hoists ----------

Age of hydraulic lifts/hoists ----------

Frequency of inspection/maintenance on lifts/hoists ----------

Are records available? ----------

Any other hydraulic systems on site? ----------

Locations of any other hydraulic systems ----------

10 Historic Hydraulic Lifts and Hoists

No. of previous hydraulic lifts/hoists on site ---------- n/a ----------

No. of previous hydraulic lifts/hoists with underground components ----------

Locations of previous hydraulic lifts/hoists ----------

Date previous hydraulic lifts/hoists installed ----------

Date previous hydraulic lifts/hoists removed or abandoned ----------

Were previous lifts/hoists drained and decommissioned? ----------

Was soil tested in vicinity of previous lifts/hoists? ----------

Are records available? ----------

Any other previous hydraulic systems on site? ----------n/a----------

Locations of any previous other hydraulic systems ----------n/a----------

11 Asbestos Containing Materials

Has an asbestos survey been carried out for site? --current investigation--

Is report available? --n/a--

Are any known or suspected asbestos containing materials on site? --suspected - no known--

Does site have an asbestos management plan? --no--

Has any remediation of asbestos containing materials been completed on site? no

Details --n/a--

Have asbestos containing materials been stored on site? --no--

Location --n/a--

12 PCBs

Has a PCB surveyor PCB testing been carried out for the site? --current investigation--

Is report or test results available? n/a

Number of oil-filled transformers on site n/a

Location of oil-filled transformers n/a

Were transformers ever tested for PCBs? n/a

Any fluorescent light ballasts on site? yes

Any high pressure light ballasts on site? n/a

Is there a PCB storage area on site? n/a

Was there ever a PCB storage area on site n/a

Was there ever a PCB spill or leak on site? n/a

13 UFFI

Was Urea formaldehyde foam insulation ever used on site? unknown

Location? n/a

Was any other spray foam insulation used on site? unknown

Location? n/a

14 Lead

Was lead-based paint used on site? suspected

Locations? wall/ceiling paints

Were lead-based plumbing materials used on site? unknown

Locations? n/a

Are lead-acid batteries stored on site? stored for proper disposal

Locations? contained inside site building

Are any other lead products used or stored on site? n/a

15 Mold

Has a mold assessment ever been carried out on site? previous Phase I ESA

Is report available? yes

Is there any apparent mold on site building materials? no

Locations? n/a

Are there any water damaged building materials on site? no

Locations? n/a

Have there been any historic roof leaks or other water leaks on site? ~~yes~~ no

Locations? n/a

16 Pesticides and Herbicides

Have pesticides ever been used on site? n/a

Locations? n/a

Type of pesticide? n/a

Have herbicides ever been used on site? n/a

Locations? n/a

Type of herbicide? n/a

17 Radon

Has testing for radon ever been carried out on site? no

Are results available ? n/a

18 Spills and Leaks

Have there been historic spill/leaks of fuel products on site? none reported

Locations and details n/a

Were spill/leak areas cleaned up and tested? n/a

Are records available? n/a

Have there been historic spills/leaks of chemical products on site? none reported

Locations and details n/a

Were spill/leak areas cleaned up and tested? n/a

Are records available? n/a

Were spills/leaks reported to regulators? n/a

Are you aware of any fuel product or chemical spills on adjacent sites? none reported

Date and details n/a

19 Air Emissions

Are site air emissions subject to air pollution control regulations? n/a

Are air emissions monitored? n/a

Are results available? n/a

20 Past Environmental Investigations

Have previous environmental investigations or surveys been carried out on site? Yes

Details Phase I ESA + Phase II ESA

Are reports available? yes

Have any environmental remediations been carried out on site? no

Details n/a

Are reports available? n/a

Are there any existing monitor wells on site? no

Number and locations n/a

Are there any recovery wells on site? no

Number and locations n/a

Are there any active or historic environmental remediation systems on site? no

Details and locations n/a

21 Permits and Other Site Information

Are copies of any environmental permits available for site? no

Are copies of any certificates of approval available for site? no

Has site received any citations or stop work orders from environmental regulators? none reported

Details n/a

Is there any regulatory correspondence available for the site? yes - see reg. letters in App E

Are any historic site plans available? yes - aerial photos

Are any historic site photographs available? yes - previous reports

22 Respondent

Name and telephone number of person(s) who completed the questionnaire

Erin Cullen 576-1458

23 Knowledgeable Interviewees

Name and telephone number of person(s) who could provide additional environmental and historical information about the site

Karl Adams 891-1610 / Albert Cavanaugh 891-1610

24 Comments:

APPENDIX E

Government Regulatory Search Letters

Fax

Stantec Consulting Ltd.
607 Torbay Road
St. John's, NL A1A 4Y6
Tel: (709) 576-1458
Fax: (709) 576-2126

Stantec

To:	Joan Hann - NLDEC	Fax No.:	(709) 729-6969
From:	Erin Cullen		
Date:	March 1, 2010	File:	121410853

3 page(s) total includes cover sheet. Original will follow by mail ☐ Yes X No.

REFERENCE: REGULATORY INFORMATION – PHASE I ESA

We are conducting a Phase I Environmental Site Assessment for the following property:

- **Canadian Coast Guard Search and Rescue Station, Burin, NL**

Please review your records for the site and advise us in writing on:

i) permits (e.g., certificates of approval, storage tank registrations, and/or operating permits) that pertain to activities that may impact the condition of the property (e.g., hazardous waste storage, treatment, and disposal or potential sources of information);
ii) past, pending, outstanding or continuing prosecutions, work orders, or control orders, or complaints related to environmental compliance that may impact the condition of the property; and,
iii) violations of environmental statutes, regulations, by-laws, approvals and permits that may impact the condition of the property.

Attached is an authorization from the owner (Public Works and Government Services Canada) for Stantec Consulting Ltd. to proceed with the Phase I ESA and a site location plan. Thank you in advance for your assistance. Please call if you have any questions.

Yours truly,

Stantec Consulting Ltd.

Erin Cullen, M.E.Sc., EIT

Attachments: Authorization Letter
Site Location Plan

Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Environment & Conservation

Pollution Prevention Division
(Waste Management Section)

Date: March 8, 2010

Fax: 1-709-576-2126

Stantec

Attention: Mr. Cullen

Re: Property Location – Canadian Coast Guard Search & Rescue Station, Burin, NL

WE DO NOT GUARANTEE THE ACCURACY, COMPLETENESS, CURRENCY OR RELIABILITY OF THE INFORMATION PROVIDED BELOW. Any reliance on the information is at the user's own risk.

