Golder Associates Ltd.

2390 Argentia Road
Mississauga, Ontario, Canada L5N 5Z7
Telephone: (905) 567-4444
Fax: (905) 567-6561

FINAL DRAFT REPORT
FOR PEER REVIEW

BIOACCESSIBILITY TESTING OF SOIL AND HOUSE DUST SAMPLES FROM THE SUDBURY SOILS STUDY

Submitted to:

The SARA Group
c/o Cantox Environmental Inc.
1900 Minnesota Court, Suite 130
Mississauga, Ontario
L5N 3C9

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EXECUTIVE SUMMARY

Golder Associates Ltd. (Golder) was retained by The SARA Group to conduct *in vitro* bioaccessibility testing using soil and house dust samples from the Sudbury area, in support of the Human Health Risk Assessment (HHRA) currently being conducted as part of the Sudbury Soils Study (SSS).

The bioaccessibility assay applied involves chemically mimicking two phases of the human digestion process, namely, the gastric and the intestinal phases. Soil (n=86) and house dust (n=10) samples collected from the Sudbury area were dried and sieved to represent the <250 μm or <60 μm size fractions, respectively. The 250 μm fraction is deemed the most important soil fraction for incidental ingestion via skin and hand-to-mouth behaviour. Using a mass balance approach, the bioaccessibility was calculated using the ratio of the concentration of metal (or metalloid) found in the extraction fluid to the concentration of metal (or metalloid) present in soil or dust. This bioaccessibility fraction can then be used in exposure assessments to more accurately assess the risk of exposure to metals via ingestion of contaminated soil or dust particles.

The Student's-*t* 95% upper confidence limit of the mean (95UCL) statistic for arsenic, cobalt, copper, lead, nickel and selenium in Sudbury soil was estimated to be 36.8%, 26.4%, 64.4%, 16.0%, 37.6% and 20.3% (values based on all analytical data; see comment below for selenium), respectively. However, because the data for arsenic, nickel and selenium were not normally distributed, the recommended 95UCL statistic, as determined using the US EPA program ProUCL (U.S. EPA, 2004) was the Chebyshev 95UCL of 41.1%, 42.0% and 27.2%, respectively. For house dust, the Student's-*t* 95UCL statistic was 3.7%, 2.4%, 4.6%, 3.4% and 1.2% for arsenic, cobalt, copper, lead and nickel, respectively. The data for nickel was not normally distributed, and therefore, as outlined above, the recommended 95UCL statistic was the Chebyshev 95UCL which was estimated to be 2.0%. Selenium in house dust was below the method detection limit (MDL) for all samples and 95UCL statistics were not calculated for this metal**.** The maximum values for house dust were 5.4%, 3.3%, 6.0%, 6.8% and 3.3% for arsenic, cobalt, copper, lead and nickel, respectively. Maximum values were not calculated for selenium because the concentrations were below the MDL.

Based on the results of the bioaccessibility testing conducted with Sudbury soils and house dust, Golder provides the following recommendations for consideration:

- That point estimates of the 95UCL be used in all exposure assessments for soil, and the point estimates of the 95UCL or the maximum be used in all exposure assessments for dust. When data are not normally distributed, the Chebyshev 95UCL statistic should be used. When data are normally distributed the Students-*t* 95UCL statistic should be used;
- Bioaccessibility estimates for selenium in soil are provided in three (3) ways. The bioaccessibility estimates of 20.3% and 27.2%, based on the Student's-*t* 95UCL and the

Chebyshev 95UCL, respectively, are based on all data (n=86); samples at or below the MDL were assumed to have values of one-half the MDL for the calculations. In addition, the bioaccessibility estimates were calculated using only data where selenium was above the MDL in the sieved soil (n=54), and when selenium was above the MDL in both the sieved soil and the extraction fluid (n=24). The bioaccessibility point estimates using the 95UCL for data with selenium above the MDL in the sieved soil and with selenium above the MDL in both sieved soil and extraction fluid, respectively were 19.6% and 26.3%, and 33.9% and 41.2% based on the Student's-*t* 95UCL and Chebyshev 95UCL, respectively. The data have been presented in three (3) ways to reflect the uncertainty in the analytical data when an element is reported near the MDL. Golder recommends use of the Chebyshev 95UCL calculated using the data with selenium above the MDL in both the sieved soil and extraction fluid of 41.2% for this metal; and,

- The bioaccessibility of soil-bound lead was much higher (~60%) following gastric extraction, compared with the bioaccessibility following gastric and intestinal extraction (~20%). The difference in bioaccessibility between extractions can probably be attributed to complexation of the lead with bile added during the gastric and intestinal extraction, making lead less bioaccessible. This binding would also likely occur in the human intestine. Still, it is recommended that the bioaccessibility values determined from the gastric extractions be used in the HHRA, despite the small sample size (i.e., n=10).

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 Overview of Bioaccessibility Testing

Human health impacts resulting from exposure to metal-contaminated soil is assumed to result primarily from the oral soil ingestion pathway. This is especially true for children who ingest relatively large quantities of soil as a result of typical hand-to-mouth behaviour (Oomen *et al.*, 2004). However, when determining human health risks associated with metal-impacted soil, toxicity has generally been evaluated by means of ingestion of metals contained in food or dissolved in drinking water. Metals present in soil are generally less bioavailable than metals contained in food or water matrices (Casteel *et al.*, 1997; Ruby *et al.*, 1999; Oomen *et al.*, 2003). The implications of this phenomenon to human health risk assessments (HHRA) is that a considerable overestimation of the exposure and risk associated with ingestion of metal-impacted soil is likely; therefore, an accurate prediction of human health risks is problematic. For example, the United States Environmental Protection Agency (U.S. EPA) has derived toxicity reference values (TRVs) for cancer and non-cancer effects of arsenic based on epidemiological studies of arsenic in drinking water (U.S.EPA, 2006). Typically, close to 100% of arsenic ingested in this form is available to be taken up across human intestinal epithelial cells; hence, it has the potential to cause adverse health effects. However, a substantially smaller proportion of ingested arsenic bound to soil becomes available during transit through the human gastrointestinal tract and is, therefore, less is available to be taken up across the intestines (Ruby *et al.*, 1996). The need to accurately predict the quantity of metal available to exert toxicity in different matrices (i.e., food, water, soil) was identified more than a decade ago (Ruby *et al.*, 1993; U.S. EPA, 1989). Accounting for matrix effects will reduce some of the uncertainty surrounding the TRVs used in risk assessments (RA) (Maddaloni, 2004). Many countries now allow for an adjustment for the bioavailability of soil-borne contaminants by their relative availability in soil in comparison with the medium (i.e., food or water) used in the toxicity study upon which the TRV is based (U.S. EPA, 1989). This is defined as the relative bioavailability and the exposure is adjusted using a relative absorption factor (or RAF).

Soil contaminant bioavailability can be influenced by a number of abiotic and biotic factors. Abiotic factors include: contaminant speciation, soil properties (such as organic matter and clay content), contaminant source, and age of contaminant. Biotic factors include organisms that can alter contaminant availability in soil (such as microorganisms and plants through the release of chelators or enzymes), as well as physiological properties of the organism ingesting the soil. For instance, the physiologies of children and adults differ (e.g., stomach and intestinal pHs and residence times, etc.), and therefore the contaminant bioavailability can differ accordingly. Since using humans to determine contaminant bioavailability is not an option, test animals with similar physiological characteristics to humans can be used to conduct *in vivo* site-specific bioavailability testing. However, due to the relative infeasibility of conducting suitable animal studies (from both an ethical and economic point of view), alternative methods that are easy-to-use, humane,

and relatively inexpensive are preferred. *In vitro* bioaccessibility testing is one of the alternative methods developed for this purpose. *In vitro* bioaccessibility testing involves chemically mimicking the human gastrointestinal tract, thereby providing an estimate of the concentration of soil-borne contaminants potentially available for uptake during transit through the gastrointestinal tract. This type of testing does not take into account absorption or metabolism once taken up by the organism. It is therefore a highly conservative estimate of the amount of a contaminant potentially reaching systemic circulation and resulting in a toxic effect on an organism. Since these tests are designed to mimic the human gastrointestinal system, they may be the most accurate and practical approach to estimating contaminant bioavailability in humans, and may provide better predictive capabilities than the rat or swine studies typically used for this purpose (Ruby, 2004). They are also more economically feasible, allowing for better characterization of the heterogeneous conditions in soil, and do not have the associated ethical limitations that animal studies carry (Ruby, 2004).

To date, a number of bioaccessibility testing protocols have been developed, and/or tested in government-funded projects. A critical review of the literature by the United Kingdom Environment Agency and the British Geological Survey in 2002 (Environment Agency and British Geological Society, 2002) identified the following methods as the most suitable for use to date:

1. The PBET (modified Physiologically-Based Extraction Test) method modified from Miller *et al.* (Miller *et al.*, 1981) by Ruby *et al.* (1993). The original method of Miller *et al.* (1981) was a nutritional study developed to determine the bioavailability of iron in food. The modified method of Ruby *et al.* (1993) uses 1 g of soil and 100 mL of extraction fluid and contains both a gastric and intestinal phase extraction procedure;

2. SBET method (Simplified Bioaccessibility Extraction Test). This method is similar to the PBET method, but uses only a gastric phase, and was originally designed for use with lead only (British Geological Survey);

3. The RIVM method (*In Vitro* Digestion Model, National Institute of Public Health and the Environment, the Netherlands). This method is a 3-phase method, with saliva, gastric and intestinal phases, and uses 0.6 g of soil and 13.5 mL of gastric fluid; and,

4. The DIN method (Method E DIN 19738, Ruhr-Universitat Bochum (RUB, Germany), comprises both gastric and intestinal phases, and can simulate a fed state by the addition of milk powder. The ratio of soil to extraction fluid is 1:50 (2.0 g of soil and 100 mL of gastric fluid).

There are advantages and disadvantages to each of the methods described above, but consideration should be given to the validation status, ease of use and comparability to an animal

model (Environment Agency, 2005). The U.S. EPA and U.S. EPA Region VIII have been involved in conducting swine and monkey bioavailability studies for use in the validation of bioaccessibility tests for just under a decade (Ruby *et al.*, 1999). The U.S. EPA are also in the final stages of publishing a guidance document relating to the use of bioavailability adjustments in RAs; it is expected that bioaccessibility testing will be endorsed, at least for some elements, for use in HHRA. It has also been suggested that the U.S. EPA, rather than endorsing one method for bioaccessibility testing, will instead be outlining criteria for each test (Environment Agency, 2005; Maddaloni, 2004). Other regulatory jurisdictions are following this approach and are reviewing or awaiting *in vitro*/*in vivo* study results prior to releasing their final position (Environment Agency, 2005). For example, the UK's Environment Agency recognizes the usefulness of bioaccessibility testing and requests that submissions of this type of method in support of RA provide supporting evidence that the method is scientific and robust, and that uncertainties have been addressed in any conclusions made regarding the bioaccessibility testing (Environment Agency, 2005). The use of bioaccessibility testing in HHRA will reduce some uncertainty surrounding the TRVs by adjusting for exposure medium (Maddaloni, 2004), and therefore will strengthen the RA making the results more accurate, realistic, and scientifically defensible.

1.2 Objective of this Report

Golder Associates Ltd. (Golder) was retained by The SARA Group (SARA) to conduct *in vitro* bioaccessibility testing with soil and house dust samples collected from the Sudbury area, in support of the Human Health Risk Assessment (HHRA) being conducted as part of the Sudbury Soils Study (SSS). The original Request for Proposals (RFP) issued by The SARA Group, and dated August 27, 2004 (SARA, 2004) included a draft Standard Operating Procedure (SOP) for a bioaccessibility assay methodology. Golder's proposal to conduct the testing indicated that some issues of incompatibility existed between the bioaccessibility approach outlined in the RFP and the methodology developed by Golder. Furthermore, Golder's previous experience with bioaccessibility testing had already addressed a number of issues identified in the RFP (SARA, 2004). In consultation with The SARA Group, a phased approach was developed to evaluate whether gastric or gastric and intestinal extraction would be more appropriate for the bioaccessibility program for the SSS. This report outlines the methodology, results, conclusions, and recommendations from the study.

2.0 METHODS

2.1 Overview of Golder's Method for Bioaccessibility Testing

An overview of the rationale for Golder's bioaccessibility testing method development is provided in Appendix C.

Golder has been conducting research and development in support of bioaccessibility testing evaluations since the spring of 2003. Golder's methods were developed with the intention of supplementing HHRAs with more realistic estimates of risks to receptors based on the site-specific availability of compounds bound to the soil matrix.

The following definitions (Ruby *et al.*, 1999) are provided for clarification of terminology:

- **Oral bioavailability** is defined as the fraction of a dose that reaches the central (blood) compartment from the gastrointestinal tract. Oral bioavailability is synonymous with absolute bioavailability;
- **Relative bioavailability** refers to the comparative bioavailabilities of substances present in different forms (i.e., complexed with other substances) or from different exposure media (i.e., food, water and soil). This is expressed as the **relative absorption factor (RAF),** and is calculated using the following equation:

$$RAF = \frac{Bioavailable\ \ fraction\ \ from\ soil}{Bioavailabile\ \ fraction\ \ from\ testing\ medium}$$

  RAFs can be used in RAs to adjust for contaminant exposure in different media, that is, if the study used to derive the TRV exposes the test organisms to the contaminant in water, then the ratio of the bioavailability of the contaminant in soil and the bioavailability of the contaminant in water, the RAF, can be used to adjust the exposure. The term relative bioavailability adjustment (RBA) is also used in this context; and,
- **Oral bioaccessibility** is defined as the fraction of a substance that is soluble in the gastrointestinal environment, and is therefore available for absorption.

2.1.1 Use of Bioaccessibility Testing in Human Health Risk Assessments

Bioaccessibility evaluations provide values which more accurately represent the actual fraction of contaminant readily available from site soils (i.e., potentially digestible by humans) via the oral exposure route. Specifically, bioaccessibility evaluations allow for corrections to be made for differences in bioaccessibility of contaminants in soil relative to the bioavailability in exposure media used by regulatory agencies to develop reference doses (RfDs). Since RfDs are derived from studies in which contaminants are provided to test organisms in readily-bioavailable media (e.g., contaminant-spiked food or water), it is scientifically defensible to adjust for bioavailability when considering real-world exposure media relative to those used in generating toxicity data. Since it is not feasible to conduct animal studies at every site, a Relative Absorption Factor (RAF) can be derived using the results of bioaccessibility evaluations. The most appropriate way to adjust for exposure media using bioaccessibility is to determine the RAF using the bioaccessibility from the environmental medium as a conservative measure of bioavailability and the bioavailability from the environmental medium measured in the study used to derive the TRV. However, it is also feasible to determine the bioaccessibility of the chemical from the dosing medium of the TRV study, so that the numerator and denominator of the RAF are consistent (i.e., bioaccessibility/bioaccessibility, rather than bioaccessibility/bioavailability). A

RAF based on a bioaccessibility evaluation is a simple quotient comparing the solubility of contaminants in soil and spiked food sources in simulated digestive fluids, and makes no assumptions about digestive differences between humans and other mammalian species, and is calculated as follows:

$$RAF = \frac{Bioaccessibility\ of\ Chemical\ in\ Soil}{Bioaccessibility\ of\ Chemical\ in\ Exposure\ Medium\ used\ to\ Develop\ the\ RfD}$$

For example, with respect to nickel, the bioaccessibility (i.e., primarily the HCl-soluble fraction) in soils (i.e., the numerator) will be site-specific and dependant upon a number of factors, such as: weathering, oxidation state, speciation, among other factors. For the RAF to be based on bioaccessibility, rather than bioavailability, the denominator must contain the bioaccessibility estimate (using exactly the same method as was used to determine the bioaccessibility estimate in the numerator) for the exposure medium used as the key reference study that is the basis for the RfD. In this case, the key reference study supporting the RfD for nickel salts is that of Ambrose *et al.* (1976). In that study, rats were fed laboratory chow spiked with nickel sulphate. The no-observable effect level (NOEL) was 100 mg/kg nickel in chow. Therefore, the bioaccessibility of $NiSO_4$-spiked rat chow can be determined and serve as the denominator in the equation to properly correct for the differences in bioaccessibility of nickel from exposure media. By determining the RAF using bioaccessibility for both numerator and denominator, a level of conservatism is being added to the study (i.e., bioaccessibility being typically higher than bioavailability). However, this also contributes to increased uncertainty. It is therefore recommended that the RAF be based on the conservative assumption that the bioaccessibility from soil is a "worse-case" bioavailability estimate, and that the denominator not be adjusted using bioaccessibility.

Once applied to the exposure assessment within an RA, the exposure rate due to incidental ingestion of site soils (often the driving exposure route for risks, particularly for metals) is more realistic than if bioaccessibility had not been used. The Ontario Ministry of Environment (MOE) recently applied this approach in the recent Port Colborne RA; this work is outlined in "*Soil Investigation and Human Health Risk Assessment for the Rodney Street Community"* (MOE, 2002).

2.2 Extraction Procedures

2.2.1 Preparation of Soil Samples

Soil samples were received by Golder from the SARA Group in plastic Ziploc bags (chain-of-custody forms for all samples are provided in Appendix A). All samples were dried at 40ºC to a constant weight and sieved through a #60 sieve (soil particles passing the #60 sieve represent the <250 µm fraction). As indicated in MOE (2002), the <250 µm soil particles are thought to be the

most important soil fraction for incidental ingestion via skin contact and hand-to-mouth behaviour.

2.2.2 Preparation of Dust Samples

Dust samples were also received by Golder from the SARA Group in plastic Ziploc bags (chain-of-custody forms are provided in Appendix A). All samples were dried at 40ºC to a constant weight and sieved through a 60 µm sieve. In contrast to the soil samples, this smaller sieve size was used to exclude fine material, such as hair, clothing fibers and carpet particles, from dust samples.

2.2.3 Preparation of Gastric Fluids

The general composition of the gastric extraction fluid (analogous to stomach acid) was adapted from the standard operating procedure (SOP) developed by the Solubility/Bioavailability Research Consortium (SBRC) (Ruby *et al.* 1999; Exponent, 2001) and differed by the incubation time and the addition of pepsin to the gastric fluid.

In brief, gastric extraction fluid was prepared by adding 60.06 g of glycine to 1.9 L of distilled water. Concentrated trace metal-grade hydrochloric acid (HCl) was added to the solution until a pH of 1.5 was achieved. The solution was then filled to a final volume of 2 L with distilled water, yielding a 0.4 M glycine solution.

2.2.4 Gastric Phase Extraction Technique

The gastric phase extraction technique is described briefly as follows. One gram of soil or up to one gram of dust was weighed on an analytical balance and placed in a labelled, pre-weighted 18 oz. WhirlPak bag. One hundred mL of heated (37 ºC) gastric extraction fluid was added to the WhirlPak bag. In the case of dust samples, when 1 gram of sample was not available, all extraction fluid volumes were scaled down accordingly. For instance, if 0.5 g of dust was obtained, 50 mL of extraction fluid was used. One gram of pepsin (EM Science) for every 100 mL extraction fluid was added to the WhirlPak bag. The WhirlPak bag was placed in the shaking incubator at 37 ºC for 2 hours at a maximum shaking setting of 25 strokes min^{-1} (Boekel Scientific Shake n' Bake DNA Hybridization Oven, Model 136400).

2.2.5 Intestinal Phase Extraction Technique

Upon completion of the gastric phase of extraction (described above), the WhirlPak bag was removed from the oven and saturated sodium hydroxide (NaOH) was added until the pH of the solution was between 7 and 8. Bile (0.35 g; Bovine Bile, Sigma) was added for every 100 mL extraction fluid. Pancreatin (0.035 g; Sigma; pancreatin consists primarily of lipase, amylase and

proteinase (specifically, trypsin, chymotrypsin and elastase I and II)) was added for every 100 mL extraction fluid. The WhirlPak bag was placed in the shaking incubator at 37 ºC for 2 hours at a maximum shaking setting of 25 cycles min^{-1}. Following completion of the intestinal phase of extraction, the WhirlPak bag was removed from the incubator and gently placed in a 1000 mL beaker for support. Fifteen mL of the leachate was drawn with a disposable pipette into a disposable centrifuge tube. The sample was then centrifuged (Eppendorf, Model 5804) at 10,000*g* for 10 minutes. The supernatant was carefully decanted into an appropriately clean sample jar, stabilized using nitric acid and stored at 4°C until submission to AGAT Laboratories (AGAT) for analysis of metals using Inductively Coupled Plasma – Mass Spectroscopy (ICP-MS), typically within 48 h of extraction.

2.3 Determining the Bioaccessibility of Nickel in Rat Chow

The bioaccessibility of nickel in rat chow spiked with nickel was determined in the event that the RAF based on the ratio of bioaccessibilities in soil to rat chow was to be used (see Section 2.1.1 for the recommended approach). The nickel-spiked rat chow was prepared as follows: Rat chow, purchased from a pet-food store (Living World Hamster Food), was ground manually. Particles greater than 6.35 mm, and less than 2.36 mm, were excluded. 2.5 mL of a 1000 mg/L nickel nitrate hexahydrate solution (CertiPUR, Nickel AA Standard, EMD) was added to 5 mL of acetone and mixed well. The solution (7.5 mL in total) was added to 10 g of the ground rat chow, mixed well, and left in a fume hood at room temperature for 24 hours to allow for the evaporation of the acetone, yielding a nominal concentration of nickel of 100 µg/g in the rat chow. Two replicate samples were extracted following the procedures for soil outlined above in Sections 2.2.4 and 2.2.5. The duplicate extractions as well as un-extracted spiked and un-spiked chow were sent to AGAT for the analytical determination of nickel (using ICP-MS).

Ideally, the method of addition used in this study would have been the same as that used by Ambrose *et al.* (1976) in the study upon which the R_fD of nickel of 20 µg/kg/day is based. In that study, nickel sulfate hexahydrate fines were mixed with finely-ground meal. However, because this is the extent of the detail provided by these researchers on the method of rat chow preparation and nickel addition to the rat chow, Golder used the method outlined above, which has been used in other metal feeding studies. Regardless, the RAF calculated for nickel is a conservative value. For example, the RAF calculated based on the bioaccessibility of nickel in soil of 42.0% (95% Chebyshev UCL) and the bioaccessibility of nickel in food of 94.7% is 0.44, while the RAF calculated assuming a bioaccessibility of nickel in food of 100% is 0.42. So, regardless of the method of addition, use of nickel bioaccessibilities of less than 100% in rat chow will provide a more conservative RAF.

