Report No. 073064

Prepared for:
Department of Agriculture

# Mud Lake Road Agricultural Reserve

## Phase II – Sampling Results

February 2008

# Contents

## Executive Summary

In December of 2006, the initial work to complete a Phase I Environmental Site Assessment (Phase I ESA) was completed. This work was triggered as a result of concerns that there may be contamination issued relating to this area. A thorough inspection of the area by snowmobile was completed. Unfortunately, due to snow accumulation and the amount of frost, it was not possible to identify areas of stressed vegetation, surface staining or water bodies. The remainder of the work required for a Phase I ESA was completed. Time was also required to ensure that all snow melt had occurred to determine usable surface water supplies and vegetation that was going to grow back after the snow and the frost had the opportunity.

On August 3, 2007 a fly over of the area took place in a helicopter. The fly over allowed a CBCL Limited field technologist to cover the entire project area, including areas that were not safely accessible by foot. During the flight, areas for soil samples and water samples were identified. Areas containing surface debris were selected for soil samples, and an area with running surface water was selected for sampling.

The field program also included a thorough of the area during sample collection. All sample bottles were clearly labelled and stored in a cooler at 4ºC until they were refrigerated and repacked for shipment to the laboratory. Chain of custody forms were completed at the end of each day, and bottles were prepared for the following sampling day so that field time could be used efficiently.

The aerial inspection identified five soil sample locations and one surface water location. With only a few indiscriminate debris sites, the landscape resembles the majority of semi-wilderness areas within the province. The five sample locations are located in lots 2, 4, 6, and 11. As stressed vegetation was not evident, the sample locations were selected because of surface debris in the vicinity. A sixth location was selected in lot number 14 as it located at the end of the resource road, with easy access to all residents of the area. There was only one location identified as suitable to collect a surface water sample. It is located in the top right corner of lot number 16. This area contained running water and was located within the study area. Overall, the landscape appeared to be void of human activity.

Soil samples were analysed for BTEX/TPH, Metals, Polychlorinated Biphenyls, Volatile Organic Compounds and a screen for Polycyclic Aromatic Hydrocarbons. The surface water sample was analysed for General Chemistry, Metals, Pesticides, Volatile Organic Compounds, and a screen for Polycyclic Aromatic Hydrocarbons. There were no exceedences identified for any of parameters analysed.

# Chapter 1 Introduction

CBCL Limited was retained by the Department of Agriculture, Land Resources Stewardship Division to complete additional work at the Mud Lake Road Agricultural Reserve in Happy Valley – Goose Bay, Newfoundland and Labrador. The additional work to be completed was the collection of soil and water samples throughout the area.

## 1.1 Background

The Lake Melville Ecoregion includes the Churchill River Valley and the coastal plain surrounding Lake Melville. The River terraces are composed of coarse textured, alluvial soils, while the uplands have shallow, well-drained soils. A soil survey of an area east of Happy Valley – Goose Bay has identified the majority of the soils falling into one of the two following categories: little or nor limitations, or moderate limitations. The soils were evaluated for forage crops, potato and cole crops. Typically, the last frost date in early June and the first frost date is mid-September, allowing for approximately 100 frost free days.

In December of 2006, the initial work to complete a Phase I Environmental Site Assessment (Phase I ESA) was completed. This work was triggered as a result of concerns that there may be contamination issued relating to this area. A thorough inspection of the area by snowmobile was completed. Unfortunately, due to snow accumulation and the amount of frost, it was not possible to identify areas of stressed vegetation, surface staining or water bodies. The remainder of the work required for a Phase I ESA was completed. Time was also required to ensure that all snow melt had occurred to determine usable surface water supplies and vegetation that was going to grow back after the snow and the frost had the opportunity.

## 1.2 Limiting Conditions

*This report and the information contained herein is not to be construed as legal advice, or as a guarantee or warranty regarding the potential liability associated with site environmental conditions or impacts.*

The conclusions presented in this report are indicative of observations recorded at the time and place noted and represent our professional opinion, in light of the terms of reference, scope of work, and any limiting conditions noted herein.

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

# Chapter 2 Methodology

The following section will outline the process used to determine sample locations and process used to collect samples.

## 2.1 Document Review

The following is a list of documents that were reviewed during this phase of the work:

- Phase I Environmental Site Assessment Mud Lake Road Agricultural Reserve. CBCL Limited. February 2007.
- Call for Proposals, Crown Land Agricultural Lease, Mud Lake Road – Happy Valley – Goose Bay: Phase II (Lots 1 – 4, 7 & 8). Land Resource Stewardship Division, Department of Natural Resources, June 2006.
- Mud Lake Road Agricultural Reserve, Historical Resources Impact Assess, Permit Nos 05-14 & 05-14-01. John Erwin Ph.D. June 6, 2005.
- Soils of the Happy Valley East Area, Labrador, Soil Survey Report. Soil & Land Management Division, Department of Forest Resources & Agrifoods. Rick St. Croix. February 2002.
- The Hydrology of Labrador. Water Resources Division, Department of Environment.

## 2.2 Aerial Inspection

On August 3, 2007 a fly over of the area took place in a helicopter. The fly over allowed a CBCL Limited field technologist to cover the entire project area, including areas that were not safely accessible by foot. During the flight, areas for soil samples and water samples were identified. Areas containing surface debris were selected for soil samples, and an area with running surface water was selected for sampling.

## 2.3 Field Program

The field program also included a thorough of the area during sample collection. All sample bottles were clearly labelled and stored in a cooler at 4ºC until they were refrigerated and repacked for shipment to the laboratory. Chain of custody forms were completed at the end of each day, and bottles were prepared for the following sampling day so that field time could be used efficiently.

Soil samples were collected at a depth of 36 – 51 cm. Samples were collected with a stainless steel spade that was thoroughly cleaned between samples. Care was taken to ensure very little moisture content and minimal head space in each sample jar.

The CBCL field team collected the surface water sample in the appropriate laboratory provided bottles, following all laboratory requests and CCME sampling protocols. Samples were taken at a maximum depth of 30 cm. In the event that a bottle contained a preservative, water was collected in a bottle that did not contain preservative and decanted into the sample bottle. Some samples required preservatives to be added after the samples were obtained, and therefore the preservatives were added in the field while taking appropriate precautions. Nitric acid was added to each of the vial collected for metals. Vials for VOC analysis contained Sodium Bisulfate added at the laboratory, 40mL vials for BTEX/TPH contained Copper Sulfate added at the laboratory and bottles for mercury analysis contained potassium dichromate

in nitric acid solution added at the laboratory. Samples were submitted to the laboratory for total metals analyses, negating the need for filtration.

The chemical results were organized into an existing Microsoft Excel database, and compared to the relevant guidelines as outlined in Section 2.3.1.

The laboratory used for chemical analyses was Maxxam Analytics Inc.

### *2.3.1 Guidelines*

The surface water sample that was collected was compared to the Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses. Irrigation water. October 2005.

Soil samples collected for BTEX/TPH (Benzne, Toluene, Ethylbenzene, Xylene/Total Petroleum Hydrocarbons) were compared to the Atlantic Risk Based Corrective Action Tier I Guidelines for Commercial, non-potable, coarse-grained soils. March 2007.

The remainder of the soil samples collected were compared to the Canadian Soil Quality Guidelines for the Protection for Environmental and Human Health, Agricultural, coarse-grained soil. September 2007. Theses guidelines were released in November 2007.

# Chapter 3 Results

## 3.1 Aerial Inspection

The aerial inspection identified five soil sample locations and one surface water location. With only a few indiscriminate debris sites, the landscape resembles the majority of semi-wilderness areas within the province. The five sample locations are located in lots 2, 4, 6, and 11. As stressed vegetation was not evident, the sample locations were selected because of surface debris in the vicinity. A sixth location was selected in lot number 14 as it located at the end of the resource road, with easy access to all residents of the area.

There was only one location identified as suitable to collect a surface water sample. It is located in the top right corner of lot number 16. This area contained running water and was located within the study area.

Overall, the landscape appeared to be void of human activity. A compact disc containing the video taken during the fly over is located in Appendix A. To view the video Quicktime software is required. A map with sample locations is identified is located in Appendix B. Photos of the sample locations are located in Appendix C.

## 3.2 Field Program

There were no exceedences identified for any of parameters analysed.

Soil samples were analysed for BTEX/TPH, Metals, Polychlorinated Biphenyls, Volatile Organic Compounds and a screen for Polycyclic Aromatic Hydrocarbons.

The surface water sample was analysed for General Chemistry, Metals, Pesticides, Volatile Organic Compounds, and a screen for Polycyclic Aromatic Hydrocarbons.

Appendix D contains the tables used to interpret the sample laboratory analysis. The raw data provided by the laboratory in located in Appendix E.

# Chapter 4 Recommendations

The following is a list of recommendations for future years:

- As the area is easily accessible to the majority of residents, it is recommended that a site visit be completed each year to identify areas stressed vegetation or surface debris sites.

# Appendix A
# CD with Aerial Video

# Appendix B
# Map


CLW 8.5
CLW 3.2
ORG 375.1
CLW 13.7
CLW 5.3
CLW 24.0
CRR 17.6
CRL 15
ORG 5.8
ORG 30.4
ORG 16.3
CLW 7.7
CLW 8.7
CRL 12.8
CLW6CRL4 58.8
ORG 90.0
CRL7CLW3 26.9
Surface Water #1
ORG 22.3
Soil #5
CLW 11.2
CLW 58.
CRL 14.4
CLW7ORG3 26.7
Lot # 15
Lot # 16
CRR7CLW3 50.7
Lot # 14
CRL6HVY4 140.4
CLW7CRL3 47.5
Lot # 13
Lot # 12
Lot # 10
Lot # 11
CRL 2.9
CRR7CRL3 53.5
ORG 6.5
Lot # 9
Soil #2
CRR7CRL3 127.9
Soil #6
Lot # 8
CRR7CLW3 96.3
Lot # 7
CRL 20.4
CLW 8.0
Soil #3
CRL 83.6
Soil #4
Lot # 6
GPT7CRL3 66.3
SFY6CLW4 33.5
Lot # 5
Lot # 4
Lot # 3
CRR 3.0
CRR 11.8
CRR 21.8
CRR 7.1
Lot # 1
Lot # 2
Silviculture Boundary
Soil #1
CRR 145.1
CRR 34.2
CLW 2.3
SFY 5.0

# Appendix C
# Photographs

SOIL #1

SOIL #2

SOIL #3

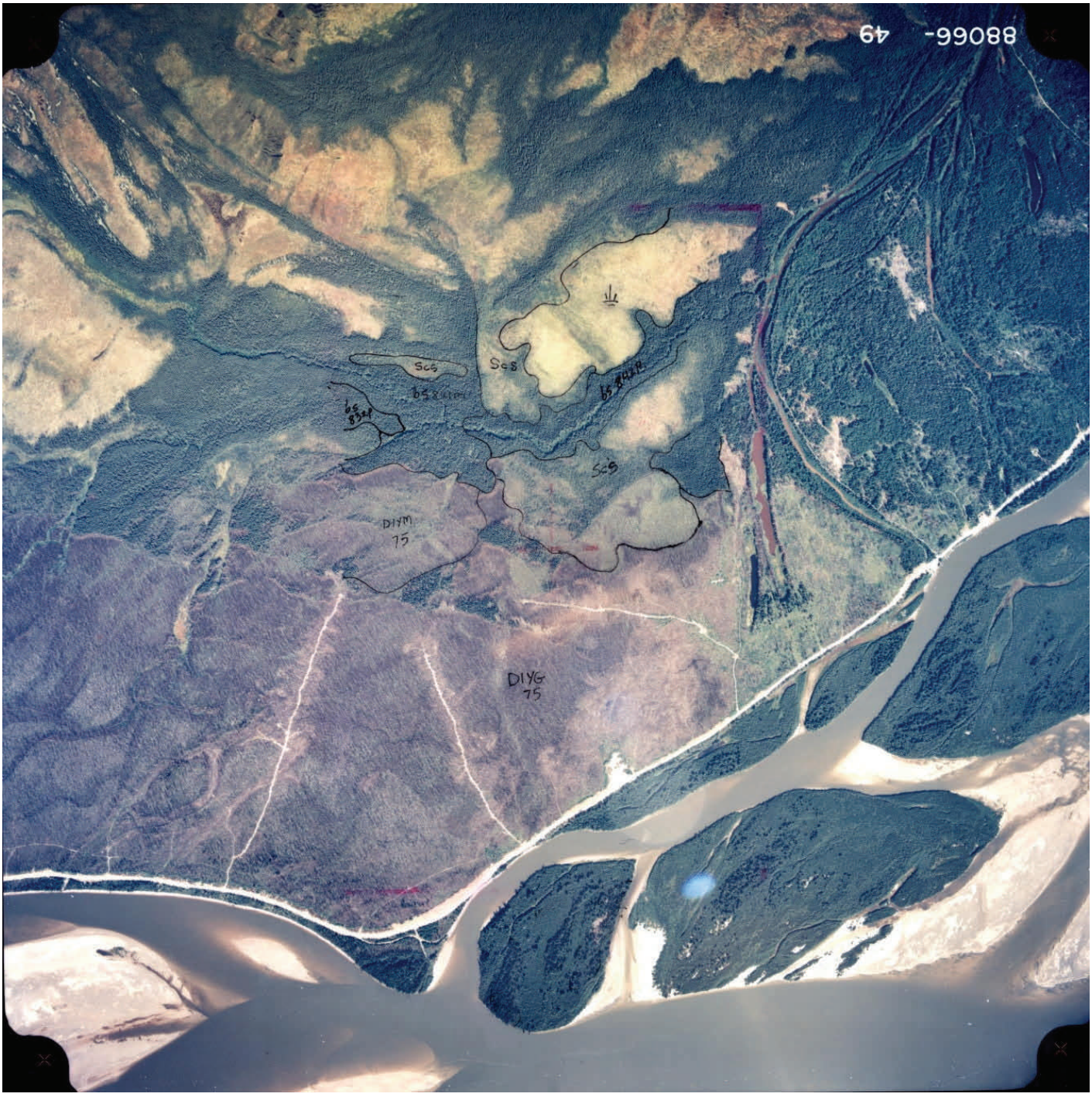
SOIL #4

SOIL #5

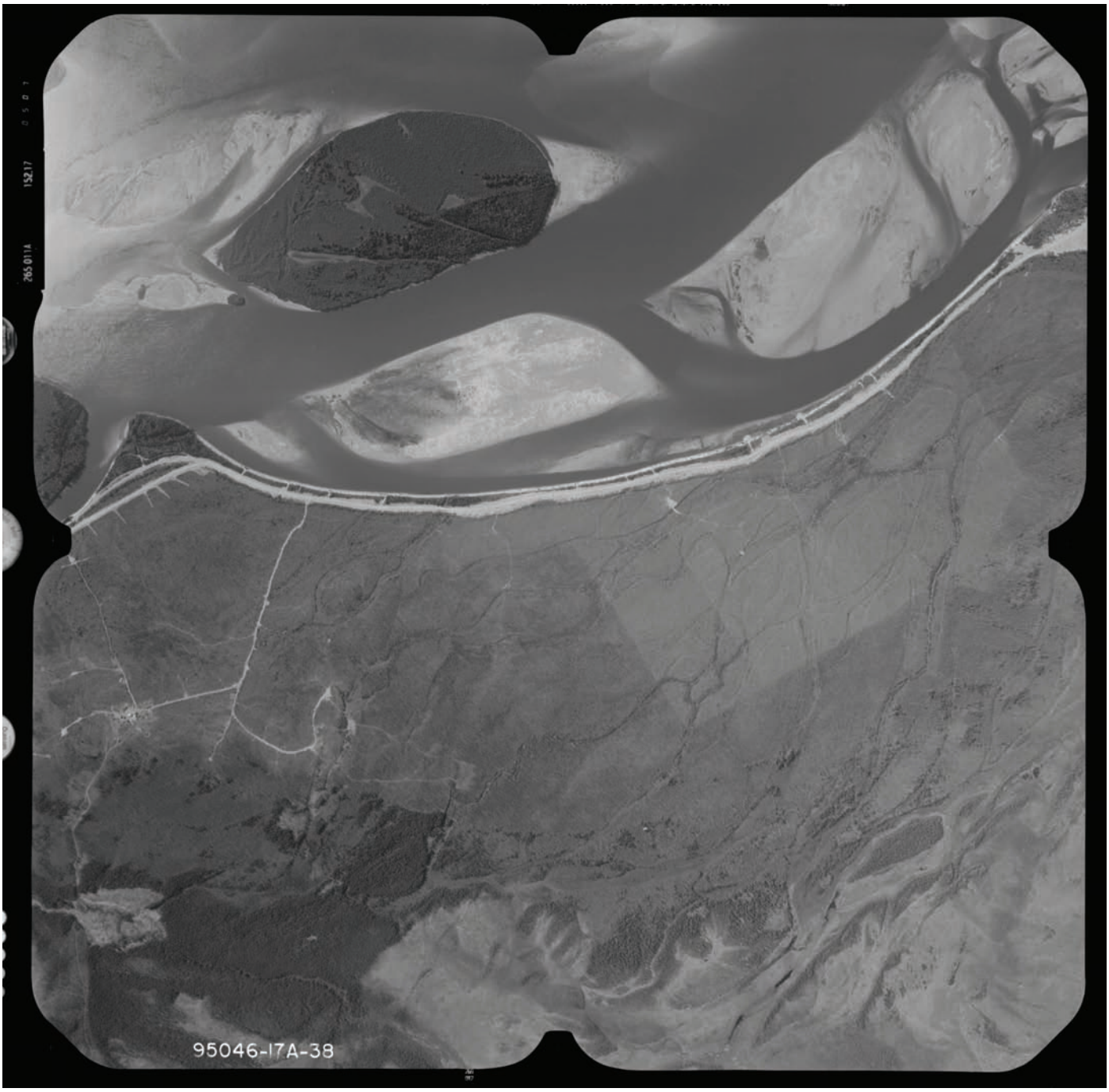
SOIL #6

SURFACE
WATER #1

GENERAL PHOTOS




GENERAL PHOTOS




GENERAL PHOTOS

ACCESS ROAD LOOKING TOWARD CHURCHILL RIVER

ACCESS ROAD LOOKING NORTH

DECEMBER 5, 2006

DECEMBER 5, 2006

# Appendix D
# Tables

Table 3.1 BTEX/TPH in Soil

| Parameter | Units | RDL | Tier I RBCA | Sample Identification | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | SED 1 | SED 2 | SED 3 | SED 4 | SED 5 | SED 6 |
| Benzene | mg/kg | 0.03 | 1.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Toluene | mg/kg | 0.03 | 160 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Ethylbenzene | mg/kg | 0.03 | 430 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Xylene (Total) | mg/kg | 0.05 | 200 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| C6 - C10 (less BTEX) | mg/kg | 3 | | <3 | <3 | <3 | <3 | <3 | <3 |
| >C10-C21 Hydrocarbons | mg/kg | 15 | | <15 | <15 | <15 | <15 | <15 | <15 |
| >C21-<C32 Hydrocarbons | mg/kg | 15 | | <15 | <15 | <15 | <15 | 47 | <15 |
| Modified TPH (Tier1) | mg/kg | 20 | 450 | <20 | <20 | <20 | <20 | 47 | <20 |

RDL = Reportable Detection Limit  Tier I, non-potable, coarse-grained

Exceedence

Table 3.2 Metals in Soil

| Parameter | Units | RDL | Guidelines CCME Agri | Interim Remed Criteria | Sample Identification | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SED 1 | SED 2 | SED 3 | SED 4 | SED 5 | SED 6 |
| Aluminum | mg/kg | 10 | | | 8000 | 6100 | 7800 | 3500 | 7700 | 3700 |
| Antimony | mg/kg | 2 | | 20 | <2 | <2 | <2 | <2 | <2 | <2 |
| Arsenic | mg/kg | 2 | 12 | | <2 | <2 | <2 | <2 | <2 | <2 |
| Barium | mg/kg | 5 | 750 | | 43 | 34 | 46 | 23 | 35 | 21 |
| Beryllium | mg/kg | 2 | | 4 | <2 | <2 | <2 | <2 | <2 | <2 |
| Boron | mg/kg | 5 | | 2 | <5 | <5 | <5 | <5 | <5 | <5 |
| Cadmium | mg/kg | 0.3 | 1.4 | | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium | mg/kg | 2 | 64 | | 17 | 13 | 14 | 7 | 24 | 8 |
| Cobalt | mg/kg | 1 | | 40 | 4 | 3 | 4 | 2 | 3 | 2 |
| Copper | mg/kg | 2 | 63 | | 4 | 4 | 4 | 3 | 3 | 3 |
| Iron | mg/kg | 50 | | | 10000 | 8300 | 9300 | 5700 | 9100 | 5200 |
| Lead | mg/kg | 0.5 | 70 | | 4.3 | 2.7 | 1.8 | 1.3 | 3.3 | 1.6 |
| Manganese | mg/kg | 2 | | | 150 | 110 | 140 | 81 | 110 | 75 |
| Molybdenum | mg/kg | 2 | | 5 | <2 | <2 | <2 | <2 | <2 | <2 |
| Mercury (Hg) | mg/kg | 0.01 | 6.6 | | <0.01 | <0.01 | 0.01 | ND | <0.01 | <0.01 |
| Nickel | mg/kg | 2 | 50 | | 10 | 7 | 9 | 5 | 8 | 5 |
| Selenium | mg/kg | 1 | 1 | | <1 | <1 | <1 | <1 | <1 | <1 |
| Silver | mg/kg | 0.5 | | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Strontium | mg/kg | 5 | | | 5 | <5 | <5 | <5 | <5 | <5 |
| Thallium | mg/kg | 0.1 | | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Uranium | mg/kg | 0.1 | 23 | | 0.3 | 0.3 | 0.3 | 0.2 | 0.4 | 0.2 |
| Vanadium | mg/kg | 2 | 130 | | 26 | 20 | 23 | 11 | 16 | 9 |
| Zinc | mg/kg | 5 | 200 | | 30 | 21 | 27 | 15 | 21 | 14 |

