REPORT

Phase III ESA & Hazardous Materials Assessment Former Baie Verte Asbestos Mine, Baie Verte, NL

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL
RESOURCES - MINERAL
DEVELOPMENT DIVISION

REPORT NO. 1028976

Jacques
Whitford

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REPORT TO

Alex Smith
Newfoundland & Labrador Department of Natural Resources –
Mineral Development Division,
P.O. Box 8700, St. John's, NL A1B 4J6

ON

Phase III ESA & Hazardous Materials Assessment, Former Baie Verte Asbestos Mine, Baie Verte, NL

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EXECUTIVE SUMMARY

At the request of the Newfoundland and Labrador Department of Natural Resources - Mineral Development Division (DNR-MDD), Jacques Whitford Limited (Jacques Whitford) has carried out a Phase III Environmental Site Assessment (ESA) at the Former Baie Verte Asbestos Mine Property located off Highway 410, Baie Verte, Newfoundland and Labrador (NL), (see Drawing No. 1028976-EE-01 in Appendix 1a). This work was carried out as a follow up to a Phase II ESA previously conducted on the property by AMEC Earth & Environmental (AMEC) in June 2006, and its purpose was to further delineate the noted environmental site impacts identified in the Phase II ESA (as reported in AMEC Report No. TF6126509 "*Phase II Environmental Site Assessment, Former Baie Verte Asbestos Mine, Baie Verte, Newfoundland and Labrador*", dated January 2007).

Based on a previous Phase I ESA conducted on the property in 2005 by AMEC (AMEC Report No. TF6126504 *"Phase I Environmental Site Assessment, Former Baie Verte Asbestos Mine, Baie Verte, NL"*, dated March 2005), the following six (6) smaller study areas were identified on the property for the purposes of subsequent environmental site investigations:

- Area A: Northco Area;
- Area B: Mill Area;
- Area C: Dock & Warehouse Area;
- Area D: Tailings Pile;
- Area E: Waste Rock and Pit Area; and,
- Area F: Marine and Freshwater Resources.

Northco Area – Phase III ESA

Fieldwork carried out in the Northco Area during the current investigation comprised excavation of eleven (11) test pits and completion of three (3) monitor wells.

The conclusions of this assessment are summarised below.

1. The stratigraphy observed on the site was generally similar at all test pit and monitor well locations and comprised loose to compact greyish green to brown gravel (GP) and sand and gravel (SM) with varying percentages of silt, cobbles and boulders overlying bedrock. Depth to bedrock ranged from 0.7 mbgs in BVM-TP12 to greater than 3.7 m in BVM-TP10.
2. Groundwater was encountered at depths ranging from 1.2 m to 3.1 m below the ground surface in the test pits and monitor wells completed at this site. Based on local topography and site observations, the direction of groundwater flow at the site is inferred to be towards the southeast Upper Duck Island Cove Brook. However, groundwater elevation data indicates a local shallow groundwater flow direction towards the northwest in the vicinity of monitor wells BVM-MW2, BVM-MW3 and BVM-MW4 possibly due to a drainage ditch in this area that disrupts the natural groundwater flow pattern.
3. No free liquid phase petroleum hydrocarbons were observed on site during the current investigation. However, a slight oily sheen (too thin to measure) was observed on the surface of the groundwater in monitor well BVM-MW2, located immediately east of the former tank farm

during the current investigation, as well as on the surface of groundwater in test pit NC-TP23, excavated in approximately the same location during the previous Phase II ESA.

4. None of the detected concentrations of TPH in the soil samples analyzed during the current investigation exceeded the applicable Tier I RBSLs for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil. Further, no concentrations of BTEX were detected in any of the soil samples analyzed at the site. The detected concentrations of TPH in surface soil samples NC-TP15-SS1 and NC-TP16-SS1, collected at the former tank farm, during the previous Phase II ESA exceeded the applicable Tier I RBSLs for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil, returning values of <22,400 mg/kg) and <13,000 mg/kg, respectively.
5. The estimated extent of the former tank farm area with TPH in soil exceeding the Tier I RBSLs for a commercial site is 100 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock on the site, it is expected that approximately 100 m^3 of impacted soil from this area exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts on average are present in the upper 1 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal if required. Additional delineation would be necessary to better refine these estimates.
6. The detected concentration of TPH in groundwater from BVM-MW4, located along the gravel access road between the former tank farm and the E&R building, exceeded the applicable Tier I RBSL for fuel and lube oil on a commercial site with non-potable groundwater and coarse soil (i.e., 20 mg/L). None of the other concentrations of TPH detected in groundwater analyzed at the site exceeded the applicable Tier I RBSL guideline.
7. The estimated extent of the Northco area with TPH in groundwater exceeding the Tier I RBSLs for a commercial site is 100 m^2. Limited evaluation of petroleum hydrocarbon impacts in groundwater have been carried out in the vicinity of monitor well BVM-MW4, and additional delineation is required in this area to confirm the area of petroleum hydrocarbon impacted groundwater. The actual impacted area may be smaller or larger than the estimated area.
8. Based on NLDEC policy directive PPD05-01, petroleum hydrocarbon remediation of soil and groundwater at the site would be required in accordance with provincial regulations, unless a risk-based remedial approach is followed for the site. Adopting a risk-based remedial approach, petroleum hydrocarbon remediation of site soil and groundwater would be governed by site-specific threshold limit criteria determined for this contaminant.
9. Concentrations of ethylbenzene detected in former soil samples NC-TP7-SS3 (0.16 mg/kg) and NC-TP23-SS1 (0.51 mg/kg) were below the applicable Tier I RBSL for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil of 430 mg/kg, and are thus not considered an environmental concern. Soil sample NC-TP7-SS3 was collected adjacent to the waste oil AST located at the northwest corner of the former E&R building and soil sample NC-TP23-SS1 was collected downgradient (east) of the former tank farm during the previous Phase II ESA.

Mill Area – Phase III ESA

Fieldwork completed as part of the current investigation in the Mill Area comprised excavation of six (6) test pits and five (5) monitor wells.

The conclusions of this assessment are summarised below.

1. The stratigraphy observed on the site was generally similar at all test pit and monitor well locations and comprised loose to compact greyish brown sand and gravel (SP) with varying

percentages of silt, cobbles and boulders overlying ultramafic intrusive bedrock. Depth to bedrock ranged from 0.975 mbgs in monitor well BVM-MW5 to greater than 3.04 mbgs in monitor wells BVM-MW6, BVM-MW7 and BVM-MW9.

2. Groundwater was encountered at depths ranging from 0.8 m to 6.33 m below the ground surface in the test pits and monitor wells completed at this site. Based on local topography and site observations, the direction of groundwater flow at the site is inferred to be southeast towards Upper Duck Island Cove Brook. However, groundwater elevation data in the Power Center area indicates a local shallow groundwater flow direction towards the south-southwest in the vicinity of monitor wells BVM-MW5, BVM-MW8 and BVM-MW9 possibly due to local topographical features and site infrastructure (i.e., drainage ditch and culvert system) that disrupt the natural groundwater flow pattern in this area of the site.

3. No free liquid phase petroleum hydrocarbons were observed on site during the current investigation. During the previous Phase II ESA, approximately 2.0 cm of free phase petroleum hydrocarbon product was observed on the water table within test pit ML-TP3, excavated in the vicinity of a former UST located along the south side of the dry mill building. In addition, an oily sheen was observed on the water table within test pit ML-TP18, excavated in the vicinity of the former Bunker C AST located southwest corner of the Power Centre during the Phase II ESA.

4. The detected TPH concentration in soil at test pit BVM-TP6, located approximately 25 m south of the former Bunker C AST along the southwest corner of the Power Centre exceeded the applicable Tier I RBSL for fuel oil on a commercial site with non-potable groundwater and coarse soil (i.e., 7,400 mg/kg). None of the detected concentrations of TPH in the other soil samples analyzed at the site during the current investigation exceeded the applicable Tier I RBSLs. Further, concentrations of BTEX in all soil samples analyzed were either non-detect or detected at levels below the applicable Tier I RBSLs for these parameters. The detected concentration of TPH in soil samples ML-TP3-SS1, collected in the vicinity of the former UST located along the south side of the dry mill building exceeded the applicable Tier I RBSL for a commercial site, returning a value of <66,500 mg/kg. The detected concentration of TPH in soil sample ML-TP18-SS1, collected southwest of the power centre, in the vicinity of the Bunker C AST exceeded the applicable Tier I RBSL for a commercial site, returning a value of <18,800 mg/kg. There was field evidence of similar petroleum hydrocarbon impacts at test pit BVM-TP7, however the apparent impacted soil was not analysed at this location. Field evidence suggests that the TPH concentration at test pit BVM-TP7 may also exceed the referenced Tier I RBSLs for fuel oil and lube oil for a commercial site with non-potable groundwater and coarse soil.

5. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of former test pit ML-TP18 is approximately 300 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 450 m^3 of impacted soil in the vicinity of former test pit ML-TP18 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts on average are present in the upper 1.5 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Limited evaluation of petroleum hydrocarbon impacts in soil has been carried out east of former test pit ML-TP18 and the actual impacted area may be smaller or larger than the estimated area. Additional delineation would be required to refine the impacted soil estimates.

6. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of test pit BVM-TP6 is approximately 225 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 300 m^3 of impacted soil in the vicinity of test pit BVM-TP6 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts are present in the upper 1.2 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required.

Limited evaluation of petroleum hydrocarbon impacts in soil have been carried out in this area and the actual impacted area may be smaller or larger than the estimated area. Additional delineation would be required to refine the impacted soil estimates.

7. The estimated extent of TPH in soil exceeding the Tier I RBSLs for a commercial site in the vicinity of former test pit ML-TP3, located in the vicinity of the former UST along the south side of the dry mill building is approximately 120 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 120 m^3 of impacted soil in the vicinity of former test pit ML-TP3 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts are present in the upper 1.4 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Additional delineation would be necessary to better refine these estimates.
8. The detected concentration of TPH in groundwater from BVM-MW6, located in the vicinity of the former UST along the south side of the dry mill building, exceeded the applicable Tier I RBSL for fuel and lube oil on a commercial site with non-potable groundwater and coarse soil (i.e., 20 mg/L). None of the other concentrations of TPH detected in groundwater analyzed at the site exceeded the applicable Tier I RBSL guideline.
9. The estimated extent of TPH in groundwater exceeding the applicable Tier I RBSL for a commercial site in the vicinity of monitor well BVM-MW6, located in the vicinity of the former UST along the south side of the dry mill building, is 200 m^2. Limited evaluation of petroleum hydrocarbon impacts in groundwater have been carried out in the vicinity of monitor well BVM-MW6, and additional delineation is required in this area to confirm the area of petroleum hydrocarbon impacted groundwater. The actual impacted area may be smaller or larger than the estimated area.
10. Based on NLDEC policy directive PPD05-01, petroleum hydrocarbon remediation of soil and groundwater at the site would be required in accordance with provincial regulations, unless a risk-based remedial approach is followed for the site. Adopting a risk-based remedial approach, petroleum hydrocarbon remediation of site soil and groundwater would be governed by site-specific threshold limit criteria determined for this contaminant.
11. In accordance with NLDEC policy directive PPD05-01, remediation is required for the free petroleum hydrocarbon product identified in the vicinity of a former UST located along the south side of the dry mill building. Removal is required to an approved waste oil treatment facility.
12. Concentrations of ethylbenzene detected in previous soil samples ML-TP2-SS3 (0.1.10 mg/kg) and ML-TP3-SS1 (0.17 mg/kg) were below the applicable Tier I RBSL for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil of 430 mg/kg, and are thus not considered an environmental concern. Soil samples ML-TP2-SS3 and ML-TP3-SS1 were collected along the south side of the dry mill building during the previous Phase II ESA.

Warehouse & Dock Area – Phase III ESA

Based on testing completed as part of the Phase II ESA, no petroleum hydrocarbons, PAHs or PCBs impacts were identified in soil in the Dock & Warehouse Area, and no Phase III ESA activities were recommended for the Dock & Warehouse Area in the Phase II ESA report. However, review of the Phase I & II ESA reports, as well as observations during the site visit on August 14, 2007 indicates the presence of solidified Bunker C at or near ground surface at three (3) locations in the site area that require further assessment, including 1) in the vicinity of the former Bunker C AST, 2) at the reported location of a former Bunker C spill along the access road to the dock, and 3) in the former heavy equipment parking area.

Fieldwork completed in the Warehouse & Dock Area as part of the current investigation involved excavation of a total of sixteen (16) exploratory test pits to delineate the vertical and lateral extent of solidified accumulations of Bunker C in the three identified areas. Test pits were completed using an excavator and were excavated to depths ranging from 0.3 to 1 m below ground surface. Work in the exploratory test pits was limited to visual inspection, and did not include stratigraphic analysis or soil sample collection.

The conclusions of this assessment are summarised below.

1. Based on results of the current exploratory test pitting program, two areas of Bunker C were delineated in the Warehouse & Dock area. The estimated areas and volumes include approximately: 12 m^2 in the vicinity of the former Bunker C AST at an average thickness of 0.125 m = 1.5 m^3; and 80 m^2 in the former heavy equipment area at an average thickness of 0.3 m = 26.4 m^3.
2. In accordance with NLDEC policy directive PPD05-01, remediation is required for the two Bunker C plumes identified in the Warehouse & Dock area. Removal is required to an approved treatment facility. Generally treatment facilities in the province are only granted approval to treat Bunker C soil on a case by case basis.

Tailings Area – Phase III ESA

Based on testing completed as part of the Phase II ESA, no petroleum hydrocarbon or PCBs impacts were identified in the tailings present at the Tailings Area. Therefore, no Phase III ESA activities were recommended for the Tailings Area in the Phase II ESA report, and no additional environmental site assessment work was carried out in this area as part of the current investigation

Waste Rock & Pit Area – Phase III ESA

Fieldwork carried out in the Waste Rock & Pit area during the current investigation comprised excavation of four (4) test pits and completion of one (1) monitor well.

The conclusions of this assessment are summarised below.

1. The stratigraphy observed on the site was generally similar at all test pit and monitor well locations and comprised compact to dense grey brown silty gravel (GM) with varying percentages of cobbles and boulders, and appeared largely derived from waste rock material generated from mining operations. A 2 m thick wood chip and bark material was encountered at surface in test pit BVM-TP2 and a silty sand with gravel till layer was encountered beneath the fill in BVM-TP3. Depth to bedrock ranged from 2.7 mbgs in test pit BVM-TP2 to 5.18 mbgs in monitor well BVM-MW1.
2. Groundwater was not encountered in any of the test pits or the monitor well completed at the site.
3. Free liquid phase petroleum hydrocarbons were not observed at this site during the current investigation or the previous Phase II ESA.
4. Low levels of TPH were detected in all of the soil samples collected at the site, however none exceeded the applicable Tier I RBSL for fuel oil on a commercial site with non-potable groundwater and coarse soil (i.e., 7,400 mg/kg). Further no levels of BTEX were detected in any of the soil samples completed at the site during the current investigation. The detected concentration of TPH in soil sample WR-TP2-SS1 (<14,900 mg/kg) exceeded the Tier I RBSL

criterion of 7,400 mg/kg for diesel fuel in soil at a commercial site with coarse-grained soil and non-potable groundwater.

5. The estimated extent of TPH in soil exceeding the Tier I RBSLs for a commercial site in the vicinity of former test pit MR-TP2 is shown on Drawing No. 1028976-EE-013 in Appendix 6a. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of former test pit MR-TP2 is approximately 100 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 100 m^3 of impacted soil in the vicinity of former test pit MR-TP2 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts are present in the upper 1 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Additional delineation would be necessary to better refine these estimates.
6. Based on NLDEC policy directive PPD05-01, petroleum hydrocarbon remediation of soil at the site would be required in accordance with provincial regulations, unless a risk-based remedial approach is followed for the site. Adopting a risk-based remedial approach, petroleum hydrocarbon remediation of site soil would be governed by site-specific threshold limit criteria determined for this contaminant.

Recommendations – Phase III ESA

The Phase III ESA investigation completed by Jacques Whitford was carried out as a follow up to a the Phase II ESA previously conducted on the property by AMEC in 2006/2007, and its purpose was to further delineate the noted environmental site impacts identified during the Phase II ESA following the Phase III ESA sampling plan recommended in the Phase II ESA report. Jacques Whitford's Phase III ESA did not include further evaluation of various other contaminants identified on the property during the previous Phase II ESA, including metals and asbestos impacts in soil and freshwater and marine sediments, metals impacts in surface water, as well as PAHs impacts in marine sediments. Further, the former Baie Verte Asbestos Mine property is a large, complex site with a long history of industrial site usage, and it is possible that other environmental impacts are present on the site that have not been identified that may be discovered during decommissioning activities and may require future evaluation. Based on information provided by DNR-MDD, Jacques Whitford understands that a future limited industrial land use is intended for the Former Baie Verte Asbestos Mine Property.

Based on results of environmental site assessment work completed on the property to date, Jacques Whitford makes the following recommendations:

1. Decide whether to carry out conventional soil remediation (i.e., removal of impacted soil from the site for off-site disposal or treatment) or risk management (i.e., impacted soil is left in place and managed) or a combination of both approaches for petroleum hydrocarbon impacted soil identified in the Northco area, Mill area and Waster Rock & Pit area. Under a risk-management approach the site owner maintains the long-term liability for the impacts on the site.
2. If the usage of a risk-management approach is acceptable to the site owner, carry out a human health risk assessment and a screening level ecological risk assessment for petroleum hydrocarbons in the Northco area, Mill area and Waster Rock & Pit area. The human health risk assessment would include a RBCA Tier II risk assessment for petroleum hydrocarbon impacts. Dependent on the results of the screening level ecological risk assessment, additional ecological assessment could be required for portions of the property. Dependent on the results of the risk assessments, risk management or remedial action may be required for portions of the property.

3. Once the site owner makes a decision with respect to the future usage of the various portions of the property and whether to use a conventional remediation approach or a risk-management approach, develop a remedial action plan and/or a risk management plan for the study area. Submit the remedial action plan and/or risk management plan to the NLDEC for review and approval before implementing on the study area.

4. Free product and solidified Bunker C require remediation as per NLDEC PPD05-01 and the Environmental Protection Act. Risk assessment / risk management is not applicable until petroleum hydrocarbon products have been remediated on the property.

5. No additional work was carried out as part of the current investigation to further delineate the horizontal and vertical extent of metals impacts in soil identified in the Northco area, Mill area, Warehouse & Dock area, Tailings area and Waste Rock & Pit area during the Phase II ESA. The Phase II ESA indicates that metals impacts in soil are widespread throughout the site and likely reflect background geology conditions in the area. However, background soil sampling should be considered in order to provide soil metals chemistry results that are representative of natural conditions for comparison to evaluate the environmental significance of soil metals results from portions of property. In addition, background freshwater sediment sampling should be considered to evaluate the environmental significance of metals results for freshwater sediment samples collected from various sites on the property. Background metals sampling would also be required if a risk assessment/risk management approach is adopted for the property, as per Health Canada guidance.

6. In accordance with NLDEC policy directive PPD05-01, remediation of the metals impacted soil, freshwater sediment would be required unless a risk-based remedial approach is developed and approved for the property or the source of the metals impacts is shown to be natural in origin, demonstrated through background sampling.

7. No additional work was carried out as part of the current investigation to further evaluate levels of petroleum hydrocarbons, metals and PAHs identified in marine and freshwater resources in the site area during the Phase II ESA. However, based on regulatory requirements, future environmental sampling for these parameters may be required in marine and freshwater resources in the site area. If an ecological risk assessment is to be conducted, detailed sampling of sediment and surface water media would likely be required.

8. Further, environmental assessment of several areas of potential environmental concern in the Waste Rock & Pit Area identified in the Phase I ESA, including the former pit office area located on the Saddle; the location of a partially buried UST along the south wall of the West Pit; an area of debris (i.e., containing discarded tires, equipment and drums) along the toe of the waste rock pile, and the location of a potential discarded transformer within the waste rock pile were not included in the previous Phase II ESA or the current investigation due to safety concerns (i.e., rough, steep terrain, slope stability, etc.). It is recommended that geotechnical evaluation be carried out in these areas prior to carrying out intrusive investigation to assess slope stability and access conditions.

9. All ASTs and USTs and associated pipelines identified at the site should be decommissioned in accordance with the most recent Storage and Handling of Gasoline and Associated Products Regulations; and

10. In the event that the pad-mounted and pole-mounted transformers present at the Site are to be removed from the property, the dielectric fluids within the transformers must be tested for PCBs to assess transportation and disposal requirements.

Recommendations – Hazardous Materials Assessment

The Hazardous Materials Assessment completed by Jacques Whitford was carried out as a follow up to a Phase II ESA previously conducted on the property by AMEC Earth & Environmental (AMEC) in June 2006, and its purpose was to carrying out a detailed inspection of the buildings, facilities and equipment at the site and documenting the location of known or suspected hazardous building materials. The hazardous materials assessment included an inspection for asbestos-containing materials, lead/mercury/PCB-containing paints and materials, polychlorinated biphenyls (PCBs), mold and water-damaged building materials and any other hazardous materials observed in the subject buildings, facilities and equipment. The inspections and bulk sampling were carried out on a limited intrusive basis. Based on the results of the current investigation, Jacques Whitford makes the following recommendations:

1. Based on the results of the Phase II and III ESAs, friable asbestos building materials were confirmed to be present in areas of the former Baie Verte Asbestos Mine. Exposed friable asbestos product was also observed throughout many buildings and on the exterior surfaces of the site. Numerous pallets of finished asbestos product in poor condition were observed being stored inside the Warehouse Building. Non-friable asbestos was also confirmed to be present in the buildings on the site. Settled dust which may contain asbestos fibres was present throughout the site and within the buildings.
2. The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials from the buildings are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the former Baie Verte Asbestos Mine to include options for the removal, management, handling and/or disposal of asbestos containing building materials, asbestos product and settled dust.
3. Elevated lead concentrations (i.e., greater than 600 mg/kg) are present in paints throughout the former Baie Verte Asbestos Mine Site. Elevated mercury concentrations (i.e., greater than 10 mg/kg) are also present in paints throughout the Site.
4. Lead based paints and painted building materials that have a lead leachate concentration of less than the applicable assessment criterion of 5.0 mg/L may be disposed of at an approved landfill if removed from the Site. Mercury based paints and painted building materials that have a mercury leachate concentration of less than the applicable assessment criterion of 0.1 mg/L may also be disposed of at an approved landfill if removed from the Site. PCB based paints and painted building materials that have a PCB leachate concentration of less than the applicable assessment criterion of 0.3 mg/L may also be disposed of at an approved landfill if removed from the Site.
5. If the concentration of lead, mercury or PCB leachate in paints is at a level that is considered hazardous, the paint and painted building materials, if removed from the Site, must be disposed of as hazardous waste.
6. Lead, Mercury and PCB 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.
7. Lead, Mercury and PCB based paints that are in poor condition may pose health concerns for building occupants or on-site workers. Lead, Mercury and PCB based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.

8. A management action plan for lead, mercury and PCB containing paints should be developed for the site.
9. The results of a limited inspection of light ballasts can be used to evaluate the presence of PCB ballasts in a building. If the apparently oldest ballasts on a floor of a building do not contain PCBs, then it is likely that none of the ballasts on the floor contain PCBs. If any of the inspected ballasts on a floor of a building contain PCBs, then all ballasts on that floor of the building must either be inspected or be treated as though they contain PCBs. Based on the available information and the observations from the limited inspections, it is possible that PCB-containing fluorescent light ballasts are located within the site buildings. It is recommended that all ballasts within the buildings be inspected upon removal or be treated as though they contain PCBs. Electrical equipment was observed on site, but was not accessible or readily visible for assessment. A management action plan for PCB containing electrical equipment should be developed for the site.
10. Extensive water damage was observed within most of the site buildings except for the Northco Area. Extensive mold growth was not observed as the majority of the building materials on site were non-porous in nature.
11. Appropriate personnel protective equipment and decontamination procedures should be continued for all work carried out on the site.

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1.0 INTRODUCTION

At the request of the Newfoundland and Labrador Department of Natural Resources - Mineral Development Division (DNR-MDD), Jacques Whitford Limited (Jacques Whitford) has carried out a Phase III Environmental Site Assessment (ESA) at the Former Baie Verte Asbestos Mine Property located off Highway 410, Baie Verte, Newfoundland and Labrador (NL), (see Drawing No. 1028976-EE-01 in Appendix 1a). This work was carried out as a follow up to a Phase II ESA previously conducted on the property by AMEC Earth & Environmental (AMEC) in June 2006, and its purpose was to further delineate the noted environmental site impacts identified in the Phase II ESA (as reported in AMEC Report No. TF6126509 "*Phase II Environmental Site Assessment, Former Baie Verte Asbestos Mine, Baie Verte, Newfoundland and Labrador*", dated January 2007).

Based on a previous Phase I ESA conducted on the property in 2005 by AMEC (AMEC Report No. TF6126504 *"Phase I Environmental Site Assessment, Former Baie Verte Asbestos Mine, Baie Verte, NL"*, dated March 2005), the following six (6) smaller study areas were identified on the property for the purposes of subsequent environmental site investigations:

- Area A: Northco Area;
- Area B: Mill Area;
- Area C: Dock & Warehouse Area;
- Area D: Tailings Pile;
- Area E: Waste Rock and Pit Area; and,
- Area F: Marine and Freshwater Resources.

The locations of these sites are shown on Drawing No. 1028976-EE-02 in Appendix 1a.

This report is presented in five sections. Section 1 provides background information about the property and an overview of previous environmental investigations completed on the property, explains the regulatory guidelines and their applicability, and describes the scope of work. Section 2 summarizes the methodology used for the Phase III ESA field investigation, hazardous materials assessment and laboratory analyses. Results of the Phase III ESA and hazardous materials assessment are presented in Section 3 by site; and include the results of field investigations, hazardous materials assessment and laboratory analyses, as well as a discussion of results and conclusions. Section 4 provides recommendations for future work on the property. Section 5 discusses the limitations of the assessment and its findings. Supporting information is provided in appendices by site. A discussion of remedial and risk management options to address identified issues on the site are provided under separate over.

This report was prepared specifically and solely for the above project. The report presents all of the factual findings and laboratory results of the Phase III ESA investigations and hazardous materials assessment, and presents our comments on the environmental status of the property.

1.1 Property Description

1.1.1 Location and Access

The former Baie Verte Asbestos Mine is located on the Baie Verte Peninsula, approximately 8 km north of the Town of Baie Verte, NL (as shown on Drawing No. 1028976-EE-01 in Appendix 1a). The property is located along the Fleur de Lys Highway (Route 410), a paved secondary highway that connects to the Trans Canada Highway (TCH) approximately 70 km to the south of the property. The property is bordered to the east by the waters of Duck Island Cove, to the north and south by undeveloped land consisting primarily of wilderness and forested areas, and to the west by undeveloped land and the Fleur de Lys Highway (Route 410). A well-developed asphalt road provides easy access to the property from the Fleur de Lys Highway (Route 410), and access to various sites within the property is afforded via a network of gravel roads remaining from historical operations at the site; as shown on Drawing Nos. 1028976-EE-01 and 1028976-EE-02 in Appendix 1a, as well as the site plans provided in Appendices 2a to 6a.

1.1.2 Historical Development and Land Use

The Baie Verte Asbestos Mine and Mill was operated by Advocate Mines Limited from 1963 to 1981, Baie Verte Mines Inc. from 1982 to 1991, and Terranov Mining Corporation between 1991 and 1994. Over 49 million tonnes of ore were processed at the mine site between 1963 and 1991 using a dry-milling process to produce approximately 1.6 millon tonnes of asbestos. In 1980, reprocessing of the tailings with a wet mill facility was implemented and operated until mine closure in 1994. Approximately 190 million tonnes of waste rock and 47 million tonnes of tailings remain on site. In November 1996, the site and infrastructure left in place became the property of the Crown, and the responsibility for the management of the site and assets were assigned to the DNR-MDD. In 1998, Northco Forest Products Limited (Northco) leased the Erection and Repair (E & R) building and Mine Dry Building from the Province of Newfoundland and Labrador for the establishment of a sawmill operation. As part of the lease agreement Northco also built an office building at the site. In 2006, the sawmill operation ceased and Northco's assests are currently being liquidated due to financial difficulties.

Currently the property is vacant, but contains various site buildings/foundations and infrastructure (i.e., equipment, roads, waste rock and tailings stockpiles, open mining pits, and a marine dock & warehouse facility) related to former mining operations at the site.

1.1.3 Topography, Drainage, and Geology

Topography within the property is variable. The main mine and mill area and gravel access roads that run through the property is situated within a generally northeast-trending valley through which the Upper Duck Island Cove Brook pond and brook system flows at an elevation of approximately 100 m above sea level (masl) in the western portion of the site to 0 masl in the Dock and Warehouse Area located at the shoreline of Upper Duck Island Cove, approximately 2.5 km east of the Mill Site. Upland areas are present north and south of the main mine site. The north valley wall rises to an elevation of approximately 200 masl with a gradient of 0.1, however in the Waste Rock and Pit Area, located north of the Mill site, the natural topography has been modified by open pit mining and waste rock stockpiling operations. The south valley wall is less pronounced rising to an elevation of approximately 230 masl at a gradient of 0.06. The Tailings Pile is located at an elevation of approximately 150 masl along the slope of the south valley wall.

Ponds and brooks located in the site area are shown on Drawing Nos. 1028976-EE-01 and 1028976-EE-02 in Appendix 1a. The main drainage feature on the property is the Upper Duck Island Cove Brook pond and brook system which drains north eastward to Upper Duck Island Cove in the valley underlying the main mine site. In addition, another pond and brook system, referred to as Lower Duck Island Cove Brook, borders the northern boundary of the Waste Rock and Pit Area and drains north-eastward towards Lower Duck Island Cove. In addition, various surface drainage systems (i.e., ditches, culverts, etc.) are also present on the property to control surface water run-off.

Groundwater levels on the property are generally assumed to be close to ground surface and to be a subdued reflection of the topography. The direction of groundwater flow in the area is assumed to follow topography which would be from the valley slopes to the north and south towards Upper Duck Island Cove Brook and then northeast toward the coast (Upper Duck Island Cove). However, based on groundwater elevation data collected as part of the current investigation, groundwater flow direction varies locally within the property, presumably following local topographic and site features. In addition, open mining pits located in the Waste Rock and Pit Area can be expected to influence groundwater flow conditions in this area.

Site-specific topography, surface drainage and groundwater flow conditions are discussed in more detail in Section 3. Surface water and groundwater on the property and within the general property area are not utilised as sources of drinking water.

Available geological maps and data indicate that the native bedrock is comprised of mafic and ultramafic intrusive rocks. The surficial geology in the area consists of discontinuous sand and gravel till with exposed bedrock. The characteristic permeability of these soils is moderate. However, much of the main mine site is underlain by placed gravel fill of variable thickness, and with varying percentages of silt, sand, cobble and boulders.

1.2 Previous Investigations

AMEC completed a Phase I ESA of the property in 2004/2005 followed by a Phase II ESA in 2006/2007. Details of the findings of the Phase I ESA are provided in AMEC Report No. TF6126504, dated March 2005, and are not included in this report. Details of the environmental site assessment work carried out and findings of the Phase II ESA are discussed in more detail by site in Section 3. However, based on the findings of the Phase II ESA, the following overall conclusions were made with respect to the environmental status of the property:

1. Lead and mercury containing paints were identified at the Northco Area, Mill Area and Dock and Warehouse Area;
2. Lead-containing paints were identified at the Tailings Area and the Waste Rock and Pit Area;
3. PCBs-containing paint was identified at the Warehouse and Dock Area;
4. Asbestos-containing building materials (i.e. floor tiles, siding, ceiling tiles, pipe insulation, brick mortar, etc.) were identified at the Northco Area, Mill Area and Dock and Warehouse Area ;
5. Concentrations of asbestos fibres detected in all air samples (indoor and outdoor) collected on the property during the current investigation did not exceed the applicable assessment criterion of 0.1 fibres/cm3;

6. Findings of the florescent light ballast inspection were inconclusive, however, given the age of the Site buildings, it is likely that polychlorinated biphenyls- (PCBs) containing light ballasts are present at the Site;
7. Petroleum hydrocarbon impacts in soil were identified at the following locations:
   - Northco Area: Former Tank Farm;
   - Northco Area: Downgradient of the Bunker C Tank Farm;
   - Mill Area: South side of the Dry Mill;
   - Mill Area: Southwest corner of the Power Centre; and
   - Waste Rock and Pit Area: North Pit access road, approximately 200 m northwest of the
   - Primary Crusher of the Mill Area.
8. Approximately 2.0 cm free phase petroleum hydrocarbon product was observed on the water table at the Mill Area, along the south side of the Dry Mill;
9. Metal impacts were detected in all soil samples analyzed during the current investigation. Most notably, concentrations of nickel and chromium detected in all soil samples analyzed exceeded the applicable assessment criteria. A few exceedances of copper, iron and arsenic were also reported under the same applicable assessment criteria. The nickel and chromium impacts in soil may be related to background geology conditions in the area;
10. Concentrations of polycyclic aromatic hydrocarbons (PAHs) and PCBs in all soil samples analyzed were either non-detect or detected at levels below the applicable assessment criteria;
11. Concentrations of a combination of metals detected in all six surface water samples collected from Upper Duck Island Cove Brook exceeded the applicable assessment criteria;
12. Concentrations of asbestos, and a combination of metals detected in all freshwater sediment samples collected from Upper Duck Island Cove Brook, as well as marine sediment samples collected from Duck Island Cove exceeded the applicable assessment criteria; and,
13. The concentration of fluoranthene detected in one of the three marine sediment samples collected at the Site also exceeded the applicable assessment criterion.

The Phase II ESA report recommended a Phase III ESA be conducted to further delineate various identified environmental impacts identified at the former mine site, and a Phase III sampling plan was provided in the Phase II ESA.

1.3 Objectives and Scope

The objectives of the current Phase III ESA program at the former Baie Verte Asbestos Mine site as outlined in the project's RFP issued by the DNR-MDD, dated April 26, 2007 were as follows:

1. Conduct an investigation of the site using appropriate sampling methods to delineate the extent of contamination identified in the Phase II ESA report.
2. Prepare a hazardous materials assessment of all structures for materials not confirmed in the Phase II ESA report.

3. Provide a report that presents conclusions based on the scope of work and describes the chemical nature and the physical extent of the contamination and whether the contaminants of concern are present in excess of the appropriate criteria.
4. Provide a discussion of remediation options and cost estimates for each.

In order to meet the project objectives the following scope of work was developed based on review of the Phase I and II ESA reports for the mine site, the Phase III ESA sampling plan that was recommended in the Phase II ESA report, as well as site observations during a site visit by Jacques Whitford carried out on August 14, 2007 with DNR-MDD representative Mr. Alex Smith, P.Eng. The scope of work was designed to meet the requirements of the Newfoundland and Labrador Department of Environment and Conservation (NLDEC) guidelines for the management of contaminated sites, as well as applicable hazardous materials regulations and associated occupational health and safety regulations.

Former Baie Verte Asbestos Mine - Northco Area

Phase III ESA

- Excavate six (6) additional test pits using an excavator to further delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil identified within and down-gradient of the former Tank Farm;
- Drill three (3) boreholes and install monitor wells to determine groundwater flow direction and investigate potential petroleum hydrocarbon impacts and free phase petroleum hydrocarbon product in subsurface soil and groundwater down-gradient of the former Tank Farm. In addition, since the tank farm site is not readily accessible using a drill rig due to steep terrain, a stand pipe will be installed in a test pit in the center of the Tank Farm Area to assess potential petroleum hydrocarbon impacts in groundwater and free phase petroleum hydrocarbon product in this area.
- Excavate five (5) test pits along the perimeter of the former E&R building to evaluate potential volatile organic compounds (VOCs) impacts in soil in this area related to historical site usage;
- Collect soil samples from the test pits and boreholes for required laboratory analysis;
- Collect water samples from the monitor wells, as well as from a stand pipe installed within a test pit in the former Tank Farm Area for required laboratory analysis;
- Conduct falling head tests on the monitor wells to determine the permeability of the soil stratigraphy. Such information will be useful in evaluating remedial options or conducting a site-specific risk assessment on the property, if required;
- Carry out head space vapour screening to select soil samples for chemical analysis;
- Submit select soil and groundwater samples for laboratory analysis of benzene, toluene, ethyl benzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH), and VOCs, as required; and,
- Document the site investigation scope, methodology and results in a written report. The report will contain the results of the Phase III ESA. Dependent on the defined extent of the soil and groundwater impacts, the recommendations may be for criteria-based remediation, risk-based remediation or additional delineation. Where necessary and possible based on the amount of

available site information, remedial action plans will be developed to address specific site issues.

Hazardous Materials Assessment

The following buildings will be assessed as part of the Hazardous Materials Assessment:

- Former Mine Dry Building
- Erection and Repair (E&R) Building

Visual inspections and bulk sampling will be carried out, and will be limited to safely and readily accessible portions of the site buildings, facilities and equipment, to be determined on site.

Former Baie Verte Asbestos Mine - Mill Area

Phase III ESA

- Excavate three (3) additional test pits using an excavator to further delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil identified along the south side of the Dry Mill;
- Drill three (3) boreholes and install monitor wells to determine groundwater flow direction and investigate potential petroleum hydrocarbon impacts and free phase petroleum hydrocarbon product in subsurface soil and groundwater along the south side of the Dry Mill. Please note delineation required only two (2) monitor wells to be completed in this area.
- Excavate three (3) additional test pits using an excavator to further delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil identified at the southeast corner of the Power Centre. Please note that relocation of stockpiled sawdust is required in order to gain access to selected test pit locations.
- Drill three (3) boreholes and install monitor wells to determine groundwater flow direction and investigate potential petroleum hydrocarbon impacts and free phase petroleum hydrocarbon product in subsurface soil and groundwater at the southeast corner of the Power Centre and down-gradient of the Bunker C AST (i.e. Day Tank). Please note that relocation of stockpiled sawdust is required in order to gain access to selected borehole/monitor well locations.
- Collect soil samples from the test pits and boreholes for required laboratory analysis;
- Collect water samples from the monitor wells for required laboratory analysis;
- Conduct falling head tests on the monitor wells to determine the permeability of the soil stratigraphy. Such information will be useful in evaluating remedial options or conducting a site-specific risk assessment on the property, if required;
- Carry out head space vapour screening to select soil samples for chemical analysis;
- Submit select soil and groundwater samples for laboratory analysis of TPH and BTEX; and,
- Document the site investigation scope, methodology and results in a written report. The report will contain the results of the Phase III ESA. Dependent on the defined extent of the soil and groundwater impacts, the recommendations may be for criteria-based remediation, risk-based remediation or additional delineation. Where necessary and possible based on the amount of

available site information, remedial action plans will be developed to address specific site issues.

Hazardous Materials Assessment

The following buildings will be assessed as part of the Hazardous Materials Assessment:

- Primary Crusher
- Secondary Crusher
- Power Centre
- Dry Rock Storage Building (part of the Dry Rock Storage Facility)
- Furnace/blower Building (part of the Dry Rock Storage Facility)
- Dry Mill
- Wet Mill

Visual inspections and bulk sampling will be carried out and will be limited to safely and readily accessible portions of the site buildings, facilities and equipment, to be determined on site. The interior of the Dry Rock Storage Building will not be accessed for assessment due to the poor structural condition of the building.

Former Baie Verte Asbestos Mine - Dock & Warehouse Area

Phase III ESA

Based on results of the Phase II ESA, no petroleum hydrocarbons, PAHs or PCBs impacts were identified in soil in the Dock & Warehouse Area, and no Phase III ESA activities were recommended for the Dock & Warehouse Area in the Phase II ESA report. However, review of the Phase I & II ESA reports, as well as observations during the site visit on August 14, 2007 indicate the presence of solidified Bunker C at or near ground surface at three (3) locations in the Dock & Warehouse Area that require further assessment in order to carry out remedial options evaluation, and develop a remedial action plan to address Bunker C present in these areas. The following work plan is recommended to further evaluate the solidified Bunker C present in these three areas:

- Carry out an exploratory test pitting program in each of the three areas to delineate the vertical and lateral extent of the Bunker C plume.

Hazardous Materials Assessment

The following buildings will be assessed as part of the Hazardous Materials Assessment:

- Warehouse
- Lunchroom Facility

Visual inspections and bulk sampling will be carried out and will be limited to safely and readily accessible portions of the site buildings, facilities and equipment, to be determined on site.

Former Baie Verte Asbestos Mine - Tailings Pile

Phase III ESA

Based on testing completed as part of the Phase II ESA, no petroleum hydrocarbon or PCBs impacts were identified in the tailings present at the Tailings Area. Therefore, no Phase III ESA activities were recommended for the Tailings Area in the Phase II ESA report.

Hazardous Materials Assessment

The following buildings will be assessed as part of the Hazardous Materials Assessment:

- Conveyor House
- Grease Shack

Visual inspections and bulk sampling will be carried out and will be limited to safely and readily accessible portions of the site buildings, facilities and equipment, to be determined on site.

Former Baie Verte Asbestos Mine - Waste Rock & Pit Area

Phase III ESA

- Excavate four (4) additional test pits using an excavator to further delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil identified along the North Pit access road;
- Drill one (1) borehole and install a monitor well to investigate potential petroleum hydrocarbon impacts and free phase petroleum hydrocarbon product in subsurface soil and groundwater down gradient the area of stained soil identified along the North Pit access road;
- Collect soil samples from the test pits and borehole for required laboratory analysis;
- Collect a water sample from the monitor well for required laboratory analysis;
- Conduct a falling head test on the monitor well to determine the permeability of the soil stratigraphy. Such information will be useful in evaluating remedial options or conducting a site-specific risk assessment on the property, if required;
- Carry out head space vapour screening to select soil samples for chemical analysis;
- Submit select soil and groundwater samples for laboratory analysis of TPH and BTEX; and,
- Document the site investigation scope, methodology and results in a written report. The report will contain the results of the Phase III ESA. Dependent on the defined extent of the soil and groundwater impacts, the recommendations may be for criteria-based remediation, risk-based remediation or additional delineation. Where necessary and possible based on the amount of available site information, remedial action plans will be developed to address specific site issues.

Hazardous Materials Assessment

The following building will be assessed as part of the Hazardous Materials Assessment:

- Wooden Shed

Visual inspections and bulk sampling will be carried out and will be limited to safely and readily accessible portions of the site buildings, facilities and equipment, to be determined on site.

The current Phase III ESA did not include any additional work to further delineate the horizontal and vertical extent of metals impacts in soil identified at various sites during the Phase II ESA. Metals impacts in soil are considered to be widespread throughout the property and likely reflect background geology conditions in the area. However, based on regulatory requirements, future environmental sampling for metals may be a requirement as part of decommissioning activities in this area of the site.

Further, assessment of several areas of potential environmental concern in the Waste Rock & Pit Area identified in the Phase I ESA, including the former pit office area located on the Saddle; the location of a partially buried UST along the south wall of the West Pit; an area of debris (i.e., containing discarded tires, equipment and drums) along the toe of the waste rock pile, and the location of a potential discarded transformer within the waste rock pile were not included in the current Phase III ESA due to safety concerns (i.e., rough, steep terrain, slope stability, etc.). A geotechnical evaluation would be required in these areas prior to carrying out intrusive investigation to assess slope stability and access conditions.

1.4 Regulatory Framework

1.4.1 Soil & Groundwater

The former Baie Verte Asbestos mine site is presently not in active usage, however it is considered to be industrial based on past site operations and activities, and has been assessed during the current investigation for future industrial land use. Site soils are considered to be coarse-grained and groundwater resources are not used for human consumption and therefore considered to be non-potable.

The Newfoundland and Labrador Department of Environment and Conservation (NLDEC) adopted new soil and groundwater remediation guidelines for petroleum hydrocarbons on February 22, 2005 under policy directive PPD05-01. These guidelines are outlined in the *Guidance Document for the Management of Impacted Sites*, Version 1.0. The purpose of this guidance document is to provide a clear process for the management of impacted sites in Newfoundland and Labrador that result in the satisfactory resolution of environmental contamination, which may present an unacceptable risk to human health and ecological receptors. The guidance document incorporates recent scientific and regulatory advances in this area that have resulted from work at the international, national and regional levels.

The guidance document 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 clean-up criteria that are protective of human health and the environment. Tier III may either result in the selection of clean-up criteria 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 are not as stringent as past guidelines and allow for greater flexibility in managing contaminated sites.

For a Tier I assessment, the guidance document and the Atlantic RBCA (Risk-Based Corrective Action) Version 2 User Guidance Document (October 2003) outline risk-based screening levels (RBSLs) for evaluating petroleum hydrocarbon impacted sites. These criteria, contained in "Tier I RBSL Tables", are based on default conditions for typical sites and exposure pathways. These criteria are classified by receptor characteristics, groundwater usage and soil type. In addition, the TPH criteria are dependent on the nature of the hydrocarbon type (i.e., the criteria differ for gasoline, fuel oil and lube oil).

If site concentrations exceed the Tier I RBSLs, the site may be remediated to the Tier I RBSLs or a Tier II assessment may be completed to determine more appropriate clean-up criteria. A Tier II assessment may include comparison of the site concentrations to the Tier II Pathway-Specific Screening Level (PSSL) tables or development of Site-Specific Target Levels (SSTLs). PSSLs are only appropriate for sites where the exposure pathways assumed in the Tier I RBSL tables are not complete (e.g., if a property has no building on site, there would be no potential for on-site indoor air exposure).

In accordance with the Atlantic RBCA requirements, an "Ecological Receptor Screening Checklist" has been completed for the site and is provided in Appendix 1b. Further assessment of ecological receptors for petroleum hydrocarbon impacts may be required in portions of the study area site, dependent on the remedial/risk management option selected for those portions of the study area. In addition, further assessment of ecological receptors for various other contaminants identified on the property during the previous Phase II ESA, including metals and asbestos impacts in soil and fresh and marine sediments, metals impacts in surface water, as well as PAHs impacts in marine sediments, may also be required in portions of the study area site, dependent on the remedial/risk management option selected for those portions of the study area as well as regulatory requirements.

The "Applicability of the Tier I/II RBSL/PSSL Tables" for the study area site was also completed and is provided in Appendix 1b. Based on the available site information and the existing and possible future site usage, petroleum hydrocarbons in soil and groundwater on the study area were screened against the Tier I RBSLs for fuel oil or lube oil on a commercial site with non-potable groundwater and coarse soil. Based on the existing and possible future site usage, PCBs, PAHs and VOCs in soil on the site were screened against industrial guidelines from the Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (2007).

1.4.2 Asbestos-Containing Materials

The inhalation of asbestos fibres can cause serious diseases of the lungs and other organs that may not appear until years after the exposure has occurred.

The common use of friable asbestos-containing materials (ACMs) in construction generally ceased voluntarily in the mid 1970s. If sampling indicates that asbestos is present in any concentration the product should be considered as asbestos-containing and dealt with accordingly. In addition, other ACMs are still known to be present in non-friable building materials currently used in the construction of buildings.

Friable ACMs (i.e., those which crumbles easily by hand pressure) are a potential health concern as asbestos fibres can be easily exposed and become airborne. Further, non-friable ACMs can be considered friable if disturbed. The investigation and management of asbestos-containing materials is governed by provincial regulations.

Asbestos sample analyses results were compared to the "1998 Newfoundland and Labrador Asbestos Abatement Regulations (Nfld. Reg. 111/98). Under these regulations, materials containing greater than 1% asbestos fibers are considered asbestos-containing and should be managed in accordance with the applicable regulations.

1.4.3 Lead in Paint

In 1976, the lead content in interior paint was limited to 0.5% by weight (i.e., 5,000 mg/kg) under the federal Hazardous Products Act. A recent 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 mg/kg).

Jacques Whitford is not aware of specific Federal or Provincial 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-based paints (i.e., lead content above 600 mg/kg) 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-based painted materials or removed lead-based paints (i.e., paints removed from the building materials) in a municipal landfill. NLDEC has adopted an informal criterion of 600 mg/kg for the disposal of lead-based 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 mg/kg. If the lead content of the leachate exceeds 5 mg/L, the paint is leach toxic and considered to be a hazardous material (Environment Canada Table of Metals Leachate Toxicity for lead leachability). 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 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 mg/kg. If warranted, the leachability tests on painted demolition debris should be carried out on bulk samples of the demolition debris with the lead-based paints intact.

1.4.4 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.

For disposal of paint containing mercury, the level of mercury within the paint could also be compared to the Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (2007) 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 10 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 10 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.

1.4.5 Polychlorinated Biphenyls in Paint

The CCME guidelines for PCB in soil at a commercial/industrial site (33.0 mg/kg) were used to evaluate PCB concentrations in paint. In areas where the PCB concentration exceeds 33 mg/kg, measures should be taken to ensure that the paint is encapsulated or removed. Paint samples that contained a PCB concentration in excess of 33.0 mg/kg should be subjected to leachability testing. The federal regulation for the Transportation of Dangerous Goods (TDG) for mercury (0.1 mg/L) was used to assess the results of the leachability testing to determine disposal options for any PCB-containing paint removed during renovations/demolition of painted surfaces at the Site.

2.0 METHODOLOGY

2.1 Phase III Environmental Site Assessment

2.1.1 Field Investigation

The Phase III ESA investigation consisted of drilling boreholes, installing monitor wells, excavating test pits, and carrying out related soil and groundwater sampling and field testing during the period from September 4 to September 21, 2007. Fieldwork and site supervision was conducted by Steve Moores, a Jacques Whitford senior environmental technician. Drilling services were provided by Logan Geotech Inc. of Stewiacke, Nova Scotia. Excavator services were provided by Barker Construction of Baie Verte, NL. Table 1 provides a summary of fieldwork for the current investigation subdivided by individual sites.

Table 1 Summary Table of Phase III ESA Scope of Work – Former Baie Verte Mine

Site	Environmental Concern	Scope of Work	
		Test Pit	Monitor Well
Northco Area	Potential impacts related to historical storage and usage of petroleum hydrocarbons and VOCs on site.	11	3
Mill Area	Potential impacts related to historical storage and usage of petroleum hydrocarbons on site.	6	5
Waste Rock & Pit Area	Potential impacts related to historical usage and possible spillage of petroleum hydrocarbons on site. Soil staining observed during Phase II ESA	4	1
Dock & Warehouse Area (former heavy equipment storage area)	Potential impacts related to historical usage and possible spillage of petroleum hydrocarbons on site. Bunker C staining observed during Phase II ESA	Exploratory test holes	-
Total		21	9

As part of the current investigation, test pits and monitor wells were completed in the following areas of the property: 1) Northco Area, 2) Mill Area, and 3) Waste Rock & Pit Area. Test pit and monitor well locations were selected by Jacques Whitford in consultation with DNR-MDD in target areas of concern. The locations of the test pits and monitor wells were established in the field by Jacques Whitford personnel by measurements from existing site infrastructure and by usage of a hand-held Garmin GPS unit. The GPS coordinates for the test pits and monitor wells are provided by site in Appendix 2e, 3e, and 6e. For each site, the elevations of the ground surface at the monitor wells were measured with respect to a benchmark of 100 m established at one of the monitor wells, as noted on the Monitor Well Records in Appendices 2b, 3b, and 6b. Sample location plans provided by site in Appendix 2a, 3a and 6a show the locations of test pits and monitor wells completed as part of the current investigation, as well as general site features and former Phase II ESA sample locations.

A total of nine (9) boreholes were drilled using a track-mounted CME-85 and both hollow stem auger and wash boring drilling techniques, and were terminated at depths below ground surface ranging from 3.04 to 9.14 m.

A total of 21 test pits were excavated on the property using a Caterpillar 320 LC track-mounted excavator. The test pits were excavated to depths below ground surface ranging from 0.7 to 4.2 m, and were backfilled with excavated material upon completion. In addition, a total of 16 exploratory test pits were dug at three (3) locations in the Dock & Warehouse Area to further evaluate the extent of accumulations of solidified Bunker C previously identified at or near ground surface during the Phase II ESA. Work in the exploratory test pits was limited to visual inspection, and did not include stratigraphic analysis or soil sample collection.

Fieldwork was managed on a full time basis by Jacques Whitford personnel who kept detailed records of surface and subsurface conditions and recovered representative samples of the materials encountered. In the test pits, soils were sampled directly by bulk sample methods from the test pit walls or from the excavator bucket. Soil samples were recovered from the test pits at frequent intervals over their respective depths, the number of which varied with the test pit depth. In the test pits, where possible, one sample was collected near surface, one at maximum test pit depth and one additional sample per 0.5 to 1.5 m of depth. In the boreholes, where possible, soils were continuously sampled at 0.61-m intervals using a 50-mm diameter split-spoon sampler. Also, Standard Penetration Tests (SPT) were conducted on each borehole and N-values were recorded. Where bedrock was encountered in the boreholes, HQ-size core was recovered.

Following drilling, monitor wells were installed in all of the completed boreholes, including monitor well BVM-MW1, installed in the Waste Rock & Pit Area. Groundwater was also not encountered in the monitor well (BVM-MW1) during the current investigation. However, a monitor well was installed in the borehole as it is possible that seasonally the groundwater table may rise to within the screened portion of the well allowing groundwater monitoring to be carried out at this location.

The wells consisted of 50-mm diameter, flush-threaded, Schedule 40 PVC casing and No. 10 slot screen. Silica sand was placed around the screened section to inhibit silt intrusion into the well and facilitate well development. The screened section was placed to span the water table as measured at the time of drilling. A bentonite seal was placed above the sand pack, followed by backfill with drill cuttings to the surface. In addition, since the tank farm site in the Northco Area was not readily accessible using a drill rig due to steep terrain, a 50 mm stand pipe was installed in test pit BVM-TP10 to facilitate collection of a groundwater sample for evaluation of potential petroleum hydrocarbon impacts in groundwater and free phase petroleum hydrocarbon product in this area. Details of subsurface conditions encountered at the test pit and borehole locations, as well as specific monitor well construction details are presented on the Monitor Well Records provided by site in Appendix 2b, 3b and 6b.

The soil samples were examined for any field evidence of petroleum hydrocarbon impacts. Duplicate soil samples were collected at each sample location, where possible. The samples were placed in clean glass jars with aluminum foil under the lids. Head space soil vapour concentrations were measured in the duplicate sample jars using a MiniRAE 2000 photoionization detector (PID). These PID readings are presented on the Test Pit and Monitor Well Records by site in Appendix 2b, 3b and 6b. Based on the PID readings, site observations and site history, selected soil samples were submitted to Maxxam Analytics Inc. in St. John's, NL, and Bedford, NS, for required laboratory analysis.

Upon completion of the monitor wells, each monitor well was developed using a dedicated Waterra inertia pump apparatus with Waterra tubing and PVC foot valves. Prior to groundwater sampling, the water level was measured in each monitor well and the well was purged by removing a minimum of three well volumes of water. Following monitor well development, groundwater samples were collected into clean, new sample bottles and submitted to Maxxam Analytics Inc. in St. John's, NL and Bedford, NS for required laboratory analysis.

Groundwater elevations in the monitor wells were determined by subtracting the depth to groundwater from the ground surface elevation. Then, where groundwater elevation data was available from a minimum of three monitor wells, the direction of groundwater flow was determined using three point triangulation.

Hydraulic response (bail-down) tests were carried out on two monitor wells, including BVM-MW3 (Northco Area) and BVM-MW6 (Mill Area) to determine the permeability of the underlying stratigraphy at each site. While bail down testing was only performed on one monitor well at each site due to time constraints in the field, test results are considered to provide a reasonable general estimate of the permeability of the uppermost (i.e., water table) aquifer in these two areas of the property. Bail down tests were conducted by removing a volume of water from each well and recording the water levels in the well at specific time intervals as the water levels recovered. Results of bail-down testing are provided by site in Appendix 2f and 3f. The permeability data collected as part of this investigation would be necessary to carry out human health and ecological risk assessments at the site, if required in the future.

2.2 Hazardous Materials Assessment

Jacques Whitford completed the Hazardous Materials Assessment by carrying out a detailed inspection of the buildings, facilities and equipment at the site and documenting the location of known or suspected hazardous building materials.

The hazardous materials assessment included an inspection for asbestos-containing materials, lead/mercury/PCB-containing paints and materials, polychlorinated biphenyls (PCBs), mold and water-damaged building materials and any other hazardous materials observed in the subject buildings, facilities and equipment. The inspections and bulk sampling were carried out on a limited intrusive basis.

2.2.1 Asbestos Assessment

The following describes the scope of work and methodology for the asbestos assessment:

1. Carried out an asbestos assessment of the buildings, equipment and facilities as required under Section 10 of the Newfoundland and Labrador Asbestos Abatement Regulations, 1998; the assessment documented the location, condition and approximate quantity of ACMs throughout the buildings; JW inspected all safely accessible building materials, equipment and insulation for the presence of asbestos; suspended ceiling tiles (if any) were lifted to enable an inspection above ceilings; samples of vinyl floor tiles, ceiling tiles, pipe insulation/parging, drywall materials and joint compounds, hardboards, plaster finishes and stuccos were collected (if present); bulk samples were collected and analysed where necessary to confirm the asbestos content; where possible, visual similarity between materials in each individual room of the buildings was used to reduce the number of samples which require analysis in other rooms in the buildings; potential ACMs not identified as visually similar to materials identified in other rooms in the buildings were sampled accordingly;
2. Jacques Whitford attempted to correlate in the field the locations of the previous asbestos samples collected and analyzed during the Phase II ESA to minimize duplication and additional laboratory costs;
3. Visual inspections and sampling were limited to safely and readily accessible portions of the site buildings, facilities and equipment;
4. The sampling program included random sampling of drywall/drywall plasters and stuccos (if present) throughout the buildings; to limit costs, drywall/drywall plaster samples and stucco samples were not obtained from all rooms in the buildings; if the analytical results indicated the variable presence of asbestos in drywall/drywall plasters or stuccos, then additional sampling may be required, or alternatively all drywall/drywall plasters and stuccos must be treated as ACMs during renovation/removal;
5. Materials and equipment were inspected and sampled on a limited intrusive basis where required (i.e., where there was evidence of possible concealed ACMs, Jacques Whitford opened equipment, walls or ceilings to search for possible ACMs as required); Jacques Whitford did not inspect all concealed spaces throughout the buildings; Jacques Whitford minimized any damage caused during inspection and sampling, but Jacques Whitford did not repair any damages caused to building finishes during the inspection and sampling; Jacques Whitford

accessed and inspected for concealed flooring in one location per room, for all rooms which may have multiple layers of flooring visible;

6. The asbestos assessment included approximate quantification of the amount of ACMs present in the various areas of the buildings; Jacques Whitford physically inspected pipe and fitting insulation on any exposed pipelines (if encountered) in the buildings;
7. Documented the asbestos assessment in a report; the report includes marked-up floor plan sketches showing bulk sample locations;
8. Jacques Whitford's scope of work did not include the preparation of an Asbestos Management Plan or the preparation of site-specific specifications or tender documents for the removal of ACMs.
9. Jacques Whitford's scope of work did not include collecting representative sediment samples or near-surface soil samples from various exterior areas on the site, including areas adjacent to the site buildings, roadways, dock, pits and stockpiles on the Baie Verte Asbestos Mines site.
10. Jacques Whitford's sampling plan did not include the testing of asbestos ore, tailings, processed asbestos, or partly processed asbestos (all of which are known to contain asbestos) for asbestos content. The sampling plan did not include the testing of settled dust from inside site buildings for asbestos, since it is assumed that most settled dusts in the buildings will contain asbestos; an extensive testing program would be required to differentiate between settled dusts that do contain asbestos and those that do not.
11. The asbestos assessment did not include sampling and testing of air in the buildings or on exterior areas of the site. Air quality monitoring can be conducted during future removal of ACMs.