2.4 Quality Assurance/Quality Control Measures

Five sample measures were used to assure data quality, as specified by the SARA Group (2004), as described below:

- Reagent Blanks – extraction fluid (analyzed at a rate of 5% of the total number of samples);
- Bottle Blanks – extraction fluid run through the complete gastric and intestinal extraction (analyzed at a rate of 5% of the total number of samples);
- Blank Spike – extraction fluid spiked with 10 mg/L (Co, Cu, Ni, Pb) and 1 mg/L (As, Se). Blank spikes were prepared in pairs, one being run through the extraction procedure and analyzed, the other being analyzed for metals without being subjected to the extraction (analyzed at a rate of 5% of the total number of samples);
- Duplicates – duplicate extractions of soil were conducted (analyzed at a rate of 10% of the total number of samples); and,
- Standard Reference Material – extractions of NIST SRM 2711 ("Montana II Soil") and NIST SRM 2583 ("Trace Elements in Indoor Dust") were conducted (analyzed at a rate of 2% of the total number of samples).

2.5 Preliminary Testing

Due to uncertainties associated with previous nickel studies, specifically complexation of nickel with glycine at high pH values typical of the intestinal phase of extraction (as stated in the RFP for this work), Golder and The SARA Group agreed to conduct preliminary tests using both the "gastric" extraction (GE) and "gastric and intestinal" extraction (GIE) test for each of ten (10) sieved soil samples to determine if glycine could be a confounding factor in the estimation of nickel bioaccessibilities. In brief, gastric extractions were conducted as outlined in Section 2.2.4. Following the completion of the gastric phase of extraction, the sample bag was removed from the oven and placed in a 1 L beaker for support. Fifteen milliliters of the extractant was transferred into a disposable centrifuge tube using a disposable pipette. The sample was centrifuged at 10 000*g* for 10 minutes, and the supernatant was carefully decanted into a sample jar, acidified with nitric acid, and stored at 4°C prior to submission to AGAT for analysis of metals by ICP-MS, typically within 48 h of extraction. Following sampling of the gastric phase extractant, the intestinal phase of extraction was performed as outlined in Section 2.2.5.

2.6 Bioaccessibility Calculations

Bioaccessibility estimates were calculated as a mass balance of the total amount of metal in the extract and the total amount in the <250 µm soil fraction or <60 µm dust fraction as follows:

$$Bioaccessibility\,(\%) = \frac{mass\ \ metal\ in\ \ extract}{mass\ \ metal\ in\ \ soil\ or\ dust} \times 100 = \frac{([metal]_{extract} \times volume\ \ of\ \ extract}{[metal]_{soil\ or\ dust} \times mass\ \ of\ \ soil\ or\ dust} \times 100$$

Examples of the calculation used for the estimation of nickel bioaccessibility in soil and dust are provided for soil sample 05-334 and dust sample 05-1290 in Appendix F. Note that the metal concentrations in the extraction fluids were corrected by subtracting the metal concentrations in the bottle blank.

3.0 RESULTS

The chain of custody forms and laboratory analytical results are provided in Appendices A and B, respectively for both soils and dust. The bioaccessibility estimates for the metals in soil and dust are provided graphically in Figures 1-12 and in tabular format in Appendix D.

3.1 Preliminary Testing

As evident in Figures 1, 2, 3, 5, and 6, there was no clearly defined difference between the GE and GIE with respect to arsenic, cobalt, copper, nickel and selenium bioaccessibilities. In fact, there were no significant differences between the gastric and gastric and intestinal bioaccessibilities for these metals (ANOVA, $p<0.05$). However, for lead (Figure 4), there was a significant decrease in bioaccessibility to approximately 17 percent following GIE (from approximately 61 percent following GE, which is almost four times lower; ANOVA, $p<0.05$). Since most metals are absorbed through the small intestine, and with the exception of lead, no substantial differences existed between the gastric and the gastric and intestinal extractions, the full gastric and intestinal extraction was used for the balance of the study. While for lead this appears to be less conservative, this is potentially a more realistic estimate of bioaccessibility. Animal studies using rats revealed that lead is primarily absorbed through the duodenum, and therefore supports our rationale for using the gastric and intestinal extraction for bioaccessibility estimates (Ellickson *et al.*, 2001). In addition to the previously mentioned Figures, Tables of the bioaccessibility results of the GE and GIE are provided in Appendix D.

3.2 Bioaccessibility in Soil Samples

Metal bioaccessibilities in soil are presented in Figures 7 to 12. The bioaccessibility was calculated as the mass-balance quotient of the respective metal (or metalloid) concentration in the extract after gastric and intestinal extraction divided by the mass present in the extracted soil. It should be noted that the post-extraction mass (i.e., the numerator) is 'background-corrected' by subtracting the average mass of metal present in the "bottle blanks". This adjustment was necessary to account for metals added during the extraction from reagents, water, proteins and

enzymes. Bioaccessibility is presented herein as a function of 250 µm fraction-soil analyte concentration.

The statistical treatment of the data is described as follows: 95% upper confidence limits of the mean (95UCL) were calculated using the U.S. EPA program ProUCL (U.S. EPA Version 3.0; available at http://www.epa.gov/esd/tsc/software.htm). All data were entered according to the specifications required by the program, and the program determined the best fit of the data. Specifically, the program recommended a specific method for determining the 95UCL based on the distribution, sample size and skewness of the data, and calculated the recommended, as well as other, 95UCL statistics. For a comprehensive rationale related to the program, more information is available in the U.S. EPA guidance document on this program (U.S. EPA, 2004).

For arsenic, nickel and selenium, the program determined that the data were not normally distributed and recommended use of the Chebyshev 95UCL. For cobalt, copper and lead, the program determined that the data were normally distributed and recommended use of the Student's-*t* 95UCL. Although the ProUCL program recommends the appropriate statistic, both the Student's-*t* 95UCLand the Chebyshev 95UCL statistics have been provided for all metals for soil, and the recommended statistic has been indicated in bold face (Table 1). The program outputs for each of the metals have been provided in Appendix D. The mean bioaccessibilities for the six metals are also presented in Table 1, and were calculated using the mathematical functions in Microsoft Excel.

Table 1: Mean and 95% upper confidence limit for estimating the bioaccessibility of each of the 6 elements present in soil samples and dust collected from houses in the Sudbury area. n=86 for soil and n=10 for house dust.

	Bioaccessibility in Soil			Bioaccessibility in House Dust		
Element	**Mean (µg/L)**	**95UCL (Student's-*t*)**	**95UCL (Chebyshev)**	**Mean (µg/L)**	**95UCL (Student's -*t*)**	**95UCL (Chebyshev)**
Arsenic	34.2	36.8	**41.1**	2.6	**3.7**	5.2
Cobalt	24.7	**26.4**	32.0	1.3	**2.4**	3.5
Copper	61.5	**64.4**	81.1	3.4	**4.6**	6.1
Lead	14.4	**16.0**	18.6	2.2	**3.4**	5.1
Nickel	34.9	37.6	**42.0**	0.7	1.2	**2.0**
Selenium	15.9[a], 15.1[b], 26.4[c]	20.3[a], 19.6[b], 33.9[c]	**27.2[a], 26.3[b], 41.2[c]**	N/A[d]	N/A[d]	N/A[d]

N/A- unable to be calculated.

a- all data (n=86 for soil and n=10 for dust), b excluding samples at MDL in sieved soil (n=54), c-excluding samples at MDL in sieved soil and/or extraction fluid (n=24), d – mean and 95%UCL could not be calculated because metal below MDL in all extraction samples.

Prepared by:_____
Verified by:_____

Bolded values are the recommended statistic based on ProUCL (US EPA, 2004).

The relative absorption factor (RAF) was calculated for nickel based on bioaccessibility to account for the differences in media used to derive the reference dose (see discussion in Section 2.1.1 and 2.3). Nickel was the only element used in this study upon which the reference dose was based on a study using food as an exposure medium; therefore, it was the only appropriate element for which to determine a RAF based on bioaccessibility. The bioacessibility of Ni in rat chow determined in this study was 94.7 ± 7.7%. The RAF for nickel was calculated to be 0.37, 0.40 or 0.44, using the mean bioaccessibility value (i.e., 34.9%), the Student's–*t* 95UCL (i.e., 37.6%) or the Chebyshev 95UCL (i.e., 42.0%), respectively, in Sudbury soils.

The RAF, based on bioaccessibility, was calculated as follows:

$$RAF = \frac{Bioaccessibility\ of\ Chemical\ in\ Soil}{Bioaccessibility\ of\ Chemical\ in\ Exposure\ Medium\ used\ to\ Develop\ the\ RfD}$$

3.3 Bioaccessibility in Dust Samples

Metal bioaccessibilities in dust are provided in Figures 13-17. The levels of selenium detected in household dust were below the method detection limit (MDL) used, and therefore are not presented graphically. It should be noted that the bioaccessibility of each element in house dust is low (less than 10%) relative to soil. The bioaccessibility in these Figures was calculated in the

same way as for soil (refer to Section 3.2). The point estimates (i.e., 95UCL) should be used in the RA for arsenic, cobalt, copper, lead and nickel. The means and all 95UCLs for the 6 elements in house dust are presented in Table 1. As for soils (Section 3.2), the U.S. EPA program ProUCL (U.S. EPA, 2004) was used to determine the distribution of the data and the recommended 95UCL statistic for dust. For all elements evaluated, with the exception of nickel, data were normally distributed and the Student's-*t* 95UCL was recommended. For nickel, the Chebyshev 95UCL was recommended. Although the ProUCL program recommends the appropriate statistic, both the Student's-*t* and the Chebyshev 95UCL statistics have been provided for all metals for dust, and the recommended statistic has been indicated in bold face (Table 1). The program outputs for each of the metals in dust have been provided in Appendix D. Again as with soils, the mean bioaccessibilities for the six metals in dust are also presented in Table 1 and were calculated using mathematical functions in Microsoft Excel.

3.4 Quality Assurance/Quality Control

Background levels of arsenic and selenium in the reagents blanks (i.e., extraction fluid) were below the detection limit of the analytical method used (Table 2). Cobalt, copper, lead and nickel were all present in trace amounts in reagents. The extraction procedure increased the level of arsenic, cobalt, copper, lead, nickel and selenium by approximately 3-, 4-, 1-, 2-, 6- and 1-fold, respectively, over the reagent blanks. Although these numbers look significant, upon further examination, this can be accounted for. Arsenic and selenium are near their method detection limits, so this apparent increase is probably not real. Cobalt had an increase of 2.4 µg/L or 0.24 µg, which is close to background levels and the method detection limit. The increase in copper during the extraction procedure is likely a result of the presence of copper in bile, and can be accounted for quantitatively. Nevertheless, all soils assessed for metal bioaccessibility were corrected for the mean bottle blank value for each element (Table 2), thereby correcting for any background levels of metals present.

Pancreatin and bile were assessed to determine if they contributed to the background detection of metals. Arsenic, cobalt, lead, nickel and selenium in both of these chemicals were all below the MDL. Copper was detected at concentrations of 1, 0.9, 1 and 0.9 µg/g in pancreatin, and at 5.1 µg/g for both samples of bile analyzed (Table 3). Five distilled water samples were also analyzed for metals to determine if this was the source of background metal levels. Of the relevant metals for this study, copper and nickel were detectable at concentrations of about 36 and 1.5 µg/L, respectively (Table 4). Despite this contribution of copper and nickel to the extraction from these sources, all samples were corrected for bottle blanks which accounted for any background levels of metals present.

The QA/QC program also involved the submission of 10 duplicate samples, each pair originating from the same soil sample, but extracted and analyzed independently for metals. In addition, two independently-extracted samples of the NIST SRM 2711 ("Montana II Soil") were submitted for

metals analysis. These samples were used to determine the repeatability of the extraction and analytical procedures using soil. This was done by calculating the Relative Percent Difference (RPD) in metal concentrations in the extraction fluids following extraction, between duplicate soil samples, and was calculated as follows;

$$RPD = 100 \times \frac{[metal_{duplicate\ 1}] - [metal_{duplicate\ 2}]}{mean(duplicate\ 1, duplicate\ 2)}$$

Given the heterogeneity of soil in natural conditions (i.e., weathered soil), between-sample variability (i.e., RPD) of up to 35 % is deemed acceptable, based on professional experience with analytical data, and scientific judgment. Greater variability is, however, possible, and does occur. Variability in the analysis of the 6 elements between duplicate samples was generally within acceptable and expected ranges as determined by the RPD (Table 5A). It should be noted that the detection of selenium in the soil extractions was at or below the MDL of 0.8 µg/L. The difference between 1 and 2 µg/L represents a small difference of 0.1 and 0.2 µg. When samples are close to the MDL relative percent differences between QA/QC duplicates is really not a practical measure of reproducibility. Based on this assumption, the results for selenium in the duplicate samples should therefore be interpreted with caution. There were 2 duplicate pairs whose results were more variable than expected for arsenic, lead, and nickel; these are samples 05-415 and 05-389. The laboratory responsible for the analysis (AGAT Laboratories) verified the results, and offered a technical explanation for the variability, as follows: "the samples contained high concentrations of compounds that can produce interference with the analytical method; these include high organic matter content and high concentrations of chloride. Chlorine binds easily to argon gas used in the ICP-MS. Therefore, samples with high chlorine content or those that have similar mass to ArCl (77), may produce more variability in the results than expected" (O. Beckman, AGAT Laboratories, *personal communication*, June 23, 2005). Based on this information, Golder has provided summary statistics both containing and omitting these two samples. RPDs for these elements (not including selenium) between duplicate samples ranged from 7.23% to 50.83%, including the two uncertain samples (i.e., 05-415 and 05-389), and 4.64% to 28.53% not including these samples. The RPD in the metal concentrations in the extraction fluids for the duplicate samples of NIST SRM 2711 ("Montana II Soil") analyzed were between 4.5% and 55.7% (Table 5B).

None of the dust samples were extracted in duplicate. However, three (3) replicates of the NIST SRM 2583 ("Trace Elements in Indoor Dust") were extracted, and the RPDs in metal concentrations in the extraction fluids following extraction were determined between the samples with the highest and lowest concentrations measured to determine the repeatability of the extraction and analytical procedures using dust. RPDs were 14.5%, 6.6%, 5.4%, 19.4% and 7.0% for arsenic, cobalt, copper, lead and nickel, respectively. The RPD for selenium was not calculated because the concentration of selenium in the extraction fluids was below the MDL for this metal. These values are within established control limits; typically, RPDs of up to 20% are

considered acceptable, indicating reproducibility and reliability of the dust results. The RPDs are provided in Table 5C.

The measured concentrations of arsenic and lead in the NIST SRM 2583 ("Trace Elements in Indoor Dust") were 5.1 and 79.2 mg/kg, respectively, and were within the acceptable ranges outlined in the NIST Certificate of Analysis. (The certified concentrations provided by NIST are 7 ±1.6 and 85.9 ±7.2 mg/kg for arsenic and lead, respectively.) The bioaccessibilities of each of the metals was also determined for the NIST SRM 2583 (n=3). The following results were obtained: arsenic = 54.1 ± 3.9; cobalt = 45.6 ± 1.7; copper = 56.9 ± 1.6; lead = 26.1 ± 2.5; and, nickel = 78.2 ± 2.8.

Finally, the percent recovery of spiked extraction fluid undergoing the extraction procedure was also evaluated. Extraction fluid was 'spiked' with a known amount of each metal, half of which went through the extraction process, while the other half was analyzed directly (i.e., no extraction). The spikes allow for an evaluation of whether the extraction procedure itself binds or interferes with the availability of the metal being analyzed, although the concentrations used in the spikes (i.e., 1 mg/L for As and Se; 10 mg/L for Co, Cu, Ni and Pb) are generally higher than the concentrations observed in the bioaccessibility extracts. The resulting data were reported as a ratio of the spiked samples to the spiked and tested samples. A value of 1, therefore, indicates 100% recovery of the spiked metal (Table 6 provides the results for the recovery of each metal from the extraction procedure). All metals, with the exception of lead, had a recovery of between 87-92%. The recovery of lead was approximately 54%. This result, together with the results comparing the gastric extraction to the gastric and intestinal extraction (Figure 4) supports the suggestion that lead may be forming complexes with the bile added during the intestinal extraction phase (through carboxylate and sulfonate groups on bile salts), reducing the bioaccessibility of lead following GIE versus GE. These interactions are also likely occurring in the human intestine.

3.5 Glycine and Nickel

The SARA Group (2004) indicated that there had been controversy regarding the impact of glycine in the extraction fluid on nickel bioaccessibility estimates when both gastric and intestinal extractions are employed. It is difficult to draw conclusions regarding the effects of glycine on the bioaccessibilities of metals through a comparison of the gastric and gastric and intestinal bioaccessibilities in the presence of glycine as was conducted in this study. Ideally, a comparison of the gastric metal bioaccessibilities in the presence and absence of glycine, and the gastric and intestinal metal bioaccessibilities in the presence and absence of glycine, would have been conducted. Regardless, because the 0.4 M glycine solution may enhance the bioaccessibilites of metals, particularly cobalt, copper and nickel, use of the glycine solution in the testing conducted by Golder provides "worst-case" estimates of metal bioaccessibilities.

4.0 RECOMMENDATIONS

Based on the results of this study, Golder provides the following recommendations related to the potential use of bioaccessibility data in the Sudbury HHRA:

1. The concentration of selenium detected from soil and dust samples was near or below the MDL, making the results highly variable and unpredictable. The results for soil are presented in three (3) ways to account for data detected at the MDL. Figure 12A illustrates the bioaccessibility using all selenium data (n=86). Samples reported at the MDL are presented as one-half of the MDL. Figure 12B has excluded all data where selenium was detected at or below the MDL in the sieved soil (n=54), and Figure 12C has excluded all data with either selenium at the MDL in the extraction fluid and/or in the sieved soil (n=24). The following Student's-*t* 95UCL for bioaccessibility were obtained for selenium for the following three (3) scenarios: i) 20.3% for all data; ii) 19.6% for data excluding selenium not detected in sieved soil; and, iii) 33.9% for data excluding selenium not detected in sieved soil and/or extraction fluid. When considering all of the data for selenium, the distribution is not normal, and therefore, the Chebyshev 95UCL is recommended and was calculated at 27.2%, 26.3% and 41.2% using the three methods outlined above. Golder recommends the use of 41.2% as a point estimate for the bioaccessibility of selenium. This value is the most conservative estimate and is considered appropriate given that many samples are close to the MDL and data variability is uncertain.

2. The bioaccessibilities of all soil-bound metals, with the exception of lead, are comparable between the gastric and gastric and intestinal extractions, and tend not to be influenced by the pH change or the presence of bile in the intestinal phase (this is supported by the data presented in Figures 1-6 and the spiked/spiked tested QA/QC results). Lead, however, appears to have reduced bioaccessibility following the gastric and intestinal extraction relative to the gastric extraction, and only has a 54% recovery from spiked samples. Lead is potentially complexing with bile added during the intestinal extraction procedure, and is therefore less bioaccessible during the gastric and intestinal extraction than during the gastric extraction only (Ellickson *et al.*, 2001). This is also likely to occur in the human intestine. However, researchers have observed a stronger correlation between *in vivo* relative bioavilability estimated from swine studies and *in vitro* bioaccessibility estimated from the gastric phase of extraction only (e.g., r=0.89 for gastric phase, r=0.38 for gastric and intestinal phase; Schroder *et al.*, 2004). Therefore, despite the small sample size (n=10), it is recommended that the bioaccessibility value determined from the gastric phase extraction be used in the RA. Still, it should be noted that the evidence of a stronger correlation between *in vivo* relative bioavailability and *in vitro* bioaccessibility estimated from the gastric phase is based on studies conducted with pigs and rats. Although there are similarities between pig and human gastrointestinal physiologies, it is possible that for humans, correlations with *in*

vivo relative bioavailability would be higher using the bioaccessibility determined from the gastric and intestinal phase of extraction.

3. Given the sample size, it is recommended that the appropriate 95UCL (either the Student's-*t* 95UCL or the Chebyshev 95UCL) be used as the point estimate for the bioaccessibilities of all metals with the exception of selenium in Sudbury soils. Since many of the samples had concentrations of selenium at or below the MDL, it is recommended that only samples with detectable limits be used to derive site-specific bioaccessibility values for Sudbury soils. Furthermore, the Student's-*t* 95UCL and the Chebyshev 95UCL statistics should be used for metals with normal and non-normal data distributions, respectively. Based on this approach, the recommended statistics are 41.1%, 26.4%, 64.4%, 16.0%, 42.0% and 41.2% for arsenic, cobalt, copper, lead, nickel and selenium, respectively.

4. It is recommended that the 95UCL or the maximum value of bioaccessibility of all metals, with the exception of selenium, be used for house dust samples in the Sudbury HHRA. Selenium in house dust was below the MDL. Further to this, the Student's-*t* and the Chebyshev 95UCL statistics should be used for metals with normal and non-normal data distributions, respectively. Based on this approach, the recommended statistics are 3.7%, 2.4%, 4.6%, 3.4% and 2.0% for arsenic, cobalt, copper, lead and nickel, respectively. The maximum values are 5.4%, 3.3%, 6.0%, 6.8% and 3.3% for arsenic, cobalt, copper, lead and nickel, respectively.

5. In order to use the bioaccessibility results effectively in the exposure assessment of a RA, the relative absorption factor (RAF) should be used, where appropriate. The RAF corrects for the differential media/matrix to which the samples for the bioaccessibility evaluations are conducted (i.e. soil), to the media used in the study that was used to derive the RfD. For example, the originating study for the reference dose of nickel soluble salts is based on the ingestion of rat chow by rats. Therefore, a correction for the bioaccessibility of nickel in rat chow could be applied to all bioaccessibility data gathered for nickel in soil samples. Alternatively, the bioaccessibility of nickel can be conservatively assumed equal to the bioavailability of nickel, and can be used in the numerator of the traditional RAF calculation. The RAF can be determined and applied to the exposure estimates for potential human exposure scenarios. Of the metals tested in this study, the only appropriate conversion factor is for nickel, based on the study used to derive the TRV selected.