Further to your request in relation to the referenced property, a file review at the Department of Environment and Conservation office in St. John's has been carried out. The following information is provided as it relates to the Provincial Jurisdiction, subject to the above limitations.

To the best of our knowledge, there are no past, pending, outstanding or ongoing orders or complaints related to compliance nor any matter of environmental significance on file for this property.

This information has been provided in consideration of your request and in view of available records.

Your request should also be sent to our agents at the Government Services Centre for a review of their files. They can be contacted at the Department of Government Services – Tele 709-466-4064.

If you have any further inquiries concerning this property, please contact me at Tel: 709-729-2612 or by fax: 709-729-6969; or e-mail: jeffnewhook@gov.nl.ca.

Jeff Newhook
Department Coordinator
Waste Management

Fax

Stantec Consulting Ltd.
607 Torbay Road
St. John's, NL A1A 4Y6
Tel: (709) 576-1458
Fax: (709) 576-2126

Stantec

To: GSC, Marystown Fax No.: (709) 279-8031

From: Erin Cullen

Date: March 1, 2010 File: 121410853

3 page(s) total includes cover sheet. Original will follow by mail ☐ Yes X No.

REFERENCE: REGULATORY INFORMATION – PHASE I ESA

We are conducting a Phase I Environmental Site Assessment for the following property:

- **Canadian Coast Guard Search and Rescue Station, Burin, NL**

Please review your records for the site and advise us in writing on:

i) permits (e.g., certificates of approval, storage tank registrations, and/or operating permits) that pertain to activities that may impact the condition of the property (e.g., hazardous waste storage, treatment, and disposal or potential sources of information);
ii) past, pending, outstanding or continuing prosecutions, work orders, or control orders, or complaints related to environmental compliance that may impact the condition of the property; and,
iii) violations of environmental statutes, regulations, by-laws, approvals and permits that may impact the condition of the property.

Attached is an authorization from the owner (Public Works and Government Services Canada) for Stantec Consulting Ltd. to proceed with the Phase I ESA and a site location plan. Thank you in advance for your assistance. Please call if you have any questions.

Yours truly,

Stantec Consulting Ltd.

Erin Cullen, M.E.Sc., EIT.

Attachments: Authorization Letter
Site Location Plan

Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Government Services

March 5, 2010

File No: 814.080.14

Ms. Erin Cullen
Stantec Consulting Ltd.
607 Torbay Road
St. John's, NL
A1A 4Y6

Dear Ms. Cullen:

Re: Phase I Environmental Assessment Records Search for Canadian Coast Guard Search and Rescue Station, Burin, NL

This refers to your request of March 1, 2010, for a Phase I Environmental Assessment for the above-noted property with regard to:

- Permits (e.g., certificates of approval, storage tank registrations, and/or operating permits) that pertain to activities that may impact the condition of the property (e.g., hazardous waste storage, treatment, and disposal or potential sources of information);
- Past, pending, outstanding or continuing prosecutions, work orders, or control orders, or complaints related to environmental compliance that may impact the condition of the property; and
- Violations of environmental statues, regulations, by-laws, approvals and permits that may impact the condition of the property.

As we do not possess a departmental central registry of activities affecting the environment on properties in the Province, we state that to the best of our knowledge and on a search of the files in the possession of the Government Service Centre, the Department of Government Services is not aware of any outstanding environmental concerns at the property in question. However we can note the following:

- October 23, 1995 – Certificate of Approval issued for the installation of two interconnected 2312 litre capacity aboveground self-dyked fuel storage tanks to be located at Canadian Coast Guard Lifeboat Station at Burin.

The Department of Government Services makes no representations or warranties on the accuracy or completeness of the information provided. This letter does not constitute a guarantee that this property is contamination free.

If you have any further questions please do not hesitate to call me at (709) 466-4063.

Sincerely,

Inga Smith-Bailey, BSc.
Environmental Protection Officer

Fax

Stantec Consulting Ltd.
607 Torbay Road
St. John's, NL A1A 4Y6
Tel: (709) 576-1458
Fax: (709) 576-2126

Stantec

To:	Charles MacLean (Environment Canada)	Fax No.:	772-5097
From:	Erin Cullen		
Date:	March 1, 2010	File:	121410853

3 page(s) total includes cover sheet. Original will follow by mail ☐ Yes X No.

REFERENCE: REGULATORY INFORMATION – PHASE I ENVIRONMENTAL SITE ASSESSMENTS

We are conducting a Phase I Environmental Site Assessment for the following property:

- **Canadian Coast Guard Search and Rescue Station, Burin, NL**

Please review your records for the sites and advise us in writing on:

i) permits (e.g., certificates of approval, storage tank registrations, and/or operating permits) that pertain to activities that may impact the condition of the property (e.g., hazardous waste storage, treatment, and disposal or potential sources of information);
ii) past, pending, outstanding or continuing prosecutions, work orders, or control orders, or complaints related to environmental compliance that may impact the condition of the property; and,
iii) violations of environmental statutes, regulations, by-laws, approvals and permits that may impact the condition of the property.

If you have any further questions, please contact the undersigned at your convenience.

Thank you in advance for your assistance.

Yours truly,

Stantec Consulting Ltd.

Erin Cullen, M.E.Sc., EIT

Attachments: Authorization letter
Site Location Plan

Environment Canada | Environnement Canada

MAR - 8 2010

Canada

www.ec.gc.ca

Environment Canada Centre
6 Bruce Street
Mount Pearl, NF
A1N 4T3
(709) 772-4005

March 4, 2010

Our File # 4170-1

Ms. Erin Cullen, M.E.Sc., EIT
Stantec Consulting Ltd.
607 Torbay Road
St. John's, NL A1A 4Y6

Dear Ms. Cullen

Re: Phase 1 Environmental Site Assessment
Canadian Coast Guard Search and Rescue Station, Burin, NL

We have reviewed your request regarding the environmental status of the above noted property. Upon the review of our files for the property name and location you have specified, we have found no issues or information pertaining to our legislated mandate under the Fisheries Act or the Canadian Environmental Protection Act. Our review included consideration of any past, current or pending approvals, reportable incidents and any past current or pending enforcement actions related to compliance issues under these Acts.