2.2.2 Paint Assessment

The following describes the scope of work and methodology for the paint assessment:

1. Carried out a representative assessment for lead/mercury/PCB-based paint materials throughout the buildings, facilities and equipment; the assessment documented the location and condition of lead/mercury/PCB-based paint throughout the buildings; Jacques Whitford inspected all exterior and interior painted surfaces; representative bulk samples were collected and analysed where necessary to confirm lead/mercury/PCB content; where possible, visual similarity between painted surfaces in each individual room was used to reduce the number of samples which require analysis in other rooms; samples were collected of the paints that are most common throughout the buildings – all paint colours were not sampled; the painted surface of a sample of equipment in the buildings or exterior to the buildings was included in the survey (not all equipment was sampled); based on the results of the assessment, the location and condition of lead/mercury/PCB -based materials was provided for the buildings;
2. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA to minimize duplication and additional laboratory costs;
3. Visual inspections and sampling were limited to safely and readily accessible portions of the site buildings, facilities and equipment;
4. The locations, conditions and substrates were noted for all painted building materials;
5. Dependent on the lead and mercury concentrations in the tested samples (i.e., if the lead and mercury concentrations are above the allowable levels for disposal in a municipal landfill),

testing for lead and mercury leachability was required to determine the acceptable disposal options for the painted materials;

6. The lead/mercury/PCBs assessment did not include sampling and testing of air in the building for the presence of lead/mercury/PCBs.
7. The report includes marked-up floor plan sketches to show the locations of bulk samples;
8. The scope of work did not include the generation of specifications or tender packages for the remediation of any identified lead/mercury/PCB -based paints.

2.2.3 PCBs Inspection Program

The following describes the scope of work and methodology for the PCBs assessment:

1. A general PCB assessment was conducted in the buildings to identify the type and location of possible PCB-containing equipment such as fluorescent light ballasts or transformers; based on the age of the site construction, PCB-containing equipment could be present;
2. It should be noted that for demolition and disposal purposes in buildings which have a mixture of PCB ballasts and non-PCB ballasts, either all ballasts should be considered to contain PCBs or all ballasts should be checked individually for PCBs and disposed accordingly. The information obtained from each light ballast should be compared to information in the Environmental Protection Services report EPS 2/CC/2 Identification of Lamp Ballasts Containing PCBs to determine whether or not the ballasts contain PCBs;
3. Random inspection of observed fluorescent light ballasts that were easily accessible was included in the scope of work for this assessment; Jacques Whitford accessed and inspected a sample of the oldest looking ballasts in the buildings; all removed ballasts were put back in place; the report presents a list of all ballasts inspected and notes the ballasts that are known to contain PCBs, those that are known to be PCB-free, and those that are assumed to contain PCBs due to the absence of manufacturer's date codes and/or markings;
4. Jacques Whitford identified any transformers present on exterior areas or present in the interior of the buildings. Jacques Whitford recorded any identifying information (if present and readily visible) on the individual transformers (i.e., manufacturer's names, model numbers, serial numbers) to determine if there is an historical record for these units of containing PCBs. The site assessment determined if there were readily visible existing, useable ports available on the transformers for the collection of oil samples (no intrusive inspections were completed).
5. Visual inspections were limited to safely and readily accessible portions of the site, site buildings, facilities and equipment.

2.2.4 Mold Assessment

The following describes the scope of work and methodology for the mold assessment:

1. Carried out a visual inspection in the buildings for evidence of suspect mold and/or water-damaged building materials;
2. The interior inspections were generally carried out on a non-intrusive basis;
3. Visual inspections and sampling was limited to safely and readily accessible portions of the site buildings, facilities and equipment;

4. Presented a list of all buildings with visual evidence of suspect mold and with visual evidence of water-damaged building materials;
5. The scope of work of the mold assessment did not include the collection of bulk samples from the building interiors for mold analysis;
6. The scope of work did not include air quality testing for mold or development of specifications or tender documents for the remediation of any identified suspect mold or water-damaged building materials.

2.2.5 Other Identified Hazardous Materials

The following describes the scope of work and methodology to identify other hazardous materials:

1. Carried out a visual inspection in each room of each building for evidence of stored chemicals and/or other hazardous building materials;
2. The interior inspections were generally be carried out on a non-intrusive basis;
3. Visual inspections were limited to safely and readily accessible portions of the site buildings, facilities and equipment;
4. Presented a list of all buildings with visual evidence of stored chemicals and/or other hazardous building materials;
5. The scope of work did not include the collection of samples for chemical analysis.

2.3 Quality Assurance/Quality Control (QA/QC) Sampling Program

A brief overview of the QA/QC program for testing at the Baie Verte Mine property is presented below:

- All sampling apparatus was decontaminated prior to and between sampling events. In addition, gloves were worn by the samplers and all other handlers of the samples.
- Duplicate samples were collected to check for the natural sample variance and the consistency of field techniques and laboratory analysis. The initial sample bottles for a particular parameter or set of parameters were filled first and then the duplicate sample bottles were filled. The duplicate samples were handled in the same manner as the initial sample. A total number of duplicate samples, equal to 10% of the total number of samples, were assigned a QA/QC identification number, stored in an iced cooler, and shipped to the laboratory with the other samples. The blind duplicate samples collected are as follows:
    - Duplicate #1 (BVM-MW2-SS3) for TPH/BTEX
- Replicate sampling is a standard QA/QC procedure carried out by Maxxam Analytics Inc. and comprises 10% of the total number of samples being analysed.
- All samples were sent to the laboratory quickly enough so that sample-holding times were not exceeded. Samples were stored and sent in coolers packed with ice or ice packs with sufficient packing material so that samples will not be broken.
- Duplicate samples of materials collected for the hazardous materials assessment were also submitted as blind duplicates to check for the natural sample variance and the consistency of field techniques and laboratory analysis. The duplicate samples were handled in the same manner as the initial sample. A total number of duplicate samples, equal to 10% of the total

number of samples, were assigned a QA/QC identification number, and shipped to the laboratory with the other samples. The blind duplicate samples collected are as follows:

- Duplicate #1 (JW07-ML-PS53 – a duplicate of JW07-ML-PS3) for lead, mercury and PCBs in paint
- Duplicate #2 (JW07-ML-PS54 – a duplicate of JW07-ML-PS18) for lead, lead leachability, mercury and PCBs in paint
- Duplicate #3 (JW07-ML-PS55 – a duplicate of JW07-ML-PS29) for lead, lead leachability, mercury and PCBs in paint
- Duplicate #4 (JW07-ML-PS56 – a duplicate of JW07-ML-PS39) for lead and mercury in paint
- Duplicate #5 (JW07-ML-PS57 – a duplicate of JW07-ML-PS49) for lead, lead leachability and mercury in paint

- Chain of Custody forms were filled out for all lab shipments with Jacques Whitford personnel keeping a legible copy.

There are no firm guidelines for the degree of correlation expected between field duplicates due to natural heterogeneity in soil type (e.g., grain size, clay fraction) and building materials and contaminant distribution. However, the laboratory data is considered to indicate an acceptable duplicate correlation. The blind duplicate sample results for the five supplicate samples agree reasonably close with the corresponding samples and confirms the representativeness of the sampling procedures.

2.4 Personnel Protective Equipment (PPE) and Decontamination Program

Due to the presence of asbestos-containing materials (ACMs) throughout the Baie Verte Mine site, a decontamination area was established at the site during the current investigation. The decontamination area contained a temporary car wash facility to remove ACMs from site vehicles and equipment and a change room/wash area for all site personnel. An eye wash station was contained within the wash area, along with first aid kits.

The decontamination facility was provided by PowerVac Services, a local hazardous materials abatement contractor, and was located at the entrance to the site. The facility was divided into three distinct and separated rooms, including a Dirty Room, Shower Room and Clean Room. Partitions between the rooms in the decontamination facility were self closing so that each room functioned as an airlock. Power was provided to the facility by a generator and water was provided by an on-site water source.

The Dirty Room had provision for:

1. hosing down contaminated clothing and footwear, or cleaning it with a vacuum cleaner fitted with a HEPA filter;
2. storage of contaminated clothing and footwear;
3. bins of waste materials; and,
4. airflow towards the removal area.

The Shower Room had provision for:

1. a shower area with an adequate supply of soap, shampoo, and hot and cold water; and,
2. airflow towards the dirty decontamination area.

The Clean Room had provision for:

1. storage of individual respirators in containers or lockers;
2. a mirror to assist in donning respiratory protective equipment;
3. storage of clean clothing;
4. separate storage of clean and dirty towels; and,
5. airflow towards the shower and dirty area.

Personal vehicles were left at the entrance to the site, and access to areas within the site was via a dedicated all-terrain vehicle (ATV). The excavator, drill rig and ATV were cleaned before leaving the site. All field equipment and waste was placed inside the dirty room of the decontamination facility and removed from site by the hazardous materials abatement contractor for proper cleaning and/or disposal.

The following decontamination facility procedures were carried out by all workers and visitors entering the site during work activities:

1. The worker enters the clean room and removes all street clothes and personal belongings, leaves these in the clean room and changes into clean work clothes. A respirator is put on and checked for fit and proper operation. The worker then passes through the shower room into the dirty room. Alternatively, working clothes which is worn throughout the job may be stored and put on in the Dirty Room. Respirators, however, must always be donned in the clean room.
2. On leaving the contaminated work area, but before entering the dirty room, the workers are to remove the outer tyvek suit and place it in plastic bags or bins for disposal.
3. In the Dirty Room, the worker removes all protective clothing and equipment, except the worker's respirator. Any waste material must be placed in plastic bags or bins for disposal.
4. The worker then enters the shower room and showers while wearing the respirator. After the worker's head and the respirator's face piece and associated harness have been thoroughly rinsed, the respirator may be removed and the shower completed.
5. After showering, the worker enters the clean room and dresses in street clothes. The respirator is then thoroughly cleaned, disinfected and stored until required.

3.0 RESULTS

3.1 Northco Area - Phase III ESA

3.1.1 Site Description

This Northco Area is located directly west of the Mill Area and was most recently the location of a saw mill operation owned and operated by Northco. Buildings present in the Northco Area include the former Mine Dry building, former Erection and Repair (E & R) building, and former Northco office building (as shown on Drawing No. 1028976-EE-03 in Appendix 2a). Other features present in the area include a former Tank Farm with remnant concrete tank cradles and concrete retaining wall, a fire hydrant, several pole-mounted transformers, a shed, and a former equipment refueling station. In addition, the previous Phase I ESA identified various above and underground fuel storage tanks at the site; including a 1,000-gallon waste oil above-ground fuel storage tank (AST) observed at the northwest corner of the former E&R building, two ASTs (1,000-gallon and 200-gallon) observed at the northwest corner of the former E&R building, a discarded 200-gallon tank (empty) observed approximately 10 m north of the former E&R building, as well as potential evidence of USTs in the E&R building and in the Mine Dry, as well as in at a former refueling station located along the pit road, approximately 10 – 15 m north of the former E & R building. It is not known whether these USTs and associated piping have been removed or are still present at the site.

The Mine Dry building was historically used for general office administration and for workers of the mine to change and shower before leaving the mine site. The E&R building was historically used as a mechanical garage and machine shop for the maintenance and repairs to mining equipment. Most recently, the E&R building was used for saw milling operations and maintenance and repairs to forestry-type equipment. The majority of the site is gravel-covered with local areas of asphalt-cover immediately surrounding site buildings.

Terrain in the area gently slopes towards the southeast, and surface drainage (apparent groundwater flow direction) appears to follow the general slope, flowing towards a small brook (Upper Duck Island Cove Brook) located approximately 100 m southeast of the site.

A possible sump was previously identified along the east side of the former E&R building, and various drainage ditches are present in the area for drainage control, including immediately east of the former tank farm along the gravel access road leading to the Waste Rock and Pit area.

3.1.2 Previous Work

The Phase II ESA previously completed in the Northco Area included the excavation of 27 test pits, and the collection of soil samples for chemical analysis of petroleum hydrocarbons, metals, polycyclic aromatic hydrocarbons (PAHs) and PCBs. The sampling locations for soils collected as part of the previous Phase II ESA are shown on Drawing No. 1028976-EE-03 in Appendix 2a, and summary tables of results of laboratory analysis are provided in Appendix 2c. The results of the Phase II ESA in the Northco area can be summarized as follows:

- A petroleum hydrocarbon sheen was observed on the water table within test pit NC-TP23, excavated downgradient (east) of the former tank farm.
- Concentrations of ethylbenzene detected in soil samples NC-TP7-SS3 (0.16 mg/kg) and NC-TP23-SS1 (0.51 mg/kg) exceeded the CCME-CEQG of 0.08 mg/kg, but did not exceed the 2003 Atlantic Tier I RBSL of 430 mg/kg. Soil sample NC-TP7-SS3 was collected adjacent to the waste oil AST located at the northwest corner of the former E&R building and soil sample NC-TP23-SS1 was collected downgradient (east) of the former tank farm.
- Concentrations of modified TPH detected in surface soil samples NC-TP15-SS1 (<22,400 mg/kg) and NC-TP16-SS1 (<13,000 mg/kg) exceeded the 2003 Atlantic PIRI Tier I RBSL criterion of 7,400 mg/kg for diesel fuel in soil at a commercial site with coarse-grained soil and non-potable groundwater. Soil samples NC-TP15-SS1 and NC-TP16-SS1 were collected at the former tank farm, located west of the former E&R building.
- Concentrations of chromium and nickel detected in all eight soil samples collected at the Site exceeded the applicable assessment criteria for metals in soil at industrial sites. The concentration of copper detected in one of the eight soil samples analyzed also exceeded the applicable assessment criteria for metals. Based on the testing completed, chromium and nickel impacts in soil are considered to be widespread throughout the Site.
- Concentrations of PCBs and PAHs in all soil samples analyzed were either non-detect or detected at levels below the applicable assessment criteria, and are thus not considered to be an environmental concern in evaluated areas of the site.

3.1.3 Field Work

Fieldwork carried out in the Northco Area during the current investigation comprised excavation of eleven (11) test pits and completion of three (3) monitor wells. A site and sample location plan (Drawing No. 1028976-EE-03) showing the location of these, as well as general site features and former Phase II ESA sample locations is provided in Appendix 2a.

3.1.4 Stratigraphy

The stratigraphic information recorded during the current investigation is presented on the Test Pit and Monitor Well Records in Appendix 2b. Fill materials were encountered at or near the surface at all test pit and monitor well locations and ranged in thickness from 0.7 mbgs in BVM-TP12 to at greater than 3.7 m in BVM-TP10. Fill material generally comprised loose to compact greyish green to brown gravel (GP) and sand and gravel (SM) with varying percentages of silt, cobbles and boulders, and appeared at least in part derived from waste rock generated from mining operations.

Bedrock was encountered at the base of ten (10) of the eleven (11) test pits investigated at the site, as well as beneath the fill material in monitor wells BVM-MW2, BVM-MW3 and BVM-MW4 comprised a dark green ultramafic intrusive rock.

3.1.5 Groundwater Conditions

The depth to the groundwater table as measured on September 20, 2007 ranged from 1.20 m in BVM-MW2 to 1.27 m in BVM-MW3. Measured groundwater elevations ranged from 98.71 m in BVM-MW2 to

98.75 m in BVM-MW4. Groundwater levels in these monitor wells are expected to vary seasonally and in response to individual precipitation events.

Groundwater seepage was observed on September 8, 2007 in BVM-TP8 and BVM-TP10 at depths of 1.2 m and 3.1 m, respectively. No groundwater seepage was encountered at any of the other test pits at the time of excavation and backfilling. Test pits are not normally left open long enough for groundwater levels to stabilise in the excavations, therefore groundwater level estimates at these locations have to be considered with caution.

Groundwater elevation data for monitor wells BVM-MW2, BVM-MW3 and BVM-MW4 indicates a local shallow groundwater flow direction towards the northwest in the area of these monitor well. It is possible that the drainage ditch, located between these monitor wells and the former tank farm disrupts the natural groundwater flow pattern in this area, which would be expected to be southeast towards Upper Duck Island Cove Brook, based on site topography. The inferred direction of shallow groundwater flow in the site area, as well as locally in the vicinity of monitor wells BVM-MW2, BVM-MW3 and BVM-MW4 is shown on Drawing No. 1028976-EE-03 in Appendix 2a.

Hydraulic response (bail down) testing was conducted on September 20, 2007 on monitoring well BVM-MW3 to determine the permeability of the underlying stratigraphy at the site. Data collected during the bail down test is provided in Appendix 2f. Analysis of the bail down test data for each test well was performed using the Bouwer & Rice and Hvorslev analysis methods. Analysis was conducted with the aid of the computer program AquiferTest, version 3.5 (Waterloo Hydrogeologic Inc.). The test results are graphically displayed in Appendix 2f. Analysis of test data using the Bouwer & Rice and Hvorslev methods provided similar hydraulic conductivity values for monitoring well BVM-MW3 with values of 5.29E-5 m/s determined using the Hvorslev method and 6.68E-5 m/s determined using the Bouwer & Rice method. Based on the results of the bail down tests, an average combined hydraulic conductivity of 5.99E-5 m/s is determined for the underlying stratigraphy at the site.

3.1.6 Free Liquid Phase Petroleum Hydrocarbons

Free liquid phase petroleum hydrocarbons were not observed in the soil or on the groundwater in any of the test pits or monitor wells completed as part of the current investigation. However, a slight oily sheen (too thin to measure) was observed on the surface of the groundwater in monitor well BVM-MW2, located immediately east of the former tank farm during the current investigation, as well as on the surface of groundwater in test pit NC-TP23, excavated in approximately the same location during the previous Phase II ESA.

3.1.7 Soil Vapor Concentrations

The soil vapour concentrations measured in each of the soil samples from the test pits are provided on the Test Pit Records in Appendix 2b. The vapour concentrations measured ranged from non-detectable to 17.6 ppm. The soil vapour concentrations measured in each of the soil samples from the monitor wells are provided on the Monitor Well Records in Appendix 2b. The vapour concentrations measured ranged from non-detectable to 27.6 ppm.

Soil vapour concentrations vary with both fuel type and age, and it should be noted that the readings are intended to provide only a qualitative indication of volatile hydrocarbon levels and are not directly equivalent to soil analytical results. Soil vapor concentrations which exceed 50 ppm may indicate the presence of petroleum hydrocarbon impacts in soil. No soil vapour concentrations above 50 ppm were measured in any of the soil samples collected from test pits and monitor wells at the site. The oil sheen observed on groundwater in monitor well BVM-MW2 was associated with soil vapour concentrations less than 50 ppm.

Slight to strong petroleum hydrocarbon odours were detected during excavation at several test pit locations including BVM-TP8, BVM-TP9, BVM-TP10, BVM-TP11, BVM-TP13, BVM-TP14, and BVM-TP15. Please note that respirators were worn by field staff during excavation of test pits and borehole drilling, and thus olfactory evidence of petroleum hydrocarbons may have been more pronounced than that detected at these locations, or may have been present at other test locations at the site but not detected by field staff.

3.1.8 Soil & Groundwater Chemical Analysis & Results

A laboratory analysis schedule for the Northco Area is presented in Table 2.

Table 2 Laboratory Analysis Schedule (Northco Area)

Potential Environment Concern	Sample Location	Sample Matrix	
		Soil	Groundwater
Potential for petroleum hydrocarbon impacts in the former fuel tank storage area related to historic site usage and storage.	BVM-TP8 to BVM-TP12, BVM-TP14, BVM-MW2 to BVM-MW4	TPH/BTEX (11)	TPH/BTEX (7)
Potential for VOCs impacts in vicinity of E&R building related to historic site usage and storage.	BVM-TP13, BVM-TP16 to BVM-TP18	VOCs (6)	-
Note: The methodologies utilised by Maxxam Analytics Inc. in analysis of the soil and groundwater samples are presented on the analytical reports in Appendix 2d.			

Results of the laboratory analysis of soil and groundwater samples obtained from this site are presented in Tables 2.1 to 2.3 in Appendix 2c, along with applicable summary tables of results of chemical analysis for soils carried out as part of the previous Phase II ESA. The corresponding analytical reports from Maxxam Analytics Inc. for the current investigation are presented in Appendix 2d.

3.1.8.1 Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon analysis was conducted on eleven soil samples, including one each from test pits BVM-TP8 to BVM-TP12, and BVM-TP14, and monitor wells BVM-MW2 to BVM-MW4, as well as a laboratory QA/QC duplicate sample of BVM-TP11-BS1, and a blind field duplicate sample of BVM-MW2-SS3 (Duplicate #1). Results of laboratory analysis of soil samples from test pits and monitor wells completed at the site as part of the current investigation for petroleum hydrocarbon indicator compounds (TPH and BTEX) are presented in Table 2.1 in Appendix 2c, along with summary tables of results of petroleum hydrocarbon analysis for soils carried out as part of the previous Phase II ESA. The corresponding analytical reports from Maxxam Analytics Inc. for the current investigation are presented in Appendix 2d.

TPH were detected in ten of the soil samples analyzed, returning values ranging from 59 mg/kg in soil sample BVM-MW4-SS2 to 7,100 mg/kg in soil sample BVM-TP11-BS1. No TPH was detected in soil sample BVM-TP14-BS3. None of the detected levels of TPH in the soil samples analyzed at the site exceeded the applicable Tier I RBSLs for fuel oil or lube oil impacts on a commercial site with non-potable groundwater and coarse soil. No concentrations of BTEX were detected in any of the soil samples analyzed at the site. The Maxxam Analytics Inc. analytical report indicated that the products impacting soil samples at the site resembled weathered fuel oil and lube oil.

3.1.8.2 Volatile Organic Compounds in Soil

VOCs analysis was conducted on six soil samples collected from the test pits, including one each from test pits BVM-TP13, and BVM-TP15 to BVM-TP18, as well as a laboratory QA/QC duplicate sample of BVM-TP17-BS3. The results of the laboratory analysis for soil samples collected at the site for VOCs are presented in Table 2.2 in Appendix 2c. The corresponding analytical report from Maxxam Analytics Inc. is presented in Appendix 2d.

No concentrations of VOCs were detected in any of the soil samples analyzed.

3.1.8.3 Petroleum Hydrocarbons in Groundwater

Petroleum hydrocarbon analysis was conducted on seven groundwater samples, including one each from monitor wells BVM-MW2, BVM-MW3, and BVM-MW4, as well as a groundwater sample collected from a stand pipe installed in test pit BVM-TP10. In addition petroleum hydrocarbon analysis was also conducted on laboratory QA/QC duplicate samples of groundwater collected from BVM-MW2 and BVM-MW4, as well as a blind field duplicate sample of groundwater collected from BVM-MW4 (BVM-4FD). Results of the laboratory analysis of these groundwater samples for petroleum hydrocarbon indicator compounds (TPH and BTEX) are presented in Table 2.3 in Appendix 2c. The corresponding analytical report from Maxxam Analytics Inc. is presented in Appendix 2.d.

TPH was detected in five of the groundwater samples analyzed at the site, returning values ranging from 0.3 mg/L in BVM-TP10 to 21 mg/L in BVM-MW4. TPH was not analyzed in the two laboratory duplicate groundwater samples. The TPH concentration detected in the groundwater sample from BVM-MW4 exceeded the applicable Tier I RBSL for fuel/lube oil on a commercial site with non-potable groundwater and coarse soil (i.e., 20 mg/L). While the other concentrations of TPH detected in groundwater analyzed at the site were below the applicable Tier I RBSL guideline.

Various BTEX parameters were detected in the groundwater samples collected from monitor wells BVM-MW2 and BVM-MW4. However, none of the detected concentrations of BTEX parameters exceeded the applicable Tier I RBSLs for these parameters. The Maxxam Analytics Inc. analytical report indicated that the products impacting groundwater samples at the site resembled a mixed assemblage of fuel oil, weathered fuel oil and lube oil.

3.1.9 Discussion & Conclusions of Phase III ESA

A Phase III ESA was completed in the Northco Area at the Former Baie Verte Asbestos Mine Property by Jacques Whitford on behalf of the Newfoundland and Labrador Department of Natural Resources - Mineral Development Division to further delineate environmental impacts identified in the previous Phase II ESA. The conclusions of this assessment are summarised below.

1. The stratigraphy observed on the site was generally similar at all test pit and monitor well locations and comprised loose to compact greyish green to brown gravel (GP) and sand and

gravel (SM) with varying percentages of silt, cobbles and boulders overlying bedrock. Depth to bedrock ranged from 0.7 mbgs in BVM-TP12 to greater than 3.7 m in BVM-TP10.

2. Groundwater was encountered at depths ranging from 1.2 m to 3.1 m below the ground surface in the test pits and monitor wells completed at this site. Based on local topography and site observations, the direction of groundwater flow at the site is inferred to be towards the southeast Upper Duck Island Cove Brook. However, groundwater elevation data indicates a local shallow groundwater flow direction towards the northwest in the vicinity of monitor wells BVM-MW2, BVM-MW3 and BVM-MW4 possibly due to a drainage ditch in this area that disrupts the natural groundwater flow pattern.

3. No free liquid phase petroleum hydrocarbons were observed on site during the current investigation. However, a slight oily sheen (too thin to measure) was observed on the surface of the groundwater in monitor well BVM-MW2, located immediately east of the former tank farm during the current investigation, as well as on the surface of groundwater in test pit NC-TP23, excavated in approximately the same location during the previous Phase II ESA.

4. None of the detected concentrations of TPH in the soil samples analyzed during the current investigation exceeded the applicable Tier I RBSLs for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil. Further, no concentrations of BTEX were detected in any of the soil samples analyzed at the site. The detected concentrations of TPH in surface soil samples NC-TP15-SS1 and NC-TP16-SS1, collected at the former tank farm, during the previous Phase II ESA exceeded the applicable Tier I RBSLs for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil, returning values of <22,400 mg/kg) and <13,000 mg/kg, respectively.

5. The estimated extent of the former tank farm area with TPH in soil exceeding the Tier I RBSLs for a commercial site is shown on Drawing No. 1028976-EE-04 in Appendix 2a. The estimated area with TPH concentrations in soil above 7,400 mg/kg is approximately 100 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock on the site, it is expected that approximately 100 m^3 of impacted soil from this area exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts on average are present in the upper 1 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal if required. Additional delineation would be necessary to better refine these estimates.

6. The detected concentration of TPH in groundwater from BVM-MW4, located along the gravel access road between the former tank farm and the E&R building, exceeded the applicable Tier I RBSL for fuel and lube oil on a commercial site with non-potable groundwater and coarse soil (i.e., 20 mg/L). None of the other concentrations of TPH detected in groundwater analyzed at the site exceeded the applicable Tier I RBSL guideline.

7. The estimated extent of the Northco area with TPH in groundwater exceeding the Tier I RBSLs for a commercial site is shown on Drawing No. 1028976-EE-04 in Appendix 2a. Limited evaluation of petroleum hydrocarbon impacts in groundwater have been carried out in the vicinity of monitor well BVM-MW4, and additional delineation is required in this area to confirm the area of petroleum hydrocarbon impacted groundwater. The actual impacted area may be smaller or larger than the estimated area. Based on the available analytical and field data, Jacques Whitford has estimated that an area of about 100 m^2 of the site has TPH levels in groundwater above 20 mg/L.

8. Based on NLDEC policy directive PPD05-01, petroleum hydrocarbon remediation of soil and groundwater at the site would be required in accordance with provincial regulations, unless a risk-based remedial approach is followed for the site. Adopting a risk-based remedial approach,

petroleum hydrocarbon remediation of site soil and groundwater would be governed by site-specific threshold limit criteria determined for this contaminant.

9. Concentrations of ethylbenzene detected in former soil samples NC-TP7-SS3 (0.16 mg/kg) and NC-TP23-SS1 (0.51 mg/kg) were below the applicable Tier I RBSL for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil of 430 mg/kg, and are thus not considered an environmental concern. Soil sample NC-TP7-SS3 was collected adjacent to the waste oil AST located at the northwest corner of the former E&R building and soil sample NC-TP23-SS1 was collected downgradient (east) of the former tank farm during the previous Phase II ESA.

3.2 Northco Area - Hazardous Materials Assessment

The following buildings in the Northco Area were assessed as part of the Hazardous Materials Assessment:

- Former Mine Dry Building
- Erection and Repair (E&R) Building

Visual inspections and bulk sampling were carried out and were limited to safely and readily accessible portions of the site buildings, facilities and equipment.

3.2.1 Asbestos-Containing Materials (ACMs)

3.2.1.1 Previous Work

The Hazardous Materials Assessment previously completed in the Northco area included the collection of the following:

- 1 – ceiling tile sample (NC-ASB1), 1 – brick mortar sample (NC-ASB2), 1 – pipe insulation sample (NC-ASB3) and 1 – exterior siding sample (NC-ASB5) from the former E&R Building for asbestos analysis; and,
- 1 – floor tile sample (NC-ASB4), 1 – ceiling tile sample (NC-ASB6) and 1 – boiler insulation sample (NC-ASB7) from the Mine Dry Building for asbestos analysis.

The analytical results from the Phase II ESA are presented in Appendix 2c. Analytical results revealed that concentrations of asbestos detected in samples NC-ASB1 (20% chrysotile), NC-ASB2 (2% chrysotile), NC-ASB4 (3% chrysotile), NC-ASB5 (25% chrysotile) and NC-ASB6 (5% amosite) exceeded the applicable assessment criterion of 1%. Sample NC-ASB1 consisted of ceiling tile collected from the former E&R building, sample NC-ASB2 consisted of brick mortar collected from the former E&R building, sample NC-ASB4 consisted of floor tile collected from the Mine Dry building, sample NC-ASB5 consisted of exterior siding collected from the former E&R Phase II building and sample NC-ASB6 consisted of ceiling tile collected from the Mine Dry building. Asbestos was not detected in the pipe insulation (NC-ASB3) of the former E&R building and the boiler insulation (NC-ASB7) of the Mine Dry building.

Asbestos was detected in the ceiling tile, brick mortar and exterior siding of the former E&R building and in the ceiling tile and floor tile of the Mine Dry building. Asbestos fibres in ceiling tile are considered to be friable and asbestos fibres in floor tile, brick mortar and exterior siding are considered to be "non-friable", unless disturbed.

3.2.1.2 Phase III ESA Asbestos Survey Scope and Methodology

The Asbestos Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous asbestos samples collected and analyzed during the Phase II ESA. No other potential ACMs were observed in the subject buildings. During the sampling, a visual determination of the condition of the material, the accessibility, contact potential, exposure, and friability was made in the building. All materials were observed to be in fair to poor condition at the time of the assessment.

Upon entry into each room, 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.

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 or on the subject buildings. At the time of the site visit, all normally accessible interior areas of the buildings were accessible to Jacques Whitford for inspection. There was limited intrusive sampling conducted within wall cavities as ACMs were not expected to be within the wall cavities. The asbestos assessment did not include any intrusive sampling of the roofing materials on the buildings.

3.2.1.3 Discussion and Recommendations

Friable ACMs

Based on the results of the Phase II and III ESAs, friable asbestos was confirmed to be present in the buildings and included ceiling tiles in the Former E & R Building (approximately 100 m^2 in fair condition) and the Mine Dry Building (approximately 2,000 m^2 in fair condition).

Non-Friable ACMs

Based on the results of the Phase II and III ESAs, non-friable asbestos was confirmed to be present in the buildings and included brick mortar (approximately 1,000 m^2 of brick face in poor condition) and exterior siding (approximately 2,800 m^2 in fair condition) in the Former E & R Building and floor tiles (approximately 500 m^2 in good condition) in the Mine Dry Building.

Other Possible ACMs

No other ACMs are expected to be present in concealed wall or ceiling spaces of the buildings; however, settled dust was present throughout the site and within the buildings which may contain asbestos fibres.

The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials in the buildings are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the Northco site including the site buildings.

3.2.2 Lead, Mercury & PCBs Based Paints

3.2.2.1 Previous Work

The paint survey previously completed in the Northco area included the collection of the following:

- 15 – paint chip samples (NC-PS1 to NC-PS15) from painted surfaces for lead, lead leachate, mercury, mercury leachate and PCB analyses.

The analytical results from the Phase II ESA are presented in Appendix 2c. Results of the paint sampling program revealed that concentrations of lead detected in paint samples NC-PS1 (2,870 mg/kg), NC-PS2 (6,200 mg/kg), NC-PS5 (1,880 mg/kg), NC-PS6 (27,400 mg/kg), NCPS7 (26,400 mg/kg), NC-PS8 (996 mg/kg), NC-PS10 (796 mg/kg), NC-PS12 (930 mg/kg), NC-PS13 (673 mg/kg) and NC-PS14 (685 mg/kg) exceeded the Federal Hazardous Products Act (HPA) criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. Concentrations of lead detected in paint samples NC-PS2 (6,200 mg/kg), NC-PS6 (27,400 mg/kg) and NC-PS7 (26,400 mg/kg) also exceeded the former Federal HPA criterion of 5,000 mg/kg. Results revealed that the concentrations of lead leachate detected in all paint samples analyzed did not exceed the applicable assessment criterion of 5.0 mg/L. Therefore, these paints or painted building materials, if removed from the Site, may be disposed of at an approved landfill facility.

Results of the paint sampling program revealed that concentrations of mercury detected in paint samples NC-PS2 (19.7 mg/kg), NC-PS5 (32.2 mg/kg), NC-PS9 (54.7 mg/kg) and PS-DUP3 (13.4 mg/kg) exceeded the Federal HPA criterion of 10 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. The concentration of mercury detected in paint sample NC-PS9 (54.7 mg/kg) also exceeded the CCME guideline for mercury in soil at a industrial site (50 mg/kg). Results revealed that the concentrations of mercury leachate detected in all paint samples analyzed did not exceed the applicable assessment criterion of 0.1 mg/L. Therefore, these paints or painted building materials, if removed from the Site, may be disposed of at an approved landfill facility.

Results of the paint sampling program revealed that concentrations of PCB in all paint samples analyzed were detected at levels below the applicable CCME guideline of 33 mg/kg. Concentrations of PCBs detected in paint ranged from 0.53 mg/kg (NC-PS11) to 3.39 mg/kg (NC-PS1). Therefore, these paints or painted building materials, if removed from the Site, may be disposed of at an approved landfill facility.

3.2.2.2 Phase III ESA Paint Survey Scope and Methodology

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the AMEC Phase II ESA. No other potential paint locations or colours were observed during the Jacques Whitford Paint Survey that warranted sampling.

3.2.2.3 Discussion and Recommendations

Based on the results of the sampling and analysis, elevated lead concentrations (i.e., greater than 600 mg/kg) are present in the white ceiling paint, the green wall paint and the beige on grey wall paint within the interior of the Former E & R Building and the yellow on metal paint and green on concrete paint on the exterior of the Former E & R Building; and, the grey concrete floor paint, the brown door trim paint, the cream on yellow wall paint, the yellow/cream wall paint and orange on grey door paint within the interior of the Mine Dry Building.

Based on the results of the sampling and analysis, elevated mercury concentrations (i.e., greater than 10 mg/kg) are present in the green wall paint and the beige on grey wall paint within the interior of the Former E & R Building; and, the beige wall paint within the interior of the Mine Dry Building.

Results revealed that the concentrations of lead leachate detected in all paint samples analyzed did not exceed the applicable assessment criterion of 5.0 mg/L. Results revealed that the concentrations of mercury leachate detected in all paint samples analyzed did not exceed the applicable assessment criterion of 0.1 mg/L. Therefore, these paints, if removed from the Site, may be disposed of at an approved landfill facility.

The paints in the Mine Dry Building and the Former E & R Building were in generally poor condition. Lead and 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. Lead and Mercury based paints that are in poor condition may pose health concerns for building occupants. Lead and Mercury based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.

3.2.3 Polychlorinated Biphenyls (PCBs)

No electrical transformers, which could contain PCBs, were observed in the buildings. Approximately eight pole-mounted transformers and one pad mounted transformer were observed on the site. The pole-mounted transformers were not accessible for inspection.

The PCB inspection, including a limited random inspection of any older looking fluorescent light ballasts in the site buildings. The ballasts to be inspected were selected based on safe accessibility and apparent age. One fluorescent light ballast in each building was checked for the presence of PCBs.

The manufacturer's name, manufacturer's code (if present), and date code (if present) were recorded for the inspected ballasts. The information obtained from the light ballasts was compared (if necessary) to information in an Environmental Protection Services report EPS 2/CC/2 *Identification of Lamp Ballasts Containing PCBs* to determine whether or not the ballasts contain PCBs. All lights were 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.

Table 3 Results of Inspection of Fluorescent Light Ballasts

Ballast Location	Observed Manufacturer's Information	PCB Status
Former E & R Building	Sola Sentry	Unclear if the ballast contain PCBs.
Mine Dry Building	General Electric Non-PCB	Based on the manufacturer's markings the ballast does not contain PCBs.

The results of a limited inspection of light ballasts can be used to evaluate the presence of PCB ballasts in a building. If the apparently oldest ballasts on a floor of a building do not contain PCBs, then it is likely that none of the ballasts on the floor contain PCBs. If any of the inspected ballasts on a floor of a building contain PCBs, then all ballasts on that floor of the building must either be inspected or be treated as though they contain PCBs.

Based on the available information and the observations from the limited inspections, it is possible that PCB-containing fluorescent light ballasts are located in the buildings. It is recommended that all ballasts within the buildings be inspected upon removal or be treated as though they contain PCBs.

3.2.4 Other Identified Hazardous Materials

No other identified hazardous materials were observed within the buildings.

3.2.5 Mold

No extensive water damaged building materials or suspect mold growth was observed within the buildings.

3.3 Mill Area – Phase III ESA

3.3.1 Site Description

This area contains all the buildings and infrastructure previously used in the processing of asbestos product at the mine site. Buildings present in this area of the site include the primary crusher, secondary crusher, power centre, dry rock storage facility, dry mill and wet mill (as shown in Drawing No. 1028976-EE-06 in Appendix 3a). Brief descriptions of these buildings are presented below and are taken directly from the previous Phase II ESA report:

"**Primary Crusher**: This facility was formerly used in the primary crushing of crude asbestos ore, the first stage of processing asbestos fibre at the Site. The building measures approximately 15 m x 35 m. It is six storeys high and extends another five or six storeys underground. The structure is constructed of a metal frame with corrugated asbestos sheeting walls on a poured concrete foundation. The interior walls consist of asbestos sheeting, concrete cinder blocks and wood. The roof is constructed of galvanized metal.

Secondary Crusher: This facility was formerly used to dry and further crush the ore after it was processed at the primary crusher. The building measures approximately 60 m x 70 m and at it highest point, is approximately 10 storeys high. The structure is constructed of a metal frame with corrugated metal and asbestos sheeting walls on a poured concrete foundation. The interior walls consist of metal and asbestos sheeting, concrete cinder blocks and wood. The roof is constructed of galvanized metal.

Power Centre: This facility is attached to the northwest corner of the secondary crusher. The building measures approximately 10 m x 20 m and is approximately two storeys high. The structure is constructed of a metal frame with corrugated asbestos sheeting walls on a poured concrete foundation. The interior walls consist of asbestos sheeting, concrete cinder blocks and wood. The roof is constructed of galvanized metal. No floor drains were observed throughout the building. A network of utility towers is located directly south and adjacent to the facility. From 1995 to 1999, the power centre was used to store a variety of PCBs-contaminated items associated with the operation of the site. However, in 2001, the building was abandoned as a PCBs storage facility and items stored inside were shipped off-site for proper treatment and disposal.

Dry Rock Storage Facility: This facility was formerly used as a storage facility for ore crushed at the secondary crusher. The mill used ore stored at the facility during times when the crushers were shutdown for maintenance or repairs. The facility consists of two separate buildings, the furnace/blower building and the dry rock storage building. The furnace/blower building measures approximately 10 m x 15 m and is approximately five storeys high. The structure is constructed of a metal frame with corrugated metal sheeting walls on a poured concrete foundation. The interior walls consist of metal sheeting and concrete cinder blocks. The roof is constructed of galvanized metal. The dry rock storage building measures approximately 15 m x 40 m and is approximately five storeys high. The structure is constructed of a metal frame with corrugated asbestos and metal sheeting walls.

Dry Mill: This facility was formerly used to remove the asbestos fibres from the ore after it was processed at the secondary crusher. The building measures approximately 50 m x 60 m and is approximately twelve storeys high. The structure is constructed of a metal frame with corrugated asbestos sheeting walls on a poured concrete foundation. The interior walls consist of asbestos sheeting, concrete cinder blocks and wood. The roof is constructed of galvanized metal.

Wet Mill: This facility is the newest facility at the Site, constructed in the early 1990s. During the wet milling process, asbestos fibre was recovered from the mill tailings stockpile as a water-borne slurry. The building measures approximately 30 m x 70 m and at it highest point, is approximately five storeys high. The structure is constructed of a metal frame with corrugated metal sheeting walls on a poured concrete foundation. The interior walls consist of metal sheeting and concrete cinder blocks. The roof is constructed of aluminum metal." (AMEC Report No. TF6126509 "*Phase II Environmental Site Assessment, Former Baie Verte Asbestos Mine, Baie Verte, Newfoundland and Labrador*", dated January 2007).

Other site features and infrastructure present in the Mill Area include a conveyor storage area, a large approximately 3,600 m^2 area of stockpiled saw dust between the former E&R building and the Power Center remaining from former sawmilling operations at the site, a pole mounted transformer adjacent to the dry mill, and a network of aboveground pipelines running from the power centre to the former E&R building. In addition, various aboveground water lines (plastic and metal) are present in the area. The previous Phase I ESA identified various above and underground fuel storage tanks at the site; including one UST approximately 8 m north of the dry rock storage facility, two 910 L (200-gallon) ASTs at the exterior southeast corner of the power centre, a 910 L (200-gallon) AST inside the power centre, a propane AST approximately 75 m south of the dry mill, near the entrance of the access road leading to the tailings stockpile. The Phase I ESA report also noted the possible presence of a UST located adjacent to the southside of the dry mill, as well as three or more USTs within a former refuelling fuel station located at the intersection of the pit access road and the road leading to the primary crusher. It is not known whether these USTs and associated piping have been removed or are still present at the site. Two former ASTs were also previously present at the site including a Bunker C AST located approximately 20 m southwest of the power centre, as well as one located immediately east of the Wet Mill.

Terrain in the area gently slopes towards the southeast, and surface drainage (apparent groundwater flow direction) appears to follow the general slope, flowing towards a small brook (Upper Duck Island Cove Brook) located approximately 100 m southeast of the site.

The previous Phase I and II ESAs completed at the site indicated a drainage ditch and culvert system that runs southeast beneath the sawdust stockpile between the former E&R Building and the Power Centre towards Upper Duck Island Brook.

3.3.2 Previous Work

The Phase II ESA previously completed in the Mill Area included the excavation of 23 test pits, and the collection of soil samples for chemical analysis of petroleum hydrocarbons, metals, PAHs and PCBs. The sampling locations for soils collected as part of the previous Phase II ESA are shown on Drawing No. 1028976-EE-06 in Appendix 3a, and summary tables of results of laboratory analysis are provided in Appendix 3c. The results of the Phase II ESA in the Northco area can be summarized as follows:

- Approximately 2.0 cm of free phase petroleum hydrocarbon product was observed on the water table within test pit ML-TP3, excavated in the vicinity of a former UST reported to have been located along the south side of the dry mill building.
- A petroleum hydrocarbon sheen was observed on the water table within test pit ML-TP18, excavated in the vicinity of the Bunker C AST (i.e. day tank) present at the southwest corner of the power centre.

- Concentrations of ethylbenzene detected in soil samples ML-TP2-SS3 (0.1 mg/kg) and ML-TP3-SS1 (0.17 mg/kg) exceeded the CCME-CEQG of 0.08 mg/kg, but did not exceed the 2003 Atlantic Tier I RBSL of 430 mg/kg. Soil samples ML-TP2-SS3 and ML-TP3-SS1 were collected along the south side of the dry mill building.
- Concentrations of modified TPH detected in soil samples ML-TP3-SS1 (<66,500 mg/kg) and ML-TP18-SS1 (<18,800 mg/kg) exceeded the 2003 Atlantic PIRI Tier I RBSL criterion of 7,400 mg/kg for diesel fuel in soil at a commercial site with coarse-grained soil and non-potable groundwater. Soil sample ML-TP3-SS1 was collected in the vicinity of the former UST located along the south side of the dry mill building and soil sample ML-TP18-SS1 was collected southwest of the power centre, in the vicinity of the Bunker C AST (i.e. day tank).
- Concentrations of chromium and nickel detected in all eight soil samples collected at the Site exceeded the applicable assessment criteria for metals in soil at industrial sites. The concentration of arsenic detected in soil sample ML-TP7-SS2 (374 mg/kg) also exceeded the applicable CCME-CEQG of 12.0 mg/kg. Based on the testing completed, metal impacts in soil are considered to be widespread throughout the Site.
- Concentrations of PCBs and PAHs in all soil samples analyzed were either non-detect or detected at levels below the applicable assessment criteria, and are thus not considered to be an environmental concern in evaluated areas of the site.

3.3.3 Field Work

Fieldwork completed as part of the current investigation in the Mill Area comprised excavation of six (6) test pits and five (5) monitor wells. A sample location map (Drawing No. 1028976-EE-06) showing the location of these, as well as general site features and former Phase II ESA sample locations is provided in Appendix 3a.

3.3.4 Stratigraphy

The stratigraphic information recorded during the current investigation is presented on the Test Pit and Monitor Well Records in Appendix 3b. Fill materials were encountered at or near the surface at all test pit and monitor well locations and ranged in thickness from 0.975 m in monitor well BVM-MW5 to greater than 3.04 m in monitor wells BVM-MW6, BVM-MW7 and BVM-MW9. Fill material generally comprised loose to compact greyish brown sand and gravel (SP) with varying percentages of silt, cobbles and boulders and appeared at least in part derived from waste rock generated from mining operations.

Bedrock was encountered at the base of three (3) of the six (6) test pits investigated at the site, as well as beneath the fill material in monitor wells BVM-MW5 and BVM-MW6 and comprised a dark green ultramafic intrusive rock.

3.3.5 Groundwater Conditions

The depth to the groundwater table as measured on September 20, 2007 ranged from 1.37 m in monitor wells BVM-MW6 and BVM-MW7 to 6.33 m in BVM-MW8. Measured groundwater elevations for monitor wells BVM-MW6 and BVM-MW7 in the Dry Mill area were 100 m and 100.23 m, respectively. Measured groundwater elevations in the Power Center area ranged from 99.88 m in

BVM-MW5 to 100.0 m in BVM-MW9. Groundwater levels in these monitor wells are expected to vary seasonally and in response to individual precipitation events.

Groundwater seepage was observed on September 7, 2007 in BVM-TP6 and BVM-TP7 at depths of 1.0 m and 1.6 m, respectively. Groundwater seepage was observed on September 8, 2007 in test pits BVM-TP19, BVM-TP20 and BVM-TP21 at depths of 0.8m, 1.8m, and 1.4m, respectively. No groundwater seepage was encountered in test pit BVM-TP5 at the time of excavation and backfilling. Test pits are not normally left open long enough for groundwater levels to stabilise in the excavations, therefore groundwater level estimates at these locations have to be considered with caution.

Groundwater elevation data from a minimum of three monitor wells is required to determine the direction of groundwater flow in the Dry Mill area. Groundwater elevation data for monitor wells BVM-MW5, BVM-MW8 and BVM-MW9 indicates a local shallow groundwater flow direction in the Power Center area towards the south-southwest. It is possible that local topographical features and site infrastructure (i.e., drainage ditch and culvert system) disrupts the natural groundwater flow pattern in this area of the site, which would be expected to be southeast towards Upper Duck Island Cove Brook, based on overall site topography. The inferred direction of shallow groundwater flow in the site area, as well as locally in the vicinity of monitor wells BVM-MW2, BVM-MW3 and BVM-MW4 is shown on Drawing No. 1028976-EE-06 in Appendix 3a.

Hydraulic response (bail down) testing was conducted on September 20, 2007 on monitoring well BVM-MW6 to determine the permeability of the underlying stratigraphy at the site. Data collected during the bail down tests is provided in Appendix 3f. Analysis of the bail down test data for each test well was performed using the Bouwer & Rice and Hvorslev analysis methods. Analysis was conducted with the aid of the computer program AquiferTest, version 3.5 (Waterloo Hydrogeologic Inc.). The test results are graphically displayed in Appendix 3f. Analysis of test data using the Bouwer & Rice and Hvorslev methods provided similar hydraulic conductivity values for monitoring well BVM-MW6 with values of 1.58E-4 m/s determined using the Hvorslev method and 1.97E-4 m/s determined using the Bouwer & Rice method. Based on the results of the bail down tests, an average combined hydraulic conductivity of 1.76E-4 m/s is determined for the fill material and bedrock underlying the site.

3.3.6 Free Liquid Phase Petroleum Hydrocarbons

Free liquid phase petroleum hydrocarbons were not observed in the soil or on the groundwater in any of the test pits or monitor wells completed as part of the current investigation. During the previous Phase II ESA approximately 2.0 cm of free phase petroleum hydrocarbon product was observed on groundwater within test pit ML-TP3, excavated in the vicinity of a former UST located along the south side of the dry mill building. In addition, a petroleum hydrocarbon sheen was observed on groundwater within test pit ML-TP18, excavated in the vicinity of the former Bunker C AST located southwest corner of the power centre during the Phase II ESA.

3.3.7 Soil Vapor Concentrations

The soil vapour concentrations measured in each of the soil samples from the test pits are provided on the Test Pit Records in Appendix 3b. The vapour concentrations measured ranged from 1.6 to 21.7 ppm. The soil vapour concentrations measured in each of the soil samples from the monitor wells are provided on the Monitor Well Records in Appendix 2b. The vapour concentrations measured ranged from 0.2 to 12.7 ppm.

Soil vapour concentrations vary with both fuel type and age, and it should be noted that the readings are intended to provide only a qualitative indication of volatile hydrocarbon levels and are not directly equivalent to soil analytical results. Soil vapor concentrations which exceed 50 ppm may indicate the presence of petroleum hydrocarbon impacts in soil. No soil vapour concentrations above 50 ppm were measured in any of the soil samples collected from test pits and monitor wells at the site.

Slight to strong petroleum hydrocarbon odours were detected during excavation at test pit locations BVM-TP7 and BVM-TP20. A strong petroleum hydrocarbon odour was also detected on groundwater from monitor well BVM-MW6. Please note that respirators were worn by field staff during excavation of test pits and borehole drilling, and thus olfactory evidence of petroleum hydrocarbons may have been more pronounced than that detected at these locations, or may have been present at other test locations at the site but not detected by field staff.

3.3.8 Soil & Groundwater Chemical Analysis & Results

A laboratory analysis schedule for the Mill Area is presented in Table 4.

Table 4 Laboratory Analysis Schedule (Mill Area)

Potential Environment Concern	Sample Location	Sample Matrix	
		Soil	Groundwater
Potential for petroleum hydrocarbon impacts related to historical storage and usage	Power Center: BVM-TP5, BVM-TP6, BVM-MW5, BVM-MW9 Dry Mill: BVM-TP19, BVM-TP20, BVM-TP21, BVM-MW6, BVM-MW7	TPH/BTEX (9)	TPH/BTEX (5)
Note: The methodologies utilised by Maxxam Analytics Inc. in analysis of the soil and groundwater samples are presented on the analytical reports in Appendix 3d.			

Results of the laboratory analysis of soil and groundwater samples obtained from this site are presented in Tables 3.1 and 3.2 in Appendix 3c, along with applicable summary tables of results of chemical analysis for soils carried out as part of the previous Phase II ESA. The corresponding analytical reports from Maxxam Analytics Inc. for the current investigation are presented in Appendix 3d. Please note that soil samples collected at test pit BVM-TP7 where misplaced in the field and could not be submitted to the laboratory for analysis.

3.3.8.1 Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon analysis was conducted on nine soil samples, including four soil samples collected from test pits (i.e., BVM-TP5 and BVM- TP6) and monitor wells (i.e., BVM-MW5 and BVM-MW9) in the Power Centre area, and five soil samples collected from test pits (i.e., BVM-TP19 to BVM-TP21) and monitor wells (i.e., BVM-MW6 and BVM-MW7) in the Dry Mill Area. Results of laboratory analysis of soil samples from test pits and monitor wells completed at the site as part of the current investigation for petroleum hydrocarbon indicator compounds (TPH and BTEX) are presented in Table 3.1 in Appendix 3c, along with summary tables of results of petroleum hydrocarbon analysis for soils carried out as part of the previous Phase II ESA. The corresponding analytical reports from Maxxam Analytics Inc. for the current investigation are presented in Appendix 3d.

TPH were detected in eight of the soil samples analyzed, returning values ranging from 65 mg/kg in soil sample BVM-TP21-BS4 in the Dry Mill area to 9,900 mg/kg in soil sample BVM-TP6-BS2 in the Power Center area. No TPH was detected in soil sample BVM-MW5-SS2 in the Power Center area. The TPH concentration detected in soil sample BVM-TP6-BS2 exceeded the applicable Tier I RBSL for fuel oil on a commercial site with non-potable groundwater and coarse soil (i.e., 7,400 mg/kg). While the other concentrations of TPH detected in soil samples analyzed at the site were below the applicable Tier I RBSL guidelines. With the exception of soil sample BVM-MW6-SS3 in the Dry Mill area, no concentrations of BTEX were detected in any of the other soil samples analyzed at the site. Low levels of ethylbenzene and xylenes were detected in soil sample BVM-MW6-SS3 in the Dry Mill area, returning values of 0.04 mg/kg and 0.08 kg/kg, respectively. However the concentrations of both parameters were within the applicable Tier I RBSL guidelines for each parameter. The Maxxam Analytics Inc. analytical report indicated that the products impacting soil samples at the site resembled a mixed assemblage of weathered fuel oil and lube oil.

3.3.8.2 Petroleum Hydrocarbons in Groundwater

Petroleum hydrocarbon analysis was conducted on five groundwater samples, including one each from monitor wells BVM-MW5, BVM-MW8 and BVM-MW9 in the Power Centre area and monitor wells BVM-MW6 and BVM-MW7 in the Dry Mill Area. Results of the laboratory analysis of these groundwater samples for petroleum hydrocarbon indicator compounds (TPH and BTEX) are presented in Table 3.2 in Appendix 3c. The corresponding analytical report from Maxxam Analytics Inc. is presented in Appendix 3d.

TPH was detected in all of the groundwater samples analyzed at the site, returning values ranging from 0.4 mg/L in monitor well BVM-MW9 in the Power Centre area and monitor well BVM-MW7 in the Dry Mill area to 120 mg/L in monitor well BVM-MW6 in the Dry Mill area. The TPH concentration detected in the groundwater sample from BVM-MW6 in the Dry Mill area exceeded the applicable Tier I RBSL for fuel/lube oil on a commercial site with non-potable groundwater and coarse soil (i.e., 20 mg/L). While the other concentrations of TPH detected in groundwater analyzed at the site were below the applicable Tier I RBSL guideline. In addition, various BTEX parameters were detected in the groundwater sample collected from monitor well BVM-MW6 in the Dry Mill area. However, none of the detected concentrations of BTEX parameters exceeded the applicable Tier I RBSLs for these parameters. The Maxxam Analytics Inc. analytical report indicated that the products impacting groundwater samples at the site resembled a mixed assemblage of fuel oil, weathered fuel oil and lube oil.

3.3.9 Discussion & Conclusions of Phase III ESA

A Phase III ESA was completed in the Mill Area at the Former Baie Verte Asbestos Mine Property by Jacques Whitford on behalf of the Newfoundland and Labrador Department of Natural Resources - Mineral Development Division to further delineate environmental impacts identified in the previous Phase II ESA. The conclusions of this assessment are summarised below.

1. The stratigraphy observed on the site was generally similar at all test pit and monitor well locations and comprised loose to compact greyish brown sand and gravel (SP) with varying percentages of silt, cobbles and boulders overlying ultramafic intrusive bedrock. Depth to bedrock ranged from 0.975 mbgs in monitor well BVM-MW5 to greater than 3.04 mbgs in monitor wells BVM-MW6, BVM-MW7 and BVM-MW9.

2. Groundwater was encountered at depths ranging from 0.8 m to 6.33 m below the ground surface in the test pits and monitor wells completed at this site. Based on local topography and site observations, the direction of groundwater flow at the site is inferred to be southeast towards Upper Duck Island Cove Brook. However, groundwater elevation data in the Power Center area indicates a local shallow groundwater flow direction towards the south-southwest in the vicinity of monitor wells BVM-MW5, BVM-MW8 and BVM-MW9 possibly due to local topographical features and site infrastructure (i.e., drainage ditch and culvert system) that disrupt the natural groundwater flow pattern in this area of the site.

3. No free liquid phase petroleum hydrocarbons were observed on site during the current investigation. During the previous Phase II ESA, approximately 2.0 cm of free phase petroleum hydrocarbon product was observed on the water table within test pit ML-TP3, excavated in the vicinity of a former UST located along the south side of the dry mill building. In addition, an oily sheen was observed on the water table within test pit ML-TP18, excavated in the vicinity of the former Bunker C AST located southwest corner of the Power Centre during the Phase II ESA.

4. The detected TPH concentration in soil at test pit BVM-TP6, located approximately 25 m south of the former Bunker C AST along the southwest corner of the Power Centre exceeded the applicable Tier I RBSL for fuel oil on a commercial site with non-potable groundwater and coarse soil (i.e., 7,400 mg/kg). None of the detected concentrations of TPH in the other soil samples analyzed at the site during the current investigation exceeded the applicable Tier I RBSLs. Further, concentrations of BTEX in all soil samples analyzed were either non-detect or detected at levels below the applicable Tier I RBSLs for these parameters. The detected concentration of TPH in soil samples ML-TP3-SS1, collected in the vicinity of the former UST located along the south side of the dry mill building exceeded the applicable Tier I RBSL for a commercial site, returning a value of <66,500 mg/kg. The detected concentration of TPH in soil sample ML-TP18-SS1, collected southwest of the power centre, in the vicinity of the Bunker C AST exceeded the applicable Tier I RBSL for a commercial site, returning a value of <18,800 mg/kg. There was field evidence of similar petroleum hydrocarbon impacts at test pit BVM-TP7, however the apparent impacted soil was not analysed at this location. Field evidence suggests that the TPH concentration at test pit BVM-TP7 may also exceed the referenced Tier I RBSLs for fuel oil and lube oil for a commercial site with non-potable groundwater and coarse soil.

5. The estimated extent of TPH in soil exceeding the Tier I RBSLs for a commercial site in the vicinity of former test pit ML-TP18 in the Power Center area is shown on Drawing No. 1028976-EE-07 in Appendix 3a. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of former test pit ML-TP18 is approximately 300 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 450 m^3 of impacted soil in the vicinity of former test pit ML-TP18 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts on average are present in the upper 1.5 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Limited evaluation of petroleum hydrocarbon impacts in soil has been carried out east of former test pit ML-TP18 and the actual impacted area may be smaller or larger than the estimated area. Additional delineation would be required to refine the impacted soil estimates.

6. The estimated extent of TPH in soil exceeding the Tier I RBSLs for a commercial site in the vicinity of test pit BVM-TP6 in the Power Center area is shown on Drawing No. 1028976-EE-07 in Appendix 3a. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of test pit BVM-TP6 is approximately 225 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 300 m^3 of impacted soil in the vicinity of test pit BVM-TP6 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts are present in the upper

1.2 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Limited evaluation of petroleum hydrocarbon impacts in soil have been carried out in this area and the actual impacted area may be smaller or larger than the estimated area. Additional delineation would be required to refine the impacted soil estimates.

7. The estimated extent of TPH in soil exceeding the Tier I RBSLs for a commercial site in the vicinity of former test pit ML-TP3, located in the vicinity of the former UST along the south side of the dry mill building is shown on Drawing No. 1028976-EE-07 in Appendix 3a. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of former test pit ML-TP3 is approximately 120 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 120 m^3 of impacted soil in the vicinity of former test pit ML-TP3 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts are present in the upper 1.4 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Additional delineation would be necessary to better refine these estimates.
8. The detected concentration of TPH in groundwater from BVM-MW6, located in the vicinity of the former UST along the south side of the dry mill building, exceeded the applicable Tier I RBSL for fuel and lube oil on a commercial site with non-potable groundwater and coarse soil (i.e., 20 mg/L). None of the other concentrations of TPH detected in groundwater analyzed at the site exceeded the applicable Tier I RBSL guideline.
9. The estimated extent of TPH in groundwater exceeding the applicable Tier I RBSL for a commercial site in the vicinity of monitor well BVM-MW6, located in the vicinity of the former UST along the south side of the dry mill building, is shown on Drawing No. 1028976-EE-07 in Appendix 3a. Limited evaluation of petroleum hydrocarbon impacts in groundwater have been carried out in the vicinity of monitor well BVM-MW6, and additional delineation is required in this area to confirm the area of petroleum hydrocarbon impacted groundwater. The actual impacted area may be smaller or larger than the estimated area. Based on the available analytical and field data, Jacques Whitford has estimated that an area of about 200 m^2 has TPH levels in groundwater above 20 mg/L.
10. Based on NLDEC policy directive PPD05-01, petroleum hydrocarbon remediation of soil and groundwater at the site would be required in accordance with provincial regulations, unless a risk-based remedial approach is followed for the site. Adopting a risk-based remedial approach, petroleum hydrocarbon remediation of site soil and groundwater would be governed by site-specific threshold limit criteria determined for this contaminant.
11. In accordance with NLDEC policy directive PPD05-01, remediation is required for the free petroleum hydrocarbon product identified in the vicinity of a former UST located along the south side of the dry mill building. Removal is required to an approved waste oil treatment facility.
12. Concentrations of ethylbenzene detected in previous soil samples ML-TP2-SS3 (0.1.10 mg/kg) and ML-TP3-SS1 (0.17 mg/kg) were below the applicable Tier I RBSL for fuel oil and lube oil impacts on a commercial site with non-potable groundwater and coarse soil of 430 mg/kg, and are thus not considered an environmental concern. Soil samples ML-TP2-SS3 and ML-TP3-SS1 were collected along the south side of the dry mill building during the previous Phase II ESA.