5.0 LIMITATIONS AND USE

This report is for the sole use of Cantox Environmental and The SARA Group as it is the result of a specific scope of work. Any use of the findings provided in this report by parties other than Cantox Environmental or The SARA Group is prohibited and is at the sole risk of such party, without responsibility to Golder.

This report presents only factual results of tests that were carried out on samples which were provided to Golder by Cantox, and Golder does not offer any interpretation based upon such factual results. Golder has no knowledge as to how the samples were collected or selected. Golder confirms that the scheduled tests were carried out in accordance with Golder's proprietary laboratory procedures for these tests and to a professional standard of care. As Golder was not involved in the collection or monitoring of any sampling activity, Golder shall not be responsible and makes no comment on whether the samples provided and factual information are representative of the actual site conditions, nor does Golder provide any interpretation of the factual information as it relates to the use or application of the factual information contained in this report.

6.0 CLOSURE

We trust that you find this report satisfactory. If you have any questions or concerns please do not hesitate to contact us at your convenience.

Yours truly,

GOLDER ASSOCIATES LTD.

DRAFT

Guy Gilron, M.Sc., R.P.Bio., QP_{RA} (ON)
Senior Toxicologist/Risk Assessor

DRAFT

Tammie Morgan, M.Sc.
Environmental Risk Analyst

DRAFT

Jennifer Kirk, Ph.D.
Environmental-Risk Assessment Scientist

DRAFT

Ed Rodrigues, Ph.D., P.Geo.
Senior Regulatory Affairs Specialist

GG/TM/JK/ER/wlm

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Table 1: Mean and 95% upper confidence limit for estimating the bioaccessibility of each of the 6 elements present in soil samples and dust collected from houses in the Sudbury area. n=86 for soil and n=10 for house dust.

	Bioaccessibility in Soil			**Bioaccessibility in House Dust**		
Element	**Mean (µg/L)**	**95UCL (Student's-*t*)**	**95UCL (Chebyshev)**	**Mean (µg/L)**	**95UCL (Student's -*t*)**	**95UCL (Chebyshev)**
Arsenic	34.2	36.8	**41.1**	2.6	**3.7**	5.2
Cobalt	24.7	**26.4**	32.0	1.3	**2.4**	3.5
Copper	61.5	**64.4**	81.1	3.4	**4.6**	6.1
Lead	14.4	**16.0**	18.6	2.2	**3.4**	5.1
Nickel	34.9	37.6	**42.0**	0.7	1.2	**2.0**
Selenium	15.9[a], 15.1[b], 26.4[c]	20.3[a], 19.6[b], 33.9[c]	**27.2[a], 26.3[b], 41.2[c]**	N/A[d]	N/A[d]	N/A[d]

N/A- unable to be calculated.

a- all data (n=86 for soil and n=10 for dust), b excluding samples at MDL in sieved soil (n=54), c-excluding samples at MDL in sieved soil and/or extraction fluid (n=24), d – mean and 95%UCL could not be calculated because metal below MDL in all extraction samples.

Prepared by:_____
Verified by:_____

Bolded values are the recommended statistic based on ProUCL (US EPA, 2004)

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Table 2: The quantity of arsenic, cobalt, copper, lead, nickel and selenium detected in the extraction fluid and blank samples. Reagent blanks include only chemicals used in the extraction, bottle blanks include chemicals, bile, pancreatin and enzymes and have undergone the full extraction procedure. Numbers in italics represent one half of the detection limit.

	Arsenic (µg/L)		**Cobalt (µg/L)**		**Copper (µg/L)**		**Lead (µg/L)**		**Nickel (µg/L)**		**Selenium (µg/L)**	
	Reagent Blank	Bottle Blank	Reagent Blank	Bottle Blank	Reagent Blank	Bottle Blank	Reagent Blank	Bottle Blank	Reagent Blank	Bottle Blank	Reagent Blank	Bottle Blank
	0.5	*0.5*	0.25	0.25	23.7	41.6	2.61	*1*	2.36	119	1	*1*
	0.5	2.4	0.25	2.9	31.2	45.2	2.1	2.3	9.3	165	1	*1*
	0.5	*0.5*	0.25	3.97	24.8	50.4	3.49	7.63	28.2	223	1	*1*
	0.5	1.3	0.55	3.5	107	61.4	7.6	10.4	53.1	146	1	*1*
	0.5	2.3	3.3	5.9	49.5	121	8	28.5	34	178	1	2.3
Mean	0.5	1.4	0.92	3.3	47.24	63.92	4.76	9.97	25.39	166.20	1.0	1.26
Std	*0*	0.93	1.34	2.04	34.97	32.77	2.82	11.05	20.24	38.74	0	0.58

Prepared by:_____
Verified by:_____

Table 3: Quantity of arsenic, cobalt, copper, lead, nickel and selenium detected in pancreatin and bile used for the extraction procedure.

Parameter	Units	Detection Limit	Pancreatin 1	Pancreatin 2	Pancreatin 3	Pancreatin 4	Bile 1	Bile 2
Arsenic	**µg/g**	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Cobalt	**µg/g**	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper	**µg/g**	0.3	1	0.9	1	0.9	5.1	5.1
Lead	**µg/g**	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	**µg/g**	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Selenium	**µg/g**	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8

Prepared by:_____

Verified by:_____

Table 4: Analysis of Distilled Water Used in the Extraction Procedure. Five samples from water storage containers were analysed.

Parameter		Detection Limit	dH20 1	dH2O 2	dH2O 3	dH20 4	dH20 5	Mean	STD
Arsenic	µg/L	0.57	<0.57	<0.57	<0.57	<0.57	<0.57	N/A	N/A
Cobalt	µg/L	0.96	<0.96	<0.96	<0.96	<0.96	<0.96	N/A	N/A
Copper	µg/L	0.78	16.8	78.2	33.1	16.6	36.4	36.22	25.17
Lead	µg/L	0.44	<0.44	0.63	<0.44	<0.44	<0.44	N/A	N/A
Nickel	µg/L	0.63	<0.63	1.15	<0.63	2.67	0.75	1.52	1.01
Selenium	µg/L	0.81	<0.81	<0.81	<0.81	<0.81	<0.81	N/A	N/A

Prepared by:_____
Verified by:_____

Table 5A: Percent relative differences in metal concentrations of the extraction fluids following gastric and intestinal extraction of duplicate soil samples, and summary statistics.

Duplicate Samples	Arsenic (µg/L)	Cobalt(µg/L)	Copper (µg/L)	Lead (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Mass of Soil (g)
05-334	154.60	158.70	5666.08	115.03	4673.80	MDL	1.00
05-334R	248.60	167.70	5746.08	146.03	5093.80	2.04	1.00
% Relative Difference	46.63	5.51	1.40	23.75	8.60	200.00	-
05-393	13.70	12.90	426.08	7.93	231.80	MDL	1.00
05-393R	13.20	13.10	461.08	5.73	261.80	MDL	1.00
% Relative Difference	3.72	1.54	7.89	32.21	12.16	N/A	-
05-377	11.70	10.40	279.08	10.13	162.80	MDL	1.00
05-377R	8.07	9.60	246.08	5.33	122.80	MDL	1.00
% Relative Difference	36.72	8.00	12.57	62.10	28.01	N/A	-
05-349	51.70	46.90	1676.08	55.43	1593.80	3.74	1.00
05-349R	47.00	51.80	1516.08	48.13	1493.80	2.53	1.00
% Relative Difference	9.52	9.93	10.02	14.10	6.48	38.60	-
05-382	20.40	35.00	1436.08	86.73	537.80	3.94	1.00
05-382R	12.10	35.40	1546.08	73.03	569.80	MDL	1.00
% Relative Difference	51.08	1.14	7.38	17.15	5.78	200.00	-
05-350	96.10	77.40	2186.08	14.63	1253.80	12.94	1.00
05-350R	104.60	69.80	1866.08	17.13	1123.80	MDL	1.00
% Relative Difference	8.47	10.33	15.79	15.74	10.94	200.00	-
05-412	2.60	4.30	208.08	0.00	26.80	MDL	1.00
05-412R	5.10	4.50	160.08	0.00	3.80	MDL	1.00
% Relative Difference	64.94	4.55	26.08	N/A	150.33	N/A	-
05-415	10.50	6.40	301.08	21.03	169.80	MDL	1.00
05-415R	6.60	4.80	204.08	0.43	70.80	MDL	1.00
% Relative Difference	45.61	28.57	38.40	191.99	82.29	NA	-
05-357	11.50	13.40	372.08	28.63	238.80	1.24	1.00
05-357R	16.50	13.30	392.08	17.43	235.80	3.04	1.00
% Relative Difference	35.71	0.75	5.23	48.63	1.26	84.11	-
05-389	11.00	5.00	168.08	6.43	5.80	5.64	1.00
05-389R	5.80	5.10	201.08	10.93	43.80	MDL	1.00
% Relative Difference	61.90	1.98	17.88	51.84	153.23	200.00	-

Duplicate Samples	Arsenic (µg/L)	Cobalt(µg/L)	Copper (µg/L)	Lead (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Mass of Soil (g)
Stats	**Summary Statistics for Table 2- All data**						
Mean	36.43	7.23	14.26	50.83	45.91	153.78	-
Median	36.22	5.03	11.30	32.21	11.55	200.00	-
Maximum	64.94	28.57	38.40	191.99	153.23	200.00	-
Minimum	3.72	0.75	1.40	14.10	1.26	38.60	-
Stats	**Summary Statistics for Table 2- With samples 05-415 and 05-389 Removed**						
Mean	28.53	4.64	9.60	26.71	24.84	120.45	-
Median	36.22	5.03	8.96	23.75	9.77	200.00	-
Maximum	64.94	10.33	26.08	62.10	150.33	200.00	-
Minimum	3.72	0.75	1.40	14.10	1.26	38.60	-

N/A- not able to calculate; MDL- Method Detection Limit

Prepared by:_____
Verified by:_____

Table 5B: Percent relative differences in metal concentrations of the extraction fluids following gastric and intestinal extraction of duplicate samples of NIST SRM 2711 (soil).

Duplicate Samples	Arsenic (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Nickel (µg/L)	Selenium (µg/L)
Montana Sample 1	426.6	28	494.08	1950.03	81.8	1.24
Montana Sample 2	408	31.9	574	1770	145	1.24
% Relative Difference	4.46	13.02	14.97	9.68	55.73	0.00

Prepared by:_____
Verified by:_____

Table 5C: Percent relative differences in metal concentrations of the extraction fluids following gastric and intestinal extraction of replicate samples of NIST SRM 2538 (dust).

Replicates	Arsenic (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Lead (mg/L)	Nickel (mg/L)	Selenium (mg/L)
SRM 2538 Replicate 1	27.6	15.7	1116.08	186.03	424.8	ND
SRM 2538 Replicate 2	25.6	14.7	1076.08	209.03	442.8	ND
SRM 2538 Replicate 3	29.6	14.7	1136.08	226.03	412.8	ND
% Relative Difference	14.49	6.58	5.42	19.41	7.01	NC

ND = non-detectable.

NC = not calculated because parameter non-detectable in the extraction fluids.

Percent relative difference was calculated between the replicates with the highest and lowest extraction fluid metal concentrations to obtain the maximum percent relative difference between replicates.

Prepared by:_____

Verified by:_____

Table 6: Ratio of blank spiked samples and blank spiked samples undergoing the full gastric and intestinal extraction for each metal analyzed, used to determine the recovery of the extraction procedure. Arsenic and Selenium were each spiked with 1 mg/L and Cobalt, Copper, Lead and Nickel each with 10 mg/L.

Ratio of spiked/spiked tested							Average	Standard Deviation
Arsenic	**µg/L**	0.80	0.81	0.98	0.98	1.06	0.92	0.12
Cobalt	**µg/L**	0.85	0.92	0.86	0.84	0.88	0.87	0.03
Copper	**µg/L**	0.91	0.83	0.95	0.90	0.88	0.89	0.04
Lead	**µg/L**	0.11	0.24	0.75	0.77	0.84	0.54	0.34
Nickel	**µg/L**	0.85	0.91	0.88	N/T	0.89	0.88	0.03
Selenium	**µg/L**	0.86	0.95	0.96	0.98	1.03	0.92	0.05

N/T = not tested, since sample was not available as a result of laboratory error.

Prepared by:_____
Verified by:_____

Figure 1: Comparison of Bioaccessibility of Arsenic Under Gastric Extraction (GE) or Gastric and Intestinal Extraction (GIE)

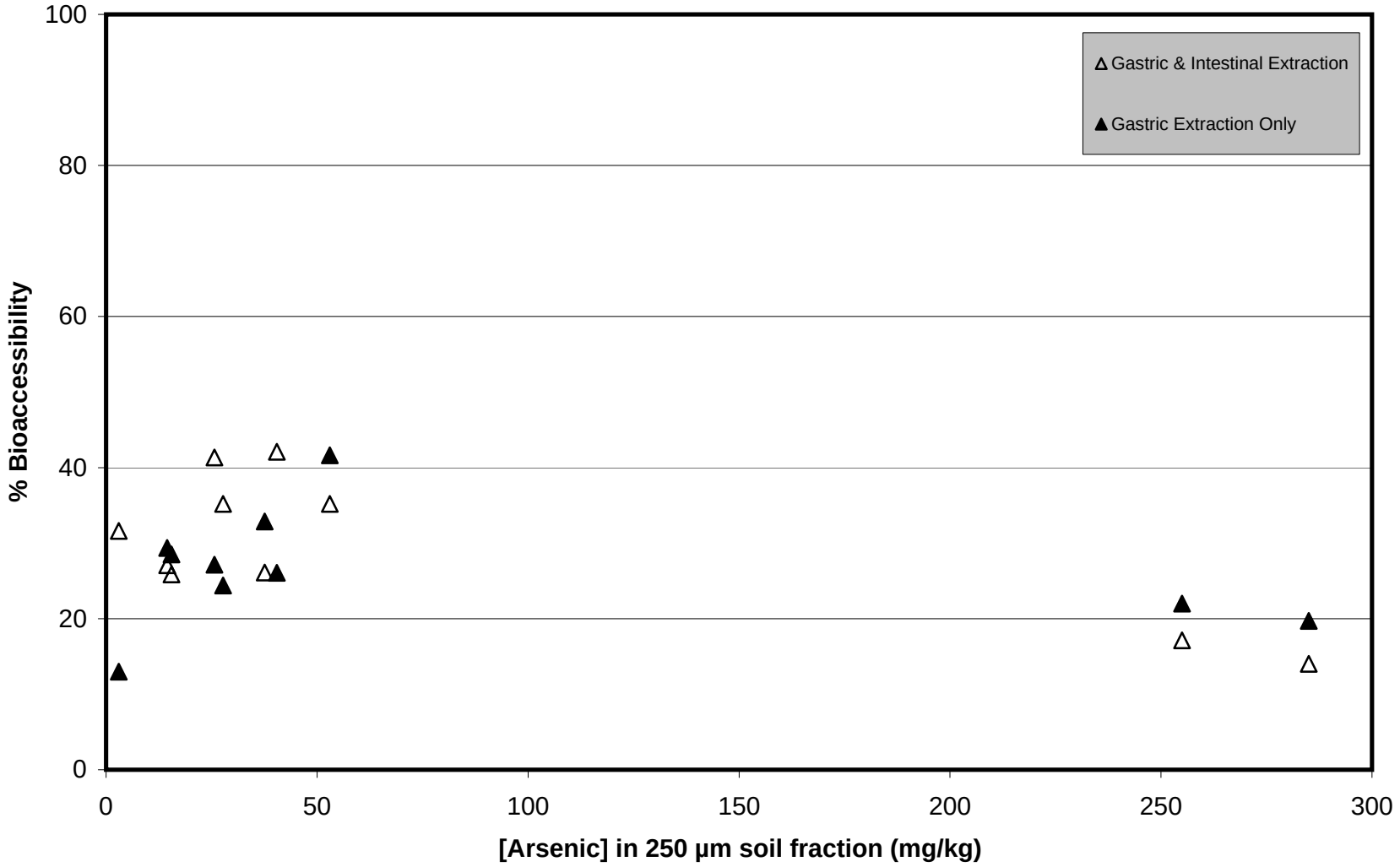


Figure 2: Comparison of Bioaccessibility of Cobalt Under Gastric Extraction (GE) or Gastric and Intestinal Extraction (GIE)

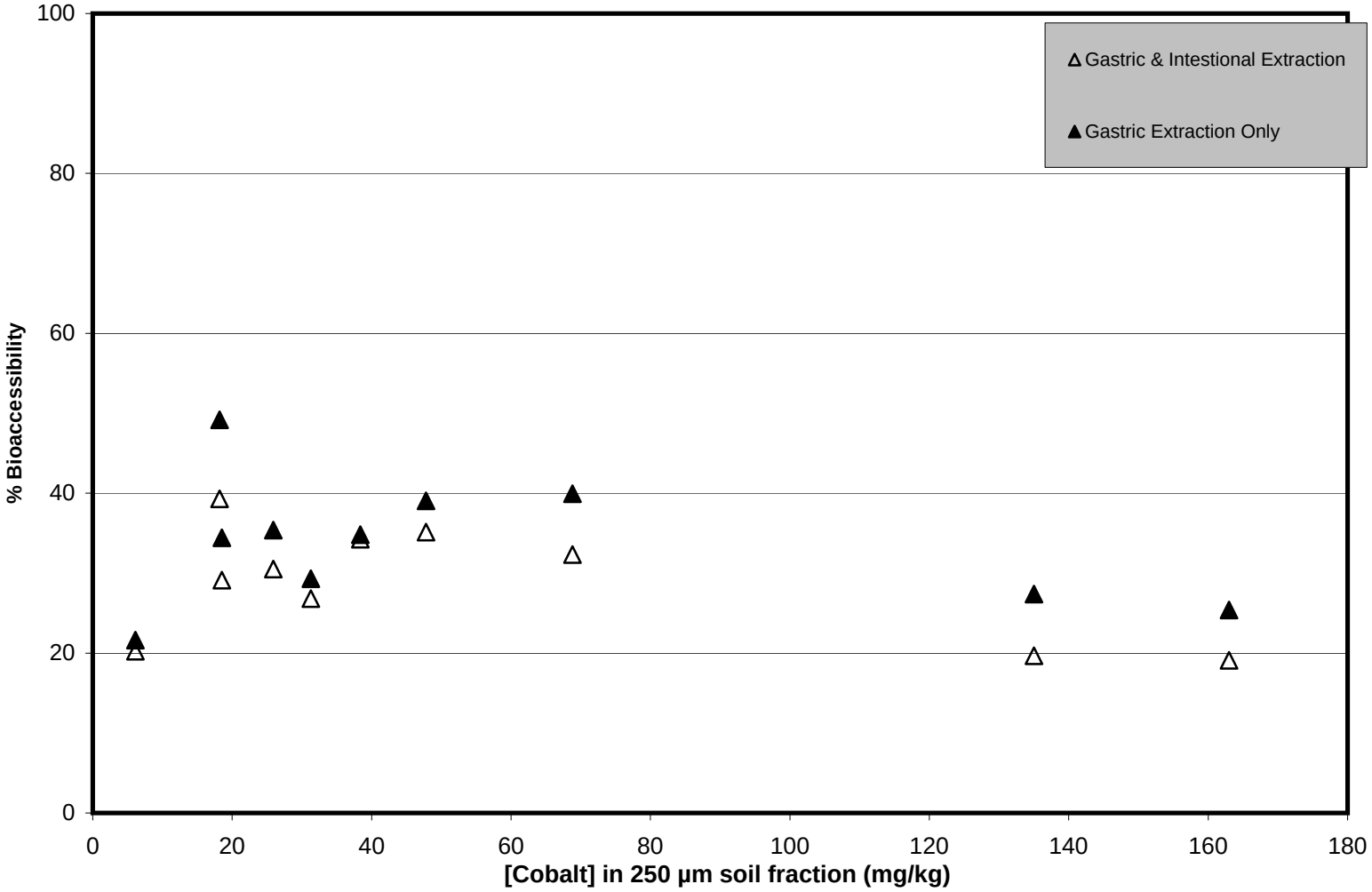


Figure 3: Comparison of Bioaccessibility of Copper Under Gastric Extraction (GE) or Gastric and Intestinal Extraction (GIE)

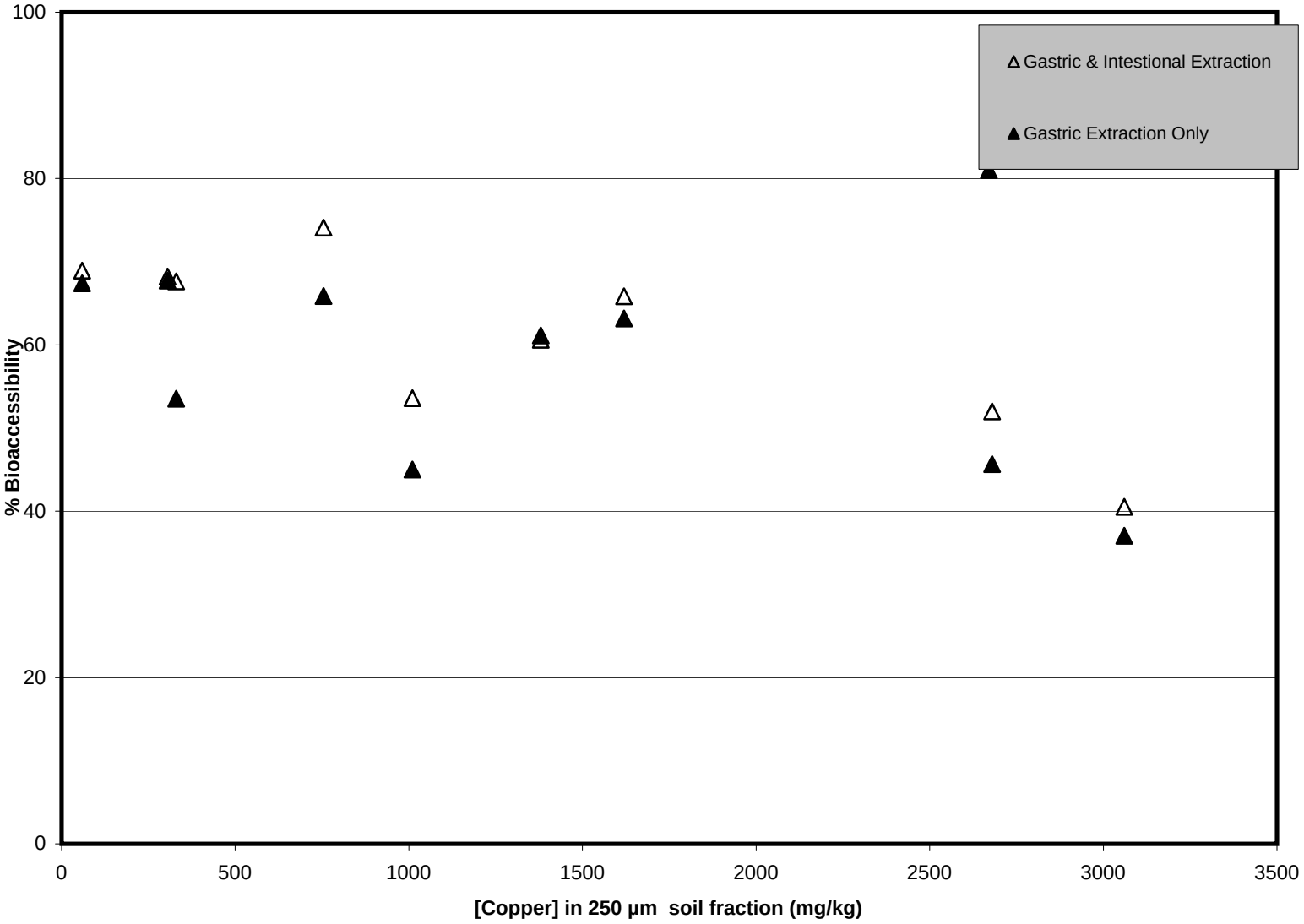


Figure 4: Comparison of Bioaccessibility of Lead Under Gastric Extraction (GE) or Gastric and Intestinal Extraction (GIE)