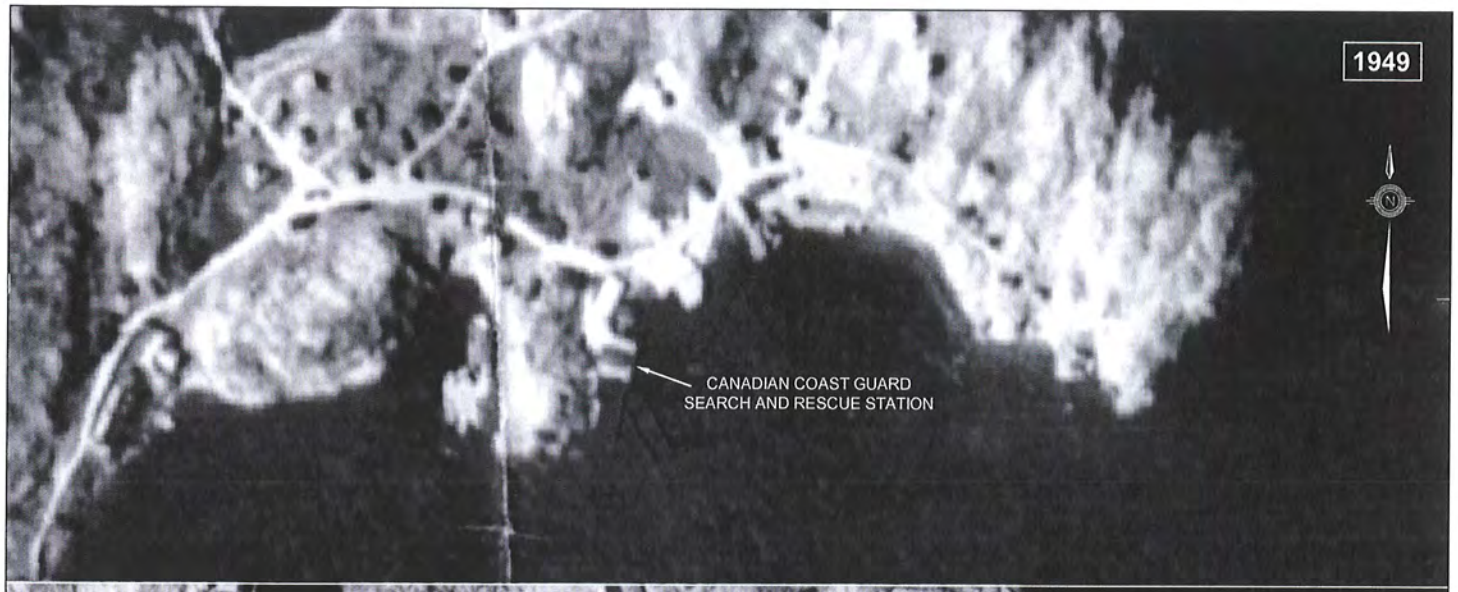
Should you have any questions on the above, please feel free to call me.

Yours sincerely,

Kevin C. Power, P.Eng.
Head, Pollution Prevention and Reduction Section
Environmental Protection Branch
Newfoundland Office

APPENDIX F

Aerial Photographs



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada		SCALE: 1:5000 (approx.)	DATE: MAR. 19, 2010
		DRAWN BY: N.M.	CHECKED BY: PB
PROJECT TITLE: PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZMAT, CCG SAR STATION, BURIN, NL (DFRP#80023)		EDITED BY: -	REV. No. 0
		DRAWING No: 121410853-EE-06	
DRAWING TITLE: AIR PHOTOS 1949, 1966 AND 1982		CAD FILE: 121410853-EE-06.DWG	

Stantec

19MAR10 9:00AM

APPENDIX G

SARA Search Results

Environment Canada

NOTE: Before beginning a search and using the results of your search, you must read and understand the Data Description and Limitations and Disclaimer. This web mapping application is limited to species belonging to Schedule 1 of the Species at Risk Act, as of September 2006, and some species do not have a distribution map [see the species list below].

All Endangered, Threatened, and Special Concern Species with a Map

Number of Species
- 1
- 2 - 3
- 4 - 6
- 7 - 10
- 11 - 15
- > 15

Map Layers
- Cities & Towns
- Roads
- Railways
- Rivers
- Water
- Forest
- Wetland
- Urban Areas

Redraw Map

0 5 10 15 km

Notes:
- Click a taxonomic group to view the list of species at risk for that group.
- Click a numeric value to display only the distribution maps for the species that belong to the selected taxonomic group and risk category.
- Click for more information about a species.
- Click to view the species distribution map

Pale highlighting

Species that belong to the selected taxonomic group and risk category (by default, all taxonomic groups and risk

Mammals Birds Reptiles... Fishes Lepidopterans Molluscs Plants... All

All Taxa

All 363 Endangered 169 Threatened 110 Special Concern 84

Mammals

All 40 Endangered 16 Threatened 12 Special Concern 12

- American Badger jacksoni subspecies
- American Badger jeffersonii subspecies
- Beluga Whale (St. Lawrence Estuary population)
- Black-tailed Prairie Dog
- **Blue Whale (Atlantic population)**
- Blue Whale (Pacific population)

categories have been selected)
Bright highlighting
Species that were found in the query area

- Eastern Mole
- Eastern Wolf
- Ermine haidarum subspecies
- Fin Whale (Atlantic population)
- Fin Whale (Pacific population)
- Grey Fox
- Grey Whale (Eastern North Pacific population)
- Harbour Porpoise (Pacific Ocean population)
- Humpback Whale (North Pacific population)
- Killer Whale (Northeast Pacific northern resident population)
- Killer Whale (Northeast Pacific offshore population)
- Killer Whale (Northeast Pacific southern resident population)
- Killer Whale (Northeast Pacific transient population)
- Mountain Beaver
- Newfoundland Marten
- **North Atlantic Right Whale**
- North Pacific Right Whale
- Northern Bottlenose Whale (Scotian Shelf population)
- Pacific Water Shrew
- Pallid Bat
- Sea Otter
- Sei Whale (Pacific population)
- Spotted Bat
- Steller Sea Lion
- Swift Fox
- Townsend's Mole
- Vancouver Island Marmot
- Wolverine (Eastern population)
- Wood Bison
- Woodland Caribou (Atlantic–Gaspésie population)
- Woodland Caribou (Boreal population)
- Woodland Caribou (Northern Mountain population)
- Woodland Caribou (Southern Mountain population)
- Woodland Vole