3.4 Mill Area - Hazardous Materials Assessment

The following buildings in the Mill Area were assessed as part of the Hazardous Materials Assessment:

- Primary Crusher
- Secondary Crusher
- Power Centre/Drier Building
- Dry Rock Storage Building (part of the Dry Rock Storage Facility)
- Furnace/blower Building (part of the Dry Rock Storage Facility)
- Dry Mill
- Wet Mill

Visual inspections and bulk sampling were carried out and were limited to safely and readily accessible portions of the site buildings, facilities and equipment. The interior of the Dry Rock Storage Building was not accessed for assessment due to the poor structural condition of the building.

3.4.1 Asbestos-Containing Materials (ACMs)

3.4.1.1 Previous Work

The asbestos survey previously completed in the Mill Area included the collection of the following:

- 4 – samples of building materials (ML-ASB1 to ML-ASB4 - pipe insulation, floor tile, brick mortar) from the site buildings for asbestos analysis.

The analytical results from the Phase II ESA are presented in Appendix 2c. The analytical results revealed that concentrations of asbestos detected in samples ML-ASB1 (50% amosite), ML-ASB2 (55% amosite), ML-ASB3 (5% chrysotile) and ML-ASB4 (2% chrysotile) exceeded the applicable assessment criterion of 1%. Sample ML-ASB1 consisted of pipe insulation collected from the dry mill, sample ML-ASB2 consisted of pipe insulation collected from the secondary crusher, sample ML-ASB3 consisted of floor tile collected from the primary crusher and sample ML-ASB4 consisted of brick mortar collected from the dry rock storage facility. Pipe insulation is considered to be friable and floor tile and brick mortar are considered to be non-friable, unless disturbed.

3.4.1.2 Phase III ESA Asbestos Survey Scope and Methodology

The Asbestos Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous asbestos samples collected and analyzed during the Phase II ESA. One other potential ACM was observed in the subject buildings. During the sampling, a visual determination of the condition of the material, the accessibility, contact potential, exposure, and friability was made in the building. All materials were observed to be in poor condition at the time of the assessment.

Upon entry into each room, 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.

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 or on the subject buildings. At the time of the site visit, all normally accessible interior areas of the buildings were accessible to Jacques Whitford for inspection except for the Dry Rock Storage Building. There was limited intrusive sampling conducted within wall cavities as ACMs were not expected to be within the wall cavities. The asbestos assessment did not include any intrusive sampling of the roofing materials on the buildings.

3.4.1.3 Results

During the site inspection, one (1) bulk sample of a possible ACM was collected in the Crusher Building (JW07-ML-ASB1 which was a sample from the concrete floor). The bulk sample was sent to Maxxam Analytics Inc. for confirmatory asbestos analysis. Two paint samples originally submitted for lead, mercury and PCB content were also analyzed for asbestos content (JW07-ML-PS10 and JW07-ML-PS48). Asbestos was not confirmed to be present in the sample JW07-ML-ASB1. Sample JW07-ML-PS10 (red painted wrap from the sprinkler system in the Boiler Room) was found to contain 1-5% chyrsotile asbestos. Sample JW07-ML-PS48 (pink paint from equipment in the Dry Mill) was also found to contain 1-5% chyrsotile asbestos. Detailed laboratory test results are included in Appendix 7. A summary of the bulk samples submitted, the sample analyses and the locations of visually similar materials is included in Table 3.3 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

3.4.1.4 Discussion and Recommendations

Friable ACMs

Based on the results of the Phase II and III ESAs, friable asbestos was confirmed to be present in the buildings and included pipe insulation collected from the dry mill (approximately 100 m^2 in poor condition) and the Secondary Crusher Building (approximately 2,000 m^2 in poor condition) and pipe wrap on the sprinkler system in the Boiler Room and within pink paint on a piece of equipment sampled on the first floor of the Dry Mill Building. Exposed friable asbestos product was observed throughout all of the buildings and on the exterior surfaces of the site.

Non-Friable ACMs

Based on the results of the Phase II and III ESAs, non-friable asbestos was confirmed to be present in the buildings and included brick mortar (approximately 1,000 m^2 of brick face in poor condition) from the Dry Rock Storage Building (building is collapsed) and floor tiles (approximately 500 m^2 in poor condition) in the Primary Crusher Building. Based on visually similar materials from the E & R Building in the Northco Area, the exterior transite cladding present on the Dry Mill, the Power Centre, the Drier and Conveyor Housing is assumed to contain asbestos. The cladding was generally in fair condition.

Other Possible ACMs

No other ACMs are expected to be present in concealed wall or ceiling spaces of the buildings; however, settled dust was present throughout the site and within the buildings which may contain asbestos fibres.

The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials in the buildings are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the Mill Area site including the site buildings.

3.4.2 Lead, Mercury & PCBs Based Paints

3.4.2.1 Previous Work

The paint survey previously completed in the Mill Area included the collection of the following:

- 25 – paint chip samples (ML-PS1 to ML-PS25) from painted surfaces present at the site for a combination of lead, lead leachate, mercury, mercury leachate and PCB analyses.

The analytical results from the Phase II ESA are presented in Appendix 2c. Results of the paint sampling program revealed that concentrations of lead detected in paint samples ML-PS2 (1,080 mg/kg), ML-PS4 (158,000 mg/kg), ML-PS5 (42,100 mg/kg), ML-PS6 (1,370 mg/kg), ML-PS7 (57,900 mg/kg), ML-PS8 (23,000 mg/kg), ML-PS9 (1,930 mg/kg), ML-PS10 (1,820 mg/kg), ML-PS11 (1,520 mg/kg), ML-PS12 (5,800 mg/kg), ML-PS13 (7,240 mg/kg), ML-PS14 (10,300 mg/kg), ML-PS16 (3,750 mg/kg), ML-PS17 (975 mg/kg), ML-PS19 (4,150 mg/kg), ML-PS20 (2,500 mg/kg), ML-PS21 (2,070 mg/kg), ML-PS22 (2,140 mg/kg), ML-PS25 (1,670 mg/kg), PS-DUP4 (909 mg/kg), PS-DUP5 (54,500 mg/kg) and PS-DUP6 (3,630 mg/kg) exceeded the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site.

Concentrations of lead detected in paint samples ML-PS4 (158,000 mg/kg), ML-PS5 (42,100 mg/kg), ML-PS7 (57,900 mg/kg), ML-PS8 (23,000 mg/kg), ML-PS12 (5,800 mg/kg), ML-PS13 (7,240 mg/kg), ML-PS14 (10,300 mg/kg) and PS-DUP5 (54,500 mg/kg) also exceeded the former Federal HPA criterion of 5,000 mg/kg.

Results revealed that the concentrations of lead leachate detected in paint samples ML-PS5 (8.51 mg/L) and ML-PS14 (116.0 mg/L) exceeded the applicable assessment criterion of 5.0 mg/L. Since the concentrations of lead leachate in these paints are 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. In most cases, when the mass of equipment is considered the overall calculated lead concentration drops below 600 mg/kg if the paint is intact on the equipment.

Results of the paint sampling program revealed that concentrations of mercury detected in paint samples ML-PS7 (17.3 mg/kg), ML-PS17 (25.2 mg/kg) and PS-DUP5 (17.3 mg/kg) exceeded the Federal HPA criterion of 10.0 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. The concentrations of mercury detected in the paint samples also did not exceed the CCME guideline of 50.0 mg/kg for mercury in soil at an industrial site. The concentrations of mercury leachate detected in paint sample ML-PS17 (0.0008 mg/L) did not exceed the applicable assessment criterion of 0.1 mg/L. Therefore, these paints or painted building materials, if removed from the Site, may be disposed of at an approved landfill facility.

Results of the paint sampling program revealed that concentrations of PCBs in all paint samples analyzed were detected at levels below the applicable CCME guideline of 33.0 mg/kg. Concentrations of PCBs detected in paint ranged from 1.26 mg/kg (ML-PS4) to 29.5 mg/kg (ML-PS21). Therefore, these paints or painted building materials, if removed from the Site, may be disposed of at an approved landfill facility.

3.4.2.2 Phase III ESA Paint Survey Scope and Methodology

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA.

3.4.2.3 Results – Furnace Blower Building

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, six (6) paint samples were collected from within the Furnace Blower Building (JW07-ML-PS1 to JW07-ML-PS6). The bulk samples were sent to Maxxam Analytics Inc. for lead, mercury and PCB analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk samples submitted and the sample analyses are included in Table 3.4 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

The samples collected included white paint on the exterior of the building (JW07-ML-PS1), interior blue paint on concrete (JW07-ML-PS2), interior grey floor paint on concrete (JW07-ML-PS3), red paint on structural steel (JW07-ML-PS5) and light blue and green paints on equipment (JW07-ML-PS4 and JW07-ML-PS6).

The concentrations of lead detected in four of the paint samples were above the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. These samples include the white paint on the exterior of the building (JW07-ML-PS1), red paint on structural steel (JW07-ML-PS5) and light blue and green paints on equipment (JW07-ML-PS4 and JW07-ML-PS6). Most of these bulk samples of paint were analyzed for lead leachability. The concentrations of lead leachate in the samples from the red paint on structural steel and the light blue and green paints on equipment were in excess of 5 mg/L and therefore are considered to be leachable and are hazardous materials for disposal purposes. In most cases, when the mass of equipment is considered the overall calculated lead concentration drops below 600 mg/kg if the paint is intact on the equipment.

The concentrations of mercury detected in the paint samples were all below the Federal HPA criterion of 10.0 mg/kg and are therefore not considered to be a health hazard during any renovation/demolition activities at the Site.

PCBs were not detected in the paint samples that were analyzed.

3.4.2.4 Results – Crusher

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, two (2) paint samples were collected from within the Crusher (JW07-ML-PS7 and JW-ML-PS8). The bulk sample JW07-ML-PS7 was sent to Maxxam Analytics Inc. for lead and mercury analyses and sample JW07-ML-PS7 was sent for lead, mercury and PCB analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk sample submitted and the sample analysis is included in Table 3.4 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

The samples collected included blue on white paint on interior transite walls of the building (JW07-ML-PS7) and grey/white paint on equipment (JW07-ML-PS8).

The concentrations of lead detected in the two paint samples were above the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. The bulk samples of paint were analyzed for lead leachability. The concentrations of lead leachate in the samples were not in excess of 5 mg/L and therefore are not considered to be leachable and are not hazardous materials for disposal purposes.

The concentrations of mercury detected in the paint samples were both below the Federal HPA criterion of 10.0 mg/kg and are therefore not considered to be a health hazard during any renovation/demolition activities at the Site.

PCBs were not detected in the paint sample (JW07-ML-PS8) that was analyzed.

3.4.2.5 Results – Boiler Room

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, four (4) paint samples were collected from within the Boiler Room (JW07-ML-PS9 to JW-ML-PS12).

The bulk samples were sent to Maxxam Analytics Inc. for lead and mercury analyses. Samples JW07-ML-PS10 and JW07-ML-PS12 were also sent for PCB analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk samples submitted and the sample analyses are included in Table 3.4 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

The samples collected included grey paint on the boilers (JW07-ML-PS9), interior red paint on the sprinkler system (JW07-ML-PS10), exterior green paint on walls (JW07-ML-PS11), and interior blue paint on walls (JW07-ML-PS12).

The concentrations of lead detected in three of the paint samples were above the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. These samples include grey paint on the boilers (JW07-ML-PS9), interior red paint on the sprinkler system (JW07-ML-PS10), and exterior green paint on walls (JW07-ML-PS11). Two of these bulk samples of paint (JW07-ML-PS9 and JW07-ML-PS11) were analyzed for lead leachability. The concentrations of lead leachate in the samples were not in excess of 5 mg/L and therefore are not considered to be leachable and are not hazardous materials for disposal purposes.

The concentrations of mercury detected in the paint samples were all below the Federal HPA criterion of 10.0 mg/kg and are therefore not considered to be a health hazard during any renovation/demolition activities at the Site.

PCBs were not detected in the paint samples that were analyzed.

3.4.2.6 Results – Power Centre/Drier Building

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, seven (7) paint samples were collected from within the Drier Building (JW07-ML-PS13 to JW-ML-PS19). The bulk samples were sent to Maxxam Analytics Inc. for lead and mercury analyses. Samples JW07-ML-PS14, JW07-ML-PS16 and JW07-ML-PS18 were also sent for PCB analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk samples submitted and the sample analyses are included in Table 3.4 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

The samples collected included yellow, orange/silver, white/green, silver, green and grey paint on drier equipment (JW07-ML-PS13 to JW07-ML-17 and JW07-ML-19), and green on blue on light blue interior wall paint (JW07-ML-PS18).

The concentrations of lead detected in six of the seven paint samples were above the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. The concentration of lead detected in the green paint sample from the drier equipment was not above the Federal HPA criterion of 600 mg/kg. The bulk samples of paint with a lead concentration above 600 mg/kg were analyzed for lead leachability. The concentration of lead leachate in the sample from the silver paint on the drier equipment was in excess of 5 mg/L and therefore is considered to be leachable and is hazardous materials for disposal purposes. No other concentrations of lead leachate were above 5 mg/L. In most cases, when the mass of equipment is considered the overall calculated lead concentration drops below 600 mg/kg if the paint is intact on the equipment.

The concentrations of mercury detected in the paint samples were all below the Federal HPA criterion of 10.0 mg/kg and are therefore not considered to be a health hazard during any renovation/demolition activities at the Site.

PCBs were not detected in the paint samples that were analyzed.

3.4.2.7 Results – Wet Mill

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, seven (7) paint samples were collected from within the Wet Mill (JW07-ML-PS20 to JW-ML-PS26). The bulk samples were sent to Maxxam Analytics Inc. for lead and mercury analyses. Samples JW07-ML-PS20, JW07-ML-21, JW07-ML-PS23 and JW07-ML-PS25 were also sent for PCB analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk samples submitted and the sample analyses are included in Table 3.4 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

The samples collected included a composite sample of loose paint settled on the floor (JW07-ML-PS20), white paint on concrete (JW07-ML-PS21), light blue paint on equipment (JW07-ML-PS22), red primer paint on structural steel (JW07-ML-PS23), exterior blue paint on steel siding (JW07-ML-PS24), white paint on equipment (JW07-ML-PS25) and blue paint on structural steel (JW07-ML-PS26).

The concentrations of lead detected in two of the seven paint samples were above the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. These samples included the composite sample of loose paint settled on the floor (JW07-ML-PS20) and the exterior blue paint on steel siding (JW07-ML-PS24). The bulk samples of paint with a lead concentration above 600 mg/kg were analyzed for lead leachability. The concentration of lead leachate in the samples were not in excess of 5 mg/L and therefore are not considered to be leachable and are not hazardous materials for disposal purposes. In most cases, when the mass of equipment is considered the overall calculated lead concentration drops below 600 mg/kg if the paint is intact on the equipment.

The concentrations of mercury detected in the paint samples were all below the Federal HPA criterion of 10.0 mg/kg and are therefore not considered to be a health hazard during any renovation/demolition activities at the Site.

PCBs were not detected in the paint samples that were analyzed.

3.4.2.8 Results – Dry Mill

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, twenty-six (26) paint samples were collected from within the Dry Mill (JW07-ML-PS27 to JW-ML-PS52). The bulk samples were sent to Maxxam Analytics Inc. for lead and mercury analyses. Twelve (12) samples were also sent for PCB analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk samples submitted and the sample analyses are included in Table 3.4 in Appendix 3c. The locations where the bulk samples were collected are noted on Drawing No. 1028976-EE-08 in Appendix 3a.

The samples collected included a composite sample of loose paint settled on the floor (JW07-ML-PS31), interior white ceiling paint (JW07-ML-PS32), orange paint on structural steel (JW07-ML-PS33), exterior light blue paint on transite panel (JW07-ML-PS34) and twenty-two (22) samples of paint from equipment throughout the building.

The concentrations of lead detected in twenty-three (23) of the twenty-six (26) paint samples were above the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. These samples included the composite sample of loose paint settled on the floor (JW07-ML-PS31), orange paint on structural steel (JW07-ML-PS33), exterior light blue paint on transite panel (JW07-ML-PS34) and twenty (20) samples of paint from equipment throughout the building. The bulk samples of paint with a lead concentration above 600 mg/kg were analyzed for lead leachability. The concentrations of lead leachate in three of the paint samples taken from equipment were in excess of 5 mg/L and therefore are considered to be leachable and are hazardous materials for disposal purposes. In most cases, when the mass of equipment is considered the overall calculated lead concentration drops below 600 mg/kg if the paint is intact on the equipment.

The concentrations of mercury detected in the two paint samples taken from equipment (JW07-ML-PS42 and JW07-ML-PS50) were above the Federal HPA criterion of 10.0 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. These bulk samples of paint with a mercury concentration above 10.0 mg/kg were analyzed for mercury leachability. The concentration of mercury leachate in the samples were in excess of 0.1 mg/L and therefore are considered to be leachable and are hazardous materials for disposal purposes.

PCBs were not detected in the paint samples that were analyzed.

3.4.2.9 Discussion and Recommendations

Based on the results of the sampling and analysis, elevated lead concentrations (i.e., greater than 600 mg/kg) are present throughout the Mill Area, including exterior and interior paints, paints from various pieces of equipment and composite paint samples collected from loose paint on the floor.

Based on the results of the sampling and analysis, elevated mercury concentrations (i.e., greater than 10 mg/kg) are present in the light blue paint, yellow paint and green/blue paint on equipment in the Dry Mill Building, light green on dark green on blue on grey paint on an exterior door of the Dry Mill Building and white on grey paint on equipment in the Primary Crusher Building.

Results revealed that the concentrations of lead leachate detected in one paint sample from equipment in the Dry Rock Storage Building, two paint samples from equipment and a paint sample from structural steel in the Furnace Blower Building, one paint sample from equipment in the Drier Building and four paint samples from equipment in the Dry Mill Building analyzed did exceed the applicable assessment criterion of 5.0 mg/L. Results revealed that the concentrations of mercury leachate detected in two paint samples from equipment in the Dry Mill Building did exceed the applicable assessment criterion of 0.1 mg/L. Therefore, these paints, if removed from the Site, are considered to be leachable and are hazardous materials for disposal purposes. In most cases, when the mass of equipment is considered the overall calculated lead concentration drops below 600 mg/kg if the paint is intact on the equipment.

The paints in the Mill Area buildings, including the paints on equipment, were in generally poor condition. Lead and 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. Lead and Mercury based paints that are in poor condition may pose health concerns for building occupants. Lead and Mercury based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.

3.4.3 Polychlorinated Biphenyls (PCBs)

Electrical equipment was observed in several areas of the Mill Area. An electrical room was observed in the Wet Mill Building; however, based on the age of this building, PCB containing electrical equipment is not expected to be present.

The main power centre and the Dry Mill Building contained various pieces of electrical equipment. A complete inventory of electrical equipment was not conducted due to the potential number of the equipment on site, the poor condition of equipment in the buildings and inaccessibility of all areas of the buildings.

The PCB inspection, including a limited random inspection of any older looking fluorescent light ballasts in the site buildings. The ballasts to be inspected were selected based on safe accessibility and apparent age. The ballasts were missing in the majority of easily accessible fluorescent lights within the buildings. Two easily accessible fluorescent light ballasts were found during the site visit and were checked for the presence of PCBs.

The manufacturer's name, manufacturer's code (if present), and date code (if present) were recorded for the inspected ballasts. The information obtained from the light ballasts was compared (if necessary) to information in an Environmental Protection Services report EPS 2/CC/2 *Identification of Lamp Ballasts Containing PCBs* to determine whether or not the ballasts contain PCBs. All lights were 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.

Table 5 Results of Inspection of Fluorescent Light Ballasts

Ballast Location	Observed Manufacturer's Information	PCB Status
Wet Mill Building	General Electric Non-PCB	Based on the manufacturer's markings the ballast does not contain PCBs.
Dry Mill Building	Sola Sentry	Unclear if the ballast contains PCBs.

The results of a limited inspection of light ballasts can be used to evaluate the presence of PCB ballasts in a building. If the apparently oldest ballasts on a floor of a building do not contain PCBs, then it is likely that none of the ballasts on the floor contain PCBs. If any of the inspected ballasts on a floor of a building contain PCBs, then all ballasts on that floor of the building must either be inspected or be treated as though they contain PCBs.

Based on the available information and the observations from the limited inspections, it is possible that PCB-containing fluorescent light ballasts are located in the buildings. It is recommended that all ballasts within the building be inspected upon removal or be treated as though they contain PCBs.

3.4.4 Mold

Extensive water damage was observed within the Wet Mill Building and the Dry Mill Building. Extensive mold growth was not observed as the majority of the building materials were non-porous in nature.

3.4.5 Other Identified Hazardous Materials

No other identified hazardous materials were observed within the buildings.

3.5 Dock & Warehouse Area – Phase III ESA

3.5.1 Site Description

The Dock & Warehouse Area is located along the shoreline of Upper Duck Island Cove, approximately 2.5 km east of the Mill Area (as shown on Drawing No. 1028976-EE-09 in Appendix 4a).

The dock is currently in a state of disrepair and no longer in use. Historically, the dock provided two berths for marine vessels, one 70 m in length and the other at 150 m in length. The dock itself is constructed of sheet metal piling (20 m deep) and is rock filled. The top of the apron is located approximately 4 m above the low-water level and is topped with concrete, which served as the loading platform.

The warehouse is located approximately 10 m from the edge of the dock. The structure measures approximately 96 m x 98 m and has a height clearance of approximately 7 m. It had a storage capacity of 26,000 tonnes of asbestos product. The warehouse was used to store finished asbestos product before delivery to market. The building is currently vacant with some asbestos product still remaining inside. Another small building and two large propane ASTs are present at the northwest corner of the dock. This building was formerly used as a lunchroom facility and the propane tanks were used to heat Bunker C fuel, previously stored in a large AST at the Site. The AST has been removed from the Site.

A former heavy equipment parking area is located approximately 250 m west of the dock and warehouse. This area was historically used to park site heavy equipment (i.e. haul trucks, loaders, tractors, etc.).

Terrain in the area gently slopes towards the southeast, and surface drainage (apparent groundwater flow direction) appears to follow the general slope, flowing towards a small brook (Upper Duck Island Cove Brook) located approximately 200 m southeast of the site and the waters of Upper Duck Island Cove.

3.5.2 Field Work

Based on testing completed as part of the Phase II ESA, no petroleum hydrocarbons, PAHs or PCBs impacts were identified in soil in the Dock & Warehouse Area, and no Phase III ESA activities were recommended for the Dock & Warehouse Area in the Phase II ESA report. However, review of the Phase I & II ESA reports, as well as observations during the site visit on August 14, 2007 indicates the presence of solidified Bunker C at or near ground surface at three (3) locations in the site area that require further assessment, including 1) in the vicinity of the former Bunker C AST, 2) at the reported location of a former Bunker C spill along the access road to the dock, and 3) in the former heavy equipment parking area (as shown on Drawing No. 1028976-EE-09 in Appendix 4a).

Fieldwork completed in the Warehouse & Dock Area as part of the current investigation involved excavation of a total of sixteen (16) exploratory test pits to delineate the vertical and lateral extent of solidified accumulations of Bunker C in the three identified areas. The locations of the exploratory test pits are shown on Drawing No. 1028976-EE-09 in Appendix 4a. Test pits were completed using an excavator and were excavated to depths ranging from 0.3 to 1 m below ground surface. Work in the exploratory test pits was limited to visual inspection, and did not include stratigraphic analysis or soil sample collection.

3.5.3 Results of the Exploratory Test Pitting Program

Four (4) exploratory test pits were excavated in the Warehouse & Dock area to further delineate a 10 cm layer of Bunker C previously encountered during the Phase II ESA at a depth of 0.3 m in former test pit WH-TP6, located approximately 30 m northeast of the former location of the Bunker C AST. Based on results of the exploratory test pitting program, a small area of solidified Bunker C was identified at the site between 0 to 0.3 m depth. The area of Bunker C identified in this area is shown on Drawing No. 1028976-EE-09 in Appendix 4a and measures approximately 3 m wide by 4 m long and ranges in thickness from 50 to 200 mm (average thickness of 125 mm) = 1.5 m^3.

Six (6) exploratory test pits were excavated over an area of approximately 500 m^2 at the reported location of a former Bunker C spill along the access road to the dock. Test pits were excavated to the depth of groundwater at approximately 1.0 mbgs. No Bunker C was identified in this area during the current investigation.

Six (6) exploratory test pits were excavated in the former heavy equipment parking area. Based on results of the current exploratory test pitting program, an area of solidified Bunker C was identified at the site between 0 to 0.3 m depth. The area of Bunker C identified in this area is shown on Drawing No. 1028976-EE-09 in Appendix 4a and measures approximately 8 m wide by 15 m long and ranges in thickness from 50 to 400 mm. The estimated area and volume of Bunker C in this area is 80 m^2 at an average thickness of 0.30 m = 26.4 m^3

3.5.4 Discussion & Conclusions of Phase III ESA

A Phase III ESA was completed in the Warehouse & Dock area at the Former Baie Verte Asbestos Mine Property by Jacques Whitford on behalf of the Newfoundland and Labrador Department of Natural Resources - Mineral Development Division to further delineate the vertical and lateral extent of accumulations of solidified Bunker C at or near surface in three areas of the site. The conclusions of this assessment are summarised below.

1. Based on results of the current exploratory test pitting program, two areas of Bunker C were delineated in the Warehouse & Dock area. The estimated areas and volumes include approximately: 12 m2 in the vicinity of the former Bunker C AST at an average thickness of 0.125 m = 1.5 m3; and 80 m2 in the former heavy equipment area at an average thickness of 0.3 m = 26.4 m3.
2. In accordance with NLDEC policy directive PPD05-01, remediation is required for the two Bunker C plumes identified in the Warehouse & Dock area. Removal is required to an approved treatment facility. Generally treatment facilities in the province are only granted approval to treat Bunker C soil on a case by case basis.

3.6 Dock & Warehouse Area - Hazardous Materials Assessment

The following buildings in the Dock and Warehouse Area were assessed as part of the Hazardous Materials Assessment:

- Warehouse
- Lunchroom Facility

Visual inspections and bulk sampling were carried out and were limited to safely and readily accessible portions of the site buildings, facilities and equipment.

3.6.1 Asbestos-Containing Materials (ACMs)

3.6.1.1 Previous Work

The Hazardous Materials Assessment previously completed in the Dock and Warehouse area included the collection of the following:

- 3 – samples of building materials (WH-ASB1 to WH-ASB3 - insulation, siding and floor tile) from the site buildings for asbestos analysis.

The analytical results from the Phase II ESA are presented in Appendix 3c. Analytical results revealed that concentration of asbestos (20% chrysotile) detected in sample WH-ASB1 exceeded the applicable assessment criterion of 1%. Sample WH-ASB1 consisted of exterior siding collected from the warehouse. Asbestos fibres in exterior siding are considered to be "non-friable", unless disturbed.

3.6.1.2 Phase III ESA Asbestos Survey Scope and Methodology

The Asbestos Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous asbestos samples collected and analyzed during the Phase II ESA. One other potential ACM was observed in the subject buildings. During the sampling, a visual determination of the condition of the material, the accessibility, contact potential, exposure, and friability was made in the building. All materials were observed to be in poor condition at the time of the assessment.

Upon entry into each room, 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.

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 or on the subject buildings. At the time of the site visit, all normally accessible interior areas of the buildings were accessible to Jacques Whitford for inspection. There was limited intrusive sampling conducted within wall cavities as ACMs were not expected to be within the wall cavities. The asbestos assessment did not include any intrusive sampling of the roofing materials on the buildings.

3.6.1.3 Results

During the site inspection, one (1) bulk sample of a possible ACM was collected in the Former Lunchroom Building (a sample of the exterior siding). The bulk sample was sent to Maxxam Analytics Inc. for confirmatory asbestos analysis. Detailed laboratory test results are included in Appendix 7. 5-10% chrysotile asbestos was confirmed to be present in the sample submitted. A summary of the bulk sample submitted, the sample analysis and the locations of visually similar materials is included in Table 4.1 in Appendix 4b. The locations where the bulk samples were collected are noted on the drawing in Appendix 4a.

3.6.1.4 Discussion and Recommendations

Friable ACMs

Based on the results of the Phase II and III ESAs, no friable asbestos was confirmed to be present in the buildings; however, exposed friable asbestos product was observed throughout the buildings and on the exterior surfaces of the site. Numerous pallets of finished asbestos product in poor condition were observed being stored inside the Warehouse Building.

Non-Friable ACMs

Based on the results of the Phase II and III ESAs, non-friable asbestos was confirmed to be present in the buildings and included the exterior siding of the Lunchroom Building (approximately 100 m^2 in fair condition) and the Warehouse Building (approximately 1,100 m^2 in fair condition).

Other Possible ACMs

No other ACMs are expected to be present in concealed wall or ceiling spaces of the buildings; however, settled dust was present throughout the site and within the buildings which may contain asbestos fibres.

The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials in the buildings are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the Warehouse and Dock Area site including the site buildings.

3.6.2 Lead, Mercury & PCBs Based Paints

3.6.2.1 Previous Work

The paint survey previously completed in the Dock and Warehouse area included the collection of the following:

- 7 – paint chip samples (WH-PS1 to WH-PS7) from painted surfaces present at the site for a combination of lead, lead leachate, mercury, mercury leachate and PCB analyses.

The analytical results from the Phase II ESA are presented in Appendix 3c. Results of the paint sampling program revealed that the concentrations of lead detected in all paint samples exceeded the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. Concentrations of lead detected in paint ranged from 815 mg/kg (WH-PS5) to 81,300 mg/kg (WH-PS3). Concentrations of lead detected in the paint samples WH-PS1 (14,700 mg/kg), WH-PS2 (13,900 mg/kg), WH-PS3 (81,300 mg/kg), WH-PS4 (10,200 mg/kg), WH-PS6 (7,640 mg/kg) and WH-PS7 (5,920 mg/kg) also exceeded the former Federal HPA criterion of 5,000 mg/kg. Results revealed that the concentrations of lead leachate all paint samples analyzed did not exceed the applicable assessment criterion of 5.0 mg/L. Therefore, this paint, if removed from the Site, may be disposed of at an approved landfill facility.

Results of the paint sampling program revealed that the concentrations of mercury detected in paint samples WH-PS1 (20.7 mg/kg) and WH-PS4 (13.0 mg/kg) exceeded the Federal HPA criterion of 10.0 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. Since levels of mercury detected in the paint samples did not exceed the CCME guideline for mercury in soil at an industrial site (50.0 mg/kg), leachability testing for mercury was not carried out on the paint samples.

Results of the paint sampling program revealed that concentrations of PCBs detected in paint samples WH-PS1 (420 mg/kg) and WH-PS7 (4,260 mg/kg) exceeded the applicable CCME guideline of 33 mg/kg. Results revealed that the concentration of PCB leachate in paint sample EM-PS7 (0.318 mg/L) exceeded the applicable assessment criterion of 0.3 mg/L. Since the concentration of PCB leachate in this paint is at a level considered hazardous, this paint and painted building materials, if removed from the Site, must be disposed of as hazardous waste.

3.6.2.2 Phase III ESA Paint Survey Scope and Methodology

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. During the site inspection, one (1) paint sample of white paint on the exterior of the Warehouse Building (JW07-WH-PS1) was collected. The bulk sample was sent to Maxxam Analytics Inc. for lead and mercury analyses. Detailed laboratory test results are included in Appendix 7. A summary of the bulk sample submitted and the sample analysis is included in Table 4.2 in Appendix 4b. The locations where the bulk samples were collected are noted on the drawing in Appendix 4a.

3.6.2.3 Results

The concentration of lead detected in the paint sample JW07-WH-PS1 was 2,100 mg/kg and was above the Federal HPA criterion of 600 mg/kg and is therefore considered to be a health hazard during any renovation/demolition activities at the Site. The bulk sample of paint was analyzed for lead leachability. The concentration of lead leachate in the sample was 2.1 mg/L. The sample did not have a leachable lead concentration in excess of 5 mg/L and therefore is not considered to be leachable and is not hazardous materials for disposal purposes.

The concentration of mercury detected in the paint sample JW07-WH-PS1 was 10 mg/kg and was equal to the Federal HPA criterion of 10.0 mg/kg and is therefore not considered to be a health hazard during any renovation/demolition activities at the Site. The bulk sample of paint was analyzed for mercury leachability. The concentration of mercury leachate in the sample was 0.07 mg/L. The sample did not have a leachable mercury concentration in excess of 0.1 mg/L and therefore is not considered to be leachable and is not hazardous materials for disposal purposes.

3.6.2.4 Discussion and Recommendations

Based on the results of the sampling and analysis, elevated lead concentrations (i.e., greater than 600 mg/kg) are present in the grey on blue on green paint on the exterior of the Warehouse Building and the yellow/orange paint and grey paint on the structural steel columns and the green on blue wall paint within the interior of the Warehouse Building; and the yellow paint and the white paint on the exterior of the Former Lunchroom Building and the blue on dark grey wall paint and grey on green on yellow wall paint within the interior of the Lunchroom Building.

Based on the results of the sampling and analysis, elevated mercury concentrations (i.e., greater than 10 mg/kg) are present in the grey on blue on green paint on the exterior of the Warehouse Building and the green on blue wall paint within the interior of the Warehouse Building.

Based on the results of the sampling and analysis, elevated PCB concentrations (i.e., greater than 33 mg/kg) are present in the grey on blue on green paint on the exterior of the Warehouse Building and the grey on green on yellow wall paint within the interior of the Lunchroom Building.

Results revealed that the concentrations of lead leachate detected in all paint samples analyzed did not exceed the applicable assessment criterion of 5.0 mg/L. Results revealed that the concentrations of mercury leachate detected in all paint samples analyzed did not exceed the applicable assessment criterion of 0.1 mg/L. Therefore, these paints, if removed from the Site, may be disposed of at an approved landfill facility.

Results revealed that the concentration of PCB leachate in the sample of the grey on green on yellow wall paint within the interior of the Lunchroom Building exceeded the applicable assessment criterion of 0.3 mg/L. Since the concentration of PCB leachate in this paint is at a level considered hazardous, this paint and painted building materials, if removed from the Site, must be disposed of as hazardous waste.

The paints were in generally poor condition. Lead, Mercury and PCB 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. Lead, Mercury and PCB based paints that are in poor condition may pose health concerns for building occupants. Lead and Mercury based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.

3.6.3 Polychlorinated Biphenyls (PCBs)

No electrical equipment suspected of containing PCBs was observed in the buildings.

3.6.4 Other Identified Hazardous Materials

No other identified hazardous materials were observed within the buildings.

3.6.5 Mold

Extensive water damage was observed within the Warehouse Building and the Lunchroom Building. Extensive mold growth was not observed as the majority of the building materials were non-porous in nature.

3.7 Tailings Pile – Phase III ESA

3.7.1 Site Description

The Tailings Pile is located southeast of the Mill Area along the slope of the south valley wall at an elevation of approximately 150 masl (as shown on Drawing No. 1028976-EE-011 in Appendix 5a). It is estimated that over 40 million tonnes of tailings is present in this area containing approximately 2.2% asbestos fibre. This material was deposited at the Site between the early 1960s and the late 1980s. A large slump is present on the eastern slope of the tailings pile likely due to surface run-off and/or the presence of a small stream flowing underneath the Tailings Pile. Two buildings are present at the site, including the Conveyor House and Grease Shack, as well as a vast network of conveyors and transfer stations.

3.7.2 Fieldwork

Based on testing completed as part of the Phase II ESA, no petroleum hydrocarbon or PCBs impacts were identified in the tailings present at the Tailings Area. Therefore, no Phase III ESA activities were recommended for the Tailings Area in the Phase II ESA report, and no additional environmental site assessment work was carried out in this area as part of the current investigation

3.8 Tailings Pile - Hazardous Materials Assessment

The following buildings in the Tailings Pile were assessed as part of the Hazardous Materials Assessment:

- Conveyor House
- Grease Shack

Visual inspections and bulk sampling were carried out and were limited to safely and readily accessible portions of the site buildings, facilities and equipment. The interior of the Conveyor House Building was not accessed for assessment due to the poor structural condition of the building.

3.8.1 Asbestos-Containing Materials (ACMs)

3.8.1.1 Previous Work

The asbestos survey previously completed in the Tailings Pile included the collection of the following:

- 1 – sample of insulation (SP-ASB1) from the interior of the conveyor house for asbestos analysis

The analytical results from the Phase II ESA are presented in Appendix 4b. One insulation sample (SP-ASB1), collected from the interior of the conveyor house present at the Site, was analyzed for asbestos. Asbestos was not detected in sample SP-ASB1. Based on the testing completed, the insulation present inside the conveyor house is not considered to be asbestos containing.

3.8.1.2 Phase III ESA Asbestos Survey Scope and Methodology

The Asbestos Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous asbestos samples collected and analyzed during the Phase II ESA. No other potential ACMs were observed in the subject buildings.

The survey and sampling of ACMs was generally limited to readily visible or easily accessible materials inside or on the subject buildings. At the time of the site visit, all normally accessible interior areas of the buildings were accessible to Jacques Whitford for inspection. There was limited intrusive sampling conducted within wall cavities as ACMs were not expected to be within the wall cavities. The asbestos assessment did not include any intrusive sampling of the roofing materials on the buildings.

3.8.1.3 Discussion and Recommendations

No ACMs were observed and no ACMs are expected to be present in concealed wall or ceiling spaces of the buildings; however, settled dust was present throughout the site and within the buildings which may contain asbestos fibres. The tailings stockpile is also reported to contain approximately 2.2% asbestos fibre.

The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials in the building are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the Tailings Stockpile site.

3.9 Lead, Mercury & PCBs Based Paints

3.9.1.1 Previous Work

The paint survey previously completed in the Tailings Pile included the collection of the following:

- 2 – paint chip samples (SP -PS1 to SP –PS2) from painted surfaces of the conveyor house for a combination of lead and mercury analyses

The analytical results from the Phase II ESA are presented in Appendix 4b. Results of the paint sampling program revealed that the concentrations of lead detected in paint samples SP-PS1 (2,560 mg/kg) and SP-PS2 (3,490 mg/kg) exceeded the Federal HPA criterion of 600 mg/kg and are therefore considered to be a health hazard during any renovation/demolition activities at the Site. Since levels of lead detected in both paint samples did not exceed the former Federal HPA criterion of 5,000 mg/kg, leachability testing for lead was not carried out on the paint samples.

Results of the paint sampling program revealed that the concentrations of mercury detected in paint samples SP-PS1 (0.47 mg/kg) and SP-PS2 (1.54 mg/kg) did not exceed the Federal HPA criterion of 10 mg/kg. Since levels of mercury detected in the paint samples did not exceed the CCME guideline for mercury in soil at a commercial site (24 mg/kg), leachability testing for mercury was not carried out on the paint samples.

3.9.1.2 Phase III ESA Paint Survey Scope and Methodology

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. Potential paint locations or colours were observed within the Conveyor House, but the building was not entered due to the poor structural condition of the building.

3.9.1.3 Discussion and Recommendations

Based on the results of the sampling and analysis, elevated lead concentrations (i.e., greater than 600 mg/kg) are present in the red paint on mechanical equipment in the Conveyor House and the blue paint on the exterior of the Conveyor House.

The paints were in generally poor condition. Lead and 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. Lead and Mercury based paints that are in poor condition may pose health concerns for building occupants. Lead and Mercury based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.

3.9.2 Polychlorinated Biphenyls (PCBs)

No electrical equipment suspected of containing PCBs was observed within the buildings.

3.9.3 Other Identified Hazardous Materials

No other identified hazardous materials were observed within the buildings.

3.9.4 Mold

Extensive water damage was observed within the Conveyor House Building. Extensive mold growth was not observed as the majority of the building materials were non-porous in nature.

3.10 Waste Rock & Pit Area – Phase III ESA

3.10.1 Site Description

The Waste Rock & Pit area is located in the upland area north of the main mine site (as shown on Drawing Nos. 1028976-EE-02 in Appendix 1 and 1028976-EE-12 in Appendix 6a). There are three large stockpiles of waste rock present in this area containing approximately 190 million tonnes of material. The largest of the three waste rock stockpiles is located northeast of the North Pit. The smallest is located between the west pit and Steam Bath Pond. The other stockpile is located northwest of the north pit and is bounded to the west by the Fleur de Lys Highway. These stockpiles consist of waste rock (i.e. overburden) that was removed from the pits during mining operations.

There are two open mining pits present at the Site: North Pit and West Pit. The two pits are located side-by-side and are separated by a body of waste rock designated as the "saddle area". The saddle has a thickness of approximately 45 m and consists of compacted mine rejects over underlying bedrock. Both pits are partially filled with water.

Other infrastructure present in the area include a wooden shed and a pipe storage rack northwest of the north pit. In addition the Phase I ESA identified an area of stained soil and an open-top 45-gallon drum, containing an unknown substance (possibility grease or lube oil), approximately 50 m south of the wooden shed, an area of stained soil along the pit roadway approximately 200 m northwest of the primary crusher in the Mill Area, two partially buried underground storage tanks (USTs) along the south wall of the west pit, a potentially discarded transformer in the waste rock pile located northeast of the Mill Area, an area of partially buried debris/waste along the north side of the north pit, and an area of discarded tires, equipment and drums along the toe of the waste rock piles located north of the Mill Area.

The site is situated along a northeast-trending ridge that rises to an elevation of approximately 200 masl. However, within the Waste Rock & Pit area topography is variable having been modified by open pit mining and waste rock stockpiling operations.

3.10.2 Previous Work

The Phase II ESA previously completed in the Waste Rock & Pit area included the excavation of 5 test pits, and the collection of soil samples for chemical analysis of petroleum hydrocarbons, metals, PAHs and PCBs. The sampling locations for soils collected as part of the previous Phase II ESA are shown on Drawing No. 1028976-EE-12 in Appendix 6a, and summary tables of results of laboratory analysis are provided in Appendix 6c. The results of the Phase II ESA in the Waste Rock & Pit area can be summarized as follows:

- The concentration of TPH detected in soil sample WR-TP2-SS1 (<14,900 mg/kg) exceeded the 2003 Atlantic PIRI Tier I RBSL criterion of 7,400 mg/kg for diesel fuel in soil at a commercial site with coarse-grained soil and non-potable groundwater. Soil sample WR-TP2-SS1 was collected within an area of stained soil identified along the pit road, approximately 200 m northwest of the primary crusher building of the Mill Area.

- Concentrations of chromium and nickel detected in soil sample SP-TP5-SS1 exceeded the applicable assessment criteria for metals in soil at industrial sites. Soil sample WR-TP5-SS1 was collected within the former pit office area located west of the assess road to the primary crusher building of the Mill Area. Based on the testing completed, metal impacts in soil are considered to be widespread throughout the Site.
- Concentrations of PCBs and PAHs in all soil samples analyzed were either non-detect or detected at levels below the applicable assessment criteria, and are thus not considered to be an environmental concern in evaluated areas of the site.

3.10.3 Field Work

Fieldwork carried out in the Waste Rock & Pit area during the current investigation comprised excavation of four (4) test pits and completion of one (1) monitor well. A site and sample location plan (Drawing No. 1028976-EE-12) showing the location of these, as well as general site features and former Phase II ESA sample locations is provided in Appendix 6a.

3.10.4 Stratigraphy

The stratigraphic information recorded during the current investigation is presented on the Test Pit Records and Monitor Well Records in Appendix 6b. Fill materials were encountered at or near the surface at test pits BVM-TP1, BVM-TP3, and BVM-TP4 and monitor well BVM-MW1 and ranged in thickness from 2.0 m in BVM-TP3 to 5.18 m in monitor well BVM-MW1. At test pit BVM-TP2, a 2 m thick wood chip and bark material was encountered at surface and was underlain by fill material to the termination depth of 4.2 m. Fill material at all test pit and monitor well locations generally comprised compact to dense grey brown silty gravel (GM) with varying percentages of cobbles and boulders, and appeared largely derived from waste rock material generated from mining operations.

A till layer was encountered beneath the fill layer in BVM-TP3 and comprised compact brown silty sand with gravel (SM).

Bedrock was encountered beneath the fill material in monitor well BVM-MW1, and comprised a dark green ultramafic intrusive rock. In BVM-TP3, excavator refusal on presumed bedrock occurred at a depth of 2.7 m. However, it was not possible to excavate the bedrock in the confines of this test pit. Bedrock was not encountered at any of the other test pits.

3.10.5 Groundwater Conditions

Groundwater was not encountered in any of the test pits completed at the site. Groundwater was also not encountered in the monitor well (BVM-MW1) completed at the site. However, a monitor well was installed in the borehole as it is possible that seasonally the groundwater table may rise to within the screened portion of the well allowing groundwater monitoring to be carried out at this location.

3.10.6 Free Liquid Phase Petroleum Hydrocarbons

Free liquid phase petroleum hydrocarbons were not observed at this site during the current investigation or the previous Phase II ESA.

3.10.7 Soil Vapor Concentrations

The soil vapour concentrations measured in each of the soil samples from the test pits are provided on the Test Pit Records in Appendix 6b. No detectable vapour concentrations were measured in the soil samples collected from the test pits completed at this site. The soil vapour concentration measured in the soil sample collected from monitor well BVM-MW1 is provided on the Monitor Well Record in Appendix 6b, and returned a value of 4.2 ppm.

Soil vapour concentrations vary with both fuel type and age, and it should be noted that the readings are intended to provide only a qualitative indication of volatile hydrocarbon levels and are not directly equivalent to soil analytical results. Soil vapor concentrations which exceed 50 ppm may indicate the presence of petroleum hydrocarbon impacts in soil. No soil vapour concentrations above 50 ppm were measured in any of the soil samples collected from test pits and monitor wells at the site.

3.10.8 Soil Chemical Analysis & Results

A laboratory analysis schedule for the Waste Rock & Pit Area is presented in Table 6.

Table 6 Laboratory Analysis Schedule (Waste Rock & Pit Area)

Potential Environment Concern	Sample Location	Sample Matrix	
		Soil	Groundwater
Potential for petroleum hydrocarbon impacts related to historical site usage. Staining identified in this area.	BVM-TP1, BVM-TP2, BVM-TP3, BVM-TP4, BVM-MW1	TPH/BTEX (5)	-
Note: The methodologies utilised by Maxxam Analytics Inc. in analysis of the soil and groundwater samples are presented on the analytical reports in Appendix 6d.			

Results of the laboratory analysis of soil samples obtained from this site are presented in Tables 6.1 in Appendix 6c. The corresponding analytical reports from Maxxam Analytics Inc. for the current investigation are presented in Appendix 6d.

3.10.8.1 Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon analysis was conducted on five soil samples, including one each from test pits BVM-TP1 to BVM-TP4, and monitor well BVM-MW1. Results of laboratory analysis of soil samples from test pits and the monitor well completed at the site as part of the current investigation for petroleum hydrocarbon indicator compounds (TPH and BTEX) are presented in Table 6.1 in Appendix 6c, along with summary tables of results of petroleum hydrocarbon analysis for soils carried out as part of the previous Phase II ESA. The corresponding analytical reports from Maxxam Analytics Inc. for the current investigation are presented in Appendix 6d.

TPH were detected in all of the soil samples analyzed, returning values ranging from 80 mg/kg in soil sample BVM-MW1-SS1 to 510 mg/kg in soil sample BVM-TP2-BS1. None of the detected levels of

TPH in the soil samples analyzed at the site exceeded the applicable Tier I RBSLs for fuel or lube oil impacts on a commercial site with non-potable groundwater and coarse soil. No concentrations of BTEX were detected in any of the soil samples analyzed at the site. The Maxxam Analytics Inc. analytical report indicated that the products impacting soil samples at the site resembled lube oil.

3.10.9 Discussion & Conclusions of Phase III ESA

A Phase III ESA was completed in the Waste Rock & Pit Area at the Former Baie Verte Asbestos Mine Property by Jacques Whitford on behalf of the Newfoundland and Labrador Department of Natural Resources - Mineral Development Division to further delineate environmental impacts identified in the previous Phase II ESA. The conclusions of this assessment are summarised below.

1. The stratigraphy observed on the site was generally similar at all test pit and monitor well locations and comprised compact to dense grey brown silty gravel (GM) with varying percentages of cobbles and boulders, and appeared largely derived from waste rock material generated from mining operations. A 2 m thick wood chip and bark material was encountered at surface in test pit BVM-TP2 and a silty sand with gravel till layer was encountered beneath the fill in BVM-TP3. Depth to bedrock ranged from 2.7 mbgs in test pit BVM-TP2 to 5.18 mbgs in monitor well BVM-MW1.
2. Groundwater was not encountered in any of the test pits or the monitor well completed at the site.
3. Free liquid phase petroleum hydrocarbons were not observed at this site during the current investigation or the previous Phase II ESA.
4. Low levels of TPH were detected in all of the soil samples collected at the site, however none exceeded the applicable Tier I RBSL for fuel oil on a commercial site with non-potable groundwater and coarse soil (i.e., 7,400 mg/kg). Further no levels of BTEX were detected in any of the soil samples completed at the site during the current investigation. The detected concentration of TPH in soil sample WR-TP2-SS1 (<14,900 mg/kg) exceeded the Tier I RBSL criterion of 7,400 mg/kg for diesel fuel in soil at a commercial site with coarse-grained soil and non-potable groundwater.
5. The estimated extent of TPH in soil exceeding the Tier I RBSLs for a commercial site in the vicinity of former test pit MR-TP2 is shown on Drawing No. 1028976-EE-013 in Appendix 6a. The estimated area with TPH concentrations in soil above 7,400 mg/kg in the vicinity of former test pit MR-TP2 is approximately 100 m^2. Based on field evidence of impacts and the noted depth to groundwater and bedrock in this area, it is expected that approximately 100 m^3 of impacted soil in the vicinity of former test pit MR-TP2 exceeds the applicable Tier I RBSL. Field and analytical evidence indicates that petroleum hydrocarbon impacts are present in the upper 1 m of soil in this area. Most of the impacted soils in this area are readily accessible for removal, if required. Additional delineation would be necessary to better refine these estimates.
6. Based on NLDEC policy directive PPD05-01, petroleum hydrocarbon remediation of soil at the site would be required in accordance with provincial regulations, unless a risk-based remedial approach is followed for the site. Adopting a risk-based remedial approach, petroleum hydrocarbon remediation of site soil would be governed by site-specific threshold limit criteria determined for this contaminant.

3.11 Waste Rock & Pit Area - Hazardous Materials Assessment

The following building in the Waste Rock Area was assessed as part of the Hazardous Materials Assessment:

- Wooden Shed

Visual inspections and bulk sampling were carried out and were limited to safely and readily accessible portions of the site buildings, facilities and equipment.

3.11.1 Asbestos-Containing Materials (ACMs)

3.11.1.1 Previous Work

No previous work for asbestos-containing materials was completed in the Waste Rock Area.

3.11.1.2 Phase III ESA Asbestos Survey Scope and Methodology

The Asbestos Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. No ACMs were observed or are expected to be present in concealed wall or ceiling spaces of the buildings; however, settled dust was present throughout the site and within the building which may contain asbestos fibres.

3.11.1.3 Discussion and Recommendations

The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials in the building are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the Waste Rock and Pit Area site.

3.11.2 Lead, Mercury & PCBs Based Paints

3.11.2.1 Previous Work

The paint survey previously completed in the Tailings Pile Area included the collection of the following:

- 1 - paint chip sample (WR-PS1) collected from the yellow painted surfaces of the wooden shed

The analytical results from the Phase II ESA are presented in Appendix 4b. Results of the paint sampling program revealed that the concentration of lead detected in paint sample WR-PS1 (1,200 mg/kg) exceeded the Federal HPA criterion of 600 mg/kg and therefore considered to be a health hazard during any renovation/demolition activities at the Site. Since the level of lead detected in the paint sample WR-PS1 did not exceed the former Federal HPA criterion of 5,000 mg/kg, leachability testing for lead was not carried out on the paint sample.

Results of the paint sampling program revealed that concentrations of mercury detected in paint sample WR-PS1 (0.41 mg/kg) did not exceed the Federal HPA criterion of 10.0 mg/kg and the CCME guideline of 24.0 mg/kg. Since the level of mercury detected in the paint sample WR-PS1 did not exceed the CCME-CEQG of 24.0 mg/kg, leachability testing for mercury was not carried out on the paint sample.

3.11.2.2 Phase III ESA Paint Survey Scope and Methodology

The Paint Survey was conducted from September 4 to 21, 2007 by Steve Moores, a Jacques Whitford senior environmental technician. Jacques Whitford attempted to correlate in the field the locations of the previous paint samples collected and analyzed during the Phase II ESA. No other potential paint locations or colours were observed that warranted sampling.

3.11.2.3 Discussion and Recommendations

Based on the results of the sampling and analysis, an elevated lead concentration (i.e., greater than 600 mg/kg) is present in the yellow paint on the exterior of the Wooden Shed.

The paint was in generally poor condition. 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. Lead based paints that are in poor condition may pose health concerns for building occupants. Lead based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.

3.11.3 Polychlorinated Biphenyls (PCBs)

No electrical equipment suspected of containing PCBs was observed within the building.

3.11.4 Other Identified Hazardous Materials

No other identified hazardous materials were observed within the building.

3.11.5 Mold

Water damage was observed within the Wooden Shed.

4.0 RECOMMENDATIONS

4.1 Phase III Environmental Site Assessment

The Phase III ESA investigation completed by Jacques Whitford was carried out as a follow up to a the Phase II ESA previously conducted on the property by AMEC in 2006/2007, and its purpose was to further delineate the noted environmental site impacts identified during the Phase II ESA following the Phase III ESA sampling plan recommended in the Phase II ESA report. Jacques Whitford's Phase III ESA did not include further evaluation of various other contaminants identified on the property during the previous Phase II ESA, including metals and asbestos impacts in soil and freshwater and marine sediments, metals impacts in surface water, as well as PAHs impacts in marine sediments. Further, the former Baie Verte Asbestos Mine property is a large, complex site with a long history of industrial site usage, and it is possible that other environmental impacts are present on the site that have not been identified that may be discovered during decommissioning activities and may require future evaluation. Based on information provided by DNR-MDD, Jacques Whitford understands that a future limited industrial land use is intended for the Former Baie Verte Asbestos Mine Property.

Based on results of environmental site assessment work completed on the property to date, Jacques Whitford makes the following recommendations:

1. Decide whether to carry out conventional soil remediation (i.e., removal of impacted soil from the site for off-site disposal or treatment) or risk management (i.e., impacted soil is left in place and managed) or a combination of both approaches for petroleum hydrocarbon impacted soil identified in the Northco area, Mill area and Waster Rock & Pit area. Under a risk-management approach the site owner maintains the long-term liability for the impacts on the site.
2. If the usage of a risk-management approach is acceptable to the site owner, carry out a human health risk assessment and a screening level ecological risk assessment for petroleum hydrocarbons in the Northco area, Mill area and Waster Rock & Pit area. The human health risk assessment would include a RBCA Tier II risk assessment for petroleum hydrocarbon impacts. Dependent on the results of the screening level ecological risk assessment, additional ecological assessment could be required for portions of the property. Dependent on the results of the risk assessments, risk management or remedial action may be required for portions of the property.
3. Once the site owner makes a decision with respect to the future usage of the various portions of the property and whether to use a conventional remediation approach or a risk-management approach, develop a remedial action plan and/or a risk management plan for the study area. Submit the remedial action plan and/or risk management plan to the NLDEC for review and approval before implementing on the study area.
4. Free product and solidified Bunker C require remediation as per NLDEC PPD05-01 and the Environmental Protection Act. Risk assessment / risk management is not applicable until petroleum hydrocarbon products have been remediated on the property.
5. No additional work was carried out as part of the current investigation to further delineate the horizontal and vertical extent of metals impacts in soil identified in the Northco area, Mill area, Warehouse & Dock area, Tailings area and Waste Rock & Pit area during the Phase II ESA. The Phase II ESA indicates that metals impacts in soil are widespread throughout the site and likely reflect background geology conditions in the area. However, background soil sampling should be considered in order to provide soil metals chemistry results that are representative of natural conditions for comparison to evaluate the environmental significance of soil metals results from portions of property. In addition, background freshwater sediment sampling should be considered to evaluate the environmental significance of metals results for freshwater sediment samples collected from various sites on the property. Background metals sampling would also be required if a risk assessment/risk management approach is adopted for the property, as per Health Canada guidance.
6. In accordance with NLDEC policy directive PPD05-01, remediation of the metals impacted soil, freshwater sediment would be required unless a risk-based remedial approach is developed and approved for the property or the source of the metals impacts is shown to be natural in origin, demonstrated through background sampling.
7. No additional work was carried out as part of the current investigation to further evaluate levels of petroleum hydrocarbons, metals and PAHs identified in marine and freshwater resources in the site area during the Phase II ESA. However, based on regulatory requirements, future environmental sampling for these parameters may be required in marine and freshwater resources in the site area. If an ecological risk assessment is to be conducted, detailed sampling of sediment and surface water media would likely be required.
8. Further, environmental assessment of several areas of potential environmental concern in the Waste Rock & Pit Area identified in the Phase I ESA, including the former pit office area located

on the Saddle; the location of a partially buried UST along the south wall of the West Pit; an area of debris (i.e., containing discarded tires, equipment and drums) along the toe of the waste rock pile, and the location of a potential discarded transformer within the waste rock pile were not included in the previous Phase II ESA or the current investigation due to safety concerns (i.e., rough, steep terrain, slope stability, etc.). It is recommended that geotechnical evaluation be carried out in these areas prior to carrying out intrusive investigation to assess slope stability and access conditions.

9. All ASTs and USTs and associated pipelines identified at the site should be decommissioned in accordance with the most recent Storage and Handling of Gasoline and Associated Products Regulations; and
10. In the event that the pad-mounted and pole-mounted transformers present at the Site are to be removed from the property, the dielectric fluids within the transformers must be tested for PCBs to assess transportation and disposal requirements.

4.2 Hazardous Materials Assessment

Based on the results of the current investigation, Jacques Whitford makes the following recommendations:

1. Based on the results of the Phase II and III ESAs, friable asbestos building materials were confirmed to be present in areas of the former Baie Verte Asbestos Mine. Exposed friable asbestos product was also observed throughout many buildings and on the exterior surfaces of the site. Numerous pallets of finished asbestos product in poor condition were observed being stored inside the Warehouse Building. Non-friable asbestos was also confirmed to be present in the buildings on the site. Settled dust which may contain asbestos fibres was present throughout the site and within the buildings.
2. The management of asbestos-containing materials and the handling, removal and disposal of asbestos-containing materials from the buildings are to be carried out in accordance with the Newfoundland Asbestos Abatement Regulations 1998. An asbestos management action plan should be developed for the former Baie Verte Asbestos Mine to include options for the removal, management, handling and/or disposal of asbestos containing building materials, asbestos product and settled dust.
3. Elevated lead concentrations (i.e., greater than 600 mg/kg) are present in paints throughout the former Baie Verte Asbestos Mine Site. Elevated mercury concentrations (i.e., greater than 10 mg/kg) are also present in paints throughout the Site.
4. Lead based paints and painted building materials that have a lead leachate concentration of less than the applicable assessment criterion of 5.0 mg/L may be disposed of at an approved landfill if removed from the Site. Mercury based paints and painted building materials that have a mercury leachate concentration of less than the applicable assessment criterion of 0.1 mg/L may also be disposed of at an approved landfill if removed from the Site. PCB based paints and painted building materials that have a PCB leachate concentration of less than the applicable assessment criterion of 0.3 mg/L may also be disposed of at an approved landfill if removed from the Site.
5. If the concentration of lead, mercury or PCB leachate in paints is at a level that is considered hazardous, the paint and painted building materials, if removed from the Site, must be disposed of as hazardous waste.