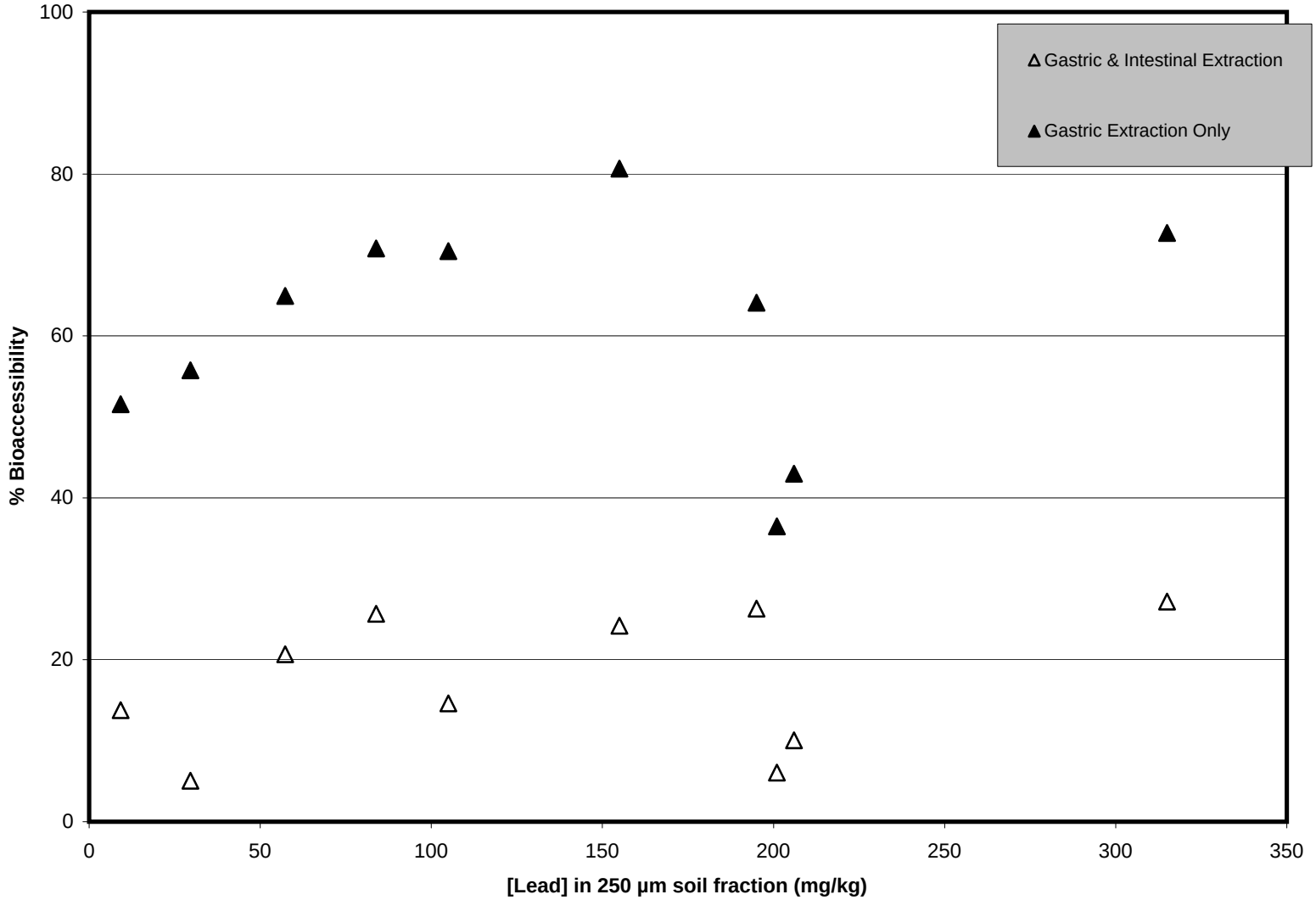


Figure 5: Comparison of Bioaccessibility of Nickel Under Gastric Extraction (GE) or Gastric and Intestinal Extraction (GIE)

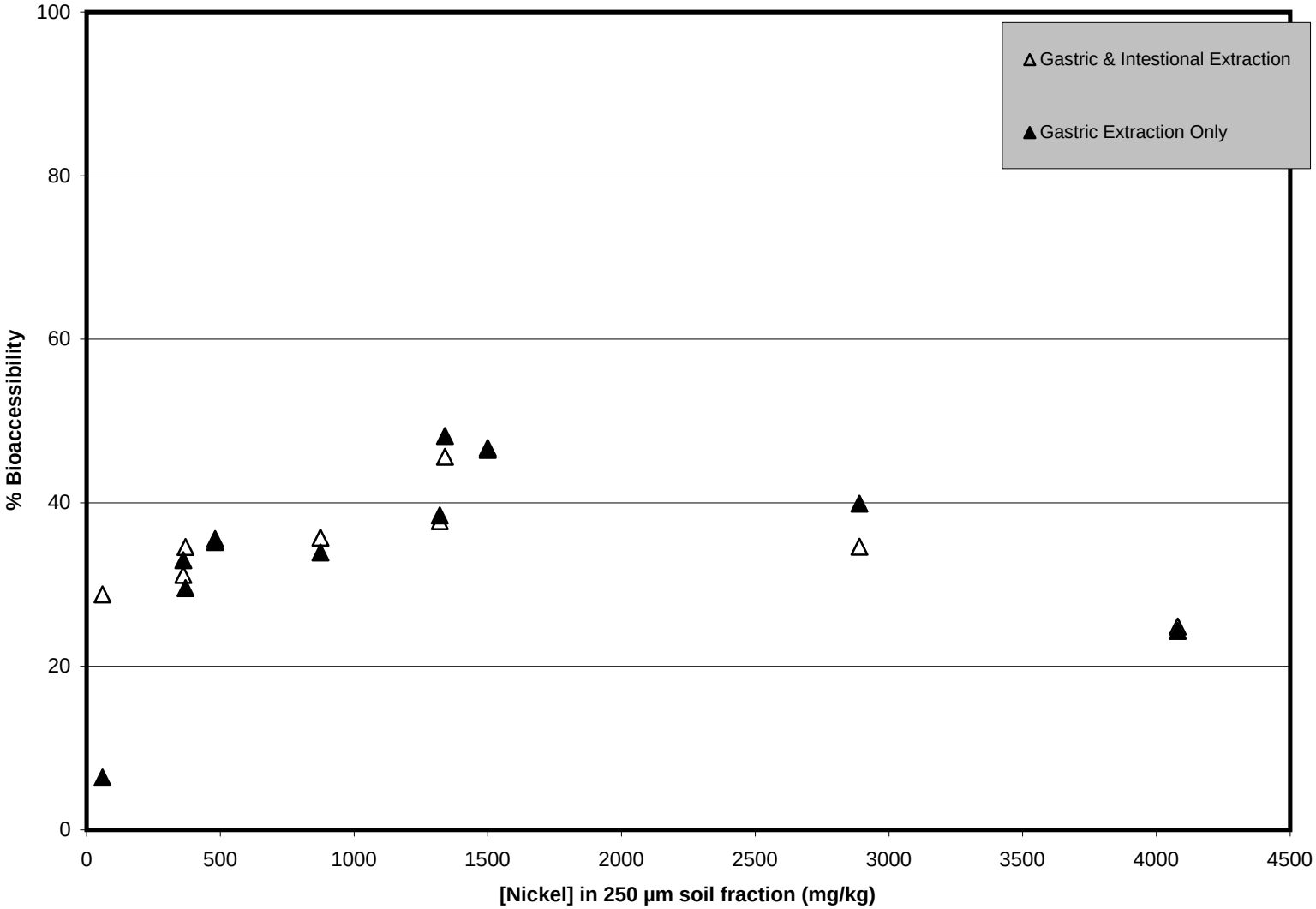


Figure 6: Comparison of Bioaccessibility of Selenium Under Gastric Extraction (GE) or Gastric and Intestinal Extraction (GIE)