Birds

All 48 Endangered 25 Threatened 10 Special Concern 13

- Acadian Flycatcher
- Ancient Murrelet
- Barn Owl (Eastern population)
- Barn Owl (Western population)
- Barrow's Goldeneye (Eastern population)
- Burrowing Owl
- Cerulean Warbler
- Eskimo Curlew
- Flammulated Owl
- Greater Sage-Grouse urophasianus subspecies
- Harlequin Duck (Eastern population)
- Henslow's Sparrow

- Hooded Warbler
- Horned Lark strigata subspecies
- Ivory Gull
- King Rail
- Kirtland's Warbler
- Least Bittern
- Lewis's Woodpecker
- Loggerhead Shrike excubitorides subspecies
- Loggerhead Shrike migrans subspecies
- Long–billed Curlew
- Marbled Murrelet
- Mountain Plover
- Northern Bobwhite
- Northern Goshawk laingi subspecies
- Peregrine Falcon anatum subspecies
- Peregrine Falcon pealei subspecies
- Pink–footed Shearwater
- Piping Plover circumcinctus subspecies
- Piping Plover melodus subspecies
- Prothonotary Warbler
- **Red Crossbill percna subspecies**
- Roseate Tern
- Ross's Gull
- Sage Thrasher
- Savannah Sparrow princeps subspecies
- Short–tailed Albatross
- Spotted Owl caurina subspecies
- Sprague's Pipit
- Western Screech-Owl kennicottii subspecies
- Western Screech-Owl macfarlanei subspecies
- White–headed Woodpecker
- Whooping Crane
- Williamson's Sapsucker
- Yellow Rail
- Yellow-breasted Chat auricollis subspecies (British Columbia population)
- Yellow-breasted Chat virens subspecies

Reptiles and Amphibians

All 44 Endangered 13 Threatened 18 Special Concern 13

- Allegheny Mountain Dusky Salamander
- Blanding's Turtle (Great Lakes / St. Lawrence population)
- Blanding's Turtle (Nova Scotia population)
- Blue Racer
- Butler's Gartersnake
- Coast Tailed Frog
- Coastal Giant Salamander
- Coeur d'Alene Salamander
- Eastern Foxsnake
- Eastern Hog-nosed Snake

- Eastern Hog-nosed Snake
- Eastern Ratsnake
- Eastern Ribbonsnake (Atlantic population)
- Eastern Ribbonsnake (Great Lakes population)
- Eastern Yellow-bellied Racer
- Fowler's Toad
- Great Basin Gophersnake
- Great Basin Spadefoot
- Great Plains Toad
- Jefferson Salamander
- Leatherback Seaturtle
- Massasauga
- Milksnake
- Nightsnake
- Northern Cricket Frog
- Northern Leopard Frog (Southern Mountain population)
- Northern Leopard Frog (Western Boreal/Prairie populations)
- Northern Map Turtle
- Oregon Spotted Frog
- Prairie Skink
- Queen Snake
- Red-legged Frog
- Rocky Mountain Tailed Frog
- Rubber Boa
- Sharp-tailed Snake
- Small-mouthed Salamander
- Spiny Softshell
- Spotted Turtle
- Spring Salamander
- Stinkpot
- Tiger Salamander (Southern Mountain population)
- Western Rattlesnake
- Western Skink
- Western Toad
- Western Yellow-bellied Racer

Fishes

All 39 Endangered 15 Threatened 13 Special Concern 11

- "Eastslope" Sculpin (St. Mary and Milk River populations)
- Atlantic Salmon (Inner Bay of Fundy populations)
- Atlantic Whitefish
- Atlantic Wolffish
- Aurora Trout
- Banded Killifish (Newfoundland population)
- Benthic Enos Lake Stickleback
- Benthic Paxton Lake Stickleback
- Benthic Vananda Creek Stickleback
- Blackstripe Topminnow
- Bridle Shiner

- Carmine Shiner
- Channel Darter
- Columbia Mottled Sculpin
- Cultus Pygmy Sculpin
- Eastern Sand Darter
- Grass Pickerel
- Green Sturgeon
- Lake Chubsucker
- Lake Utopia Dwarf Smelt
- Limnetic Enos Lake Stickleback
- Limnetic Paxton Lake Stickleback
- Limnetic Vananda Creek Stickleback
- Morrison Creek Lamprey
- Nooksack Dace
- Northern Madtom
- Northern Wolffish
- Pugnose Minnow
- Pugnose Shiner
- Salish Sucker
- Shorthead Sculpin
- Silver Chub
- Spotted Gar
- Spotted Sucker
- Spotted Wolffish
- Vancouver Lamprey
- Warmouth
- Western Silvery Minnow
- White Sturgeon

Molluscs

All 17 Endangered 11 Threatened 2 Special Concern 4

- Banff Springs Snail
- Dromedary Jumping–slug
- Hotwater Physa
- Kidneyshell
- Mudpuppy Mussel
- Northern Abalone
- Northern Riffleshell
- Olympia Oyster
- Oregon Forestsnail
- Rayed Bean
- Rocky Mountain Ridged Mussel
- Round Hickorynut
- Round Pigtoe
- Snuffbox
- Warty Jumping–slug
- Wavy–rayed Lampmussel
- Yellow Lampmussel

Lepidopterans

All 15 Endangered 8 Threatened 5 Special Concern 2

- Behr's (Columbia) Hairstreak
- Dakota Skipper
- Dun Skipper (Western population)
- Island Blue
- Maritime Ringlet
- **Monarch**
- Mormon Metalmark (Prairie population)
- Mormon Metalmark (Southern Mountain population)
- Ottoe Skipper
- Poweshiek Skipperling
- Sand–verbena Moth
- Taylor's Checkerspot
- Weidemeyer's Admiral
- White Flower Moth
- Yucca Moth

Plants, Lichens, and Mosses

All 160 Endangered 81 Threatened 50 Special Concern 29

- Alkaline Wing–nerved Moss
- American Chestnut
- American Ginseng
- American Hart's–tongue Fern
- American Water–willow
- Anticosti Aster
- Athabasca Thrift
- Baikal Sedge
- Banded Cord–moss
- Barrens Willow
- Bashful Bulrush
- Bearded Owl–clover
- Bear's–foot Sanicle
- Bird's–foot Violet
- Blue Ash
- Bluehearts
- Blunt–lobed Woodsia
- Bog Bird?s–foot Trefoil
- Boreal Felt Lichen (Atlantic population)
- Boreal Felt Lichen (Boreal population)
- Branched Bartonia
- Branched Phacelia
- Buffalograss
- Butternut
- Cliff Paintbrush
- Climbing Prairie Rose
- Coastal Scouler's Catchfly
- Coastal Wood Fern
- Colicroot
- Columbian Carpet Moss
- Common Hoptree