6. Lead, Mercury and PCB 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.
7. Lead, Mercury and PCB based paints that are in poor condition may pose health concerns for building occupants or on-site workers. Lead, Mercury and PCB based paints that are in poor condition should be removed or repaired by an experienced abatement contractor.
8. A management action plan for lead, mercury and PCB containing paints should be developed for the site.
9. The results of a limited inspection of light ballasts can be used to evaluate the presence of PCB ballasts in a building. If the apparently oldest ballasts on a floor of a building do not contain PCBs, then it is likely that none of the ballasts on the floor contain PCBs. If any of the inspected ballasts on a floor of a building contain PCBs, then all ballasts on that floor of the building must either be inspected or be treated as though they contain PCBs. Based on the available information and the observations from the limited inspections, it is possible that PCB-containing fluorescent light ballasts are located within the site buildings. It is recommended that all ballasts within the buildings be inspected upon removal or be treated as though they contain PCBs. Electrical equipment was observed on site, but was not accessible or readily visible for assessment. A management action plan for PCB containing electrical equipment should be developed for the site.
10. Extensive water damage was observed within most of the site buildings except for the Northco Area. Extensive mold growth was not observed as the majority of the building materials on site were non-porous in nature.
11. Appropriate personnel protective equipment and decontamination procedures should be continued for all work carried out on the site.

5.0 CLOSURE

This report has been prepared for the sole benefit of the Newfoundland and Labrador Department of Natural Resources. The report may not be used by any other person or entity without the express written consent of Jacques Whitford and the Newfoundland and Labrador Department of Natural Resources.

Any use which a third party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such third parties. JW accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The conclusions presented in this report represent the best technical judgement of Jacques Whitford Limited based on the data obtained from the work and on observations made during the site inspection from September 4 to 21, 2007. The conclusions are based on the site conditions encountered by Jacques Whitford Limited 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. Due to the nature of the investigation and the limited data available, Jacques Whitford Limited cannot warrant against undiscovered environmental liabilities.

A hazardous materials assessment is a limited sampling of a site. The conclusions given herein are based on information gathered at the specific sample locations and can only be extrapolated to an undefined limited area around these locations. In addition, analysis has been carried out for asbestos-containing materials and lead, mercury and PCBs in paint, and it should not be inferred that other chemical species are not present. A complete inspection of all wall and ceiling spaces for concealed asbestos, UFFI or mold was not carried out; only a limited inspection of accessible spaces was carried out. A complete inspection of the site building for the presence of PCBs was not carried out; only a limited inspection of random fluorescent light ballasts was carried out.

Should any conditions at the site be encountered which differ from those described herein, we request that we be notified immediately in order to assess the additional information and its effects on the above conclusions and recommendations.

This report was prepared by Carolyn Anstey-Moore, M.Sc., M.A.Sc., P.Geo. and Paula Brennan, M.A.Sc., P.Eng. and reviewed by Jim Slade, P.Eng., P.Geo. and Keith Keating, P.Eng.

Respectfully submitted,

JACQUES WHITFORD LIMITED

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Environmental Geoscientist

Jim Slade, P.Eng., P.Geo.
Senior Environmental Engineer

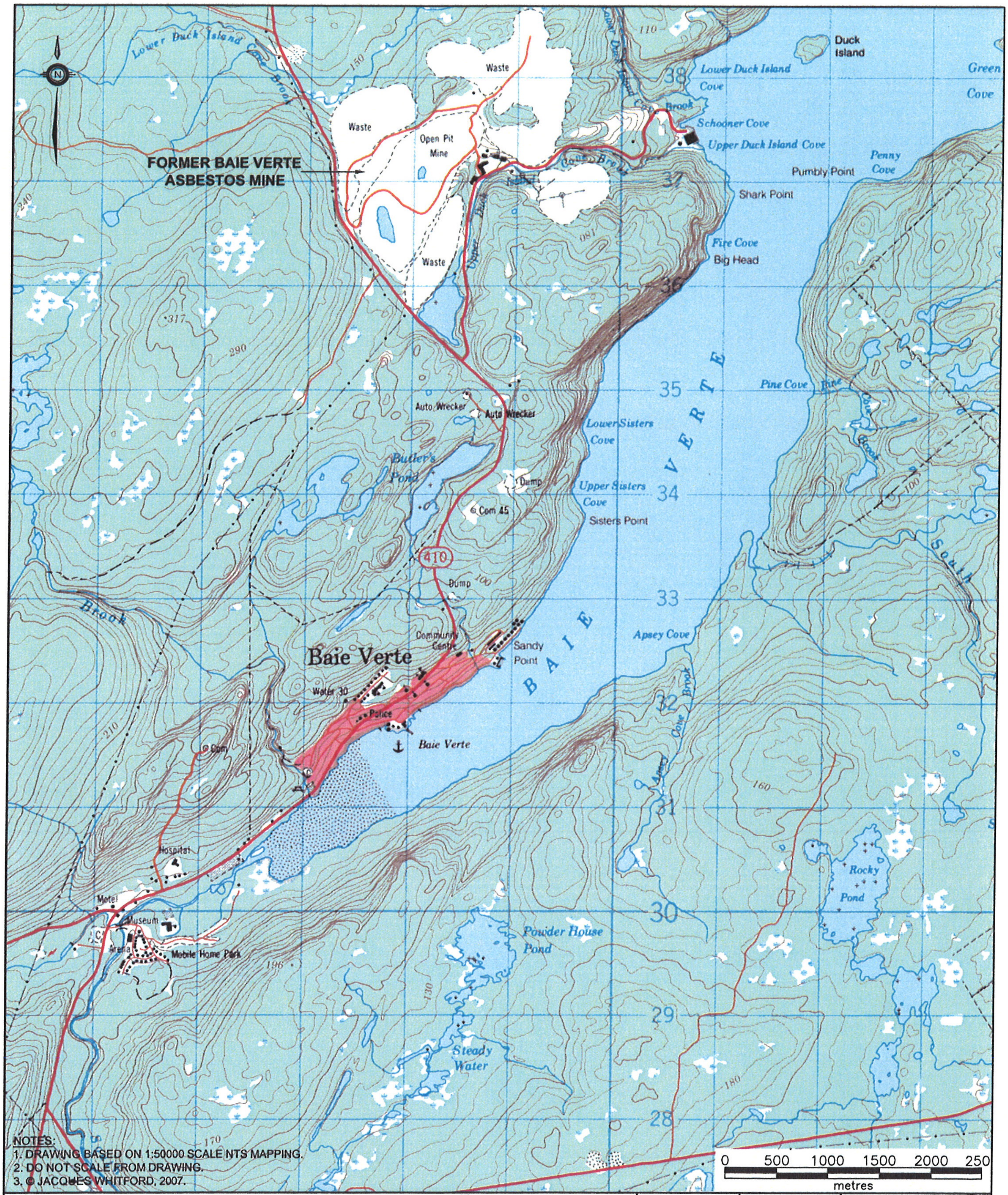
CAROLYN ANSTEY-MOORE
SIGNATURE
02/01/08
DATE

PROVINCE OF NEWFOUNDLAND AND LABRADOR
PEG Newfoundland and Labrador
PROFESSIONAL ENGINEERS AND GEOSCIENTISTS
PERMIT HOLDER
This Permit Allows
JACQUES WHITFORD LIMITED

To practice Professional Geoscience in Newfoundland and Labrador.
Permit No. as issued by PEG Y0198
which is valid for the year 2008

APPENDIX 1a

Regional Drawings



NOTES:
1. DRAWING BASED ON 1:50000 SCALE NTS MAPPING.
2. DO NOT SCALE FROM DRAWING.
3. © JACQUES WHITFORD, 2007.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

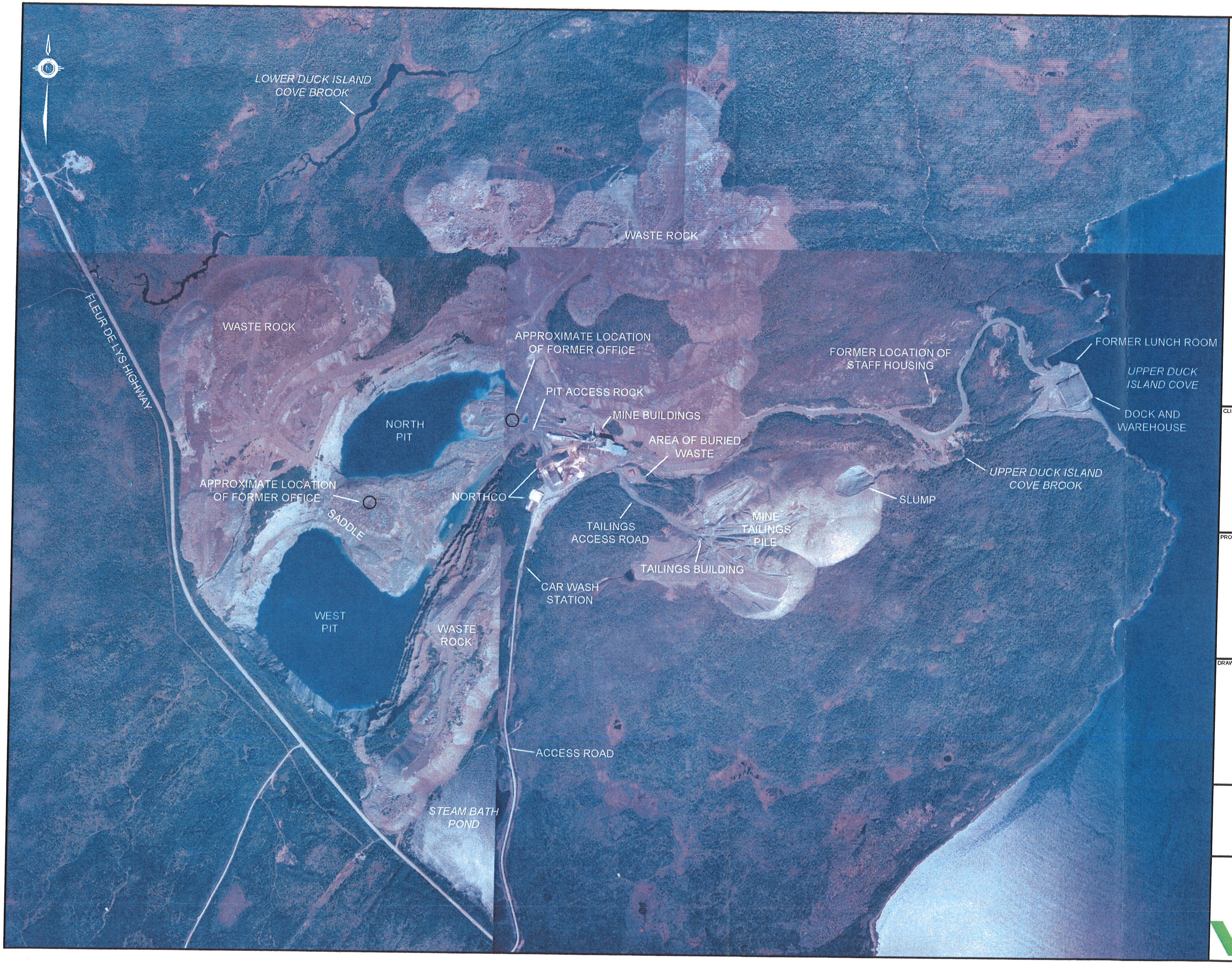
PROJECT TITLE:
PHASE III ESA AND HAZARDOUS MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE, BAIE VERTE, NL

DRAWING TITLE:
REGIONAL PROPERTY LOCATION MAP

SCALE: 1:50000
DATE: DEC. 7, 2007
DRAWN BY: N.M.
CHECKED BY:
EDITED BY: -
REV. No. 0
DRAWING No: 1028976-EE-01
CAD FILE: 1028976-EE-09.DWG

Jacques Whitford

07DEC07 9:00AM



NOTES:

THIS DRAWING IS BASED ON 1:12,500 AERIAL PHOTOGRAPHS.

IT IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION IN SUPPORT OF THIS REPORT.

ALL LOCATIONS, DIMENSIONS AND ORIENTATIONS ARE APPROXIMATE.

THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.

AERIAL PHOTOGRAPH INFORMATION:

ROLL: 99016, # 179 & #181. 1999
99017, # 015 & #017. 1999

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT,
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

DRAWING TITLE:

PROPERTY LOCATION PLAN

Jacques Whitford
CONSULTING ENGINEERS

SCALE: NTS	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: - -	REV. No. 0
DRAWING No. 1028976-EE-02	
CAD FILE: 1028976-EE-08.DWG	

07DEC07 9:00AM

APPENDIX 1b

Applicability of the Tier I/II RBSL/PSSL Tables and Ecological Receptor Screening Checklist

APPLICABILITY OF THE TIER I/II RBSL/PSSL TABLES

If the Tier I Risk-Based Screening Level (RBSL) criteria or the Tier II Pathway-Specific Screening Level (PSSL) criteria are to be used, the Site Professional must ensure that the actual site conditions are consistent with the default parameters used to calculate the criteria in the RBSL or PSSL Tables. If not, the site-specific differences must be incorporated by using the Atlantic RBCA model and the development of Site-Specific Target Levels (SSTL).

Table 1 Tier I/II Checklist

Defaults and Mandatory Criteria		Compatible with Defaults?
Issue	**Yes or No/ Comment**	
Is there surface staining?	YES	**NO**
Is there free product in soil or water?	YES	**NO**
Are there odours or explosive conditions in buildings or infrastructure?	NO (for those buildings assessed only)	**YES**
Is there objectionable taste or odour in potable water supplies?	NO - Non-potable site.	**YES**
Is any further activity required from the Ecological Screening Document?	YES (see Ecological Screening)	**NO**
Is there any impacted water known or reasonably suspected to be in bedrock?	Possible	**YES**
Is the depth to groundwater approximately 3 metres?	Depth to groundwater is approximately 3.0 m in some areas of the site, but does vary for each study area within the site as an whole.	**YES**
Is the impacted soil thickness less than 3 metres?	YES	**YES**
Does the on-site building have any of the following: - single storey residential building with no basement? - floor slab thickness less than 11.25 cm? - concrete floor with cracks exceeding the default crack fraction? - dirt basement floor? - sump with dirt bottom? - basements where soil is impacted above applicable Tier I RBSL is in contact with foundation walls?	NO	**YES**
Do the site conditions significantly differ from those of the default parameters?	NO - The site conditions are such that the Tier I Look Up Table criteria are conservative for this site.	**YES**

If the site conditions are not compatible with the default assumptions, a Tier II or a Tier III risk assessment approach may be required. If more than one type of petroleum product is found on a site, the lowest Look Up Table value should be used.

APPENDIX 1

Atlantic RBCA Version 2

REFERENCE GUIDELINES TIER ONE CHECK LIST

FOR

ECOLOGICAL RECEPTOR SCREENING

IN ATLANTIC CANADA

ATLANTIC PARTNERS IN RBCA IMPLEMENTATION

June 2003

Purpose

This document provides guidance for conducting a TIER I screening Ecological Risk Assessment (ERA) at a simple site impacted with hydrocarbons. This is a qualitative evaluation designed to determine whether or not additional data is required to quantify risks to ecological receptors through a tiered Ecological Risk Assessment (ERA).

This protocol is to be used in conjunction with the TIER 1 or TIER 2 Human Health Risk Assessment, RBCA tool kit, for Atlantic Canada.

The components of this assessment consist of a check list format to identify the potential receptors at risk and the presence of exposure pathways.

These practices are consistent with the recommended tiered approach from the National Contaminated Sites Remediation Program (NCSRP) as published by Environment Canada

The following guidelines are intended to be the minimum requirements for a preliminary assessment. They should in no way be construed as limiting, if your professional judgement determines that additional or different evaluation is required for a particular site.

Introduction

The components of this evaluation are divided into two steps. Step 1 identifies the presence of ecological receptors on or adjacent to the site, within a suggested distance of 150 metres. This distance is subject to professional judgement.

Step 2 determines the potential for the ecological receptors to be exposed to released hydrocarbons. Risks to ecological receptors essentially require the presence of receptors, potential pathways and the presence of toxicity. Further ERA activities should not be required if one of these conditions is missing.

1) ECOLOGICAL HABITAT

(within 150 meters of the site)

YES/NO

• Wetland habitats such as marshes, swamps, tidal flats, beaches	YES
• Aquatic habitats such as rivers, lakes or streams	YES
• Forested habitats (50 acres or more)	YES
• Grassland habitats	No
• Provincial/National parks or ecological reserve	No

- Rare, threatened or endangered species populations

  Possible

- Other critical or sensitive habitat for wildlife, migratory species

  Possible

If the answer is **NO** to ALL questions, then no species of concern are identified. There is no further action required.

If the answer to any on question is **"YES"**, then proceed to the next step.

2) EXPOSURE ASSESSMENT

YES/NO

• Can dissolved hydrocarbons in groundwater reach any receptor habitat identified above now or in the future?	YES
• Can LNAPL (Light Non Aqueous Phase Liquids) reach any receptor habitat identified above?	YES
• Can hydrocarbons reach any receptor habitat identified above via surface runoffs?	YES

If the site is under a building or pavement, skip the next two questions.

- Is there a potential for direct absorption of contaminants through skin? YES

- Is there a potential for oral consumption of contaminated soil, water, or plants? YES
- Have hydrocarbons, associated with the site being investigated, been known to be present in any of the soils, sediments, or surface water of the receptor habitat(s) identified above at concentrations greater than CCME ecologically-based guidelines?

Possible

If the answer to any questions above is YES, then further assessment is required. Additional data should be gathered to enhance the knowledge of the site-specific situation such as; fate and transport of contaminants, description of the receptor of concerns, preliminary toxicity estimates and mitigation options. (Tiered ERA)

The results of this screening assessment should be documented in writing in the Atlantic RBCA report. It should detail answers to the questions above and provide documentation or rationale for the answers provided.

Further assessment of ecological receptors for petroleum hydrocarbons impacts (and possibly other chemicals of concern) may be required in portions of the study site area to determine if there are risks to identified ecological receptors for this site. Also, there has been no evaluation to determine if there are rare, threatened or endangered species associated with this site or if sensitive habitats are present for species or migratory species. Further evaluation is recommended.

References;

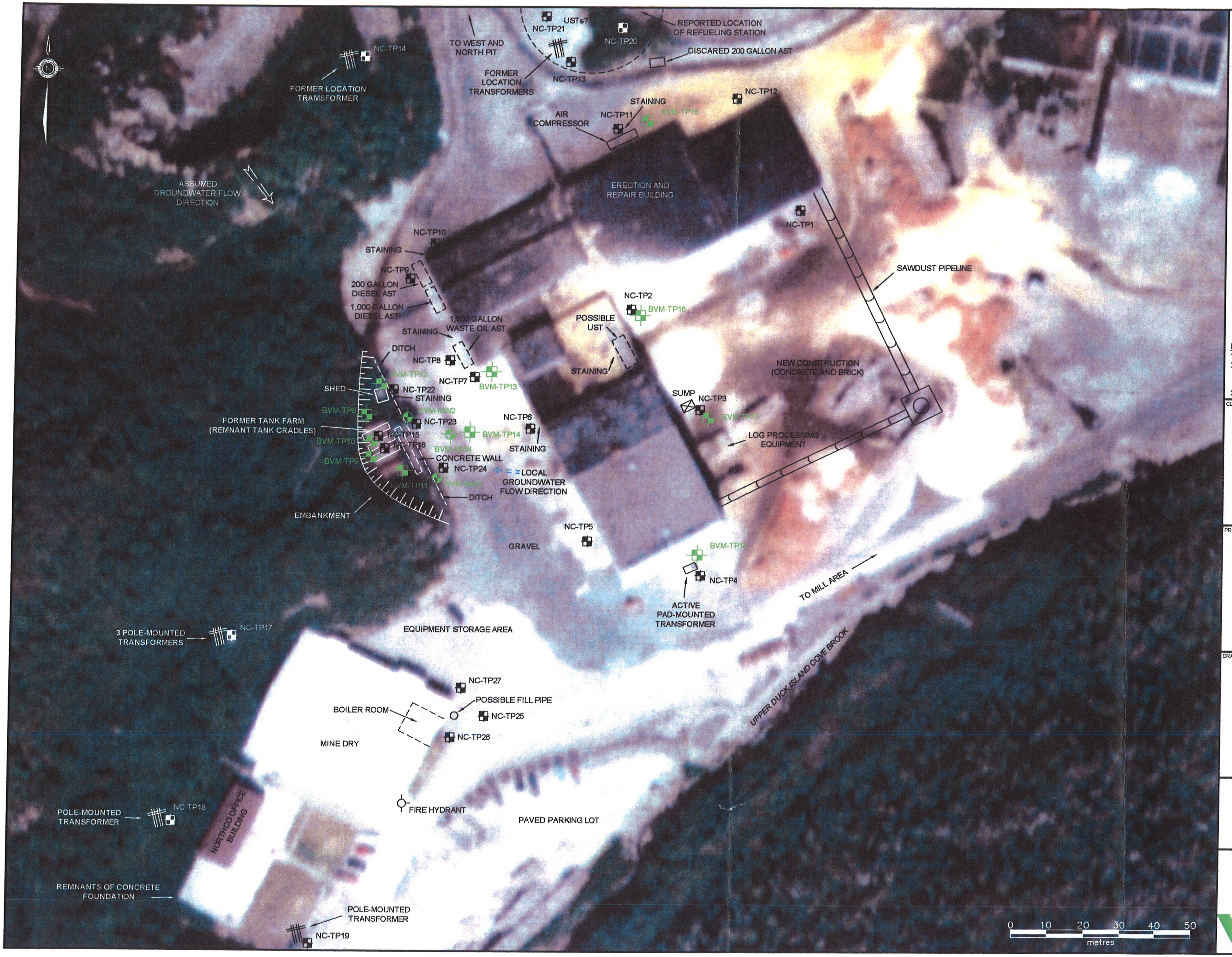
1) ASTM, RBCA Draft Provisional Standard (RBCA II), Appendix 5 qualitative ecological exposure assessment, ASTM publication, 1997

2) BRITISH COLUMBIA Ministry of Environment, Lands and Parks, 1998. Guidance and Checklist for Tier 1 Ecological Risk Assessment of Contaminated Sites in British Columbia. Landis et al. January 1998.

3) ENVIRONMENT CANADA, 1994. A Framework for Ecological Risk Assessment at Contaminated Sites in Canada: Review and Recommendations. Scientific series No 199, C. Gaudet, EVS Environment Consultants, ESSA Environmental and Social Systems Analysts, Ottawa Ont. 1994.

APPENDIX 2a

Site Drawings – Northco Area



LEGEND

TP	TEST PIT (CURRENT INVESTIGATION)
MW	MONITOR WELL (CURRENT INVESTIGATION)
▩	FORMER TEST PIT LOCATION (AMEC, 2007)

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT,
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

DRAWING TITLE:

SITE AND PHASE III ESA
SAMPLE LOCATION PLAN
NORTHCO AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE:	1:1000	DATE:	DEC. 7, 2007
DRAWN BY:	N.M.	CHECKED BY:	
EDITED BY:	-	REV. No:	0
DRAWING No:	1028976-EE-03		
CAD FILE:	1028976-EE-01.DWG		

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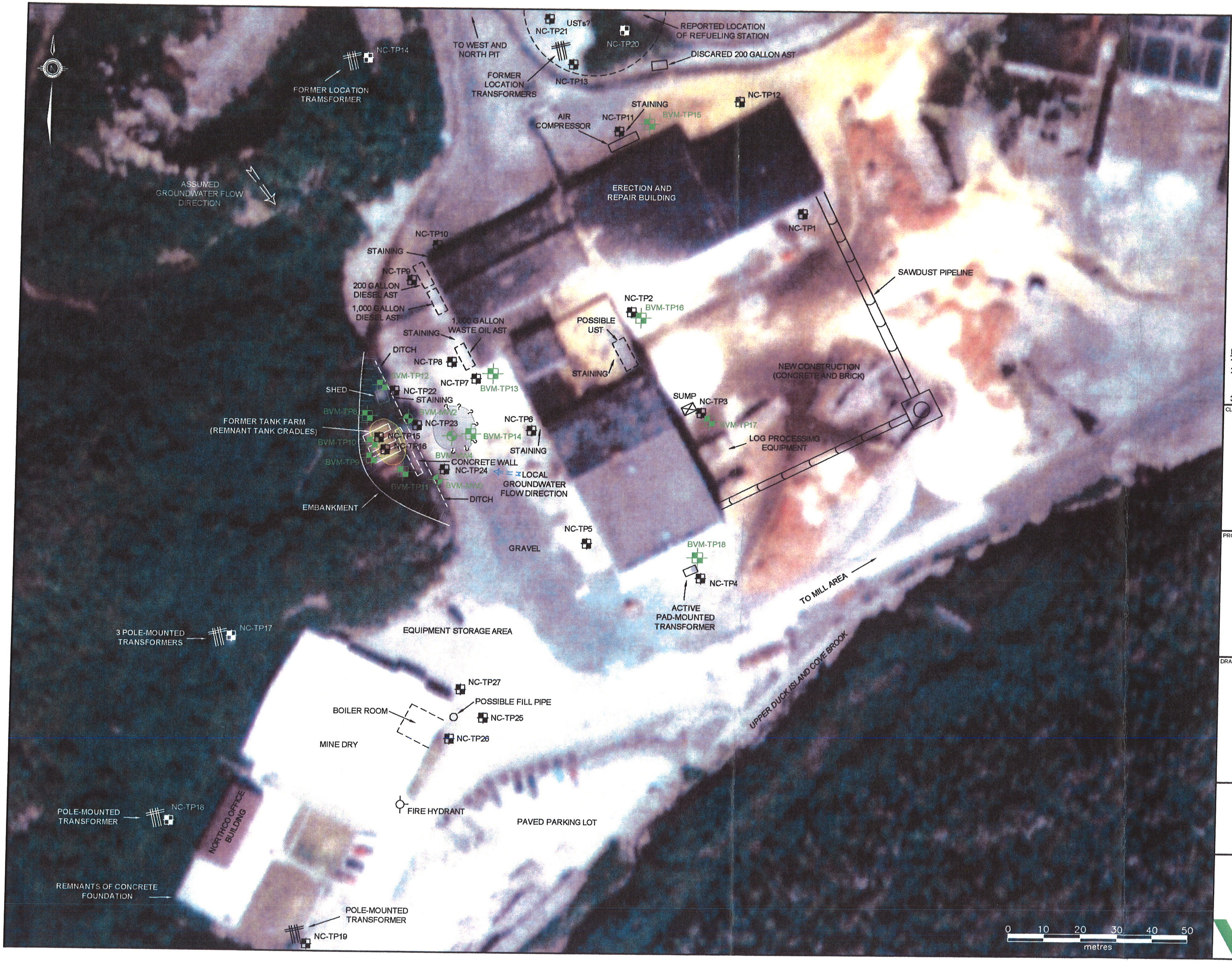

LEGEND

TP	TEST PIT (CURRENT INVESTIGATION)
MW	MONITOR WELL (CURRENT INVESTIGATION)
	FORMER TEST PIT LOCATION (AMEC, 2007)
🟨	ESTIMATED EXTENT OF AREA WITH TPH IN SOIL > TIER I RBSLs FOR A COMMERCIAL SITE
⬜	ESTIMATED EXTENT OF AREA WITH TPH IN GROUNDWATER > TIER I RBSLs FOR A COMMERCIAL SITE

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT,
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

DRAWING TITLE

ESTIMATED EXTENT OF PETROLEUM
HYDROCARBON IMPACTS IN SOIL
AND GROUNDWATER
NORTHCO AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: 1:1000	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: -	REV. No. 0
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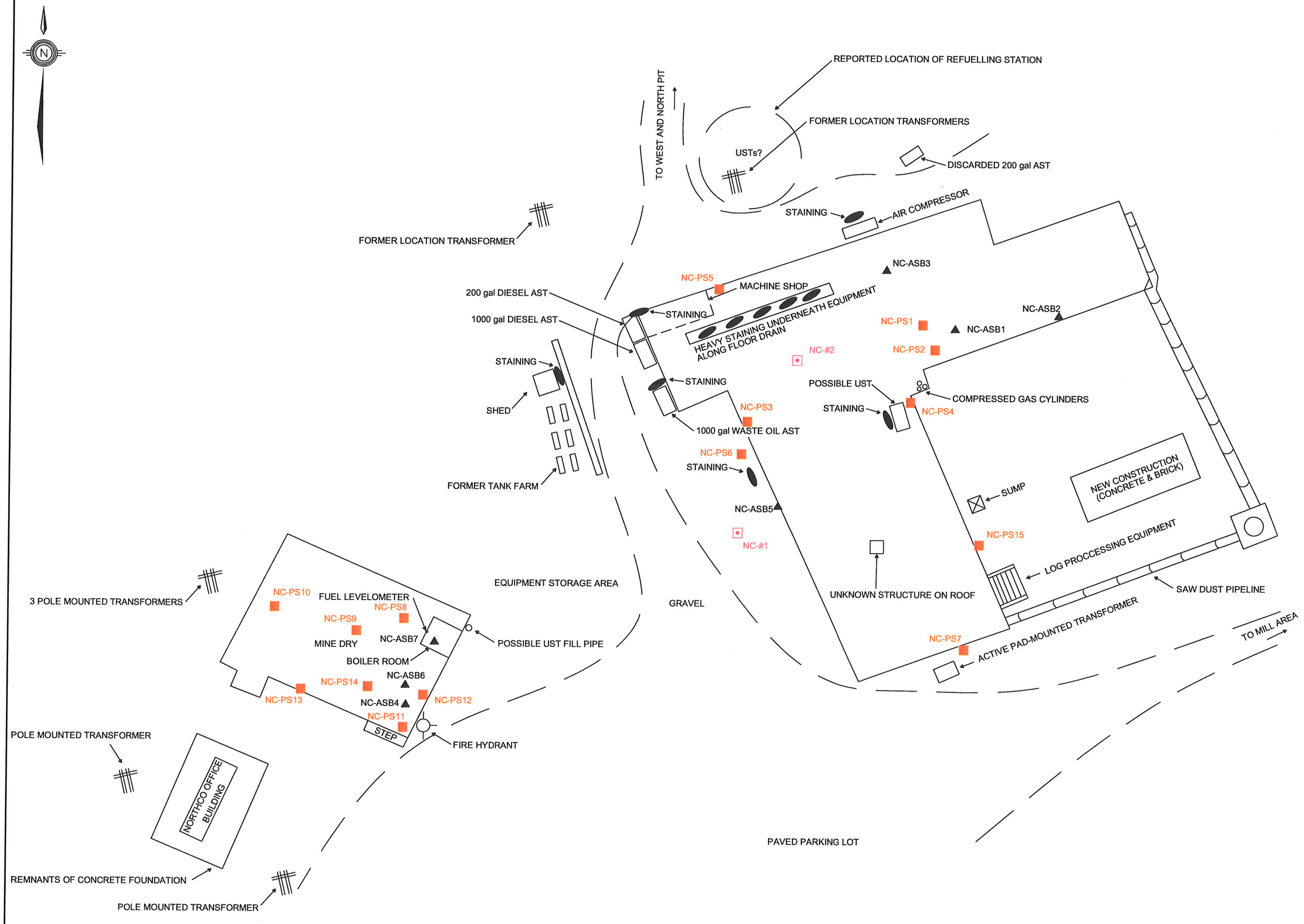

LEGEND

— — GRAVEL ACCESS ROADS
▲ ASBESTOS SAMPLE (AMEC 2007)
■ PAINT SAMPLE (AMEC 2007)
⊡ AIR SAMPLE (AMEC 2007)

NOTES:
1. DRAWING BASED ON INFORMATION PROVIDED BY CLIENT & JW FIELD NOTES.
2. DO NOT SCALE FROM DRAWING.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA & HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE
NORTHCO, BAIE VERTE, NL

DRAWING TITLE:

HAZARDOUS MATERIALS ASSESSMENT
SAMPLE LOCATIONS PLAN - NORTHCO AREA

Jacques Whitford
CONSULTING ENGINEERS

Jacques Whitford

SCALE: NTS	DATE: DEC. 6, 2007
DRAWN BY: S.N.	CHECKED BY:
EDITED BY: -	REV. No. 0
DRAWING No: 1028976-EE-05	
CAD FILE: 1028976-EE-12.DWG	

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APPENDIX 2b

Test Pit & Monitor Well Records & Symbols and Terms – Northco Area

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology Describing Common Soil Genesis

Rootmat - vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
Topsoil - mixture of soil and humus capable of supporting good vegetative growth
Peat - fibrous aggregate of visible and invisible fragments of decayed organic matter
Loam - silty sand or sand with silt mixed with organics matter
Till - unstratified glacial deposit which may range from clay to boulders
Fill - any materials below the surface identified as placed by humans (excluding buried services)

Terminology Describing Soil Structure

Homogeneous - same colour and appearance throughout
Stratified - composed of alternating successions of different soil types, e.g., silt and sand
Lensed - inclusion of small pockets of different soils
Laminated - alternating layers of varying material or colour with the layers less than 6 mm thick
Layer - thickness > 75 mm
Seam - thickness between 2 mm and 75 mm
Parting - thickness < 2 mm

Grain Size and Plasticity

Terminology describing soils on the basis of grain size and plasticity is based on the Unified Soil Classification System (USCS) (ASTM D-2487). The classification excludes particles larger than 76 mm (3 inches). This system provides a group symbol (e.g., SM) and group name (e.g., silty SAND) for identification. Note: terminology describing materials in the absence of laboratory analysis is based on the ASTM D-2488 visual method.

Terminology describing materials outside the USCS (e.g., particles larger than 76 mm, visible organic matter, construction debris) is based on the (visually estimated) proportion of these materials present:

Trace, or occasional	Less than approximately 10%
Some	approximately 10-20%
Frequent	Greater than approximately 20%

Standard Penetration Test 'N-Value'

The performance of the Standard Penetration Test provides an 'N-value'; the number of blows of a 140 pound (64 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (51 mm) O.D. split spoon sampler one foot (305 mm) into the soil. For split spoon samples where insufficient penetration is achieved and 'N' values cannot be determined, the number of blows is reported over sampler penetration in millimetres (e.g., 50/75).

Density of Cohesionless Soils

The standard terminology to describe cohesionless soils includes the compactness (formerly "relative density"), as determined by laboratory test or by the Standard Penetration Test 'N- value'.

Density	N-Value	Compactness %
Very Loose	< 4	< 15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	> 50	> 85

Consistency of Cohesive Soils

The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, unconfined compression tests, or occasionally by standard penetration tests.

Consistency	Undrained Shear Strength		N-Value
	ksf	kPa	
Very Soft	< 0.25	< 12.5	< 2
Soft	0.25-0.5	12.5-25	2-4
Firm	0.5-1.0	25-50	4-8
Stiff	1.0-2.0	50-100	8-15
Very Stiff	2.0-4.0	100-200	15-30
Hard	> 4.0	> 200	> 30

ROCK DESCRIPTION

Rock Quality Designation (RQD)

The classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be due to close shearing, jointing, faulting, or weathering in the rock mass and are not counted. RQD was originally intended to be applied to NW core; however, it can be used on different core sizes if most of the fractures caused by drilling stresses are easily distinguishable from *in situ* fractures.

RQD (%)	Rock Quality		
90-100	Excellent	-	intact, very sound
75-90	Good	-	moderately jointed, massive, sound
50-75	Fair	-	fractured, blocky and seamy
25-50	Poor	-	severely fractured, shattered and very seamy or blocky
0-25	Very poor	-	very severely fractured, crushed

Total Core Recovery (TCR)

Total core recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

Weathering State

Term	Description
Slight	Weathering limited to the surface of major discontinuities. Typically iron stained.
Moderate	Weathering extends throughout rock mass. Rock is not friable.
High	Weathering extends throughout rock mass. Rock is friable (crumbles naturally or broken between fingers).

Terminology Describing Rock Mass

Spacing (mm)	Bedding, Laminations, Bands	Discontinuity
2000-6000	Very Thick	Very wide
600-2000	Thick	Wide
200-600	Medium	Moderately close
60-200	Thin	Close
20-60	Very Thin	Very close
< 20	Laminated	Extremely close
< 6	Thinly Laminated	

RECORD SYMBOLS AND ABBREVIATIONS

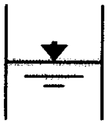
Sample Types

SS	Split spoon sample (obtained by performing the Standard Penetration Test)	WS	Wash sample	ST	Shelby tube or thin wall tube
		BS	Bulk sample	HQ, NQ, BQ, etc.	Rock core samples obtained using standard size diamond drilling bits.
		RC	Rock chip sample		

Laboratory Tests

S	Sieve analysis	H	Hydrometer analysis	A	Atterberg limits

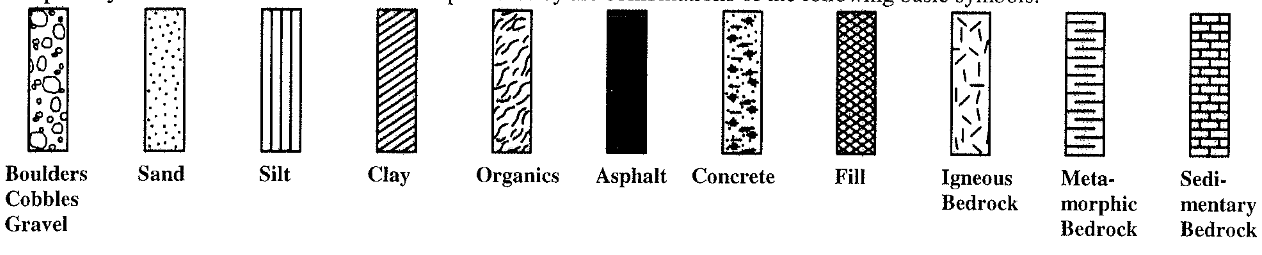
Water Level Measurement



Indicates recorded water level in a borehole, test pit or standpipe.

Strata Plot

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols:

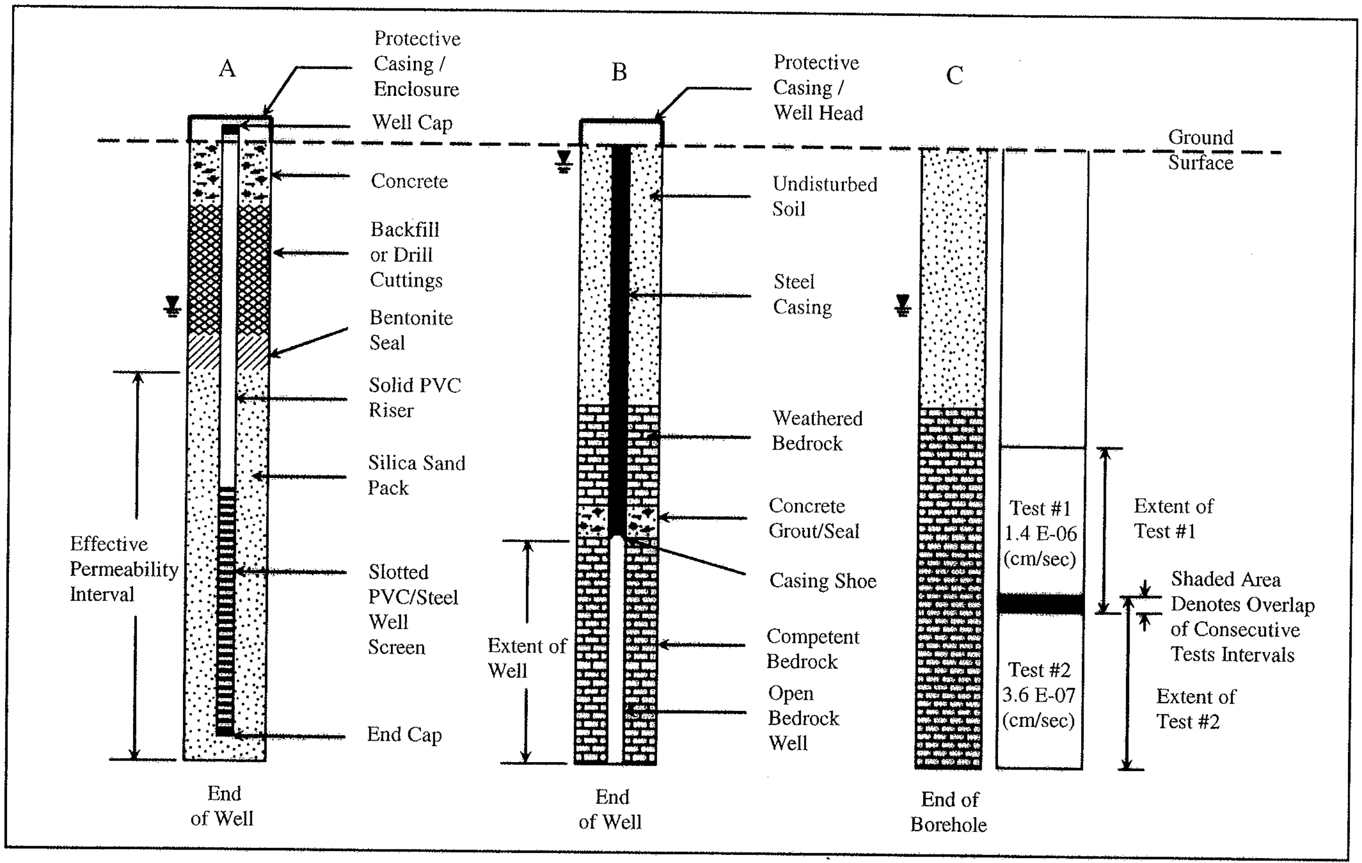


Solid lines between strata indicate the boundary between different strata. Dashed lines between strata indicate the boundary between strata is inferred.

SYMBOLS AND TERMS USED ON MONITOR WELL, WATER WELL AND ENVIRONMENTAL RECORDS

Well Construction and Permeability Testing

Basic symbols used in typical monitor or water well and piezometer construction are shown below. The well construction symbols or materials shown below may be combined or altered to suit a particular application. The diagram shows: A) a typical piezometer or monitor well in overburden; B) a typical water well in bedrock; C) borehole permeability test results in bedrock.



Apparent Moisture Content

Terminology used to describe apparent moisture content at the time of borehole drilling or test pit excavation.

Symbol	Description
D	Dry – containing little or no moisture
M	Moist – containing some moisture without having 'free' moisture
S	Saturated – 'free' moisture can drain from material

Terminology Describing Contamination

PID	-	Photo Ionization Detector (readings in ppm)
TPH	-	Total Petroleum Hydrocarbon concentration (readings in ppm based on mass)
ppm	-	Parts Per Million (measurement of concentration, mg/kg or mg/L)
nd	-	Not Detected – below limit of quantification (LOQ)

Apparent Hydrocarbon Odour

Terminology used to describe apparent hydrocarbon odour at the time of borehole drilling or test pit excavation.

Value	Description
0	No apparent odour
1	Slight odour
2	Moderate odour
3	Strong odour

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TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-8-07** WATER LEVEL **1.2 m** **9-8-07**
TEST PIT No. **BVMJW07-TP8**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown SAND with silt and gravel (SP-SM); some cobbles			BS	1			6.2	-	-	-	-	-
					BS	2			8.7	-	-	-	-	-
1				▼	BS	3			5.8	2200	nd	nd	nd	nd
		End of Test Pit Groundwater encountered at top of bedrock. Bedrock encountered at ~1.2 m depth. Slight hydrocarbon odour present during excavation.												
2														
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-8-07 WATER LEVEL N/A

TEST PIT No. BVMJW07-TP9
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, greyish brown GRAVEL (GP); some cobbles (waste rock with asbestos)			BS	1			5.1	-	-	-	-	-
					BS	2			5.4	1400	nd	nd	nd	nd
		End of Test Pit Groundwater not encountered. Bedrock encountered at ~0.8 m depth. Slight hydro carbon odour present during excavation.												
1														
2														
3														
4														
5														

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TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-8-07 WATER LEVEL 3.1 m 9-8-07
TEST PIT No. BVMJW07-TP10
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES HYDROCARBON ODOUR	SAMPLES OTHER TESTS	PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm) TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brownish black GRAVEL with silt (GP-GM): FILL (Class "B")			BS	1			10.2	-	-	-	-	-
					BS	2			5.6	-	-	-	-	-
1					BS	3			7.3	-	-	-	-	-
					BS	4			9.8	-	-	-	-	-
2					BS	5			4.4	-	-	-	-	-
					BS	6			6.5	-	-	-	-	-
3				▼	BS	7			8.2	1600	nd	nd	nd	nd
					BS	8			4.7	-	-	-	-	-
4		End of Test Pit Groundwater encountered at ~3.1 m depth. Bedrock not encountered. Slight hyrdocarbon odour present during excavation.												
5														

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TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**

PROJECT **Phase III ESA & Hazardous Materials Assessment**

LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**

DATES (mm-dd-yy): DUG **9-8-07** WATER LEVEL **N/A**

TEST PIT No. **BVMJW07-TP11**

PROJECT No. **1028976**

DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: HYDROCARBON ODOUR	SAMPLES: OTHER TESTS	PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm): TPH	CHEMICAL ANALYSIS (ppm): BENZENE	CHEMICAL ANALYSIS (ppm): TOLUENE	CHEMICAL ANALYSIS (ppm): ETHYLBENZENE	CHEMICAL ANALYSIS (ppm): XYLENES
0		Compact, greyish green GRAVEL (GP); some cobbles and boulders (waster rock & class "B")			BS	1			5.7	7100	nd	nd	nd	nd
					BS	2			4.2	-	-	-	-	-
1					BS	3			6.3	-	-	-	-	-
					BS	4			5.7	-	-	-	-	-
		End of Test Pit Groundwater not encountered. Bedrock encountered at ~1.6 m depth. Slight hydrocarbon odour present during excavation.												
2														
3														
4														
5														

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TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-8-07
WATER LEVEL N/A
TEST PIT No. BVMJW07-TP12
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown grey SAND with gravel (SP)	▨		BS	1			4.3	4700	nd	nd	nd	nd
			▨		BS	2			3.6	-	-	-	-	-
		End of Test Pit												
1		Groundwater not encountered.												
		Bedrock encountered at ~0.7 m depth.												
2														
3														
4														
5														

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TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources

PROJECT Phase III ESA & Hazardous Materials Assessment

LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL

DATES (mm-dd-yy): DUG 9-8-07 WATER LEVEL N/A

TEST PIT No. BVMJW07-TP13

PROJECT No. 1028976

DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Approximately 0.3 m of concrete followed by compact, brown grey GRAVEL (GP); some cobbles and boulders: FILL			BS	1			2.2	-	-	-	-	-
					BS	2			2.1	-	-	-	-	-
1					BS	3			2.2	-	-	-	-	-
		End of Test Pit Groundwater not encountered. Bedrock encountered at 1.1 m depth. Slight hydrocarbon odour present during excavation.												
2														
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-8-07** WATER LEVEL **N/A**
TEST PIT No. **BVMJW07-TP14**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact to loose, grey GRAVEL (GP); some cobbles and boulders (waste rock)			BS	1			6.2	-	-	-	-	-
					BS	2			9.8	-	-	-	-	-
1					BS	3			17.6	nd	nd	nd	nd	nd
		End of Test Pit Groundwater not encountered. Bedrock encountered at ~1.2 m depth. Slight hydrocarbon odour present during excavation.												
2														
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**
DATES (mm-dd-yy): DUG 9-8-07 WATER LEVEL N/A

TEST PIT No. **BVMJW07-TP15**
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, black-brown, silty SAND with gravel (SM)			BS	1			0.0	-	-	-	-	-
					BS	2			1.5	-	-	-	-	-
1					BS	3			6.8	-	-	-	-	-
					BS	4			5.2	-	-	-	-	-
2					BS	5			7.6	-	-	-	-	-
		End of Test Pit Groundwater not encountered. Bedrock encountered at 2.2 m depth. Strong odour present during excavation.												
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-8-07 WATER LEVEL N/A

TEST PIT No. BVMJW07-TP16
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, black-brown, SAND with gravel (SP); occasional boulders	▨		BS	1			1.7	-	-	-	-	-
			▨		BS	2			2.3	-	-	-	-	-
1			▨		BS	3			4.6	-	-	-	-	-
			▨		BS	4			9.2	-	-	-	-	-
2		End of Test Pit Groundwater not encountered. Bedrock encountered at 1.8 m depth.												
3														
4														
5														

ENV. TEST PIT 12/4/07

JACQUES WHITFORD

TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-8-07**
WATER LEVEL **N/A**
TEST PIT No. **BVMJW07-TP17**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, grey GRAVEL (GP); some cobbles and boulders: FILL			BS	1			0.0	-	-	-	-	-
					BS	2			0.0	-	-	-	-	-
1		End of Test Pit Groundwater not encountered. Bedrock encountered at ~0.8 m depth.												
2														
3														
4														
5														

JACQUES WHITFORD

TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-8-07** WATER LEVEL **N/A**
TEST PIT No. **BVMJW07-TP18**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose grey GRAVEL (GP); some cobbles and boulders: FILL			BS	1			1.2	-	-	-	-	-
					BS	2			1.1	-	-	-	-	-
1					BS	3			1.3	-	-	-	-	-
					BS	4			1.2	-	-	-	-	-
		End of Test Pit Groundwater not encountered. Bedrock encountered at ~1.7 m depth.												
2														
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

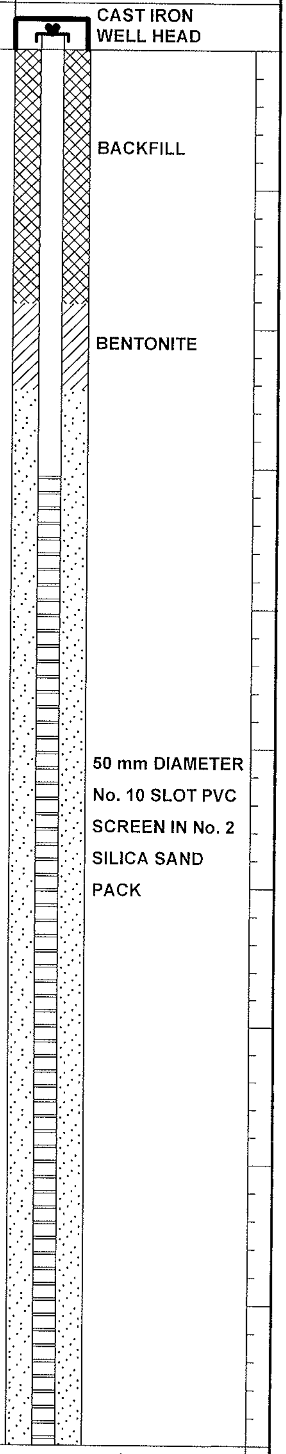
MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW2
PAGE 1 of 2
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07 WATER LEVEL 1.2 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
	99.91						mm					
0		Compact, grey GRAVEL (GP)			SS	1	100	16	0	D	2.4	-
1	99.3	Dense, grey GRAVEL (SP)		▼	SS	2	150	37	0	D	6.8	-
	98.7	Very dense, greyish green SILT (ML) with sand and gravel; some cobbles and boulders			SS	3	450	77	0	D	16.2	170
2 3	98.1	Waste rock (cobbles & boulders with some gravel)			RC	4	-		0	D	-	-
4 5	96.6	BEDROCK: Grey-green ultramafic intrusive rocks			RC	5	-		0	D	-	-

WELL CONSTRUCTION DETAILS

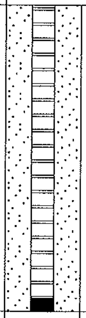


JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. **BVMJW07-MW2**
PAGE **2** of **2**
PROJECT No. **1028976**
DRILLING METHOD **DIA**
SIZE **HQ**
DATUM **Assumed**

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL**
DATES (mm-dd-yy): BORING **9-13-07** WATER LEVEL **1.2 m** **9-20-07**

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %					
		Continued from Previous Page					mm						
5			▦		RC	6	60%	13%	0	D	-	-	 50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK END CAP
6	93.8	End of Borehole Oily sheen noted on groundwater.											
7													
8													
9													
10													

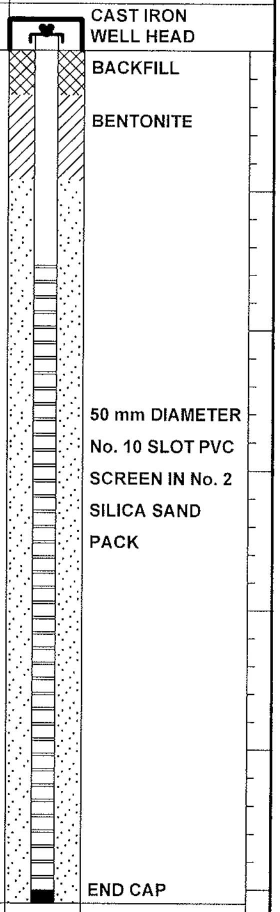
JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW3
PAGE 1 of 1
CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07
WATER LEVEL 1.27 m 9-20-07
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %				
0	100.00						mm					
	99.4	Compact, grey SAND with silt and gravel (SP-SM); some cobbles			SS	1	300	20	0	D	14.5	-
1	98.6	Dense, greyish green silty SAND with gravel (SM)			SS	2	450	30	0	D	12.2	-
				▼	SS	3	100	50/125	0	D	27.6	1100
2	97.0	BEDROCK: Dark grey ultramafic intrusive rock			RC	4	1350	63%	-	-	-	-
3		End of Borehole										
4												
5												

WELL CONSTRUCTION DETAILS



JACQUES WHITFORD

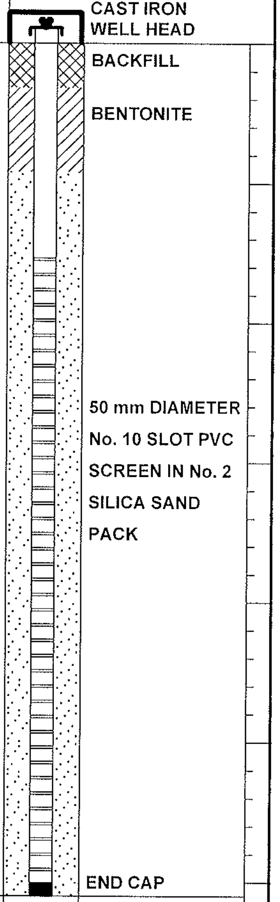
MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW4
PAGE 1 of 1
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Northco, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07 WATER LEVEL 1.21 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
0	99.96						mm					
	99.4	Dense, grey silty SAND with gravel (SM); some cobbles and boulders			SS	1	450	47	0	D	6.2	-
1	98.7	Very dense, grey SILT (ML) with sand and gravel		▼	SS	2	450	166/480	0	M	9.7	59
2 3	96.9	BEDROCK: Dark green ultramafic intrusive rock			RC	3	900	33%	-	-	-	-
4 5		End of Borehole										

WELL CONSTRUCTION DETAILS



Jacques Whitford

APPENDIX 2c

Laboratory Analytical Results Summary Tables – Northco Area (Current Investigation & AMEC, 2007)

Table 2.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil - Northco Area
Phase III ESA & Hazardous Materials Assessment
Former Baie Verte Asbestos Mine - Northco Area
Baie Verte, NL
JW Project No. 1028976

Parameters	Benzene	Toluene	Ethylbenzene	Xylenes	C6-C10 (Gas Range)	C10-C21 (Fuel Range)	C21-C32 (Lube Range)	Modified TPH - Tier I[3]	Resemblance
RDL	0.03	0.03	0.03	0.05	3	15	15	20	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Criteria[1]	1.8	160	430	200	na	na	na	7,400	
Criteria[2]	1.8	160	430	200	na	na	na	10,000	
BVM-JW07-TP8-BS3	nd	nd	nd	nd	270	1,600	350	2,200	WFO
BVM-JW07-TP9-BS1	nd	nd	nd	nd	nd	61	1,300	1,400	LO
BVM-JW07-TP10-BS7	nd	nd	nd	nd	150	840	660	1,600	WFO
BVM-JW07-TP11-BS1	nd	nd	nd	nd	nd	370	6,700	7,100	LO
BVM-JW07-TP11-BS1 Lab-Dup	nd	nd	nd	nd	nd	-	-	-	-
BVM-JW07-TP12-BS1	nd	nd	nd	nd	6	1,000	3,700	4,700	WFO, LO
BVM-JW07-TP14-BS3	nd	nd	nd	nd	nd	nd	nd	nd	-
BVM-JW07-MW2-SS3	nd	nd	nd	nd	nd	76	88	170	WFO, LO
Duplicate #1	nd	nd	nd	nd	nd	49	76	130	WFO, LO
BVM-JW07-MW3-SS3	nd	nd	nd	nd	39	640	420	1,100	WFO, LO
BVM-JW07-MW4-SS2	nd	nd	nd	nd	nd	nd	59	59	LO

Notes:

1 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for commercial site with non-potable groundwater, coarse-grained soil and fuel oil impacts

2 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for a commercial site with non-potable groundwater, coarse-grained soil and lube oil impacts

3 = Modified TPH - Tier I does not include BTEX

RDL = Reportable detection limit

nd = Not detected above standard RDL

na = No applicable criteria

Lab-Dup = Laboratory duplicate sample

WFO = Weathered fuel oil; LO = Lube oil

Duplicate #1 = Field QA/QC duplicate sample of BVM-JW07-MW2-SS3

"-" = Parameter not analyzed

Table 2.2 Results of Laboratory Analysis of VOCs in Soil - Northco Area
Phase III ESA & Hazardous Materials Assessment
Former Baie Verte Asbestos Mine - Northco Area
Baie Verte, NL
JW Project No. 1028976

Parameters	RDL	Units	Criteria[1]	BVM-JW07-TP13-BS1	BVM-JW07-TP15-BS5	BVM-JW07-TP16-BS1	BVM-JW07-TP17-BS2	BVM-JW07-TP17-BS3 Lab-Dup	BVM-JW07-TP18-BS4
Chlorobenzenes									
1,2-Dichlorobenzene	30	ug/kg	10,000	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	30	ug/kg	10,000	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	30	ug/kg	10,000	nd	nd	nd	nd	nd	nd
Chlorobenzene	30	ug/kg	10,000	nd	nd	nd	nd	nd	nd
Volatiles									
1,1,1-Trichloroethane	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	30	ug/kg	50,000	nd (100)	nd (2,000)	nd	nd	nd	nd
1,1,2-Trichloroethane	30	ug/kg	50,000	nd	nd (600)	nd	nd	nd	nd
1,1-Dichloroethane	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
1,1-Dichloroethylene	30	ug/kg	na	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
Benzene	30	ug/kg	30	nd	nd	nd	nd	nd	nd
Bromodichloromethane	30	ug/kg	na	nd	nd	nd	nd	nd	nd
Bromoform	30	ug/kg	na	nd	nd	nd	nd	nd	nd
Bromomethane	200	ug/kg	na	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
Chloroethane	200	ug/kg	na	nd	nd	nd	nd	nd	nd
Chloroform	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
Chloromethane	30	ug/kg	na	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethylene	30	ug/kg	na	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	30	ug/kg	na	nd	nd	nd	nd	nd	nd
Dibromochloromethane	50	ug/kg	na	nd	nd	nd	nd	nd	nd
Ethylbenzene	30	ug/kg	82	nd	nd	nd	nd	nd	nd
Ethylene Dibromide	30	ug/kg	na	nd	nd	nd	nd	nd	nd
Methylene Chloride(Dichloromethane)	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
o-Xylene	30	ug/kg	11,000	nd	nd	nd	nd	nd	nd
p+m-Xylene	30	ug/kg	11,000	nd	nd (50)	nd	nd	nd	nd
Styrene	30	ug/kg	50,000	nd	nd	nd	nd	nd	nd
Tetrachloroethylene	30	ug/kg	600	nd	nd	nd	nd	nd	nd
Toluene	30	ug/kg	370	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethylene	30	ug/kg	na	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	30	ug/kg	na	nd	nd	nd	nd	nd	nd
Trichloroethylene	30	ug/kg	10	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	30	ug/kg	na	nd	nd	nd	nd	nd	nd
Vinyl Chloride	30	ug/kg	na	nd	nd	nd	nd	nd	nd