RDL = Reportable Detection Limit

Exceedence

Table 3.3 Polychlorinated Biphenyls in Soil

| Parameter | Units | RDL | Guidelines CCME Agri | Sample Identification | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | SED 1 | SED 2 | SED 3 | SED 4 | SED 5 | SED 6 |
| Total PCBs | ug/g | 0.05 | 0.5 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

RDL = Reportable Detection Limit

Exceedence

Table 3.4 Volitile Organic Compounds in Soil

| Parameter | Units | RDL | Guideline CCME Agri | Interim Remed Criteria | Sample Identification | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SED 1 | SED 2 | SED 3 | SED 4 | SED 5 | SED 6 |
| 1,2-Dichlorobenzene | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,3-Dichlorobenzene | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,4-Dichlorobenzene | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| Chlorobenzene | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,1,1-Trichloroethane | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,1,2,2-Tetrachloroethane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,1,2-Trichloroethane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,1-Dichloroethane | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,1-Dichloroethylene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,2-Dichloroethane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| 1,2-Dichloropropane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Benzene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Bromodichloromethane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Bromoform | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Bromomethane | ug/kg | 200 | | | <200 | <200 | <200 | <200 | <200 | <200 |
| Carbon Tetrachloride | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| Chloroethane | ug/kg | 200 | | | <200 | <200 | <200 | <200 | <200 | <200 |
| Chloroform | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Chloromethane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| cis-1,2-Dichloroethylene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| cis-1,3-Dichloropropene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Dibromochloromethane | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Ethylbenzene | ug/kg | 30 | 82 | | <30 | <30 | <30 | <30 | <30 | <30 |
| Ethylene Dibromide | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Methylene Chloride(Dichloromethane) | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| o-Xylene | ug/kg | 30 | 11000 | | <30 | <30 | <30 | <30 | <30 | <30 |
| p+m-Xylene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Styrene | ug/kg | 30 | | 100 | <30 | <30 | <30 | <30 | <30 | <30 |
| Tetrachloroethylene | ug/kg | 30 | 100 | | <30 | <30 | <30 | <30 | <30 | <30 |
| Toluene | ug/kg | 30 | 370 | | <30 | <30 | <30 | <30 | <30 | <30 |
| trans-1,2-Dichloroethylene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| trans-1,3-Dichloropropene | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Trichloroethylene | ug/kg | 30 | 10 | | <30 | <30 | <30 | <30 | <30 | <30 |
| Trichlorofluoromethane (FREON 11) | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |
| Vinyl Chloride | ug/kg | 30 | | | <30 | <30 | <30 | <30 | <30 | <30 |

RDL = Reportable Detection Limit

Exceedence

Table 3.5 Metals in Surface Water

| Parameter | Units | RDL | Guideline | SW 1 |
|---|---|---|---|---|
| Aluminum | ug/L | 10 | 5000 | <150 |
| Antimony | ug/L | 2 | | <2 |
| Arsenic | ug/L | 2 | 100 | <2 |
| Barium | ug/L | 5 | | 6 |
| Beryllium | ug/L | 2 | 100 | <2 |
| Bismuth | ug/L | 2 | | <2 |
| Boron | ug/L | 5 | 500-6000 | <5 |
| Cadmium | ug/L | 0.3 | 5.1 | ND |
| Calcium | mg/L | 0.1 | | 1.3 |
| Chromium | ug/L | 2 | 4.9 | <2 |
| Cobalt | ug/L | 1 | 50 | <1 |
| Copper | ug/L | 2 | 200-1000 | <2 |
| Iron | ug/L | 50 | 5000 | 4900 |
| Lead | ug/L | 0.5 | 200 | <0.5 |
| Magnesium | mg/L | 0.1 | | 0.7 |
| Manganese | ug/L | 2 | 200 | 34 |
| Mercury | ug/L | 0.01 | | <0.01 |
| Molybdenum | ug/L | 2 | 10-50 | <2 |
| Nickel | ug/L | 2 | 200 | <2 |
| Phosphorus | mg/L | 0.1 | | <0.1 |
| Potassium | mg/L | 0.1 | | 0.6 |
| Selenium | ug/L | 2 | 20-50 | <2 |
| Silver | ug/L | 0.5 | | <0.5 |
| Sodium | mg/L | 0.1 | | 1.9 |
| Strontium | ug/L | 5 | | 12 |
| Thallium | ug/L | 0.1 | | <0.1 |
| Tin | ug/L | 2 | | <2 |
| Titanium | ug/L | 2 | | 5 |
| Uranium | ug/L | 0.1 | 10 | <0.1 |
| Vanadium | ug/L | 2 | 100 | <2 |
| Zinc | ug/L | 5 | 1000-5000 | 14 |

| | |
|---|---|
| RDL = Reportable Detection Limit | |
| | Exceedence |

Table 3.6 Volitile Organic Compounds in Surface Water

| Parameters | Units | RDL | Guideline | SW 1 |
|---|---|---|---|---|
| 1,2-Dichlorobenzene | ug/L | 0.5 | | <0.5 |
| 1,3-Dichlorobenzene | ug/L | 1 | | <1 |
| 1,4-Dichlorobenzene | ug/L | 1 | | <1 |
| Chlorobenzene | ug/L | 1 | | <1 |
| 1,1,1-Trichloroethane | ug/L | 1 | | <1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 1 | | <1 |
| 1,1,2-Trichloroethane | ug/L | 1 | | <1 |
| 1,1-Dichloroethane | ug/L | 2 | | <2 |
| 1,1-Dichloroethylene | ug/L | 2 | | <2 |
| 1,2-Dichloroethane | ug/L | 1 | | <1 |
| 1,2-Dichloropropane | ug/L | 1 | | <1 |
| Benzene | ug/L | 1 | | <1 |
| Bromodichloromethane | ug/L | 1 | | <1 |
| Bromoform | ug/L | 1 | | <1 |
| Bromomethane | ug/L | 8 | | <8 |
| Carbon Tetrachloride | ug/L | 1 | | <1 |
| Chloroethane | ug/L | 8 | | <8 |
| Chloroform | ug/L | 1 | | <1 |
| Chloromethane | ug/L | 8 | | <8 |
| cis-1,2-Dichloroethylene | ug/L | 2 | | <2 |
| cis-1,3-Dichloropropene | ug/L | 2 | | <2 |
| Dibromochloromethane | ug/L | 1 | | <1 |
| Ethylbenzene | ug/L | 1 | | <1 |
| Ethylene Dibromide | ug/L | 1 | | <1 |
| Methylene Chloride(Dichloromethane) | ug/L | 3 | | <3 |
| o-Xylene | ug/L | 1 | | <1 |
| p+m-Xylene | ug/L | 2 | | <2 |
| Styrene | ug/L | 1 | | <1 |
| Tetrachloroethylene | ug/L | 1 | | <1 |
| Toluene | ug/L | 1 | | <1 |
| trans-1,2-Dichloroethylene | ug/L | 2 | | <2 |
| trans-1,3-Dichloropropene | ug/L | 1 | | <1 |
| Trichloroethylene | ug/L | 1 | | <1 |
| Trichlorofluoromethane (FREON 11) | ug/L | 8 | | <8 |
| Vinyl Chloride | ug/L | 1 | | <1 |

RDL = Reportable Detection Limit

Exceedence

Table 3.7 General Chemistry in Surface Water

| Parameters | Units | RDL | Guideline | SW 1 |
|---|---|---|---|---|
| Total Alkalinity (Total as CaCO3) | mg/L | 5 | | <5 |
| Dissolved Chloride (Cl) | mg/L | 1 | | 2 |
| Colour | TCU | 30 | | 73 |
| Hardness (CaCO3) | mg/L | 1 | | 6 |
| Nitrate + Nitrite | mg/L | 0.05 | | 0.08 |
| Nitrite (N) | mg/L | 0.01 | | <0.01 |
| Nitrogen (Ammonia Nitrogen) | mg/L | 0.05 | | 0.06 |
| Total Organic Carbon (C) | mg/L | 0.5 | | 15 |
| Orthophosphate (P) | mg/L | 0.01 | | 0.01 |
| pH | pH | N/A | | 6.09 |
| Reactive Silica (SiO2) | mg/L | 0.5 | | 8.5 |
| Dissolved Sulphate (SO4) | mg/L | 2 | | <2 |
| Turbidity | NTU | 0.1 | | 6.2 |
| Conductivity | uS/cm | 1 | | 17 |
| Anion Sum | me/L | N/A | | 0.05 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 1 | | <1 |
| Calculated TDS | mg/L | 1 | | 20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | 1 | | <1 |
| Cation Sum | me/L | N/A | | 0.4 |
| Ion Balance (% Difference) | % | N/A | | 77.8 |
| Langelier Index (@ 20C) | N/A | N/A | | NC |
| Langelier Index (@ 4C) | N/A | N/A | | NC |
| Nitrate (N) | mg/L | 0.05 | | 0.08 |
| Saturation pH (@ 20C) | N/A | N/A | | NC |
| Saturation pH (@ 4C) | N/A | N/A | | NC |

| | |
|---|---|
| RDL = Reportable Detection Limit | |
| | Exceedence |

Table 3.8 Pesticides in Surface Water

| Parameter | Unit | RDL | Guideline CCME Agri | SW 1 |
|---|---|---|---|---|
| 2,4'-DDT + 4,4'-DDD | ug/L | 0.2 | | <0.2 |
| 4,4'-DDE | ug/L | 0.1 | | <0.1 |
| 4,4'-DDT | ug/L | 0.2 | | <0.2 |
| 4,4'-methoxychlor | ug/L | 0.1 | | <0.1 |
| a-BHC | ug/L | 0.1 | | <0.1 |
| a-Chlordane | ug/L | 0.06 | | <0.06 |
| Alachlor | ug/L | 0.5 | | <0.5 |
| Aldrin | ug/L | 0.3 | | <0.3 |
| Aspon | ug/L | 0.2 | | <0.2 |
| Atrazine | ug/L | 0.2 | 10 | <0.2 |
| Azinophos methyl (Guthion) | ug/L | 1 | | <1 |
| Azinphos ethyl | ug/L | 0.5 | | <0.5 |
| b-BHC | ug/L | 0.1 | | <0.1 |
| Benfluralin | ug/L | 0.1 | | <0.1 |
| Bromacil | ug/L | 0.1 | 0.2 | <0.1 |
| Bromophos | ug/L | 0.1 | | <0.1 |
| Bromophos-ethyl | ug/L | 0.3 | | <0.3 |
| Butylate | ug/L | 0.5 | | <0.5 |
| Captan | ug/L | 1 | | <1 |
| Carbophenothion | ug/L | 0.3 | | <0.3 |
| Chlorbenside | ug/L | 0.1 | | <0.1 |
| Chlorfenson(ovex) | ug/L | 0.2 | | <0.2 |
| Chlorfenvinphos(e/z) | ug/L | 0.1 | | <0.1 |
| Chlormephos | ug/L | 0.5 | | <0.5 |
| Chlorothalonil (Daconil) | ug/L | 1 | | <1 |
| Chlorpropham | ug/L | 0.2 | | <0.2 |
| Chlorpyrifos | ug/L | 0.2 | | <0.2 |
| Chlorpyriphos-methyl | ug/L | 0.1 | | <0.1 |
| Chlorthiophos | ug/L | 0.3 | | <0.3 |
| Cyanazine (Bladex) | ug/L | 0.5 | 0.5 | <0.5 |
| Cyanophos | ug/L | 0.2 | | <0.2 |
| Dacthal | ug/L | 0.1 | | <0.1 |
| d-BHC | ug/L | 0.1 | | <0.1 |
| Demeton | ug/L | 1 | | <1 |
| Desethyl-atrazine | ug/L | 0.3 | | <0.3 |
| Desmetryn | ug/L | 0.3 | | <0.3 |
| Diallate(e/z) | ug/L | 0.5 | | <0.5 |
| Diazinon | ug/L | 0.3 | | <0.3 |
| Dichlobenil | ug/L | 0.2 | | <0.2 |
| Dichlofenthion | ug/L | 0.2 | | <0.2 |
| Dichlofluanid | ug/L | 0.5 | | <0.5 |
| Dichloran | ug/L | 0.5 | | <0.5 |
| Dichlorvox + Naled | ug/L | 0.1 | | <0.1 |
| Dicofol | ug/L | 0.2 | | <0.2 |
| Dicrotophos | ug/L | 0.5 | | <0.5 |
| Dieldrin | ug/L | 0.5 | | <0.5 |
| Dimethoate | ug/L | 0.5 | | <0.5 |
| Dioxathion | ug/L | 1 | | <1 |

| Parameter | Unit | RDL | Guideline CCME Agri | SW 1 |
|---|---|---|---|---|
| Diphenylamine | ug/L | 0.1 | | <0.1 |
| Disulfoton (Di-Syston) | ug/L | 1 | | <1 |
| Endosulfan I | ug/L | 0.2 | | <0.2 |
| Endosulfan II | ug/L | 0.2 | | <0.2 |
| Endosulfan Sulfate | ug/L | 0.2 | | <0.2 |
| Endrin | ug/L | 0.5 | | <0.5 |
| Endrin Aldehyde | ug/L | 0.5 | | <0.5 |
| Endrin ketone | ug/L | 0.5 | | <0.5 |
| EPN | ug/L | 0.5 | | <0.5 |
| Eptam | ug/L | 0.5 | | <0.5 |
| Ethalfluralin | ug/L | 0.5 | | <0.5 |
| Ethion | ug/L | 0.2 | | <0.2 |
| Fenitrothion | ug/L | 0.5 | | <0.5 |
| Fensulfothion | ug/L | 0.1 | | <0.1 |
| Fenthion | ug/L | 0.1 | | <0.1 |
| Folpet | ug/L | 1 | | <1 |
| Fonofos | ug/L | 0.1 | | <0.1 |
| g-Chlordane | ug/L | 0.06 | | <0.06 |
| Heptachlor | ug/L | 0.1 | | <0.1 |
| Heptachlor epoxide | ug/L | 0.5 | | <0.5 |
| Hexachlorobenzene | ug/L | 0.2 | | <0.2 |
| Hexazinone | ug/L | 0.1 | | <0.1 |
| Iodofenphos | ug/L | 0.1 | | <0.1 |
| Iprodione | ug/L | 1 | | <1 |
| Isofenphos | ug/L | 0.3 | | <0.3 |
| Lindane (BHC), gamma- | ug/L | 0.1 | | <0.1 |
| Malaoxon | ug/L | 1 | | <1 |
| Malathion | ug/L | 0.5 | | <0.5 |
| Metalaxyl | ug/L | 0.3 | | <0.3 |
| Methidathion | ug/L | 0.3 | | <0.3 |
| Metolachlor | ug/L | 0.2 | 28 | <0.2 |
| Metribuzin (Sencor) | ug/L | 0.3 | 0.5 | <0.3 |
| Mevinphos (Phosdrin) | ug/L | 0.1 | | <0.1 |
| Mirex | ug/L | 0.3 | | <0.3 |
| Nitrofen | ug/L | 0.2 | | <0.2 |
| o,p'-DDD | ug/L | 0.1 | | <0.1 |
| o,p'-DDE | ug/L | 0.1 | | <0.1 |
| Omethoate | ug/L | 1 | | <1 |
| Parathion | ug/L | 0.5 | | <0.5 |
| Parathion methyl | ug/L | 0.5 | | <0.5 |
| Pentachloronitrobenzene | ug/L | 0.5 | | <0.5 |
| Permethrin | ug/L | 0.5 | | <0.5 |
| Phorate (Thimet) | ug/L | 0.5 | | <0.5 |
| Phosalone | ug/L | 0.2 | | <0.2 |
| Phosmet | ug/L | 0.2 | | <0.2 |
| Phosphamidon | ug/L | 0.2 | | <0.2 |
| Pirimicarb | ug/L | 0.5 | | <0.5 |
| Pirimiphos-ethyl | ug/L | 0.5 | | <0.5 |
| Pirimiphos-methyl | ug/L | 0.2 | | <0.2 |
| Procymidone | ug/L | 0.2 | | <0.2 |

| Parameter | Unit | RDL | Guideline CCME Agri | SW 1 |
|---|---|---|---|---|
| Profenophos | ug/L | 0.5 | | <0.5 |
| Profluralin | ug/L | 0.5 | | <0.5 |
| Prometryn | ug/L | 0.2 | | <0.2 |
| Pronamide | ug/L | 0.2 | | <0.2 |
| Propazine | ug/L | 0.1 | | <0.1 |
| Propiconazole | ug/L | 0.5 | | <0.5 |
| Pyrazophos | ug/L | 0.1 | | <0.1 |
| Quinalophos | ug/L | 0.3 | | <0.3 |
| Ronnel | ug/L | 0.1 | | <0.1 |
| Simazine | ug/L | 0.5 | 0.5 | <0.5 |
| Stirophos | ug/L | 0.2 | | <0.2 |
| Sulfotepp | ug/L | 0.1 | | <0.1 |
| Tecnazene | ug/L | 0.5 | | <0.5 |
| Terbufos | ug/L | 0.3 | | <0.3 |
| Terbuthylazine | ug/L | 0.1 | | <0.1 |
| Terbutryne | ug/L | 0.2 | | <0.2 |
| Tetradifon | ug/L | 0.2 | | <0.2 |
| Tolylfluanid | ug/L | 0.5 | | <0.5 |
| Triadimefon | ug/L | 0.3 | | <0.3 |
| Triallate | ug/L | 0.3 | | <0.3 |
| Trifluralin | ug/L | 0.2 | | <0.2 |
| Vinclozolin | ug/L | 0.5 | | <0.5 |

RDL = Reportable Detection Limit

Exceedence

# Appendix E
# Laboratory Reports

Your Project #: 073064
Site:LABRADOR
Your C.O.C. #: 16479

**Attention: Carla Hayes**
CBCL Limited Consulting Engineers
350 Hamilton River Rd
PO Box 1989 Stn B
Happy Valley-Goose Bay, NL
A0P 1E0

**Report Date: 2007/09/06**

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: A792826**
**Received: 2007/08/29, 10:50**

Sample Matrix: Soil
# Samples Received: 5

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Method Reference |
|---|---|---|---|---|---|
| TEH in Soil (PIRI) | 5 | 2007/08/29 | 2007/08/30 | ATL SOP 00197 | Based on Atl. PIRI |
| Moisture | 5 | N/A | 2007/08/29 | ATL SOP 00196 | MOE Handbook 1983 |
| VPH in Soil (PIRI) | 5 | 2007/08/29 | 2007/08/29 | ATL SOP 00199 | Based on Atl. PIRI |
| ModTPH (T1) Calc. for Soil (1) | 5 | 2007/08/29 | 2007/08/30 | | Based on Atl. PIRI |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

ROB WHELAN,
Email: Rob.Whelan@maxxamanalytics.com
Phone# (709) 754 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 #: A792826
Report Date: 2007/09/06

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: LABRADOR
Sampler Initials:

## ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

| Maxxam ID | | U33835 | U33836 | U33837 | U33838 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 | 2007/08/23 | 2007/08/23 | 2007/08/23 | | |
| COC Number | | 16479 | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 1** | **SED 2** | **SED 3** | **SED 4** | **RDL** | **QC Batch** |
| **INORGANICS** | | | | | | | |
| Moisture | % | 13 | 8 | 20 | 5 | 1 | 1345602 |
| **TPH COMPOUNDS** | | | | | | | |
| Benzene | mg/kg | ND | ND | ND | ND | 0.03 | 1345607 |
| Toluene | mg/kg | ND | ND | ND | ND | 0.03 | 1345607 |
| Ethylbenzene | mg/kg | ND | ND | ND | ND | 0.03 | 1345607 |
| Xylene (Total) | mg/kg | ND | ND | ND | ND | 0.05 | 1345607 |
| C6 - C10 (less BTEX) | mg/kg | ND | ND | ND | ND | 3 | 1345607 |
| >C10-C21 Hydrocarbons | mg/kg | ND | ND | ND | ND | 15 | 1345608 |
| >C21-<C32 Hydrocarbons | mg/kg | ND | ND | ND | ND | 15 | 1345608 |
| Modified TPH (Tier1) | mg/kg | ND | ND | ND | ND | 20 | 1345778 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 101 | 100 | 102 | 102 | | 1345608 |
| Isobutylbenzene - Volatile | % | 94 | 97 | 97 | 79 | | 1345607 |
| n-Dotriacontane - Extractable | % | 104 (1) | 105 (1) | 103 (1) | 106 (1) | | 1345608 |

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
( 1 ) PAH's estimated to be less than 0.5mg/kg.



49-55 Elizabeth Ave, Suite 101A, St. John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll-free: 888-492-7227 Fax: 709-754-8612 www.maxxamanalytics.com

Maxxam Job #: A792826
Report Date: 2007/09/06

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: LABRADOR
Sampler Initials:

## ATLANTIC MUST IN SOIL - PIRI TIER I (SOIL)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U33839 | | |
| Sampling Date | | 2007/08/23 | | |
| COC Number | | 16479 | | |
| | **Units** | **SED 5** | **RDL** | **QC Batch** |
| **INORGANICS** | | | | |
| Moisture | % | 48 | 1 | 1345602 |
| **TPH COMPOUNDS** | | | | |
| Benzene | mg/kg | ND | 0.03 | 1345607 |
| Toluene | mg/kg | ND | 0.03 | 1345607 |
| Ethylbenzene | mg/kg | ND | 0.03 | 1345607 |
| Xylene (Total) | mg/kg | ND | 0.05 | 1345607 |
| C6 - C10 (less BTEX) | mg/kg | ND | 3 | 1345607 |
| >C10-C21 Hydrocarbons | mg/kg | ND | 15 | 1345608 |
| >C21-<C32 Hydrocarbons | mg/kg | 47 | 15 | 1345608 |
| Modified TPH (Tier1) | mg/kg | 47 | 20 | 1345778 |
| **Surrogate Recovery (%)** | | | | |
| Isobutylbenzene - Extractable | % | 100 | | 1345608 |
| Isobutylbenzene - Volatile | % | 110 | | 1345607 |
| n-Dotriacontane - Extractable | % | 109 (1) | | 1345608 |

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
( 1 ) Lube oil range.PAH's estimated to be less than 0.5mg/kg.