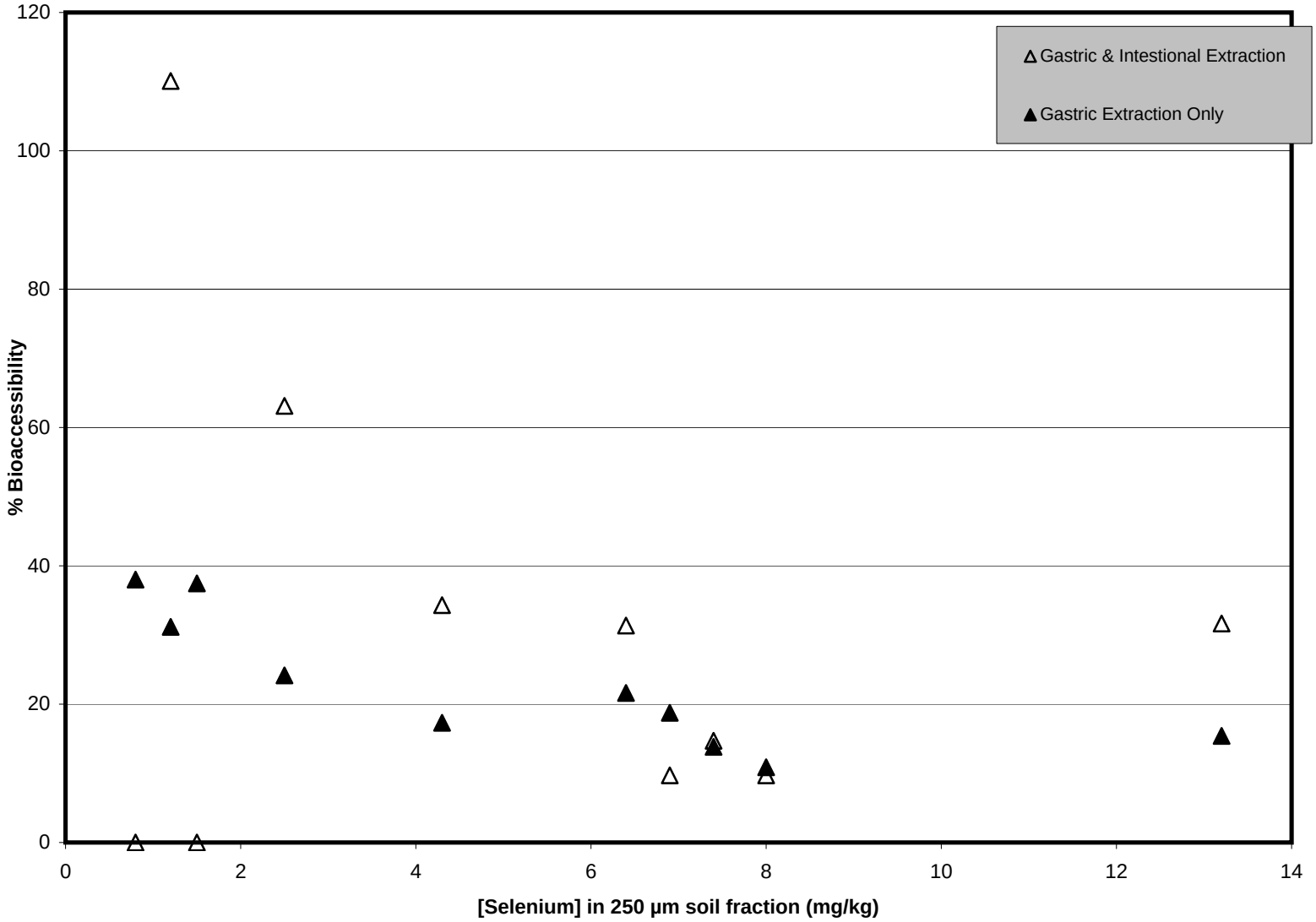


Figure 7: Bioaccessibility of Arsenic in Soils

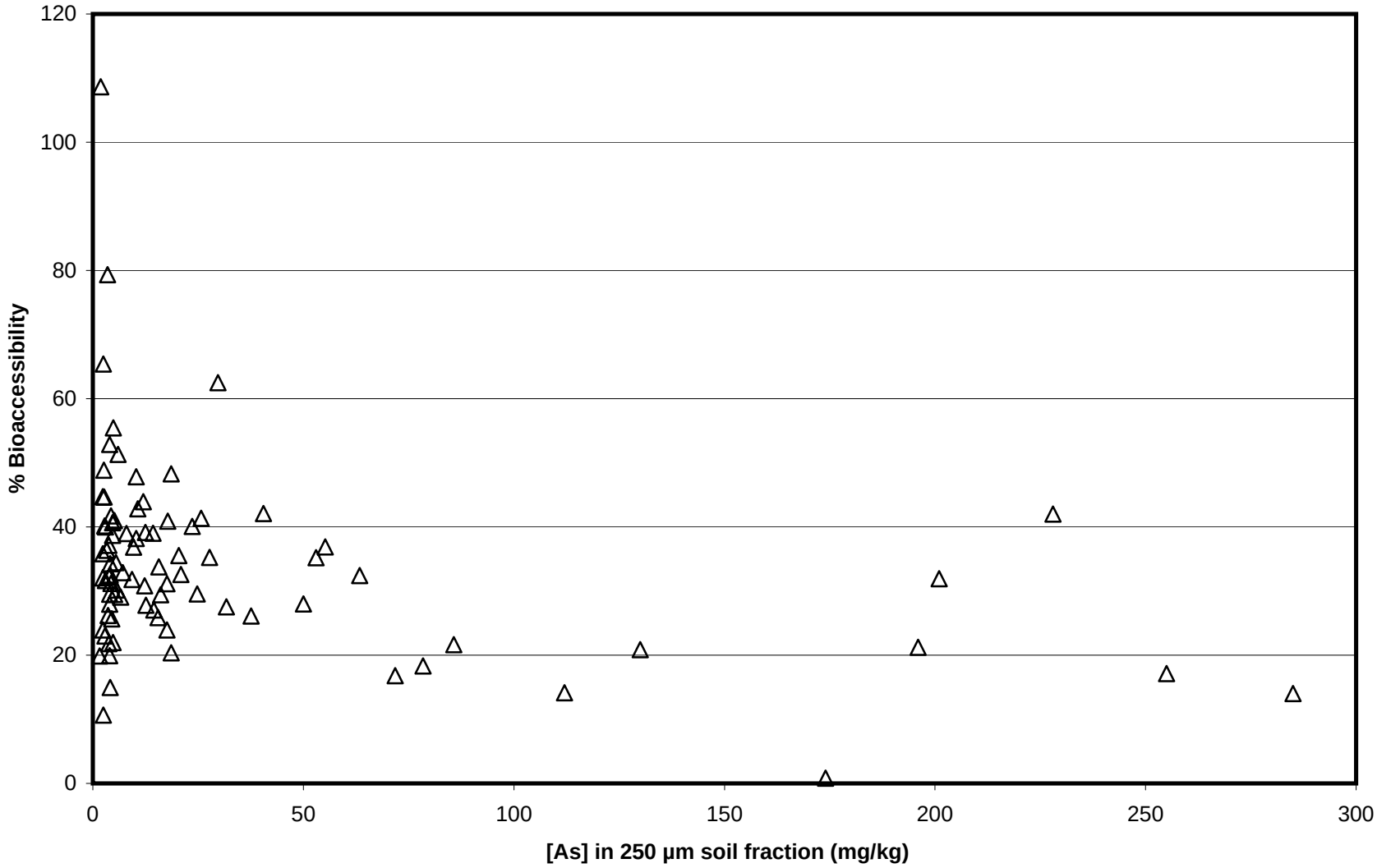


Figure 8: Bioaccessibility of Cobalt in Soils

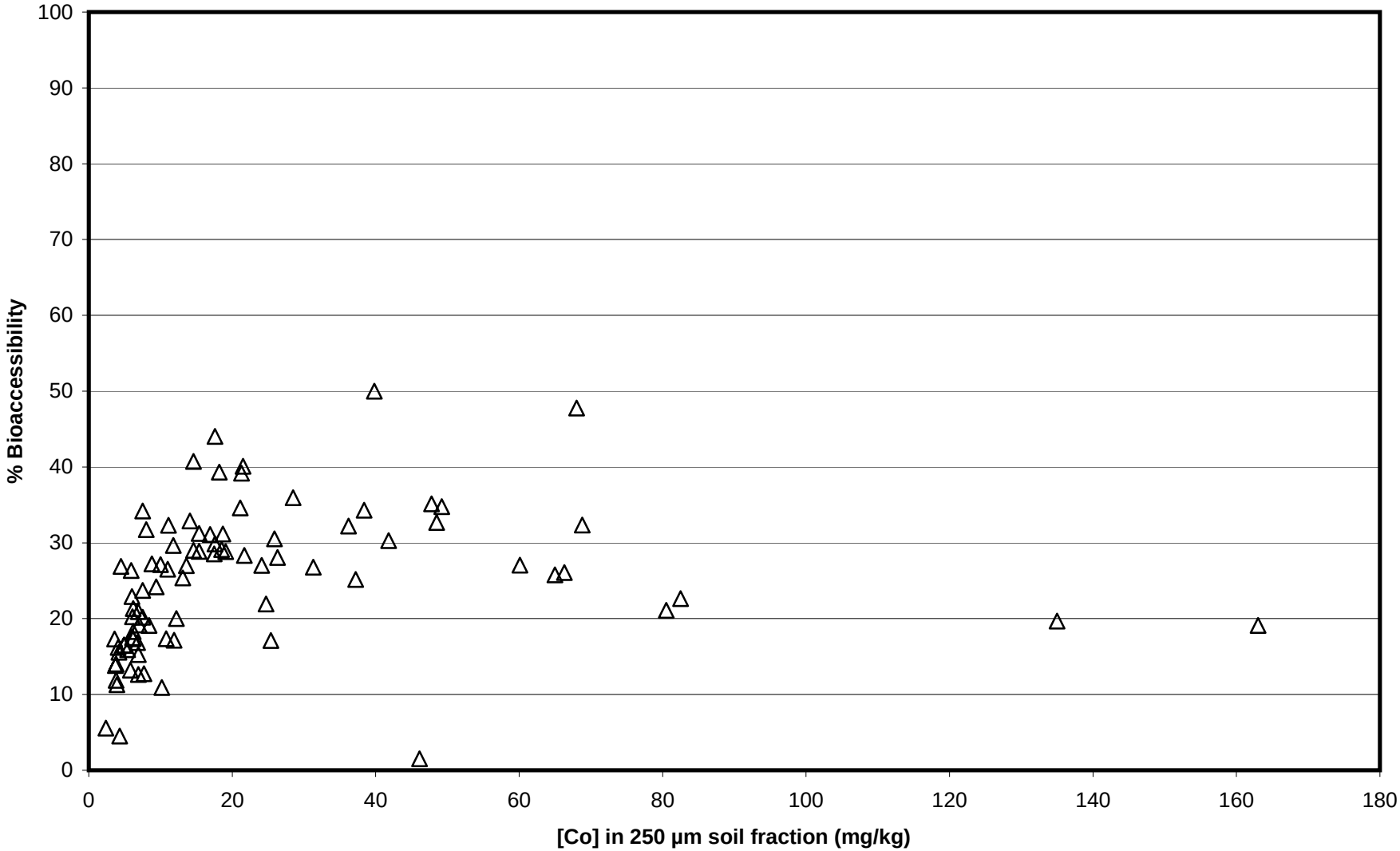


Figure 9: Bioaccessibility of Copper in Soils

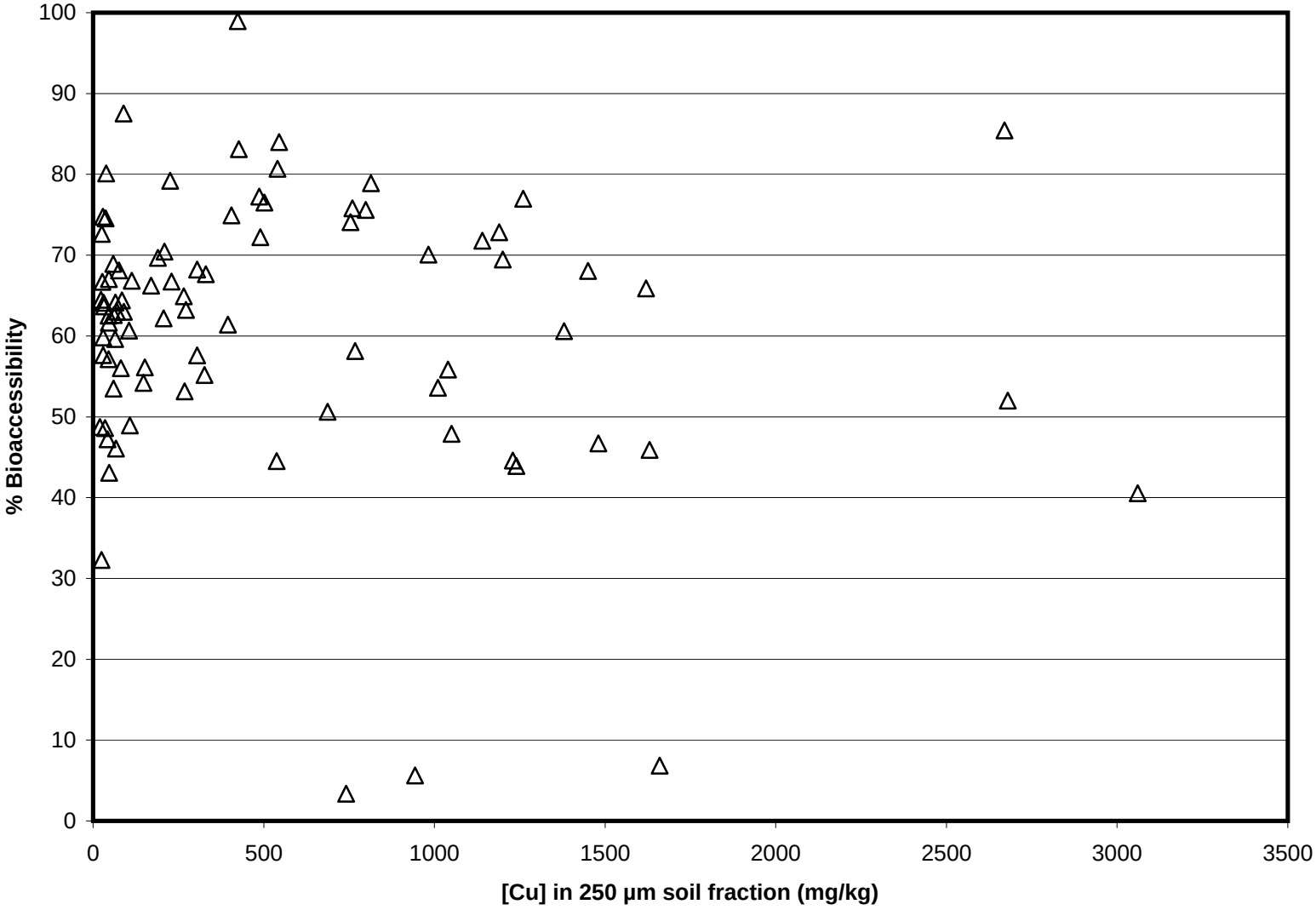


Figure 10: Bioaccessibility of Lead in Soils

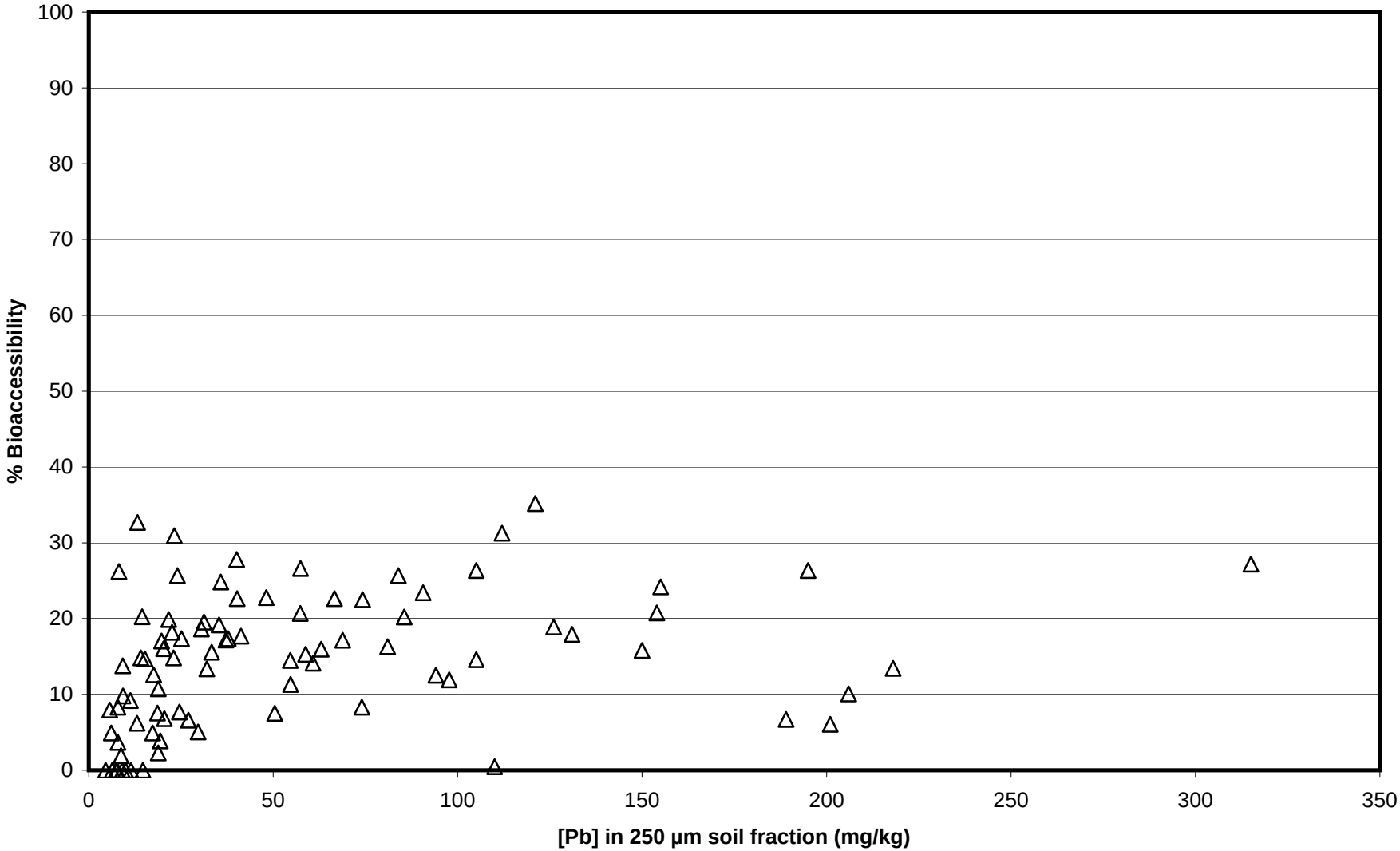


Figure 11: Bioaccessibility of Nickel in Soils

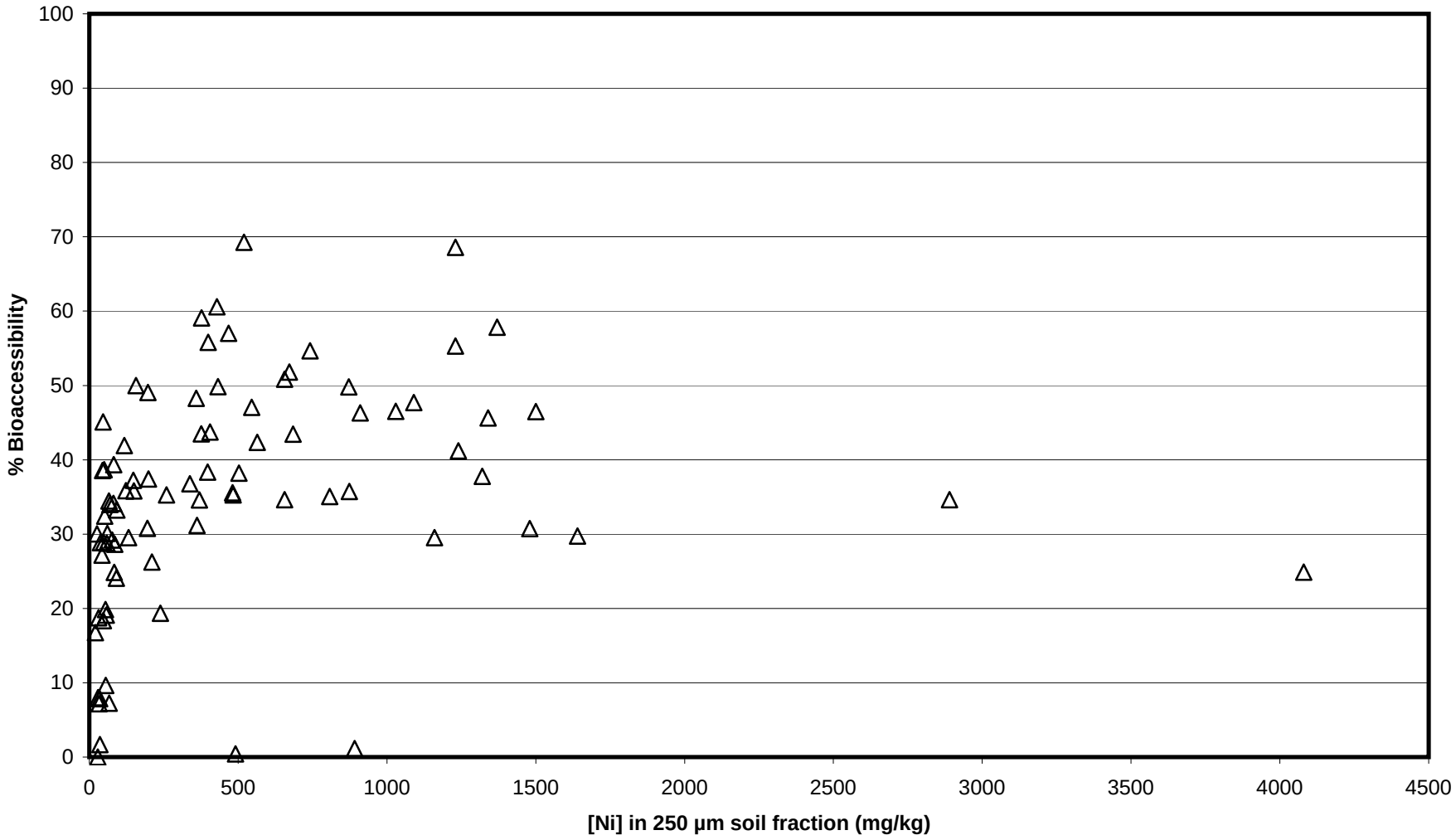


Figure 12A: Bioaccessibility of Selenium in Soils-All Data

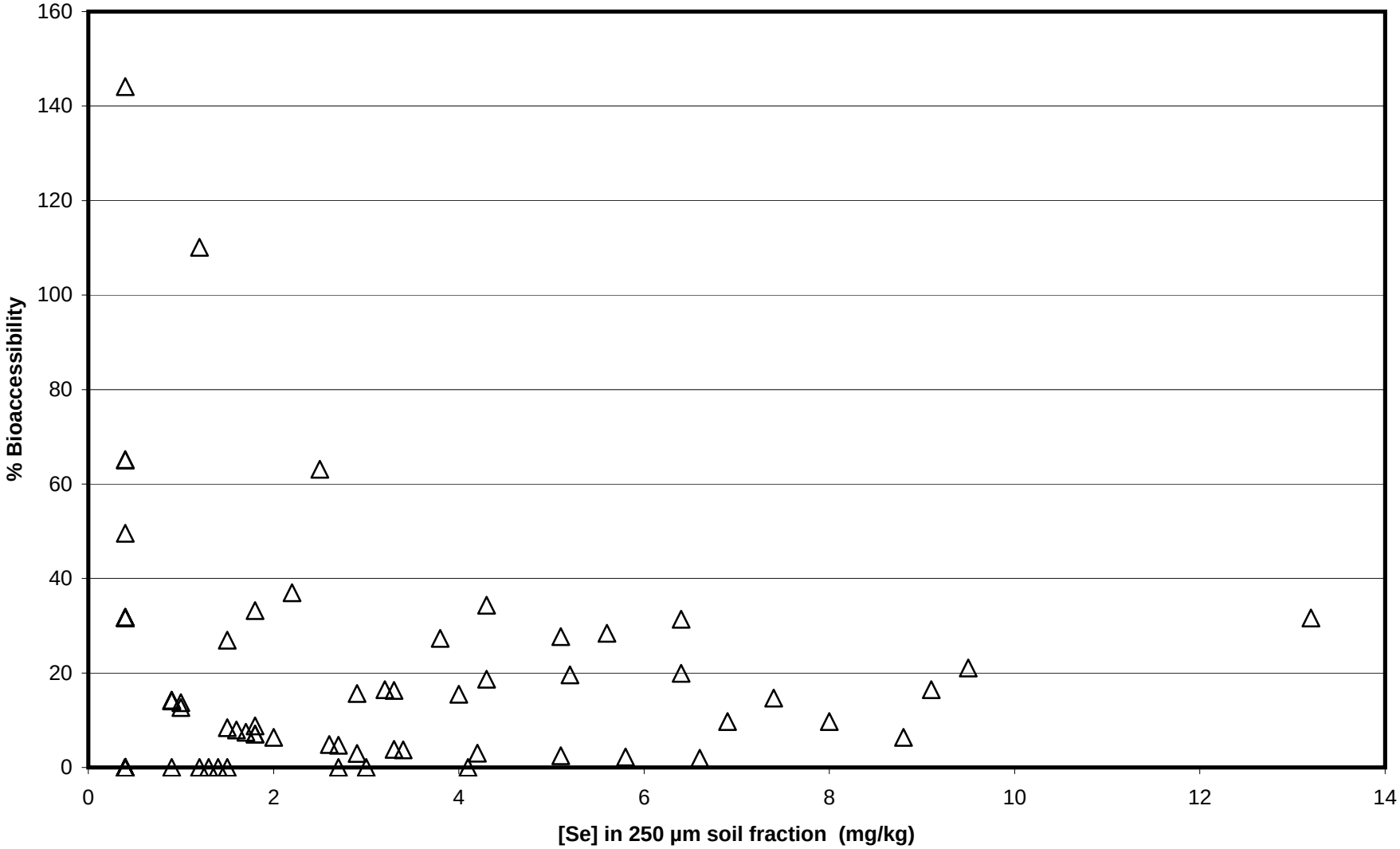


Figure 12B: Bioaccessibility of Selenium in Soil-Excluding Data with below MDL in Sieved Soil

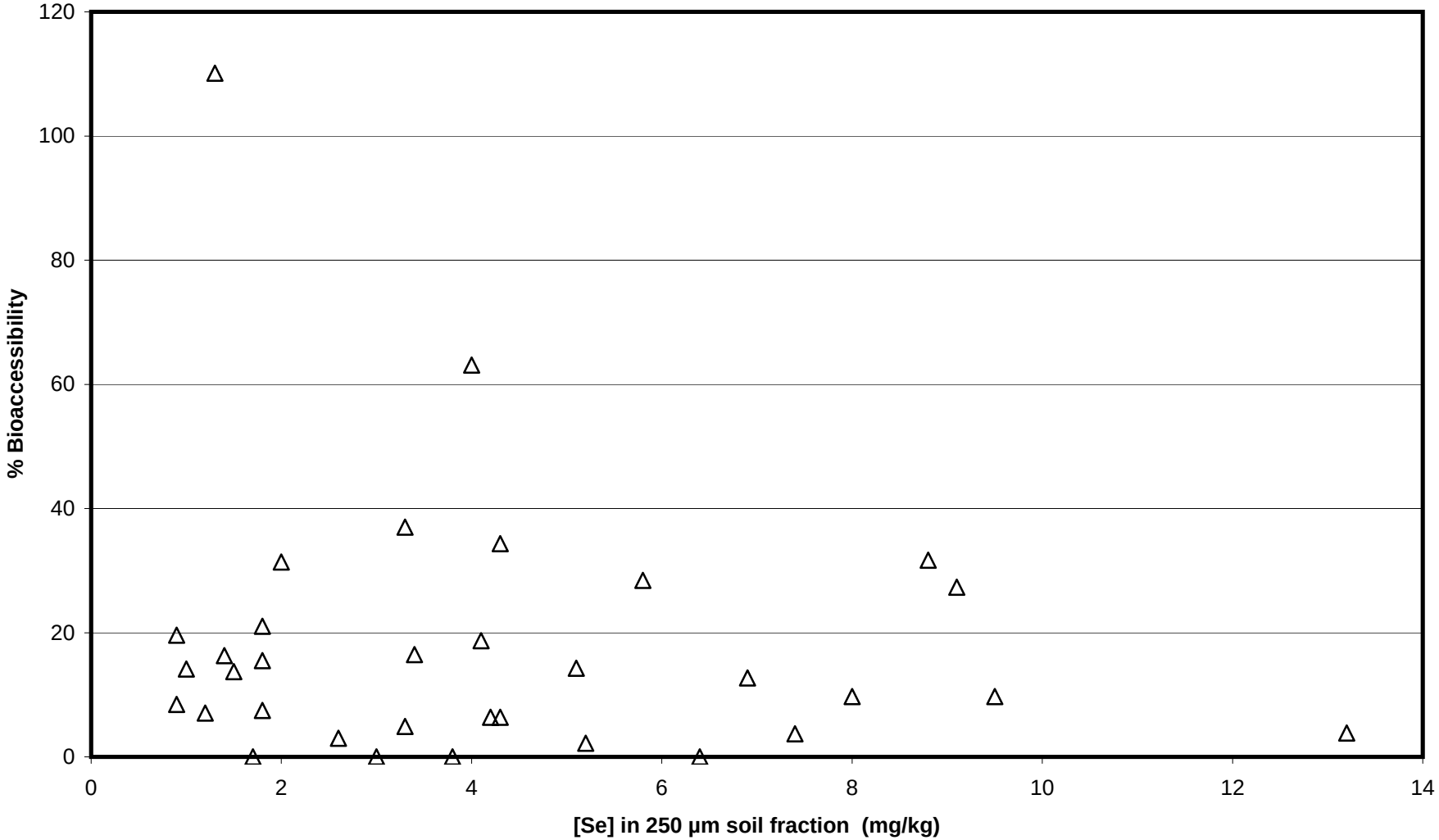


Figure 12C: Bioaccessibilityof Selenium-excluding data below MDL in either the extraction fluid or the sieved soil fraction