Notes:
1 = 2007 Canadian Soil Quality Guidelines for Industrial Site
RDL = Reportable Detection Limit
nd = Not detected above standard RDL
nd () = Not detected above elevated RDL in parenthesis
na = No applicable criteria
Lab-Dup = Laboratory Duplicate Sample

Table 2.3 Results of Laboratory Analysis of Petroleum Hydrocarbons in Groundwater - Northco Area
Phase III ESA & Hazardous Materials Assessment
Former Baie Verte Asbestos Mine - Northco Area
Baie Verte, NL
JW Project No. 1028976

Parameters	RDL	Units	Criteria[1]	BVM-JW07-TP10	BVM-JW07-MW2	BVM-JW07-MW2 Lab-Dup	BVM-JW07-MW3	BVM-JW07-MW4	BVM-JW07-MW4 Lab-Dup	BVM-JW07-4FD
Benzene	0.001	mg/L	6.9	nd	nd	nd	nd	nd	-	nd
Toluene	0.001	mg/L	20	nd	0.011	0.011	nd	nd	-	0.001
Ethylbenzene	0.001	mg/L	20	nd	0.003	0.003	nd	0.005	-	0.008
Xylenes	0.002	mg/L	20	nd	0.014	0.014	nd	0.023	-	0.036
C6-C10 (Gas Range)	0.01	mg/L	na	nd	nd	nd	nd	0.28	-	0.26
C10-C21 (Fuel Range)	0.05	mg/L	na	0.19	0.31	-	1.7	12	20	11
C21-C32 (Lube Range)	0.1	mg/L	na	0.1	0.7	-	0.9	8.5	13	7.4
Modified TPH - Tier I[2]	0.1	mg/L	20	0.3	1	-	2.5	21	-	18
Resemblance				FO, LO	WFO, LO	-	WFO, LO	WFO, LO	-	WFO; LO

Notes:

1 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for groundwater at a commercial site with non-potable groundwater and coarse-grained soil

2 = Modified TPH - Tier I does not include BTEX

RDL = Reportable detection limit
nd = Not detected above standard RDL
na = No applicable criteria
Lab-Dup = Laboratory Duplicate Sample
BVM-JW07-4FD = JW Field QA/QC duplicate sample of BVM-JW07-MW4
"-" = Parameter not analyzed
FO = Fuel oil; WFO = Weathered fuel oil; LO = Lube oil
Shaded = Value exceeds applicable criteria

Table 2-1: Summary of Building Materials Samples and Asbestos Analysis - Northco

Sample ID	Sample Location	Sample Type	Asbestos Fibre %		
			Chrysotile	Amosite	other asbestos fibres
NC-ASB1	Former E & R Building - Level I	Ceiling Tile	20	nd	nd
NC-ASB2	Former E & R Building - Level I	Brick Mortar	2	nd	nd
NC-ASB3	Former E & R Building - Level II	Pipe Insulation	nd	nd	nd
NC-ASB4	Mine Dry - Main Floor	Floor Tile	3	nd	nd
NC-ASB5	Former E & R Building	Exterior Siding	25	nd	nd
NC-ASB6	Mine Dry - Main Floor	Ceiling Tile	nd	5	nd
NC-ASB7	Mine Dry - Basement	Boiler Insulation	nd	nd	nd

Note: Shaded results are above maximum as outlined under "The Asbestos Abatement Regulations, 1998 (Nfld. Reg. 111/98) of 1 % asbestos fibers.

trace: <1%

nd: not detected

Table 2-2: Asbestos in Air - Mill Area

Sample ID	Sample Location	Sample Type	Airborne Concentration (fibres/cm^3)
NC#1	Former E&R Building - Outside	Air	<0.002
NC#2	Former E&R Building - Inside	Air	<0.002

Note: Shaded results are above maximum as outlined under "2006 Occupational Exposure Threshold Limit Value (TLV) of 0.1 fibres/cm^3 (ACGIH)

Table 2-3. Lead in Paint - Northco

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Lead (mg/kg)
S2006-12095	NC-PS1	Former E & R Building - Ceiling	Gyproc	White Paint	5	**2870**
S2006-12096	NC-PS2	Former E & R Building - Interior Wall	Gyproc	Grey Paint	5	**6200**
S2006-12097	NC-PS3	Former E & R Building - Interior Wall	Concrete	Green Paint	5	385
S2006-12135	PS-DUP1	Former E & R Building - Interior Wall	Concrete	Green Paint	5	268
S2006-12098	NC-PS4	Former E & R Building - Steel Columns	Metal	Blue on White Paint	5	131
S2006-12099	NC-PS5	Former E & R Building - Interior Wall	Concrete	Beige on Grey Paint	5	**1880**
S2006-12100	NC-PS6	Former E & R Building - Exterior	Metal	Yellow Paint	5	**27400**
S2006-12101	NC-PS7	Former E & R Building - Exterior Wall	Concrete	Green Paint	5	**26400**
S2006-12102	NC-PS8	Mine Dry - Floor	Concrete	Grey Paint	5	**996**
S2006-12103	NC-PS9	Mine Dry - Interior Wall	Metal	Beige Paint	5	237
S2006-12104	NC-PS10	Mine Dry - Interior Door Frame	Metal	Brown Paint	5	**796**
S2006-12105	NC-PS11	Mine Dry - Interior Wall	Brick	Pale Yellow Paint	5	406
S2006-12106	NC-PS12	Mine Dry - Interior Wall	Brick	Cream on Yellow Paint	5	**930**
S2006-12107	NC-PS13	Mine Dry - Interior Wall	Gyproc	Yellow - Cream Paint	5	**673**
S2006-12108	NC-PS14	Mine Dry - Interior Door	Metal	Orange on Grey Paint	5	**685**
S2006-12109	NC-PS15	Former E & R Building - Exterior Door	Wood	Blue Paint	5	<5
S2006-12137	PS-DUP3	Former E & R Building - Exterior Door	Wood	Blue Paint	5	<5

Notes:
MDL: Method detection limit
<X: Below MDL
Data in brackets: Laboratory replicate results
Bold and underlined results indicate that lead concentration is above the relevant Federal Hazardous Products Act criterion of 600 mg/kg
Shaded results indicate that lead concentration is above the former Federal Hazardous Products Act criterion of 5000 mg/kg
PS-DUP1 is a blind field duplicate of paint sample NC-PS3
PS-DUP3 is a blind field duplicate of paint sample NC-PS15

Table 2-4. Mercury in Paint - Northco

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Mercury (mg/kg)
S2006-12095	NC-PS1	Former E & R Building - Ceiling	Gyproc	White Paint	0.01	3.59
S2006-12096	NC-PS2	Former E & R Building - Interior Wall	Gyproc	Grey Paint	0.01	3.99
S2006-12097	NC-PS3	Former E & R Building - Interior Wall	Concrete	Green Paint	0.01	**19.7**
S2006-12135	PS-DUP1	Former E & R Building - Interior Wall	Concrete	Green Paint	0.01	**13.4**
S2006-12098	NC-PS4	Former E & R Building - Steel Columns	Metal	Blue on White Paint	0.01	2.61
S2006-12099	NC-PS5	Former E & R Building - Interior Wall	Concrete	Beige on Grey Paint	0.01	**32.2**
S2006-12100	NC-PS6	Former E & R Building - Exterior	Metal	Yellow Paint	0.01	3.14
S2006-12101	NC-PS7	Former E & R Building - Exterior Wall	Concrete	Green Paint	0.01	0.99
S2006-12102	NC-PS8	Mine Dry - Floor	Concrete	Grey Paint	0.01	0.97
S2006-12103	NC-PS9	Mine Dry - Interior Wall	Metal	Beige Paint	0.01	**54.7**
S2006-12104	NC-PS10	Mine Dry - Interior Door Frame	Metal	Brown Paint	0.01	3.44
S2006-12105	NC-PS11	Mine Dry - Interior Wall	Brick	Pale Yellow Paint	0.01	5.44
S2006-12106	NC-PS12	Mine Dry - Interior Wall	Brick	Cream on Yellow Paint	0.01	0.81
S2006-12107	NC-PS13	Mine Dry - Interior Wall	Gyproc	Yellow - Cream Paint	0.01	0.17
S2006-12108	NC-PS14	Mine Dry - Interior Door	Metal	Orange on Grey Paint	0.01	1.09
S2006-12109	NC-PS15	Former E & R Building - Exterior Door	Wood	Blue Paint	0.01	<0.01
S2006-12137	PS-DUP3	Former E & R Building - Exterior Door	Wood	Blue Paint	0.01	0.04

Notes:

MDL: Method detection limit

<X: Below MDL

Data in brackets: Laboratory replicate results

Bold and and underlined results indicate that mercury concentration is above the Federal Hazardous Products Act criterion of 10 mg/kg

Shaded results indicate that mercury concentration is above the CCME CEQG for a commercial property (24 mg/kg)

PS-DUP1 is a blind field duplicate of paint sample NC-PS3

PS-DUP3 is a blind field duplicate of paint sample NC-PS15

Table 2-5. PCB in Paint - Northco

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	PCB (mg/kg)
S2006-12095	NC-PS1	Former E & R Building - Ceiling	Gyproc	White Paint	0.005	3.39
S2006-12096	NC-PS2	Former E & R Building - Interior Wall	Gyproc	Grey Paint	0.005	1.88
S2006-12099	NC-PS5	Former E & R Building - Interior Wall	Concrete	Beige on Grey Paint	0.005	2.01
S2006-12102	NC-PS8	Mine Dry - Floor	Concrete	Grey Paint	0.005	2.55
S2006-12105	NC-PS11	Mine Dry - Interior Wall	Brick	Pale Yellow Paint	0.005	0.53

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that PCB concentration is above the CCME-CEQG for a commercial property (33 mg/kg)

Table 2-6. Lead Leachate in Paint - Northco

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/L)	TCLP Lead (mg/L)
S2006-12096	NC-PS2	Former E & R Building - Interior Wall	Gyproc	Grey Paint	0.002	0.188
S2006-10993	NC-PS6	Former E & R Building - Exterior	Metal	Yellow Paint	0.002	1.540
S2006-10996	NC-PS7	Former E & R Building - Exterior Wall	Concrete	Green Paint	0.002	2.960

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that lead concentration is above the relevant Transportation of Dangerous Good Act (Updated 2002) criterion of 5.0 mg/L

Table 2-7. Mercury Leachate in Paint - Northco

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/L)	TCLP Mercury (mg/L)
S2006-12099	NC-PS5	Former E & R Building - Interior Wall	Concrete	Beige on Grey Paint	0.0001	0.0005
S2006-12103	NC-PS9	Mine Dry - Interior Wall	Concrete	Beige Paint	0.0001	0.0009

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that lead concentration is above the relevant Transportation of Dangerous Good Act (Updated 2002) criterion of 0.1 mg/L

Table 2-8: BTEX/TPH in Soil - Northco

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m) LAB ID FIELD ID DATE (D/M/Y)		Lab Blank	3.5 - 4.8 S2006-11596 NC-TP1-SS4 23-Sep-06	1.0 - 2.0 S2006-11597 NC-TP2-SS2 23-Sep-06	2.0 - 2.9 S2006-11598 NC-TP3-SS3 23-Sep-06	2.0 - 3.0 S2006-11599 NC-TP4-SS3 23-Sep-06	1999 CCME-CEQG (Updated 2005) INDUSTRIAL SITES	2003 ATLANTIC PIRI TIER I RBSL[1]		
								GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	<0.01	0.03	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	0.03	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.06	0.53	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	97.00	<10	<10	-	-	-	-
TPH (>C10-C21)	10	<10	<100 ***	1240	61	102	-	-	-	-
TPH (>C21-C32)	50	<50	1540	4170	172	373	-	-	-	-
Modified TPH (C6-C32)	70	<70	<1650	<5510	<243	<485	-	**450**	**7400**	**10000**
Hydrocarbon Identification		-	-	Chromatogram resembles diesel and heavy oil	Chromatogram resembles heavy oil	Chromatogram resembles heavy oil				

Notes:

MDL: Method detection limit

<X: not detected above MDL

CCME: Canadian Council of Ministers of the Environment

CEQG: Canadian Environment Quality Guidelines

Bold faced guidelines reflect those most applicable to current land use designation

Data in brackets: Laboratory replicate results

-: VALUE NOT ESTABLISHED

PIRI: Partnership in RBCA Implementation

RBCA: Risk Based Corrective Action

RBSL: Risk Based Screening Level

Bold and underlined data exceeds the CCME-CEQGs

Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL

1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable

*** Higher MDL reported due to sample dilution factor

Table 2-9: BTEX/TPH in Soil - Northco

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m) LAB ID FIELD ID DATE (D/M/Y)		0.0 - 0.9 S2006-11600 NC-TP5-SS1 23-Sep-06	0.0 - 1.0 S2006-11601 NC-TP6-SS1 23-Sep-06	0.0 - 1.0 S2006-11607 DUP 7 23-Sep-06	2.5 - 3.5 S2006-11602 NC-TP7-SS3 23-Sep-06	2.2 - 3.2 S2006-11603 NC-TP8-SS3 23-Sep-06	1999 CCME-CEQG (Updated 2005) INDUSTRIAL SITES	2003 ATLANTIC PIRI TIER I RBSL[1]		
								GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	0.02	<0.01	<0.01	0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	**0.16**	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.06	<0.06	0.20	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	38	29	171	22	-	-	-	-
TPH (>C10-C21)	10	<10	966	710	2720	1260	-	-	-	-
TPH (>C21-C32)	50	<50	631	524	2080	846	-	-	-	-
Modified TPH (C6-C32)	70	<70	<1640	<1260	<4970	<2130	-	**450**	**7400**	**10000**
Hydrocarbon Identification		-	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable
DUP 7 is a blind field duplicate of soil sample NC-TP6-SS1

Table 2-10: BTEX/TPH in Soil - Northco

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m)		0.0 - 1.1	0.0 - 0.9	1.0 - 1.7	1.0 - 2.0	1.0 - 2.0	1999 CCME-CEQG (Updated 2005) INDUSTRIAL SITES	2003 ATLANTIC PIRI TIER I RBSL[1]		
LAB ID		S2006-11630	S2006-11631	S2006-11632	S2006-11633	S2006-11628				
FIELD ID		NC-TP9-SS1	NC-TP10-SS1	NC-TP11-SS2	NC-TP12-SS2	DUP 8				
DATE (D/M/Y)		24-Sep-06	24-Sep-06	24-Sep-06	24-Sep-06	24-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	0.01	0.02	0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.04	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	103	11	17	-	-	-	-
TPH (>C10-C21)	10	28	<10	3480	572	444	-	-	-	-
TPH (>C21-C32)	50	62	<50	<50	379	442	-	-	-	-
Modified TPH (C6-C32)	70	<100	<70	<3630	<962	<903	-	**450**	**7400**	**10000**
Hydrocarbon Identification		Chromatogram resembles diesel and heavy oil	-	Chromatogram resembles diesel	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil heavy oil				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable
DUP 8 is a blind field duplicate of soil sample NC-TP12-SS2

Table 2-11: BTEX/TPH in Soil - Northco

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m)		0.0 - 0.3	0.0 - 0.3	0.0 - 1.0	0.0 - 1.1	0.0 - 1.0	1999 CCME-CEQG (Updated 2005) INDUSTRIAL SITES	2003 ATLANTIC PIRI TIER I RBSL^1		
LAB ID		S2006-11692	S2006-11693	S2006-11634	S2006-11635	S2006-11636				
FIELD ID		NC-TP15-SS1	NC-TP16-SS1	NC-TP20-SS1	NC-TP21-SS1	NC-TP22-SS1				
DATE (D/M/Y)		28-Sep-06	28-Sep-06	24-Sep-06	24-Sep-06	24-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.06	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	<10	<10	12	-	-	-	-
TPH (>C10-C21)	10	1670	1340	209	179	591	-	-	-	-
TPH (>C21-C32)	50	20700	11700	789	2100	77	-	-	-	-
Modified TPH (C6-C32)	70	**<22400**	**<13000**	<1010	<2290	<680	-	**450**	**7400**	**10000**
Hydrocarbon Identification		Chromatogram resembles weathered diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable

Table 2-12: BTEX/TPH in Soil - Northco

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m)		0.0 - 1.0	0.0 - 1.0	2.0 - 3.0	1.0 - 2.0	2.0 - 3.0	1999 CCME-CEQG (Updated 2005) INDUSTRIAL SITES	2003 ATLANTIC PIRI TIER I RBSL[1]		
LAB ID		S2006-11637	S2006-11638	S2006-11639	S2006-11640	S2006-11641				
FIELD ID		NC-TP23-SS1	NC-TP24-SS1	NC-TP25-SS3	NC-TP26-SS2	NC-TP27-SS3				
DATE (D/M/Y)		24-Sep-06	24-Sep-06	24-Sep-06	24-Sep-06	24-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	0.04	0.02	<0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	**0.51**	0.03	<0.02	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	1.27	0.17	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	63	62	<10	<10	15	-	-	-	-
TPH (>C10-C21)	10	1790	1730	<10	<10	167	-	-	-	-
TPH (>C21-C32)	50	974	1570	<50	<50	<50	-	-	-	-
Modified TPH (C6-C32)	70	<2830	<3360	<70	<70	<232	-	**450**	**7400**	**10000**
Hydrocarbon Identification		Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	-	-	Chromatogram resembles diesel				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable

APPENDIX 2d

Maxxam Analytics Inc. Analytical Reports – Northco Area (Current Investigation)

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66229	U66230		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12119	12119		
Registration #					
	Units	**BVM-JW07-TP8-BS3**	**BVM-JW07-TP9-BS1**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	13	12	1	1360980
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	270	ND	3	1360981
>C10-C21 Hydrocarbons	mg/kg	1600	61	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	350	1300	15	1360985
Modified TPH (Tier1)	mg/kg	2200	1400	20	1360309
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	102	94		1360985
Isobutylbenzene - Volatile	%	173 (1)	92		1360981
n-Dotriacontane - Extractable	%	122 (2)	112 (3)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(2) Weathered fuel oil fraction.
(3) Lube oil fraction.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66231	U66232		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12119	12118		
Registration #					
	Units	**BVM-JW07-TP10-BS7**	**BVM-JW07-TP12-BS1**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	18	13	1	1360980
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	150	6	3	1360981
>C10-C21 Hydrocarbons	mg/kg	840	1000	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	660	3700	15	1360985
Modified TPH (Tier1)	mg/kg	1600	4700	20	1360309
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	93	103		1360985
Isobutylbenzene - Volatile	%	177 (1)	118		1360981
n-Dotriacontane - Extractable	%	115 (2)	83 (3)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(2) Weathered fuel oil fraction.
(3) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66233	U66234		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12118	12118		
Registration #					
	Units	**BVM-JW07-TP14-BS3**	**BVM-JW07-TP19-BS2**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	3	10	1	1360980
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	ND	ND	3	1360981
>C10-C21 Hydrocarbons	mg/kg	ND	21	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	ND	170	15	1360985
Modified TPH (Tier1)	mg/kg	ND	190	20	1360309
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	97	95		1360985
Isobutylbenzene - Volatile	%	111	116		1360981
n-Dotriacontane - Extractable	%	102	121(1)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.

Maxxam Job #: A7A2057
Report Date: 2007/09/26

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U75298	U75299		
Sampling Date		2007/09/19	2007/09/19		
COC Number		12150	12150		
Registration #					
	Units	**BVMJW07-MW1-SS1**	**BVMJW07-MW2-SS3**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	3	16	1	1364119
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1364122
Toluene	mg/kg	ND	ND	0.03	1364122
Ethylbenzene	mg/kg	ND	ND	0.03	1364122
Xylene (Total)	mg/kg	ND	ND	0.05	1364122
C6 - C10 (less BTEX)	mg/kg	ND	ND	3	1364122
>C10-C21 Hydrocarbons	mg/kg	ND	76	15	1366733
>C21-<C32 Hydrocarbons	mg/kg	80	88	15	1366733
Modified TPH (Tier1)	mg/kg	80	170	20	1363484
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	99	104		1366733
Isobutylbenzene - Volatile	%	120	125		1364122
n-Dotriacontane - Extractable	%	120 (1)	125 (2)		1366733

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.
(2) Weathered fuel oil fraction. Lube oil fraction

Maxxam Job #: A7A2057
Report Date: 2007/09/26

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U75300	U75301		
Sampling Date		2007/09/19	2007/09/19		
COC Number		12150	12150		
Registration #					
	Units	**BVMJW07-MW3-SS3**	**BVMJW07-MW4-SS2**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	19	11	1	1364119
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1364122
Toluene	mg/kg	ND	ND	0.03	1364122
Ethylbenzene	mg/kg	ND	ND	0.03	1364122
Xylene (Total)	mg/kg	ND	ND	0.05	1364122
C6 - C10 (less BTEX)	mg/kg	39	ND	3	1364122
>C10-C21 Hydrocarbons	mg/kg	640	ND	15	1366733
>C21-<C32 Hydrocarbons	mg/kg	420	59	15	1366733
Modified TPH (Tier1)	mg/kg	1100	59	20	1363484
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	112	102		1366733
Isobutylbenzene - Volatile	%	193 (1)	119		1364122
n-Dotriacontane - Extractable	%	114 (2)	118 (3)		1366733

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(2) Weathered fuel oil fraction. Lube oil fraction
(3) Lube oil fraction

Maxxam Job #: A799260
Report Date: 2007/11/30

Jacques Whitford Limited
Client Project #: 1028976/Z9100 PHASE III ESA
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		U62940	U62940	U63001		
Sampling Date		2007/09/07	2007/09/07	2007/09/07		
COC Number		12116	12116	12116		
Registration #						
	Units	**BVM-JW07-TP11-BS1**	**BVM-JW07-TP11-BS1 Lab-Dup**	**RP-JW07-TP8-BS3**	**RDL**	**QC Batch**

TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1360693
Toluene	mg/kg	ND	ND	ND	0.03	1360693
Ethylbenzene	mg/kg	ND	ND	ND	0.03	1360693
Xylene (Total)	mg/kg	ND	ND	ND	0.05	1360693
C6 - C10 (less BTEX)	mg/kg	ND	ND	ND	3	1360693
>C10-C21 Hydrocarbons	mg/kg	370		ND	15	1362106
>C21-<C32 Hydrocarbons	mg/kg	6700		ND	15	1362106
Modified TPH (Tier1)	mg/kg	7100		ND	20	1358549
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	89		112		1362106
Isobutylbenzene - Volatile	%	84	88	97		1360693
n-Dotriacontane - Extractable	%	5.1 (1)		98		1362106

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction. TEH surrogate(s) not within acceptance limits due to sample dilution / product interference.

Maxxam Job #: A7A2029
Report Date: 2007/09/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U75180	U75184	U75185		
Sampling Date		2007/09/19	2007/09/19	2007/09/19		
COC Number		12152	12152	12152		
Registration #						
	Units	**RMJW07-MW8-SS1**	**RMJW07-MW9-SS4**	**DUPLICATE #1**	**RDL**	**QC Batch**
INORGANICS						
Moisture	%	10	7	18	1	1364119
TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1364122
Toluene	mg/kg	ND	ND	ND	0.03	1364122
Ethylbenzene	mg/kg	ND	ND	ND	0.03	1364122
Xylene (Total)	mg/kg	ND	ND	ND	0.05	1364122
C6 - C10 (less BTEX)	mg/kg	ND	ND	ND	3	1364122
>C10-C21 Hydrocarbons	mg/kg	ND	ND	49	15	1365188
>C21-<C32 Hydrocarbons	mg/kg	31	25	76	15	1365188
Modified TPH (Tier1)	mg/kg	31	25	130	20	1363484
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	95	94	96		1365188
Isobutylbenzene - Volatile	%	123	108	130		1364122
n-Dotriacontane - Extractable	%	105 (1)	105 (1)	104 (2)		1365188

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil range.
(2) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: A7A0366
Report Date: 2007/09/24

Jacques Whitford Limited
Client Project #: 1028976/Z9100/PHASE III ESA
Project name: BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		U67692		U67693		
Sampling Date		2007/09/10		2007/09/10		
COC Number		12118		12118		
Registration #						
	Units	BVM-JW07-TP13-BS1	RDL	BVM-JW07-TP15-BS5	RDL	QC Batch
CHLOROBENZENES						
1,2-Dichlorobenzene	ug/kg	ND	30	ND	30	1362363
1,3-Dichlorobenzene	ug/kg	ND	30	ND	30	1362363
1,4-Dichlorobenzene	ug/kg	ND	30	ND	30	1362363
Chlorobenzene	ug/kg	ND	30	ND	30	1362363
VOLATILES						
1,1,1-Trichloroethane	ug/kg	ND	30	ND	30	1362363
1,1,2,2-Tetrachloroethane	ug/kg	ND (1)	100	ND (1)	2000	1362363
1,1,2-Trichloroethane	ug/kg	ND	30	ND (1)	600	1362363
1,1-Dichloroethane	ug/kg	ND	30	ND	30	1362363
1,1-Dichloroethylene	ug/kg	ND	30	ND	30	1362363
1,2-Dichloroethane	ug/kg	ND	30	ND	30	1362363
1,2-Dichloropropane	ug/kg	ND	30	ND	30	1362363
Benzene	ug/kg	ND	30	ND	30	1362363
Bromodichloromethane	ug/kg	ND	30	ND	30	1362363
Bromoform	ug/kg	ND	30	ND	30	1362363
Bromomethane	ug/kg	ND	200	ND	200	1362363
Carbon Tetrachloride	ug/kg	ND	30	ND	30	1362363
Chloroethane	ug/kg	ND	200	ND	200	1362363
Chloroform	ug/kg	ND	30	ND	30	1362363
Chloromethane	ug/kg	ND	30	ND	30	1362363
cis-1,2-Dichloroethylene	ug/kg	ND	30	ND	30	1362363
cis-1,3-Dichloropropene	ug/kg	ND	30	ND	30	1362363
Dibromochloromethane	ug/kg	ND	30	ND	30	1362363
Ethylbenzene	ug/kg	ND	30	ND	30	1362363
Ethylene Dibromide	ug/kg	ND	30	ND	30	1362363
Methylene Chloride(Dichloromethane)	ug/kg	ND	50	ND	50	1362363
o-Xylene	ug/kg	ND	30	ND	30	1362363
p+m-Xylene	ug/kg	ND	30	ND (1)	50	1362363
Styrene	ug/kg	ND	30	ND	30	1362363
Tetrachloroethylene	ug/kg	ND	30	ND	30	1362363

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated VOC RDL(s) due to matrix interference.

Maxxam Job #: A7A0366
Report Date: 2007/09/24

Jacques Whitford Limited
Client Project #: 1028976/Z9100/PHASE III ESA
Project name: BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		U67692		U67693		
Sampling Date		2007/09/10		2007/09/10		
COC Number		12118		12118		
Registration #						
	Units	**BVM-JW07-TP13-BS1**	**RDL**	**BVM-JW07-TP15-BS5**	**RDL**	**QC Batch**
Toluene	ug/kg	ND	30	ND	30	1362363
trans-1,2-Dichloroethylene	ug/kg	ND	30	ND	30	1362363
trans-1,3-Dichloropropene	ug/kg	ND	30	ND	30	1362363
Trichloroethylene	ug/kg	ND	30	ND	30	1362363
Trichlorofluoromethane (FREON 11)	ug/kg	ND	30	ND	30	1362363
Vinyl Chloride	ug/kg	ND	30	ND	30	1362363
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	121		101		1362363
D4-1,2-Dichloroethane	%	121		117		1362363
D8-Toluene	%	119		134		1362363

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7A0366
Report Date: 2007/09/24

Jacques Whitford Limited
Client Project #: 1028976/Z9100/PHASE III ESA
Project name: BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		U67694	U67695		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12118	12118		
Registration #					
	Units	**BVM-JW07-TP16-BS1**	**BVM-JW07-TP17-BS1**	**RDL**	**QC Batch**

CHLOROBENZENES					
1,2-Dichlorobenzene	ug/kg	ND	ND	30	1362363
1,3-Dichlorobenzene	ug/kg	ND	ND	30	1362363
1,4-Dichlorobenzene	ug/kg	ND	ND	30	1362363
Chlorobenzene	ug/kg	ND	ND	30	1362363
VOLATILES					
1,1,1-Trichloroethane	ug/kg	ND	ND	30	1362363
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND	30	1362363
1,1,2-Trichloroethane	ug/kg	ND	ND	30	1362363
1,1-Dichloroethane	ug/kg	ND	ND	30	1362363
1,1-Dichloroethylene	ug/kg	ND	ND	30	1362363
1,2-Dichloroethane	ug/kg	ND	ND	30	1362363
1,2-Dichloropropane	ug/kg	ND	ND	30	1362363
Benzene	ug/kg	ND	ND	30	1362363
Bromodichloromethane	ug/kg	ND	ND	30	1362363
Bromoform	ug/kg	ND	ND	30	1362363
Bromomethane	ug/kg	ND	ND	200	1362363
Carbon Tetrachloride	ug/kg	ND	ND	30	1362363
Chloroethane	ug/kg	ND	ND	200	1362363
Chloroform	ug/kg	ND	ND	30	1362363
Chloromethane	ug/kg	ND	ND	30	1362363
cis-1,2-Dichloroethylene	ug/kg	ND	ND	30	1362363
cis-1,3-Dichloropropene	ug/kg	ND	ND	30	1362363
Dibromochloromethane	ug/kg	ND	ND	30	1362363
Ethylbenzene	ug/kg	ND	ND	30	1362363
Ethylene Dibromide	ug/kg	ND	ND	30	1362363
Methylene Chloride(Dichloromethane)	ug/kg	ND	ND	50	1362363
o-Xylene	ug/kg	ND	ND	30	1362363
p+m-Xylene	ug/kg	ND	ND	30	1362363
Styrene	ug/kg	ND	ND	30	1362363
Tetrachloroethylene	ug/kg	ND	ND	30	1362363

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7A0366
Report Date: 2007/09/24

Jacques Whitford Limited
Client Project #: 1028976/Z9100/PHASE III ESA
Project name: BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		U67694	U67695		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12118	12118		
Registration #					
	Units	**BVM-JW07-TP16-BS1**	**BVM-JW07-TP17-BS1**	**RDL**	**QC Batch**
Toluene	ug/kg	ND	ND	30	1362363
trans-1,2-Dichloroethylene	ug/kg	ND	ND	30	1362363
trans-1,3-Dichloropropene	ug/kg	ND	ND	30	1362363
Trichloroethylene	ug/kg	ND	ND	30	1362363
Trichlorofluoromethane (FREON 11)	ug/kg	ND	ND	30	1362363
Vinyl Chloride	ug/kg	ND	ND	30	1362363
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	120	121		1362363
D4-1,2-Dichloroethane	%	120	118		1362363
D8-Toluene	%	120	119		1362363

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		U67695	U67696		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12118	12118		
Registration #					
	Units	BVM-JW07-TP17-BS1 Lab-Dup	BVM-JW07-TP18-BS4	RDL	QC Batch
CHLOROBENZENES					
1,2-Dichlorobenzene	ug/kg	ND	ND	30	1362363
1,3-Dichlorobenzene	ug/kg	ND	ND	30	1362363
1,4-Dichlorobenzene	ug/kg	ND	ND	30	1362363
Chlorobenzene	ug/kg	ND	ND	30	1362363
VOLATILES					
1,1,1-Trichloroethane	ug/kg	ND	ND	30	1362363
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND	30	1362363
1,1,2-Trichloroethane	ug/kg	ND	ND	30	1362363
1,1-Dichloroethane	ug/kg	ND	ND	30	1362363
1,1-Dichloroethylene	ug/kg	ND	ND	30	1362363
1,2-Dichloroethane	ug/kg	ND	ND	30	1362363
1,2-Dichloropropane	ug/kg	ND	ND	30	1362363
Benzene	ug/kg	ND	ND	30	1362363
Bromodichloromethane	ug/kg	ND	ND	30	1362363
Bromoform	ug/kg	ND	ND	30	1362363
Bromomethane	ug/kg	ND	ND	200	1362363
Carbon Tetrachloride	ug/kg	ND	ND	30	1362363
Chloroethane	ug/kg	ND	ND	200	1362363
Chloroform	ug/kg	ND	ND	30	1362363
Chloromethane	ug/kg	ND	ND	30	1362363
cis-1,2-Dichloroethylene	ug/kg	ND	ND	30	1362363
cis-1,3-Dichloropropene	ug/kg	ND	ND	30	1362363
Dibromochloromethane	ug/kg	ND	ND	30	1362363
Ethylbenzene	ug/kg	ND	ND	30	1362363
Ethylene Dibromide	ug/kg	ND	ND	30	1362363
Methylene Chloride(Dichloromethane)	ug/kg	ND	ND	50	1362363
o-Xylene	ug/kg	ND	ND	30	1362363
p+m-Xylene	ug/kg	ND	ND	30	1362363
Styrene	ug/kg	ND	ND	30	1362363
Tetrachloroethylene	ug/kg	ND	ND	30	1362363

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7A0366
Report Date: 2007/09/24

Jacques Whitford Limited
Client Project #: 1028976/Z9100/PHASE III ESA
Project name: BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		U67695	U67696		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12118	12118		
Registration #					
	Units	**BVM-JW07-TP17-BS1 Lab-Dup**	**BVM-JW07-TP18-BS4**	**RDL**	**QC Batch**
Toluene	ug/kg	ND	ND	30	1362363
trans-1,2-Dichloroethylene	ug/kg	ND	ND	30	1362363
trans-1,3-Dichloropropene	ug/kg	ND	ND	30	1362363
Trichloroethylene	ug/kg	ND	ND	30	1362363
Trichlorofluoromethane (FREON 11)	ug/kg	ND	ND	30	1362363
Vinyl Chloride	ug/kg	ND	ND	30	1362363
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	119	125		1362363
D4-1,2-Dichloroethane	%	121	115		1362363
D8-Toluene	%	119	117		1362363

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (SOIL)

Volatile Organic Compounds in Soil: Elevated Methylene Chloride (Dichloromethane) RDL due to detected level in the method blank.

Results relate only to the items tested.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92445	U92445	U92446		
Sampling Date		2007/09/20	2007/09/20	2007/09/20		
COC Number		15298	15298	15298		
Registration #						
	Units	**BVM-JW07-MW2**	**BVM-JW07-MW2 Lab-Dup**	**BVM-JW07-MW3**	**RDL**	**QC Batch**
TPH COMPOUNDS						
Benzene	mg/L	ND	ND	ND	0.001	1371509
Toluene	mg/L	0.011	0.011	ND	0.001	1371509
Ethylbenzene	mg/L	0.003	0.003	ND	0.001	1371509
Xylene (Total)	mg/L	0.014	0.014	ND	0.002	1371509
C6 - C10 (less BTEX)	mg/L	ND	ND	ND	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	0.31		1.7	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	0.7		0.9	0.1	1371295
Modified TPH (Tier1)	mg/L	1.0		2.5	0.1	1369894
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	76		90		1371295
Isobutylbenzene - Volatile	%	102	103	103		1371509
n-Dotriacontane - Extractable	%	93 (1)		113 (2)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Weathered fuel oil fraction. Lube oil fraction.
(2) Weathered fuel oil fraction. Possible lube oil fraction.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92447	U92447	U92448		
Sampling Date		2007/09/20	2007/09/20	2007/09/20		
COC Number		15298	15298	15298		
Registration #						
	Units	**BVM-JW07-MW4**	**BVM-JW07-MW4 Lab-Dup**	**BVM-JW07-MW5**	**RDL**	**QC Batch**

TPH COMPOUNDS						
Benzene	mg/L	ND		ND	0.001	1371509
Toluene	mg/L	ND		ND	0.001	1371509
Ethylbenzene	mg/L	0.005		ND	0.001	1371509
Xylene (Total)	mg/L	0.023		ND	0.002	1371509
C6 - C10 (less BTEX)	mg/L	0.28		ND	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	12	20 (1)	4.2	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	8.5	13 (1)	8.5	0.1	1371295
Modified TPH (Tier1)	mg/L	21		13	0.1	1369894
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	129	72	75		1371295
Isobutylbenzene - Volatile	%	114		100		1371509
n-Dotriacontane - Extractable	%	120 (2)	88	91 (2)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Please refer to General Comments page for specific clarification.
(2) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92455	U92456	U92457		
Sampling Date		2007/09/20	2007/09/20	2007/09/20		
COC Number		15297	15299	15299		
Registration #						
	Units	**RM-JW07-MW4**	**BVM-JW07-MW9**	**BVM-JW07-TP10**	**RDL**	**QC Batch**

TPH COMPOUNDS						
Benzene	mg/L	ND	ND	ND	0.001	1371509
Toluene	mg/L	0.002	ND	ND	0.001	1371509
Ethylbenzene	mg/L	ND	ND	ND	0.001	1371509
Xylene (Total)	mg/L	0.002	ND	ND	0.002	1371509
C6 - C10 (less BTEX)	mg/L	ND	ND	ND	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	0.17	0.18	0.19	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	0.5	0.2	0.1	0.1	1371295
Modified TPH (Tier1)	mg/L	0.6	0.4	0.3	0.1	1370585
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	74	83	79		1371295
Isobutylbenzene - Volatile	%	92	96	95		1371509
n-Dotriacontane - Extractable	%	92 (1)	90 (1)	90 (1)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Fuel oil range. Lube oil range.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92458		
Sampling Date		2007/09/20		
COC Number		15299		
Registration #				
	Units	**BVM-JW07-4FD**	**RDL**	**QC Batch**

TPH COMPOUNDS				
Benzene	mg/L	ND	0.001	1371509
Toluene	mg/L	0.001	0.001	1371509
Ethylbenzene	mg/L	0.008	0.001	1371509
Xylene (Total)	mg/L	0.036	0.002	1371509
C6 - C10 (less BTEX)	mg/L	0.26	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	11	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	7.4	0.1	1371295
Modified TPH (Tier1)	mg/L	18	0.1	1370585
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	91		1371295
Isobutylbenzene - Volatile	%	113		1371509
n-Dotriacontane - Extractable	%	103 (1)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

APPENDIX 2e

GPS Coordinates –Northco Area

GPS Coordinates - NAD83 - Northco Area

Location	Northing	Easting
BVM-JW07-TP8	558676	5537325
BVM-JW07-TP9	558664	5537311
BVM-JW07-TP10	558686	5537310
BVM-JW07-TP11	558685	5537304
BVM-JW07-TP12	558685	5537314
BVM-JW07-TP13	558706	5537337
BVM-JW07-TP14	558700	5537316
BVM-JW07-TP15	558730	5537389
BVM-JW07-TP16	558723	5537337
BVM-JW07-TP17	558730	5537312
BVM-JW07-TP18	558773	5537281
BVM-JW07-MW2	558687	5537322
BVM-JW07-MW3	558693	5537312
BVM-JW07-MW4	558688	5537324

APPENDIX 2f

Results of Hydraulic Response (Bail-down) Test – Northco Area

Jacques Whitford
607 Torbay Road
St. John's, NL
Phone: +1 709-576-1458

Slug Test Data Report

Project: Phase III ESA, Former BVM - Northco Area

Number: 1028976

Client: NL DNR-MD

Page 1

Test Well:	**BVM-MW3**	**Slug Test:**	**BVM-MW3**
		Test Well:	BVM-MW3
Depth to Static WL:	1.27 [m]	Casing radius:	0.025 [m]
Location:	Baie Verte, NL	Boring radius:	0.05 [m]
Recorded by:	C. Anstey-Moore	Screen length:	2.28 [m]
Date:	12/5/2007	Aquifer Thickness:	1.77 [m]

	Time [s]	Depth to WL [m]	Drawdown [m]
1	0	1.83	0.56
2	10	1.63	0.36
3	15	1.60	0.33
4	20	1.52	0.25
5	25	1.45	0.18
6	30	1.37	0.10
7	35	1.30	0.03
8	40	1.27	0.00

Jacques Whitford
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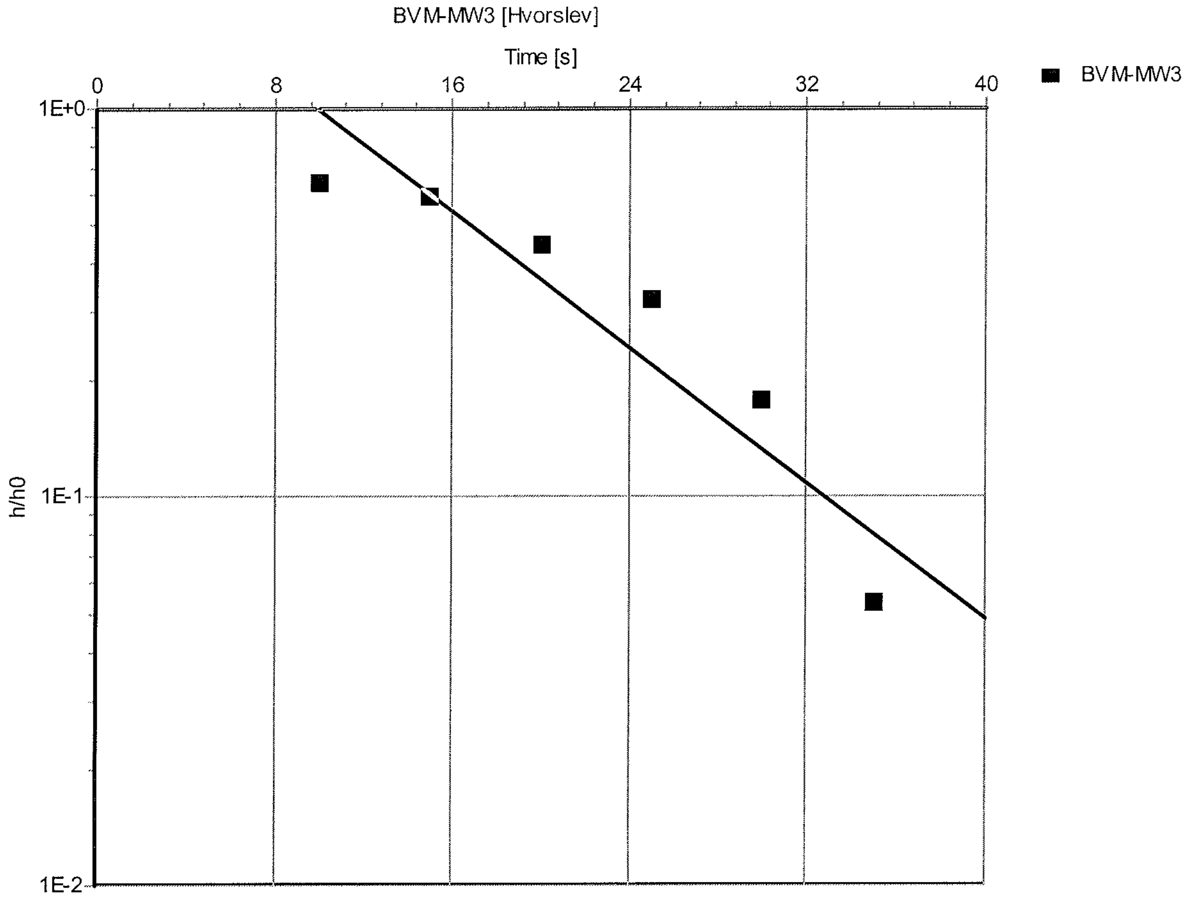
Slug Test Analysis Report

Project: Phase III ESA, Former BVM - Northco
Number: 1028976
Client: NL DNR-MD



Slug Test: **BVM-MW3**

Analysis Method: **Hvorslev**

Analysis Results: Conductivity: 5.29E-5 [m/s]

Test parameters:
Test Well: BVM-MW3
Casing radius: 0.025 [m]
Screen length: 2.28 [m]
Boring radius: 0.05 [m]
Aquifer Thickness: 1.77 [m]

Comments:

Evaluated by: C. Anstey-Moore
Evaluation Date: 12/5/2007

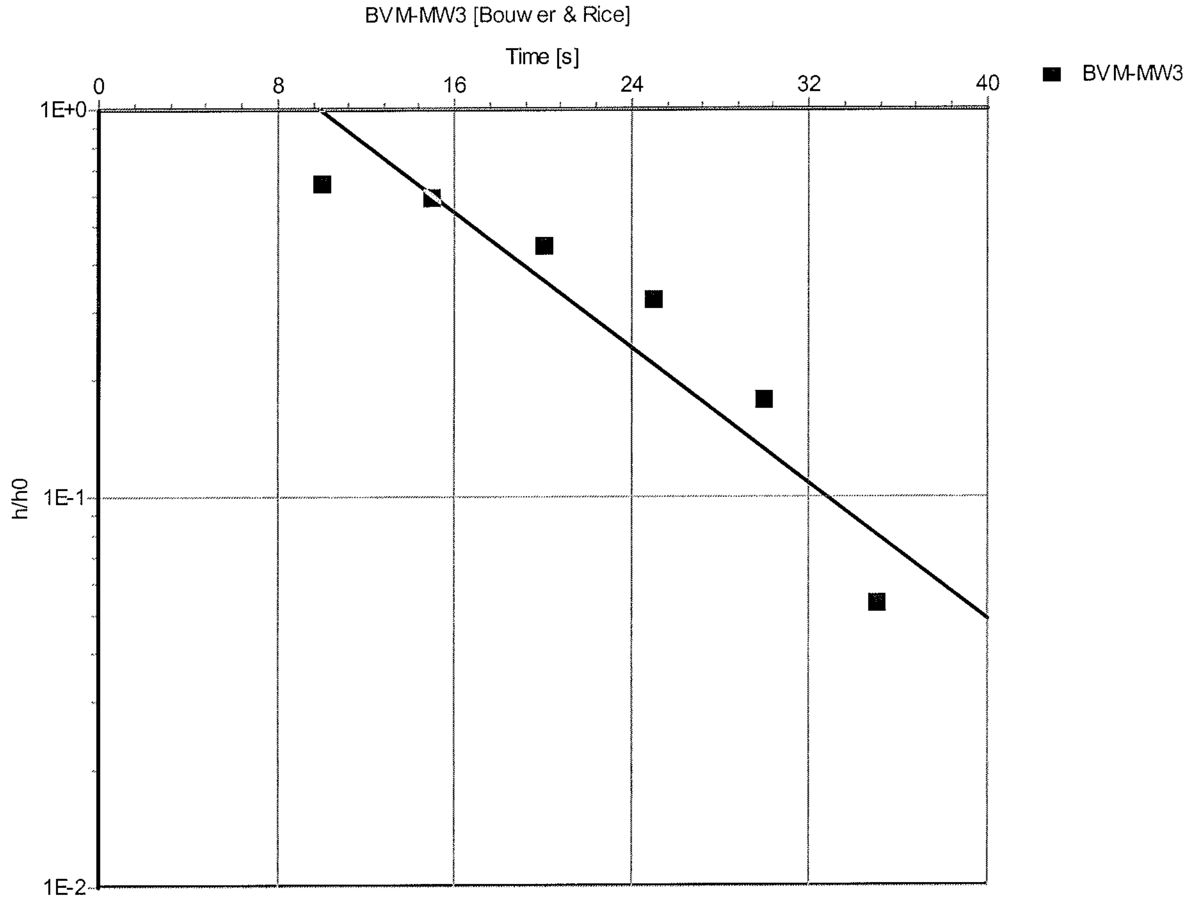
Jacques Whitford
607 Torbay Road
St. John's, NL
Phone: +1 709-576-1458

Slug Test Analysis Report

Project: Phase III ESA, Former BVM - Northco

Number: 1028976

Client: NL DNR-MD



Slug Test: **BVM-MW3**

Analysis Method: **Bouwer & Rice**

Analysis Results:		Conductivity:	6.68E-5 [m/s]
Test parameters:	Test Well: BVM-MW3	Aquifer Thickness:	1.77 [m]
	Casing radius: 0.025 [m]	Gravel Pack Porosity (%)	25
	Screen length: 2.28 [m]		
	Boring radius: 0.05 [m]		
	r(eff): 0.033 [m]		

Comments: Water level within screened interval during baildown test, effective radius calculated.

Evaluated by: C. Anstey-Moore

Evaluation Date: 12/5/2007

APPENDIX 3a

Site Drawings – Mill Area

LEGEND

TP	TEST PIT (CURRENT INVESTIGATION)
MW	MONITOR WELL (CURRENT INVESTIGATION)
	FORMER TEST PIT LOCATION (AMEC, 2007)

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT,
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

DRAWING TITLE:

SITE AND PHASE III ESA
SAMPLE LOCATION PLAN
MILL AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: 1:1500	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: -	REV. No: 0
DRAWING No: 1028976-EE-06	
CAD FILE: 1028976-EE-02.DWG	

07DEC07 10:00AM

LEGEND

TP	TEST PIT (CURRENT INVESTIGATION)
MW	MONITOR WELL (CURRENT INVESTIGATION)
■	FORMER TEST PIT LOCATION (AMEC, 2007)
🟨	ESTIMATED EXTENT OF AREA WITH TPH IN SOIL > TIER I RBSLs FOR A COMMERCIAL SITE
▨	ESTIMATED EXTENT OF AREA WITH TPH IN GROUNDWATER > TIER I RBSLs FOR A COMMERCIAL SITE

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT,
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

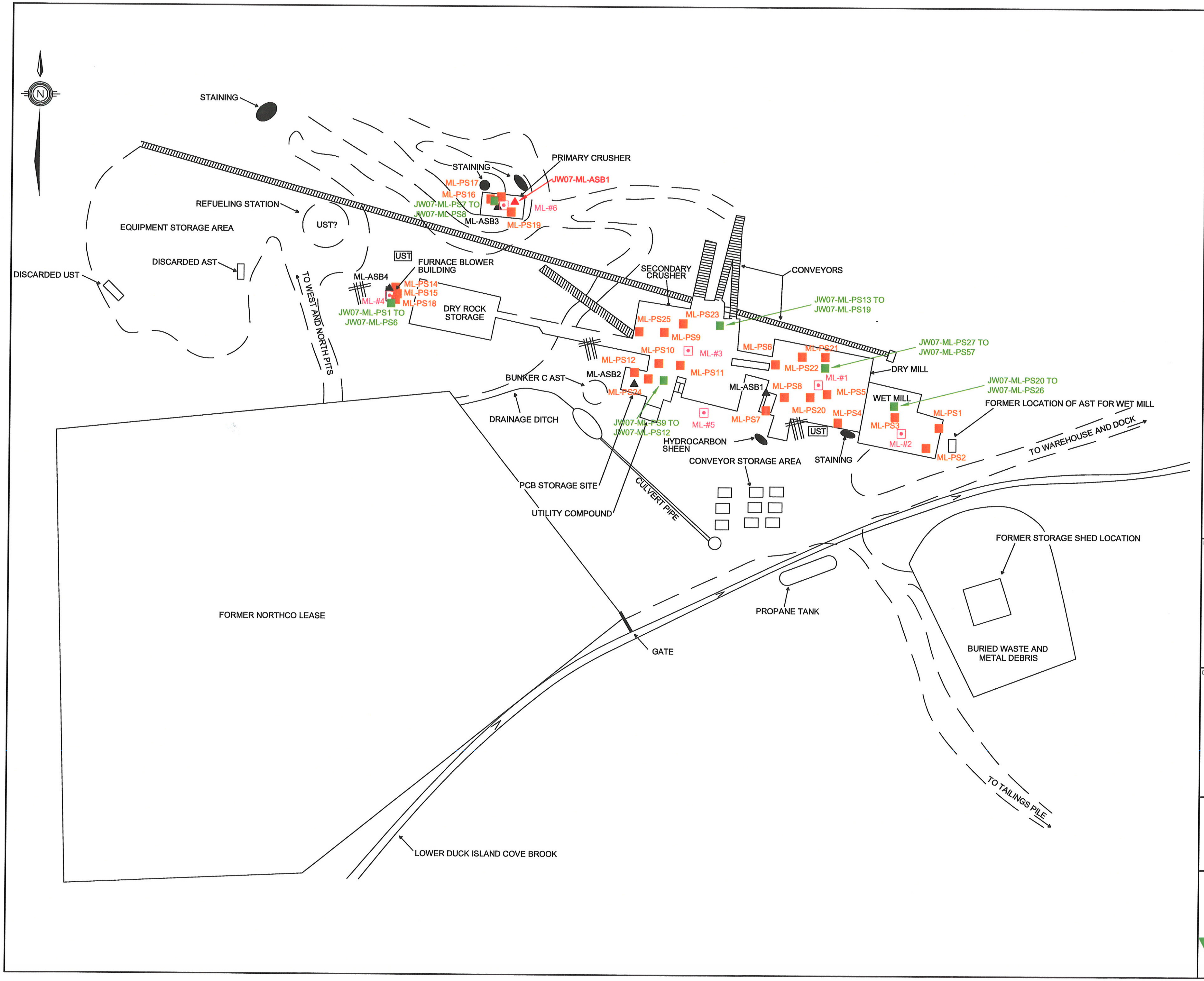
DRAWING TITLE

ESTIMATED EXTENT OF PETROLEUM
HYDROCARBON IMPACTS IN SOIL
AND GROUNDWATER
MILL AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: 1:1500	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: -	REV. No. 0
DRAWING No: 1028976-EE-07	
CAD FILE: 1028976-EE-11.DWG	

07DEC07 10:00AM



LEGEND

- ‒ ‒ GRAVEL ACCESS ROADS
- ╫ FORMER TRANSFORMER LOCATION
- > FLOW DIRECTION
- ▲ ASBESTOS SAMPLE (AMEC 2007)
- 🟥 PAINT SAMPLE (AMEC 2007)
- ⊡ AIR SAMPLE (AMEC 2007)
- ▲ ASBESTOS SAMPLE (JW 2007)
- 🟩 PAINT SAMPLE (JW 2007)

NOTES:
1. DRAWING BASED ON INFORMATION PROVIDED BY CLIENT & JW FIELD NOTES.
2. DO NOT SCALE FROM DRAWING.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA & HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE
MILL AREA, BAIE VERTE, NL

DRAWING TITLE:

HAZARDOUS MATERIALS ASSESSMENT
SAMPLE LOCATIONS PLAN - MILL AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: NTS	DATE: DEC. 6, 2007
DRAWN BY: S.N.	CHECKED BY:
EDITED BY: -	REV. No. 0
DRAWING No: 1028976-EE-08	
CAD FILE: 1028976-EE-13.DWG	

06DEC07 3:30PM

APPENDIX 3b

Test Pit & Monitor Well Records
& Symbols and Terms – Mill Area

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology Describing Common Soil Genesis

Rootmat - vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
Topsoil - mixture of soil and humus capable of supporting good vegetative growth
Peat - fibrous aggregate of visible and invisible fragments of decayed organic matter
Loam - silty sand or sand with silt mixed with organics matter
Till - unstratified glacial deposit which may range from clay to boulders
Fill - any materials below the surface identified as placed by humans (excluding buried services)

Terminology Describing Soil Structure

Homogeneous - same colour and appearance throughout
Stratified - composed of alternating successions of different soil types, e.g., silt and sand
Lensed - inclusion of small pockets of different soils
Laminated - alternating layers of varying material or colour with the layers less than 6 mm thick
Layer - thickness > 75 mm
Seam - thickness between 2 mm and 75 mm
Parting - thickness < 2 mm

Grain Size and Plasticity

Terminology describing soils on the basis of grain size and plasticity is based on the Unified Soil Classification System (USCS) (ASTM D-2487). The classification excludes particles larger than 76 mm (3 inches). This system provides a group symbol (e.g., SM) and group name (e.g., silty SAND) for identification. Note: terminology describing materials in the absence of laboratory analysis is based on the ASTM D-2488 visual method.

Terminology describing materials outside the USCS (e.g., particles larger than 76 mm, visible organic matter, construction debris) is based on the (visually estimated) proportion of these materials present:

Trace, or occasional	Less than approximately 10%
Some	approximately 10-20%
Frequent	Greater than approximately 20%

Standard Penetration Test 'N-Value'

The performance of the Standard Penetration Test provides an 'N-value'; the number of blows of a 140 pound (64 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (51 mm) O.D. split spoon sampler one foot (305 mm) into the soil. For split spoon samples where insufficient penetration is achieved and 'N' values cannot be determined, the number of blows is reported over sampler penetration in millimetres (e.g., 50/75).

Density of Cohesionless Soils

The standard terminology to describe cohesionless soils includes the compactness (formerly "relative density"), as determined by laboratory test or by the Standard Penetration Test 'N- value'.

Density	N-Value	Compactness %
Very Loose	< 4	< 15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	> 50	> 85

Consistency of Cohesive Soils

The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, unconfined compression tests, or occasionally by standard penetration tests.

Consistency	Undrained Shear Strength		N-Value
	ksf	kPa	
Very Soft	< 0.25	< 12.5	< 2
Soft	0.25-0.5	12.5-25	2-4
Firm	0.5-1.0	25-50	4-8
Stiff	1.0-2.0	50-100	8-15
Very Stiff	2.0-4.0	100-200	15-30
Hard	> 4.0	> 200	> 30

ROCK DESCRIPTION

Rock Quality Designation (RQD)

The classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be due to close shearing, jointing, faulting, or weathering in the rock mass and are not counted. RQD was originally intended to be applied to NW core; however, it can be used on different core sizes if most of the fractures caused by drilling stresses are easily distinguishable from *in situ* fractures.

RQD (%)	Rock Quality		
90-100	Excellent	-	intact, very sound
75-90	Good	-	moderately jointed, massive, sound
50-75	Fair	-	fractured, blocky and seamy
25-50	Poor	-	severely fractured, shattered and very seamy or blocky
0-25	Very poor	-	very severely fractured, crushed

Total Core Recovery (TCR)

Total core recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

Weathering State

Term	Description
Slight	Weathering limited to the surface of major discontinuities. Typically iron stained.
Moderate	Weathering extends throughout rock mass. Rock is not friable.
High	Weathering extends throughout rock mass. Rock is friable (crumbles naturally or broken between fingers).

Terminology Describing Rock Mass

Spacing (mm)	Bedding, Laminations, Bands	Discontinuity
2000-6000	Very Thick	Very wide
600-2000	Thick	Wide
200-600	Medium	Moderately close
60-200	Thin	Close
20-60	Very Thin	Very close
< 20	Laminated	Extremely close
< 6	Thinly Laminated	

RECORD SYMBOLS AND ABBREVIATIONS

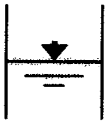
Sample Types

SS	Split spoon sample (obtained by performing the Standard Penetration Test)	WS	Wash sample	ST	Shelby tube or thin wall tube
		BS	Bulk sample	HQ, NQ, BQ, etc.	Rock core samples obtained using standard size diamond drilling bits.
		RC	Rock chip sample		

Laboratory Tests

S	Sieve analysis	H	Hydrometer analysis	A	Atterberg limits

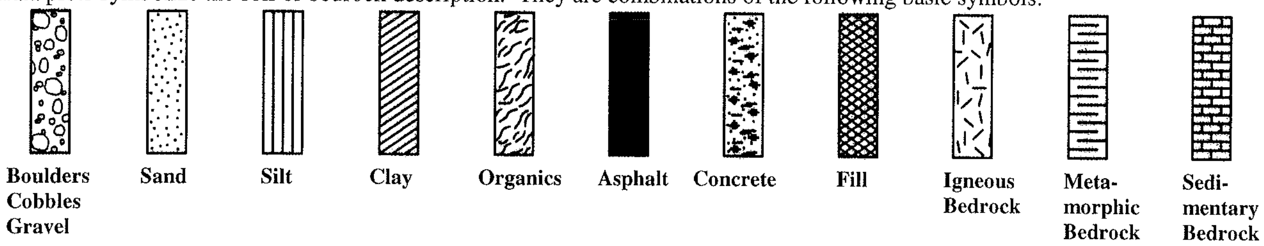
Water Level Measurement



Indicates recorded water level in a borehole, test pit or standpipe.