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Maxxam Job #: A792826
Report Date: 2007/09/06

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: LABRADOR
Sampler Initials:

**GENERAL COMMENTS**

**Results relate only to the items tested.**



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: LABRADOR

# Quality Assurance Report

Maxxam Job Number: ZA792826

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1345602 | DGA | RPD | Moisture | 2007/08/29 | 5.6 | | % | 25 |
| 1345607 | ANO | Spiked Blank | Isobutylbenzene - Volatile | 2007/08/29 | | 89 | % | 60 - 140 |
| | | | Benzene | 2007/08/29 | | 103 | % | 60 - 140 |
| | | | Toluene | 2007/08/29 | | 97 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/08/29 | | 93 | % | 60 - 140 |
| | | | Xylene (Total) | 2007/08/29 | | 102 | % | 60 - 140 |
| | | | C6 - C10 (less BTEX) | 2007/08/29 | | 86 | % | N/A |
| | | Method Blank | Isobutylbenzene - Volatile | 2007/08/29 | | 96 | % | 60 - 140 |
| | | | Benzene | 2007/08/29 | ND, RDL=0.03 | | mg/kg | |
| | | | Toluene | 2007/08/29 | ND, RDL=0.03 | | mg/kg | |
| | | | Ethylbenzene | 2007/08/29 | ND, RDL=0.03 | | mg/kg | |
| | | | Xylene (Total) | 2007/08/29 | ND, RDL=0.05 | | mg/kg | |
| | | | C6 - C10 (less BTEX) | 2007/08/29 | ND, RDL=3 | | mg/kg | |
| | | RPD | Benzene | 2007/08/29 | NC | | % | 50 |
| | | | Toluene | 2007/08/29 | NC | | % | 50 |
| | | | Ethylbenzene | 2007/08/29 | NC | | % | 50 |
| | | | Xylene (Total) | 2007/08/29 | NC | | % | 50 |
| | | | C6 - C10 (less BTEX) | 2007/08/29 | NC | | % | 50 |
| 1345608 | AME | MATRIX SPIKE | Isobutylbenzene - Extractable | 2007/08/30 | | 95 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/08/30 | | 101 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/08/30 | | 95 | % | 30 - 130 |
| | | | >C21-<C32 Hydrocarbons | 2007/08/30 | | 113 | % | 30 - 130 |
| | | Spiked Blank | Isobutylbenzene - Extractable | 2007/08/30 | | 97 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/08/30 | | 103 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/08/30 | | 95 | % | 30 - 130 |
| | | | >C21-<C32 Hydrocarbons | 2007/08/30 | | 115 | % | 30 - 130 |
| | | Method Blank | Isobutylbenzene - Extractable | 2007/08/30 | | 100 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/08/30 | | 100 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/08/30 | ND, RDL=15 | | mg/kg | |
| | | | >C21-<C32 Hydrocarbons | 2007/08/30 | ND, RDL=15 | | mg/kg | |
| | | RPD | >C10-C21 Hydrocarbons | 2007/08/30 | NC | | % | 50 |
| | | | >C21-<C32 Hydrocarbons | 2007/08/30 | NC | | % | 50 |

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
SPIKE = Fortified sample



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Your Project #: 073064
Site: MUD LAKE, LABRADOR
Your C.O.C. #: 16479

**Attention: Carla Hayes**
CBCL Limited Consulting Engineers
350 Hamilton River Rd
PO Box 1989 Stn B
Happy Valley-Goose Bay, NL
A0P 1E0

**Report Date: 2007/09/07**

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: A793563**
**Received: 2007/08/30, 10:24**

Sample Matrix: Soil
# Samples Received: 5

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Method Reference |
|---|---|---|---|---|---|
| Mercury (CVAA) | 1 | N/A | 2007/09/06 | ATL SOP 00026 R2 | Based on EPA245.5 |
| Mercury (CVAA) | 4 | N/A | 2007/09/07 | ATL SOP 00026 R2 | Based on EPA245.5 |
| Metals Solid Avail. MS - Low Level Se | 5 | N/A | 2007/08/31 | ATL SOP 00024 R3 | Based on EPA6020A |
| Moisture | 5 | N/A | 2007/08/31 | ATL SOP 00001 R2 | MOE Handbook 1983 |
| PCBs in soil by GC/ECD | 5 | 2007/08/31 | 2007/09/05 | ATL SOP 00106 R2 | Based on EPA8082 |
| Volatile Organic Compounds in Soil (1) | 5 | 2007/09/04 | 2007/09/05 | ATL SOP 00123 R2 | Based on USEPA SW-84 |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

KERI MACKAY, Project Manager
Email: keri.mackay.reports@maxxamanalytics.com
Phone# (902) 420-0203

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Total cover pages: 1

Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## RESULTS OF ANALYSES OF SOIL

| Maxxam ID | | U37199 | U37206 | U37207 | U37208 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 1** | **SED 2** | **SED 3** | **SED 4** | **RDL** | **QC Batch** |
| **INORGANICS** | | | | | | | |
| Moisture | % | 21 | 7 | 17 | 4 | 1 | 1348282 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

| Maxxam ID | | U37209 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | | |
| COC Number | | 16479 | | |
| | **Units** | **SED 5** | **RDL** | **QC Batch** |
| **INORGANICS** | | | | |
| Moisture | % | 35 | 1 | 1348282 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Maxxam ID | | U37199 | U37199 | | U37206 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | | 16479 | | |
| | **Units** | **SED 1** | **SED 1 Lab-Dup** | **QC Batch** | **SED 2** | **RDL** | **QC Batch** |
| **ELEMENTS** | | | | | | | |
| Mercury (Hg) | mg/kg | ND | ND | 1353449 | ND | 0.01 | 1354059 |
| **Elements (ICP-MS)** | | | | | | | |
| Available Aluminum (Al) | mg/kg | 8000 | | 1349181 | 6100 | 10 | 1349181 |
| Available Antimony (Sb) | mg/kg | ND | | 1349181 | ND | 2 | 1349181 |
| Available Arsenic (As) | mg/kg | ND | | 1349181 | ND | 2 | 1349181 |
| Available Barium (Ba) | mg/kg | 43 | | 1349181 | 34 | 5 | 1349181 |
| Available Beryllium (Be) | mg/kg | ND | | 1349181 | ND | 2 | 1349181 |
| Available Boron (B) | mg/kg | ND | | 1349181 | ND | 5 | 1349181 |
| Available Cadmium (Cd) | mg/kg | ND | | 1349181 | ND | 0.3 | 1349181 |
| Available Chromium (Cr) | mg/kg | 17 | | 1349181 | 13 | 2 | 1349181 |
| Available Cobalt (Co) | mg/kg | 4 | | 1349181 | 3 | 1 | 1349181 |
| Available Copper (Cu) | mg/kg | 4 | | 1349181 | 4 | 2 | 1349181 |
| Available Iron (Fe) | mg/kg | 10000 | | 1349181 | 8300 | 50 | 1349181 |
| Available Lead (Pb) | mg/kg | 4.3 | | 1349181 | 2.7 | 0.5 | 1349181 |
| Available Manganese (Mn) | mg/kg | 150 | | 1349181 | 110 | 2 | 1349181 |
| Available Molybdenum (Mo) | mg/kg | ND | | 1349181 | ND | 2 | 1349181 |
| Available Nickel (Ni) | mg/kg | 10 | | 1349181 | 7 | 2 | 1349181 |
| Available Selenium (Se) | mg/kg | ND | | 1349181 | ND | 1 | 1349181 |
| Available Silver (Ag) | mg/kg | ND | | 1349181 | ND | 0.5 | 1349181 |
| Available Strontium (Sr) | mg/kg | 5 | | 1349181 | ND | 5 | 1349181 |
| Available Thallium (Tl) | mg/kg | ND | | 1349181 | ND | 0.1 | 1349181 |
| Available Uranium (U) | mg/kg | 0.3 | | 1349181 | 0.3 | 0.1 | 1349181 |
| Available Vanadium (V) | mg/kg | 26 | | 1349181 | 20 | 2 | 1349181 |
| Available Zinc (Zn) | mg/kg | 30 | | 1349181 | 21 | 5 | 1349181 |

ND = Not detected
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Maxxam ID | | U37207 | U37208 | U37208 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 3** | **SED 4** | **SED 4 Lab-Dup** | **RDL** | **QC Batch** |
| **ELEMENTS** | | | | | | |
| Mercury (Hg) | mg/kg | 0.01 | ND | ND | 0.01 | 1354059 |
| **Elements (ICP-MS)** | | | | | | |
| Available Aluminum (Al) | mg/kg | 7800 | 3500 | | 10 | 1349181 |
| Available Antimony (Sb) | mg/kg | ND | ND | | 2 | 1349181 |
| Available Arsenic (As) | mg/kg | ND | ND | | 2 | 1349181 |
| Available Barium (Ba) | mg/kg | 46 | 23 | | 5 | 1349181 |
| Available Beryllium (Be) | mg/kg | ND | ND | | 2 | 1349181 |
| Available Boron (B) | mg/kg | ND | ND | | 5 | 1349181 |
| Available Cadmium (Cd) | mg/kg | ND | ND | | 0.3 | 1349181 |
| Available Chromium (Cr) | mg/kg | 14 | 7 | | 2 | 1349181 |
| Available Cobalt (Co) | mg/kg | 4 | 2 | | 1 | 1349181 |
| Available Copper (Cu) | mg/kg | 4 | 3 | | 2 | 1349181 |
| Available Iron (Fe) | mg/kg | 9300 | 5700 | | 50 | 1349181 |
| Available Lead (Pb) | mg/kg | 1.8 | 1.3 | | 0.5 | 1349181 |
| Available Manganese (Mn) | mg/kg | 140 | 81 | | 2 | 1349181 |
| Available Molybdenum (Mo) | mg/kg | ND | ND | | 2 | 1349181 |
| Available Nickel (Ni) | mg/kg | 9 | 5 | | 2 | 1349181 |
| Available Selenium (Se) | mg/kg | ND | ND | | 1 | 1349181 |
| Available Silver (Ag) | mg/kg | ND | ND | | 0.5 | 1349181 |
| Available Strontium (Sr) | mg/kg | ND | ND | | 5 | 1349181 |
| Available Thallium (Tl) | mg/kg | ND | ND | | 0.1 | 1349181 |
| Available Uranium (U) | mg/kg | 0.3 | 0.2 | | 0.1 | 1349181 |
| Available Vanadium (V) | mg/kg | 23 | 11 | | 2 | 1349181 |
| Available Zinc (Zn) | mg/kg | 27 | 15 | | 5 | 1349181 |

ND = Not detected
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch



200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Maxxam ID | | U37209 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | | |
| COC Number | | 16479 | | |
| | **Units** | **SED 5** | **RDL** | **QC Batch** |
| **ELEMENTS** | | | | |
| Mercury (Hg) | mg/kg | 0.02 | 0.01 | 1354059 |
| **Elements (ICP-MS)** | | | | |
| Available Aluminum (Al) | mg/kg | 7700 | 10 | 1349181 |
| Available Antimony (Sb) | mg/kg | ND | 2 | 1349181 |
| Available Arsenic (As) | mg/kg | ND | 2 | 1349181 |
| Available Barium (Ba) | mg/kg | 35 | 5 | 1349181 |
| Available Beryllium (Be) | mg/kg | ND | 2 | 1349181 |
| Available Boron (B) | mg/kg | ND | 5 | 1349181 |
| Available Cadmium (Cd) | mg/kg | ND | 0.3 | 1349181 |
| Available Chromium (Cr) | mg/kg | 24 | 2 | 1349181 |
| Available Cobalt (Co) | mg/kg | 3 | 1 | 1349181 |
| Available Copper (Cu) | mg/kg | 3 | 2 | 1349181 |
| Available Iron (Fe) | mg/kg | 9100 | 50 | 1349181 |
| Available Lead (Pb) | mg/kg | 3.3 | 0.5 | 1349181 |
| Available Manganese (Mn) | mg/kg | 110 | 2 | 1349181 |
| Available Molybdenum (Mo) | mg/kg | ND | 2 | 1349181 |
| Available Nickel (Ni) | mg/kg | 8 | 2 | 1349181 |
| Available Selenium (Se) | mg/kg | ND | 1 | 1349181 |
| Available Silver (Ag) | mg/kg | ND | 0.5 | 1349181 |
| Available Strontium (Sr) | mg/kg | ND | 5 | 1349181 |
| Available Thallium (Tl) | mg/kg | ND | 0.1 | 1349181 |
| Available Uranium (U) | mg/kg | 0.4 | 0.1 | 1349181 |
| Available Vanadium (V) | mg/kg | 16 | 2 | 1349181 |
| Available Zinc (Zn) | mg/kg | 21 | 5 | 1349181 |

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



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (SOIL)

| Maxxam ID | | U37199 | U37206 | U37207 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 1** | **SED 2** | **SED 3** | **RDL** | **QC Batch** |
| **CHLOROBENZENES** | | | | | | |
| 1,2-Dichlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,3-Dichlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,4-Dichlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Chlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| **VOLATILES** | | | | | | |
| 1,1,1-Trichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1,2-Trichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1-Dichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1-Dichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,2-Dichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,2-Dichloropropane | ug/kg | ND | ND | ND | 30 | 1351154 |
| Benzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Bromodichloromethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| Bromoform | ug/kg | ND | ND | ND | 30 | 1351154 |
| Bromomethane | ug/kg | ND | ND | ND | 200 | 1351154 |
| Carbon Tetrachloride | ug/kg | ND | ND | ND | 30 | 1351154 |
| Chloroethane | ug/kg | ND | ND | ND | 200 | 1351154 |
| Chloroform | ug/kg | ND | ND | ND | 30 | 1351154 |
| Chloromethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| cis-1,2-Dichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| cis-1,3-Dichloropropene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Dibromochloromethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| Ethylbenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Ethylene Dibromide | ug/kg | ND | ND | ND | 30 | 1351154 |
| Methylene Chloride(Dichloromethane) | ug/kg | ND | ND | ND | 30 | 1351154 |
| o-Xylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| p+m-Xylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Styrene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Tetrachloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Toluene | ug/kg | ND | ND | ND | 30 | 1351154 |

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



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (SOIL)

| Maxxam ID | | U37199 | U37206 | U37207 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 1** | **SED 2** | **SED 3** | **RDL** | **QC Batch** |
| trans-1,2-Dichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| trans-1,3-Dichloropropene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Trichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Trichlorofluoromethane (FREON 11) | ug/kg | ND | ND | ND | 30 | 1351154 |
| Vinyl Chloride | ug/kg | ND | ND | ND | 30 | 1351154 |
| **Surrogate Recovery (%)** | | | | | | |
| 4-Bromofluorobenzene | % | 117 | 103 | 114 | | 1351154 |
| D4-1,2-Dichloroethane | % | 110 | 94 | 103 | | 1351154 |
| D8-Toluene | % | 113 | 101 | 113 | | 1351154 |

ND = Not detected
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QC Batch = Quality Control Batch



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (SOIL)

| Maxxam ID | | U37208 | U37208 | U37209 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 4** | **SED 4 Lab-Dup** | **SED 5** | **RDL** | **QC Batch** |
| **CHLOROBENZENES** | | | | | | |
| 1,2-Dichlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,3-Dichlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,4-Dichlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Chlorobenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| **VOLATILES** | | | | | | |
| 1,1,1-Trichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1,2-Trichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1-Dichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,1-Dichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,2-Dichloroethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| 1,2-Dichloropropane | ug/kg | ND | ND | ND | 30 | 1351154 |
| Benzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Bromodichloromethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| Bromoform | ug/kg | ND | ND | ND | 30 | 1351154 |
| Bromomethane | ug/kg | ND | ND | ND | 200 | 1351154 |
| Carbon Tetrachloride | ug/kg | ND | ND | ND | 30 | 1351154 |
| Chloroethane | ug/kg | ND | ND | ND | 200 | 1351154 |
| Chloroform | ug/kg | ND | ND | ND | 30 | 1351154 |
| Chloromethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| cis-1,2-Dichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| cis-1,3-Dichloropropene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Dibromochloromethane | ug/kg | ND | ND | ND | 30 | 1351154 |
| Ethylbenzene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Ethylene Dibromide | ug/kg | ND | ND | ND | 30 | 1351154 |
| Methylene Chloride(Dichloromethane) | ug/kg | ND | ND | ND | 30 | 1351154 |
| o-Xylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| p+m-Xylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Styrene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Tetrachloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |

ND = Not detected
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (SOIL)

| Maxxam ID | | U37208 | U37208 | U37209 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 4** | **SED 4 Lab-Dup** | **SED 5** | **RDL** | **QC Batch** |
| Toluene | ug/kg | ND | ND | ND | 30 | 1351154 |
| trans-1,2-Dichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| trans-1,3-Dichloropropene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Trichloroethylene | ug/kg | ND | ND | ND | 30 | 1351154 |
| Trichlorofluoromethane (FREON 11) | ug/kg | ND | ND | ND | 30 | 1351154 |
| Vinyl Chloride | ug/kg | ND | ND | ND | 30 | 1351154 |
| **Surrogate Recovery (%)** | | | | | | |
| 4-Bromofluorobenzene | % | 111 | 111 | 118 | | 1351154 |
| D4-1,2-Dichloroethane | % | 101 | 103 | 117 | | 1351154 |
| D8-Toluene | % | 112 | 111 | 118 | | 1351154 |

ND = Not detected
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

| Maxxam ID | | U37199 | U37199 | U37206 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 1** | **SED 1 Lab-Dup** | **SED 2** | **RDL** | **QC Batch** |
| **PCBs** | | | | | | |
| Total PCB | ug/g | ND | ND | ND | 0.05 | 1348642 |
| **Surrogate Recovery (%)** | | | | | | |
| Decachlorobiphenyl | % | 90 | 91 | 91 | | 1348642 |

ND = Not detected
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

| Maxxam ID | | U37207 | U37208 | U37209 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2007/08/23 20:00 | 2007/08/23 20:00 | 2007/08/23 20:00 | | |
| COC Number | | 16479 | 16479 | 16479 | | |
| | **Units** | **SED 3** | **SED 4** | **SED 5** | **RDL** | **QC Batch** |
| **PCBs** | | | | | | |
| Total PCB | ug/g | ND | ND | ND | 0.05 | 1348642 |
| **Surrogate Recovery (%)** | | | | | | |
| Decachlorobiphenyl | % | 93 | 92 | 93 | | 1348642 |

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



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Maxxam Job #: A793563
Report Date: 2007/09/07

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

**GENERAL COMMENTS**

Antimony recovery from the applicable digested reference material is 40 % for work sheet # 1349181.