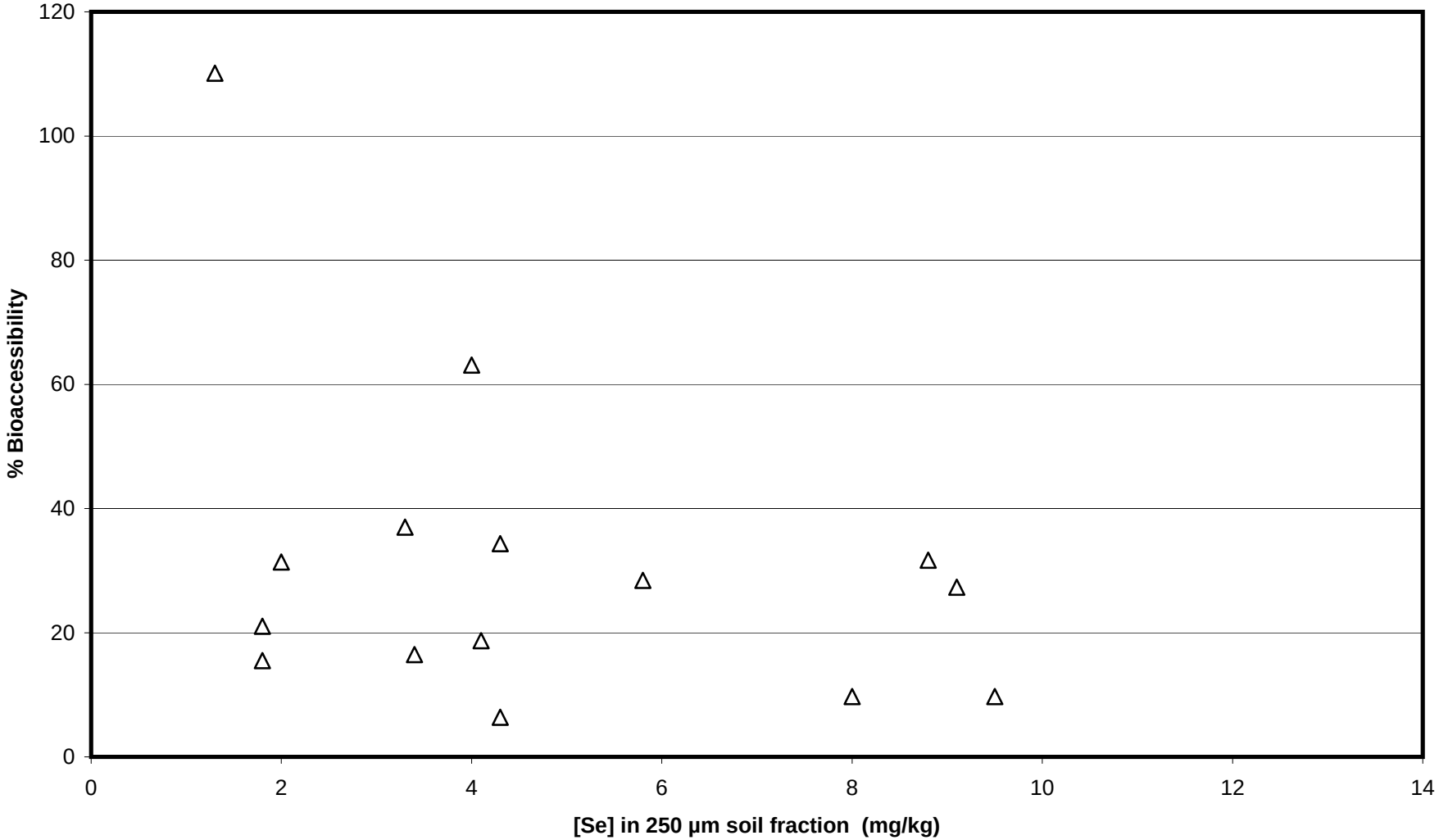


Figure 13: Bioaccessibility of Arsenic in Dust

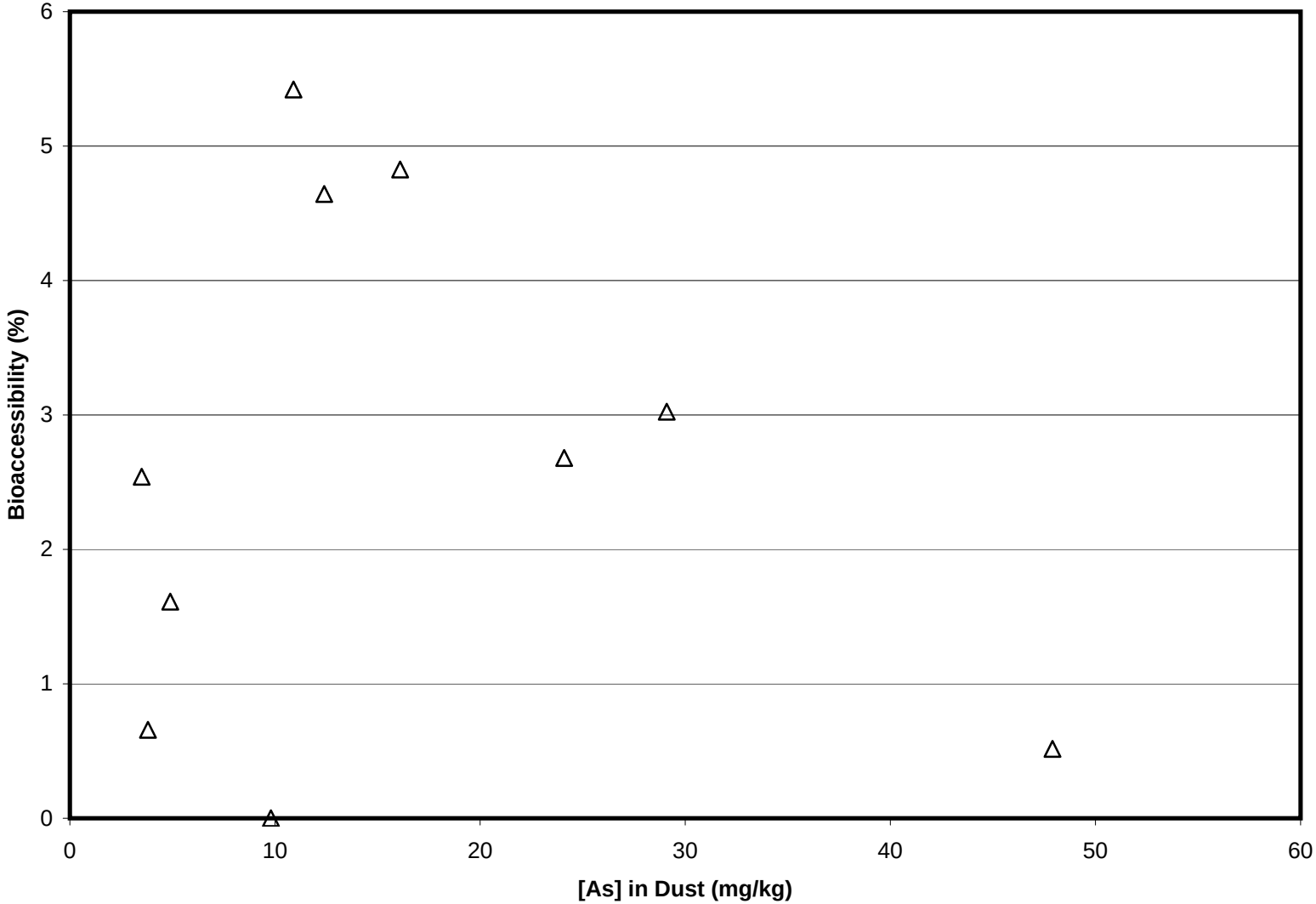


Figure 14: Bioaccessibility of Cobalt in Dust

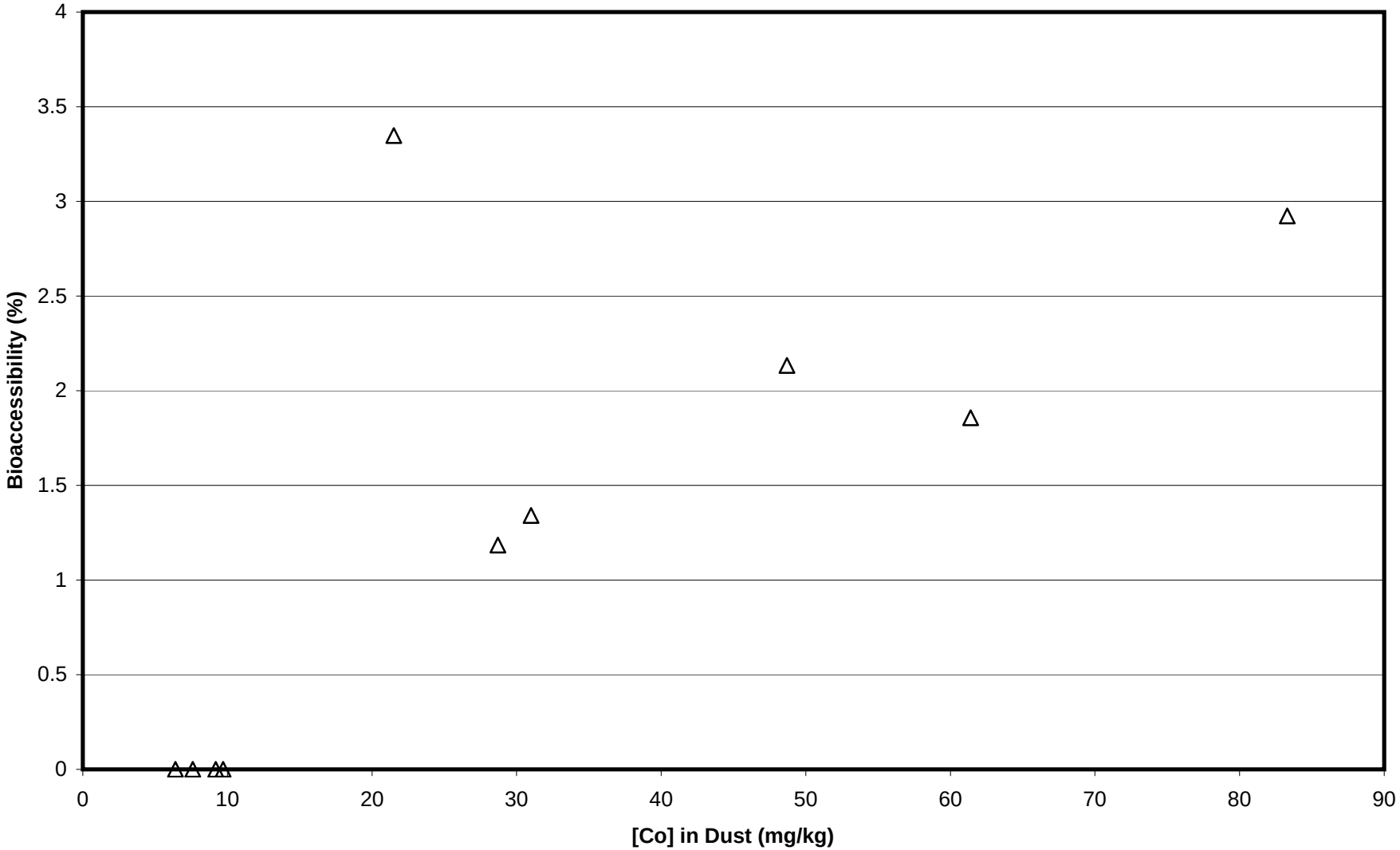


Figure 15: Bioaccessibility of Copper in Dust

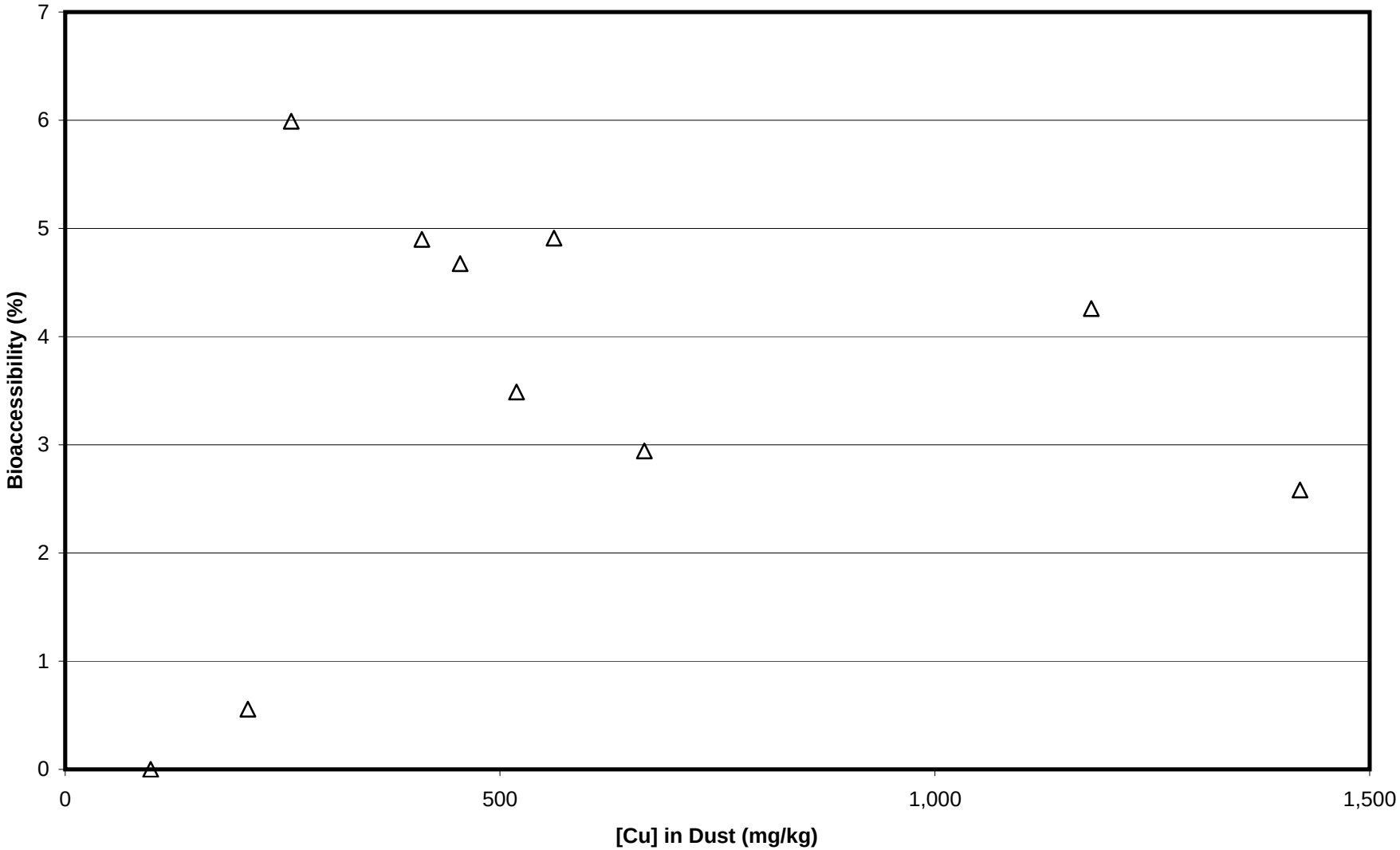


Figure 16: Bioaccessibility of Lead in Dust

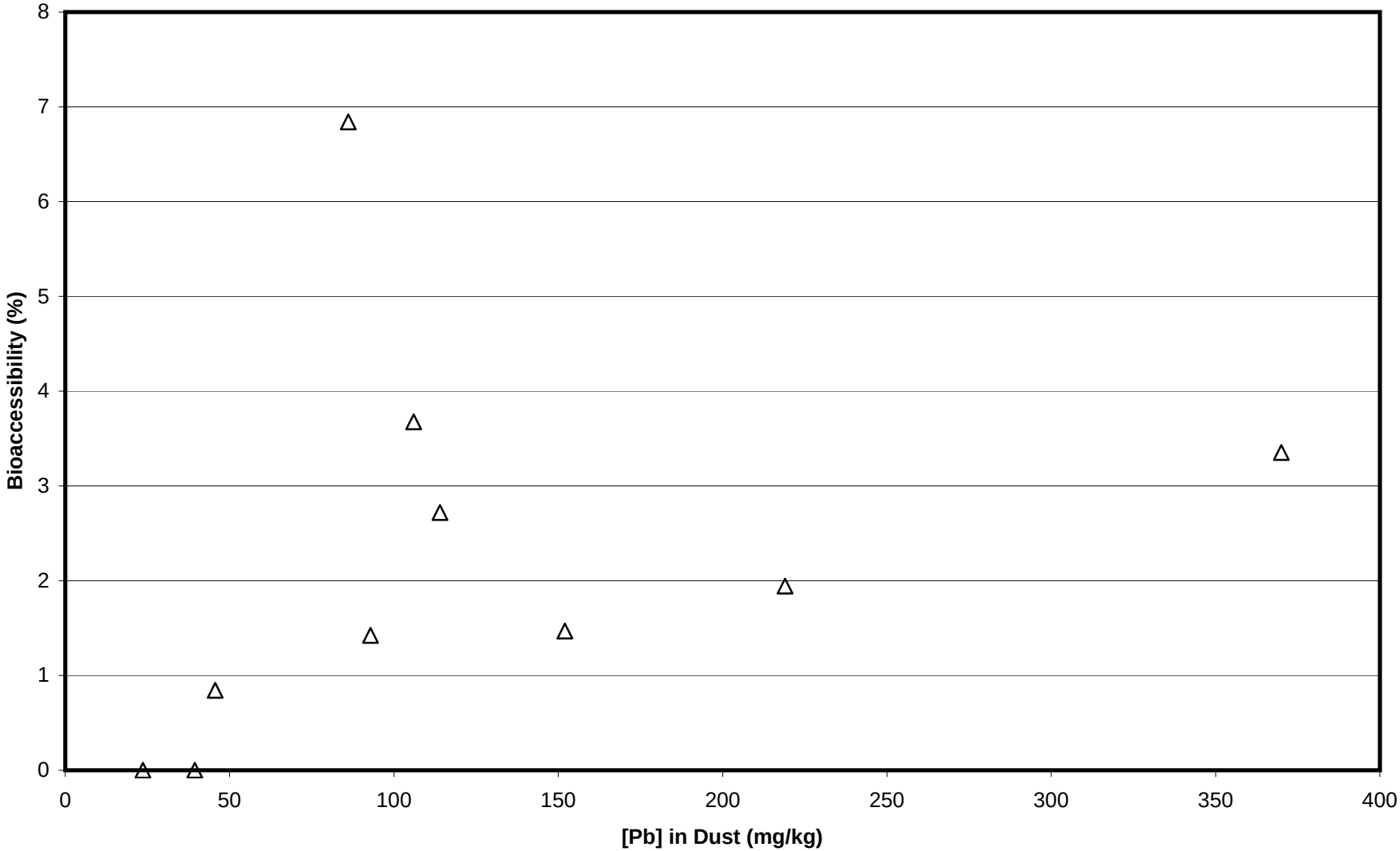
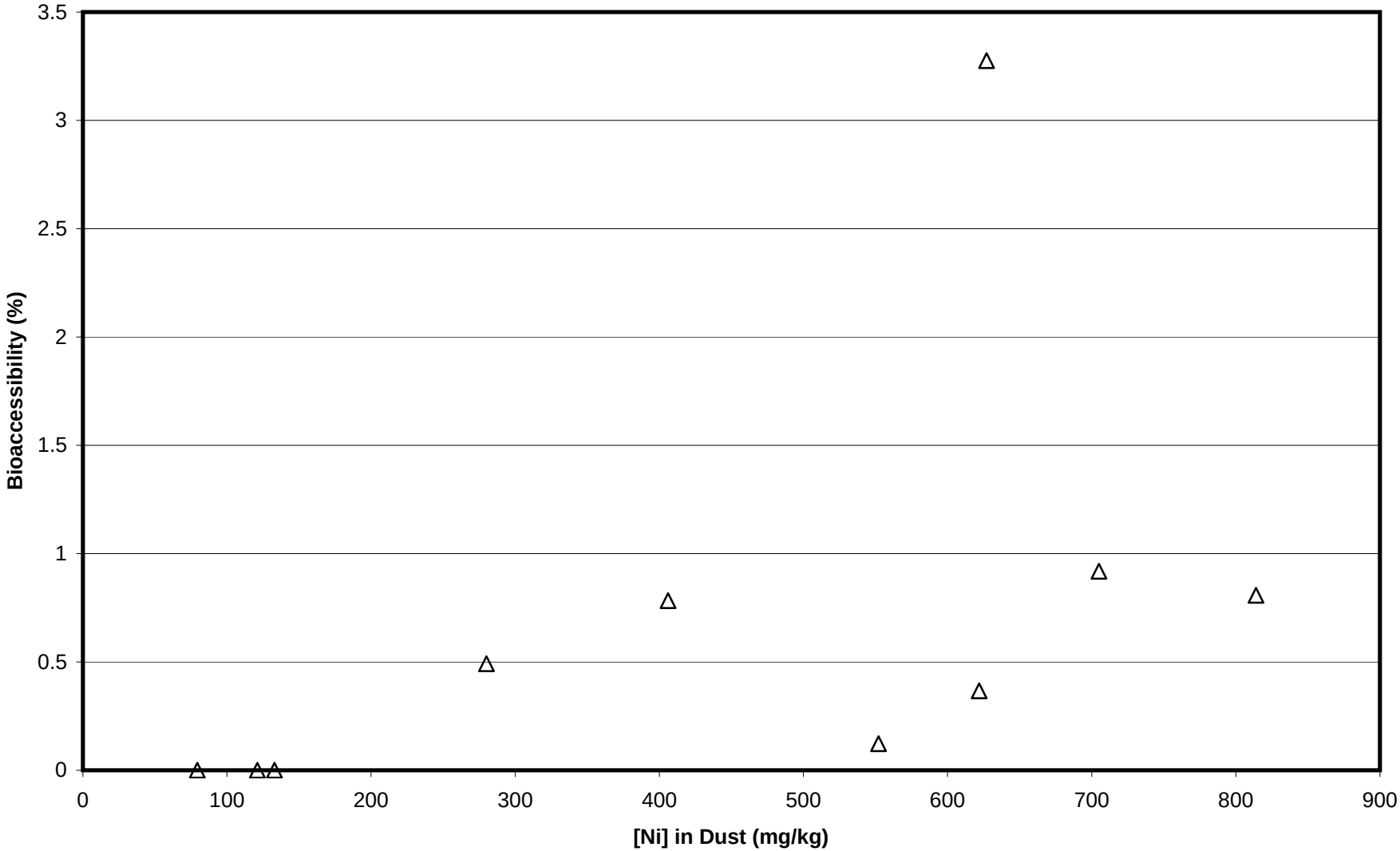


Figure 17: Bioaccessibility of Nickel in Dust



APPENDIX A

CHAIN OF CUSTODY FORMS

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: CST182619
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: JENNIFER KIRK
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: JKIRK@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
OS-3578	05.07.05	WATER	1	(32												
OS-3579		↓														
OS-3580		↓														
OS-3578		SOIL														
OS-3579		↓														
OS-3580		↓														

NC

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

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NO: 6980

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
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Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder Assoc
Contact: Jennifer Kirk
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: JKirk@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-3578	05.07.12	WATER	1													
05-3579	↓	↓	↓													
05-3579R																
05-3580																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

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Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: CST182619
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: JENNIFER KIRK
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: JKIRK@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
OS-3578	05.07.05	WATER	1	(32												
OS-3579		↓														
OS-3580		↓														
OS-3578		SOIL														
OS-3579		↓														
OS-3580		↓														

NC

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

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Mississauga, Ontario L4Z 1N9
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Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder Assoc
Contact: Jennifer Kirk
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: JKirk@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-3578	05.07.12	WATER	1													
05-3579	↓	↓	↓													
05-3579R																
05-3580																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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White Copy - AGAT

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Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: 05T124900

Notes: _____

Client Information

Company: GOLDER ASSOC

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☑ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (MAG 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-339 S	05-06-03	SOIL	1													
OS-341 S	"	"	"													
OS-355 S	"	"	"													
OS-358 S	"	"	"													
OS-359 S	"	"	"													
OS-362 S	"	"	"													
OS-363 S	"	"	"													

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6977

04-1112-069

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
Toll free: 800-856-6261
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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05712 1770
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd.
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: Mike Dutton
Email: mdutton@golder.com
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Friday June 3/05
TIME REQUIRED: 1300

Regulatory Guideline Required:

☑ GUCSO Table 3
(Indicate one)
☐ Ind/Com
☐ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☑ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Distiller Water #0	01 June 05	H_2O	1	(Samples are distilled water)		✓										
Stored Water #1	"	"	1	"		✓										
Stored Water #2	"	"	1	"		✓										
Stored Water #3	"	"	1	"		✓										
Stored Water #4	"	"	1	"		✓										
Stored Water #5	"	"	1	"		✓										

Samples Relinquished By (print name & sign): Mike Dutton Mike Dutton — Date/Time: 01 June 05 — Samples Received By (print name & sign): _____ — Date/Time: June 1 05

Samples Relinquished By (print name & sign): _____ — Date/Time: _____ — Samples Received By (print name & sign): _____ — Date/Time: _____

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PAGE 1 of 1

NO: 6976

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd

Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours (Friday)

DATE REQUIRED: Thurs June 3/05
TIME REQUIRED: 1300

Regulatory Guideline Required:

☑ GUCSO Table 3
(Indicate one)
☐ Ind/Com
☐ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☑ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Distilled Water #0	01 June 05	H_2O	1	(Sample received in lab)		✓										
Stored Water #1	"	"	1	(water)		✓										
Stored water #2	"	"	1	"		✓										
Stored water #3	"	"	1	"		✓										
Stored water #4	"	"	1	"		✓										
Stored water #5	"	"	1	"		✓										

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	01 June 05		
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

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PAGE 1 of 1

NO: 6976

CHAIN OF CUSTODY RECORD

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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05TR5157
Notes:

Client Information
Company: GOLDER ASSOC.
Contact:
Address:
Phone: Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:
1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@golder.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required
Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours
DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:
☐ GUCSO Table ____ (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region ____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	All Parameters as per Soil Proposal	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
PHASE FRAC 1-1	June 6																
PHASE FRAC 1-2	June 6																
PHASE FRAC 2-1	June 6																
PHASE FRAC 2-2	June 6																
PILE 1-1	June 6																
PILE 1-2	June 6																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Jennifer King	June 6		June 6
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT

PAGE ____ of ____
NO: 6078

CHAIN OF CUSTODY RECORD

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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: [illegible]

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☑ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ Hg 153 1 (Indicate one)
- ☐ Ind/Com
- ☑ Res/Park
- ☐ Ag

☐ Sewer Use
Region _____ (Indicate one)
- ☐ Sanitary
- ☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	All PCB SOIL	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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White Copy - AGAT

PAGE _____ of _____

NO: 6978

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
Toll free: 800-856-6261
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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: 05T12154

Notes: _____

Client Information

Company: Golder

Contact: Mike Dutton

Address: 2390 Argentia Rd.
Mississauga

Phone: 905 567-4444 Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: ~~Matt~~ Mike Dutton
   Email: mdutton@golder.com
2. Name: Rui Oliveira
   Email: roliveira@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☑ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: Tues 10 May 05

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Cu, Pb, Co, Ni	Se, As	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Spike	09 May 05	2% HNO_3	1	Cu, Pb, Co, Ni @ ≈ 10 mg/L Se + As @ ≈ 1 mg/L	✓	✓	1963											

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	1320 09 May 05	N. Ickinson	1:30
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 2904

CHAIN OF CUSTODY RECORD

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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dalton
Address: 2390 Argentia Rd
Mississauga
Phone: 905 567-9421 Fax: _____
PO #: _____
Client Project #: 09-1112-0269
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: ~~Mel~~ Mike Dalton
   Email: mdalton@golder.com
2. Name: Rui Oliveira
   Email: roliveira@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☑ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Two DAYS
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Cu, Pb, Co, Ni, As, Se	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Spike	Aug 19/09	$2\%HNO_3$	1	Cu, Pb, Co, Ni @ ≈ 10 mg/L Se ≈ 15 @ ≈ 1 mg/L	✓	✓											

Samples Relinquished By (print name & sign): Mike Dalton Mike Dalton — Date/Time: 19/08/09 — Samples Received By (print name & sign): N. Hall — Date/Time: 1:30

Samples Relinquished By (print name & sign): _____ — Date/Time: _____ — Samples Received By (print name & sign): _____ — Date/Time: _____

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 2904

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete
Arrival Temperature:
AGAT Job Number: 05T12259
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: 905 567-6100 (1217) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ REG 153 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment
05-334	05-04-19	SOIL	1	
05-337				
05-395				
05-393				
05-394				
05-395				
05-399				
05-404				
05-407				
05-414				
EXTRACTION FLUID	05.05.06	WATER	1	

Co Cu Pb As Ba

MOE Site Decom
Metals Scan (not incl. Hg, B, Cr6)
Reg 558 Metals/Inorg
Reg 558
Storm Sewer Use
Sanitary Sewer Use
CCME Fractions 1 to 4
BTEX/TPH – (gas/Diesel)
TPH – (gas/Diesel)
VOCs
PAHs
PCBs

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT

PAGE _____ of _____

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: _____
Contact: AS PER 6162
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
US-334	05.04.20	WATER	1													
US-337																
US-345																
US-393																
US-394																
US-395																
US-399																
US-1104																
US-1107																
US-414																
MONTANA I		WATER		VOID												
MONTANA II		W		VOID												

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 9169

CHAIN OF CUSTODY RECORD

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Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: SOLDAR ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (x212) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@SOLDAR.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (RPC 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	ALL TEL QUOT	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-334 REP	05-01-10	WATER	1	HNO_3	✓												
05-335					✓												
05-336					✓												
05-337					✓												
05-353 REP					✓												
05-405					✓												
BLANK					✓												
EXTRACTION FLUID					✓												
SPIKED					✓												
SPIKED TESTED					✓												

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 2907

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05T124748
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: 905 567 6100 (4214) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: OJ-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table 1 (R&O 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As per QuoTAT	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OJ-335 S	05-05-10	SOIL	1														
OJ-344 S																	
OJ-346 S																	
OJ-352 S																	
OJ-356 S																	
OJ-357 S																	
OJ-405 S																	
OJ-418 S																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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PAGE ____ of ____

NO: 2906

Co, Cu, Pb, [illegible]

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Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 14°C
AGAT Job Number: 05T122667
Notes:

Client Information

Company: GOLDER ASSOC
Contact:
Address:
Phone: Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@golder.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table REG 153 / 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	AGAT QUOT.			MOE Site Decom		Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-344	05-05-11	WATER	1																	
05-346																				
05-350 R																				
05-352																				
05-377R																				
05-413																				
SPIKED TESTED																				
BLANK																				
EXTRACTION FLUID																				
SPIKED																				

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Pink Copy – Client
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PAGE ____ of ____

NO: 6969

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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T122808
Notes: _____

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (1217) Fax: _____
PO #: _____
Client Project #: 08-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ RSC 153 / 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Per Quote	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-400 S	05.05.12	SOIL	1														
05-401 S	↓	↓	↓														
05-417 S																	
05-421 S																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
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PAGE _____ of _____
NO: 6972

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: 05T123501

Notes: _____

Client Information

Company: GOLDER ASSOC.

Contact: RUI OLIVEIRA

Address: _____

Phone: 905 567 6100 (ext 235) Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	ATTY Check (Lab Use Only)	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
~~05-109~~	05 05 17	Water	1	-													
05-410				462													
05-412 (Repeat)				464													
05-415 (Repeat)				465													
05-416				467													
05-419				469													
05-420				470													
SPIKED (NOT TESTED)				471													
SPIKED TESTED				472													
BLANK				473													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutt MOE DTE 12:35	19 May 05	A. Chandan	May 19/05 @ 12:35p
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
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White Copy - AGAT

PAGE 1 of 1

NO: 6974

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T123501
Notes: _____

Client Information
Company: GOLDER ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: 905-567 6100 Fax: ex 1217
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:
1. Name: RUI OLIVEIRA
Email: R.OLIVEIRA@GOLDER.com
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required
Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:
☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Per Quote	Lab Use Only Phase	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-357 (Repeat)	05 05	WATER	1	474														
05-389 (Repeat)				475														
05-408				476														
05-412				477														
05-413				478														
05-415				479														
SPIKED				480														
SPIKED TESTED				481														
BLANK				482														
EXTRACTION FLUID				483														

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Janice Dit Janice Dit 1235	19 May 05	A. Chandan	May 19/05 @ 12:35
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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White Copy - AGAT

PAGE 1 of 1
NO: 6975

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05712 3405
Notes: _____

Client Information

Company: GOLDER'S ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: [illegible] 567 6100 Fax: ex 1217
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Rui Oliveira
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-357 (repeat)	05-05-16	Soil	1													
05-359 (repeat)																
05-410 S				423												
05-412 S				426												
05-413 S				427												
05-415 S				429												
05-410 S	05-05-17	Soil	1	430												
05-416 S				432												
05-419 S				434												
05-420 S				435												

Samples Relinquished By (print name & sign): Mike Dit Mike Dit — Date/Time: May 19/05 @ 12:35 p.m.
Samples Received By (print name & sign): A. Chandan — Date/Time: May 19/05 @ 12:35 p.m.
Samples Relinquished By (print name & sign): _____ — Date/Time: _____
Samples Received By (print name & sign): _____ — Date/Time: _____

Pink Copy – Client
Yellow Copy - AGAT
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PAGE 1 of 1
NO: 6973

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 13T265047
Notes: _____

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
(1217)
Phone: 905 567-6100 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table REG 153 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Al 1Fr QUO-	Ni	Cu Cu Pb Zn	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05 - 1290		WATER	1	HNO_3	–	–													
05 - 1293					–	–													
05 - 1295					–	–													
05 - 1296					–	–													
05 - 1299					–	–													
05 - 1301					–	–													
05 - 1307					–	–													
05 - 1308					–	–													
05 - 1309					–	–													
05 - 1311					–	–													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
		Oscar Dechamps	4:45
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			22/Apr

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 6966

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: C.11.6255.A
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (1312) Fax: _____
PO #: _____
Client Project #: 07-1112-065
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: *(please provide prior notification)*
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	#1 PAH ONLY	#2	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-1290	05.04.21	DUST	1															
05-1293																		
05-1295																		
05-1296																		
05-1299																		
05-1301																		
05-1307																		
05-1308																		
05-1309																		
05-1311																		

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			4:41
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			22/APR

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White Copy - AGAT

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NO: 6158

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
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www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information
Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (#217) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:
1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required
Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:
RFG 153
☐ GUCSO Table 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag
☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm
☐ PWQO
☐ Reg 558
☐ CCME
☐ Other (indicate) _____
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment
05-365 S	05-04-08	SOIL	1	
05-367 S				
05-368 S				
05-369 S				
05-370 S				
05-371 S				
05-372 S				
05-373 S				
05-375 S				
05-384 S				

MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr 11/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 6159

CHAIN OF CUSTODY RECORD

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http://webearth.agatlabs.com

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Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 10 C
AGAT Job Number: 05T11905 4
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: 905 567 6100 (127) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-365	05.04.08	WATER	1	HNO_3												
OS-367																
OS-368																
OS-369																
OS-370																
OS-371																
OS-372																
OS-373																
OS-375																
OS-384																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 6156

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T119625
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (216) Fax: (1217)
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: _____ Email: _____
2. Name: _____ Email: _____
3. Name: _____ Email: _____
4. Name: _____ Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ _____ (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	#1 PER QUOTATION	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-336 S	05.04.07	SOIL	1	VOID													
05-338 S	"	"	1	VOID													
05-340 S	"	"	1														
05-342 S	"	"	1														
05-345 S	"	"	1														
05-347 S	"	"	1														
05-348 S	"	"	1														
05-349 S	"	"	1														
05-350 S	"	"	1	VOID													
05-351 S	"	"	1														
05-353 S	"	"	1	VOID													
05-354 S	"	"	1	VOID													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6303

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: AS PER 6303
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ *Ind/Com* ☐ *Res/Park* ☐ *Ag*
☐ Sewer Use Region _____ (Indicate one) ☐ *Sanitary* ☐ *Storm*
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-356 S																
OS-357 S																
OS-361 S																
OS-364 S																
OS-366 S				VOC												
OS-374 S																
OS-376 S																
OS-377 S																
OS-378 S				VOC												
OS-379 S																
OS-380 S																
OS-381 S																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6302

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: AS PER 6303

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: _____

AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☐ Multiple Samples per page

☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-382 S																
05-383 S																
05-388 S																
05-389 S																
05-390 S																
05-391 S																
05-392 S																
05-396 S																
05-397 S				void												
05-398 S																
05-402 S																
05-403 S																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 3173

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: AS PER 6303
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ *Ind/Com* ☐ *Res/Park* ☐ *Ag*
☐ Sewer Use Region _____ (Indicate one) ☐ *Sanitary* ☐ *Storm*
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-406 S																
OS-409 S				VPH												
OS-411 S																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6305

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: (905) 567 6100 (1217) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ REG 153 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	HOLD QUINTAL	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-376	05-04-07	WATER	1	N_2 OH													
05-377			1	"													
05-379			1	"													
05-380			1	"													
05-382			1	"													
05-383			1	"													
05-388			1	"													
05-391			1	"													
MONTANA			1	"													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			11 APR 2007
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6306

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 9°C
AGAT Job Number: 05T118666
Notes:

Client Information

Company: GOLDER ASSOCIATES
Contact: RUI OLIVEIRA
Address:
Phone: 905 567 6100 (1217) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table REG 153 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	NJ PHC Quality	10 (+1 PHC, As)	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-339	05.04.05	WATER	1															
05-340																		
05-341																		
05-342																		
05-345																		
05-347																		
05-348																		
05-349																		
05-351																		
05-355																		
05-356																		
05-357																		

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr. 6/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 3170

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: SAME AS 3170

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: _____

AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☐ Multiple Samples per page

☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: **(please provide prior notification)**

☐ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-358																
05-359																
05-361																
05-362																
05-363																
05-364																
05-374																
05-381																
05-389																
05-390																
05-392																
05-396																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr 6/05 7:40
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 3171

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: SAMA AS 3170
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
Email: _____
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-398																
OS-402																
OS-403																
OS-406																
OS-411																
MONTANA																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr 6/25 9:40
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 3172

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: The Sorc Group (Contax Environmental)

Contact: _____

Phone: _____ Fax: _____

Invoice to (if other than above):

PASC Quote # : _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Analysis Required:	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	S10 (Dust)			sieved through 63µm stainless steel sieve	~0.432g		(*) approx. 1.0g
2	S13	"		"	~0.272g		of sieved
3	S21	"		"	~0.404g		sample retained
4	S22	"		"	~0.745g	(*)	for bioaccess-
5	S29	"		"	~0.136g		ibility testing.
6	S38	"		"	~0.225g		
7	S41	"		"	~0.194g		
8	S50	"		"	~0.569g	(*)	
9	S52	"		"	~0.420g		
10	S60	"		"	~0.645g		
11	S72	"		"	~0.362g		
12	S82	"		"	~3.175g	(*)	

Samples Relinquished to PASC by: (Client Signature) SAGA Mike Duttan	Date: 18 Mar 05	Time:	Method of Shipment:
Samples Received in lab by: Gina Musca	Date: 19/March/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

NO 73303

PSC ANALYTICAL SERVICES
5735 Adam Road
Mississauga
Ontario L4Z 1N9
Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY
Work Order: _____
Comments: _____

CHAIN OF CUSTODY RECORD

Client: The Sora Group (Cantox Environmental)
PASC Quote # : _____
Page 2 of 2
Client P.O. # : _____
Client Project # : _____
Contact: _____
Sampled by: _____
Phone: _____ Fax: _____
Please specify Guideline (if applicable) _____

Invoice to (if other than above):

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐
RUSH Specify Date: _____
Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Analysis Required:	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	594 (Dust)	sieved through 63µm stainless steel sieve		~	5.902g	(*)	(*) see note on Page 1.
2	601 "			" " ~	0.845g		
3	602 "			" " ~	5.210g	(*)	
4	606 "			" " ~	0.478g		
5	561 "	no sample (insufficient amount)					
6							
7							
8							
9							
10							
11							
12	SARA						

Samples Relinquished to PASC by: (Client Signature) Mike Dutton	Date: 19 Mar 05	Time:	Method of Shipment:
Samples Received in lab by: Lina Musca	Date: 19 March/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

N2 73304

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T115662
Notes: _____

Client Information

Company: Golder Associates
Contact: Rui Oliveira
Address: _____
Phone: 905-567-6100(1217) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Rui Oliveira
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-343	Mar 11/10 8:30am	Soil	1													
05-353	Mar 11/10:30am	Soil	1													
05-354	Mar 11/10:30am	Soil	1													
05-378	Mar 11/10:30am	Soil	1													
05-397	Mar 11/10:30am	Soil	1													

ASAP QUOTE

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Mar 11 @ 10:30am
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 3169

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 8°C
AGAT Job Number: 05-114-9823
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: (905) 567-4444 (1244) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table 1 (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Al, Fe, B (HWS)	Co, Cu, Pb, Sb, Se, Tl	Cr (VI)	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-343	MAR 06	SOIL	1	HNO3															
OS-353	"	"	1	"															
OS-354	"	"	1	"															
OS-378	"	"	1	"															
OS-397	"	"	1	"															
OS-343F	"	"	1	"															
OS-353F	"	"	1	"															
OS-354F	"	"	1	"															
OS-378F	"	"	1	"															
OS-397F	"	"	1	"															

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
RUI OLIVEIRA			Mar 7/05 3pm
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 3168

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cantox Environmental Inc.
136-1900 Minnesota Crt.
Mississauga ON

Contact: Chris Huser / Chat Sigal

Phone: 905-814-7800, 206 x 222 Fax: _____

Invoice to (if other than above):

PASC Quote # : _____ Page ____ of ____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

Analysis Required:

Sieve - 63 µm
Soil
Bioaccessibility

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	510-org.					
2	512-org.					
3	517-org.					
4	560-org.					
5	521-org.					
6	529-org.					
7	520-org.					
8	533-org.					
9	530-org.					
10	525-org.					
11	552-org.					
12	584-org.					

Samples Relinquished to PASC by: (Client Signature) GA. Gina Muser — Date: March 7/05 — Time: — Method of Shipment:

Samples Received in lab by: — Date: — Time: — Condition of samples upon receipt at lab:

Rev.PSC-COC.5.26.02

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

№ 73498

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cantox Environmental Inc.
130-1900 Minnesota Crt.
Mississauga,

Contact: Gina Musca / Ellen Segal

Phone: 905 804-7800 x 206 x 223

Fax: _____

PASC Quote # : _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

Page _____ of _____

Invoice to (if other than above):

Notes: These samples are NOT to have bioassays. Tests only speciation.

Analysis Required:

(Cr+6 Sieve - Speciation)

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	Soil-					
2	SED-					
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Samples Relinquished to PASC by: (Client Signature) GA. GINA Musca	Date: March 7/05	Time:	Method of Shipment:
Samples Received in lab by: [illegible]	Date: Mar 8/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

73300

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cortex Environmental Inc.
130 - 1900 Minnesota Crt.

Contact: Gina Musca / Elliot Segal

Phone: 905-814-7800 x 206 x 227. Fax: _____

Invoice to (if other than above):

PASC Quote # : _____ Page _____ of _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Analysis Required:	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	620 - dry						
2	620 - lab			✓ ✓			
3	534 - dry						
4	534 - lab			✓ ✓			
5	514 - dry						
6	514 - lab			✓ ✓			
7	515 - dry						
8	515 - lab			✓ ✓			
9	522 - dry						
10	522 - lab			✓ ✓			
11							
12							

Samples Relinquished to PASC by: (Client Signature) Golder Associates Gina Musca	Date: March 7/05	Time:	Method of Shipment:
Samples Received in lab by: Mike Dalton	Date: Mar 07/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

№ 73497

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cantox Environmental Inc.
130 - 1900 Minnesota Crt.
Mississauga, ON
Contact: Gina Hawira / Elliot Sigal
Phone: 905-814-1800 x 222 Fax: _____
x206

PASC Quote # : _____ Page _____ of _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

Invoice to (if other than above):

_____

_____

_____

_____

Analysis Required:

split sieve - 63um
bioaccessibility

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	6006 - dig.					
2	601 - dig.					
3	11 - dig.					
4	602 - dig.					
5						
6						
7						
8						
9						
10						
11						
12						

Samples Relinquished to PASC by: (Client Signature) Gina Hawira	Date: March 7/05	Time:	Method of Shipment:
Samples Received in lab by: Mike Dutton Mike Dutton	Date: Mar 07/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

№ 73499

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T113564
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd
Mississauga
Phone: 905-567-4444 Fax: 905-567-6561
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: **(please provide prior notification)**
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☑ GUCSO Table Reg 153/04 2 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	✓ As & OS-114	✓ Co, Cu, Pb, Ni, Se, Ag	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
CWA Soil 01		Soil	1															
CWA Soil 02		"	1															
CWA Soil 03		"	1															

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton			
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1
NO: 3167

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #1

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05 T 11127
Notes:

Client Information

Company: Golder
Contact: Mike Duttan
Address: 2390 Argentia Road
Mississauga
Phone: 905-567-44444 Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Duttan
   Email: mduttan@golder.com
2. Name: Rui Oliviera
   Email: roliviera@golder.com
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☑ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Tues Feb 8/05
TIME REQUIRED: end of day

Regulatory Guideline Required:

☑ GUCSO Table Reg 153/04 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	B(a)P Grotesque	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-392		Soil	1														
05-394			1														
05-400			1														
05-398			1														
05-413			1														
05-415			1														
05-351			1														
05-352			1														
05-354			1														
05-359			1														
05-364			1														
05-365			1														

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Duttan Mike Dut	Feb 4/05 14:00	Oscar Lochman	Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			7:00 PM

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3174

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #1

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: M. Dutton
Address: 2390 Argentia Rd.
Mississauga
Phone: _____ Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
Email: mdutton@golder.com
2. Name: Rui Oliviera
Email: roliviera@golder.com
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☑ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: Tuesday Feb 8/05
TIME REQUIRED: end of day.

Regulatory Guideline Required:

☑ GUCSO Table Reg153/04 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-372		Soil	1													
05-376			1													
05-396			1													
05-371			1													
05-344			1													
05-346			1													
05-343			1													
05-369			1													
05-369			1													
05-391			1													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton	04 Feb/05 14:00	Oscar Bachman	4/Feb/05 14:00
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2
NO: 3177

CHAIN OF CUSTODY RECORD

Batch #2

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: _____
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED: Wed. 09 Feb 05
TIME REQUIRED: end of day.

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As per QUOTE 05-114	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-361																	
05-357																	
05-353																	
05-420																	
05-414																	
05-412																	
05-411																	
05-410																	
05-409																	
05-399																	
05-401																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	4/Feb/05 14:00	OSCAR BECHMAN	9/Feb/05 2:00 pm
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 3175

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch # 2

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T111211
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia
Mississauga
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: Rui Oliviera
   Email: roliviera@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED: Wed 09/Feb/05
TIME REQUIRED: end of day

Regulatory Guideline Required:

☐ O.Reg 153/04 GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Metals Scan (MOE Site Decom)	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-395		Soil	1													
05-385			1													
05-384			1													
05-383			1													
05-381			1													
05-393			1													
05-347			1													
05-390			1													
05-342			1													
05-345			1													
05-371			1													
05-363			1													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	04 Feb, 05 14:00	Oscar Beckyaw	4/FEB/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			2:00

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3176

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T1112-19
Notes: _____

Batch #3

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd.
Mississauga
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
Email: mdutton@golder.com
2. Name: Rui Oliveira
Email: roliveira@golder.com
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: Thurs 10 Feb 05
TIME REQUIRED: end of day

Regulatory Guideline Required:

Res. 153
☐ GUCSO Table 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As per cust.	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-334		soil	1														
05-335																	
05-337																	
05-339																	
05-340																	
05-349																	
05-355																	
05-356																	
05-358																	
05-362																	
05-367																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton			Feb 4/05 4pm
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3178

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #3

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: _____
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: see #3179
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Thurs. 10 Feb 05
TIME REQUIRED: end of day

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Received	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-370																	
05-373																	
05-374																	
05-375																	
05-377																	
05-379																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton			Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 3179

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #4

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05 7111 582
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd.
Mississauga
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: Rui Oliviera
   Email: roliviera@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours Thurs.