Strata Plot

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols:

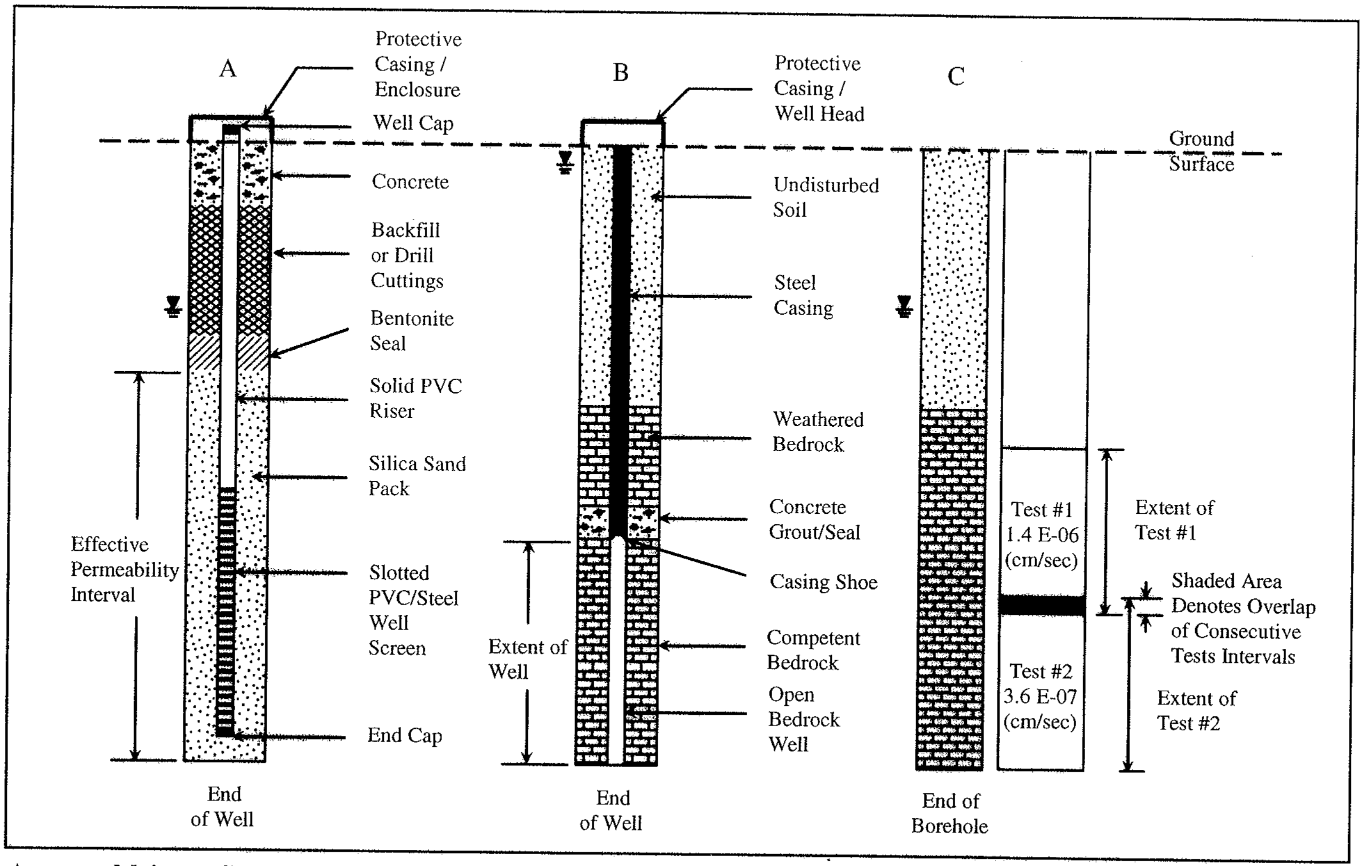


Solid lines between strata indicate the boundary between different strata. Dashed lines between strata indicate the boundary between strata is inferred.

SYMBOLS AND TERMS USED ON MONITOR WELL, WATER WELL AND ENVIRONMENTAL RECORDS

Well Construction and Permeability Testing

Basic symbols used in typical monitor or water well and piezometer construction are shown below. The well construction symbols or materials shown below may be combined or altered to suit a particular application. The diagram shows: A) a typical piezometer or monitor well in overburden; B) a typical water well in bedrock; C) borehole permeability test results in bedrock.



Apparent Moisture Content

Terminology used to describe apparent moisture content at the time of borehole drilling or test pit excavation.

Symbol	Description
D	Dry – containing little or no moisture
M	Moist – containing some moisture without having 'free' moisture
S	Saturated – 'free' moisture can drain from material

Terminology Describing Contamination

PID	-	Photo Ionization Detector (readings in ppm)
TPH	-	Total Petroleum Hydrocarbon concentration (readings in ppm based on mass)
ppm	-	Parts Per Million (measurement of concentration, mg/kg or mg/L)
nd	-	Not Detected – below limit of quantification (LOQ)

Apparent Hydrocarbon Odour

Terminology used to describe apparent hydrocarbon odour at the time of borehole drilling or test pit excavation.

Value	Description
0	No apparent odour
1	Slight odour
2	Moderate odour
3	Strong odour

JACQUES WHITFORD

TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-7-07
WATER LEVEL N/A
TEST PIT No. BVMJW07-TP5
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown-grey SAND with gravel (SP); some cobbles and boulders (waste rock)			BS	1			10.4	-	-	-	-	-
					BS	2			9.7	-	-	-	-	-
1					BS	3			12.4	-	-	-	-	-
					BS	4			18.6	-	-	-	-	-
2					BS	5			13.2	-	-	-	-	-
					BS	6			16.8	2300	nd	nd	nd	nd
		End of Test Pit Groundwater not encountered. Bedrock encountered at 2.7 m depth.												
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-7-07
WATER LEVEL 1 m 9-7-07
TEST PIT No. BVMJW07-TP6
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, grey SAND with gravel (SP); some cobbles and boulders (waste rock)			BS	1			6.4	-	-	-	-	-
					BS	2			9.2	-	-	-	-	-
1				▼										
					BS	3			5.4	9900	nd	nd	nd	nd
		End of Test Pit Groundwater encountered at ~1.0 m depth. Bedrock encountered at 1.2 m depth.												
2														
3														
4														
5														

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JACQUES WHITFORD

TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-7-07
WATER LEVEL 1.6 m 9-7-07
TEST PIT No. BVMJW07-TP7
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, grey black SAND with gravel (SP)			BS	1			21.7	-	-	-	-	-
					BS	2			18.7	-	-	-	-	-
1														
					BS	3			19.5	-	-	-	-	-
				▼	BS	4			10.7	-	-	-	-	-
2														
					BS	5			19.8	-	-	-	-	-
		End of Test Pit Groundwater encountered at ~1.6 m depth. Bedrock not encountered. Strong hydrocarbon odour present during excavation. Oily sheen observed on groundwater. A 6" Ø ductile iron pipe (fuel line?) identified at 1.5 m depth.												
3														
4														
5														

Jacques Whitford

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TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-8-07** WATER LEVEL **0.8 m** **9-7-07**
TEST PIT No. **BVMJW07-TP19**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, grey brown SAND with gravel (SP); with boulders	▨											
			▨		BS	1			3.2	-	-	-	-	-
			▨		BS	2			6.8	-	-	-	-	-
			▨	▼										
1			▨											
			▨		BS	3			1.9	190	nd	nd	nd	nd
		End of Test Pit Groundwater encountered at 0.8 m depth. Bedrock not encountered.												
2														
3														
4														
5														

JACQUES WHITFORD

TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-8-07** WATER LEVEL **1.8 m** **9-7-07**

TEST PIT No. **BVMJW07-TP20**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, blackish grey SAND with gravel (SP)			BS	1			1.6	-	-	-	-	-
					BS	2			2.8	-	-	-	-	-
1					BS	3			3.1	-	-	-	-	-
					BS	4			7.2	-	-	-	-	-
				▼										
					BS	5			8.6	80	nd	nd	nd	nd
2		End of Test Pit Groundwater encountered at ~1.8 m depth. Bedrock encountered at ~2.0 m depth. Slight hydrocarbon odour present during excavation.												
3														
4														
5														

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ENV. TEST PIT 12/6/07

JACQUES WHITFORD

TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-8-07 WATER LEVEL 1.4 m 9-7-07

TEST PIT No. BVMJW07-TP21
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose. grey, SAND with gravel (SP)	▨		BS	1			1.7	-	-	-	-	-
			▨											
			▨		BS	2			3.6	-	-	-	-	-
1			▨		BS	3			2.9	-	-	-	-	-
			▨	▼										
			▨		BS	4			4.3	65	nd	nd	nd	nd
2		End of Test Pit Groundwater encountered at ~1.4 m depth. Bedrock not encountered.												
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

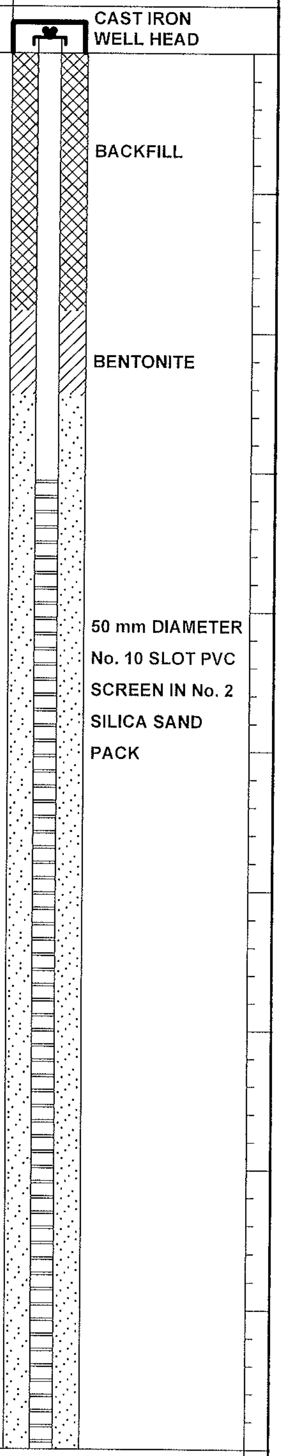
MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW5
PAGE 1 of 2
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07
WATER LEVEL 2.07 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
							mm					
0	99.88	Very dense, brown-grey SILT (ML) with gravel			SS	1	0	4	-	-	-	-
					SS	2	75	89/430	-	D	4.8	nd
1	98.9	BEDROCK: Dark green ultramafic intrusive rock			RC	3	0		-	-	-	-
2				▼								
3					RC	4	450	0	-	-	-	-
4												
					RC	5	1500	86%	-	-	-	-
5												

WELL CONSTRUCTION DETAILS



JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW5
PAGE 2 of 2
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07 WATER LEVEL 2.07 m 9-20-07

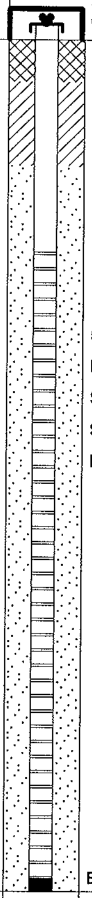
DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
		Continued from Previous Page					mm						
5													50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
					RC	6	475	0	-	-	-	-	
6	93.8												END CAP
		End of Borehole											
7													
8													
9													
10													

JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW6
PAGE 1 of 1
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07
WATER LEVEL 1.37 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
0	100.00						mm						 CAST IRON WELL HEAD
		Very dense, brown-grey SILT (ML) with gravel			SS	1	150	14	-	D	10.2	-	BACKFILL BENTONITE
	99.4	Compact, greyish-green SILT (ML); some cobbles and boulders			SS	2	200	19	-	W	11.3	-	
1				▼	SS	3	600	26	-	W	12.7	1800	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
					~~SS~~	~~4~~	~~0~~	~~0~~	-	-	-	-	
2													
3	97.0												END CAP
		End of Borehole Strong odour of petroleum hydrocarbons detected on groundwater.											
4													
5													

Jacques Whitford

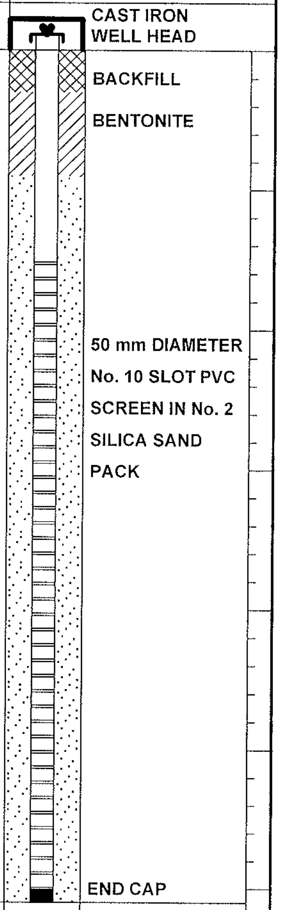
JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW7
PAGE 1 of 1
CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-13-07
WATER LEVEL 1.37 m 9-20-07
PROJECT No. 1028976
DRILLING METHOD Auger
SIZE HS
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm)	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
0	100.23	Compact, grey-green GRAVEL (GP); some cobbles and boulders		SS	1	450	21	-	D	6.3	-
1				SS	2	300	36	-	W	9.8	-
	99.0	Compact, grey GRAVEL with sand (GP)	▼	SS	3	200	11	-	W	10.7	280
2				SS	4	250	30	-	W	3.2	-
3	97.2	End of Borehole									
4											
5											

WELL CONSTRUCTION DETAILS



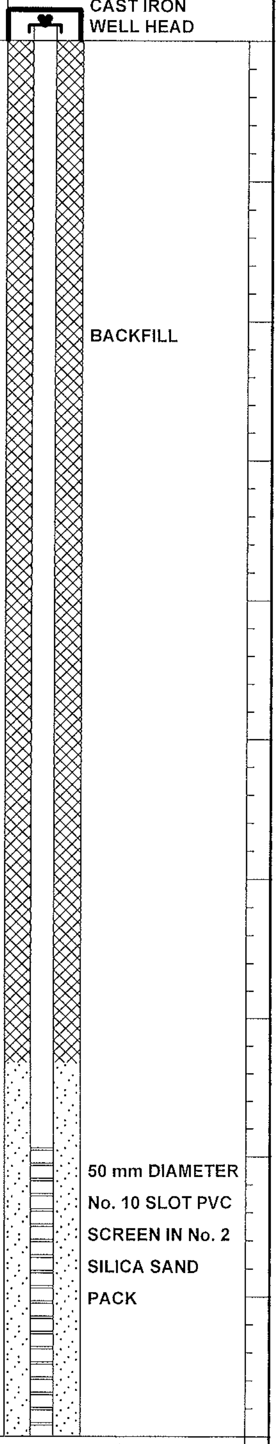
JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW8
PAGE 1 of 2
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-14-07
WATER LEVEL 6.33 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm)	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
0	99.93	Compact, grey SILT (ML) with gravel			SS	1	250	19	-	D	0.2	-	CAST IRON WELL HEAD
1					SS	2	200	18	-	D	0.8	-	BACKFILL
					SS	3	300	13	-	D	0.4	-	
2					SS	4	0	0	-	-	-	-	
					SS	5	0		-	-	-	-	
3	96.9	BEDROCK: Dark green ultramafic intrusive rock											
4					RC	6	0	0	-	-	-	-	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
5													



JACQUES WHITFORD

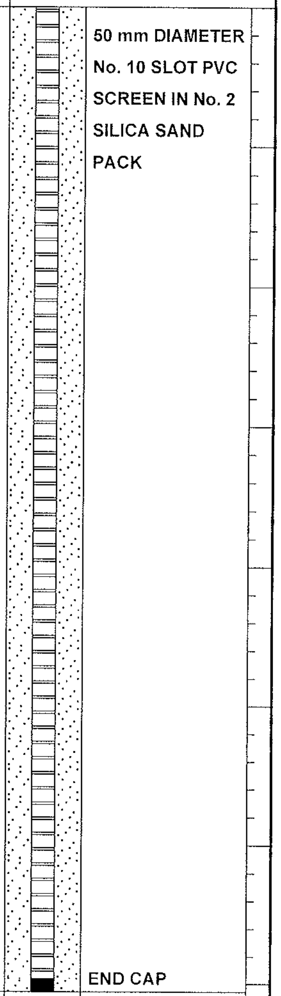
MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW8
PAGE 2 of 2
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM Assumed

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-14-07 WATER LEVEL 6.33 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY mm	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
		Continued from Previous Page								
6			RC	7	0	0	-	-	-	-
7			RC	8	0	0	-	-	-	-
8			RC	9	150		-	-	-	-
	91.4	End of Borehole								

WELL CONSTRUCTION DETAILS



Jacques Whitford

JACQUES WHITFORD

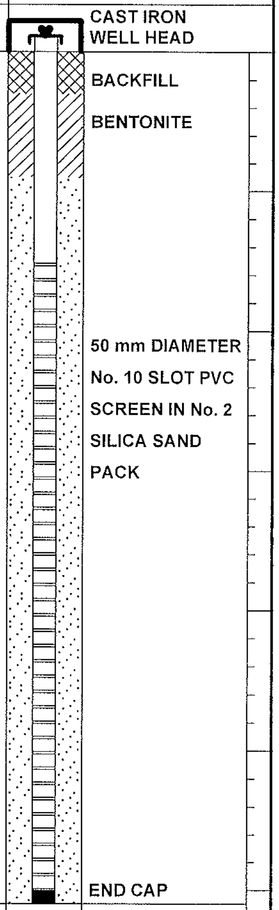
MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW9
PAGE 1 of 1
PROJECT No. 1028976
DRILLING METHOD Auger
SIZE HS
DATUM

CLIENT **Newfoundland and Labrador Department of Natural Resources**
PROJECT **Phase III ESA & Hazardous Materials Assessment**
LOCATION **Former Baie Verte Asbestos Mine - Mill Area, Baie Verte, NL**
DATES (mm-dd-yy): BORING 9-14-07
WATER LEVEL 1.47 m 9-20-07

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %				
	100.00						mm					
0		Compact, grey-green SILT (ML) with gravel; some cobbles and boulders			SS	1	400	22	-	D	4.6	-
1					SS	2	300	21	-	W	8.2	400
				▼	SS	3	350	95/430	-	W	4.5	-
2												
3	97.0											
		End of Borehole										
4												
5												

WELL CONSTRUCTION DETAILS



APPENDIX 3c

Laboratory Analytical Results Summary Tables – Mill Area (Current Investigation & AMEC, 2007)

Table 3.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil - Mill Area

Phase III ESA & Hazardous Materials Assessment
Former Baie Verte Asbestos Mine - Mill Area
Baie Verte, NL
JW Project No. 1028976

Area	Parameters	Benzene	Toluene	Ethylbenzene	Xylenes	C6-C10 (Gas Range)	C10-C21 (Fuel Range)	C21-C32 (Lube Range)	Modified TPH - Tier I^3	Resemblance
Area	RDL	0.03	0.03	0.03	0.05	3	15	15	20	
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
	Criteria^1	1.8	160	430	200	na	na	na	7,400	
	Criteria^2	1.8	160	430	200	na	na	na	10,000	
Power Centre	**BVM-JW07-TP5-BS6**	nd	nd	nd	nd	33	2,100	200	2,300	WFO
	BVM-JW07-TP6-BS2	nd	nd	nd	nd	4	2,400	7,500	9,900	WFO, LO
	BVM-JW07-MW5-SS2	nd	nd	nd	nd	nd	nd	nd	nd	-
	BVM-JW07-MW9-SS2	nd	nd	nd	nd	nd	250	150	400	WFO
Dry Mill	**BVM-JW07-TP19-BS2**	nd	nd	nd	nd	nd	21	170	190	LO
	BVM-JW07-TP20-BS5	nd	nd	nd	nd	nd	nd	80	80	LO
	BVM-JW07-TP21-BS4	nd	nd	nd	nd	nd	nd	65	65	LO
	BVM-JW07-MW6-SS3	nd	nd	0.04	0.08	120	1,000	650	1,800	WFO, LO
	BVM-JW07-MW7-SS3	nd	nd	nd	nd	nd	32	250	280	LO

Notes:

1 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for commercial site with non-potable groundwater, coarse-grained soil and fuel oil impacts
2 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for a commercial site with non-potable groundwater, coarse-grained soil and lube oil impacts
3 = Modified TPH - Tier I does not include BTEX
RDL = Reportable detection limit
nd = Not detected above standard RDL
na = No applicable criteria
WFO = Weathered fuel oil; LO = Lube oil
Shaded = Value exceeds applicable criteria

Table 3.2 Results of Laboratory Analysis of Petroleum Hydrocarbons in Groundwater- Mill Area
Phase III ESA & Hazardous Materials Assessment
Former Baie Verte Asbestos Mine - Mill Area
Baie Verte, NL
JW Project No. 1028976

Parameters	RDL	Units	Criteria[1]	Power Center			Dry Mill	
				BVM-JW07-MW5	BVM-JW07-MW8	BVM-JW07-MW9	BVM-JW07-MW6	BVM-JW07-MW7
Benzene	0.001	mg/L	6.9	nd	nd	nd	0.004	nd
Toluene	0.001	mg/L	20	nd	nd	nd	nd	nd
Ethylbenzene	0.001	mg/L	20	nd	nd	nd	0.004	nd
Xylenes	0.002	mg/L	20	nd	nd	nd	0.036	nd
C6-C10 (Gas Range)	0.01	mg/L	na	nd	nd	nd	0.36	nd
C10-C21 (Fuel Range)	0.05	mg/L	na	4.2	0.14	0.18	85	0.18
C21-C32 (Lube Range)	0.1	mg/L	na	8.5	0.4	0.2	36	0.2
Modified TPH - Tier I2	0.1	mg/L	20	13	0.5	0.4	120	0.4
			Resemblance	WFO, LO	FO, LO	FO, LO	WFO	FO, LO

Notes:

1 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for groundwater at a commercial site with non-potable groundwater and coarse-grained soil

2 = Modified TPH - Tier I does not include BTEX

RDL = Reportable detection limit

nd = Not detected above standard RDL

na = No applicable criteria

FO = Fuel oil; WFO = Weathered fuel oil; LO = Lube oil

Shaded = Value exceeds applicable criteria

Table 3.3 Results of Laboratory Analyses for Asbestos - Mill Area
Hazardous Materials Assessment
Baie Verte Mines, Near Baie Verte, NL
Jacques Whitford Project No. 1028976

Sample No.	Location	Sample Description	Sample Analysis Results	Visually Similar Material Locations	Material Condition & Quantities
JW07-ML-ASB1	Crusher	Concrete floor	No asbestos concentration	Throughout building	N/A

Table 3.4 Results of Laboratory Analyses of Lead, Mercury and PCBs in Paint - Mill Area
Hazardous Materials Assessment
Baie Verte Mines, Near Baie Verte, NL
Jacques Whitford Project No. 1028976

Parameters	Location	Description	Condition	Lead	Lead Leachability	Mercury	Mercury Leachability	Polychlorinated Biphenyls (PCBs)
RDL				100	0.5	0.03	0.01	5
Units				mg/kg	mg/L	mg/kg	mg/L	mg/kg
Guideline[1]				600	5	10	0.1	33
JW07-ML-PS1	Furnace Blower Building	Exterior white paint on steel	GOOD	2,000	-	nd	-	-
JW07-ML-PS2		Interior blue paint on concrete	GOOD	320	-	0.13	-	-
JW07-ML-PS3		Interior grey paint on concrete floor	POOR	580	-	nd	-	nd
JW07-ML-PS3 Lab. Dup.		-	-	-	-	-	-	nd
JW07-ML-PS53		Blind duplicate of JW07-ML-PS3	-	770	-	nd	-	nd
JW07-ML-PS53 Lab. Dup.		-	-	810	-	-	-	nd
JW07-ML-PS4		Light blue paint on equipment	POOR	120,000	37	0.04	-	nd
JW07-ML-PS5		Red primer paint on structural steel	POOR	22,000	10	0.11	-	-
JW07-ML-PS6		Green paint on equipment	POOR	31,000	5.5	0.21	-	nd
JW07-ML-PS7	Crusher	Interior blue on white paint on transite walls	POOR	790	nd	0.88	-	-
JW07-ML-PS8		Grey/white paint on equipment	POOR	2,800	0.8	0.06	-	nd
JW07-ML-PS8 Lab. Dup.		-	-	-	1.0	-	-	-
JW07-ML-PS9	Boiler Room	Grey paint on boilers	POOR	1,600	nd	0.25	-	-
JW07-ML-PS9 Lab. Dup.		-	-	1,600	-	-	-	-
JW07-ML-PS10		Red paint on sprinkler system (1-5% chrysotile asbestos)	POOR	24,000	-	0.59	-	nd
JW07-ML-PS11		Exterior green paint on walls	POOR	4,200	nd	0.23	-	-
JW07-ML-PS12		Interior blue paint on walls	POOR	nd	-	0.08	-	nd
JW07-ML-PS13	Drier	Yellow paint on drier equipment	POOR	14,000	2.0	0.19	-	-
JW07-ML-PS14		Orange/silver paint on drier equipment	POOR	2,400	nd	nd	-	nd
JW07-ML-PS15		White/green paint on drier equipment	POOR	5,800	0.6	0.05	-	-
JW07-ML-PS16		Silver paint on drier equipment	POOR	4,800	6.3	0.05	-	nd
JW07-ML-PS17		Green paint on drier equipment	POOR	240	-	1.7	-	-

Parameters	Location	Description	Condition	Lead	Lead Leachability	Mercury	Mercury Leachability	Polychlorinated Biphenyls (PCBs)
RDL				100	0.5	0.03	0.01	5
Units				mg/kg	mg/L	mg/kg	mg/L	mg/kg
Guideline[1]				600	5	10	0.1	33
JW07-ML-PS18	**Drier**	Green on blue on light blue paint on interior lunchroom walls	POOR	**2,000**	0.8	0.60	-	nd
JW07-ML-PS54		Blind duplicate of JW07-ML-PS18	-	**1,900**	0.7	1.1	-	nd
JW07-ML-PS19		Grey paint on drier equipment	POOR	**1,600**	0.7	0.10	-	-
JW07-ML-PS20	**Wet Mill**	Composite sample of loose paint on floor	POOR	**2,200**	nd	0.23	-	nd
JW07-ML-PS21		White paint on concrete	POOR	nd	-	nd	-	nd
JW07-ML-PS22		Light blue paint on equipment	POOR	nd	-	nd	-	-
JW07-ML-PS23		Red primer paint on structural steel	POOR	310	-	0.11	-	nd
JW07-ML-PS24		Exterior blue paint on steel siding panel	GOOD	**1,100**	0.2	0.03	-	-
JW07-ML-PS25		White paint on equipment	POOR	nd	-	0.04	-	nd
JW07-ML-PS26		Blue paint on structural steel	POOR	nd	-	0.12	-	-
JW07-ML-PS27	**Dry Mill**	Pink/green paint on equipment	POOR	**650**	1.9	0.23	-	nd
JW07-ML-PS28		Orange/red/silver on equipment	POOR	**8,100**	3.5	0.25	-	-
JW07-ML-PS29		Grey/green/red on equipment	POOR	**6,500**	1.2	0.88	-	nd
JW07-ML-PS55		Blind duplicate of JW07-ML-PS29	-	**5,600**	0.8	0.59	-	nd
JW07-ML-PS30		Light grey on green on equipment	POOR	**15,000**	1.8	4.2	-	-
JW07-ML-PS31		Composite sample of loose paint on floor	POOR	**24,000**	nd	0.58	-	nd
JW07-ML-PS31 Lab. Dup.		-	-	**25,000**	nd	-	-	-
JW07-ML-PS32		Interior white paint on ceiling	POOR	140	-	0.38	-	-
JW07-ML-PS33		Orange paint on structural steel	POOR	**120,000**	4.9	0.21	-	nd
JW07-ML-PS34		Exterior light blue paint on transite panel	POOR	**730**	1.3	0.07	-	-
JW07-ML-PS35		Light blue paint on equipment	POOR	**12,000**	**13**	0.16	-	nd
JW07-ML-PS36		Orange paint on equipment	POOR	**24,000**	nd	0.06	-	-

Parameters	Location	Description	Condition	Lead	Lead Leachability	Mercury	Mercury Leachability	Polychlorinated Biphenyls (PCBs)
RDL				100	0.5	0.03	0.01	5
Units				mg/kg	mg/L	mg/kg	mg/L	mg/kg
Guideline[1]				600	5	10	0.1	33
JW07-ML-PS36 Lab. Dup.	**Dry Mill**	-	-		0.5			
JW07-ML-PS37		Light green paint on equipment	POOR	**4,500**	2.6	0.13	-	nd
JW07-ML-PS38		Blue paint on equipment	POOR	**8,900**	0.6	1.0	-	-
JW07-ML-PS39		Light blue paint on equipment	POOR	250	-	0.09	-	nd
JW07-ML-PS56		Blind duplicate of JW07-ML-PS39	-	480	-	0.08	-	-
JW07-ML-PS40		Light blue paint on equipment	POOR	120	-	0.29	-	-
JW07-ML-PS41		Yellow paint on equipment	POOR	**150,000**	**17**	0.58	-	-
JW07-ML-PS42		Green paint on equipment	POOR	**64,000**	2.4	**11**	**0.26**	nd
JW07-ML-PS42 Lab. Dup.		-	-	-	-	-	-	nd
JW07-ML-PS43		Greenish yellow paint on equipment	POOR	**5,900**	4.8	0.08	-	-
JW07-ML-PS44		Light green paint on equipment	POOR	**1,800**	0.8	0.77	-	nd
JW07-ML-PS45		Light blue paint on equipment	POOR	**1,800**	1.1	0.23	-	-
JW07-ML-PS46		Grey paint on equipment	POOR	**3,100**	2.8	0.50	-	nd
JW07-ML-PS47		Green/blue paint on equipment	POOR	**2,200**	**9.7**	0.14	-	-
JW07-ML-PS48		Pink paint on equipment (1-5% chrysotile asbestos)	POOR	**2,000**	-	1.4	-	nd
JW07-ML-PS49		Orange/silver paint on equipment	POOR	**100,000**	2.7	0.25	-	-
JW07-ML-PS57		Blind duplicate of JW07-ML-PS49	-	**130,000**	3.0	0.20	-	-
JW07-ML-PS50		Green paint on equipment	POOR	**48,000**	0.9	**15**	**0.33**	nd
JW07-ML-PS51		Grey paint on equipment	POOR	**1,900**	0.7	0.38	-	-
JW07-ML-PS52		Orange on silver paint on equipment	POOR	**69,000**	1.7	0.13	-	-

Notes:

1. Guideline = NLDEC guideline for disposal of lead-based painted construction debris in an approved municipal landfill; Hazardous Products Act guideline for mercury in paint; Environment Canada Table of Metals Leachate Toxicity for lead and mercury leachability; CCME guideline for a commercial property for PCBs.
2. RDL = Reportable Detection Limit
3. "-" = No applicable guideline/value
4. Bold/Shaded = Value exceeds applicable criteria
5. No lead leachability analysis conducted on samples JW07-ML-PS10 and JW07-ML-PS48 due to asbestos content.

Table 3-1: Summary of Building Materials Samples and Asbestos Analysis - Mill Area

Sample ID	Sample Location	Sample Type	Asbestos Fibre %		
			Chrysotile	Amosite	other asbestos fibres
ML-ASB1	Dry Mill Building - Level I	Pipe Insulation	nd	50	nd
ML-ASB2	Secondary Crusher Building - Boiler Room	Pipe Insulation	nd	55	nd
ML-ASB3	Primary Crusher Building - Control Room	Floor Tile	5	nd	nd
ML-ASB4	Dry Rock Storage Building - Interior Wall	Mortar	2	nd	nd

Note: Shaded results are above maximum as outlined under "The Asbestos Abatement Regulations, 1998 (Nfld. Reg. 111/98) of 1 % asbestos fibers.

trace: <1%

nd: not detected

Table 3-2: Asbestos in Air - Mill Area

Sample ID	Sample Location	Sample Type	Airborne Fibre Concentration (fibres/cm^3)
ML#1	Dry Mill Building - Interior	Air	0.004
ML#2	Wet Mill Building - Interior	Air	<0.002
ML#3	Secondary Crusher Building - Interior	Air	<0.002
ML#4	Dry Rock Storage Building - Interior	Air	<0.003
ML#5	Secondary Crusher Building - Exterior	Air	0.003
ML#6	Primary Crusher Building - Interior	Air	<0.003

Note: Shaded results are above maximum as outlined under "2006 Occupational Exposure Threshold Limit Value (TLV) of 0.1 fibres/cm^3 (ACGIH)

Table 3-3. Lead in Paint - Mill Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Lead (mg/kg)
S2006-12110	ML-PS1	Wet Mill Building - Interior Wall	Concrete	White Paint	5	12
S2006-12111	ML-PS2	Wet Mill Building - Metal Equipment	Metal	Dark Blue on Light Blue on Red Paint	5	**1080**
S2006-12112	ML-PS3	Wet Mill Building - Mechanical Equipment	Metal	Light Blue Paint	5	13
S2006-12113	ML-PS4	Dry Mill Building - Steel Column	Metal	Orange on Grey Paint	5	**158000**
S2006-12114	ML-PS5	Dry Mill Building - Mechanical Equipment	Metal	Yellow on Grey Paint	5	**42100**
S2006-12115	ML-PS6	Dry Mill Building - Interior Wall	Wood	Light Blue on Cream on White Paint	5	**1370**
S2006-12116	ML-PS7	Dry Mill Building - Exterior Door	Wood	Light Green on Dark Green on Blue on Grey Paint	5	**57900**
S2006-12139	PS-DUP5	Dry Mill Building - Exterior Door	Wood	Light Green on Dark Green on Blue on Grey Paint	5	**54500**
S2006-12117	ML-PS8	Dry Mill Building - Steel Column	Metal	Grey Paint	5	**23000**
S2006-12118	ML-PS9	Secondary Crusher Building - Mechanical Equipment	Metal	Grey on Sliver Paint	5	**1930**
S2006-12119	ML-PS10	Secondary Crusher Building - Interior Door	Wood	Light Blue on Blue Paint	5	**1820**
S2006-12120	ML-PS11	Secondary Crusher Building - Ceiling	Wood	Layers of White on Cream Paint	5	**1520**
S2006-12121	ML-PS12	Secondary Crusher Building - Interior Door	Wood	Blue-Grey on White Paint	5	**5800**
S2006-12122	ML-PS13	Secondary Crusher Building - Exterior Wall	Sheeting	Light Gree on Cream Paint	5	**7240**
S2006-12123	ML-PS14	Dry Rock Storage Building - Mechanical Equipment	Metal	Light Grey on Red Paint	5	**10300**
S2006-12124	ML-PS15	Dry Rock Storage Building - Floor	Concrete	Grey Paint	5	537
S2006-12125	ML-PS16	PrimaryCrusher Building - Interior Door	Wood	Blue on Pink on Brown on Blue on Grey Paint	5	**3750**
S2006-12126	ML-PS17	PrimaryCrusher Building - Mechanical Equipment	Metal	White on Grey Paint	5	**975**
S2006-12127	ML-PS18	Dry Rock Storage Building - Interior Door	Metal	Blue Paint	5	48.4
S2006-12128	ML-PS19	PrimaryCrusher Building - Mechanical Equipment	Metal	Grey Paint	5	**4150**
S2006-12140	PS-DUP6	PrimaryCrusher Building - Mechanical Equipment	Metal	Grey Paint	5	**3630**
S2006-12129	ML-PS20	Dry Mill Building - Mechanical Equipment	Metal	Pink on Grey Paint	5	**2500**
S2006-12130	ML-PS21	Dry Mill Building - Ceiling	Wood	White Paint	5	**2070**
S2006-12131	ML-PS22	Dry Mill Building - Metal Equipment	Metal	Light Blue on Grey Paint	5	**2140**
S2006-12132	ML-PS23	Secondary Crusher Building - Interior Piping	Metal	Grey Metallic Paint	5	160
S2006-12133	ML-PS24	Secondary Crusher Building - Interior Wall	Wood	Light Blue on Green Paint	5	83
S2006-12138	PS-DUP4	Secondary Crusher Building - Interior Wall	Wood	Light Blue on Green Paint	5	**909**
S2006-12134	ML-PS25	Secondary Crusher Building - Floor	Concrete	Light Grey	5	**1670**

Notes:
MDL: Method detection limit
<X: Below MDL
Data in brackets: Laboratory replicate results
Bold and underlined results indicate that lead concentration is above the relevant Federal Hazardous Products Act criterion of 600 mg/kg
Shaded results indicate that lead concentration is above the former Federal Hazardous Products Act criterion of 5000 mg/kg
PS-DUP4 is a blind field duplicate of paint sample ML-PS24
PS-DUP5 is a blind field duplicate of paint sample ML-PS7
PS-DUP6 is a blind field duplicate of paint sample ML-PS19

Table 3-4. Mercury in Paint - Mill Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Mercury (mg/kg)
S2006-12110	ML-PS1	Wet Mill Building - Interior Wall	Concrete	White Paint	0.01	<0.01
S2006-12111	ML-PS2	Wet Mill Building - Metal Equipment	Metal	Dark Blue on Light Blue on Red Paint	0.01	0.18
S2006-12112	ML-PS3	Wet Mill Building - Mechanical Equipment	Metal	Light Blue Paint	0.01	<0.01
S2006-12113	ML-PS4	Dry Mill Building - Steel Column	Metal	Orange on Grey Paint	0.01	0.27
S2006-12114	ML-PS5	Dry Mill Building - Mechanical Equipment	Metal	Yellow on Grey Paint	0.01	0.47
S2006-12115	ML-PS6	Dry Mill Building - Interior Wall	Wood	Light Blue on Cream on White Paint	0.01	2.25
S2006-12116	ML-PS7	Dry Mill Building - Exterior Door	Wood	Light Green on Dark Green on Blue on Grey Paint	0.01	**<u>17.3</u>**
S2006-12139	PS-DUP5	Dry Mill Building - Exterior Door	Wood	Light Green on Dark Green on Blue on Grey Paint	0.01	**<u>17.3</u>**
S2006-12117	ML-PS8	Dry Mill Building - Steel Column	Metal	Grey Paint	0.01	0.87
S2006-12118	ML-PS9	Secondary Crusher Building - Mechanical Equipment	Metal	Grey on Sliver Paint	0.01	1.2
S2006-12119	ML-PS10	Secondary Crusher Building - Interior Door	Wood	Light Blue on Blue Paint	0.01	0.87
S2006-12120	ML-PS11	Secondary Crusher Building - Ceiling	Wood	Layers of White on Cream Paint	0.01	5.02
S2006-12121	ML-PS12	Secondary Crusher Building - Interior Door	Wood	Blue-Grey on White Paint	0.01	2.15
S2006-12122	ML-PS13	Secondary Crusher Building - Exterior Wall	Sheeting	Light Gree on Cream Paint	0.01	0.57
S2006-12123	ML-PS14	Dry Rock Storage Building - Mechanical Equipment	Metal	Light Grey on Red Paint	0.01	0.11
S2006-12124	ML-PS15	Dry Rock Storage Building - Floor	Concrete	Grey Paint	0.01	0.02
S2006-12125	ML-PS16	PrimaryCrusher Building - Interior Door	Wood	Blue on Pink on Brown on Blue on Grey Paint	0.01	0.39
S2006-12126	ML-PS17	PrimaryCrusher Building - Mechanical Equipment	Metal	White on Grey Paint	0.01	25.2
S2006-12127	ML-PS18	Dry Rock Storage Building - Interior Door	Metal	Blue Paint	0.01	0.21
S2006-12128	ML-PS19	PrimaryCrusher Building - Mechanical Equipment	Metal	Grey Paint	0.01	0.54
S2006-12140	PS-DUP6	PrimaryCrusher Building - Mechanical Equipment	Metal	Grey Paint	0.01	0.54
S2006-12129	ML-PS20	Dry Mill Building - Mechanical Equipment	Metal	Pink on Grey Paint	0.01	1.75
S2006-12130	ML-PS21	Dry Mill Building - Ceiling	Wood	White Paint	0.01	0.87
S2006-12131	ML-PS22	Dry Mill Building - Metal Equipment	Metal	Light Blue on Grey Paint	0.01	0.68
S2006-12132	ML-PS23	Secondary Crusher Building - Interior Piping	Metal	Grey Metallic Paint	0.01	0.46
S2006-12133	ML-PS24	Secondary Crusher Building - Interior Wall	Wood	Light Blue on Green Paint	0.01	0.69
S2006-12138	PS-DUP4	Secondary Crusher Building - Interior Wall	Wood	Light Blue on Green Paint	0.01	0.69
S2006-12134	ML-PS25	Secondary Crusher Building - Floor	Concrete	Light Grey	0.01	0.19

Notes:
MDL: Method detection limit
<X: Below MDL
Data in brackets: Laboratory replicate results
<u>Bold and and underlined results indicate that mercury concentration is above the Federal Hazardous Products Act criterion of 10 mg/kg</u>
Shaded results indicate that mercury concentration is above the CCME-CEQG for a commercial property (24 mg/kg)
PS-DUP4 is a blind field duplicate of paint sample ML-PS24
PS-DUP5 is a blind field duplicate of paint sample ML-PS7
PS-DUP6 is a blind field duplicate of paint sample ML-PS19

Table 3-5. PCB in Paint - Mill Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	PCB (mg/kg)
S2006-12111	ML-PS2	Wet Mill Building - Metal Equipment	Metal	Dark Blue on Light Blue on Red Paint	0.005	1.45
S2006-12113	ML-PS4	Dry Mill Building - Steel Column	Metal	Orange on Grey Paint	0.005	1.26
S2006-12114	ML-PS5	Dry Mill Building - Mechanical Equipment	Metal	Yellow on Grey Paint	0.005	1.75
S2006-12119	ML-PS10	Secondary Crusher Building - Interior Door	Wood	Light Blue on Blue Paint	0.005	2.53
S2006-12121	ML-PS12	Secondary Crusher Building - Interior Door	Wood	Blue-Grey on White Paint	0.005	17.5
S2006-12122	ML-PS13	Secondary Crusher Building - Exterior Wall	Sheeting	Light Gree on Cream Paint	0.005	17.6
S2006-12130	ML-PS21	Dry Mill Building - Ceiling	Wood	White Paint	0.005	29.5
S2006-12131	ML-PS22	Dry Mill Building - Metal Equipment	Metal	Light Blue on Grey Paint	0.005	2.64
S2006-12136	PS-DUP2	Dry Mill Building - Metal Equipment	Metal	Light Blue on Grey Paint	0.005	3.77

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that PCB concentration is above the CCME-CEQG for a commercial property (33 mg/kg).
PS-DUP2 is a blind field duplicate of paint sample ML-PS22

Table 3-6. Lead Leachate in Paint - Mill Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/L)	TCLP Lead (mg/L)
S2006-12113	ML-PS4	Dry Mill Building - Steel Column	Metal	Orange on Grey Paint	0.002	4.78
S2006-12114	ML-PS5	Dry Mill Building - Mechanical Equipment	Metal	Yellow on Grey Paint		8.51
S2006-12116	ML-PS7	Dry Mill Building - Exterior Door	Wood	Light Green on Dark Green on Blue on Grey Paint	0.002	0.204
S2006-12117	ML-PS8	Dry Mill Building - Steel Column	Metal	Grey Paint	0.002	0.996
S2006-12121	ML-PS12	Secondary Crusher Building - Interior Door	Wood	Blue-Grey on White Paint	0.002	0.258
S2006-12122	ML-PS13	Secondary Crusher Building - Exterior Wall	Sheeting	Light Gree on Cream Paint	0.002	2.800
S2006-12123	ML-PS14	Dry Rock Storage Building - Mechanical Equipment	Metal	Light Grey on Red Paint	0.002	116.0

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that lead concentration is above the relevant Transportation of Dangerous Good Act (Updated 2002) criterion of 5.0 mg/L

Table 3-7. Mercury Leachate in Paint - Mill Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/L)	TCLP Mercury (mg/L)
S2006-12126	ML-PS17	Primary Crusher Building - Mechanical Equipment	Metal	White on Grey Paint	0.0001	0.0008

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that lead concentration is above the relevant Transportation of Dangerous Good Act (Updated 2002) criterion of 0.1 mg/L

Table 3-8: BTEX/TPH in Soil - Mill Area

		DATA						GUIDELINES			
AVERAGE SAMPLING DEPTH (m)			0.0 - 1.0	2.0 - 3.1	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	1999 CCME-CEQG (Updated 2005) Industrial Sites	2003 ATLANTIC PIRI TIER I RBSL[1]		
LAB ID		Lab Blank	S2006-11364	S2006-11365	S2006-11366	S2006-11371	S2006-11367				
FIELD ID			ML-TP1-SS1	ML-TP2-SS3	ML-TP3-SS1	DUP 3	ML-TP4-SS1				
DATE (D/M/Y)			21-Sep-06	21-Sep-06	21-Sep-06	22-Sep-06	21-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	**1.10**	**0.17**	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.06	2.32	1.11	1.33	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	131	80	69	<10	-	-	-	-
TPH (>C10-C21)	10	<10	<10	1610	30300	2640	56	-	-	-	-
TPH (>C21-C32)	50	<50	<50	1740	36100	3320	177	-	-	-	-
Modified TPH (C6-C32)	70	<70	<70	<3480	**<66500**	<6030	<243	-	**450**	**7400**	**10000**
Hydrocarbon Identification		-	-	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil				

Notes:

MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable
DUP 3 is a blind field duplicate of soil sample ML-TP3-SS1

Table 3-9: BTEX/TPH in Soil - Mill Area

		DATA						GUIDELINES			
AVERAGE SAMPLING DEPTH (m)		0.0 - 0.7	1.0 - 2.1	1.0 - 2.0	3.0 - 4.0	3.0 - 4.0	2.0 - 3.0	1999 CCME-CEQG (Updated 2005) Industrial Sites	2003 ATLANTIC PIRI TIER I RBSL^1		
LAB ID		S2006-11368	S2006-11369	S2006-11370	S2006-11581	S2006-11604	S2006-11582				
FIELD ID		ML-TP5-SS1	ML-TP6-SS2	ML-TP7-SS2	ML-TP8-SS4	DUP 4	ML-TP9-SS3				
DATE (D/M/Y)		21-Sep-06	21-Sep-06	21-Sep-06	22-Sep-06	22-Sep-06	22-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	0.07	<0.06	<0.06	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	<10	<10	<10	<10	-	-	-	-
TPH (>C10-C21)	10	<10	<10	846	260	176	<10	-	-	-	-
TPH (>C21-C32)	50	<50	<50	116	<50	<50	4400	-	-	-	-
Modified TPH (C6-C32)	70	<70	<1640	<972	<320	<236	<4420	-	**450**	**7400**	**10000**
Hydrocarbon Identification		-	-	Chromatogram resembles diesel and heavy oil	Chromatogram resembles weathered diesel	Chromatogram resembles weathered diesel	Chromatogram resembles heavy oil				

Notes:

MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable
DUP 4 is a blind field duplicate of soil sample ML-TP8-SS4

Table 3-10: BTEX/TPH in Soil - Mill Area

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m)		0.0 - 1.0	1.0 - 2.0	0.0 - 1.0	4.0 - 5.0	0.0 - 1.0	1999 CCME-CEQG (Updated 2005) Industrial Sites	2003 ATLANTIC PIRI TIER I RBSL^1		
LAB ID		S2006-11583	S2006-11584	S2006-11585	S2006-11586	S2006-11587				
FIELD ID		ML-TP10-SS1	ML-TP11-SS2	ML-TP12-SS1	ML-TP13-SS3	ML-TP14-SS1				
DATE (D/M/Y)		22-Sep-06	22-Sep-06	22-Sep-06	22-Sep-06	22-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	0.03	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	1.1	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	110	<10	<10	<10	-	-	-	-
TPH (>C10-C21)	10	442	3830	<10	<10	29	-	-	-	-
TPH (>C21-C32)	50	5910	530	<50	<50	302	-	-	-	-
Modified TPH (C6-C32)	70	<6360	<4470	<70	<70	<341	-	**450**	**7400**	**10000**
Hydrocarbon Identification		Chromatogram resembles heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel	-	Chromatogram resembles heavy oil				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable

Table 3-11: BTEX/TPH in Soil - Mill Area

		DATA					GUIDELINES			
AVERAGE SAMPLING DEPTH (m)		0.3 - 1.3	0.0 - 1.0	1.0 - 2.0	2.0 - 3.0	0.0 - 1.0	1999 CCME-CEQG (Updated 2005) Industrial Sites	2003 ATLANTIC PIRI TIER I RBSL[1]		
LAB ID		S2006-11588	S2006-11591	S2006-11592	S2006-11593	S2006-11608				
FIELD ID		ML-TP15-SS1	ML-TP18-SS1	ML-TP19-SS2	ML-TP20-SS3	ML-TP22-SS1				
DATE (D/M/Y)		22-Sep-06	23-Sep-06	23-Sep-06	23-Sep-06	23-Sep-06		GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	0.02	0.02	<0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.06	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	<10	<10	<10	-	-	-	-
TPH (>C10-C21)	10	304	5610	14	1040	101	-	-	-	-
TPH (>C21-C32)	50	429	13200	91	2870	141	-	-	-	-
Modified TPH (C6-C32)	70	<743	**<18800**	<115	<3920	<252	-	**450**	**7400**	**10000**
Hydrocarbon Identification		Chromatogram resembles diesel and heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles heavy oil	Chromatogram resembles diesel and heavy oil	Chromatogram resembles weathered diesel and heavy oil				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
Data in brackets: Laboratory replicate results
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable

APPENDIX 3d

Maxxam Analytics Inc. Analytical Reports – Mill Area
(Current Investigation)

Maxxam Job #: A7A2057
Report Date: 2007/09/26

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U75302	U75303		
Sampling Date		2007/09/19	2007/09/19		
COC Number		12150	12150		
Registration #					
	Units	**BVMJW07-MW5-SS2**	**BVMJW07-MW6-SS3**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	4	7	1	1364119
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1364122
Toluene	mg/kg	ND	ND	0.03	1364122
Ethylbenzene	mg/kg	ND	0.04	0.03	1364122
Xylene (Total)	mg/kg	ND	0.08	0.05	1364122
C6 - C10 (less BTEX)	mg/kg	ND	120	3	1364122
>C10-C21 Hydrocarbons	mg/kg	ND	1000	15	1366733
>C21-<C32 Hydrocarbons	mg/kg	ND	650	15	1366733
Modified TPH (Tier1)	mg/kg	ND	1800	20	1363484
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	99	125		1366733
Isobutylbenzene - Volatile	%	121	199 (1)		1364122
n-Dotriacontane - Extractable	%	106	111 (2)		1366733

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(2) Weathered fuel oil fraction. Lube oil fraction

Maxxam Job #: A7A2057
Report Date: 2007/09/26

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U75304	U75305		
Sampling Date		2007/09/19	2007/09/19		
COC Number		12150	12150		
Registration #					
	Units	**BVMJW07-MW7-SS3**	**BVMJW07-MW9-SS2**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	19	18	1	1365184
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1365185
Toluene	mg/kg	ND	ND	0.03	1365185
Ethylbenzene	mg/kg	ND	ND	0.03	1365185
Xylene (Total)	mg/kg	ND	ND	0.05	1365185
C6 - C10 (less BTEX)	mg/kg	ND	ND	3	1365185
>C10-C21 Hydrocarbons	mg/kg	32	250	15	1365188
>C21-<C32 Hydrocarbons	mg/kg	250	150	15	1365188
Modified TPH (Tier1)	mg/kg	280	400	20	1363484
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	94	91		1365188
Isobutylbenzene - Volatile	%	128	116		1365185
n-Dotriacontane - Extractable	%	118 (1)	111 (2)		1365188

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.
(2) Weathered fuel oil fraction.

Maxxam Job #: A7A2057
Report Date: 2007/09/26

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66201	U66201	U66222		
Sampling Date		2007/09/10	2007/09/10	2007/09/10		
COC Number		12120	12120	12120		
Registration #						
	Units	**RM-JW07-TP7-BS4**	**RM-JW07-TP7-BS4 Lab-Dup**	**BVM-JW07-TP21-BS4**	**RDL**	**QC Batch**
INORGANICS						
Moisture	%	25	29	23	1	1360980
TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1360981
Toluene	mg/kg	0.04	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	18	16	ND	0.03	1360981
Xylene (Total)	mg/kg	27	25	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	1800	1700	ND	3	1360981
>C10-C21 Hydrocarbons	mg/kg	25000	23000	ND	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	430	410	65	15	1360985
Modified TPH (Tier1)	mg/kg	27000		65	20	1360309
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	384 (1)	366 (1)	94		1360985
Isobutylbenzene - Volatile	%	138	159 (2)	103		1360981
n-Dotriacontane - Extractable	%	128 (3)	122 (3)	105 (4)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Please refer to General Comments page for specific clarification.
(2) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(3) Weathered fuel oil fraction. Isobutylbenzene/n-Dotriacontane recovery(ies) not within acceptance limits due to sample dilution.
(4) Lube oil fraction.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66226	U66227	U66228		
Sampling Date		2007/09/10	2007/09/10	2007/09/10		
COC Number		12119	12119	12119		
Registration #						
	Units	**BVM-JW07-TP4-BS1**	**BVM-JW07-TP5-BS6**	**BVM-JW07-TP6-BS2**	**RDL**	**QC Batch**
INORGANICS						
Moisture	%	10	17	12	1	1360980
TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	ND	33	4	3	1360981
>C10-C21 Hydrocarbons	mg/kg	ND	2100	2400	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	220	200	7500	15	1360985
Modified TPH (Tier1)	mg/kg	220	2300	9900	20	1360309
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	95	118	98		1360985
Isobutylbenzene - Volatile	%	92	147 (1)	99		1360981
n-Dotriacontane - Extractable	%	120 (2)	127 (3)	75 (4)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(2) Lube oil fraction.
(3) Weathered fuel oil fraction.
(4) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66233	U66234		
Sampling Date		2007/09/10	2007/09/10		
COC Number		12118	12118		
Registration #					
	Units	**BVM-JW07-TP14-BS3**	**BVM-JW07-TP19-BS2**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	3	10	1	1360980
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	ND	ND	3	1360981
>C10-C21 Hydrocarbons	mg/kg	ND	21	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	ND	170	15	1360985
Modified TPH (Tier1)	mg/kg	ND	190	20	1360309
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	97	95		1360985
Isobutylbenzene - Volatile	%	111	116		1360981
n-Dotriacontane - Extractable	%	102	121 (1)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66235		
Sampling Date		2007/09/10		
COC Number		12118		
Registration #				
	Units	**BVM-JW07-TP20-BS5**	**RDL**	**QC Batch**
INORGANICS				
Moisture	%	21	1	1360980
TPH COMPOUNDS				
Benzene	mg/kg	ND	0.03	1360981
Toluene	mg/kg	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	ND	3	1360981
>C10-C21 Hydrocarbons	mg/kg	ND	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	80	15	1360985
Modified TPH (Tier1)	mg/kg	80	20	1360309
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	94		1360985
Isobutylbenzene - Volatile	%	104		1360981
n-Dotriacontane - Extractable	%	114 (1)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92447	U92447	U92448		
Sampling Date		2007/09/20	2007/09/20	2007/09/20		
COC Number		15298	15298	15298		
Registration #						
	Units	**BVM-JW07-MW4**	**BVM-JW07-MW4 Lab-Dup**	**BVM-JW07-MW5**	**RDL**	**QC Batch**
TPH COMPOUNDS						
Benzene	mg/L	ND		ND	0.001	1371509
Toluene	mg/L	ND		ND	0.001	1371509
Ethylbenzene	mg/L	0.005		ND	0.001	1371509
Xylene (Total)	mg/L	0.023		ND	0.002	1371509
C6 - C10 (less BTEX)	mg/L	0.28		ND	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	12	20 (1)	4.2	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	8.5	13 (1)	8.5	0.1	1371295
Modified TPH (Tier1)	mg/L	21		13	0.1	1369894
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	129	72	75		1371295
Isobutylbenzene - Volatile	%	114		100		1371509
n-Dotriacontane - Extractable	%	120 (2)	88	91 (2)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Please refer to General Comments page for specific clarification.
(2) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92449	U92450	U92451		
Sampling Date		2007/09/20	2007/09/20	2007/09/20		
COC Number		15298	15298	15298		
Registration #						
	Units	**BVM-JW07-MW6**	**BVM-JW07-MW7**	**BVM-JW07-MW8**	**RDL**	**QC Batch**
TPH COMPOUNDS						
Benzene	mg/L	0.004	ND	ND	0.001	1371509
Toluene	mg/L	ND	ND	ND	0.001	1371509
Ethylbenzene	mg/L	0.004	ND	ND	0.001	1371509
Xylene (Total)	mg/L	0.036	ND	ND	0.002	1371509
C6 - C10 (less BTEX)	mg/L	0.36	ND	ND	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	85	0.18	0.14	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	36	0.2	0.4	0.1	1371295
Modified TPH (Tier1)	mg/L	120	0.4	0.5	0.1	1369894
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	110	71	74		1371295
Isobutylbenzene - Volatile	%	113	100	99		1371509
n-Dotriacontane - Extractable	%	29 (1)	76 (2)	97 (2)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Weathered fuel oil fraction. Isobutylbenzene/n-Dotriacontane recovery(ies) not within acceptance limits due to matrix/co-extractive interference.
(2) Fuel oil range. Lube oil range.

Maxxam Job #: A7A5830
Report Date: 2007/10/03

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC MUST IN WATER - PIRI TIER I (WATER)

Maxxam ID		U92455	U92456	U92457		
Sampling Date		2007/09/20	2007/09/20	2007/09/20		
COC Number		15297	15299	15299		
Registration #						
	Units	**RM-JW07-MW4**	**BVM-JW07-MW9**	**BVM-JW07-TP10**	**RDL**	**QC Batch**

TPH COMPOUNDS						
Benzene	mg/L	ND	ND	ND	0.001	1371509
Toluene	mg/L	0.002	ND	ND	0.001	1371509
Ethylbenzene	mg/L	ND	ND	ND	0.001	1371509
Xylene (Total)	mg/L	0.002	ND	ND	0.002	1371509
C6 - C10 (less BTEX)	mg/L	ND	ND	ND	0.01	1371509
>C10-C21 Hydrocarbons	mg/L	0.17	0.18	0.19	0.05	1371295
>C21-<C32 Hydrocarbons	mg/L	0.5	0.2	0.1	0.1	1371295
Modified TPH (Tier1)	mg/L	0.6	0.4	0.3	0.1	1370585
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	74	83	79		1371295
Isobutylbenzene - Volatile	%	92	96	95		1371509
n-Dotriacontane - Extractable	%	92 (1)	90 (1)	90 (1)		1371295

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Fuel oil range. Lube oil range.