**Results relate only to the items tested.**



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

# Quality Assurance Report

Maxxam Job Number: DA793563

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1348642 | CMI | MATRIX SPIKE | | | | | | |
| | | [U37199-01] | Decachlorobiphenyl | 2007/09/05 | | 95 | % | 30 - 130 |
| | | | Total PCB | 2007/09/05 | | 92 | % | 70 - 130 |
| | | Spiked Blank | Decachlorobiphenyl | 2007/09/05 | | 91 | % | 30 - 130 |
| | | | Total PCB | 2007/09/05 | | 92 | % | 70 - 130 |
| | | Method Blank | Decachlorobiphenyl | 2007/09/05 | | 87 | % | 30 - 130 |
| | | | Total PCB | 2007/09/05 | ND, RDL=0.05 | | ug/g | |
| | | RPD [U37199-01] | Total PCB | 2007/09/05 | NC | | % | 50 |
| 1349181 | MPT | QC STANDARD | Available Aluminum (Al) | 2007/08/31 | | 79 | % | 75 - 125 |
| | | | Available Arsenic (As) | 2007/08/31 | | 107 | % | 75 - 125 |
| | | | Available Barium (Ba) | 2007/08/31 | | 106 | % | 75 - 125 |
| | | | Available Chromium (Cr) | 2007/08/31 | | 86 | % | 75 - 125 |
| | | | Available Cobalt (Co) | 2007/08/31 | | 93 | % | 75 - 125 |
| | | | Available Copper (Cu) | 2007/08/31 | | 92 | % | 75 - 125 |
| | | | Available Iron (Fe) | 2007/08/31 | | 82 | % | 75 - 125 |
| | | | Available Lead (Pb) | 2007/08/31 | | 98 | % | 75 - 125 |
| | | | Available Manganese (Mn) | 2007/08/31 | | 99 | % | 75 - 125 |
| | | | Available Nickel (Ni) | 2007/08/31 | | 101 | % | 75 - 125 |
| | | | Available Strontium (Sr) | 2007/08/31 | | 85 | % | 75 - 125 |
| | | | Available Vanadium (V) | 2007/08/31 | | 89 | % | 75 - 125 |
| | | | Available Zinc (Zn) | 2007/08/31 | | 101 | % | 75 - 125 |
| | | Spiked Blank | Available Aluminum (Al) | 2007/08/31 | | 101 | % | 75 - 125 |
| | | | Available Antimony (Sb) | 2007/08/31 | | 97 | % | 75 - 125 |
| | | | Available Arsenic (As) | 2007/08/31 | | 99 | % | 75 - 125 |
| | | | Available Barium (Ba) | 2007/08/31 | | 97 | % | 75 - 125 |
| | | | Available Beryllium (Be) | 2007/08/31 | | 97 | % | 75 - 125 |
| | | | Available Boron (B) | 2007/08/31 | | 92 | % | 75 - 125 |
| | | | Available Cadmium (Cd) | 2007/08/31 | | 94 | % | 75 - 125 |
| | | | Available Chromium (Cr) | 2007/08/31 | | 96 | % | 75 - 125 |
| | | | Available Cobalt (Co) | 2007/08/31 | | 99 | % | 75 - 125 |
| | | | Available Copper (Cu) | 2007/08/31 | | 95 | % | 75 - 125 |
| | | | Available Iron (Fe) | 2007/08/31 | | 105 | % | 75 - 125 |
| | | | Available Lead (Pb) | 2007/08/31 | | 95 | % | 75 - 125 |
| | | | Available Manganese (Mn) | 2007/08/31 | | 99 | % | 75 - 125 |
| | | | Available Molybdenum (Mo) | 2007/08/31 | | 95 | % | 75 - 125 |
| | | | Available Nickel (Ni) | 2007/08/31 | | 100 | % | 75 - 125 |
| | | | Available Selenium (Se) | 2007/08/31 | | 88 | % | 75 - 125 |
| | | | Available Silver (Ag) | 2007/08/31 | | 95 | % | 75 - 125 |
| | | | Available Strontium (Sr) | 2007/08/31 | | 99 | % | 75 - 125 |
| | | | Available Thallium (Tl) | 2007/08/31 | | 95 | % | 75 - 125 |
| | | | Available Uranium (U) | 2007/08/31 | | 97 | % | 75 - 125 |
| | | | Available Vanadium (V) | 2007/08/31 | | 98 | % | 75 - 125 |
| | | | Available Zinc (Zn) | 2007/08/31 | | 94 | % | 75 - 125 |
| | | Method Blank | Available Aluminum (Al) | 2007/08/31 | ND, RDL=10 | | mg/kg | |
| | | | Available Antimony (Sb) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Arsenic (As) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Barium (Ba) | 2007/08/31 | ND, RDL=5 | | mg/kg | |
| | | | Available Beryllium (Be) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Boron (B) | 2007/08/31 | ND, RDL=5 | | mg/kg | |
| | | | Available Cadmium (Cd) | 2007/08/31 | ND, RDL=0.3 | | mg/kg | |
| | | | Available Chromium (Cr) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Cobalt (Co) | 2007/08/31 | ND, RDL=1 | | mg/kg | |
| | | | Available Copper (Cu) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Iron (Fe) | 2007/08/31 | ND, RDL=50 | | mg/kg | |
| | | | Available Lead (Pb) | 2007/08/31 | ND, RDL=0.5 | | mg/kg | |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA793563

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1349181 | MPT | Method Blank | Available Manganese (Mn) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Molybdenum (Mo) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Nickel (Ni) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Selenium (Se) | 2007/08/31 | ND, RDL=1 | | mg/kg | |
| | | | Available Silver (Ag) | 2007/08/31 | ND, RDL=0.5 | | mg/kg | |
| | | | Available Strontium (Sr) | 2007/08/31 | ND, RDL=5 | | mg/kg | |
| | | | Available Thallium (Tl) | 2007/08/31 | ND, RDL=0.1 | | mg/kg | |
| | | | Available Uranium (U) | 2007/08/31 | ND, RDL=0.1 | | mg/kg | |
| | | | Available Vanadium (V) | 2007/08/31 | ND, RDL=2 | | mg/kg | |
| | | | Available Zinc (Zn) | 2007/08/31 | ND, RDL=5 | | mg/kg | |
| 1351154 | RMC | MATRIX SPIKE [U37208-01] | 1,2-Dichlorobenzene | 2007/09/05 | | 93 | % | 60 - 140 |
| | | | 1,3-Dichlorobenzene | 2007/09/05 | | 91 | % | 60 - 140 |
| | | | 1,4-Dichlorobenzene | 2007/09/05 | | 91 | % | 60 - 140 |
| | | | Chlorobenzene | 2007/09/05 | | 99 | % | 60 - 140 |
| | | | 1,1,1-Trichloroethane | 2007/09/05 | | 85 | % | 60 - 140 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/05 | | 89 | % | 60 - 140 |
| | | | 1,1,2-Trichloroethane | 2007/09/05 | | 97 | % | 60 - 140 |
| | | | 1,1-Dichloroethane | 2007/09/05 | | 87 | % | 60 - 140 |
| | | | 1,1-Dichloroethylene | 2007/09/05 | | 85 | % | 60 - 140 |
| | | | 1,2-Dichloroethane | 2007/09/05 | | 97 | % | 60 - 140 |
| | | | 1,2-Dichloropropane | 2007/09/05 | | 95 | % | 60 - 140 |
| | | | 4-Bromofluorobenzene | 2007/09/05 | | 106 | % | 60 - 140 |
| | | | Benzene | 2007/09/05 | | 99 | % | 60 - 140 |
| | | | Bromodichloromethane | 2007/09/05 | | 85 | % | 60 - 140 |
| | | | Bromoform | 2007/09/05 | | 69 | % | 60 - 140 |
| | | | Bromomethane | 2007/09/05 | | 77 | % | 60 - 140 |
| | | | Carbon Tetrachloride | 2007/09/05 | | 81 | % | 60 - 140 |
| | | | Chloroethane | 2007/09/05 | | 79 | % | 60 - 140 |
| | | | Chloroform | 2007/09/05 | | 85 | % | 60 - 140 |
| | | | Chloromethane | 2007/09/05 | | 85 | % | 60 - 140 |
| | | | cis-1,2-Dichloroethylene | 2007/09/05 | | 86 | % | 60 - 140 |
| | | | cis-1,3-Dichloropropene | 2007/09/05 | | 73 | % | 60 - 140 |
| | | | D4-1,2-Dichloroethane | 2007/09/05 | | 98 | % | 60 - 140 |
| | | | D8-Toluene | 2007/09/05 | | 109 | % | 60 - 140 |
| | | | Dibromochloromethane | 2007/09/05 | | 75 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/09/05 | | 101 | % | 60 - 140 |
| | | | Ethylene Dibromide | 2007/09/05 | | 94 | % | 60 - 140 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/05 | | 91 | % | 60 - 140 |
| | | | o-Xylene | 2007/09/05 | | 108 | % | 60 - 140 |
| | | | p+m-Xylene | 2007/09/05 | | 102 | % | 60 - 140 |
| | | | Styrene | 2007/09/05 | | 100 | % | 60 - 140 |
| | | | Tetrachloroethylene | 2007/09/05 | | 99 | % | 60 - 140 |
| | | | Toluene | 2007/09/05 | | 101 | % | 60 - 140 |
| | | | trans-1,2-Dichloroethylene | 2007/09/05 | | 93 | % | 60 - 140 |
| | | | trans-1,3-Dichloropropene | 2007/09/05 | | 73 | % | 60 - 140 |
| | | | Trichloroethylene | 2007/09/05 | | 100 | % | 60 - 140 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/05 | | 77 | % | 60 - 140 |
| | | | Vinyl Chloride | 2007/09/05 | | 83 | % | 60 - 140 |
| | | Spiked Blank | 1,2-Dichlorobenzene | 2007/09/05 | | 94 | % | 60 - 140 |
| | | | 1,3-Dichlorobenzene | 2007/09/05 | | 96 | % | 60 - 140 |
| | | | 1,4-Dichlorobenzene | 2007/09/05 | | 97 | % | 60 - 140 |
| | | | Chlorobenzene | 2007/09/05 | | 102 | % | 60 - 140 |
| | | | 1,1,1-Trichloroethane | 2007/09/05 | | 95 | % | 60 - 140 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/05 | | 93 | % | 60 - 140 |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA793563

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1351154 | RMC | Spiked Blank | 1,1,2-Trichloroethane | 2007/09/05 | | 98 | % | 60 - 140 |
| | | | 1,1-Dichloroethane | 2007/09/05 | | 94 | % | 60 - 140 |
| | | | 1,1-Dichloroethylene | 2007/09/05 | | 95 | % | 60 - 140 |
| | | | 1,2-Dichloroethane | 2007/09/05 | | 100 | % | 60 - 140 |
| | | | 1,2-Dichloropropane | 2007/09/05 | | 100 | % | 60 - 140 |
| | | | 4-Bromofluorobenzene | 2007/09/05 | | 111 | % | 60 - 140 |
| | | | Benzene | 2007/09/05 | | 102 | % | 60 - 140 |
| | | | Bromodichloromethane | 2007/09/05 | | 85 | % | 60 - 140 |
| | | | Bromoform | 2007/09/05 | | 72 | % | 60 - 140 |
| | | | Bromomethane | 2007/09/05 | | 87 | % | 60 - 140 |
| | | | Carbon Tetrachloride | 2007/09/05 | | 89 | % | 60 - 140 |
| | | | Chloroethane | 2007/09/05 | | 116 | % | 60 - 140 |
| | | | Chloroform | 2007/09/05 | | 94 | % | 60 - 140 |
| | | | Chloromethane | 2007/09/05 | | 93 | % | 60 - 140 |
| | | | cis-1,2-Dichloroethylene | 2007/09/05 | | 97 | % | 60 - 140 |
| | | | cis-1,3-Dichloropropene | 2007/09/05 | | 76 | % | 60 - 140 |
| | | | D4-1,2-Dichloroethane | 2007/09/05 | | 104 | % | 60 - 140 |
| | | | D8-Toluene | 2007/09/05 | | 110 | % | 60 - 140 |
| | | | Dibromochloromethane | 2007/09/05 | | 78 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/09/05 | | 107 | % | 60 - 140 |
| | | | Ethylene Dibromide | 2007/09/05 | | 98 | % | 60 - 140 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/05 | | 101 | % | 60 - 140 |
| | | | o-Xylene | 2007/09/05 | | 113 | % | 60 - 140 |
| | | | p+m-Xylene | 2007/09/05 | | 108 | % | 60 - 140 |
| | | | Styrene | 2007/09/05 | | 108 | % | 60 - 140 |
| | | | Tetrachloroethylene | 2007/09/05 | | 102 | % | 60 - 140 |
| | | | Toluene | 2007/09/05 | | 103 | % | 60 - 140 |
| | | | trans-1,2-Dichloroethylene | 2007/09/05 | | 99 | % | 60 - 140 |
| | | | trans-1,3-Dichloropropene | 2007/09/05 | | 76 | % | 60 - 140 |
| | | | Trichloroethylene | 2007/09/05 | | 100 | % | 60 - 140 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/05 | | 76 | % | 60 - 140 |
| | | | Vinyl Chloride | 2007/09/05 | | 90 | % | 60 - 140 |
| | | Method Blank | 1,2-Dichlorobenzene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,3-Dichlorobenzene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,4-Dichlorobenzene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Chlorobenzene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,1,1-Trichloroethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,1,2-Trichloroethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,1-Dichloroethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,1-Dichloroethylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,2-Dichloroethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 1,2-Dichloropropane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | 4-Bromofluorobenzene | 2007/09/05 | | 102 | % | 60 - 140 |
| | | | Benzene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Bromodichloromethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Bromoform | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Bromomethane | 2007/09/05 | ND, RDL=200 | | ug/kg | |
| | | | Carbon Tetrachloride | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Chloroethane | 2007/09/05 | ND, RDL=200 | | ug/kg | |
| | | | Chloroform | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Chloromethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | cis-1,2-Dichloroethylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | cis-1,3-Dichloropropene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | D4-1,2-Dichloroethane | 2007/09/05 | | 97 | % | 60 - 140 |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA793563

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1351154 | RMC | Method Blank | D8-Toluene | 2007/09/05 | | 104 | % | 60 - 140 |
| | | | Dibromochloromethane | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Ethylbenzene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Ethylene Dibromide | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | o-Xylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | p+m-Xylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Styrene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Tetrachloroethylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Toluene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | trans-1,2-Dichloroethylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | trans-1,3-Dichloropropene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Trichloroethylene | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | | Vinyl Chloride | 2007/09/05 | ND, RDL=30 | | ug/kg | |
| | | RPD [U37208-01] | 1,2-Dichlorobenzene | 2007/09/05 | NC | | % | 50 |
| | | | 1,3-Dichlorobenzene | 2007/09/05 | NC | | % | 50 |
| | | | 1,4-Dichlorobenzene | 2007/09/05 | NC | | % | 50 |
| | | | Chlorobenzene | 2007/09/05 | NC | | % | 50 |
| | | | 1,1,1-Trichloroethane | 2007/09/05 | NC | | % | 50 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/05 | NC | | % | 50 |
| | | | 1,1,2-Trichloroethane | 2007/09/05 | NC | | % | 50 |
| | | | 1,1-Dichloroethane | 2007/09/05 | NC | | % | 50 |
| | | | 1,1-Dichloroethylene | 2007/09/05 | NC | | % | 50 |
| | | | 1,2-Dichloroethane | 2007/09/05 | NC | | % | 50 |
| | | | 1,2-Dichloropropane | 2007/09/05 | NC | | % | 50 |
| | | | Benzene | 2007/09/05 | NC | | % | 50 |
| | | | Bromodichloromethane | 2007/09/05 | NC | | % | 50 |
| | | | Bromoform | 2007/09/05 | NC | | % | 50 |
| | | | Bromomethane | 2007/09/05 | NC | | % | 50 |
| | | | Carbon Tetrachloride | 2007/09/05 | NC | | % | 50 |
| | | | Chloroethane | 2007/09/05 | NC | | % | 50 |
| | | | Chloroform | 2007/09/05 | NC | | % | 50 |
| | | | Chloromethane | 2007/09/05 | NC | | % | 50 |
| | | | cis-1,2-Dichloroethylene | 2007/09/05 | NC | | % | 50 |
| | | | cis-1,3-Dichloropropene | 2007/09/05 | NC | | % | 50 |
| | | | Dibromochloromethane | 2007/09/05 | NC | | % | 50 |
| | | | Ethylbenzene | 2007/09/05 | NC | | % | 50 |
| | | | Ethylene Dibromide | 2007/09/05 | NC | | % | 50 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/05 | NC | | % | 50 |
| | | | o-Xylene | 2007/09/05 | NC | | % | 50 |
| | | | p+m-Xylene | 2007/09/05 | NC | | % | 50 |
| | | | Styrene | 2007/09/05 | NC | | % | 50 |
| | | | Tetrachloroethylene | 2007/09/05 | NC | | % | 50 |
| | | | Toluene | 2007/09/05 | NC | | % | 50 |
| | | | trans-1,2-Dichloroethylene | 2007/09/05 | NC | | % | 50 |
| | | | trans-1,3-Dichloropropene | 2007/09/05 | NC | | % | 50 |
| | | | Trichloroethylene | 2007/09/05 | NC | | % | 50 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/05 | NC | | % | 50 |
| | | | Vinyl Chloride | 2007/09/05 | NC | | % | 50 |
| 1353449 | AMC | MATRIX SPIKE | | | | | | |
| | | [U37199-01] | Mercury (Hg) | 2007/09/06 | | 105 | % | 75 - 125 |
| | | QC STANDARD | Mercury (Hg) | 2007/09/06 | | 83 | % | 75 - 125 |
| | | Spiked Blank | Mercury (Hg) | 2007/09/06 | | 104 | % | N/A |
| | | Method Blank | Mercury (Hg) | 2007/09/06 | ND, RDL=0.01 | | mg/kg | |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA793563

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1353449 | AMC | RPD [U37199-01] | Mercury (Hg) | 2007/09/06 | NC | | % | 35 |
| 1354059 | SSI | MATRIX SPIKE [U37208-01] | Mercury (Hg) | 2007/09/07 | | 108 | % | 75 - 125 |
| | | QC STANDARD | Mercury (Hg) | 2007/09/07 | | 86 | % | 75 - 125 |
| | | Spiked Blank | Mercury (Hg) | 2007/09/07 | | 102 | % | 75 - 125 |
| | | Method Blank | Mercury (Hg) | 2007/09/07 | ND, RDL=0.01 | | mg/kg | |
| | | RPD [U37208-01] | Mercury (Hg) | 2007/09/07 | NC | | % | 35 |

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample



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Your Project #: 073064
Site: MUD LAKE, LABRADOR
Your C.O.C. #: 16510

**Attention: Carla Hayes**
CBCL Limited Consulting Engineers
350 Hamilton River Rd
PO Box 1989 Stn B
Happy Valley-Goose Bay, NL
A0P 1E0

**Report Date: 2007/09/13**

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: A796712**
**Received: 2007/09/06, 13:06**

Sample Matrix: Soil
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Method Reference |
|---|---|---|---|---|---|
| TEH in Soil (PIRI) | 1 | 2007/09/12 | 2007/09/13 | ATL SOP 00111 R2 | Based on Atl. PIRI |
| Mercury (CVAA) | 1 | N/A | 2007/09/12 | ATL SOP 00026 R2 | Based on EPA245.5 |
| Metals Solid Avail. MS - Low Level Se | 1 | N/A | 2007/09/11 | ATL SOP 00024 R3 | Based on EPA6020A |
| Moisture | 1 | N/A | 2007/09/11 | ATL SOP 00001 R2 | MOE Handbook 1983 |
| PCBs in soil by GC/ECD | 1 | 2007/09/12 | 2007/09/12 | ATL SOP 00106 R2 | Based on EPA8082 |
| VPH in Soil (PIRI) | 1 | 2007/09/11 | 2007/09/11 | ATL SOP 00117 R2/00119 R3 | Based on Atl. PIRI |
| ModTPH (T1) Calc. for Soil ◊ | 1 | 2007/09/07 | 2007/09/13 | | Based on Atl. PIRI |
| Volatile Organic Compounds in Soil ◊ | 1 | 2007/09/11 | 2007/09/12 | ATL SOP 00123 R2 | Based on USEPA SW-84 |

Sample Matrix: Water
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Method Reference |
|---|---|---|---|---|---|
| Carbonate, Bicarbonate and Hydroxide | 1 | N/A | 2007/09/09 | | |
| Alkalinity | 1 | N/A | 2007/09/08 | ATL SOP 00013 R2 | Based on EPA310.2 |
| Chloride | 1 | N/A | 2007/09/08 | ATL SOP 00014 R3 | Based on SM4500-Cl- |
| Colour | 1 | N/A | 2007/09/08 | ATL SOP 00020 R2 | Based on EPA110.2 |
| Conductance - water | 1 | N/A | 2007/09/08 | ATL SOP 00004 R2/00006 R2 | Based on SM2510B |
| TEH in Water (PIRI) | 1 | 2007/09/10 | 2007/09/12 | ATL SOP 00113 R2 | Based on Atl. PIRI |
| Hardness (calculated as CaCO3) | 1 | N/A | 2007/09/11 | Based on SM2340B | ATL SOP 00048 |
| Mercury - Total (CVAA,LL) | 1 | N/A | 2007/09/12 | ATL SOP 00026 R2 | Based on EPA245.1 |
| Metals Water Total OES - Partial Scan | 1 | N/A | 2007/09/10 | ATL SOP 00025 R2 | Based on EPA200.7 |
| Metals Water Total MS | 1 | N/A | 2007/09/10 | ATL SOP 00024 R3 | Based on EPA6020A |
| Ion Balance (% Difference) | 1 | N/A | 2007/09/11 | | |
| Anion and Cation Sum | 1 | N/A | 2007/09/11 | | |
| Nitrogen Ammonia - water | 1 | N/A | 2007/09/08 | ATL SOP 00015 R2 | Based on USEPA 350.1 |
| Nitrogen - Nitrate + Nitrite | 1 | N/A | 2007/09/08 | ATL SOP 00016 R3 | Based on USGS - Enz. |
| Nitrogen - Nitrite | 1 | N/A | 2007/09/08 | ATL SOP 00017 R3 | Based on USEPA 354.1 |
| Nitrogen - Nitrate (as N) | 1 | N/A | 2007/09/10 | ATL SOP 00018 R2 | Based on ASTMD3867 |
| pH | 1 | N/A | 2007/09/08 | ATL SOP 00003 R2/00005 R2 | Based on EPA150.1 |
| Phosphorus - ortho | 1 | N/A | 2007/09/08 | ATL SOP 00021 R2 | Based on USEPA 365.1 |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2007/09/11 | | |

../2

Your Project #: 073064
Site: MUD LAKE, LABRADOR
Your C.O.C. #: 16510

**Attention: Carla Hayes**
CBCL Limited Consulting Engineers
350 Hamilton River Rd
PO Box 1989 Stn B
Happy Valley-Goose Bay, NL
A0P 1E0

**Report Date: 2007/09/13**

## CERTIFICATE OF ANALYSIS



Sample Matrix: Water
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Method Reference |
|---|---|---|---|---|---|
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2007/09/11 | | |
| Reactive Silica | 1 | N/A | 2007/09/08 | ATL SOP 00022 R2 | Based on EPA 366.0 |
| Sulphate | 1 | N/A | 2007/09/08 | ATL SOP 00023 R2 | Based on EPA 375.4 |
| Total Dissolved Solids (TDS calc) | 1 | N/A | 2007/09/11 | | |
| Organic carbon - Total (TOC) (1) | 1 | N/A | 2007/09/11 | ATL SOP 00037 R2 | Based on SM5310C |
| Turbidity (1) | 1 | N/A | 2007/09/09 | ATL SOP 00011 R2 | based on EPA 180.1 |
| Volatile Organic Compounds in Water | 1 | 2007/09/10 | 2007/09/12 | ATL SOP 00122 R2 | Based on EPA624 |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

KERI MACKAY, Project Manager
Email: keri.mackay.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: 2

Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## RESULTS OF ANALYSES OF SOIL

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51223 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SED 6** | **RDL** | **QC Batch** |
| **INORGANICS** | | | | |
| Moisture | % | 8 | 1 | 1355569 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ATLANTIC RBCA HYDROCARBONS (SOIL)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51223 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SED 6** | **RDL** | **QC Batch** |
| **TPH COMPOUNDS** | | | | |
| Benzene | mg/kg | ND | 0.03 | 1356390 |
| Toluene | mg/kg | ND | 0.03 | 1356390 |
| Ethylbenzene | mg/kg | ND | 0.03 | 1356390 |
| Xylene (Total) | mg/kg | ND | 0.05 | 1356390 |
| C6 - C10 (less BTEX) | mg/kg | ND | 3 | 1356390 |
| >C10-C21 Hydrocarbons | mg/kg | ND | 15 | 1357391 |
| >C21-<C32 Hydrocarbons | mg/kg | ND | 15 | 1357391 |
| Modified TPH (Tier1) | mg/kg | ND | 20 | 1354171 |
| **Surrogate Recovery (%)** | | | | |
| Isobutylbenzene - Extractable | % | 99 | | 1357391 |
| Isobutylbenzene - Volatile | % | 94 | | 1356390 |
| n-Dotriacontane - Extractable | % | 121 (1) | | 1357391 |

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
( 1 ) No visible signs of PAHs detected.