- Crooked–stem Aster
- Cucumber Tree
- Deerberry
- Deltoid Balsamroot
- Dense Blazing Star
- Dense Spike–primrose
- Dense–flowered Lupine
- Drooping Trillium
- Dwarf Hackberry
- Dwarf Lake Iris
- Dwarf Sandwort
- Eastern Lilaeopsis
- Eastern Mountain Avens
- Eastern Prairie Fringed–orchid
- Eastern Prickly Pear Cactus
- Engelmann's Quillwort
- False Hop Sedge
- False Rue–anemone
- Felt–leaf Willow
- Fernald's Braya
- Fernald's Milk–vetch
- Floccose Tansy
- Flooded Jellyskin
- Forked Three–awned Grass
- Frosted Glass–whiskers (Nova Scotia population)
- Furbish's Lousewort
- Gattinger's Agalinis
- Golden Crest
- Golden Paintbrush
- Goldenseal
- Grand Coulee Owl–clover
- Gulf of St. Lawrence Aster
- Hairy Prairie–clover
- Haller's Apple Moss
- Heart–leaved Plantain
- Hill's Pondweed
- Hill's Thistle
- Hoary Mountain–mint
- Horsetail Spike–rush
- Houghton's Goldenrod
- Howell's Triteleia
- Juniper Sedge
- Kellogg's Rush
- Kentucky Coffee–tree
- Lakeside Daisy
- Large Whorled Pogonia
- Large–headed Woolly Yarrow
- Lemmon's Holly Fern
- Long's Braya
- Lyall's Mariposa Lily
- Mackenzie Hairgrass
- Macoun's Meadowfoam

- Margined Streamside Moss
- Mexican Mosquito–fern
- Mountain Holly Fern
- New Jersey Rush
- Nodding Pogonia
- Phantom Orchid
- Pink Coreopsis
- Pink Milkwort
- Pink Sand–verbena
- Pitcher's Thistle
- Plymouth Gentian
- Poor Pocket Moss
- Prairie Lupine
- Prototype Quillwort
- Purple Sanicle
- Purple Twayblade
- Pygmy Pocket Moss
- Red Mulberry
- Redroot
- Riddell's Goldenrod
- Rigid Apple Moss
- Rosy Owl–clover
- Round–leaved Greenbrier (Great Lakes Plains population)
- Rusty Cord–moss
- Sand–dune Short–capsuled Willow
- Scarlet Ammannia
- Seaside Birds–foot Lotus
- Seaside Centipede Lichen
- Showy Goldenrod
- Showy Phlox
- Silver Hair Moss
- Skinner's Agalinis
- Slender Bush–clover
- Slender Collomia
- Slender Mouse–ear–cress
- Small White Lady's–slipper
- Small Whorled Pogonia
- Small–flowered Lipocarpha
- Small–flowered Sand–verbena
- Small–flowered Tonella
- Soapweed
- Southern Maidenhair Fern
- Spalding's Campion
- Spoon–leaved Moss
- Spotted Wintergreen
- Stoloniferous Pussytoes
- Streambank Lupine
- Swamp Rose–mallow
- Sweet Pepperbush
- Tall Bugbane
- Tall Woolly–heads
- Thread–leaved Sundew
- Tiny Cryptanthe

- Toothcup
- Tubercled Spike-rush
- Tuberous Indian-plantain
- Turnor's Willow
- Twisted Oak Moss
- Van Brunt's Jacob's-ladder
- Vancouver Island Beggarticks
- Victorin's Gentian
- Victorin's Water-hemlock
- Virginia Goat's-rue
- Water-pennywort
- Water-plantain Buttercup
- Western Blue Flag
- Western Prairie Fringed-orchid
- Western Silvery Aster
- Western Spiderwort
- White Meconella
- White Prairie Gentian
- White Wood Aster
- White-top Aster
- Wild Hyacinth
- Willowleaf Aster
- Wood-poppy
- Yellow Montane Violet

Top of Page

Important Notices

Canad Wildlife Service Websit

Last update: 2007-04-02

URL of this page:
http://www.sis.ec.gc.ca/ec_species/ec_species_e.phtml

APPENDIX H

Laboratory Reports

SOLUTIONS
FOR A WORKING WORLD

CERTIFICATE OF ANALYSIS

Company:	Stantec Consulting Limited (St. John's)	**Report Date:**	04-Mar-10
Contact:	Ms. Paula Brennan	**Analysis Date:**	03-Mar-10
Client Address:	607 Torbay Road, St. John's, NL	**Received Date:**	02-Mar-10
Client Reference:	CCG Phase 1 ESA	**LEX Project Number:**	08100318
Sampling Date:	25-Feb-10	**Number of Analyses:**	8

Analysis Requested **Bulk Asbestos by PLM**

Analysis was performed in accordance with the method EPA/600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials adopted in Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act Ontario Regulation 278/05. LEX Scientific Inc. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP 101949) by the National Institute of Standards and Technology for analysis of bulk materials for asbestos.

German Leal, B.Sc.
Laboratory Manager

			Fibrous Asbestos Content %		Other Materials Content %
Client Sample:	BM-B51	**Asbestos Detected?**	**No**		
LEX Sample:	01	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Grey	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Drywall joint compound - Service area	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			

Other Amphiboles: ac=actinolite, a=anthophyllite, t-tremolite, u=unidentified
MMVF: Man Made Vitreous Fibers: Fiberglass, Min. Wool, Rockwool, Glasswool
PLM - method detection limit is 0.1%

Analyst

2 Quebec Street, Suite 204 Guelph, Ontario N1H 2T3
Phone: 519.824.7082 Fax: 519.824.5784 Toll Free: 1.800.824.7082
e-mail: admin@lexscientific.com Website: www.lexscientific.com

		Fibrous Asbestos Content %		Other Materials Content %	
Client Sample:	BM-B52	**Asbestos Detected?**	**No**		
LEX Sample:	02	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Grey	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Drywall joint compound - Service area - ceiling	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			
Client Sample:	BM-B53	**Asbestos Detected?**	**No**		
LEX Sample:	03	**Chrysotile:**	None Deteeted	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Beige	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Vinyl floor tile - beige - storage area	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			
Client Sample:	BM-B54	**Asbestos Detected?**	**No**		
LEX Sample:	04	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Grey	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Storage sample I	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			
Client Sample:	BM-B55	**Asbestos Detected?**	**No**		
LEX Sample:	05	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Green/Black	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Vinyl floor tile - green - hallway	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			
Client Sample:	BM-B56	**Asbestos Detected?**	**No**		
LEX Sample:	06	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Grey/Green	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Drywall compound - Storage area	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			