APPENDIX 3e

GPS Coordinates –Mill Area

GPS Coordinates - NAD83 - Mill Area

Location	Northing	Easting
BVM-JW07-TP5	558835	5537394
BVM-JW07-TP6	558838	5537371
BVM-JW07-TP7	558849	5537407
BVM-JW07-TP19	558918	5537352
BVM-JW07-TP20	558918	5537397
BVM-JW07-TP21	558990	5537390
BVM-JW07-MW5	558841	5537422
BVM-JW07-MW6	558949	5537394
BVM-JW07-MW7	558947	5537371
BVM-JW07-MW8	558854	5537407
BVM-JW07-MW9	558810	5537423

APPENDIX 3f

Results of Hydraulic Response (Bail-down) Test – Mill Area

Jacques Whitford
607 Torbay Road
St. John's, NL
Phone: +1 709-576-1458

Slug Test Data Report

Project: Phase III ESA, Former BVM - Mill Area
Number: 1028976
Client: NL DNR-MD

Test Well:	**BVM-MW6**	**Slug Test:**	**BVM-MW6**
		Test Well:	BVM-MW6
Depth to Static WL:	1.37 [m]	Casing radius:	0.025 [m]
Location:	Baie Verte, NL	Boring radius:	0.05 [m]
Recorded by:	C. Anstey-Moore	Screen length:	2.29 [m]
Date:	12/5/2007	Aquifer Thickness:	1.67 [m]

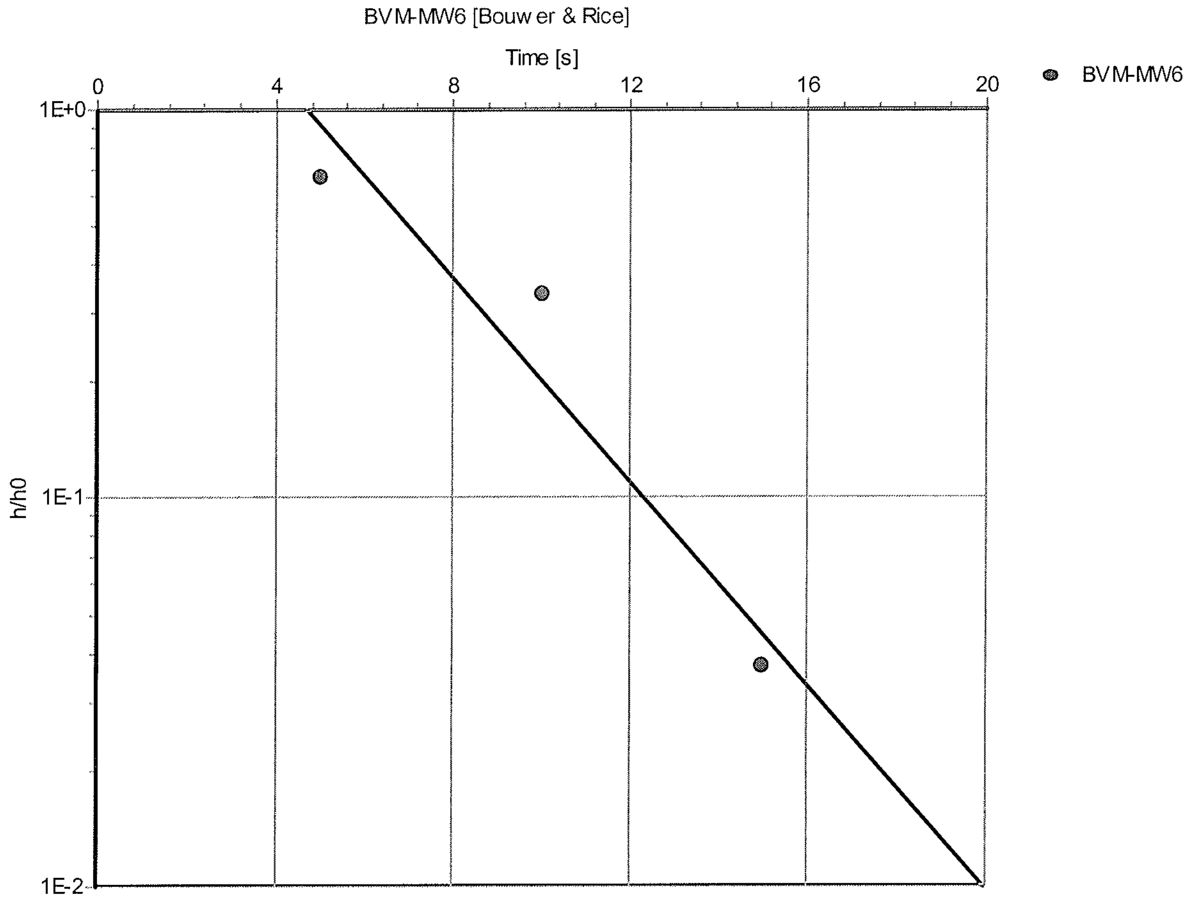
	Time [s]	Depth to WL [m]	Drawdown [m]
1	0	1.64	0.27
2	5	1.55	0.18
3	10	1.46	0.09
4	15	1.38	0.01
5	20	1.37	0.00

Slug Test Analysis Report

Project: Phase III ESA, Former BVM - Mill Area

Number: 1028976

Client: NL DNR-MD



Slug Test: **BVM-MW6**

Analysis Method: **Bouwer & Rice**

Analysis Results:	Conductivity:	1.97E-4 [m/s]

Test parameters:	Test Well:	BVM-MW6	Aquifer Thickness:	1.67 [m]
	Casing radius:	0.025 [m]	Gravel Pack Porosity (%)	25
	Screen length:	2.29 [m]		
	Boring radius:	0.05 [m]		
	r(eff):	0.033 [m]		

Comments: Water level within screened interval during baildown test, effective radius calculated.

Evaluated by: C. Anstey-Moore

Evaluation Date: 12/5/2007

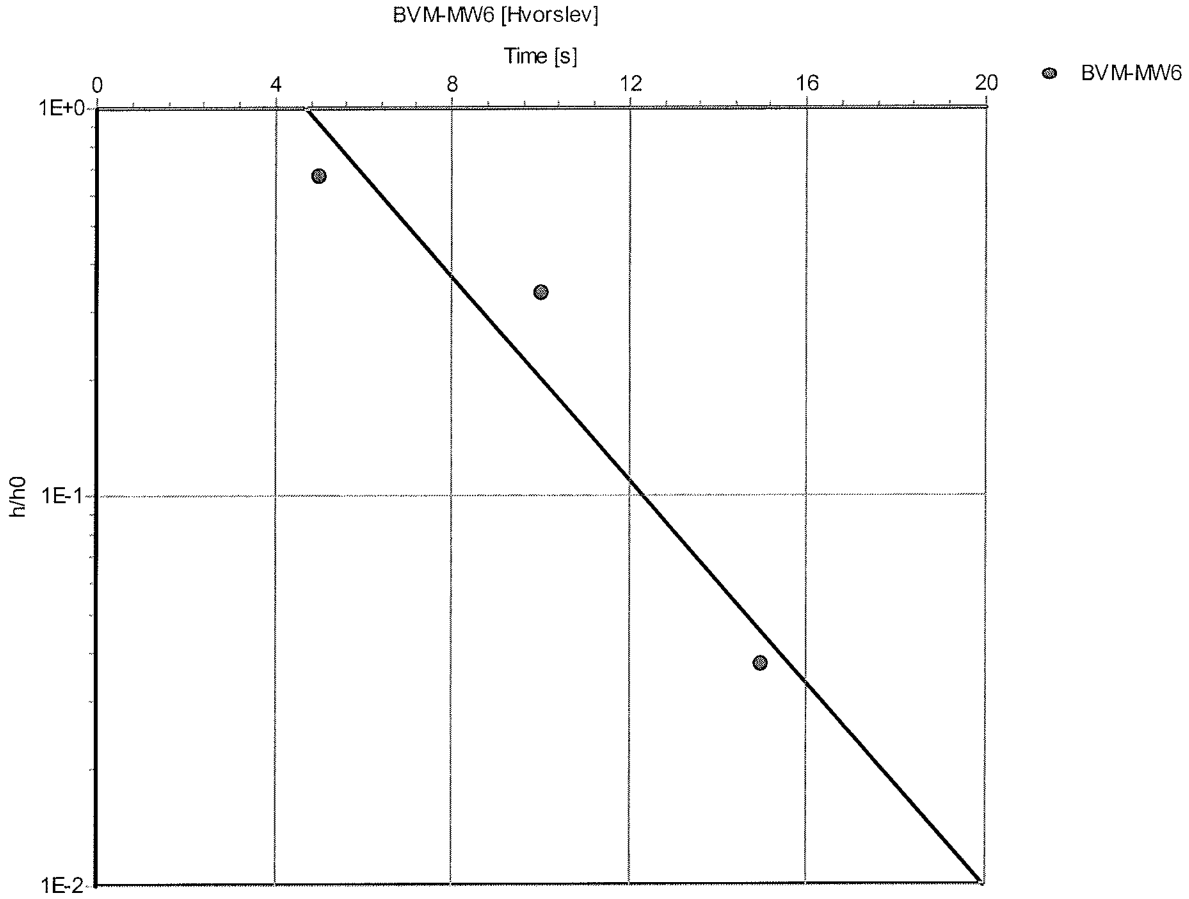
Jacques Whitford
607 Torbay Road
St. John's, NL
Phone: +1 709-576-1458

Slug Test Analysis Report

Project: Phase III ESA, Former BVM - Mill Area

Number: 1028976

Client: NL DNR-MD



Slug Test: **BVM-MW6**

Analysis Method: **Hvorslev**

Analysis Results:			Conductivity:	1.58E-4 [m/s]
Test parameters:	Test Well:	BVM-MW6	Aquifer Thickness:	1.67 [m]
	Casing radius:	0.025 [m]		
	Screen length:	2.29 [m]		
	Boring radius:	0.05 [m]		

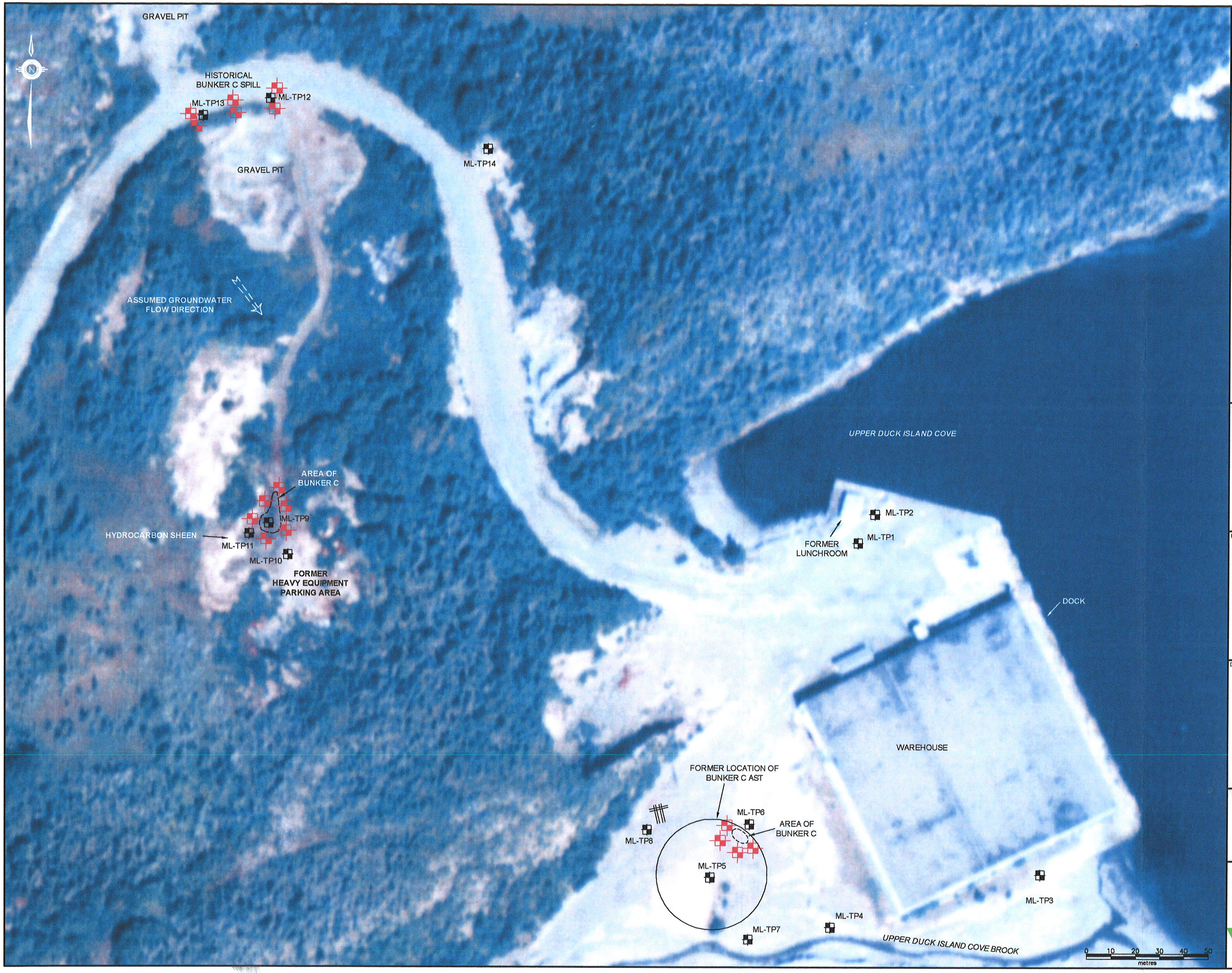
Comments:

Evaluated by: C. Anstey-Moore

Evaluation Date: 12/5/2007

APPENDIX 4a

Site Drawings – Warehouse & Dock Area



LEGEND

✚	EXPLORATORY TEST PIT (CURRENT INVESTIGATION)
◘	FORMER TEST PIT LOCATION (AMEC, 2007)
◯	AREA OF BUNKER C

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

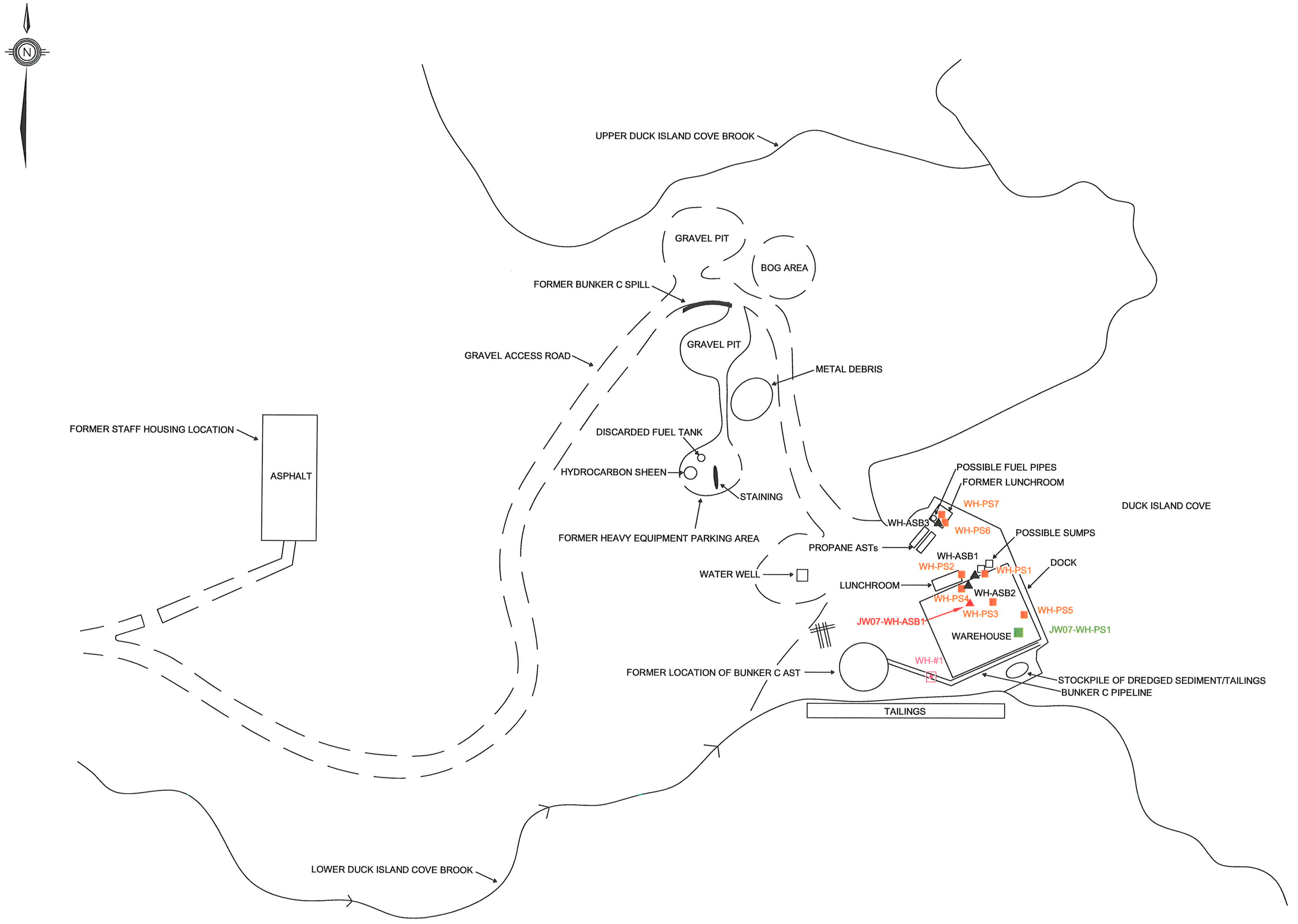
DRAWING TITLE

SITE AND PHASE III ESA WORK PLAN
WAREHOUSE AND DOCK AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: 1:1500	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: -	REV. No. 0
DRAWING No: 1028976-EE-09	
CAD FILE: 1028976-EE-03.DWG	

07DEC07 10:00AM



LEGEND

- ⚌ GRAVEL ACCESS ROADS
- ▦ FORMER TRANSFORMER LOCATION
- > FLOW DIRECTION
- ▲ ASBESTOS SAMPLE (AMEC 2007)
- 🟧 PAINT SAMPLE (AMEC 2007)
- ⊡ AIR SAMPLE (AMEC 2007)
- 🔺 ASBESTOS SAMPLE (JW 2007)
- 🟩 PAINT SAMPLE (JW 2007)

NOTES:
1. DRAWING BASED ON INFORMATION PROVIDED BY CLIENT & JW FIELD NOTES.
2. DO NOT SCALE FROM DRAWING.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA & HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE
WAREHOUSE & DOCK AREA, BAIE VERTE, NL

DRAWING TITLE:

HAZARDOUS MATERIALS ASSESSMENT
SAMPLE LOCATIONS PLAN
WAREHOUSE & DOCK AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: NTS	DATE: DEC. 6, 2007
DRAWN BY: S.N.	CHECKED BY:
EDITED BY: -	REV. No. 0
DRAWING No. 1028976-EE-10	
CAD FILE: 1028976-EE-14.DWG	

06DEC07 3:50PM

APPENDIX 4b

Laboratory Analytical Results Summary Tables - Warehouse & Dock Area (Current Investigation & AMEC, 2007)

Table 4.1 Results of Laboratory Analyses of Asbestos - Dock & Warehouse Area
Hazardous Materials Assessment
Baie Verte Mines, Near Baie Verte, NL
Jacques Whitford Project No. 1028976

Sample No.	Location	Sample Description	Sample Analysis Results	Visually Similar Material Locations	Material Condition & Quantities
JW07-WH-ASB1	Lunchroom Building	Exterior siding	5 - 10% Chrysotile Asbestos	Throughout building	N/A

Table 4.2 Results of Laboratory Analyses of Lead, Mercury and PCBs in Paint - Dock & Warehouse Area
Hazardous Materials Assessment
Baie Verte Mines, Near Baie Verte, NL
Jacques Whitford Project No. 1028976

Parameters	Location	Description	Condition	Lead	Lead Leachability	Mercury	Mercury Leachability	Polychlorinated Biphenyls (PCBs)
RDL				100	0.5	0.03	0.01	5
Units				mg/kg	mg/L	mg/kg	mg/L	mg/kg
Guideline[1]				600	5	10	0.1	33
JW07-WH-PS1	**Warehouse**	Exterior white paint on steel	GOOD	**2,100**	nd	10	-	-

Notes:

1. Guideline = NLDEC guideline for disposal of lead-based painted construction debris in an approved municipal landfill; Hazardous Products Act guideline for mercury in paint; Environment Canada Table of Metals Leachate Toxicity for lead and mercury leachability; CCME guideline for a commercial property for PCBs.
2. RDL = Reportable Detection Limit
3. "-" = No applicable guideline/value
4. Bold/Shaded = Value exceeds applicable criteria

Table 4-1: Summary of Building Materials Samples and Asbestos Analyses - Warehouse and Dock Area

Sample ID	Sample Location	Sample Type	Asbestos Fibre %		
			Chrysotile	Amosite	other asbestos fibres
WH-ASB1	Warehouse Building - Exterior Wall	Exterior Siding	20	nd	nd
WH-ASB2	Warehouse Building - Interior Wall	Insulation	nd	nd	nd
WH-ASB3	Former Lunchroom - Floor	Floor Tile	nd	nd	nd

Note: Shaded results are above maximum as outlined under "The Asbestos Abatement Regulations, 1998 (Nfld. Reg. 111/98) of 1 % asbestos fibers

trace: <1%

nd: not detected

Table 4-2: Asbestos in Air - Warehouse and Dock Area

Sample ID	Sample Location	Sample Type	Airborne Concentration (fibres/cm^3)
WH#1	Warehouse Building - Outside	Air	0.004

Note: Shaded results are above maximum as outlined under "2006 Occupational Exposure Threshold Limit Value (TLV) of 0.1 fibres/cm^3 (ACGIH)

nd: not detected

Table 4-3. Lead in Paint - Warehouse and Dock Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Lead (mg/kg)
S2006-12085	WH-PS1	Warehouse - Exterior Wall	Wood	Grey on Blue on Green Paint	5	**14700**
S2006-12086	WH-PS2	Lunchroom - Exterior Wall	Wood	Yellow Paint	5	**13900**
S2006-12087	WH-PS3	Warehouse - Steel Columns	Metal	Yellow-Orange Paint	5	**81300**
S2006-12088	WH-PS4	Warehouse - Interior Wall	Wood	Green on Blue Paint	5	**10200**
S2006-12089	WH-PS5	Warehouse - Steel Columns	Metal	Grey Paint	5	**815 (889)**
S2006-12090	WH-PS6	Former Lunchroom - Interior Wall	Wood	Blue on Dark Grey Paint	5	**7640**
S2006-12091	WH-PS7	Former Lunchroom - Interior Wall	Wood	Grey on Green on Yellow Paint	5	**5920**

Notes:
MDL: Method detection limit
<X: Below MDL
Data in brackets: Laboratory replicate results
Bold and underlined results indicate that lead concentration is above the relevant Federal Hazardous Products Act criterion of 600 mg/kg
Shaded results indicate that lead concentration is above the former Federal Hazardous Products Act criterion of 5000 mg/kg

Table 4-4. Mercury in Paint - Warehouse and Dock Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Mercury (mg/kg)
S2006-12085	WH-PS1	Warehouse - Exterior Wall	Wood	Grey on Blue on Green Paint	0.01	**20.7 (20.9)**
S2006-12086	WH-PS2	Lunchroom - Exterior Wall	Wood	Yellow Paint	0.01	0.14
S2006-12087	WH-PS3	Warehouse - Steel Columns	Metal	Yellow-Orange Paint	0.01	2.18
S2006-12088	WH-PS4	Warehouse - Interior Wall	Wood	Green on Blue Paint	0.01	**13.0**
S2006-12089	WH-PS5	Warehouse - Steel Columns	Metal	Grey Paint	0.01	0.62
S2006-12090	WH-PS6	Former Lunchroom - Interior Wall	Wood	Blue on Dark Grey Paint	0.01	5.27
S2006-12091	WH-PS7	Former Lunchroom - Interior Wall	Wood	Grey on Green on Yellow Paint	0.01	7.91

Notes:

MDL: Method detection limit

<X: Below MDL

Data in brackets: Laboratory replicate results

Bold and and underlined results indicate that mercury concentration is above the Federal Hazardous Products Act criterion of 10 mg/kg

Shaded results indicate that mercury concentration is above the CCME-CEQG for a commercial property (24 mg/kg)

Table 4-5. PCB in Paint - Warehouse and Dock Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	PCB (mg/kg)
S2006-12085	WH-PS1	Warehouse - Exterior Wall	Wood	Grey on Blue on Green Paint	0.005	420
S2006-12091	WH-PS7	Former Lunchroom - Interior Wall	Wood	Grey on Green on Yellow Paint	0.005	4260(4390)

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that PCB concentration is above the CCME-CEQG for a commercial property (33 mg/kg)

Table 4-6. Lead Leachate in Paint - Warehouse and Dock Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/L)	TCLP Lead (mg/L)
S2006-12085	WH-PS1	Warehouse - Exterior Wall	Wood	Grey on Blue on Green Paint	0.002	0.253
S2006-12086	WH-PS2	Lunchroom - Exterior Wall	Wood	Yellow Paint	0.002	0.117
S2006-12087	WH-PS3	Warehouse - Steel Columns	Metal	Yellow-Orange Paint	0.002	1.420
S2006-12088	WH-PS4	Warehouse - Interior Wall	Wood	Green on Blue Paint	0.002	0.204
S2006-12090	WH-PS6	Former Lunchroom - Interior Wall	Wood	Blue on Dark Grey Paint	0.002	0.807
S2006-12091	WH-PS7	Former Lunchroom - Interior Wall	Wood	Grey on Green on Yellow Paint	0.002	1.780

Notes:

MDL: Method detection limit

<X: Below MDL

Shaded results indicate that lead concentration is above the relevant Transportation of Dangerous Good Act (Updated 2002) criterion of 5.0 mg/L

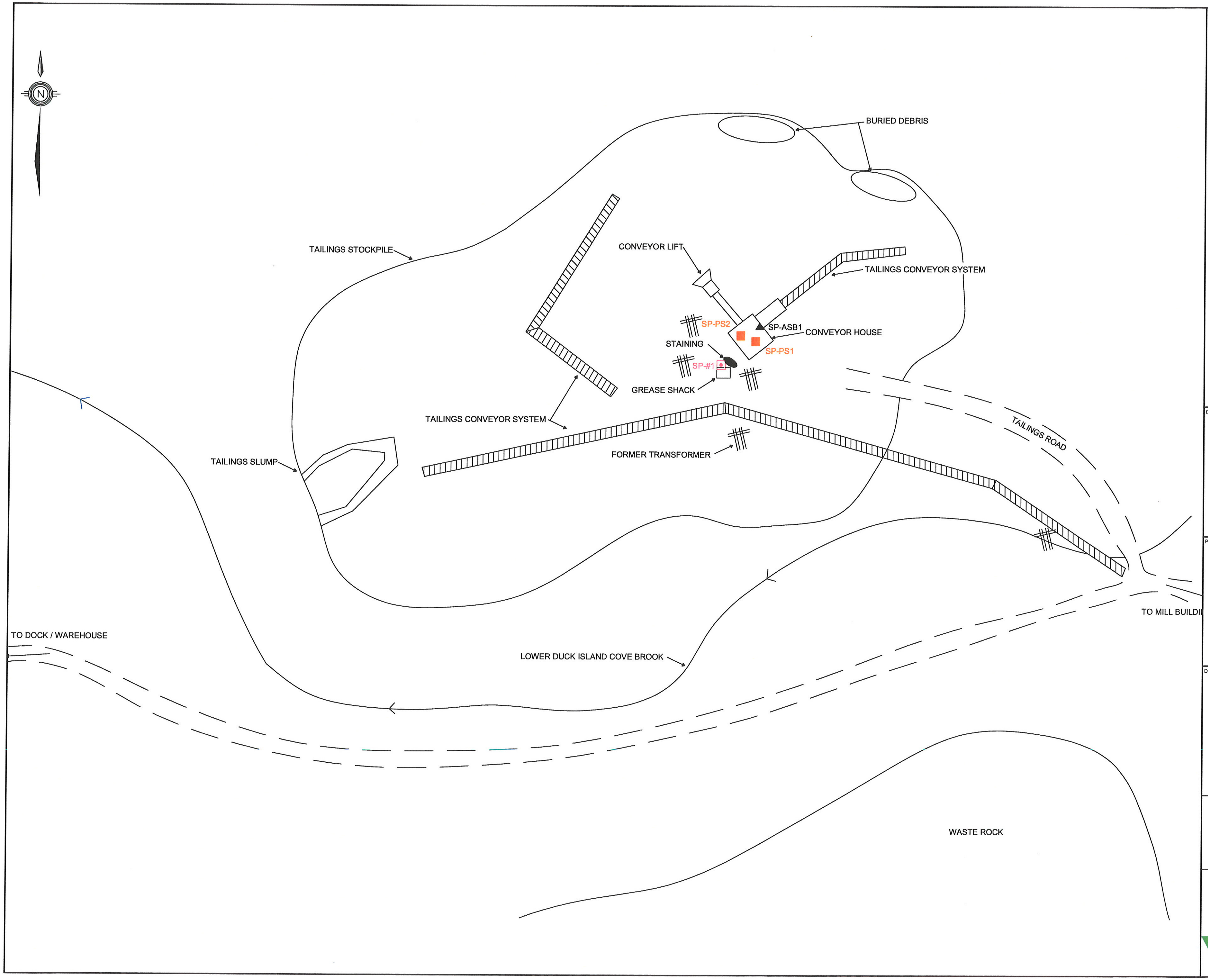
Table 4-7. PCB Leachate in Paint - Warehouse and Dock Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/L)	TCLP PCB (mg/L)
S2006-12085	WH-PS1	Warehouse - Exterior Wall	Wood	Grey on Blue on Green Paint	0.005	0.003
S2006-12091	WH-PS7	Former Lunchroom - Interior Wall	Wood	Grey on Green on Yellow Paint	0.005	0.318

Notes:
MDL: Method detection limit
<X: Below MDL
Shaded results indicate that lead concentration is above the relevant Transportation of Dangerous Good Act (Updated 2002) criterion of 0.3 mg/L

APPENDIX 5a

Site Drawings – Tailings Pile Area



LEGEND

— — GRAVEL ACCESS ROADS

⋕ FORMER TRANSFORMER LOCATION

> FLOW DIRECTION

▲ ASBESTOS SAMPLE (AMEC 2007)

🟧 PAINT SAMPLE (AMEC 2007)

⊡ AIR SAMPLE (AMEC 2007)

NOTES:

1. DRAWING BASED ON INFORMATION PROVIDED BY CLIENT & JW FIELD NOTES.
2. DO NOT SCALE FROM DRAWING.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA & HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE
TAILINGS PILE AREA, BAIE VERTE, NL

DRAWING TITLE:

HAZARDOUS MATERIALS ASSESSMENT
SAMPLE LOCATIONS PLAN
TAILINGS PILE AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: NTS	DATE: DEC. 6, 2007
DRAWN BY: S.N.	CHECKED BY:
EDITED BY: -	REV. No. 0
DRAWING No. 1028976-EE-11	
CAD FILE: 1028976-EE-15.DWG	

06DEC07 3:55PM

APPENDIX 5b

Laboratory Analytical Results Summary Tables – Tailings Pile Area (AMEC, 2007)

Table 5-1: Summary of Building Materials Samples and Asbestos Analysis - Tailings Area

Sample ID	Sample Location	Sample Type	Asbestos Fibre %		
			Chrysotile	Amosite	other asbestos fibres
SP-ASB1	Conveyor House - Interior Wall	Insulation	nd	nd	nd

Note: Shaded results are above maximum as outlined under "The Asbestos Abatement Regulations, 1998 (Nfld. Reg. 111/98) of 1 % asbestos fibers.

nd: not detected

Table 5-2: Asbestos in Air - Tailings Area

Sample ID	Sample Location	Sample Type	Airborne Concentration (fibres/cm^3)
SP#1	Southside of Grease Shack - Exterior	Air	0.003

Note: Shaded results are above maximum as outlined under "2006 Occupational Exposure Threshold Limit Value (TLV) of 0.1 fibres/cm3 (ACGIH)

Table 5-3. Lead in Paint - Tailings Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Lead (mg/kg)
S2006-12081	SP-PS1	Conveyor House - Mechanical Equipment	Metal	Red Paint	5	**<u>2560</u>**
S2006-12082	SP-PS2	Conveyor House - Siding	Metal	Blue Paint	5	**<u>3490</u>**

<u>Notes:</u>
MDL: Method detection limit
<X: Below MDL
<u>Bold and underlined results indicate that lead concentration is above the relevant Federal Hazardous Products Act criterion of 600 mg/kg</u>
Shaded results indicate that lead concentration is above the former Federal Hazardous Products Act criterion of 5000 mg/kg

Table 5-4. Mercury in Paint - Tailings Area

Lab #	Sample ID	Sample Location	Substrate	Description	MDL	Total Mercury
					(mg/kg)	(mg/kg)
S2006-12081	SP-PS1	Conveyor House - Mechanical Equipment	Metal	Red Paint	0.01	0.47
S2006-12082	SP-PS2	Conveyor House - Siding	Metal	Blue Paint	0.01	1.54

Notes:

MDL: Method detection limit

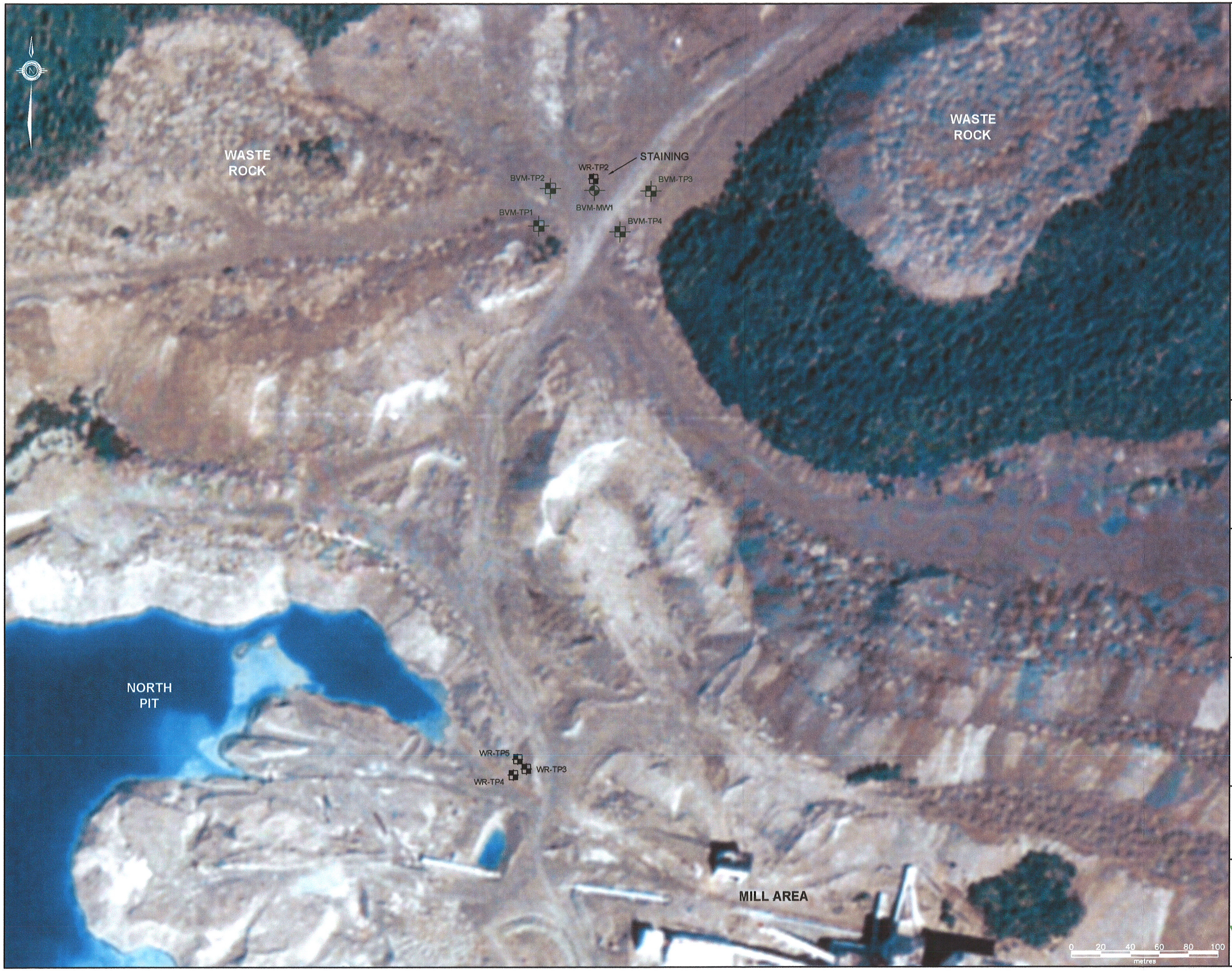
<X: Below MDL

Bold and and underlined results indicate that mercury concentration is above the Federal Hazardous Products Act criterion of 10 mg/kg

Shaded results indicate that mercury concentration is above the CCME CEQG for a commercial property (24 mg/kg)

APPENDIX 6a

Site Drawings – Waste Rock & Pit Area



LEGEND

BVM-TP	TEST PIT (CURRENT INVESTIGATION)
BVM-MW	MONITOR WELL (CURRENT INVESTIGATION)
◘	FORMER TEST PIT LOCATION (AMEC, 2007)

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

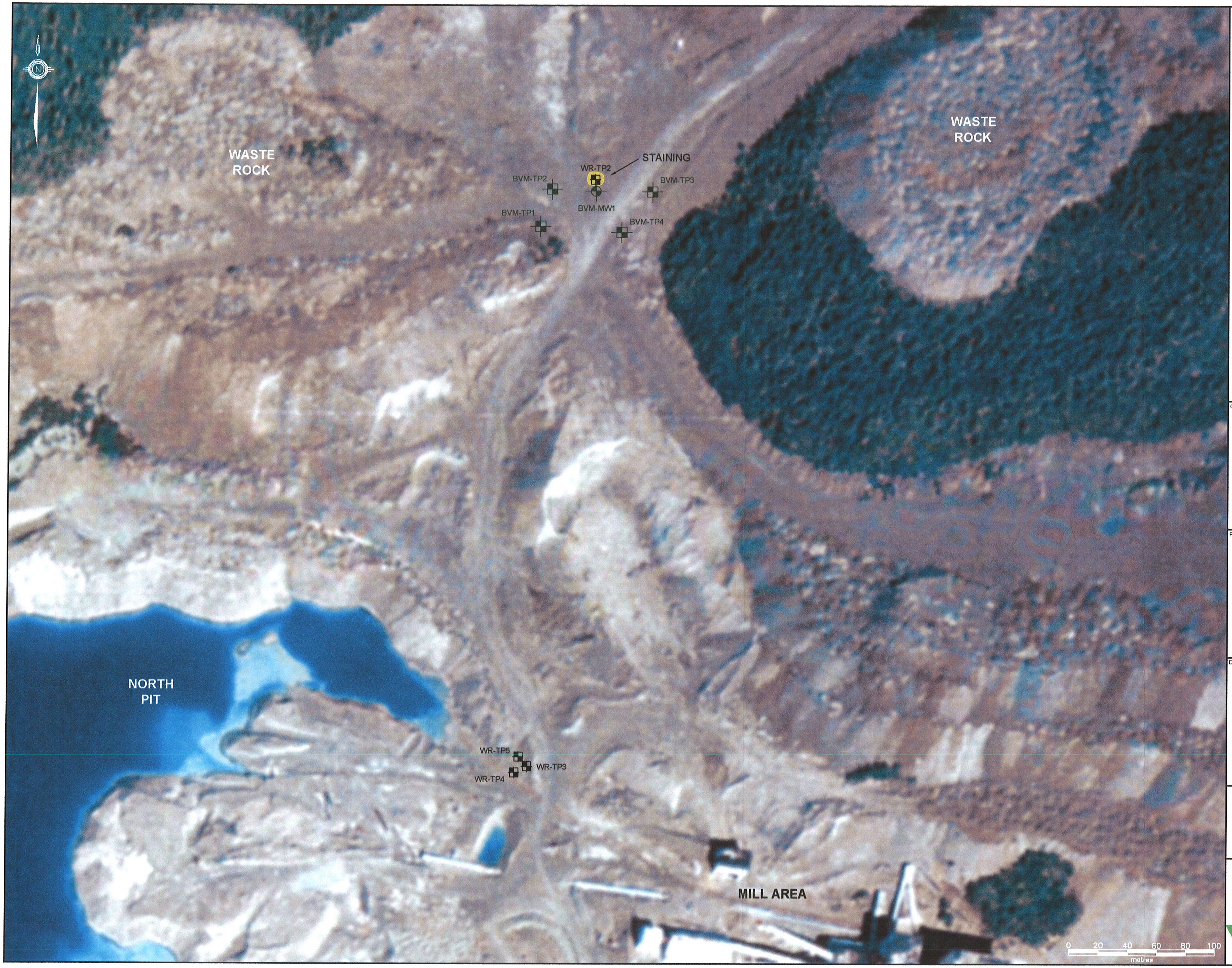
DRAWING TITLE:

SITE AND PHASE III ESA
SAMPLE LOCATION PLAN
WASTE ROCK AND PIT AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: 1:2500	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: -	REV. No: 0
DRAWING No: 1028976-EE-12	
CAD FILE: 1028976-EE-04.DWG	

07DEC07 11:00AM



LEGEND

BVM-TP	TEST PIT (CURRENT INVESTIGATION)
BVM-MW	MONITOR WELL (CURRENT INVESTIGATION)
	FORMER TEST PIT LOCATION (AMEC, 2007)
🟨	ESTIMATED EXTENT OF AREA WITH TPH IN SOIL > TIER I RBSLs FOR A COMMERCIAL SITE

NOTES:
1. DRAWING BASED ON 1999 AERIAL PHOTOGRAPHY.
2. FORMER SAMPLING LOCATIONS AND SITE FEATURES / INFRASTRUCTURE APPROXIMATE AND BASED ON INFORMATION PROVIDED ON DRAWINGS IN PHASE II ESA REPORT.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA AND HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE,
BAIE VERTE, NL

DRAWING TITLE:

ESTIMATED EXTENT OF PETROLEUM
HYDROCARBON IMPACTS IN SOIL
WASTE ROCK AND PIT AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE: 1:2500	DATE: DEC. 7, 2007
DRAWN BY: N.M.	CHECKED BY:
EDITED BY: -	REV. No: 0
DRAWING No: 1028976-EE-13	
CAD FILE: 1028976-EE-17.DWG	

07DEC07 11:00AM

LEGEND

- — — GRAVEL ACCESS ROADS
- FORMER TRANSFORMER LOCATION
- > FLOW DIRECTION
- ■ PAINT SAMPLE (AMEC 2007)
- ⊡ AIR SAMPLE (AMEC 2007)

NOTES:
1. DRAWING BASED ON INFORMATION PROVIDED BY CLIENT & JW FIELD NOTES.
2. DO NOT SCALE FROM DRAWING.
3. © JACQUES WHITFORD, 2007.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES

PROJECT TITLE:

PHASE III ESA & HAZARDOUS
MATERIALS ASSESSMENT
FORMER BAIE VERTE ASBESTOS MINE
WASTE ROCK & PIT AREA, BAIE VERTE, NL

DRAWING TITLE:

HAZARDOUS MATERIALS ASSESSMENT
SAMPLE LOCATIONS PLAN
WASTE ROCK & PIT AREA

Jacques Whitford
CONSULTING ENGINEERS

SCALE:	NTS	DATE:	DEC. 6, 2007
DRAWN BY:	S.N.	CHECKED BY:	
EDITED BY:	-	REV. No.	0
DRAWING No:	1028976-EE-14		
CAD FILE:	1028976-EE-16.DWG		

06DEC07 3:55PM

APPENDIX 6b

Test Pit & Monitor Well Records
& Symbols and Terms – Waste Rock & Pit Area

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology Describing Common Soil Genesis

Rootmat - vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
Topsoil - mixture of soil and humus capable of supporting good vegetative growth
Peat - fibrous aggregate of visible and invisible fragments of decayed organic matter
Loam - silty sand or sand with silt mixed with organics matter
Till - unstratified glacial deposit which may range from clay to boulders
Fill - any materials below the surface identified as placed by humans (excluding buried services)

Terminology Describing Soil Structure

Homogeneous - same colour and appearance throughout
Stratified - composed of alternating successions of different soil types, e.g., silt and sand
Lensed - inclusion of small pockets of different soils
Laminated - alternating layers of varying material or colour with the layers less than 6 mm thick
Layer - thickness > 75 mm
Seam - thickness between 2 mm and 75 mm
Parting - thickness < 2 mm

Grain Size and Plasticity

Terminology describing soils on the basis of grain size and plasticity is based on the Unified Soil Classification System (USCS) (ASTM D-2487). The classification excludes particles larger than 76 mm (3 inches). This system provides a group symbol (e.g., SM) and group name (e.g., silty SAND) for identification. Note: terminology describing materials in the absence of laboratory analysis is based on the ASTM D-2488 visual method.

Terminology describing materials outside the USCS (e.g., particles larger than 76 mm, visible organic matter, construction debris) is based on the (visually estimated) proportion of these materials present:

Trace, or occasional	Less than approximately 10%
Some	approximately 10-20%
Frequent	Greater than approximately 20%

Standard Penetration Test 'N-Value'

The performance of the Standard Penetration Test provides an 'N-value'; the number of blows of a 140 pound (64 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (51 mm) O.D. split spoon sampler one foot (305 mm) into the soil. For split spoon samples where insufficient penetration is achieved and 'N' values cannot be determined, the number of blows is reported over sampler penetration in millimetres (e.g., 50/75).

Density of Cohesionless Soils

The standard terminology to describe cohesionless soils includes the compactness (formerly "relative density"), as determined by laboratory test or by the Standard Penetration Test 'N- value'.

Density	N-Value	Compactness %
Very Loose	< 4	< 15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	> 50	> 85

Consistency of Cohesive Soils

The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, unconfined compression tests, or occasionally by standard penetration tests.

Consistency	Undrained Shear Strength		N-Value
	ksf	kPa	
Very Soft	< 0.25	< 12.5	< 2
Soft	0.25-0.5	12.5-25	2-4
Firm	0.5-1.0	25-50	4-8
Stiff	1.0-2.0	50-100	8-15
Very Stiff	2.0-4.0	100-200	15-30
Hard	> 4.0	> 200	> 30

ROCK DESCRIPTION

Rock Quality Designation (RQD)

The classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be due to close shearing, jointing, faulting, or weathering in the rock mass and are not counted. RQD was originally intended to be applied to NW core; however, it can be used on different core sizes if most of the fractures caused by drilling stresses are easily distinguishable from *in situ* fractures.

RQD (%)	Rock Quality		
90-100	Excellent	-	intact, very sound
75-90	Good	-	moderately jointed, massive, sound
50-75	Fair	-	fractured, blocky and seamy
25-50	Poor	-	severely fractured, shattered and very seamy or blocky
0-25	Very poor	-	very severely fractured, crushed

Total Core Recovery (TCR)

Total core recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

Weathering State

Term	Description
Slight	Weathering limited to the surface of major discontinuities. Typically iron stained.
Moderate	Weathering extends throughout rock mass. Rock is not friable.
High	Weathering extends throughout rock mass. Rock is friable (crumbles naturally or broken between fingers).

Terminology Describing Rock Mass

Spacing (mm)	Bedding, Laminations, Bands	Discontinuity
2000-6000	Very Thick	Very wide
600-2000	Thick	Wide
200-600	Medium	Moderately close
60-200	Thin	Close
20-60	Very Thin	Very close
< 20	Laminated	Extremely close
< 6	Thinly Laminated	

RECORD SYMBOLS AND ABBREVIATIONS

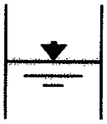
Sample Types

SS	Split spoon sample (obtained by performing the Standard Penetration Test)	WS	Wash sample	ST	Shelby tube or thin wall tube
		BS	Bulk sample	HQ, NQ, BQ, etc.	Rock core samples obtained using standard size diamond drilling bits.
		RC	Rock chip sample		

Laboratory Tests

S	Sieve analysis	H	Hydrometer analysis	A	Atterberg limits

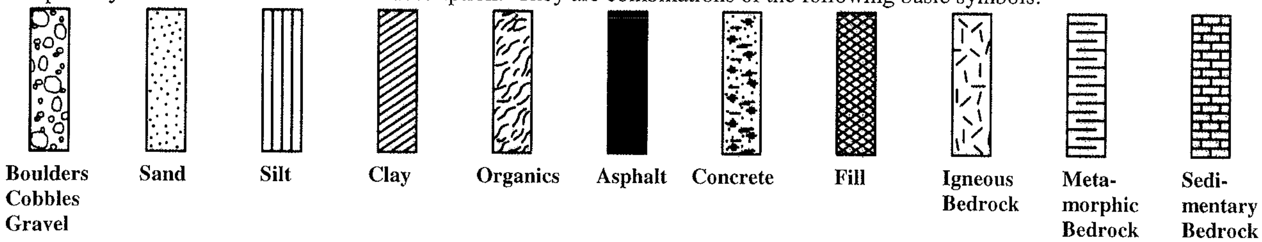
Water Level Measurement



Indicates recorded water level in a borehole, test pit or standpipe.

Strata Plot

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols:

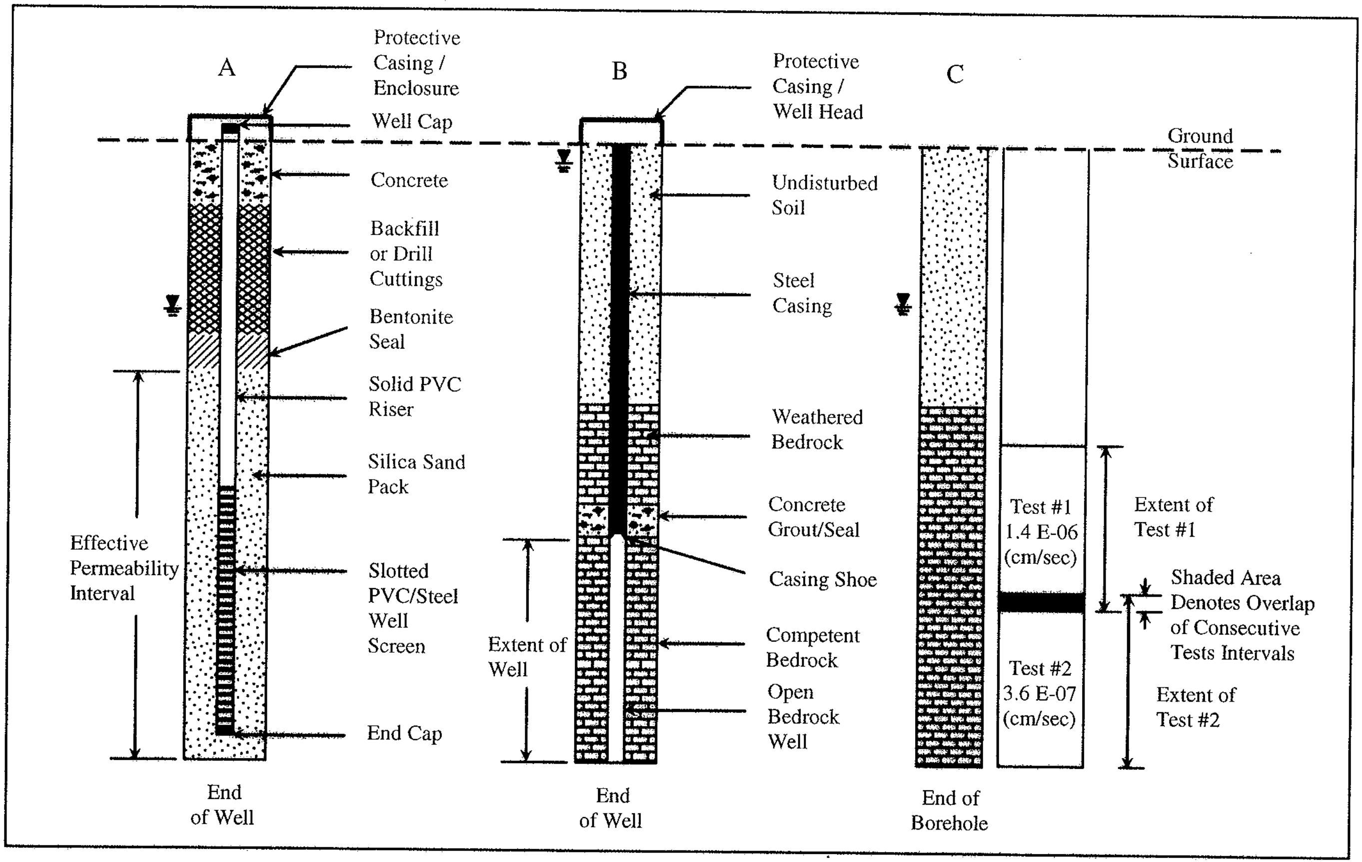


Solid lines between strata indicate the boundary between different strata. Dashed lines between strata indicate the boundary between strata is inferred.

SYMBOLS AND TERMS USED ON MONITOR WELL, WATER WELL AND ENVIRONMENTAL RECORDS

Well Construction and Permeability Testing

Basic symbols used in typical monitor or water well and piezometer construction are shown below. The well construction symbols or materials shown below may be combined or altered to suit a particular application. The diagram shows: A) a typical piezometer or monitor well in overburden; B) a typical water well in bedrock; C) borehole permeability test results in bedrock.



Apparent Moisture Content

Terminology used to describe apparent moisture content at the time of borehole drilling or test pit excavation.

Symbol	Description
D	Dry – containing little or no moisture
M	Moist – containing some moisture without having 'free' moisture
S	Saturated – 'free' moisture can drain from material

Terminology Describing Contamination

PID	-	Photo Ionization Detector (readings in ppm)
TPH	-	Total Petroleum Hydrocarbon concentration (readings in ppm based on mass)
ppm	-	Parts Per Million (measurement of concentration, mg/kg or mg/L)
nd	-	Not Detected – below limit of quantification (LOQ)

Apparent Hydrocarbon Odour

Terminology used to describe apparent hydrocarbon odour at the time of borehole drilling or test pit excavation.

Value	Description
0	No apparent odour
1	Slight odour
2	Moderate odour
3	Strong odour

JACQUES WHITFORD

TEST PIT RECORD

CLIENT **Newfoundland and Labrador Department of Natural Resources**

PROJECT **Phase III ESA & Hazardous Materials Assessment**

LOCATION **Former Baie Verte Asbestos Mine - Waste Rock & Pit Area, Baie Verte, NL**

DATES (mm-dd-yy): DUG 9-7-07

WATER LEVEL N/A

TEST PIT No. **BVMJW07-TP1**

PROJECT No. **1028976**

DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact to dense, brown-grey silty GRAVEL (GM); some cobbles and boulders (waste rock)			BS	1			0.0	230	nd	nd	nd	nd
					BS	2			0.0	-	-	-	-	-
1					BS	3			0.0	-	-	-	-	-
					BS	4			0.0	-	-	-	-	-
2					BS	5			0.0	-	-	-	-	-
					BS	6			0.0	-	-	-	-	-
3					BS	7			0.0	-	-	-	-	-
					BS	8			0.0	-	-	-	-	-
4					BS	9			0.0	-	-	-	-	-
		End of Test Pit Groundwater not encountered. Bedrock not encountered. Test Pit terminated due to maximum reach of excavator.												
5														

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TEST PIT RECORD

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Waste Rock & Pit Area, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-7-07 WATER LEVEL N/A
TEST PIT No. BVMJW07-TP2
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Wood chips and bark												
2		Compact to dense, brown to grey silty GRAVEL (GM); some cobbles and boulders (waste rock)			BS	1			0.0	510	nd	nd	nd	nd
					BS	2			0.0					
					BS	3			0.0					
					BS	4			0.0					
					BS	5			0.0					
		End of Test Pit Groundwater not encountered. Bedrock not encountered. Test Pit terminated due to maximum reach of excavator.												