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Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

| Maxxam ID | | U51223 | U51223 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2007/09/01 | 2007/09/01 | | |
| COC Number | | 16510 | 16510 | | |
| | **Units** | **SED 6** | **SED 6 Lab-Dup** | **RDL** | **QC Batch** |
| **ELEMENTS** | | | | | |
| Mercury (Hg) | mg/kg | ND | | 0.01 | 1357535 |
| **Elements (ICP-MS)** | | | | | |
| Available Aluminum (Al) | mg/kg | 3700 | 3500 | 10 | 1357352 |
| Available Antimony (Sb) | mg/kg | ND | ND | 2 | 1357352 |
| Available Arsenic (As) | mg/kg | ND | ND | 2 | 1357352 |
| Available Barium (Ba) | mg/kg | 21 | 20 | 5 | 1357352 |
| Available Beryllium (Be) | mg/kg | ND | ND | 2 | 1357352 |
| Available Boron (B) | mg/kg | ND | ND | 5 | 1357352 |
| Available Cadmium (Cd) | mg/kg | ND | ND | 0.3 | 1357352 |
| Available Chromium (Cr) | mg/kg | 8 | 7 | 2 | 1357352 |
| Available Cobalt (Co) | mg/kg | 2 | 2 | 1 | 1357352 |
| Available Copper (Cu) | mg/kg | 3 | 3 | 2 | 1357352 |
| Available Iron (Fe) | mg/kg | 5200 | 5100 | 50 | 1357352 |
| Available Lead (Pb) | mg/kg | 1.6 | 1.6 | 0.5 | 1357352 |
| Available Manganese (Mn) | mg/kg | 75 | 74 | 2 | 1357352 |
| Available Molybdenum (Mo) | mg/kg | ND | ND | 2 | 1357352 |
| Available Nickel (Ni) | mg/kg | 5 | 5 | 2 | 1357352 |
| Available Selenium (Se) | mg/kg | ND | ND | 1 | 1357352 |
| Available Silver (Ag) | mg/kg | ND | ND | 0.5 | 1357352 |
| Available Strontium (Sr) | mg/kg | ND | ND | 5 | 1357352 |
| Available Thallium (Tl) | mg/kg | ND | ND | 0.1 | 1357352 |
| Available Uranium (U) | mg/kg | 0.2 | 0.2 | 0.1 | 1357352 |
| Available Vanadium (V) | mg/kg | 9 | 9 | 2 | 1357352 |
| Available Zinc (Zn) | mg/kg | 14 | 14 | 5 | 1357352 |

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



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Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (SOIL)

| Maxxam ID | | U51223 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SED 6** | **RDL** | **QC Batch** |
| **CHLOROBENZENES** | | | | |
| 1,2-Dichlorobenzene | ug/kg | ND | 30 | 1356766 |
| 1,3-Dichlorobenzene | ug/kg | ND | 30 | 1356766 |
| 1,4-Dichlorobenzene | ug/kg | ND | 30 | 1356766 |
| Chlorobenzene | ug/kg | ND | 30 | 1356766 |
| **VOLATILES** | | | | |
| 1,1,1-Trichloroethane | ug/kg | ND | 30 | 1356766 |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | 30 | 1356766 |
| 1,1,2-Trichloroethane | ug/kg | ND | 30 | 1356766 |
| 1,1-Dichloroethane | ug/kg | ND | 30 | 1356766 |
| 1,1-Dichloroethylene | ug/kg | ND | 30 | 1356766 |
| 1,2-Dichloroethane | ug/kg | ND | 30 | 1356766 |
| 1,2-Dichloropropane | ug/kg | ND | 30 | 1356766 |
| Benzene | ug/kg | ND | 30 | 1356766 |
| Bromodichloromethane | ug/kg | ND | 30 | 1356766 |
| Bromoform | ug/kg | ND | 30 | 1356766 |
| Bromomethane | ug/kg | ND | 200 | 1356766 |
| Carbon Tetrachloride | ug/kg | ND | 30 | 1356766 |
| Chloroethane | ug/kg | ND | 200 | 1356766 |
| Chloroform | ug/kg | ND | 30 | 1356766 |
| Chloromethane | ug/kg | ND | 30 | 1356766 |
| cis-1,2-Dichloroethylene | ug/kg | ND | 30 | 1356766 |
| cis-1,3-Dichloropropene | ug/kg | ND | 30 | 1356766 |
| Dibromochloromethane | ug/kg | ND | 30 | 1356766 |
| Ethylbenzene | ug/kg | ND | 30 | 1356766 |
| Ethylene Dibromide | ug/kg | ND | 30 | 1356766 |
| Methylene Chloride(Dichloromethane) | ug/kg | ND | 30 | 1356766 |
| o-Xylene | ug/kg | ND | 30 | 1356766 |
| p+m-Xylene | ug/kg | ND | 30 | 1356766 |
| Styrene | ug/kg | ND | 30 | 1356766 |
| Tetrachloroethylene | ug/kg | ND | 30 | 1356766 |
| Toluene | ug/kg | ND | 30 | 1356766 |
| trans-1,2-Dichloroethylene | ug/kg | ND | 30 | 1356766 |

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Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (SOIL)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51223 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SED 6** | **RDL** | **QC Batch** |
| trans-1,3-Dichloropropene | ug/kg | ND | 30 | 1356766 |
| Trichloroethylene | ug/kg | ND | 30 | 1356766 |
| Trichlorofluoromethane (FREON 11) | ug/kg | ND | 30 | 1356766 |
| Vinyl Chloride | ug/kg | ND | 30 | 1356766 |
| **Surrogate Recovery (%)** | | | | |
| 4-Bromofluorobenzene | % | 95 | | 1356766 |
| D4-1,2-Dichloroethane | % | 100 | | 1356766 |
| D8-Toluene | % | 100 | | 1356766 |

ND = Not detected
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QC Batch = Quality Control Batch



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Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51223 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SED 6** | **RDL** | **QC Batch** |
| **PCBs** | | | | |
| Total PCB | ug/g | ND | 0.05 | 1356279 |
| **Surrogate Recovery (%)** | | | | |
| Decachlorobiphenyl | % | 86 | | 1356279 |

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



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Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## RESULTS OF ANALYSES OF WATER

| | | | | | |
|---|---|---|---|---|---|
| Maxxam ID | | U51103 | U51103 | | |
| Sampling Date | | 2007/09/01 | 2007/09/01 | | |
| COC Number | | 16510 | 16510 | | |
| | **Units** | **SW1** | **SW1 Lab-Dup** | **RDL** | **QC Batch** |
| **INORGANICS** | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | ND | | 5 | 1355102 |
| Dissolved Chloride (Cl) | mg/L | 2 | | 1 | 1355103 |
| Colour | TCU | 73 | | 30 | 1355107 |
| Hardness (CaCO3) | mg/L | 6 | | 1 | 1353995 |
| Nitrate + Nitrite | mg/L | 0.08 | | 0.05 | 1355109 |
| Nitrite (N) | mg/L | ND | | 0.01 | 1355110 |
| Nitrogen (Ammonia Nitrogen) | mg/L | 0.06 | 0.05 | 0.05 | 1355156 |
| Total Organic Carbon (C) | mg/L | 15 | | 0.5 | 1357211 |
| Orthophosphate (P) | mg/L | 0.01 | | 0.01 | 1355108 |
| pH | pH | 6.09 | | N/A | 1355162 |
| Reactive Silica (SiO2) | mg/L | 8.5 | | 0.5 | 1355105 |
| Dissolved Sulphate (SO4) | mg/L | ND | | 2 | 1355104 |
| Turbidity | NTU | 6.2 | | 0.1 | 1355257 |
| Conductivity | uS/cm | 17 | | 1 | 1355157 |
| **RCAP CALCULATIONS** | | | | | |
| Anion Sum | me/L | 0.0500 | | N/A | 1354131 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | ND | | 1 | 1354128 |
| Calculated TDS | mg/L | 20 | | 1 | 1353996 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | ND | | 1 | 1354128 |
| Cation Sum | me/L | 0.400 | | N/A | 1354131 |
| Ion Balance (% Difference) | % | 77.8 | | N/A | 1354130 |
| Langelier Index (@ 20C) | N/A | NC | | N/A | 1354133 |
| Langelier Index (@ 4C) | N/A | NC | | N/A | 1354134 |
| Nitrate (N) | mg/L | 0.08 | | 0.05 | 1354132 |
| Saturation pH (@ 20C) | N/A | NC | | N/A | 1354133 |
| Saturation pH (@ 4C) | N/A | NC | | N/A | 1354134 |

ND = Not detected
NC = Non-calculable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ATLANTIC RBCA HYDROCARBONS (WATER)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51103 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SW1** | **RDL** | **QC Batch** |
| **TPH COMPOUNDS** | | | | |
| >C10-C21 Hydrocarbons | mg/L | ND | 0.05 | 1355384 |
| >C21-<C32 Hydrocarbons | mg/L | ND | 0.1 | 1355384 |
| **Surrogate Recovery (%)** | | | | |
| Isobutylbenzene - Extractable | % | 103 | | 1355384 |
| n-Dotriacontane - Extractable | % | 78 (1) | | 1355384 |

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
( 1 ) No visible signs of PAHs detected.



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Maxxam Job #: A796712
Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51103 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SW1** | **RDL** | **QC Batch** |
| **ELEMENTS** | | | | |
| Total Mercury (Hg) | ug/L | ND | 0.01 | 1357937 |
| **Elements (ICP-MS)** | | | | |
| Total Aluminum (Al) | ug/L | 150 | 10 | 1356220 |
| Total Antimony (Sb) | ug/L | ND | 2 | 1356220 |
| Total Arsenic (As) | ug/L | ND | 2 | 1356220 |
| Total Barium (Ba) | ug/L | 6 | 5 | 1356220 |
| Total Beryllium (Be) | ug/L | ND | 2 | 1356220 |
| Total Bismuth (Bi) | ug/L | ND | 2 | 1356220 |
| Total Boron (B) | ug/L | ND | 5 | 1356220 |
| Total Cadmium (Cd) | ug/L | ND | 0.3 | 1356220 |
| Total Chromium (Cr) | ug/L | ND | 2 | 1356220 |
| Total Cobalt (Co) | ug/L | ND | 1 | 1356220 |
| Total Copper (Cu) | ug/L | ND | 2 | 1356220 |
| Total Iron (Fe) | ug/L | 4900 | 50 | 1356220 |
| Total Lead (Pb) | ug/L | ND | 0.5 | 1356220 |
| Total Manganese (Mn) | ug/L | 34 | 2 | 1356220 |
| Total Molybdenum (Mo) | ug/L | ND | 2 | 1356220 |
| Total Nickel (Ni) | ug/L | ND | 2 | 1356220 |
| Total Selenium (Se) | ug/L | ND | 2 | 1356220 |
| Total Silver (Ag) | ug/L | ND | 0.5 | 1356220 |
| Total Strontium (Sr) | ug/L | 12 | 5 | 1356220 |
| Total Thallium (Tl) | ug/L | ND | 0.1 | 1356220 |
| Total Tin (Sn) | ug/L | ND | 2 | 1356220 |
| Total Titanium (Ti) | ug/L | 5 | 2 | 1356220 |
| Total Uranium (U) | ug/L | ND | 0.1 | 1356220 |
| Total Vanadium (V) | ug/L | ND | 2 | 1356220 |
| Total Zinc (Zn) | ug/L | 14 | 5 | 1356220 |
| **Elements (ICP-OES)** | | | | |
| Total Calcium (Ca) | mg/L | 1.3 | 0.1 | 1355693 |
| Total Magnesium (Mg) | mg/L | 0.7 | 0.1 | 1355693 |
| Total Phosphorus (P) | mg/L | ND | 0.1 | 1355693 |
| Total Potassium (K) | mg/L | 0.6 | 0.1 | 1355693 |

ND = Not detected
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Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51103 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SW1** | **RDL** | **QC Batch** |
| Total Sodium (Na) | mg/L | 1.9 | 0.1 | 1355693 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (WATER)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51103 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SW1** | **RDL** | **QC Batch** |
| **CHLOROBENZENES** | | | | |
| 1,2-Dichlorobenzene | ug/L | ND | 0.5 | 1355757 |
| 1,3-Dichlorobenzene | ug/L | ND | 1 | 1355757 |
| 1,4-Dichlorobenzene | ug/L | ND | 1 | 1355757 |
| Chlorobenzene | ug/L | ND | 1 | 1355757 |
| **VOLATILES** | | | | |
| 1,1,1-Trichloroethane | ug/L | ND | 1 | 1355757 |
| 1,1,2,2-Tetrachloroethane | ug/L | ND | 1 | 1355757 |
| 1,1,2-Trichloroethane | ug/L | ND | 1 | 1355757 |
| 1,1-Dichloroethane | ug/L | ND | 2 | 1355757 |
| 1,1-Dichloroethylene | ug/L | ND | 2 | 1355757 |
| 1,2-Dichloroethane | ug/L | ND | 1 | 1355757 |
| 1,2-Dichloropropane | ug/L | ND | 1 | 1355757 |
| Benzene | ug/L | ND | 1 | 1355757 |
| Bromodichloromethane | ug/L | ND | 1 | 1355757 |
| Bromoform | ug/L | ND | 1 | 1355757 |
| Bromomethane | ug/L | ND | 8 | 1355757 |
| Carbon Tetrachloride | ug/L | ND | 1 | 1355757 |
| Chloroethane | ug/L | ND | 8 | 1355757 |
| Chloroform | ug/L | ND | 1 | 1355757 |
| Chloromethane | ug/L | ND | 8 | 1355757 |
| cis-1,2-Dichloroethylene | ug/L | ND | 2 | 1355757 |
| cis-1,3-Dichloropropene | ug/L | ND | 2 | 1355757 |
| Dibromochloromethane | ug/L | ND | 1 | 1355757 |
| Ethylbenzene | ug/L | ND | 1 | 1355757 |
| Ethylene Dibromide | ug/L | ND | 1 | 1355757 |
| Methylene Chloride(Dichloromethane) | ug/L | ND | 3 | 1355757 |
| o-Xylene | ug/L | ND | 1 | 1355757 |
| p+m-Xylene | ug/L | ND | 2 | 1355757 |
| Styrene | ug/L | ND | 1 | 1355757 |
| Tetrachloroethylene | ug/L | ND | 1 | 1355757 |
| Toluene | ug/L | ND | 1 | 1355757 |
| trans-1,2-Dichloroethylene | ug/L | ND | 2 | 1355757 |

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Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

## VOLATILE ORGANICS BY GC/MS (WATER)

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51103 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| | **Units** | **SW1** | **RDL** | **QC Batch** |
| trans-1,3-Dichloropropene | ug/L | ND | 1 | 1355757 |
| Trichloroethylene | ug/L | ND | 1 | 1355757 |
| Trichlorofluoromethane (FREON 11) | ug/L | ND | 8 | 1355757 |
| Vinyl Chloride | ug/L | ND | 1 | 1355757 |
| **Surrogate Recovery (%)** | | | | |
| 4-Bromofluorobenzene | % | 95 | | 1355757 |
| D4-1,2-Dichloroethane | % | 102 | | 1355757 |
| D8-Toluene | % | 99 | | 1355757 |

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Report Date: 2007/09/13

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: MUD LAKE, LABRADOR
Sampler Initials:

**GENERAL COMMENTS**

Antimony recovery from the applicable digested reference material is 30 % for work sheet # 1357352.

Sample U51103-01: RCAp Ion Balance acceptable. Low ionic strength sample.

**Results relate only to the items tested.**



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

# Quality Assurance Report

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1355102 | JPU | MATRIX SPIKE | Total Alkalinity (Total as CaCO3) | 2007/09/08 | | NC | % | 80 - 120 |
| | | QC STANDARD | Total Alkalinity (Total as CaCO3) | 2007/09/08 | | 103 | % | 80 - 120 |
| | | Spiked Blank | Total Alkalinity (Total as CaCO3) | 2007/09/08 | | 115 | % | 80 - 120 |
| | | Method Blank | Total Alkalinity (Total as CaCO3) | 2007/09/08 | ND, RDL=5 | | mg/L | |
| | | RPD | Total Alkalinity (Total as CaCO3) | 2007/09/08 | 0.6 | | % | 25 |
| 1355103 | JPU | MATRIX SPIKE | Dissolved Chloride (Cl) | 2007/09/08 | | 103 | % | 80 - 120 |
| | | QC STANDARD | Dissolved Chloride (Cl) | 2007/09/08 | | 100 | % | 80 - 120 |
| | | Spiked Blank | Dissolved Chloride (Cl) | 2007/09/08 | | 106 | % | 80 - 120 |
| | | Method Blank | Dissolved Chloride (Cl) | 2007/09/08 | ND, RDL=1 | | mg/L | |
| | | RPD | Dissolved Chloride (Cl) | 2007/09/08 | 2.1 | | % | 25 |
| 1355104 | JPU | MATRIX SPIKE | Dissolved Sulphate (SO4) | 2007/09/08 | | 95 | % | 80 - 120 |
| | | QC STANDARD | Dissolved Sulphate (SO4) | 2007/09/08 | | 93 | % | 80 - 120 |
| | | Spiked Blank | Dissolved Sulphate (SO4) | 2007/09/08 | | 99 | % | 80 - 120 |
| | | Method Blank | Dissolved Sulphate (SO4) | 2007/09/08 | ND, RDL=2 | | mg/L | |
| | | RPD | Dissolved Sulphate (SO4) | 2007/09/08 | NC | | % | 25 |
| 1355105 | JPU | MATRIX SPIKE | Reactive Silica (SiO2) | 2007/09/08 | | 87 | % | 80 - 120 |
| | | QC STANDARD | Reactive Silica (SiO2) | 2007/09/08 | | 103 | % | 75 - 125 |
| | | Spiked Blank | Reactive Silica (SiO2) | 2007/09/08 | | 99 | % | 80 - 120 |
| | | Method Blank | Reactive Silica (SiO2) | 2007/09/08 | ND, RDL=0.5 | | mg/L | |
| | | RPD | Reactive Silica (SiO2) | 2007/09/08 | 0.4 | | % | 25 |
| 1355107 | JPU | QC STANDARD | Colour | 2007/09/08 | | 88 | % | 80 - 120 |
| | | Method Blank | Colour | 2007/09/08 | ND, RDL=5 | | TCU | |
| | | RPD | Colour | 2007/09/08 | NC | | % | 25 |
| 1355108 | JPU | MATRIX SPIKE | Orthophosphate (P) | 2007/09/08 | | 94 | % | 80 - 120 |
| | | QC STANDARD | Orthophosphate (P) | 2007/09/08 | | 99 | % | 80 - 120 |
| | | Spiked Blank | Orthophosphate (P) | 2007/09/08 | | 102 | % | 80 - 120 |
| | | Method Blank | Orthophosphate (P) | 2007/09/08 | ND, RDL=0.01 | | mg/L | |
| | | RPD | Orthophosphate (P) | 2007/09/08 | NC | | % | 25 |
| 1355109 | JPU | MATRIX SPIKE | Nitrate + Nitrite | 2007/09/08 | | 96 | % | 80 - 120 |
| | | QC STANDARD | Nitrate + Nitrite | 2007/09/08 | | 99 | % | 80 - 120 |
| | | Spiked Blank | Nitrate + Nitrite | 2007/09/08 | | 101 | % | 80 - 120 |
| | | Method Blank | Nitrate + Nitrite | 2007/09/08 | ND, RDL=0.05 | | mg/L | |
| | | RPD | Nitrate + Nitrite | 2007/09/08 | NC | | % | 25 |
| 1355110 | JPU | MATRIX SPIKE | Nitrite (N) | 2007/09/08 | | 103 | % | 80 - 120 |
| | | QC STANDARD | Nitrite (N) | 2007/09/08 | | 101 | % | 80 - 120 |
| | | Spiked Blank | Nitrite (N) | 2007/09/08 | | 109 | % | 80 - 120 |
| | | Method Blank | Nitrite (N) | 2007/09/08 | ND, RDL=0.01 | | mg/L | |
| | | RPD | Nitrite (N) | 2007/09/08 | NC | | % | 25 |
| 1355156 | JPU | MATRIX SPIKE [U51103-01] | Nitrogen (Ammonia Nitrogen) | 2007/09/08 | | 99 | % | 80 - 120 |
| | | QC STANDARD | Nitrogen (Ammonia Nitrogen) | 2007/09/08 | | 100 | % | 80 - 120 |
| | | Spiked Blank | Nitrogen (Ammonia Nitrogen) | 2007/09/08 | | 101 | % | 80 - 120 |
| | | Method Blank | Nitrogen (Ammonia Nitrogen) | 2007/09/08 | ND, RDL=0.05 | | mg/L | |
| | | RPD [U51103-01] | Nitrogen (Ammonia Nitrogen) | 2007/09/08 | NC | | % | 25 |
| 1355157 | SMT | QC STANDARD | Conductivity | 2007/09/08 | | 102 | % | 80 - 120 |
| | | Method Blank | Conductivity | 2007/09/08 | 1.0 | | uS/cm | |
| | | RPD | Conductivity | 2007/09/08 | 2.6 | | % | 25 |
| 1355162 | SMT | QC STANDARD | pH | 2007/09/08 | | 101 | % | 80 - 120 |
| | | Method Blank | pH | 2007/09/08 | 5.57 | | pH | |
| | | RPD | pH | 2007/09/08 | 1.6 | | % | 25 |
| 1355257 | JBK | QC STANDARD | Turbidity | 2007/09/09 | | 108 | % | 80 - 120 |
| | | Method Blank | Turbidity | 2007/09/09 | ND, RDL=0.1 | | NTU | |
| | | RPD | Turbidity | 2007/09/09 | NC | | % | 25 |
| 1355384 | AON | MATRIX SPIKE | Isobutylbenzene - Extractable | 2007/09/12 | | 102 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/09/12 | | 100 | % | 30 - 130 |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1355384 | AON | MATRIX SPIKE | >C10-C21 Hydrocarbons | 2007/09/12 | | 74 | % | 30 - 130 |
| | | | >C21-<C32 Hydrocarbons | 2007/09/12 | | 78 | % | 30 - 130 |
| | | Spiked Blank | Isobutylbenzene - Extractable | 2007/09/12 | | 101 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/09/12 | | 97 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/09/12 | | 87 | % | 30 - 130 |
| | | | >C21-<C32 Hydrocarbons | 2007/09/12 | | 93 | % | 30 - 130 |
| | | Method Blank | Isobutylbenzene - Extractable | 2007/09/12 | | 99 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/09/12 | | 99 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/09/12 | ND, RDL=0.05 | | mg/L | |
| | | | >C21-<C32 Hydrocarbons | 2007/09/12 | ND, RDL=0.1 | | mg/L | |
| | | RPD | >C10-C21 Hydrocarbons | 2007/09/12 | NC | | % | 40 |
| | | | >C21-<C32 Hydrocarbons | 2007/09/12 | NC | | % | 40 |
| 1355693 | MLB | MATRIX SPIKE | Total Calcium (Ca) | 2007/09/10 | | 96 | % | 80 - 120 |
| | | | Total Magnesium (Mg) | 2007/09/10 | | 106 | % | 80 - 120 |
| | | | Total Phosphorus (P) | 2007/09/10 | | 101 | % | 80 - 120 |
| | | | Total Potassium (K) | 2007/09/10 | | 102 | % | 80 - 120 |
| | | | Total Sodium (Na) | 2007/09/10 | | 104 | % | 80 - 120 |
| | | QC STANDARD | Total Calcium (Ca) | 2007/09/10 | | 111 | % | 80 - 120 |
| | | | Total Magnesium (Mg) | 2007/09/10 | | 110 | % | 80 - 120 |
| | | | Total Phosphorus (P) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Potassium (K) | 2007/09/10 | | 98 | % | 80 - 120 |
| | | | Total Sodium (Na) | 2007/09/10 | | 106 | % | 80 - 120 |
| | | Spiked Blank | Total Calcium (Ca) | 2007/09/10 | | 104 | % | 80 - 120 |
| | | | Total Magnesium (Mg) | 2007/09/10 | | 105 | % | 80 - 120 |
| | | | Total Phosphorus (P) | 2007/09/10 | | 100 | % | 80 - 120 |
| | | | Total Potassium (K) | 2007/09/10 | | 99 | % | 80 - 120 |
| | | | Total Sodium (Na) | 2007/09/10 | | 100 | % | 80 - 120 |
| | | Method Blank | Total Calcium (Ca) | 2007/09/10 | ND, RDL=0.1 | | mg/L | |
| | | | Total Magnesium (Mg) | 2007/09/10 | ND, RDL=0.1 | | mg/L | |
| | | | Total Phosphorus (P) | 2007/09/10 | ND, RDL=0.1 | | mg/L | |
| | | | Total Potassium (K) | 2007/09/10 | ND, RDL=0.1 | | mg/L | |
| | | | Total Sodium (Na) | 2007/09/10 | ND, RDL=0.1 | | mg/L | |
| | | RPD | Total Calcium (Ca) | 2007/09/10 | 1.3 | | % | 25 |
| | | | Total Magnesium (Mg) | 2007/09/10 | 0.7 | | % | 25 |
| | | | Total Phosphorus (P) | 2007/09/10 | NC | | % | 25 |
| | | | Total Potassium (K) | 2007/09/10 | 3.0 | | % | 25 |
| | | | Total Sodium (Na) | 2007/09/10 | 1.6 | | % | 25 |
| 1355757 | RMC | MATRIX SPIKE | 1,2-Dichlorobenzene | 2007/09/12 | | 100 | % | 70 - 130 |
| | | | 1,3-Dichlorobenzene | 2007/09/12 | | 100 | % | 70 - 130 |
| | | | 1,4-Dichlorobenzene | 2007/09/12 | | 100 | % | 70 - 130 |
| | | | Chlorobenzene | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | 1,1,1-Trichloroethane | 2007/09/12 | | 116 | % | 70 - 130 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/12 | | 100 | % | 70 - 130 |
| | | | 1,1,2-Trichloroethane | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | 1,1-Dichloroethane | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | 1,1-Dichloroethylene | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | 1,2-Dichloroethane | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | 1,2-Dichloropropane | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | 4-Bromofluorobenzene | 2007/09/12 | | 99 | % | 70 - 130 |
| | | | Benzene | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Bromodichloromethane | 2007/09/12 | | 100 | % | 70 - 130 |
| | | | Bromoform | 2007/09/12 | | 89 | % | 70 - 130 |
| | | | Bromomethane | 2007/09/12 | | 95 | % | 70 - 130 |
| | | | Carbon Tetrachloride | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Chloroethane | 2007/09/12 | | 111 | % | 70 - 130 |