Other Amphiboles: ac=actinolite, a=anthophyllite, t-tremolite, u=unidentified
MMVF: Man Made Vitreous Fibers: Fiberglass, Min. Wool, Rockwool, Glasswool
PLM - method detection limit is 0.1%

Analyst _____

			Fibrous Asbestos Content %		Other Materials Content %
Client Sample:	BM-B57	**Asbestos Detected?**	**No**		
LEX Sample:	07	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Grey	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Drywall compound - Storage room	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			
Client Sample:	BM-B58	**Asbestos Detected?**	**No**		
LEX Sample:	08	**Chrysotile:**	None Detected	**Cellulose:**	None Detected
Layers Analyzed:	Sample Homogenized	**Amosite:**	None Detected	**MMVF:**	None Detected
Colour:	Grey	**Crocidolite:**	None Detected	**Other Fibers:**	None Detected
Description:	Storage sample II	**Other Amphiboles:**	None Detected	**Non Fibers:**	100
		Comments:			

Other Amphiboles: ac=actinolite, a=anthophyllite, t-tremolite, u=unidentified
MMVF: Man Made Vitreous Fibers: Fiberglass, Min. Wool, Rockwool, Glasswool
PLM - method detection limit is 0.1%

Analyst _____

Your Project #: 121410853
Site: CG-BURIN, BUIRIN, NL.
Your C.O.C. #: 19811

Attention: Paula Brennan
Stantec Consulting Ltd
St. John's - Standing Offer
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2010/03/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B025136
Received: 2010/03/03, 8:54

Sample Matrix: Paint
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Metals Paint Avail. Unified MS - N-per	16	2010/03/04	2010/03/04	ATL SOP 00024 R5	Based on EPA6020A
PCBs in Paint by GC/ECD	4	2010/03/03	2010/03/10		in house
PCBs in Paint by GC/ECD	2	2010/03/05	2010/03/11		in house
PCBs in Paint by GC/ECD	9	2010/03/10	2010/03/15		in house

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key
Rob Griffith
15 Mar 2010 13:47:00 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MICHELLE HILL, Project Manager
Email: Michelle.Hill@maxxamanalytics.com
Phone# (902) 420-0203

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: B025136
Report Date: 2010/03/15

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN, BUIRIN, NL.

ELEMENTS BY ICP/MS (PAINT)

Maxxam ID		FF6171	FF6172		FF6173		FF6174	FF6175		
Sampling Date		2010/02/25	2010/02/25		2010/02/25		2010/02/25	2010/02/25		
COC Number		19811	19811		19811		19811	19811		
	Units	**PT-BS1**	**PT-BS2**	**RDL**	**PT-BS3**	**RDL**	**PT-BS4**	**PT-BS5**	**RDL**	**QC Batch**
Metals										
Available Lead (Pb)	mg/kg	2100	1100	5	15	6	8400	34	5	2092712
Available Mercury (Hg)	mg/kg	ND	ND	1	ND (1)	1	ND	9	1	2092712

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated reporting limit due to low sample weight used in digestion.

Maxxam ID		FF6176		FF6177		FF6178	FF6179	FF6180		
Sampling Date		2010/02/25		2010/02/25		2010/02/25	2010/02/25	2010/02/25		
COC Number		19811		19811		19811	19811	19811		
	Units	**PT-BS6**	**RDL**	**PT-BS7**	**RDL**	**PT-BS8**	**PT-BS9**	**PT-BS10**	**RDL**	**QC Batch**
Metals										
Available Lead (Pb)	mg/kg	ND (1)	6	200	7	5	ND	140	5	2092712
Available Mercury (Hg)	mg/kg	2	1	2	1	45	42	16	1	2092712

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated reporting limit due to low sample weight used in digestion.

Maxxam ID		FF6181	FF6182	FF6183	FF6184	FF6185		
Sampling Date		2010/02/25	2010/02/25	2010/02/25	2010/02/25	2010/02/25		
COC Number		19811	19811	19811	19811	19811		
	Units	**PT-BS11**	**PT-BS12**	**PT-BS13**	**PT-BS14**	**PT-BS15**	**RDL**	**QC Batch**
Metals								
Available Lead (Pb)	mg/kg	400	350	6	250	4800	5	2092712
Available Mercury (Hg)	mg/kg	7	83	11	9	2	1	2092712

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B025136
Report Date: 2010/03/15

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN, BUIRIN, NL.

ELEMENTS BY ICP/MS (PAINT)

Maxxam ID		FF6186		
Sampling Date		2010/02/25		
COC Number		19811		
	Units	**PT-BS16**	**RDL**	**QC Batch**
Metals				
Available Lead (Pb)	mg/kg	17	6	2092712
Available Mercury (Hg)	mg/kg	9	1	2092712

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B025136
Report Date: 2010/03/15

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN, BUIRIN, NL.

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		FF6171	FF6172		FF6173		FF6174		
Sampling Date		2010/02/25	2010/02/25		2010/02/25		2010/02/25		
COC Number		19811	19811		19811		19811		
	Units	**PT-BS1**	**PT-BS2**	**QC Batch**	**PT-BS3**	**QC Batch**	**PT-BS4**	**RDL**	**QC Batch**
PCBs									
Total PCB	mg/kg	ND	ND	2090545	ND	2093705	ND	5	2090545
Surrogate Recovery (%)									
Decachlorobiphenyl	%	5.0 (1)	7.0 (1)	2090545	28 (1)	2093705	23 (1)		2090545

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Insufficient sample to repeat.

Maxxam ID		FF6175			FF6176	FF6177	FF6178	FF6178		
Sampling Date		2010/02/25			2010/02/25	2010/02/25	2010/02/25	2010/02/25		
COC Number		19811			19811	19811	19811	19811		
	Units	**PT-BS5**	**RDL**	**QC Batch**	**PT-BS6**	**PT-BS7**	**PT-BS8**	**PT-BS8 Lab-Dup**	**RDL**	**QC Batch**
PCBs										
Total PCB	mg/kg	ND	5	2093705	ND	ND	ND	ND	10	2096635
Surrogate Recovery (%)										
Decachlorobiphenyl	%	19 (1)		2093705	40 (2)	38 (2)	17 (3)	9.7 (4)		2096635

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(2) Elevated PCB RDL due to insufficient sample.
(3) Elevated PCB RDL due to insufficient sample. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(4) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B025136
Report Date: 2010/03/15

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN, BUIRIN, NL.