JACQUES WHITFORD

TEST PIT RECORD

CLIENT: Newfoundland and Labrador Department of Natural Resources
PROJECT: Phase III ESA & Hazardous Materials Assessment
LOCATION: Former Baie Verte Asbestos Mine - Waste Rock & Pit Area, Baie Verte, NL
DATES (mm-dd-yy): DUG 9-7-07
WATER LEVEL N/A
TEST PIT No. BVMJW07-TP3
PROJECT No. 1028976
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact to dense, brown-grey silty GRAVEL (GM); some cobbles and boulders (waste rock)			BS	1			0.0					
					BS	2			0.0					
1					BS	3			0.0					
					BS	4			0.0					
2		Compact to dense, brown, silty SAND with gravel (SM): TILL			BS	5			0.0	120	nd	nd	nd	nd
					BS	6			0.0					
		End of Test Pit Groundwater not encountered. Refusal on probable bedrock at 2.7 m depth.												
3														
4														
5														

Jacques Whitford

JACQUES WHITFORD

TEST PIT RECORD

CLIENT: **Newfoundland and Labrador Department of Natural Resources**
PROJECT: **Phase III ESA & Hazardous Materials Assessment**
LOCATION: **Former Baie Verte Asbestos Mine - Waste Rock & Pit Area, Baie Verte, NL**
DATES (mm-dd-yy): DUG **9-7-07**
WATER LEVEL **N/A**
TEST PIT No. **BVMJW07-TP4**
PROJECT No. **1028976**
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact to dense, brown-grey silty GRAVEL (GM); some cobbles and boulders (waste rock)			BS	1			0.0	220	nd	nd	nd	nd
					BS	2			0.0					
1					BS	3			0.0					
					BS	4			0.0					
2					BS	5			0.0					
					BS	6			0.0					
3					BS	7			0.0					
					BS	8			0.0					
4					BS	9			0.0					
		End of Test Pit Groundwater not encountered. Bedrock not encountered. Test Pit terminated due to maximum reach of excavator.												
5														

JACQUES WHITFORD

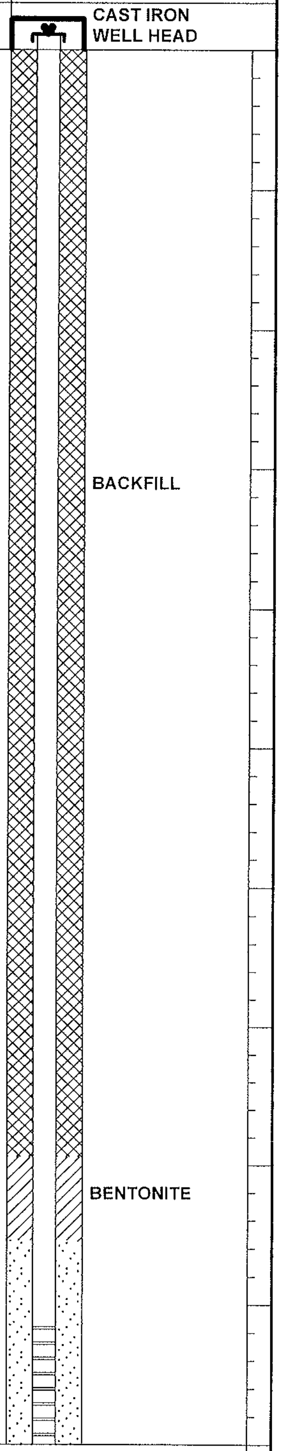
MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW1
PAGE 1 of 2
PROJECT No. 1028976
DRILLING METHOD DIA
SIZE HQ
DATUM

CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT Phase III ESA & Hazardous Materials Assessment
LOCATION Former Baie Verte Asbestos Mine - Waste Rock & Pit Area, Baie Verte, NL
DATES (mm-dd-yy): BORING 9-11-07
WATER LEVEL N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm)	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)
0		Compact to dense, brown-grey silty GRAVEL (GM); some cobbles and boulders (waste rock)			SS	1	275	71/280	0	D	4.2	80
1												
2												
					SS	2	0		-	-	-	-
3												
4					RC	3	0		-	-	-	-
5												

WELL CONSTRUCTION DETAILS

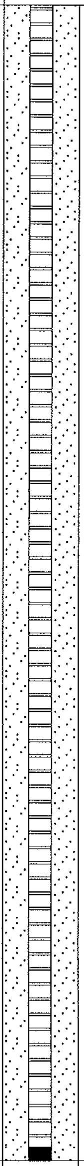


Jacques Whitford

JACQUES WHITFORD

MONITOR WELL RECORD

BOREHOLE No. BVMJW07-MW1
PAGE 2 of 2
CLIENT Newfoundland and Labrador Department of Natural Resources
PROJECT No. 1028976
PROJECT Phase III ESA & Hazardous Materials Assessment
DRILLING METHOD DIA
LOCATION Former Baie Verte Asbestos Mine - Waste Rock & Pit Area, Baie Verte, NL
SIZE HQ
DATES (mm-dd-yy): BORING 9-11-07
WATER LEVEL N/A
DATUM

DEPTH (m)	ELEVATION (m)	DESCRIPTION Continued from Previous Page	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
							mm						
5													
		Grey-black BEDROCK											 50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
6					RC	4	0		-	-	-	-	
7													
8					RC	5	350		-	-	-	-	
9													END CAP
		End of Borehole											
10													

APPENDIX 6c

Laboratory Analytical Results Summary Tables – Waste Rock & Pit Area
(Current Investigation & AMEC, 2007)

Table 6.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil - Waste Rock & Pit Area
Phase III ESA & Hazardous Materials Assessment
Former Baie Verte Asbestos Mine - Waste Rock Area
Baie Verte, NL
JW Project No. 1028976

Parameters	Benzene	Toluene	Ethylbenzene	Xylenes	C6-C10 (Gas Range)	C10-C21 (Fuel Range)	C21-C32 (Lube Range)	Modified TPH - Tier I^3	Resemblance
RDL	0.03	0.03	0.03	0.05	3	15	15	20	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Criteria^1	1.8	160	430	200	na	na	na	7,400	
Criteria^2	1.8	160	430	200	na	na	na	10,000	
BVM-JW07-TP1-BS1	nd	nd	nd	nd	nd	nd	230	230	LO
BVM-JW07-TP2-BS1	nd	nd	nd	nd	nd	36	470	510	LO
BVM-JW07-TP3-BS5	nd	nd	nd	nd	nd	nd	120	120	LO
BVM-JW07-TP4-BS1	nd	nd	nd	nd	nd	nd	220	220	LO
BVM-JW07-MW1-SS1	nd	nd	nd	nd	nd	nd	80	80	LO

Notes:
1 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for commercial site with non-potable groundwater, coarse-grained soil and fuel oil impacts
2 = Atlantic RBCA Tier I Risk-Based Screening Level (RBSL) for a commercial site with non-potable groundwater, coarse-grained soil and lube oil impacts
3 = Modified TPH - Tier I does not include BTEX
RDL = Reportable detection limit
nd = Not detected above standard RDL
na = No applicable criteria
LO = Lube oil

Table 6-4: BTEX/TPH in Soil - Waste Rock and Pit Areas

		DATA						GUIDELINES			
AVERAGE SAMPLING DEPTH (m) LAB ID FIELD ID DATE (D/M/Y)		Lab Blank	1.0 - 2.0 S2006-11642 WR-TP1-SS2 24-Sep-06	0.0 - 1.0 S2006-11613 WR-TP2-SS1 24-Sep-06	0.0 - 1.0 S2006-11363 WR-TP3-SS1 24-Sep-06	0.0 - 1.0 S2006-11363 WR-TP4-SS1 24-Sep-06	0.0 - 1.0 S2006-11363 WR-TP5-SS1 24-Sep-06	1999 CCME-CEQG (Updated 2005) INDUSTRIAL SITES	2003 ATLANTIC PIRI TIER I RBSL^1		
									GASOLINE	DIESEL/#2	#6 OIL
PARAMETERS	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	**1.8**	**1.8**	**1.8**
Toluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.37**	**160**	**160**	**160**
Ethylbenzene	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.082**	**430**	**430**	**430**
Total Xylenes	0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	**11**	**200**	**200**	**200**
TPH (C6-C10)	10	<10	<10	<10	<10	<10	<10	-	-	-	-
TPH (>C10-C21)	10	<10	<10	1970	<10	<10	<10	-	-	-	-
TPH (>C21-C32)	50	<50	<50	12900	<50	<50	<50	-	-	-	-
Modified TPH (C6-C32)	70	<70	<70	**<14900**	<70	<70	<70	-	**450**	**7400**	**10000**
Hydrocarbon Identification		-	-	Chromatogram resembles weathered diesel and heavy oil	-	-	-				

Notes:
MDL: Method detection limit
<X: not detected above MDL
CCME: Canadian Council of Ministers of the Environment
CEQG: Canadian Environment Quality Guidelines
Bold faced guidelines reflect those most applicable to current land use designation
-: VALUE NOT ESTABLISHED
PIRI: Partnership in RBCA Implementation
RBCA: Risk Based Corrective Action
RBSL: Risk Based Screening Level
Bold and underlined data exceeds the CCME-CEQGs
Shaded and bold faced data exceeds recommended 2003 Atlantic PIRI RBSL
1: Tier I RBCA criteria for coarse-grained soils at commercial sites where groundwater is non-potable

Table 6-2. Lead in Paint - Waste Rock and Pit Areas

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Lead (mg/kg)
S2006-12084	WR-PS1	Wooden Shed - Exterior Wall	Wood	Yellow Paint	5	**1200**

Notes:
MDL: Method detection limit
<X: Below MDL
Bold and underlined results indicate that lead concentration is above the relevant Federal Hazardous Products Act criterion of 600 mg/kg
Shaded results indicate that lead concentration is above the former Federal Hazardous Products Act criterion of 5000 mg/kg

Table 6-3. Mercury in Paint - Waste Rock and Pit Areas

Lab #	Sample ID	Sample Location	Substrate	Description	MDL (mg/kg)	Total Mercury (mg/kg)
S2006-12084	WR-PS1	Wooden Shed - Exterior Wall	Wood	Yellow Paint	0.01	0.41

Notes:
MDL: Method detection limit
<X: Below MDL
Bold and underlined results indicate that mercury concentration is above the Federal Hazardous Products Act criterion of 10 mg/kg
Shaded results indicate that mercury concentration is above the CCME-CEQG for a commercial property (24 mg/kg)

APPENDIX 6d

Maxxam Analytics Inc. Analytical Reports – Waste Rock & Pit Area (Current Investigation)

Maxxam Job #: A7A2057
Report Date: 2007/09/26

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U75298	U75299		
Sampling Date		2007/09/19	2007/09/19		
COC Number		12150	12150		
Registration #					
	Units	**BVMJW07-MW1-SS1**	**BVMJW07-MW2-SS3**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	3	16	1	1364119
TPH COMPOUNDS					
Benzene	mg/kg	ND	ND	0.03	1364122
Toluene	mg/kg	ND	ND	0.03	1364122
Ethylbenzene	mg/kg	ND	ND	0.03	1364122
Xylene (Total)	mg/kg	ND	ND	0.05	1364122
C6 - C10 (less BTEX)	mg/kg	ND	ND	3	1364122
>C10-C21 Hydrocarbons	mg/kg	ND	76	15	1366733
>C21-<C32 Hydrocarbons	mg/kg	80	88	15	1366733
Modified TPH (Tier1)	mg/kg	80	170	20	1363484
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	99	104		1366733
Isobutylbenzene - Volatile	%	120	125		1364122
n-Dotriacontane - Extractable	%	120 (1)	125 (2)		1366733

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.
(2) Weathered fuel oil fraction. Lube oil fraction

Maxxam Job #: A7A0059
Report Date: 2007/09/20

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66223	U66224	U66225		
Sampling Date		2007/09/10	2007/09/10	2007/09/10		
COC Number		12119	12119	12119		
Registration #						
	Units	**BVM-JW07-TP1-BS1**	**BVM-JW07-TP2-BS1**	**BVM-JW07-TP3-BS5**	**RDL**	**QC Batch**
INORGANICS						
Moisture	%	18	24	14	1	1360980
TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	ND	ND	ND	3	1360981
>C10-C21 Hydrocarbons	mg/kg	ND	36	ND	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	230	470	120	15	1360985
Modified TPH (Tier1)	mg/kg	230	510	120	20	1360309
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	98	93	95		1360985
Isobutylbenzene - Volatile	%	89	105	97		1360981
n-Dotriacontane - Extractable	%	127 (1)	96 (1)	112 (1)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Lube oil fraction.

Jacques Whitford Limited
Maxxam Job #: A7A0059
Report Date: 2007/09/20
Client Project #: 1028976-Z9100
Project name: PHASE III ESA, BAIE VERTE
Your P.O. #: NSD016400
Sampler Initials:

ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

Maxxam ID		U66226	U66227	U66228		
Sampling Date		2007/09/10	2007/09/10	2007/09/10		
COC Number		12119	12119	12119		
Registration #						
	Units	**BVM-JW07-TP4-BS1**	**BVM-JW07-TP5-BS6**	**BVM-JW07-TP6-BS2**	**RDL**	**QC Batch**
INORGANICS						
Moisture	%	10	17	12	1	1360980
TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1360981
Toluene	mg/kg	ND	ND	ND	0.03	1360981
Ethylbenzene	mg/kg	ND	ND	ND	0.03	1360981
Xylene (Total)	mg/kg	ND	ND	ND	0.05	1360981
C6 - C10 (less BTEX)	mg/kg	ND	33	4	3	1360981
>C10-C21 Hydrocarbons	mg/kg	ND	2100	2400	15	1360985
>C21-<C32 Hydrocarbons	mg/kg	220	200	7500	15	1360985
Modified TPH (Tier1)	mg/kg	220	2300	9900	20	1360309
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	95	118	98		1360985
Isobutylbenzene - Volatile	%	92	147 (1)	99		1360981
n-Dotriacontane - Extractable	%	120 (2)	127 (3)	75 (4)		1360985

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Isobutylbenzene recovery not within acceptance limits due to matrix/co-extractive interference.
(2) Lube oil fraction.
(3) Weathered fuel oil fraction.
(4) Weathered fuel oil fraction. Lube oil fraction.

APPENDIX 6e

GPS Coordinates –Waste Rock & Pit Area

GPS Coordinates - NAD83 - Waste Rock & Pit Area

Location	Northing	Easting
BVM-JW07-TP1	558616	5537918
BVM-JW07-TP2	558643	5538043
BVM-JW07-TP3	558763	5537949
BVM-JW07-TP4	558697	5537878
BVM-JW07-MW1	558740	5537986

APPENDIX 7

Maxxam Analytics Inc. Analytical Reports for the Hazardous Materials Assessment

Maxxam Analytics Inc
Driven by service and Science
www.maxxamanalytics.com

Your P.O. #: NSD016400
Your Project #: 1028976-Z9100
Site: BAIE VERTE/RAMBLER
Your C.O.C. #: 08451

Attention: Paula Brennan
Jacques Whitford Limited
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2007/10/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A7B4658
Received: 2007/10/18, 10:11

Sample Matrix: Solid
Samples Received: 15

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Asbestos (1)	6	N/A	2007/10/24	ATL SOP-00174	Based on NIOSH9002
Asbestos (1)	9	N/A	2007/10/25	ATL SOP-00174	Based on NIOSH9002

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Sydney, NS (ESL)

Encryption Key Sara Nicholson

Sara Nicholson
26 Oct 2007 10:49:17 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

SHARLENE BAIRD, Project Manager
Email: sharlene.baird.reports@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 CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A7B4658
Report Date: 2007/10/26

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

RESULTS OF ANALYSES OF SOLID

Maxxam ID		V31969		V31974	V31975		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08451		08451	08451		
Registration #							
	Units	**JW07-BHA-ASB1**	**QC Batch**	**JW07-BHA-ASB2**	**JW07-BHA-ASB3**	**RDL**	**QC Batch**

INORGANICS							
Asbestos	%	ND	1389589	ND	ND	1	1390671
Chrysotile Asbestos	%	ND	1389589	ND	ND	1	1390671
Amosite Asbestos	%	ND	1389589	ND	ND	1	1390671
Crocidolite Asbestos	%	ND	1389589	ND	ND	1	1390671
Tremolite Asbestos	%	ND	1389589	ND	ND	1	1390671
Cellulose	%	ND	1389589	(1-5)	(80-90)	1	1390671
Mineral Wool	%	ND	1389589	ND	ND	1	1390671
Glass Fibres	%	SEE NOTE	1389589	(1-5)	ND	1	1390671
Hair	%	ND	1389589	ND	ND	1	1390671
Miscellaneous Fibres	%	ND	1389589	ND	ND	1	1390671

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4658
Report Date: 2007/10/26

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

RESULTS OF ANALYSES OF SOLID

Maxxam ID		V31976		V31977	V31978		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08451		08451	08451		
Registration #							
	Units	**JW07-BHA-ASB4**	**QC Batch**	**JW07-BHA-ASB5**	**JW07-BHA-ASB6**	**RDL**	**QC Batch**
INORGANICS							
Asbestos	%	ND	1389589	ND	ND	1	1390671
Chrysotile Asbestos	%	ND	1389589	ND	ND	1	1390671
Amosite Asbestos	%	ND	1389589	ND	ND	1	1390671
Crocidolite Asbestos	%	ND	1389589	ND	ND	1	1390671
Tremolite Asbestos	%	ND	1389589	ND	ND	1	1390671
Cellulose	%	ND	1389589	(>90)	(>90)	1	1390671
Mineral Wool	%	ND	1389589	ND	ND	1	1390671
Glass Fibres	%	ND	1389589	ND	ND	1	1390671
Hair	%	ND	1389589	ND	ND	1	1390671
Miscellaneous Fibres	%	ND	1389589	ND	ND	1	1390671

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4658
Report Date: 2007/10/26

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

RESULTS OF ANALYSES OF SOLID

Maxxam ID		V31979	V31980	V31981		
Sampling Date		2007/09/03	2007/09/03	2007/09/03		
COC Number		08451	08451	08451		
Registration #						
	Units	**JW07-BHA-ASB7**	**JW07-RMM-ASB1**	**JW07-RMM-ASB2**	**RDL**	**QC Batch**
INORGANICS						
Asbestos	%	(1-5)	(1-5)	ND	1	1389589
Chrysotile Asbestos	%	(1-5)	(1-5)	ND	1	1389589
Amosite Asbestos	%	ND	ND	ND	1	1389589
Crocidolite Asbestos	%	ND	ND	ND	1	1389589
Tremolite Asbestos	%	ND	ND	ND	1	1389589
Cellulose	%	ND	ND	ND	1	1389589
Mineral Wool	%	ND	ND	ND	1	1389589
Glass Fibres	%	ND	ND	ND	1	1389589
Hair	%	ND	ND	ND	1	1389589
Miscellaneous Fibres	%	ND	ND	ND	1	1389589

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4658
Report Date: 2007/10/26

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

RESULTS OF ANALYSES OF SOLID

Maxxam ID		V31982		V31983		
Sampling Date		2007/09/03		2007/09/03		
COC Number		08451		08451		
Registration #						
	Units	**JW07-RMM-ASB3**	**QC Batch**	**LW07-EM-ASB1**	**RDL**	**QC Batch**

INORGANICS						
Asbestos	%	(10-20)	1390671	(20-40)	1	1389589
Chrysotile Asbestos	%	(10-20)	1390671	(20-40)	1	1389589
Amosite Asbestos	%	ND	1390671	ND	1	1389589
Crocidolite Asbestos	%	ND	1390671	ND	1	1389589
Tremolite Asbestos	%	ND	1390671	ND	1	1389589
Cellulose	%	(5-10)	1390671	ND	1	1389589
Mineral Wool	%	ND	1390671	ND	1	1389589
Glass Fibres	%	ND	1390671	ND	1	1389589
Hair	%	ND	1390671	ND	1	1389589
Miscellaneous Fibres	%	ND	1390671	ND	1	1389589

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4658
Report Date: 2007/10/26

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

RESULTS OF ANALYSES OF SOLID

Maxxam ID		V31984	V31985	V31986	V31987		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08451	08451	08451	08451		
Registration #							
	Units	**JW07-EM-ASB2**	**JW07-ML-ASB1**	**JW07-WH-ASB1**	**JW07-BHA-ASB8**	**RDL**	**QC Batch**

INORGANICS							
Asbestos	%	ND	ND	(5-10)	ND	1	1390671
Chrysotile Asbestos	%	ND	ND	(5-10)	ND	1	1390671
Amosite Asbestos	%	ND	ND	ND	ND	1	1390671
Crocidolite Asbestos	%	ND	ND	ND	ND	1	1390671
Tremolite Asbestos	%	ND	ND	ND	ND	1	1390671
Cellulose	%	(80-90)	ND	ND	(80-90)	1	1390671
Mineral Wool	%	ND	ND	ND	ND	1	1390671
Glass Fibres	%	ND	ND	ND	ND	1	1390671
Hair	%	ND	ND	ND	ND	1	1390671
Miscellaneous Fibres	%	ND	ND	ND	ND	1	1390671

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4658
Report Date: 2007/10/26

Jacques Whitford Limited
Client Project #: 1028976-Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

GENERAL COMMENTS

Sample V31969-01: <1.0% of glass fibers were found in the sample.

Results relate only to the items tested.

Your P.O. #: NSD016400
Your Project #: 1028976/Z9100
Site: BAIE VERTE/RAMBLER
Your C.O.C. #: 08453

Attention: Paula Brennan
Jacques Whitford Limited
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2007/10/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A7B4852
Received: 2007/10/18, 10:10

Sample Matrix: Paint
Samples Received: 79

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Mercury in paint	24	N/A	2007/10/22	ATL SOP 00026 R2	Based on EPA 245.5
Mercury in paint	54	N/A	2007/10/23	ATL SOP 00026 R2	Based on EPA 245.5
Mercury in paint	1	N/A	2007/10/24	ATL SOP 00026 R2	Based on EPA 245.5
Lead Paint Avail. OES	52	N/A	2007/10/22	ATL SOP 00025 R2	Based on USEPA 6010B
Lead Paint Avail. OES	27	N/A	2007/10/23	ATL SOP 00025 R2	Based on USEPA 6010B
PCBs in Paint by GC/ECD	17	2007/10/23	2007/10/24		in house
PCBs in Paint by GC/ECD	20	2007/10/23	2007/10/25		in house

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key Sara Nicholson
Sara Nicholson
25 Oct 2007 15:51:57 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

SHARLENE BAIRD, Project Manager
Email: sharlene.baird.reports@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 CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33041		V33071		V33072		
Sampling Date		2007/09/03		2007/09/03		2007/09/03		
COC Number		08453		08453		08453		
Registration #								
	Units	**JW07-ML-PS1**	**RDL**	**JW07-ML-PS2**	**RDL**	**JW07-ML-PS3**	**RDL**	**QC Batch**
ELEMENTS								
Available Lead (Pb)	mg/kg	2000	100	320	100	580	100	1387544
Mercury (Hg)	mg/kg	ND	0.03	0.13	0.06	ND	0.03	1387453

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33073		V33074	V33075	V33076		
Sampling Date		2007/09/03		2007/09/03	2007/09/03	2007/09/03		
COC Number		08453		08453	08453	08453		
Registration #								
	Units	**JW07-ML-PS4**	**RDL**	**JW07-ML-PS5**	**JW07-ML-PS6**	**JW07-ML-PS7**	**RDL**	**QC Batch**
ELEMENTS								
Available Lead (Pb)	mg/kg	120000	1000	22000	31000	790	100	1387544
Mercury (Hg)	mg/kg	0.04	0.03	0.11	0.21	0.88	0.03	1387453

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33077		V33078	V33078		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08453		08453	08453		
Registration #							
	Units	**JW07-ML-PS8**	**QC Batch**	**JW07-ML-PS9**	**JW07-ML-PS9 Lab-Dup**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	2800	1387544	1600	1600	100	1387546
Mercury (Hg)	mg/kg	0.06	1387453	0.25		0.03	1387457

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33079	V33080	V33081	V33082		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS10**	**JW07-ML-PS11**	**JW07-ML-PS12**	**JW07-ML-PS13**	**RDL**	**QC Batch**

ELEMENTS							
Available Lead (Pb)	mg/kg	24000	4200	ND	14000	100	1387546
Mercury (Hg)	mg/kg	0.59	0.23	0.08	0.19	0.03	1387457

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33083	V33084	V33085	V33086		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS14**	**JW07-ML-PS15**	**JW07-ML-PS16**	**JW07-ML-PS17**	**RDL**	**QC Batch**

ELEMENTS							
Available Lead (Pb)	mg/kg	2400	5800	4800	240	100	1387546
Mercury (Hg)	mg/kg	ND	0.05	0.05	1.7	0.03	1387457

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33087	V33088	V33089	V33090		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS18**	**JW07-ML-PS19**	**JW07-ML-PS20**	**JW07-ML-PS21**	**RDL**	**QC Batch**

ELEMENTS							
Available Lead (Pb)	mg/kg	2000	1600	2200	ND	100	1387546
Mercury (Hg)	mg/kg	0.60	0.10	0.23	ND	0.03	1387457

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33091	V33092		V33093		
Sampling Date		2007/09/03	2007/09/03		2007/09/03		
COC Number		08453	08453		08453		
Registration #							
	Units	**JW07-ML-PS22**	**JW07-ML-PS23**	**QC Batch**	**JW07-ML-PS24**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	ND	310	1387546	1100	100	1387546
Mercury (Hg)	mg/kg	ND	0.11	1387457	0.03	0.03	1389321

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33094		V33095	V33096		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08453		08453	08453		
Registration #							
	Units	**JW07-ML-PS25**	**QC Batch**	**JW07-ML-PS26**	**JW07-ML-PS27**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	ND	1387546	ND	650	100	1387546
Mercury (Hg)	mg/kg	0.04	1387457	0.12	0.23	0.03	1388739

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33097	V33098		V33099		
Sampling Date		2007/09/03	2007/09/03		2007/09/03		
COC Number		08453	08453		08453		
Registration #							
	Units	**JW07-ML-PS28**	**JW07-ML-PS29**	**RDL**	**JW07-ML-PS30**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	8100	6500	100	15000	100	1387546
Mercury (Hg)	mg/kg	0.25	0.88	0.03	4.2	0.2	1388739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33100	V33100	V33101		
Sampling Date		2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453		
Registration #						
	Units	**JW07-ML-PS31**	**JW07-ML-PS31 Lab-Dup**	**JW07-ML-PS32**	**RDL**	**QC Batch**
ELEMENTS						
Available Lead (Pb)	mg/kg	24000	25000	140	100	1387872
Mercury (Hg)	mg/kg	0.58		0.38	0.03	1388739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33102		V33103	V33104		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08453		08453	08453		
Registration #							
	Units	**JW07-ML-PS33**	**RDL**	**JW07-ML-PS34**	**JW07-ML-PS35**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	120000	500	730	12000	100	1387872
Mercury (Hg)	mg/kg	0.21	0.03	0.07	0.16	0.03	1388739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33105	V33106	V33107	V33108		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS36**	**JW07-ML-PS37**	**JW07-ML-PS38**	**JW07-ML-PS39**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	24000	4500	8900	250	100	1387872
Mercury (Hg)	mg/kg	0.06	0.13	1.0	0.09	0.03	1388739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33109		V33110		V33111		
Sampling Date		2007/09/03		2007/09/03		2007/09/03		
COC Number		08453		08453		08453		
Registration #								
	Units	**JW07-ML-PS40**	**RDL**	**JW07-ML-PS41**	**RDL**	**JW07-ML-PS42**	**RDL**	**QC Batch**
ELEMENTS								
Available Lead (Pb)	mg/kg	120	100	150000	500	64000	500	1387872
Mercury (Hg)	mg/kg	0.29	0.03	0.58	0.03	11	0.2	1388739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33112		V33113	V33114		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08453		08453	08453		
Registration #							
	Units	**JW07-ML-PS43**	**QC Batch**	**JW07-ML-PS44**	**JW07-ML-PS45**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	5900	1387872	1800	1800	100	1387872
Mercury (Hg)	mg/kg	0.08	1388739	0.77	0.23	0.03	1388743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33115	V33116	V33117		
Sampling Date		2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453		
Registration #						
	Units	**JW07-ML-PS46**	**JW07-ML-PS47**	**JW07-ML-PS48**	**RDL**	**QC Batch**
ELEMENTS						
Available Lead (Pb)	mg/kg	3100	2200	2000	100	1387872
Mercury (Hg)	mg/kg	0.50	0.14	1.4	0.03	1388743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33118		V33119		
Sampling Date		2007/09/03		2007/09/03		
COC Number		08453		08453		
Registration #						
	Units	**JW07-ML-PS49**	**RDL**	**JW07-ML-PS50**	**RDL**	**QC Batch**
ELEMENTS						
Available Lead (Pb)	mg/kg	100000	500	48000	100	1387872
Mercury (Hg)	mg/kg	0.25	0.03	15	0.8	1388743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33120		V33121		
Sampling Date		2007/09/03		2007/09/03		
COC Number		08453		08453		
Registration #						
	Units	**JW07-ML-PSS1**	**RDL**	**JW07-ML-PSS2**	**RDL**	**QC Batch**
ELEMENTS						
Available Lead (Pb)	mg/kg	1900	100	69000	500	1387872
Mercury (Hg)	mg/kg	0.38	0.03	0.13	0.03	1388743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33122	V33122	V33123	V33124		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PSS3**	**JW07-ML-PSS3 Lab-Dup**	**JW07-ML-PSS4**	**JW07-ML-PSS5**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	770	810	1900	5600	50	1388313
Mercury (Hg)	mg/kg	ND		1.1	0.59	0.03	1388743

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33125		V33126		V33127		
Sampling Date		2007/09/03		2007/09/03		2007/09/03		
COC Number		08453		08453		08453		
Registration #								
	Units	**JW07-ML-PSS6**	**RDL**	**JW07-ML-PSS7**	**RDL**	**JW07-WH-PS1**	**RDL**	**QC Batch**

ELEMENTS								
Available Lead (Pb)	mg/kg	480	50	130000	500	2100	50	1388313
Mercury (Hg)	mg/kg	0.08	0.03	0.20	0.03	10	0.2	1388743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33128		V33129		
Sampling Date		2007/09/03		2007/09/03		
COC Number		08453		08453		
Registration #						
	Units	**JW07-BHA-PS1**	**RDL**	**JW07-BHA-PS2**	**RDL**	**QC Batch**

ELEMENTS						
Available Lead (Pb)	mg/kg	4000	50	1900	50	1388313
Mercury (Hg)	mg/kg	18	0.8	9.9	0.2	1388743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33130	V33131		V33132		
Sampling Date		2007/09/03	2007/09/03		2007/09/03		
COC Number		08453	08453		08453		
Registration #							
	Units	**JW07-BHA-PS3**	**JW07-RMM-PS1**	**QC Batch**	**JW07-RMM-PS2**	**RDL**	**QC Batch**

ELEMENTS							
Available Lead (Pb)	mg/kg	420	16000	1388313	110	50	1388313
Mercury (Hg)	mg/kg	1.1	0.42	1388743	ND	0.03	1388745

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33133		V33134	V33135		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08453		08453	08453		
Registration #							
	Units	**JW07-RMM-PS3**	**RDL**	**JW07-RMM-PS4**	**JW07-RMM-PS5**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	1600	50	2700	340	50	1388313
Mercury (Hg)	mg/kg	1.9	0.03	5.8	3.5	0.2	1388745

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33136	V33137	V33138	V33139		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-RMM-PS6**	**JW07-RMM-PS7**	**JW07-RMM-PS8**	**JW07-RMM-PS9**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	2600	ND	80	190	50	1388313
Mercury (Hg)	mg/kg	0.07	0.05	ND	0.04	0.03	1388745

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33140	V33141	V33142	V33143		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-RMM-PS10**	**JW07-RMM-PS11**	**JW07-EM-PS1**	**JW07-EM-PS2**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	71	ND	170	36000	50	1388313
Mercury (Hg)	mg/kg	0.05	ND	0.17	0.19	0.03	1388745

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		V33144	V33144	V33145	V33146		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-EM-PS3**	**JW07-EM-PS3 Lab-Dup**	**JW07-EM-PS4**	**JW07-EM-PS5**	**RDL**	**QC Batch**
ELEMENTS							
Available Lead (Pb)	mg/kg	4800	5000	35000	610	50	1388314
Mercury (Hg)	mg/kg	0.38		0.43	0.10	0.03	1388745

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33147	V33148		
Sampling Date		2007/09/03	2007/09/03		
COC Number		08453	08453		
Registration #					
	Units	**JW07-EM-PS6**	**JW07-EM-PS7**	**RDL**	**QC Batch**
ELEMENTS					
Available Lead (Pb)	mg/kg	150	40000	50	1388314
Mercury (Hg)	mg/kg	0.09	0.21	0.03	1388745

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		V33072	V33072	V33073	V33075		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS3**	**JW07-ML-PS3 Lab-Dup**	**JW07-ML-PS4**	**JW07-ML-PS6**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386117
Surrogate Recovery (%)							
Decachlorobiphenyl	%	39	30	65	58		1386117

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V33077	V33079	V33081	V33083		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS8**	**JW07-ML-PS10**	**JW07-ML-PS12**	**JW07-ML-PS14**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386117
Surrogate Recovery (%)							
Decachlorobiphenyl	%	68	35	45	68		1386117

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		V33085	V33087	V33089	V33090		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS16**	**JW07-ML-PS18**	**JW07-ML-PS20**	**JW07-ML-PS21**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386117
Surrogate Recovery (%)							
Decachlorobiphenyl	%	53	47	50	23 (1)		1386117

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam ID		V33092	V33094	V33096	V33098		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS23**	**JW07-ML-PS25**	**JW07-ML-PS27**	**JW07-ML-PS29**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386117
Surrogate Recovery (%)							
Decachlorobiphenyl	%	47	36	22 (1)	23 (1)		1386117

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		V33100	V33102	V33104	V33106		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS31**	**JW07-ML-PS33**	**JW07-ML-PS35**	**JW07-ML-PS37**	**RDL**	**QC Batch**

PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386117
Surrogate Recovery (%)							
Decachlorobiphenyl	%	41	23 (1)	16 (1)	18 (1)		1386117

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam ID		V33108		V33111	V33111		
Sampling Date		2007/09/03		2007/09/03	2007/09/03		
COC Number		08453		08453	08453		
Registration #							
	Units	**JW07-ML-PS39**	**QC Batch**	**JW07-ML-PS42**	**JW07-ML-PS42 Lab-Dup**	**RDL**	**QC Batch**

PCBs							
Total PCB	mg/kg	ND	1386117	ND	ND	5	1386138
Surrogate Recovery (%)							
Decachlorobiphenyl	%	28 (1)	1386117	19 (1)	18 (2)		1386138

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(2) Please refer to General Comments page for specific clarification.

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		V33113	V33115	V33117	V33119		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PS44**	**JW07-ML-PS46**	**JW07-ML-PS48**	**JW07-ML-PS50**	**RDL**	**QC Batch**

PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386138
Surrogate Recovery (%)							
Decachlorobiphenyl	%	42	22 (1)	54	29 (1)		1386138

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam ID		V33122	V33123	V33124	V33125		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-ML-PSS3**	**JW07-ML-PSS4**	**JW07-ML-PSS5**	**JW07-ML-PSS6**	**RDL**	**QC Batch**

PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386138
Surrogate Recovery (%)							
Decachlorobiphenyl	%	18 (1)	41	20 (1)	28 (1)		1386138

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		V33127	V33128	V33130	V33132		
Sampling Date		2007/09/03	2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453	08453		
Registration #							
	Units	**JW07-WH-PS1**	**JW07-BHA-PS1**	**JW07-BHA-PS3**	**JW07-RMM-PS2**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	ND	ND	ND	ND	5	1386138
Surrogate Recovery (%)							
Decachlorobiphenyl	%	27 (1)	70	80	79		1386138

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam ID		V33134	V33136	V33138		
Sampling Date		2007/09/03	2007/09/03	2007/09/03		
COC Number		08453	08453	08453		
Registration #						
	Units	**JW07-RMM-PS4**	**JW07-RMM-PS6**	**JW07-RMM-PS8**	**RDL**	**QC Batch**
PCBs						
Total PCB	mg/kg	ND	ND	ND	5	1386138
Surrogate Recovery (%)						
Decachlorobiphenyl	%	26 (1)	9.7 (1)	66		1386138

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		V33140		
Sampling Date		2007/09/03		
COC Number		08453		
Registration #				
	Units	**JW07-RMM-PS10**	**RDL**	**QC Batch**

PCBs				
Total PCB	mg/kg	ND	5	1386138
Surrogate Recovery (%)				
Decachlorobiphenyl	%	95		1386138

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B4852
Report Date: 2007/10/25

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

GENERAL COMMENTS

Sample V33071-01: Lead: Elevated detection limit due to blank performance.

Sample V33072-01: Lead: Elevated detection limit due to blank performance.

Sample V33076-01: Lead: Elevated detection limit due to blank performance.

Sample V33093-01: Mercury analysis done on an aliquot of the prepared lead digest due to limited sample.

Results relate only to the items tested.

Jacques Whitford Limited
Attention: Paula Brennan
Client Project #: 1028976/Z9100
P.O. #: NSD016400
Project name: BAIE VERTE/RAMBLER

Quality Assurance Report

Maxxam Job Number: DA7B4852

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1386117 RST	MATRIX SPIKE [V33072-01]	Decachlorobiphenyl	2007/10/25		43	%	30 - 130
		Total PCB	2007/10/25		23 (1)	%	60 - 130
	Spiked Blank	Decachlorobiphenyl	2007/10/25		74	%	30 - 130
		Total PCB	2007/10/25		102	%	60 - 130
	Method Blank	Decachlorobiphenyl	2007/10/25		84	%	30 - 130
		Total PCB	2007/10/25	ND, RDL=5		mg/kg	
	RPD [V33072-01]	Total PCB	2007/10/25	NC		%	50
1386138 RST	MATRIX SPIKE [V33111-01]	Decachlorobiphenyl	2007/10/24		11 (2)	%	30 - 130
		Total PCB	2007/10/24		14 (1)	%	60 - 130
	Spiked Blank	Decachlorobiphenyl	2007/10/24		78	%	30 - 130
		Total PCB	2007/10/24		97	%	60 - 130
	Method Blank	Decachlorobiphenyl	2007/10/24		87	%	30 - 130
		Total PCB	2007/10/24	ND, RDL=5		mg/kg	
	RPD [V33111-01]	Total PCB	2007/10/24	NC		%	50
1387453 SSI	QC STANDARD	Mercury (Hg)	2007/10/22		101	%	75 - 125
	Spiked Blank	Mercury (Hg)	2007/10/22		100	%	75 - 125
	Method Blank	Mercury (Hg)	2007/10/22	ND, RDL=0.03		mg/kg	
1387457 SSI	QC STANDARD	Mercury (Hg)	2007/10/22		105	%	75 - 125
	Spiked Blank	Mercury (Hg)	2007/10/22		104	%	75 - 125
	Method Blank	Mercury (Hg)	2007/10/22	ND, RDL=0.03		mg/kg	
1387544 MLB	MATRIX SPIKE	Available Lead (Pb)	2007/10/22		97	%	75 - 125
	QC STANDARD	Available Lead (Pb)	2007/10/22		107	%	75 - 125
	Spiked Blank	Available Lead (Pb)	2007/10/22		92	%	75 - 125
	Method Blank	Available Lead (Pb)	2007/10/22	ND, RDL=50		mg/kg	
	RPD	Available Lead (Pb)	2007/10/22	NC		%	25
1387546 MLB	MATRIX SPIKE [V33078-01]	Available Lead (Pb)	2007/10/22		80	%	75 - 125
	QC STANDARD	Available Lead (Pb)	2007/10/22		98	%	75 - 125
	Spiked Blank	Available Lead (Pb)	2007/10/22		97	%	75 - 125
	Method Blank	Available Lead (Pb)	2007/10/22	ND, RDL=50		mg/kg	
	RPD [V33078-01]	Available Lead (Pb)	2007/10/22	1.9		%	25
1387872 MLB	MATRIX SPIKE [V33100-01]	Available Lead (Pb)	2007/10/22		NC	%	75 - 125
	QC STANDARD	Available Lead (Pb)	2007/10/22		95	%	75 - 125
	Spiked Blank	Available Lead (Pb)	2007/10/22		86	%	75 - 125
	Method Blank	Available Lead (Pb)	2007/10/22	ND, RDL=50		mg/kg	
	RPD [V33100-01]	Available Lead (Pb)	2007/10/22	3.7		%	25
1388313 MLB	MATRIX SPIKE [V33122-01]	Available Lead (Pb)	2007/10/23		82	%	75 - 125
	QC STANDARD	Available Lead (Pb)	2007/10/23		107	%	75 - 125
	Spiked Blank	Available Lead (Pb)	2007/10/23		95	%	75 - 125
	Method Blank	Available Lead (Pb)	2007/10/23	ND, RDL=50		mg/kg	
	RPD [V33122-01]	Available Lead (Pb)	2007/10/23	4.3		%	25
1388314 MLB	MATRIX SPIKE [V33144-01]	Available Lead (Pb)	2007/10/23		NC	%	75 - 125
	QC STANDARD	Available Lead (Pb)	2007/10/23		100	%	75 - 125
	Spiked Blank	Available Lead (Pb)	2007/10/23		90	%	75 - 125
	Method Blank	Available Lead (Pb)	2007/10/23	ND, RDL=50		mg/kg	
	RPD [V33144-01]	Available Lead (Pb)	2007/10/23	3.8		%	25
1388739 SSI	QC STANDARD	Mercury (Hg)	2007/10/23		92	%	75 - 125
	Spiked Blank	Mercury (Hg)	2007/10/23		96	%	75 - 125
	Method Blank	Mercury (Hg)	2007/10/23	ND, RDL=0.03		mg/kg	
1388743 SSI	QC STANDARD	Mercury (Hg)	2007/10/23		97	%	75 - 125

Quality Assurance Report (Continued)

Maxxam Job Number: DA7B4852

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1388743 SSI	Spiked Blank	Mercury (Hg)	2007/10/23		98	%	75 - 125
	Method Blank	Mercury (Hg)	2007/10/23	ND, RDL=0.03		mg/kg	
1388745 SSI	QC STANDARD	Mercury (Hg)	2007/10/23		91	%	75 - 125
	Spiked Blank	Mercury (Hg)	2007/10/23		102	%	75 - 125
	Method Blank	Mercury (Hg)	2007/10/23	ND, RDL=0.03		mg/kg	
1389321 SSI	Method Blank	Mercury (Hg)	2007/10/24	ND, RDL=0.03		mg/kg	

ND = Not detected
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample
(1) Matrix Spike: results are outside acceptance limit. Analysis was repeated with similar results.
(2) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Your P.O. #: NSD016300
Your Project #: 1028976/Z9100
Site: BAIE VERT/RAMBLER
Your C.O.C. #: N/A

Attention: Paula Brennan
Jacques Whitford Limited
St. John's - Standing Offer
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2007/12/05
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A7B9289
Received: 2007/10/29, 10:34

Sample Matrix: Leachate
Samples Received: 52

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Mercury - Total (CVAA,LL)	3	N/A	2007/11/05	ATL SOP 00026 R2	Based on EPA245.1
Metals Water Total OES - Partial Scan	16	N/A	2007/11/02	ATL SOP 00025 R3	Based on EPA200.7
Metals Water Total OES - Partial Scan	4	N/A	2007/11/05	ATL SOP 00025 R3	Based on EPA200.7
Metals Water Total OES - Partial Scan	32	N/A	2007/11/06	ATL SOP 00025 R3	Based on EPA200.7

Sample Matrix: Paint
Samples Received: 56

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Asbestos (1)	2	N/A	2007/11/05	ATL SOP-00174	Based on NIOSH9002
Moisture	56	N/A	2007/10/30	ATL SOP 00001 R2	MOE Handbook 1983
TCLP Inorganic extraction - pH	52	N/A	2007/11/02	4100_1_1	Based on EPA1311
TCLP Inorganic extraction - Weight	52	N/A	2007/11/02	4100_1_1	Based on EPA1311

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Sydney, NS (ESL)

Sharlene Baird
Sharlene Baird
05 Dec 2007 16:10:55 -04:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

SHARLENE BAIRD, Project Manager
Email: sharlene.baird.reports@maxxamanalytics.com
Phone# (902) 420-0203

Your P.O. #: NSD016300
Your Project #: 1028976/Z9100
Site: BAIE VERT/RAMBLER
Your C.O.C. #: N/A

Attention: Paula Brennan
Jacques Whitford Limited
St. John's - Standing Offer
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2007/12/05

CERTIFICATE OF ANALYSIS

-2-

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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 CAEAL have approved this reporting process and electronic report format.

Total cover pages: 2

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53100	V53101		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS4 (P#V33073)**	**JW07-ML-PS5 (P#V33074)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	37	10	0.5	1396839

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53102	V53103		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS6 (P#V33075)**	**JW07-ML-PS7 (P#V33076)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	5.5	ND	0.5	1396839

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53104	V53104		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS8 (P#V33077)**	**JW07-ML-PS8 (P#V33077) Lab-Dup**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	0.8	1.0	0.5	1396839

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53105	V53107		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS9 (P#V33078)**	**JW07-ML-PS11 (P#V33080)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	ND	0.5	1396839

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53108	V53109		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS13 (P#V33082)**	**JW07-ML-PS14 (P#V33083)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	2.0	ND	0.5	1396839

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53110	V53111		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS15 (P#V33084)**	**JW07-ML-PS16 (P#V33085)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	0.6	6.3	0.5	1396839

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53112	V53113		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS18 (P#V33087)**	**JW07-ML-PS19 (P#V33088)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	0.8	0.7	0.5	1396839

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53114	V53116		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS20 (P#V33089)**	**JW07-ML-PS27 (P#V33096)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	1.9	0.5	1396839

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53117		V53118		
Sampling Date		2007/09/07		2007/09/07		
COC Number		N/A		N/A		
Registration #						
	Units	**JW07-ML-PS28 (P#V33097)**	**QC Batch**	**JW07-ML-PS29 (P#V33098)**	**RDL**	**QC Batch**

Elements (ICP-OES)						
Total Lead (Pb)	mg/L	3.5	1396839	1.2	0.5	1397224

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53119	V53120		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS30 (P#V33099)**	**JW07-ML-PS31 (P#V33100)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	1.8	ND	0.5	1397224

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53120	V53121		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS31 (P#V33100) Lab-Dup**	**JW07-ML-PS33 (P#V33102)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	4.9	0.5	1397224

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53122	V53123		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS34 (P#V33103)**	**JW07-ML-PS35 (P#V33104)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	1.3	13	0.5	1397224

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53124	V53124		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS36 (P#V33105)**	**JW07-ML-PS36 (P#V33105) Lab-Dup**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	0.5	0.5	1397224

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53125	V53126		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS37 (P#V33106)**	**JW07-ML-PS38 (P#V33107)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	2.6	0.6	0.5	1397224

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53127	V53128		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS41 (P#V33110)**	**JW07-ML-PS42 (P#V33111)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	17	2.4	0.5	1397224

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53129	V53130		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS43 (P#V33112)**	**JW07-ML-PS44 (P#V33113)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	4.8	0.8	0.5	1397224

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53131	V53132		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS45 (P#V33114)**	**JW07-ML-PS46 (P#V33115)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	1.1	2.8	0.5	1397224

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53133	V53136		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS47 (P#V33116)**	**JW07-ML-PS50 (P#V33119)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	9.7	0.9	0.5	1398901

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53137	V53138		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS51 (P#V33120)**	**JW07-ML-PS52 (P#V33121)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	0.7	1.7	0.5	1398901

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53139	V53140		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS54 (P#V33123)**	**JW07-ML-PS55 (P#V33124)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	0.7	0.8	0.5	1398901

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53141	V53142		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS57 (P#V33126)**	**JW07-WH-PS1 (P#V33127)**	**RDL**	**QC Batch**
Elements (ICP-OES)					
Total Lead (Pb)	mg/L	3.0	ND	0.5	1398901

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53143	V53144		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-BHA-PS1 (P#V33128)**	**JW07-BHA-PS2 (P#V33129)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	0.5	ND	0.5	1398901

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53145	V53146		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-RMM-PS1 (P#V33131)**	**JW07-RMM-PS3 (P#V33133)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	9.4	ND	0.5	1398901

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53147	V53148		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-RMM-PS4 (P#V33134)**	**JW07-RMM-PS6 (P#V33136)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	0.6	0.5	1398901

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (LEACHATE)

Maxxam ID		V53149	V53150		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-RMM-PS10 (P#V33140)**	**JW07-EM-PS2 (P#V33143)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	15	0.5	1398901

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53151	V53152		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-EM-PS3 (P#V33144)**	**JW07-EM-PS4 (P#V33145)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	2.9	8.4	0.5	1397990

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53153	V53154		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-EM-PS5 (P#V33146)**	**JW07-EM-PS7 (P#V33148)**	**RDL**	**QC Batch**

Elements (ICP-OES)					
Total Lead (Pb)	mg/L	ND	15	0.5	1397990

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53083	V53100		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS1 (P#V33041)**	**JW07-ML-PS4 (P#V33073)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g		2.5	N/A	1396519
Initial pH	N/A		NA		1396511
Final pH	N/A		5.0		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53101	V53102		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS5 (P#V33074)**	**JW07-ML-PS6 (P#V33075)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	20	2.5	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.0	5.1		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53103	V53104		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS7 (P#V33076)**	**JW07-ML-PS8 (P#V33077)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	20	2.5	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.1	5.2		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53104	V53105		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS8 (P#V33077) Lab-Dup**	**JW07-ML-PS9 (P#V33078)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%		ND	1	1393106
Sample Weight (as received)	g	2.5	20	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.2	5.1		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53106	V53107		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS10 (P#V33079)**	**JW07-ML-PS11 (P#V33080)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g		10	N/A	1396519
Initial pH	N/A		NA		1396511
Final pH	N/A		5.3		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53108	V53109		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS13 (P#V33082)**	**JW07-ML-PS14 (P#V33083)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	10	20	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.0	5.0		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53110	V53111		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS15 (P#V33084)**	**JW07-ML-PS16 (P#V33085)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	2.5	10	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.7	5.0		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53112	V53113		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS18 (P#V33087)**	**JW07-ML-PS19 (P#V33088)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	20	10	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.0	5.5		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53114	V53115		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS20 (P#V33089)**	**JW07-ML-PS24 (P#V33093)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	2.5		N/A	1396519
Initial pH	N/A	NA			1396511
Final pH	N/A	5.0			1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53116	V53117		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS27 (P#V33096)**	**JW07-ML-PS28 (P#V33097)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	2.5	10	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.0	5.6		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53118	V53119		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS29 (P#V33098)**	**JW07-ML-PS30 (P#V33099)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393106
Sample Weight (as received)	g	2.5	10	N/A	1396519
Initial pH	N/A	NA	NA		1396511
Final pH	N/A	5.1	5.3		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53120	V53120		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS31 (P#V33100)**	**JW07-ML-PS31 (P#V33100) Lab-Dup**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND		1	1393106
Sample Weight (as received)	g	20	20	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.4	5.3		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53121		
Sampling Date		2007/09/07		
COC Number		N/A		
Registration #				
	Units	**JW07-ML-PS33 (P#V33102)**	**RDL**	**QC Batch**

INORGANICS				
Moisture	%	ND	1	1393116
Sample Weight (as received)	g	2.5	N/A	1396519
Initial pH	N/A	NA		1396511
Final pH	N/A	5.0		1396511

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53122	V53123		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS34 (P#V33103)**	**JW07-ML-PS35 (P#V33104)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	10	2.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.0	5.1		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53124	V53124		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS36 (P#V33105)**	**JW07-ML-PS36 (P#V33105) Lab-Dup**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND		1	1393116
Sample Weight (as received)	g	2.5	2.5	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	5.3	5.2		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53125	V53126		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS37 (P#V33106)**	**JW07-ML-PS38 (P#V33107)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5	2.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.1	5.1		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53127	V53128		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS41 (P#V33110)**	**JW07-ML-PS42 (P#V33111)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	1.6	10	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.0	5.3		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53129	V53130		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS43 (P#V33112)**	**JW07-ML-PS44 (P#V33113)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5	2.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.0	5.7		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53131	V53132		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS45 (P#V33114)**	**JW07-ML-PS46 (P#V33115)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5	2.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.2	5.2		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53133	V53134		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS47 (P#V33116)**	**JW07-ML-PS48 (P#V33117)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5		N/A	1396522
Initial pH	N/A	NA			1396512
Final pH	N/A	5.3			1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53135	V53136		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS49 (P#V33118)**	**JW07-ML-PS50 (P#V33119)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5	8.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.0	5.1		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53137	V53138		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS51 (P#V33120)**	**JW07-ML-PS52 (P#V33121)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5	2.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.2	4.9		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53139	V53140		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS54 (P#V33123)**	**JW07-ML-PS55 (P#V33124)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	10	2.5	N/A	1396522
Initial pH	N/A	NA	NA		1396512
Final pH	N/A	5.0	5.1		1396512

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53141	V53142		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS57 (P#V33126)**	**JW07-WH-PS1 (P#V33127)**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	ND	ND	1	1393116
Sample Weight (as received)	g	2.5	10	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	5.0	5.4		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53143	V53144		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-BHA-PS1 (P#V33128)**	**JW07-BHA-PS2 (P#V33129)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393122
Sample Weight (as received)	g	20	20	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	6.0	5.6		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53145	V53146		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-RMM-PS1 (P#V33131)**	**JW07-RMM-PS3 (P#V33133)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393122
Sample Weight (as received)	g	2.5	2.5	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	5.1	5.8		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
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Sampler Initials:

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53147	V53148		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-RMM-PS4 (P#V33134)**	**JW07-RMM-PS6 (P#V33136)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393122
Sample Weight (as received)	g	20	10	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	5.0	5.0		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53149	V53150		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-RMM-PS10 (P#V33140)**	**JW07-EM-PS2 (P#V33143)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393122
Sample Weight (as received)	g	2.5	2.5	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	6.0	5.2		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ATLANTIC TCLP LEACHATE + LEAD ICP-OES (PAINT)

Maxxam ID		V53151	V53152		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-EM-PS3 (P#V33144)**	**JW07-EM-PS4 (P#V33145)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393122
Sample Weight (as received)	g	2.5	2.5	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	5.1	5.0		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53153	V53154		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-EM-PS5 (P#V33146)**	**JW07-EM-PS7 (P#V33148)**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1393122
Sample Weight (as received)	g	20	2.5	N/A	1396523
Initial pH	N/A	NA	NA		1396516
Final pH	N/A	6.5	5.1		1396516

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
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Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (LEACHATE)

Maxxam ID		V53128	V53135		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS42 (P#V33111)**	**JW07-ML-PS49 (P#V33118)**	**RDL**	**QC Batch**
ELEMENTS					
Total Mercury (Hg)	ug/L	0.26		0.01	1398445
Elements (ICP-OES)					
Total Lead (Pb)	mg/L		2.7	0.5	1398901

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		V53136	V53142		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS50 (P#V33119)**	**JW07-WH-PS1 (P#V33127)**	**RDL**	**QC Batch**
ELEMENTS					
Total Mercury (Hg)	ug/L	0.33	0.07	0.01	1398445

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7B9289
Report Date: 2007/12/05

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERT/RAMBLER
Your P.O. #: NSD016300
Sampler Initials:

RESULTS OF ANALYSES OF PAINT

Maxxam ID		V53106	V53134		
Sampling Date		2007/09/07	2007/09/07		
COC Number		N/A	N/A		
Registration #					
	Units	**JW07-ML-PS10 (P#V33079)**	**JW07-ML-PS48 (P#V33117)**	**RDL**	**QC Batch**
INORGANICS					
Asbestos	%	(1-5)	(1-5)	1	1398089
Chrysotile Asbestos	%	(1-5)	(1-5)	1	1398089
Amosite Asbestos	%	ND	ND	1	1398089
Crocidolite Asbestos	%	ND	ND	1	1398089
Tremolite Asbestos	%	ND	ND	1	1398089
Cellulose	%	(5-10)	(10-20)	1	1398089
Mineral Wool	%	ND	ND	1	1398089
Glass Fibres	%	(5-10)	ND	1	1398089
Hair	%	ND	ND	1	1398089
Miscellaneous Fibres	%	ND	ND	1	1398089

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

GENERAL COMMENTS

Sample V53083-01: Moisture value reported is a visual estimate for calculation purposes.

Sample V53100-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53101-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53102-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53103-00: Lead: Elevated detection limit due to matrix interference.

Sample V53103-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53104-00: Lead: Elevated detection limit due to matrix interference.

Sample V53104-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53105-00: Lead: Elevated detection limit due to matrix interference.

Sample V53105-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53106-01: Moisture value reported is a visual estimate for calculation purposes.

Sample V53107-00: Lead: Elevated detection limit due to matrix interference.

Sample V53107-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53108-00: Lead: Elevated detection limit due to matrix interference.

Sample V53108-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53109-00: Lead: Elevated detection limit due to matrix interference.

Sample V53109-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53110-00: Lead: Elevated detection limit due to matrix interference.

Sample V53110-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53111-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53112-00: Lead: Elevated detection limit due to matrix interference.

Sample V53112-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53113-00: Lead: Elevated detection limit due to matrix interference.

Sample V53113-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53114-00: Lead: Elevated detection limit due to matrix interference.

Sample V53114-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53115-01: Moisture value reported is a visual estimate for calculation purposes.

Sample V53116-00: Lead: Elevated detection limit due to matrix interference.

Sample V53116-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53117-00: Lead: Elevated detection limit due to matrix interference.

Sample V53117-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53118-00: Lead: Elevated detection limit due to matrix interference.

Sample V53118-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53119-00: Lead: Elevated detection limit due to matrix interference.

Sample V53119-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53120-00: Lead: Elevated detection limit due to matrix interference.

Sample V53120-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53121-00: Lead: Elevated detection limit due to matrix interference.

Sample V53121-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53122-00: Lead: Elevated detection limit due to matrix interference.

Sample V53122-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53123-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53124-00: Lead: Elevated detection limit due to matrix interference.

Sample V53124-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53125-00: Lead: Elevated detection limit due to matrix interference.

Sample V53125-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53126-00: Lead: Elevated detection limit due to matrix interference.

Sample V53126-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53127-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53128-00: Lead: Elevated detection limit due to matrix interference.

Sample V53128-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53129-00: Lead: Elevated detection limit due to matrix interference.

Sample V53129-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53130-00: Lead: Elevated detection limit due to matrix interference.

Sample V53130-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53131-00: Lead: Elevated detection limit due to matrix interference.

Sample V53131-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53132-00: Lead: Elevated detection limit due to matrix interference.

Sample V53132-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53133-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53134-01: Moisture value reported is a visual estimate for calculation purposes.

Sample V53135-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53136-00: Lead: Elevated detection limit due to matrix interference.

Sample V53136-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53137-00: Lead: Elevated detection limit due to matrix interference.

Sample V53137-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53138-00: Lead: Elevated detection limit due to matrix interference.

Sample V53138-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53139-00: Lead: Elevated detection limit due to matrix interference.

Sample V53139-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53140-00: Lead: Elevated detection limit due to matrix interference.

Sample V53140-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53141-00: Lead: Elevated detection limit due to matrix interference.

Sample V53141-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53142-00: Lead: Elevated detection limit due to matrix interference.

Sample V53142-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53143-00: Lead: Elevated detection limit due to matrix interference.

Sample V53143-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53144-00: Lead: Elevated detection limit due to matrix interference.

Sample V53144-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53145-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53146-00: Lead: Elevated detection limit due to matrix interference.

Sample V53146-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53147-00: Lead: Elevated detection limit due to matrix interference.

Sample V53147-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53148-00: Lead: Elevated detection limit due to matrix interference.

Sample V53148-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53149-00: Lead: Elevated detection limit due to matrix interference.

Sample V53149-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53150-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53151-00: Lead: Elevated detection limit due to matrix intereference.

Sample V53151-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53152-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53153-00: Lead: Elevated detection limit due to matrix intereference.

Sample V53153-01: Moisture value reported is a visual estimate for calculation purposes.

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 V53154-01: Moisture value reported is a visual estimate for calculation purposes.

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.

Jacques Whitford Limited
Attention: Paula Brennan
Client Project #: 1028976/Z9100
P.O. #: NSD016300
Project name: BAIE VERT/RAMBLER

Quality Assurance Report

Maxxam Job Number: DA7B9289

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1396519 AMC	RPD [V53104-01]	Sample Weight (as received)	2007/11/02	0		%	N/A
1396522 AMC	RPD [V53120-01]	Sample Weight (as received)	2007/11/02	0		%	N/A
1396523 AMC	RPD [V53124-01]	Sample Weight (as received)	2007/11/02	0		%	N/A
1396839 MLB	MATRIX SPIKE	Total Lead (Pb)	2007/11/02		93	%	80 - 120
	QC STANDARD	Total Lead (Pb)	2007/11/02		85	%	80 - 120
	Spiked Blank	Total Lead (Pb)	2007/11/02		92	%	80 - 120
	Method Blank	Total Lead (Pb)	2007/11/02	ND, RDL=0.05		mg/L	
	RPD [V53104-00]	Total Lead (Pb)	2007/11/02	NC		%	25
1397224 MLB	MATRIX SPIKE	Total Lead (Pb)	2007/11/06		94	%	80 - 120
	QC STANDARD	Total Lead (Pb)	2007/11/06		82	%	80 - 120
	Spiked Blank	Total Lead (Pb)	2007/11/06		90	%	80 - 120
	Method Blank	Total Lead (Pb)	2007/11/06	ND, RDL=0.05		mg/L	
	RPD [V53120-00]	Total Lead (Pb)	2007/11/06	NC		%	25
	RPD [V53124-00]	Total Lead (Pb)	2007/11/06	NC		%	25
1397990 MLB	MATRIX SPIKE	Total Lead (Pb)	2007/11/05		98	%	80 - 120
	QC STANDARD	Total Lead (Pb)	2007/11/05		114	%	80 - 120
	Spiked Blank	Total Lead (Pb)	2007/11/05		92	%	80 - 120
	Method Blank	Total Lead (Pb)	2007/11/05	ND, RDL=0.05		mg/L	
1398445 AMC	QC STANDARD	Total Mercury (Hg)	2007/11/05		100	%	80 - 120
	Spiked Blank	Total Mercury (Hg)	2007/11/05		102	%	80 - 120
	Method Blank	Total Mercury (Hg)	2007/11/05	ND, RDL=0.013		ug/L	
	RPD	Total Mercury (Hg)	2007/11/05	NC		%	25
1398901 MLB	MATRIX SPIKE	Total Lead (Pb)	2007/11/06		98	%	80 - 120
	QC STANDARD	Total Lead (Pb)	2007/11/06		112	%	80 - 120
	Spiked Blank	Total Lead (Pb)	2007/11/06		87	%	80 - 120
	Method Blank	Total Lead (Pb)	2007/11/06	ND, RDL=0.05		mg/L	

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample

Your P.O. #: NSD016400
Your Project #: 1028976/Z9100
Site: BAIE VERTE/RAMBLER
Your C.O.C. #: 12188

Attention: Paula Brennan
Jacques Whitford Limited
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2007/11/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A7C6759
Received: 2007/11/15, 10:59

Sample Matrix: Leachate
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Metals Water Total OES - Partial Scan	2	N/A	2007/11/21	ATL SOP 00025 R3	Based on EPA200.7

Sample Matrix: Solid Waste
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture	2	N/A	2007/11/16	ATL SOP 00001 R2	MOE Handbook 1983
TCLP Inorganic extraction - pH	2	N/A	2007/11/20	4100_1_1	Based on EPA1311
TCLP Inorganic extraction - Weight	2	N/A	2007/11/20	4100_1_1	Based on EPA1311

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Sara Nicholson
Encryption Key
Sara Nicholson
22 Nov 2007 11:16:22 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

SHARLENE BAIRD, Project Manager
Email: sharlene.baird.reports@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 CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A7C6759
Report Date: 2007/11/22

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (LEACHATE)

Maxxam ID		V87412		V87413		
Sampling Date		2007/11/08		2007/11/08		
COC Number		12188		12188		
Registration #						
	Units	**JW07-ML-PS1**	**RDL**	**JW07-ML-PS24**	**RDL**	**QC Batch**

Elements (ICP-OES)						
Total Lead (Pb)	mg/L	ND	0.5	0.2	0.1	1409998

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7C6759
Report Date: 2007/11/22

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

RESULTS OF ANALYSES OF SOLID WASTE

Maxxam ID		V87412	V87413		
Sampling Date		2007/11/08	2007/11/08		
COC Number		12188	12188		
Registration #					
	Units	**JW07-ML-PS1**	**JW07-ML-PS24**	**RDL**	**QC Batch**

INORGANICS					
Moisture	%	ND	ND	1	1406870
Sample Weight (as received)	g	50	44	N/A	1408973
Initial pH	N/A	NA	NA		1408970
Final pH	N/A	5.6	5.0		1408970

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A7C6759
Report Date: 2007/11/22

Jacques Whitford Limited
Client Project #: 1028976/Z9100
Project name: BAIE VERTE/RAMBLER
Your P.O. #: NSD016400
Sampler Initials:

GENERAL COMMENTS

Sample V87412-00: Lead: Elevated detection limit due to matrix interference.

Sample V87412-01: Moisture value reported is a visual estimate for calculation purposes.

Sample V87413-00: Lead: Elevated detection limit due to blank performance.

Sample V87413-01: Moisture value reported is a visual estimate for calculation purposes.

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.

Jacques Whitford Limited
Attention: Paula Brennan
Client Project #: 1028976/Z9100
P.O. #: NSD016400
Project name: BAIE VERTE/RAMBLER

Quality Assurance Report

Maxxam Job Number: DA7C6759

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1409998 MLB	MATRIX SPIKE	Total Lead (Pb)	2007/11/21		93	%	80 - 120
	QC STANDARD	Total Lead (Pb)	2007/11/21		100	%	80 - 120
	Spiked Blank	Total Lead (Pb)	2007/11/21		88	%	80 - 120
	Method Blank	Total Lead (Pb)	2007/11/21	ND, RDL=0.05		mg/L	

ND = Not detected
QC Standard = Quality Control Standard
SPIKE = Fortified sample