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Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1355757 | RMC | MATRIX SPIKE | Chloroform | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Chloromethane | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | cis-1,2-Dichloroethylene | 2007/09/12 | | 110 | % | 70 - 130 |
| | | | cis-1,3-Dichloropropene | 2007/09/12 | | 100 | % | 70 - 130 |
| | | | D4-1,2-Dichloroethane | 2007/09/12 | | 103 | % | 70 - 130 |
| | | | D8-Toluene | 2007/09/12 | | 101 | % | 70 - 130 |
| | | | Dibromochloromethane | 2007/09/12 | | 95 | % | 70 - 130 |
| | | | Ethylbenzene | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Ethylene Dibromide | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | o-Xylene | 2007/09/12 | | 115 | % | 70 - 130 |
| | | | p+m-Xylene | 2007/09/12 | | 105 | % | 70 - 130 |
| | | | Styrene | 2007/09/12 | | 110 | % | 70 - 130 |
| | | | Tetrachloroethylene | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Toluene | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | trans-1,2-Dichloroethylene | 2007/09/12 | | 116 | % | 70 - 130 |
| | | | trans-1,3-Dichloropropene | 2007/09/12 | | 84 | % | 70 - 130 |
| | | | Trichloroethylene | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/12 | | 111 | % | 70 - 130 |
| | | | Vinyl Chloride | 2007/09/12 | | 111 | % | 70 - 130 |
| | | Spiked Blank | 1,2-Dichlorobenzene | 2007/09/11 | | 100 | % | 70 - 130 |
| | | | 1,3-Dichlorobenzene | 2007/09/11 | | 99 | % | 70 - 130 |
| | | | 1,4-Dichlorobenzene | 2007/09/11 | | 101 | % | 70 - 130 |
| | | | Chlorobenzene | 2007/09/11 | | 107 | % | 70 - 130 |
| | | | 1,1,1-Trichloroethane | 2007/09/11 | | 118 | % | 70 - 130 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/11 | | 100 | % | 70 - 130 |
| | | | 1,1,2-Trichloroethane | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | 1,1-Dichloroethane | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | 1,1-Dichloroethylene | 2007/09/11 | | 110 | % | 70 - 130 |
| | | | 1,2-Dichloroethane | 2007/09/11 | | 103 | % | 70 - 130 |
| | | | 1,2-Dichloropropane | 2007/09/11 | | 107 | % | 70 - 130 |
| | | | 4-Bromofluorobenzene | 2007/09/11 | | 99 | % | 70 - 130 |
| | | | Benzene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Bromodichloromethane | 2007/09/11 | | 102 | % | 70 - 130 |
| | | | Bromoform | 2007/09/11 | | 95 | % | 70 - 130 |
| | | | Bromomethane | 2007/09/11 | | 82 | % | 70 - 130 |
| | | | Carbon Tetrachloride | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Chloroethane | 2007/09/11 | | 111 | % | 70 - 130 |
| | | | Chloroform | 2007/09/11 | | 107 | % | 70 - 130 |
| | | | Chloromethane | 2007/09/11 | | 106 | % | 70 - 130 |
| | | | cis-1,2-Dichloroethylene | 2007/09/11 | | 113 | % | 70 - 130 |
| | | | cis-1,3-Dichloropropene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | D4-1,2-Dichloroethane | 2007/09/11 | | 101 | % | 70 - 130 |
| | | | D8-Toluene | 2007/09/11 | | 100 | % | 70 - 130 |
| | | | Dibromochloromethane | 2007/09/11 | | 97 | % | 70 - 130 |
| | | | Ethylbenzene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Ethylene Dibromide | 2007/09/11 | | 107 | % | 70 - 130 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/11 | | 113 | % | 70 - 130 |
| | | | o-Xylene | 2007/09/11 | | 114 | % | 70 - 130 |
| | | | p+m-Xylene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Styrene | 2007/09/11 | | 111 | % | 70 - 130 |
| | | | Tetrachloroethylene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Toluene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | trans-1,2-Dichloroethylene | 2007/09/11 | | 116 | % | 70 - 130 |
| | | | trans-1,3-Dichloropropene | 2007/09/11 | | 97 | % | 70 - 130 |



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Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1355757 | RMC | Spiked Blank | Trichloroethylene | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/11 | | 109 | % | 70 - 130 |
| | | | Vinyl Chloride | 2007/09/11 | | 108 | % | 70 - 130 |
| | | Method Blank | 1,2-Dichlorobenzene | 2007/09/11 | ND, RDL=0.5 | | ug/L | |
| | | | 1,3-Dichlorobenzene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 1,4-Dichlorobenzene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Chlorobenzene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 1,1,1-Trichloroethane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 1,1,2-Trichloroethane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 1,1-Dichloroethane | 2007/09/11 | ND, RDL=2 | | ug/L | |
| | | | 1,1-Dichloroethylene | 2007/09/11 | ND, RDL=2 | | ug/L | |
| | | | 1,2-Dichloroethane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 1,2-Dichloropropane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | 4-Bromofluorobenzene | 2007/09/11 | | 99 | % | 70 - 130 |
| | | | Benzene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Bromodichloromethane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Bromoform | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Bromomethane | 2007/09/11 | ND, RDL=8 | | ug/L | |
| | | | Carbon Tetrachloride | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Chloroethane | 2007/09/11 | ND, RDL=8 | | ug/L | |
| | | | Chloroform | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Chloromethane | 2007/09/11 | ND, RDL=8 | | ug/L | |
| | | | cis-1,2-Dichloroethylene | 2007/09/11 | ND, RDL=2 | | ug/L | |
| | | | cis-1,3-Dichloropropene | 2007/09/11 | ND, RDL=2 | | ug/L | |
| | | | D4-1,2-Dichloroethane | 2007/09/11 | | 97 | % | 70 - 130 |
| | | | D8-Toluene | 2007/09/11 | | 98 | % | 70 - 130 |
| | | | Dibromochloromethane | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Ethylbenzene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Ethylene Dibromide | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/11 | ND, RDL=3 | | ug/L | |
| | | | o-Xylene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | p+m-Xylene | 2007/09/11 | ND, RDL=2 | | ug/L | |
| | | | Styrene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Tetrachloroethylene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Toluene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | trans-1,2-Dichloroethylene | 2007/09/11 | ND, RDL=2 | | ug/L | |
| | | | trans-1,3-Dichloropropene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Trichloroethylene | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/11 | ND, RDL=8 | | ug/L | |
| | | | Vinyl Chloride | 2007/09/11 | ND, RDL=1 | | ug/L | |
| | | RPD | Bromodichloromethane | 2007/09/12 | 2.4 | | % | 40 |
| | | | Bromoform | 2007/09/12 | NC | | % | 40 |
| | | | Chloroform | 2007/09/12 | 3.9 | | % | 40 |
| | | | Dibromochloromethane | 2007/09/12 | NC | | % | 40 |
| 1356220 | MPT | MATRIX SPIKE | Total Aluminum (Al) | 2007/09/10 | | 107 | % | 80 - 120 |
| | | | Total Antimony (Sb) | 2007/09/10 | | 102 | % | 80 - 120 |
| | | | Total Arsenic (As) | 2007/09/10 | | 112 | % | 80 - 120 |
| | | | Total Barium (Ba) | 2007/09/10 | | 107 | % | 80 - 120 |
| | | | Total Beryllium (Be) | 2007/09/10 | | 107 | % | 80 - 120 |
| | | | Total Bismuth (Bi) | 2007/09/10 | | 101 | % | 80 - 120 |
| | | | Total Boron (B) | 2007/09/10 | | 103 | % | 80 - 120 |
| | | | Total Cadmium (Cd) | 2007/09/10 | | 108 | % | 80 - 120 |
| | | | Total Chromium (Cr) | 2007/09/10 | | 104 | % | 80 - 120 |
| | | | Total Cobalt (Co) | 2007/09/10 | | 106 | % | 80 - 120 |



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Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1356220 | MPT | MATRIX SPIKE | Total Copper (Cu) | 2007/09/10 | | 100 | % | 80 - 120 |
| | | | Total Lead (Pb) | 2007/09/10 | | 103 | % | 80 - 120 |
| | | | Total Manganese (Mn) | 2007/09/10 | | 118 | % | 80 - 120 |
| | | | Total Molybdenum (Mo) | 2007/09/10 | | 106 | % | 80 - 120 |
| | | | Total Nickel (Ni) | 2007/09/10 | | 103 | % | 80 - 120 |
| | | | Total Selenium (Se) | 2007/09/10 | | 114 | % | 80 - 120 |
| | | | Total Silver (Ag) | 2007/09/10 | | 103 | % | 80 - 120 |
| | | | Total Strontium (Sr) | 2007/09/10 | | 107 | % | 80 - 120 |
| | | | Total Thallium (Tl) | 2007/09/10 | | 105 | % | 80 - 120 |
| | | | Total Tin (Sn) | 2007/09/10 | | 93 | % | 80 - 120 |
| | | | Total Titanium (Ti) | 2007/09/10 | | 106 | % | 80 - 120 |
| | | | Total Uranium (U) | 2007/09/10 | | 109 | % | 80 - 120 |
| | | | Total Vanadium (V) | 2007/09/10 | | 107 | % | 80 - 120 |
| | | | Total Zinc (Zn) | 2007/09/10 | | 104 | % | 80 - 120 |
| | | QC STANDARD | Total Aluminum (Al) | 2007/09/10 | | 106 | % | 80 - 120 |
| | | | Total Antimony (Sb) | 2007/09/10 | | 102 | % | 80 - 120 |
| | | | Total Arsenic (As) | 2007/09/10 | | 100 | % | 80 - 120 |
| | | | Total Barium (Ba) | 2007/09/10 | | 92 | % | 80 - 120 |
| | | | Total Beryllium (Be) | 2007/09/10 | | 93 | % | 80 - 120 |
| | | | Total Boron (B) | 2007/09/10 | | 92 | % | 80 - 120 |
| | | | Total Cadmium (Cd) | 2007/09/10 | | 100 | % | 80 - 120 |
| | | | Total Chromium (Cr) | 2007/09/10 | | 97 | % | 80 - 120 |
| | | | Total Cobalt (Co) | 2007/09/10 | | 98 | % | 80 - 120 |
| | | | Total Copper (Cu) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Iron (Fe) | 2007/09/10 | | 111 | % | 80 - 120 |
| | | | Total Lead (Pb) | 2007/09/10 | | 100 | % | 80 - 120 |
| | | | Total Manganese (Mn) | 2007/09/10 | | 107 | % | 80 - 120 |
| | | | Total Molybdenum (Mo) | 2007/09/10 | | 97 | % | 80 - 120 |
| | | | Total Nickel (Ni) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Selenium (Se) | 2007/09/10 | | 90 | % | 80 - 120 |
| | | | Total Strontium (Sr) | 2007/09/10 | | 97 | % | 80 - 120 |
| | | | Total Thallium (Tl) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Uranium (U) | 2007/09/10 | | 98 | % | 80 - 120 |
| | | | Total Vanadium (V) | 2007/09/10 | | 97 | % | 80 - 120 |
| | | | Total Zinc (Zn) | 2007/09/10 | | 96 | % | 80 - 120 |
| | | Spiked Blank | Total Aluminum (Al) | 2007/09/10 | | 106 | % | 80 - 120 |
| | | | Total Antimony (Sb) | 2007/09/10 | | 94 | % | 80 - 120 |
| | | | Total Arsenic (As) | 2007/09/10 | | 92 | % | 80 - 120 |
| | | | Total Barium (Ba) | 2007/09/10 | | 99 | % | 80 - 120 |
| | | | Total Beryllium (Be) | 2007/09/10 | | 91 | % | 80 - 120 |
| | | | Total Bismuth (Bi) | 2007/09/10 | | 96 | % | 80 - 120 |
| | | | Total Boron (B) | 2007/09/10 | | 91 | % | 80 - 120 |
| | | | Total Cadmium (Cd) | 2007/09/10 | | 94 | % | 80 - 120 |
| | | | Total Chromium (Cr) | 2007/09/10 | | 93 | % | 80 - 120 |
| | | | Total Cobalt (Co) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Copper (Cu) | 2007/09/10 | | 94 | % | 80 - 120 |
| | | | Total Lead (Pb) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Manganese (Mn) | 2007/09/10 | | 103 | % | 80 - 120 |
| | | | Total Molybdenum (Mo) | 2007/09/10 | | 98 | % | 80 - 120 |
| | | | Total Nickel (Ni) | 2007/09/10 | | 98 | % | 80 - 120 |
| | | | Total Selenium (Se) | 2007/09/10 | | 87 | % | 80 - 120 |
| | | | Total Silver (Ag) | 2007/09/10 | | 101 | % | 80 - 120 |
| | | | Total Strontium (Sr) | 2007/09/10 | | 97 | % | 80 - 120 |
| | | | Total Thallium (Tl) | 2007/09/10 | | 93 | % | 80 - 120 |
| | | | Total Tin (Sn) | 2007/09/10 | | 93 | % | 80 - 120 |