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		FF6179	FF6180			FF6181		
Sampling Date		2010/02/25	2010/02/25			2010/02/25		
COC Number		19811	19811			19811		
	Units	**PT-BS9**	**PT-BS10**	**RDL**	**QC Batch**	**PT-BS11**	**RDL**	**QC Batch**
PCBs								
Total PCB	mg/kg	ND	ND	10	2096635	ND	5	2090545
Surrogate Recovery (%)								
Decachlorobiphenyl	%	41 (1)	27 (2)		2096635	23 (3)		2090545

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PCB RDL due to insufficient sample.
(2) Elevated PCB RDL due to insufficient sample. PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(3) PCB surrogate not within acceptance limits. Insufficient sample to repeat.

Maxxam ID		FF6182	FF6183	FF6184	FF6185		
Sampling Date		2010/02/25	2010/02/25	2010/02/25	2010/02/25		
COC Number		19811	19811	19811	19811		
	Units	**PT-BS12**	**PT-BS13**	**PT-BS14**	**PT-BS15**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	10	2096635
Surrogate Recovery (%)							
Decachlorobiphenyl	%	17 (1)	22 (1)	20 (1)	22 (1)		2096635

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PCB RDL due to insufficient sample. PCB surrogate not within acceptance limits. Insufficient sample to repeat.

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Maxxam Job #: B025136
Report Date: 2010/03/15

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN, BUiRIN, NL.

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

PCBs in Paint by GC/ECD: This data was generated using accepted laboratory practices and standard Quality Control procedures. However, due to the absence of a recognized reference method for the PCBs in Paint, an in-house method was used. Quality control samples were analyzed, however certain QC elements are unavailable, as noted:
Calculations of Method Detection Limit (MDL) as per CFR 40 (Part 136)
Accuracy and precision study
External performance evaluation study

PCBs in Paint by GC/ECD: This data was generated using accepted laboratory practices and standard Quality Control procedures. However, due to the absence of a recognized reference method for PCB in paint, an in-house method was used. Quality control samples were analyzed, however certain QC elements are unavailable, as noted:
Calculations of Method Detection Limit (MDL) as per CFR 40 (Part 136)
Accuracy and precision study
External performance evaluation study

PCBs in Paint by GC/ECD: This data was generated using accepted laboratory practices and standard Quality Control procedures. However, due to the absence of a recognized reference method for PCB in paint, an in-house method was used. Quality control (QC) samples were analyzed, however certain QA/QC elements may be unavailable, as noted:
1) Calculations of Method Detection Limit (MDL) as per CFR 40 (Part 136)
2) Accuracy and precision study
3) External performance evaluation study

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Paula Brennan
Client Project #: 121410853
P.O. #:
Project name: CG-BURIN, BUIRIN, NL.

Quality Assurance Report

Maxxam Job Number: DB025136

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2090545 RST	Matrix Spike	Decachlorobiphenyl	2010/03/10		19 (1)	%	30 - 130
		Total PCB	2010/03/10		56 (2)	%	60 - 130
	Spiked Blank	Decachlorobiphenyl	2010/03/10		62	%	30 - 130
		Total PCB	2010/03/10		101	%	60 - 130
	Method Blank	Decachlorobiphenyl	2010/03/10		91	%	30 - 130
		Total PCB	2010/03/10	ND, RDL=5		mg/kg	
	RPD	Total PCB	2010/03/10	NC		%	50
2092712 KGU	QC Standard	Available Lead (Pb)	2010/03/04		103	%	75 - 125
	Spiked Blank	Available Lead (Pb)	2010/03/04		101	%	75 - 125
		Available Mercury (Hg)	2010/03/04		105	%	75 - 125
	Method Blank	Available Lead (Pb)	2010/03/04	ND, RDL=5		mg/kg	
		Available Mercury (Hg)	2010/03/04	ND, RDL=1		mg/kg	
2093705 CMI	Matrix Spike	Decachlorobiphenyl	2010/03/12		44	%	30 - 130
		Total PCB	2010/03/12		63 (2)	%	60 - 130
	Spiked Blank	Decachlorobiphenyl	2010/03/11		74	%	30 - 130
		Total PCB	2010/03/11		102	%	60 - 130
	Method Blank	Decachlorobiphenyl	2010/03/11		86	%	30 - 130
		Total PCB	2010/03/11	ND, RDL=5		mg/kg	
	RPD	Total PCB	2010/03/12	NC		%	50
2096635 CMI	Spiked Blank	Decachlorobiphenyl	2010/03/15		46	%	30 - 130
		Total PCB	2010/03/15		93	%	60 - 130
	Method Blank	Decachlorobiphenyl	2010/03/15		74	%	30 - 130
		Total PCB	2010/03/15	ND, RDL=5		mg/kg	
	RPD [FF6178-01]	Total PCB	2010/03/15	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(2) Matrix Spike: results are outside acceptance limit. Analysis was repeated with similar results.

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Your Project #: 121410853
Site:CG-BURIN
Your C.O.C. #: B 116434

Attention: Paula Brennan
Stantec Consulting Ltd
St. John's - Standing Offer
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2010/03/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B027546
Received: 2010/03/08, 15:00

Sample Matrix: Leachate
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Mercury - Total (CVAA,LL)	5	2010/03/11	2010/03/12	ATL SOP 00026 R6	Based on EPA245.1
Metals Water Total OES - Partial Scan	4	N/A	2010/03/11	ATL SOP 00025 R5	Based on EPA200.7

Sample Matrix: Paint
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
TCLP Inorganic extraction - pH	9	N/A	2010/03/11	ATL SOP-00035 R4	Based on EPA1311
TCLP Inorganic extraction - Weight	9	N/A	2010/03/11	ATL SOP-00035 R4	Based on EPA1311

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key
Rob Griffith
12 Mar 2010 15:35:13 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MICHELLE HILL, Project Manager
Email: Michelle.Hill@maxxamanalytics.com
Phone# (902) 420-0203

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

This document is in electronic format, hard copy is available on request.