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Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1356220 | MPT | Spiked Blank | Total Titanium (Ti) | 2007/09/10 | | 96 | % | 80 - 120 |
| | | | Total Uranium (U) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | | Total Vanadium (V) | 2007/09/10 | | 94 | % | 80 - 120 |
| | | | Total Zinc (Zn) | 2007/09/10 | | 95 | % | 80 - 120 |
| | | Method Blank | Total Aluminum (Al) | 2007/09/10 | ND, RDL=10 | | ug/L | |
| | | | Total Antimony (Sb) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Arsenic (As) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Barium (Ba) | 2007/09/10 | ND, RDL=5 | | ug/L | |
| | | | Total Beryllium (Be) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Bismuth (Bi) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Boron (B) | 2007/09/10 | ND, RDL=5 | | ug/L | |
| | | | Total Cadmium (Cd) | 2007/09/10 | ND, RDL=0.3 | | ug/L | |
| | | | Total Chromium (Cr) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Cobalt (Co) | 2007/09/10 | ND, RDL=1 | | ug/L | |
| | | | Total Copper (Cu) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Iron (Fe) | 2007/09/10 | ND, RDL=50 | | ug/L | |
| | | | Total Lead (Pb) | 2007/09/10 | ND, RDL=0.5 | | ug/L | |
| | | | Total Manganese (Mn) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Molybdenum (Mo) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Nickel (Ni) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Selenium (Se) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Silver (Ag) | 2007/09/10 | ND, RDL=0.5 | | ug/L | |
| | | | Total Strontium (Sr) | 2007/09/10 | ND, RDL=5 | | ug/L | |
| | | | Total Thallium (Tl) | 2007/09/10 | ND, RDL=0.1 | | ug/L | |
| | | | Total Tin (Sn) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Titanium (Ti) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Uranium (U) | 2007/09/10 | ND, RDL=0.1 | | ug/L | |
| | | | Total Vanadium (V) | 2007/09/10 | ND, RDL=2 | | ug/L | |
| | | | Total Zinc (Zn) | 2007/09/10 | ND, RDL=5 | | ug/L | |
| | | RPD | Total Aluminum (Al) | 2007/09/10 | NC | | % | 25 |
| | | | Total Antimony (Sb) | 2007/09/10 | NC | | % | 25 |
| | | | Total Arsenic (As) | 2007/09/10 | NC | | % | 25 |
| | | | Total Barium (Ba) | 2007/09/10 | 2.4 | | % | 25 |
| | | | Total Beryllium (Be) | 2007/09/10 | NC | | % | 25 |
| | | | Total Bismuth (Bi) | 2007/09/10 | NC | | % | 25 |
| | | | Total Boron (B) | 2007/09/10 | NC | | % | 25 |
| | | | Total Cadmium (Cd) | 2007/09/10 | NC | | % | 25 |
| | | | Total Chromium (Cr) | 2007/09/10 | NC | | % | 25 |
| | | | Total Cobalt (Co) | 2007/09/10 | NC | | % | 25 |
| | | | Total Copper (Cu) | 2007/09/10 | NC | | % | 25 |
| | | | Total Iron (Fe) | 2007/09/10 | 4.2 | | % | 25 |
| | | | Total Lead (Pb) | 2007/09/10 | NC | | % | 25 |
| | | | Total Manganese (Mn) | 2007/09/10 | 2.0 | | % | 25 |
| | | | Total Molybdenum (Mo) | 2007/09/10 | NC | | % | 25 |
| | | | Total Nickel (Ni) | 2007/09/10 | NC | | % | 25 |
| | | | Total Selenium (Se) | 2007/09/10 | NC | | % | 25 |
| | | | Total Silver (Ag) | 2007/09/10 | NC | | % | 25 |
| | | | Total Strontium (Sr) | 2007/09/10 | 2.3 | | % | 25 |
| | | | Total Thallium (Tl) | 2007/09/10 | NC | | % | 25 |
| | | | Total Tin (Sn) | 2007/09/10 | NC | | % | 25 |
| | | | Total Titanium (Ti) | 2007/09/10 | NC | | % | 25 |
| | | | Total Uranium (U) | 2007/09/10 | NC | | % | 25 |
| | | | Total Vanadium (V) | 2007/09/10 | NC | | % | 25 |
| | | | Total Zinc (Zn) | 2007/09/10 | NC | | % | 25 |
| 1356279 | RST | MATRIX SPIKE | Decachlorobiphenyl | 2007/09/12 | | 91 | % | 30 - 130 |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1356279 | RST | MATRIX SPIKE | Total PCB | 2007/09/12 | | 104 | % | 70 - 130 |
| | | Spiked Blank | Decachlorobiphenyl | 2007/09/12 | | 92 | % | 30 - 130 |
| | | | Total PCB | 2007/09/12 | | 88 | % | 70 - 130 |
| | | Method Blank | Decachlorobiphenyl | 2007/09/12 | | 90 | % | 30 - 130 |
| | | | Total PCB | 2007/09/12 | ND, RDL=0.05 | | ug/g | |
| | | RPD | Decachlorobiphenyl | 2007/09/12 | 4.2 | | % | N/A |
| | | | Total PCB | 2007/09/12 | NC | | % | 50 |
| 1356390 | GTH | MATRIX SPIKE | Isobutylbenzene - Volatile | 2007/09/11 | | 126 | % | 60 - 140 |
| | | | Benzene | 2007/09/11 | | 83 | % | 60 - 140 |
| | | | Toluene | 2007/09/11 | | 115 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/09/11 | | 86 | % | 60 - 140 |
| | | | Xylene (Total) | 2007/09/11 | | 106 | % | 60 - 140 |
| | | Spiked Blank | Isobutylbenzene - Volatile | 2007/09/11 | | 99 | % | 60 - 140 |
| | | | Benzene | 2007/09/11 | | 104 | % | 60 - 140 |
| | | | Toluene | 2007/09/11 | | 102 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/09/11 | | 99 | % | 60 - 140 |
| | | | Xylene (Total) | 2007/09/11 | | 100 | % | 60 - 140 |
| | | Method Blank | Isobutylbenzene - Volatile | 2007/09/11 | | 97 | % | 60 - 140 |
| | | | Benzene | 2007/09/11 | ND, RDL=0.03 | | mg/kg | |
| | | | Toluene | 2007/09/11 | ND, RDL=0.03 | | mg/kg | |
| | | | Ethylbenzene | 2007/09/11 | ND, RDL=0.03 | | mg/kg | |
| | | | Xylene (Total) | 2007/09/11 | ND, RDL=0.05 | | mg/kg | |
| | | | C6 - C10 (less BTEX) | 2007/09/11 | ND, RDL=3 | | mg/kg | |
| | | RPD | Benzene | 2007/09/11 | NC | | % | 50 |
| | | | Toluene | 2007/09/11 | NC | | % | 50 |
| | | | Ethylbenzene | 2007/09/11 | NC | | % | 50 |
| | | | Xylene (Total) | 2007/09/11 | NC | | % | 50 |
| | | | C6 - C10 (less BTEX) | 2007/09/11 | NC | | % | 50 |
| 1356766 | RMC | MATRIX SPIKE | 1,2-Dichlorobenzene | 2007/09/12 | | 99 | % | 60 - 140 |
| | | | 1,3-Dichlorobenzene | 2007/09/12 | | 99 | % | 60 - 140 |
| | | | 1,4-Dichlorobenzene | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | Chlorobenzene | 2007/09/12 | | 103 | % | 60 - 140 |
| | | | 1,1,1-Trichloroethane | 2007/09/12 | | 89 | % | 60 - 140 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/12 | | 97 | % | 60 - 140 |
| | | | 1,1,2-Trichloroethane | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | 1,1-Dichloroethane | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | 1,1-Dichloroethylene | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | 1,2-Dichloroethane | 2007/09/12 | | 93 | % | 60 - 140 |
| | | | 1,2-Dichloropropane | 2007/09/12 | | 99 | % | 60 - 140 |
| | | | 4-Bromofluorobenzene | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | Benzene | 2007/09/12 | | 106 | % | 60 - 140 |
| | | | Bromodichloromethane | 2007/09/12 | | 79 | % | 60 - 140 |
| | | | Bromoform | 2007/09/12 | | 71 | % | 60 - 140 |
| | | | Bromomethane | 2007/09/12 | | 67 | % | 60 - 140 |
| | | | Carbon Tetrachloride | 2007/09/12 | | 83 | % | 60 - 140 |
| | | | Chloroethane | 2007/09/12 | | 77 | % | 60 - 140 |
| | | | Chloroform | 2007/09/12 | | 89 | % | 60 - 140 |
| | | | Chloromethane | 2007/09/12 | | 91 | % | 60 - 140 |
| | | | cis-1,2-Dichloroethylene | 2007/09/12 | | 94 | % | 60 - 140 |
| | | | cis-1,3-Dichloropropene | 2007/09/12 | | 75 | % | 60 - 140 |
| | | | D4-1,2-Dichloroethane | 2007/09/12 | | 96 | % | 60 - 140 |
| | | | D8-Toluene | 2007/09/12 | | 93 | % | 60 - 140 |
| | | | Dibromochloromethane | 2007/09/12 | | 71 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/09/12 | | 105 | % | 60 - 140 |
| | | | Ethylene Dibromide | 2007/09/12 | | 96 | % | 60 - 140 |



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Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1356766 | RMC | MATRIX SPIKE | Methylene Chloride(Dichloromethane) | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | o-Xylene | 2007/09/12 | | 114 | % | 60 - 140 |
| | | | p+m-Xylene | 2007/09/12 | | 108 | % | 60 - 140 |
| | | | Styrene | 2007/09/12 | | 114 | % | 60 - 140 |
| | | | Tetrachloroethylene | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | Toluene | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | trans-1,2-Dichloroethylene | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | trans-1,3-Dichloropropene | 2007/09/12 | | 75 | % | 60 - 140 |
| | | | Trichloroethylene | 2007/09/12 | | 103 | % | 60 - 140 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/12 | | 83 | % | 60 - 140 |
| | | | Vinyl Chloride | 2007/09/12 | | 89 | % | 60 - 140 |
| | | Spiked Blank | 1,2-Dichlorobenzene | 2007/09/12 | | 98 | % | 60 - 140 |
| | | | 1,3-Dichlorobenzene | 2007/09/12 | | 99 | % | 60 - 140 |
| | | | 1,4-Dichlorobenzene | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | Chlorobenzene | 2007/09/12 | | 100 | % | 60 - 140 |
| | | | 1,1,1-Trichloroethane | 2007/09/12 | | 88 | % | 60 - 140 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/12 | | 97 | % | 60 - 140 |
| | | | 1,1,2-Trichloroethane | 2007/09/12 | | 98 | % | 60 - 140 |
| | | | 1,1-Dichloroethane | 2007/09/12 | | 92 | % | 60 - 140 |
| | | | 1,1-Dichloroethylene | 2007/09/12 | | 96 | % | 60 - 140 |
| | | | 1,2-Dichloroethane | 2007/09/12 | | 94 | % | 60 - 140 |
| | | | 1,2-Dichloropropane | 2007/09/12 | | 99 | % | 60 - 140 |
| | | | 4-Bromofluorobenzene | 2007/09/12 | | 91 | % | 60 - 140 |
| | | | Benzene | 2007/09/12 | | 105 | % | 60 - 140 |
| | | | Bromodichloromethane | 2007/09/12 | | 81 | % | 60 - 140 |
| | | | Bromoform | 2007/09/12 | | 71 | % | 60 - 140 |
| | | | Bromomethane | 2007/09/12 | | 65 | % | 60 - 140 |
| | | | Carbon Tetrachloride | 2007/09/12 | | 83 | % | 60 - 140 |
| | | | Chloroethane | 2007/09/12 | | 78 | % | 60 - 140 |
| | | | Chloroform | 2007/09/12 | | 89 | % | 60 - 140 |
| | | | Chloromethane | 2007/09/12 | | 94 | % | 60 - 140 |
| | | | cis-1,2-Dichloroethylene | 2007/09/12 | | 93 | % | 60 - 140 |
| | | | cis-1,3-Dichloropropene | 2007/09/12 | | 76 | % | 60 - 140 |
| | | | D4-1,2-Dichloroethane | 2007/09/12 | | 94 | % | 60 - 140 |
| | | | D8-Toluene | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | Dibromochloromethane | 2007/09/12 | | 75 | % | 60 - 140 |
| | | | Ethylbenzene | 2007/09/12 | | 103 | % | 60 - 140 |
| | | | Ethylene Dibromide | 2007/09/12 | | 97 | % | 60 - 140 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/12 | | 103 | % | 60 - 140 |
| | | | o-Xylene | 2007/09/12 | | 112 | % | 60 - 140 |
| | | | p+m-Xylene | 2007/09/12 | | 105 | % | 60 - 140 |
| | | | Styrene | 2007/09/12 | | 113 | % | 60 - 140 |
| | | | Tetrachloroethylene | 2007/09/12 | | 102 | % | 60 - 140 |
| | | | Toluene | 2007/09/12 | | 102 | % | 60 - 140 |
| | | | trans-1,2-Dichloroethylene | 2007/09/12 | | 97 | % | 60 - 140 |
| | | | trans-1,3-Dichloropropene | 2007/09/12 | | 76 | % | 60 - 140 |
| | | | Trichloroethylene | 2007/09/12 | | 101 | % | 60 - 140 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/12 | | 85 | % | 60 - 140 |
| | | | Vinyl Chloride | 2007/09/12 | | 93 | % | 60 - 140 |
| | | Method Blank | 1,2-Dichlorobenzene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,3-Dichlorobenzene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,4-Dichlorobenzene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Chlorobenzene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,1,1-Trichloroethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |



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Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1356766 | RMC | Method Blank | 1,1,2-Trichloroethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,1-Dichloroethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,1-Dichloroethylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,2-Dichloroethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 1,2-Dichloropropane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | 4-Bromofluorobenzene | 2007/09/12 | | 90 | % | 60 - 140 |
| | | | Benzene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Bromodichloromethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Bromoform | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Bromomethane | 2007/09/12 | ND, RDL=200 | | ug/kg | |
| | | | Carbon Tetrachloride | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Chloroethane | 2007/09/12 | ND, RDL=200 | | ug/kg | |
| | | | Chloroform | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Chloromethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | cis-1,2-Dichloroethylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | cis-1,3-Dichloropropene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | D4-1,2-Dichloroethane | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | D8-Toluene | 2007/09/12 | | 95 | % | 60 - 140 |
| | | | Dibromochloromethane | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Ethylbenzene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Ethylene Dibromide | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | o-Xylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | p+m-Xylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Styrene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Tetrachloroethylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Toluene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | trans-1,2-Dichloroethylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | trans-1,3-Dichloropropene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Trichloroethylene | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | | Vinyl Chloride | 2007/09/12 | ND, RDL=30 | | ug/kg | |
| | | RPD | 1,2-Dichlorobenzene | 2007/09/12 | NC | | % | 50 |
| | | | 1,3-Dichlorobenzene | 2007/09/12 | NC | | % | 50 |
| | | | 1,4-Dichlorobenzene | 2007/09/12 | NC | | % | 50 |
| | | | Chlorobenzene | 2007/09/12 | NC | | % | 50 |
| | | | 1,1,1-Trichloroethane | 2007/09/12 | NC | | % | 50 |
| | | | 1,1,2,2-Tetrachloroethane | 2007/09/12 | NC | | % | 50 |
| | | | 1,1,2-Trichloroethane | 2007/09/12 | NC | | % | 50 |
| | | | 1,1-Dichloroethane | 2007/09/12 | NC | | % | 50 |
| | | | 1,1-Dichloroethylene | 2007/09/12 | NC | | % | 50 |
| | | | 1,2-Dichloroethane | 2007/09/12 | NC | | % | 50 |
| | | | 1,2-Dichloropropane | 2007/09/12 | NC | | % | 50 |
| | | | Benzene | 2007/09/12 | NC | | % | 50 |
| | | | Bromodichloromethane | 2007/09/12 | NC | | % | 50 |
| | | | Bromoform | 2007/09/12 | NC | | % | 50 |
| | | | Bromomethane | 2007/09/12 | NC | | % | 50 |
| | | | Carbon Tetrachloride | 2007/09/12 | NC | | % | 50 |
| | | | Chloroethane | 2007/09/12 | NC | | % | 50 |
| | | | Chloroform | 2007/09/12 | NC | | % | 50 |
| | | | Chloromethane | 2007/09/12 | NC | | % | 50 |
| | | | cis-1,2-Dichloroethylene | 2007/09/12 | NC | | % | 50 |
| | | | cis-1,3-Dichloropropene | 2007/09/12 | NC | | % | 50 |
| | | | Dibromochloromethane | 2007/09/12 | NC | | % | 50 |
| | | | Ethylbenzene | 2007/09/12 | NC | | % | 50 |



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Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1356766 | RMC | RPD | Ethylene Dibromide | 2007/09/12 | NC | | % | 50 |
| | | | Methylene Chloride(Dichloromethane) | 2007/09/12 | NC | | % | 50 |
| | | | o-Xylene | 2007/09/12 | NC | | % | 50 |
| | | | p+m-Xylene | 2007/09/12 | NC | | % | 50 |
| | | | Styrene | 2007/09/12 | NC | | % | 50 |
| | | | Tetrachloroethylene | 2007/09/12 | NC | | % | 50 |
| | | | Toluene | 2007/09/12 | NC | | % | 50 |
| | | | trans-1,2-Dichloroethylene | 2007/09/12 | NC | | % | 50 |
| | | | trans-1,3-Dichloropropene | 2007/09/12 | NC | | % | 50 |
| | | | Trichloroethylene | 2007/09/12 | NC | | % | 50 |
| | | | Trichlorofluoromethane (FREON 11) | 2007/09/12 | NC | | % | 50 |
| | | | Vinyl Chloride | 2007/09/12 | NC | | % | 50 |
| 1357211 | CRA | MATRIX SPIKE | Total Organic Carbon (C) | 2007/09/11 | | 95 | % | N/A |
| | | QC STANDARD | Total Organic Carbon (C) | 2007/09/11 | | 91 | % | 80 - 120 |
| | | Spiked Blank | Total Organic Carbon (C) | 2007/09/11 | | 99 | % | 75 - 125 |
| | | Method Blank | Total Organic Carbon (C) | 2007/09/11 | ND, RDL=0.5 | | mg/L | |
| | | RPD | Total Organic Carbon (C) | 2007/09/11 | NC | | % | 25 |
| 1357352 | RPE | QC STANDARD | Available Aluminum (Al) | 2007/09/11 | | 77 | % | 75 - 125 |
| | | | Available Arsenic (As) | 2007/09/11 | | 108 | % | 75 - 125 |
| | | | Available Barium (Ba) | 2007/09/11 | | 119 | % | 75 - 125 |
| | | | Available Chromium (Cr) | 2007/09/11 | | 91 | % | 75 - 125 |
| | | | Available Cobalt (Co) | 2007/09/11 | | 97 | % | 75 - 125 |
| | | | Available Copper (Cu) | 2007/09/11 | | 94 | % | 75 - 125 |
| | | | Available Iron (Fe) | 2007/09/11 | | 83 | % | 75 - 125 |
| | | | Available Lead (Pb) | 2007/09/11 | | 111 | % | 75 - 125 |
| | | | Available Manganese (Mn) | 2007/09/11 | | 101 | % | 75 - 125 |
| | | | Available Nickel (Ni) | 2007/09/11 | | 101 | % | 75 - 125 |
| | | | Available Strontium (Sr) | 2007/09/11 | | 90 | % | 75 - 125 |
| | | | Available Vanadium (V) | 2007/09/11 | | 92 | % | 75 - 125 |
| | | | Available Zinc (Zn) | 2007/09/11 | | 98 | % | 75 - 125 |
| | | Spiked Blank | Available Aluminum (Al) | 2007/09/11 | | 100 | % | 75 - 125 |
| | | | Available Antimony (Sb) | 2007/09/11 | | 101 | % | 75 - 125 |
| | | | Available Arsenic (As) | 2007/09/11 | | 101 | % | 75 - 125 |
| | | | Available Barium (Ba) | 2007/09/11 | | 103 | % | 75 - 125 |
| | | | Available Beryllium (Be) | 2007/09/11 | | 103 | % | 75 - 125 |
| | | | Available Boron (B) | 2007/09/11 | | 87 | % | 75 - 125 |
| | | | Available Cadmium (Cd) | 2007/09/11 | | 98 | % | 75 - 125 |
| | | | Available Chromium (Cr) | 2007/09/11 | | 99 | % | 75 - 125 |
| | | | Available Cobalt (Co) | 2007/09/11 | | 103 | % | 75 - 125 |
| | | | Available Copper (Cu) | 2007/09/11 | | 101 | % | 75 - 125 |
| | | | Available Iron (Fe) | 2007/09/11 | | 104 | % | 75 - 125 |
| | | | Available Lead (Pb) | 2007/09/11 | | 102 | % | 75 - 125 |
| | | | Available Manganese (Mn) | 2007/09/11 | | 102 | % | 75 - 125 |
| | | | Available Molybdenum (Mo) | 2007/09/11 | | 101 | % | 75 - 125 |
| | | | Available Nickel (Ni) | 2007/09/11 | | 102 | % | 75 - 125 |
| | | | Available Selenium (Se) | 2007/09/11 | | 96 | % | 75 - 125 |
| | | | Available Silver (Ag) | 2007/09/11 | | 100 | % | 75 - 125 |
| | | | Available Strontium (Sr) | 2007/09/11 | | 102 | % | 75 - 125 |
| | | | Available Thallium (Tl) | 2007/09/11 | | 99 | % | 75 - 125 |
| | | | Available Uranium (U) | 2007/09/11 | | 103 | % | 75 - 125 |
| | | | Available Vanadium (V) | 2007/09/11 | | 103 | % | 75 - 125 |
| | | | Available Zinc (Zn) | 2007/09/11 | | 93 | % | 75 - 125 |
| | | Method Blank | Available Aluminum (Al) | 2007/09/11 | ND, RDL=10 | | mg/kg | |
| | | | Available Antimony (Sb) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Arsenic (As) | 2007/09/11 | ND, RDL=2 | | mg/kg | |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1357352 | RPE | Method Blank | Available Barium (Ba) | 2007/09/11 | ND, RDL=5 | | mg/kg | |
| | | | Available Beryllium (Be) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Boron (B) | 2007/09/11 | ND, RDL=5 | | mg/kg | |
| | | | Available Cadmium (Cd) | 2007/09/11 | ND, RDL=0.3 | | mg/kg | |
| | | | Available Chromium (Cr) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Cobalt (Co) | 2007/09/11 | ND, RDL=1 | | mg/kg | |
| | | | Available Copper (Cu) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Iron (Fe) | 2007/09/11 | ND, RDL=50 | | mg/kg | |
| | | | Available Lead (Pb) | 2007/09/11 | ND, RDL=0.5 | | mg/kg | |
| | | | Available Manganese (Mn) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Molybdenum (Mo) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Nickel (Ni) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Selenium (Se) | 2007/09/11 | ND, RDL=1 | | mg/kg | |
| | | | Available Silver (Ag) | 2007/09/11 | ND, RDL=0.5 | | mg/kg | |
| | | | Available Strontium (Sr) | 2007/09/11 | ND, RDL=5 | | mg/kg | |
| | | | Available Thallium (Tl) | 2007/09/11 | ND, RDL=0.1 | | mg/kg | |
| | | | Available Uranium (U) | 2007/09/11 | ND, RDL=0.1 | | mg/kg | |
| | | | Available Vanadium (V) | 2007/09/11 | ND, RDL=2 | | mg/kg | |
| | | | Available Zinc (Zn) | 2007/09/11 | ND, RDL=5 | | mg/kg | |
| | | RPD [U51223-01] | Available Aluminum (Al) | 2007/09/11 | 6.2 | | % | 35 |
| | | | Available Antimony (Sb) | 2007/09/11 | NC | | % | 35 |
| | | | Available Arsenic (As) | 2007/09/11 | NC | | % | 35 |
| | | | Available Barium (Ba) | 2007/09/11 | NC | | % | 35 |
| | | | Available Beryllium (Be) | 2007/09/11 | NC | | % | 35 |
| | | | Available Boron (B) | 2007/09/11 | NC | | % | 35 |
| | | | Available Cadmium (Cd) | 2007/09/11 | NC | | % | 35 |
| | | | Available Chromium (Cr) | 2007/09/11 | NC | | % | 35 |
| | | | Available Cobalt (Co) | 2007/09/11 | NC | | % | 35 |
| | | | Available Copper (Cu) | 2007/09/11 | NC | | % | 35 |
| | | | Available Iron (Fe) | 2007/09/11 | 2.3 | | % | 35 |
| | | | Available Lead (Pb) | 2007/09/11 | NC | | % | 35 |
| | | | Available Manganese (Mn) | 2007/09/11 | 1.1 | | % | 35 |
| | | | Available Molybdenum (Mo) | 2007/09/11 | NC | | % | 35 |
| | | | Available Nickel (Ni) | 2007/09/11 | NC | | % | 35 |
| | | | Available Selenium (Se) | 2007/09/11 | NC | | % | 35 |
| | | | Available Silver (Ag) | 2007/09/11 | NC | | % | 35 |
| | | | Available Strontium (Sr) | 2007/09/11 | NC | | % | 35 |
| | | | Available Thallium (Tl) | 2007/09/11 | NC | | % | 35 |
| | | | Available Uranium (U) | 2007/09/11 | NC | | % | 35 |
| | | | Available Vanadium (V) | 2007/09/11 | NC | | % | 35 |
| | | | Available Zinc (Zn) | 2007/09/11 | NC | | % | 35 |
| 1357391 | ALE | MATRIX SPIKE | Isobutylbenzene - Extractable | 2007/09/13 | | 100 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/09/13 | | 89 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/09/13 | | 94 | % | 30 - 130 |
| | | | >C21-<C32 Hydrocarbons | 2007/09/13 | | 75 | % | 30 - 130 |
| | | Spiked Blank | Isobutylbenzene - Extractable | 2007/09/13 | | 102 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/09/13 | | 98 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/09/13 | | 100 | % | 30 - 130 |
| | | | >C21-<C32 Hydrocarbons | 2007/09/13 | | 105 | % | 30 - 130 |
| | | Method Blank | Isobutylbenzene - Extractable | 2007/09/13 | | 107 | % | 30 - 130 |
| | | | n-Dotriacontane - Extractable | 2007/09/13 | | 90 | % | 30 - 130 |
| | | | >C10-C21 Hydrocarbons | 2007/09/13 | ND, RDL=15 | | mg/kg | |
| | | | >C21-<C32 Hydrocarbons | 2007/09/13 | ND, RDL=15 | | mg/kg | |
| | | RPD | >C10-C21 Hydrocarbons | 2007/09/13 | NC | | % | 50 |
| | | | >C21-<C32 Hydrocarbons | 2007/09/13 | NC | | % | 50 |



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CBCL Limited Consulting Engineers
Attention: Carla Hayes
Client Project #: 073064
P.O. #:
Project name: MUD LAKE, LABRADOR

## Quality Assurance Report (Continued)

Maxxam Job Number: DA796712

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1357535 | SSI | MATRIX SPIKE | Mercury (Hg) | 2007/09/12 | | NC | % | 75 - 125 |
| | | QC STANDARD | Mercury (Hg) | 2007/09/12 | | 95 | % | 75 - 125 |
| | | Spiked Blank | Mercury (Hg) | 2007/09/12 | | 108 | % | 75 - 125 |
| | | Method Blank | Mercury (Hg) | 2007/09/12 | ND, RDL=0.01 | | mg/kg | |
| | | RPD | Mercury (Hg) | 2007/09/12 | 0.6 | | % | 35 |
| 1357937 | SSI | MATRIX SPIKE | Total Mercury (Hg) | 2007/09/12 | | 105 | % | N/A |
| | | QC STANDARD | Total Mercury (Hg) | 2007/09/12 | | 107 | % | 80 - 120 |
| | | Spiked Blank | Total Mercury (Hg) | 2007/09/12 | | 103 | % | 80 - 120 |
| | | Method Blank | Total Mercury (Hg) | 2007/09/12 | ND, RDL=0.013 | | ug/L | |
| | | RPD | Total Mercury (Hg) | 2007/09/12 | NC | | % | 25 |

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample



200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Your Project #: 073064
Site:LABRADOR
Your C.O.C. #: 16510

**Attention: Carla Hayes**
CBCL Limited Consulting Engineers
350 Hamilton River Rd
PO Box 1989 Stn B
Happy Valley-Goose Bay, NL
A0P 1E0

**Report Date: 2007/09/25**

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: A796734**
**Received: 2007/09/06, 13:06**

Sample Matrix: Water
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Method Reference |
|---|---|---|---|---|---|
| Diagnostic Pest Scan in Water (1) | 1 | 2007/09/10 | 2007/09/24 | | undefined |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bedford to Burnaby Subcontract

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

KERI MACKAY, Project Manager
Email: keri.mackay.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 #: A796734
Report Date: 2007/09/25

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: LABRADOR
Sampler Initials:

## RESULTS OF ANALYSES OF WATER

| | | | | |
|---|---|---|---|---|
| Maxxam ID | | U51255 | | |
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 16510 | | |
| Registration # | | | | |
| | **Units** | **SW1** | **RDL** | **QC Batch** |
| **MISCELLANEOUS** | | | | |
| Subcontract Parameter | N/A | ATTACHED | N/A | 1356004 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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Maxxam Job #: A796734
Report Date: 2007/09/25

CBCL Limited Consulting Engineers
Client Project #: 073064
Project name: LABRADOR
Sampler Initials:

**GENERAL COMMENTS**

**Results relate only to the items tested.**



200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Your Project #: A796734
Your C.O.C. #: 08196764

**Attention: BEDFORD CLIENT SERVICE**
MAXXAM ANALYTICS INC.
200 BLUEWATER ROAD, SUITE 105
BEDFORD, NS
CANADA B4B 1G9

**Report Date: 2007/09/21**

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: A742324**
**Received: 2007/09/11, 09:25**

Sample Matrix: Water
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Diagnostic Pesticide Scan in Water (1) | 1 | 2007/09/12 | 2007/09/19 | BRN SOP-00336 R2.0 | BCMOE 2nd Ed. |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

KIMBERLEY WEBBER,
Email: Kimberley.Webber@MaxxamAnalytics.com
Phone# (604) 444-4808 Ext:259

==========

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.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 1

Maxxam Job #: A742324
Report Date: 2007/09/21

MAXXAM ANALYTICS INC.
Client Project #: A796734
Site Reference:
Sampler Initials:

## SEMIVOLATILE ORGANICS BY GC-MS (WATER)

| Maxxam ID | | G89019 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 08196764 | | |
| | **Units** | **SW1/U51255** | **RDL** | **QC Batch** |
| **Base Neutrals** | | | | |
| Diphenylamine | ug/L | ND | 0.1 | 1842996 |
| Pentachloronitrobenzene | ug/L | ND | 0.5 | 1842996 |
| Pronamide | ug/L | ND | 0.2 | 1842996 |
| **Chlorobenzenes** | | | | |
| Hexachlorobenzene | ug/L | ND | 0.2 | 1842996 |
| **FOOD GROUP PARAMETERS** | | | | |
| Bromophos | ug/L | ND | 0.1 | 1842996 |
| Chlorothalonil (Daconil) | ug/L | ND | 1 | 1842996 |
| Dichlobenil | ug/L | ND | 0.2 | 1842996 |
| Dicofol | ug/L | ND | 0.2 | 1842996 |
| Malaoxon | ug/L | ND | 1 | 1842996 |
| Phosalone | ug/L | ND | 0.2 | 1842996 |
| **Parameter** | | | | |
| 4,4'-DDE | ug/L | ND | 0.1 | 1842996 |
| 4,4'-DDT | ug/L | ND | 0.2 | 1842996 |
| 4,4'-methoxychlor | ug/L | ND | 0.1 | 1842996 |
| a-Chlordane | ug/L | ND | 0.06 | 1842996 |
| Azinophos methyl (Guthion) | ug/L | ND | 1 | 1842996 |
| Bromacil | ug/L | ND | 0.1 | 1842996 |
| Chlorpyrifos | ug/L | ND | 0.2 | 1842996 |
| Disulfoton (Di-Syston) | ug/L | ND | 1 | 1842996 |
| Endosulfan I | ug/L | ND | 0.2 | 1842996 |
| Endosulfan II | ug/L | ND | 0.2 | 1842996 |
| g-Chlordane | ug/L | ND | 0.06 | 1842996 |
| Mevinphos (Phosdrin) | ug/L | ND | 0.1 | 1842996 |
| Parathion methyl | ug/L | ND | 0.5 | 1842996 |
| Phorate (Thimet) | ug/L | ND | 0.5 | 1842996 |
| Stirophos | ug/L | ND | 0.2 | 1842996 |
| **Organophosphorus Pest.** | | | | |
| Alachlor | ug/L | ND | 0.5 | 1842996 |
| Atrazine | ug/L | ND | 0.2 | 1842996 |
| Butylate | ug/L | ND | 0.5 | 1842996 |

ND = Not detected
RDL = Reportable Detection Limit

Maxxam Job #: A742324
Report Date: 2007/09/21

MAXXAM ANALYTICS INC.
Client Project #: A796734
Site Reference:
Sampler Initials:

## SEMIVOLATILE ORGANICS BY GC-MS (WATER)

| Maxxam ID | | G89019 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 08196764 | | |
| | **Units** | **SW1/U51255** | **RDL** | **QC Batch** |
| Captan | ug/L | ND | 1 | 1842996 |
| Chlorpropham | ug/L | ND | 0.2 | 1842996 |
| Cyanazine (Bladex) | ug/L | ND | 0.5 | 1842996 |
| Desethyl-atrazine | ug/L | ND | 0.3 | 1842996 |
| Diazinon | ug/L | ND | 0.3 | 1842996 |
| Dichloran | ug/L | ND | 0.5 | 1842996 |
| Dimethoate | ug/L | ND | 0.5 | 1842996 |
| Ethion | ug/L | ND | 0.2 | 1842996 |
| Fenitrothion | ug/L | ND | 0.5 | 1842996 |
| Fenthion | ug/L | ND | 0.1 | 1842996 |
| Folpet | ug/L | ND | 1 | 1842996 |
| Fonofos | ug/L | ND | 0.1 | 1842996 |
| Malathion | ug/L | ND | 0.5 | 1842996 |
| Methidathion | ug/L | ND | 0.3 | 1842996 |
| Metolachlor | ug/L | ND | 0.2 | 1842996 |
| Metribuzin (Sencor) | ug/L | ND | 0.3 | 1842996 |
| Parathion | ug/L | ND | 0.5 | 1842996 |
| Phosmet | ug/L | ND | 0.2 | 1842996 |
| Phosphamidon | ug/L | ND | 0.2 | 1842996 |
| Prometryn | ug/L | ND | 0.2 | 1842996 |
| Propazine | ug/L | ND | 0.1 | 1842996 |
| Simazine | ug/L | ND | 0.5 | 1842996 |
| Terbufos | ug/L | ND | 0.3 | 1842996 |
| Trifluralin | ug/L | ND | 0.2 | 1842996 |
| Vinclozolin | ug/L | ND | 0.5 | 1842996 |
| **Organochlorine Pesticides** | | | | |
| 2,4'-DDT + 4,4'-DDD | ug/L | ND | 0.2 | 1842996 |
| a-BHC | ug/L | ND | 0.1 | 1842996 |
| Aldrin | ug/L | ND | 0.3 | 1842996 |
| Aspon | ug/L | ND | 0.2 | 1842996 |
| Azinphos ethyl | ug/L | ND | 0.5 | 1842996 |
| b-BHC | ug/L | ND | 0.1 | 1842996 |
| Benfluralin | ug/L | ND | 0.1 | 1842996 |

ND = Not detected
RDL = Reportable Detection Limit

Maxxam Job #: A742324
Report Date: 2007/09/21

MAXXAM ANALYTICS INC.
Client Project #: A796734
Site Reference:
Sampler Initials:

## SEMIVOLATILE ORGANICS BY GC-MS (WATER)

| Maxxam ID | | G89019 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 08196764 | | |
| | **Units** | **SW1/U51255** | **RDL** | **QC Batch** |
| Bromophos-ethyl | ug/L | ND | 0.3 | 1842996 |
| Carbophenothion | ug/L | ND | 0.3 | 1842996 |
| Chlorbenside | ug/L | ND | 0.1 | 1842996 |
| Chlorfenson(ovex) | ug/L | ND | 0.2 | 1842996 |
| Chlorfenvinphos(e/z) | ug/L | ND | 0.1 | 1842996 |
| Chlormephos | ug/L | ND | 0.5 | 1842996 |
| Chlorpyriphos-methyl | ug/L | ND | 0.1 | 1842996 |
| Chlorthiophos | ug/L | ND | 0.3 | 1842996 |
| Cyanophos | ug/L | ND | 0.2 | 1842996 |
| Dacthal | ug/L | ND | 0.1 | 1842996 |
| d-BHC | ug/L | ND | 0.1 | 1842996 |
| Demeton | ug/L | ND | 1 | 1842996 |
| Desmetryn | ug/L | ND | 0.3 | 1842996 |
| Diallate(e/z) | ug/L | ND | 0.5 | 1842996 |
| Dichlofenthion | ug/L | ND | 0.2 | 1842996 |
| Dichlofluanid | ug/L | ND | 0.5 | 1842996 |
| Dichlorvox + Naled | ug/L | ND | 0.1 | 1842996 |
| Dicrotophos | ug/L | ND | 0.5 | 1842996 |
| Dieldrin | ug/L | ND | 0.5 | 1842996 |
| Dioxathion | ug/L | ND | 1 | 1842996 |
| Endosulfan Sulfate | ug/L | ND | 0.2 | 1842996 |
| Endrin | ug/L | ND | 0.5 | 1842996 |
| Endrin Aldehyde | ug/L | ND | 0.5 | 1842996 |
| Endrin ketone | ug/L | ND | 0.5 | 1842996 |
| EPN | ug/L | ND | 0.5 | 1842996 |
| Eptam | ug/L | ND | 0.5 | 1842996 |
| Ethalfluralin | ug/L | ND | 0.5 | 1842996 |
| Fensulfothion | ug/L | ND | 0.1 | 1842996 |
| Heptachlor | ug/L | ND | 0.1 | 1842996 |
| Heptachlor epoxide | ug/L | ND | 0.5 | 1842996 |
| Hexazinone | ug/L | ND | 0.1 | 1842996 |
| Iodofenphos | ug/L | ND | 0.1 | 1842996 |
| Isofenphos | ug/L | ND | 0.3 | 1842996 |

ND = Not detected
RDL = Reportable Detection Limit

Maxxam Job #: A742324
Report Date: 2007/09/21

MAXXAM ANALYTICS INC.
Client Project #: A796734
Site Reference:
Sampler Initials:

## SEMIVOLATILE ORGANICS BY GC-MS (WATER)

| Maxxam ID | | G89019 | | |
|---|---|---|---|---|
| Sampling Date | | 2007/09/01 | | |
| COC Number | | 08196764 | | |
| | **Units** | **SW1/U51255** | **RDL** | **QC Batch** |
| Lindane (BHC), gamma- | ug/L | ND | 0.1 | 1842996 |
| Metalaxyl | ug/L | ND | 0.3 | 1842996 |
| Mirex | ug/L | ND | 0.3 | 1842996 |
| Nitrofen | ug/L | ND | 0.2 | 1842996 |
| o,p'-DDD | ug/L | ND | 0.1 | 1842996 |
| o,p'-DDE | ug/L | ND | 0.1 | 1842996 |
| Omethoate | ug/L | ND | 1 | 1842996 |
| Permethrin | ug/L | ND | 0.5 | 1842996 |
| Pirimicarb | ug/L | ND | 0.5 | 1842996 |
| Pirimiphos-ethyl | ug/L | ND | 0.5 | 1842996 |
| Pirimiphos-methyl | ug/L | ND | 0.2 | 1842996 |
| Procymidone | ug/L | ND | 0.2 | 1842996 |
| Profenophos | ug/L | ND | 0.5 | 1842996 |
| Profluralin | ug/L | ND | 0.5 | 1842996 |
| Pyrazophos | ug/L | ND | 0.1 | 1842996 |
| Quinalophos | ug/L | ND | 0.3 | 1842996 |
| Ronnel | ug/L | ND | 0.1 | 1842996 |
| Sulfotepp | ug/L | ND | 0.1 | 1842996 |
| Tecnazene | ug/L | ND | 0.5 | 1842996 |
| Terbuthylazine | ug/L | ND | 0.1 | 1842996 |
| Terbutryne | ug/L | ND | 0.2 | 1842996 |
| Tetradifon | ug/L | ND | 0.2 | 1842996 |
| Tolylfluanid | ug/L | ND | 0.5 | 1842996 |
| Triadimefon | ug/L | ND | 0.3 | 1842996 |
| Triallate | ug/L | ND | 0.3 | 1842996 |
| **PESTICIDE RESIDUE** | | | | |
| Iprodione | ug/L | ND | 1 | 1842996 |
| Propiconazole | ug/L | ND | 0.5 | 1842996 |
| **Surrogate Recovery (%)** | | | | |
| p,p'-DDE13C12 (sur.) | % | 89 | N/A | 1842996 |

ND = Not detected
N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: A742324
Report Date: 2007/09/21

MAXXAM ANALYTICS INC.
Client Project #: A796734
Site Reference:
Sampler Initials:

**SEMIVOLATILE ORGANICS BY GC-MS (WATER) Comments**

Sample G89019-01 Diagnostic Pesticide Scan in Water: Sample arrived past recommended hold time(7days)

**Results relate only to the items tested.**

MAXXAM ANALYTICS INC.
Attention: BEDFORD CLIENT SERVICE
Client Project #: A796734
P.O. #:
Site Reference:

# Quality Assurance Report

Maxxam Job Number: VA742324

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1842996 | LS2 | SPIKE | Hexachlorobenzene | 2007/09/19 | | 57 | % | 50 - 130 |
| | | | 4,4'-methoxychlor | 2007/09/19 | | 69 | % | 50 - 130 |
| | | | Bromacil | 2007/09/19 | | 82 | % | 50 - 130 |
| | | | Alachlor | 2007/09/19 | | 83 | % | 50 - 130 |
| | | | Atrazine | 2007/09/19 | | 83 | % | 50 - 130 |
| | | | Cyanazine (Bladex) | 2007/09/19 | | 59 | % | 50 - 130 |
| | | | Metolachlor | 2007/09/19 | | 87 | % | 50 - 130 |
| | | | Trifluralin | 2007/09/19 | | 74 | % | 50 - 130 |
| | | | Endrin | 2007/09/19 | | 73 | % | 50 - 130 |
| | | | Endrin Aldehyde | 2007/09/19 | | 110 | % | 50 - 130 |
| | | | Endrin ketone | 2007/09/19 | | 103 | % | 50 - 130 |
| | | | Heptachlor | 2007/09/19 | | 70 | % | 50 - 130 |
| | | | Heptachlor epoxide | 2007/09/19 | | 94 | % | 50 - 130 |
| | | | Lindane (BHC), gamma- | 2007/09/19 | | 95 | % | 50 - 130 |
| | | | p,p'-DDE13C12 (sur.) | 2007/09/19 | | 90 | % | 40 - 130 |
| | | BLANK | Diphenylamine | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Pentachloronitrobenzene | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Pronamide | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Hexachlorobenzene | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Bromophos | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Chlorothalonil (Daconil) | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Dichlobenil | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Dicofol | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Malaoxon | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Phosalone | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | 4,4'-DDE | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | 4,4'-DDT | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | 4,4'-methoxychlor | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | a-Chlordane | 2007/09/19 | ND, RDL=0.06 | | ug/L | |
| | | | Azinophos methyl (Guthion) | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Bromacil | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Chlorpyrifos | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Disulfoton (Di-Syston) | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Endosulfan I | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Endosulfan II | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | g-Chlordane | 2007/09/19 | ND, RDL=0.06 | | ug/L | |
| | | | Mevinphos (Phosdrin) | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Parathion methyl | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Phorate (Thimet) | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Stirophos | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Alachlor | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Atrazine | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Butylate | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Captan | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Chlorpropham | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Cyanazine (Bladex) | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Desethyl-atrazine | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Diazinon | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Dichloran | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Dimethoate | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Ethion | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Fenitrothion | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Fenthion | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Folpet | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Fonofos | 2007/09/19 | ND, RDL=0.1 | | ug/L | |

MAXXAM ANALYTICS INC.
Attention: BEDFORD CLIENT SERVICE
Client Project #: A796734
P.O. #:
Site Reference:

## Quality Assurance Report (Continued)

Maxxam Job Number: VA742324

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1842996 | LS2 | BLANK | Malathion | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Methidathion | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Metolachlor | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Metribuzin (Sencor) | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Parathion | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Phosmet | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Phosphamidon | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Prometryn | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Propazine | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Simazine | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Terbufos | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Trifluralin | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Vinclozolin | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | 2,4'-DDT + 4,4'-DDD | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | a-BHC | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Aldrin | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Aspon | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Azinphos ethyl | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | b-BHC | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Benfluralin | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Bromophos-ethyl | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Carbophenothion | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Chlorbenside | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Chlorfenson(ovex) | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Chlorfenvinphos(e/z) | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Chlormephos | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Chlorpyriphos-methyl | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Chlorthiophos | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Cyanophos | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Dacthal | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | d-BHC | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Demeton | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Desmetryn | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Diallate(e/z) | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Dichlofenthion | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Dichlofluanid | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Dichlorvox + Naled | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Dicrotophos | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Dieldrin | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Dioxathion | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Endosulfan Sulfate | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Endrin | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Endrin Aldehyde | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Endrin ketone | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | EPN | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Eptam | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Ethalfluralin | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Fensulfothion | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Heptachlor | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Heptachlor epoxide | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Hexazinone | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Iodofenphos | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Isofenphos | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Lindane (BHC), gamma- | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Metalaxyl | 2007/09/19 | ND, RDL=0.3 | | ug/L | |

MAXXAM ANALYTICS INC.
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Client Project #: A796734
P.O. #:
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## Quality Assurance Report (Continued)

Maxxam Job Number: VA742324

| QA/QC Batch Num | Init | QC Type | Parameter | Date Analyzed yyyy/mm/dd | Value | Recovery | Units | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 1842996 | LS2 | BLANK | Mirex | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Nitrofen | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | o,p'-DDD | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | o,p'-DDE | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Omethoate | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | Permethrin | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Pirimicarb | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Pirimiphos-ethyl | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Pirimiphos-methyl | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Procymidone | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Profenophos | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Profluralin | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Pyrazophos | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Quinalophos | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Ronnel | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Sulfotepp | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Tecnazene | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Terbuthylazine | 2007/09/19 | ND, RDL=0.1 | | ug/L | |
| | | | Terbutryne | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Tetradifon | 2007/09/19 | ND, RDL=0.2 | | ug/L | |
| | | | Tolylfluanid | 2007/09/19 | ND, RDL=0.5 | | ug/L | |
| | | | Triadimefon | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Triallate | 2007/09/19 | ND, RDL=0.3 | | ug/L | |
| | | | Iprodione | 2007/09/19 | ND, RDL=1 | | ug/L | |
| | | | p,p'-DDE13C12 (sur.) | 2007/09/19 | | 94 | % | 40 - 130 |
| | | | Propiconazole | 2007/09/19 | ND, RDL=0.5 | | ug/L | |

ND = Not detected

# Validation Signature Page

**Maxxam Job #: A742324**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

DAVE HUANG,

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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.