Maxxam Job #: B027546
Report Date: 2010/03/12

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN

MERCURY BY COLD VAPOUR AA (LEACHATE)

Maxxam ID		FG8061		FG8062		FG8063	FG8064		
Sampling Date		2010/02/25		2010/02/25		2010/02/25	2010/02/25		
COC Number		B 116434		B 116434		B 116434	B 116434		
	Units	**PT-BS8 (P#FF6178)**	**RDL**	**PT-BS9 (P#FF6179)**	**RDL**	**PT-BS10 (P#FF6180)**	**PT-BS12 (P#FF6182)**	**RDL**	**QC Batch**
Metals									
Total Mercury (Hg)	ug/L	55	1.3	190	2.6	95	44	1.3	2098696

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FG8065		
Sampling Date		2010/02/25		
COC Number		B 116434		
	Units	**PT-BS13 (P#FF6183)**	**RDL**	**QC Batch**
Metals				
Total Mercury (Hg)	ug/L	0.46	0.013	2098696

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B027546
Report Date: 2010/03/12

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN

ELEMENTS BY ICP-AES (LEACHATE)

Maxxam ID		FG8066	FG8070	FG8071	FG8072		
Sampling Date		2010/02/25	2010/02/25	2010/02/25	2010/02/25		
COC Number		B 116434	B 116434	B 116434	B 116434		
	Units	**PT-BS1 (P#FF6171)**	**PT-BS2 (P#FF6172)**	**PT-BS4 (P#FF6174)**	**PT-BS15 (P#FF6185)**	**RDL**	**QC Batch**
Metals							
Total Lead (Pb)	mg/L	0.60	0.48	7.7	11	0.05	2098275

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B027546
Report Date: 2010/03/12

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN

RESULTS OF ANALYSES OF PAINT

Maxxam ID		FG8061	FG8062	FG8063	FG8064	FG8065	FG8066	FG8070	
Sampling Date		2010/02/25	2010/02/25	2010/02/25	2010/02/25	2010/02/25	2010/02/25	2010/02/25	
COC Number		B 116434	B 116434	B 116434	B 116434	B 116434	B 116434	B 116434	
	Units	**PT-BS8 (P#FF6178)**	**PT-BS9 (P#FF6179)**	**PT-BS10 (P#FF6180)**	**PT-BS12 (P#FF6182)**	**PT-BS13 (P#FF6183)**	**PT-BS1 (P#FF6171)**	**PT-BS2 (P#FF6172)**	**QC Batch**
Inorganics									
Sample Weight (as received)	g	2.5	2.5	2.5	2.5	2.5	1.6	2.4	2097729
Initial pH	N/A	NA	NA	NA	NA	NA	NA	NA	2097732
Final pH	N/A	6.1	5.7	5.7	6.1	5.1	5.1	5.4	2097732

QC Batch = Quality Control Batch

Maxxam ID		FG8071	FG8072	
Sampling Date		2010/02/25	2010/02/25	
COC Number		B 116434	B 116434	
	Units	**PT-BS4 (P#FF6174)**	**PT-BS15 (P#FF6185)**	**QC Batch**
Inorganics				
Sample Weight (as received)	g	2.5	2.5	2097729
Initial pH	N/A	NA	NA	2097732
Final pH	N/A	5.2	4.7	2097732

QC Batch = Quality Control Batch

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Maxxam Job #: B027546
Report Date: 2010/03/12

Stantec Consulting Ltd
Client Project #: 121410853
Project name: CG-BURIN

GENERAL COMMENTS

Sample FG8061-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8062-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8063-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8064-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8065-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8066-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8070-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8071-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FG8072-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Paula Brennan
Client Project #: 121410853
P.O. #:
Project name: CG-BURIN

Quality Assurance Report

Maxxam Job Number: DB027546

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2097729 JWH	Method Blank	Sample Weight (as received)	2010/03/11	50		g	
2098275 SSI	Matrix Spike	Total Lead (Pb)	2010/03/11		92	%	80 - 120
	QC Standard	Total Lead (Pb)	2010/03/11		64 (1)	%	80 - 120
	Spiked Blank	Total Lead (Pb)	2010/03/11		84	%	80 - 120
	Method Blank	Total Lead (Pb)	2010/03/11	ND, RDL=0.05		mg/L	
2098696 JRC	Matrix Spike	Total Mercury (Hg)	2010/03/12		109	%	80 - 120
	QC Standard	Total Mercury (Hg)	2010/03/12		99	%	N/A
	Spiked Blank	Total Mercury (Hg)	2010/03/12		96	%	80 - 120
	Method Blank	Total Mercury (Hg)	2010/03/12	ND, RDL=0.013		ug/L	
	RPD	Total Mercury (Hg)	2010/03/12	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Characteristic recovery, alternate reference material had a 85% recovery.

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APPENDIX I

NCSCS Pre-Screening Checklist

CCME National Classification System for Contaminated Sites (2008)
Pre-Screening Checklist

Question	Response (yes / no)	Comment
1. Are **Radioactive material, Bacterial contamination** or **Biological hazards** likely to be present at the site?	No	If yes, do not proceed through the NCSCS. Contact applicable regulatory agency immediately.
2. Are there **no contamination exceedances** (known or suspected)? Determination of exceedances may be based on: 1) CCME environmental quality guidelines; 2) equivalent provincial guidelines/standards if no CCME guideline exists for a specific chemical in a relevant medium; or 3) toxicity benchmarks derived from the literature for chemicals not covered by CCME or provincial guidelines/standards.	Yes	If yes (i.e., there are no exceedances), do not proceed through the NCSCS.
3. Have **partial/incompleted or no environmental site investigations** been conducted for the Site?	No	If yes, do not proceed through the NCSCS.
4. Is there direct and signficant evidence of **impacts to humans** at the site, or off-site due to migration of contaminants from the site?	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated (e.g., for comparison with other Class 1 sites).
5. Is there direct and significant evidence of **impacts to ecological receptors** at the site, or off-site due to migration of contaminants from the site?	No	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are considered to be severe, the site may be categorized as Class 1, regardless of the numerical total NCSCS score. For the purpose of application of the NCSCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction.
6. Are there indicators of significant **adverse effects in the exposure zone** (i.e., the zone in which receptors may come into contact with contaminants)? Some examples are as follows: -Hydrocarbon sheen or NAPL in the exposure zone -Severely stressed biota or devoid of biota; -Presence of material at ground surface or sediment with suspected high concentration of contaminants such as ore tailings, sandblasting grit, slag, and coal tar.	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated (e.g., for comparison with other Class 1 sites).
7. Do measured concentrations of volatiles or unexploded ordnances represent an **explosion hazard**?	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, and do not continue until the safety risks have been addressed. Consult your jurisdiction's occupational health and safety guidance or legislation on exposive hazards and measurement of lower explosive limits.

If none of the above applies, proceed with the NCSCS scoring.