DATE REQUIRED: Fri. 10 Feb 05
TIME REQUIRED: end of day

Regulatory Guideline Required:

Reg 153
☐ GUCSO Table 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Before Grade	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-379		soil	1	166													
05-380				167													
05-396																	
05-397																	
05-398																	
05-399																	
05-392																	
05-397																	
05-402																	
05-403																	
05-404																	
05-405																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton			Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3180

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #4

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: Golder

Contact: Mike Dalton

Address: _____

Phone: 905-567-4444 Fax: _____

PO #: _____

Client Project #: 04-1112-089

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: see # 3190
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☐ 48 to 72 Hours Thurs

DATE REQUIRED: Thurs 10 Feb 05

TIME REQUIRED: end of day

Regulatory Guideline Required:

Reg 153

☐ GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Received	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-406		soil	1														
05-407		"	"														
05-416		"	"														
05-417		"	"														
05-418		"	"														
05-419		"	"														
05-421		"	"														
			—														
			—														
			—														
			—														
			—														

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dalton			Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 6462

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: SARA Group c/o Cantox
Address: 130-1900 Minnesota Crt.
Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: (905) 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☑ Fax ☑ Email
☐ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE: _____

split

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	CONTAINERS RECEIVED
Dec 13		G	S	584-55	1		
Jan 6		G	S	518-55			
Nov 30		G	S	550-55			
Dec 13		G	S	522-55			
Nov 30		G	S	502-55			
Nov 30		G	S	542-55			

LABORATORY USE ONLY
WORK ORDER NUMBER:
ENTERED BY:
TEMP | LAB ID

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

Page 1 of 1

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other: _____

COMMENTS:

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
SARA GROUP				
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
Golde	1/13/05			

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

MIKE DUTTON / RUI

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T113277
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: _____
Address: 2390 ARGENTIA RD.
_____
Phone: 905 567 4444 Fax: _____
PO #: _____
Client Project #: 04-1120-861
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☑ ~~GUCSO Table~~ O.Reg 153 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Sb, As, Ba, Be	Cu, Pb, Zn	B, Hg, Cr6	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-425	05.02.13	SOIL	1																
05-435	"	"	1																
05-437	"	"	1																
05-440	"	"	1																
05-444	"	"	1																
05-450	"	"	1																
05-451	"	"	1																
05-459	"	"	1																
05-461	"	"	1																
05-463	"	"	1																
05-464	"	"	1																
05-467	"	"	1																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
RUI OLIVEIRA			1:20 PM
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 3166

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: SAME AS 3166
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____ Email: _____
2. Name: _____ Email: _____
3. Name: _____ Email: _____
4. Name: _____ Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-475	05.02.19	Soil	1													
05-476		"	1													
05-477		"	1													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Feb 22/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 10000

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05T1132 77
Notes:

Client Information

Company: Golder Assoc.
Contact:
Address: 2390 Argentia Rd.
Phone: 905-567-4447 Fax: 905-567-6561
PO #:
Client Project #: 04-1120-961
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☑ GUCSO Table 1 Reg 153 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	4 Sb, As, Ba, Be, Cu, Pb, Zn, Hg ICP-MS	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-422 (A)	05-02-18	WATER		HNO3 PRES													
05-422 (B)	"	"		"													
05-425 (A)	"	"		"													
05-425 (A)F	"	"		"													
05-425 (B)	"	"		"													
05-435	"	"		"													
05-437	"	"		"													
05-440	"	"		"													
05-444	"	"		"													
05-444F	"	"		"													
05-450	"	"		"													
05-451	"	"		"													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
RUI Guy OLIVEIRA			Feb 22/10
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT

NC 6702

5623 [illegible]
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com
Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Arrival Temperature: _____
AGAT Job Number: [illegible]
Notes: _____

Client Information

Company: SANE AS 6702
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

- ☐ Single Sample per page
- ☐ Multiple Samples per page
- ☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
- ☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
- ☐ 24 to 48 hours
- ☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

- ☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
- ☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
- ☐ PWQO ☐ Reg 558 ☐ CCME
- ☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-459	05.02.18	WATER		WHO, MIXED												
05-461	"	"		"												
05-463	"	"		"												
05-464	"	"		"												
05-467	"	"		"												
05-475	"	"		"												
05-476	"	"		"												
05-477	"	"		"												

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Feb 22/18 5P
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 6703

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: 05T124900

Notes: _____

Client Information

Company: GOLDER ASSOC

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☑ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (MAG 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-339 S	05-06-03	SOIL	1													
OS-341 S	"	"	"													
OS-355 S	"	"	"													
OS-358 S	"	"	"													
OS-359 S	"	"	"													
OS-362 S	"	"	"													
OS-363 S	"	"	"													

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6977

04-1112-069

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05712 1770
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd.
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: Mike Dutton
Email: mdutton@golder.com
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Friday June 3/05
TIME REQUIRED: 1300

Regulatory Guideline Required:

☑ GUCSO Table 3
(Indicate one)
☐ Ind/Com
☐ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☑ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Distiller Water #0	01 June 05	H_2O	1	(Samples are distilled water)		✓										
Stored Water #1	"	"	1	"		✓										
Stored Water #2	"	"	1	"		✓										
Stored Water #3	"	"	1	"		✓										
Stored Water #4	"	"	1	"		✓										
Stored Water #5	"	"	1	"		✓										

Samples Relinquished By (print name & sign): Mike Dutton Mike Dutton — Date/Time: 01 June 05 — Samples Received By (print name & sign): _____ — Date/Time: June 1 05

Samples Relinquished By (print name & sign): _____ — Date/Time: _____ — Samples Received By (print name & sign): _____ — Date/Time: _____

Pink Copy – Client
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PAGE 1 of 1

NO: 6976

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd

Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours (Friday)

DATE REQUIRED: Thurs June 3/05
TIME REQUIRED: 1300

Regulatory Guideline Required:

☑ GUCSO Table 3
(Indicate one)
☐ Ind/Com
☐ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☑ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Distilled Water #0	01 June 05	H_2O	1	(Sample received in lab)		✓										
Stored Water #1	"	"	1	(water)		✓										
Stored water #2	"	"	1	"		✓										
Stored water #3	"	"	1	"		✓										
Stored water #4	"	"	1	"		✓										
Stored water #5	"	"	1	"		✓										

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	01 June 05		
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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PAGE 1 of 1

NO: 6976

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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05TR5157
Notes:

Client Information
Company: GOLDER ASSOC.
Contact:
Address:
Phone: Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:
1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@golder.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required
Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours
DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:
☐ GUCSO Table ____ (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region ____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	All Parameters as per Soil Proposal	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
PHASE FRAC 1-1	June 6																
PHASE FRAC 1-2	June 6																
PHASE FRAC 2-1	June 6																
PHASE FRAC 2-2	June 6																
PILE 1-1	June 6																
PILE 1-2	June 6																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Jennifer King	June 6		June 6
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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PAGE ____ of ____
NO: 6078

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: [illegible]

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☑ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ Hg 153 1 (Indicate one)
- ☐ Ind/Com
- ☑ Res/Park
- ☐ Ag

☐ Sewer Use
Region _____ (Indicate one)
- ☐ Sanitary
- ☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	All PCB SOIL	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
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PAGE _____ of _____

NO: 6978

CHAIN OF CUSTODY RECORD

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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: 05T12154

Notes: _____

Client Information

Company: Golder

Contact: Mike Dutton

Address: 2390 Argentia Rd.
Mississauga

Phone: 905 567-4444 Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: ~~Matt~~ Mike Dutton
   Email: mdutton@golder.com
2. Name: Rui Oliveira
   Email: roliveira@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☑ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: Tues 10 May 05

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Cu, Pb, Co, Ni	Se, As	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Spike	09 May 05	2% HNO_3	1	Cu, Pb, Co, Ni @ ≈ 10 mg/L Se + As @ ≈ 1 mg/L	✓	✓	1963											

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	1320 09 May 05	N. Ickinson	1:30
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
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PAGE 1 of 1

NO: 2904

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dalton
Address: 2390 Argentia Rd
Mississauga
Phone: 905 567-9421 Fax: _____
PO #: _____
Client Project #: 09-1112-0269
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: ~~Mel~~ Mike Dalton
   Email: mdalton@golder.com
2. Name: Rui Oliveira
   Email: roliveira@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☑ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Two DAYS
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Cu, Pb, Co, Ni, As, Se	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
Spike	Aug 19/09	$2\%HNO_3$	1	Cu, Pb, Co, Ni @ ≈ 10 mg/L Se ≈ 15 @ ≈ 1 mg/L	✓	✓											

Samples Relinquished By (print name & sign): Mike Dalton Mike Dalton — Date/Time: 19/08/09 — Samples Received By (print name & sign): N. Hall — Date/Time: 1:30

Samples Relinquished By (print name & sign): _____ — Date/Time: _____ — Samples Received By (print name & sign): _____ — Date/Time: _____

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 2904

CHAIN OF CUSTODY RECORD

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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete
Arrival Temperature:
AGAT Job Number: 05T12259
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: 905 567-6100 (1217) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ REG 153 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment
05-334	05-04-19	SOIL	1	
05-337				
05-395				
05-393				
05-394				
05-395				
05-399				
05-404				
05-407				
05-414				
EXTRACTION FLUID	05.05.06	WATER	1	

Co Cu Pb As Ba

MOE Site Decom
Metals Scan (not incl. Hg, B, Cr6)
Reg 558 Metals/Inorg
Reg 558
Storm Sewer Use
Sanitary Sewer Use
CCME Fractions 1 to 4
BTEX/TPH – (gas/Diesel)
TPH – (gas/Diesel)
VOCs
PAHs
PCBs

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT

PAGE _____ of _____

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: _____
Contact: AS PER 6162
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
US-334	05.04.20	WATER	1													
US-337																
US-345																
US-393																
US-394																
US-395																
US-399																
US-1104																
US-1107																
US-414																
MONTANA I		WATER		VOID												
MONTANA II		W		VOID												

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 9169

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: SOLOAR ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (x212) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@SOLOAR.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (RPC 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	All Fill Out	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-334 REP	05-01-10	WATER	1	HNO_3	✓												
05-335					✓												
05-336					✓												
05-337					✓												
05-353 REP					✓												
05-405					✓												
BLANK					✓												
EXTRACTION FLUID					✓												
SPIKED					✓												
SPIKED TESTED					✓												

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 2907

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05T124748
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: 905 567 6100 (4214) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: OJ-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table 1 (R&O 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As per QuoTAT	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OJ-335 S	05-05-10	SOIL	1														
OJ-344 S																	
OJ-346 S																	
OJ-352 S																	
OJ-356 S																	
OJ-357 S																	
OJ-405 S																	
OJ-418 S																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE ____ of ____

NO: 2906

Co, Cu, Pb, [illegible]

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 14°C
AGAT Job Number: 05T122667
Notes:

Client Information

Company: GOLDER ASSOC
Contact:
Address:
Phone: Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@golder.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table REG 153 / 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	AGAT QUOT.			MOE Site Decom		Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-344	05-05-11	WATER	1																	
05-346																				
05-350 R																				
05-352																				
05-377R																				
05-413																				
SPIKED TESTED																				
BLANK																				
EXTRACTION FLUID																				
SPIKED																				

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

Samples Relinquished By (print name & sign) | Date/Time | Samples Received By (print name & sign) | Date/Time

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PAGE ____ of ____

NO: 6969

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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T122808
Notes: _____

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (1217) Fax: _____
PO #: _____
Client Project #: 08-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ RSC 153 / 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Per Quote	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-400 S	05.05.12	SOIL	1														
05-401 S	↓	↓	↓														
05-417 S																	
05-421 S																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
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NO: 6972

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www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: 05T123501

Notes: _____

Client Information

Company: GOLDER ASSOC.

Contact: RUI OLIVEIRA

Address: _____

Phone: 905 567 6100 (ext 235) Fax: _____

PO #: _____

Client Project #: 04-1112-069

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	ATTY Check (Lab Use Only)	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
~~05-109~~	05 05 17	Water	1	-													
05-410				462													
05-412 (Repeat)				464													
05-415 (Repeat)				465													
05-416				467													
05-419				469													
05-420				470													
SPIKED (NOT TESTED)				471													
SPIKED TESTED				472													
BLANK				473													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutt MOE DTE 12:35	19 May 05	A. Chandan	May 19/05 @ 12:35p
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
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PAGE 1 of 1

NO: 6974

CHAIN OF CUSTODY RECORD

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www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T123501
Notes: _____

Client Information
Company: GOLDER ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: 905-567 6100 Fax: ex 1217
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:
1. Name: RUI OLIVEIRA
Email: R.OLIVEIRA@GOLDER.com
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required
Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:
☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Per Quote	Lab Use Only Phase	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-357 (Repeat)	05 05	WATER	1	474														
05-389 (Repeat)				475														
05-408				476														
05-412				477														
05-413				478														
05-415				479														
SPIKED				480														
SPIKED TESTED				481														
BLANK				482														
EXTRACTION FLUID				483														

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Janice Dit Janice Dit 1235	19 May 05	A. Chandan	May 19/05 @ 12:35
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

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PAGE 1 of 1
NO: 6975

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www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05712 3405
Notes: _____

Client Information

Company: GOLDER'S ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: [illegible] 567 6100 Fax: ex 1217
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Rui Oliveira
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-357 (repeat)	05-05-16	Soil	1													
05-359 (repeat)																
05-410 S				423												
05-412 S				426												
05-413 S				427												
05-415 S				429												
05-410 S	05-05-17	Soil	1	430												
05-416 S				432												
05-419 S				434												
05-420 S				435												

Samples Relinquished By (print name & sign): Mike Dit Mike Dit — Date/Time: May 19/05 @ 12:35 p.m.
Samples Received By (print name & sign): A. Chandan — Date/Time: May 19/05 @ 12:35 p.m.
Samples Relinquished By (print name & sign): _____ — Date/Time: _____
Samples Received By (print name & sign): _____ — Date/Time: _____

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1
NO: 6973

CHAIN OF CUSTODY RECORD

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Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 13T265047
Notes: _____

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
(1217)
Phone: 905 567-6100 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table REG 153 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Al 1Fr QUO-	Ni	Cu Cu Pb Zn	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05 - 1290		WATER	1	HNO_3	–	–													
05 - 1293					–	–													
05 - 1295					–	–													
05 - 1296					–	–													
05 - 1299					–	–													
05 - 1301					–	–													
05 - 1307					–	–													
05 - 1308					–	–													
05 - 1309					–	–													
05 - 1311					–	–													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
		Oscar Dechamps	4:45
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			22/Apr

Pink Copy – Client
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PAGE _____ of _____
NO: 6966

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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: C.11.6255.A
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (1312) Fax: _____
PO #: _____
Client Project #: 07-1112-065
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: *(please provide prior notification)*
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	#1 PAH ONLY	#2	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-1290	05.04.21	DUST	1															
05-1293																		
05-1295																		
05-1296																		
05-1299																		
05-1301																		
05-1307																		
05-1308																		
05-1309																		
05-1311																		

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			4:41
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			22/APR

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Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 6158

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LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information
Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (#217) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:
1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required
Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:
RFG 153
☐ GUCSO Table 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag
☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm
☐ PWQO
☐ Reg 558
☐ CCME
☐ Other (indicate) _____
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment
05-365 S	05-04-08	SOIL	1	
05-367 S				
05-368 S				
05-369 S				
05-370 S				
05-371 S				
05-372 S				
05-373 S				
05-375 S				
05-384 S				

MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr 11/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

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White Copy - AGAT

PAGE _____ of _____
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www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 10 C
AGAT Job Number: 05T11905 4
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: 905 567 6100 (127) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-365	05.04.08	WATER	1	HNO_3												
OS-367																
OS-368																
OS-369																
OS-370																
OS-371																
OS-372																
OS-373																
OS-375																
OS-384																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 6156

CHAIN OF CUSTODY RECORD

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Fax: 905-501-0589
Toll free: 800-856-6261
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LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T119625
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: RUI OLIVEIRA
Address: _____
Phone: 905 567 6100 (216) Fax: (1217)
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: _____ Email: _____
2. Name: _____ Email: _____
3. Name: _____ Email: _____
4. Name: _____ Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ _____ (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	#1 PER QUOTATION	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-336 S	05.04.07	SOIL	1	VOID													
05-338 S	"	"	1	VOID													
05-340 S	"	"	1														
05-342 S	"	"	1														
05-345 S	"	"	1														
05-347 S	"	"	1														
05-348 S	"	"	1														
05-349 S	"	"	1														
05-350 S	"	"	1	VOID													
05-351 S	"	"	1														
05-353 S	"	"	1	VOID													
05-354 S	"	"	1	VOID													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6303

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: AS PER 6303
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ *Ind/Com* ☐ *Res/Park* ☐ *Ag*
☐ Sewer Use Region _____ (Indicate one) ☐ *Sanitary* ☐ *Storm*
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-356 S																
OS-357 S																
OS-361 S																
OS-364 S																
OS-366 S				VOC												
OS-374 S																
OS-376 S																
OS-377 S																
OS-378 S				VOC												
OS-379 S																
OS-380 S																
OS-381 S																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6302

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: AS PER 6303

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: _____

AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☐ Multiple Samples per page

☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-382 S																
05-383 S																
05-388 S																
05-389 S																
05-390 S																
05-391 S																
05-392 S																
05-396 S																
05-397 S				void												
05-398 S																
05-402 S																
05-403 S																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 3173

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: AS PER 6303
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ *Ind/Com* ☐ *Res/Park* ☐ *Ag*
☐ Sewer Use Region _____ (Indicate one) ☐ *Sanitary* ☐ *Storm*
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-406 S																
OS-409 S				VPH												
OS-411 S																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6305

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address: _____
Phone: (905) 567 6100 (1217) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ ~~GUCSO Table~~ REG 153 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	HOLD QUINTAL	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-376	05-04-07	WATER	1	N_2 OH													
05-377			1	"													
05-379			1	"													
05-380			1	"													
05-382			1	"													
05-383			1	"													
05-388			1	"													
05-391			1	"													
MONTANA			1	"													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			11 APR 2007
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 6306

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 9°C
AGAT Job Number: 05T118666
Notes:

Client Information

Company: GOLDER ASSOCIATES
Contact: RUI OLIVEIRA
Address:
Phone: 905 567 6100 (1217) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table REG 153 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	NJ PHC Quality	10 (+1 PHC, As)	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-339	05.04.05	WATER	1															
05-340																		
05-341																		
05-342																		
05-345																		
05-347																		
05-348																		
05-349																		
05-351																		
05-355																		
05-356																		
05-357																		

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr. 6/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 3170

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: SAME AS 3170

Contact: _____

Address: _____

Phone: _____ Fax: _____

PO #: _____

Client Project #: _____

AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☐ Multiple Samples per page

☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: **(please provide prior notification)**

☐ 24 to 48 hours

☐ 48 to 72 Hours

DATE REQUIRED: _____

TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-358																
05-359																
05-361																
05-362																
05-363																
05-364																
05-374																
05-381																
05-389																
05-390																
05-392																
05-396																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr 6/05 7:40
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____

NO: 3171

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: SAMA AS 3170
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
Email: _____
2. Name: _____
Email: _____
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-398																
OS-402																
OS-403																
OS-406																
OS-411																
MONTANA																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Apr 6/25 9:40
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE _____ of _____
NO: 3172

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: The Sorc Group (Contax Environmental)

Contact: _____

Phone: _____ Fax: _____

Invoice to (if other than above):

PASC Quote # : _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Analysis Required:	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	S10 (Dust)			sieved through 63µm stainless steel sieve	~0.432g		(*) approx. 1.0g
2	S13	"		"	~0.272g		of sieved
3	S21	"		"	~0.404g		sample retained
4	S22	"		"	~0.745g	(*)	for bioaccess-
5	S29	"		"	~0.136g		ibility testing.
6	S38	"		"	~0.225g		
7	S41	"		"	~0.194g		
8	S50	"		"	~0.569g	(*)	
9	S52	"		"	~0.420g		
10	S60	"		"	~0.645g		
11	S72	"		"	~0.362g		
12	S82	"		"	~3.175g	(*)	

Samples Relinquished to PASC by: (Client Signature) SAGA Mike Duttan	Date: 18 Mar 05	Time:	Method of Shipment:
Samples Received in lab by: Gina Musca	Date: 19/March/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

NO 73303

PSC ANALYTICAL SERVICES
5735 Adam Road
Mississauga
Ontario L4Z 1N9
Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY
Work Order: _____
Comments: _____

CHAIN OF CUSTODY RECORD

Client: The Sora Group (Cantox Environmental)
PASC Quote # : _____
Page 2 of 2
Client P.O. # : _____
Client Project # : _____
Contact: _____
Sampled by: _____
Phone: _____ Fax: _____
Please specify Guideline (if applicable) _____

Invoice to (if other than above):

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐
RUSH Specify Date: _____
Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Analysis Required:	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	594 (Dust)	sieved through 63µm stainless steel sieve		~	5.902g	(*)	(*) see note on Page 1.
2	601 "			" " ~	0.845g		
3	602 "			" " ~	5.210g	(*)	
4	606 "			" " ~	0.478g		
5	561 "	no sample (insufficient amount)					
6							
7							
8							
9							
10							
11							
12	SARA						

Samples Relinquished to PASC by: (Client Signature) Mike Dutton	Date: 19 Mar 05	Time:	Method of Shipment:
Samples Received in lab by: Lina Musca	Date: 19 March/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

N2 73304

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T115662
Notes: _____

Client Information

Company: Golder Associates
Contact: Rui Oliveira
Address: _____
Phone: 905-567-6100(1217) Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Rui Oliveira
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours
DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table 1 (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-343	Mar 11/10 8:30am	Soil	1													
05-353	Mar 11/10:30am	Soil	1													
05-354	Mar 11/10:30am	Soil	1													
05-378	Mar 11/10:30am	Soil	1													
05-397	Mar 11/10:30am	Soil	1													

ASAP QUOTE

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Mar 11 @ 10:30am
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 3169

CHAIN OF CUSTODY RECORD

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5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

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Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 8°C
AGAT Job Number: 05-114-9823
Notes:

Client Information

Company: GOLDER ASSOC
Contact: RUI OLIVEIRA
Address:
Phone: (905) 567-4444 (1244) Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☐ GUCSO Table 1 (Reg 153)
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Al, Fe, B (HWS)	Co, Cu, Pb, Sb, Se, Tl	Cr (VI)	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
OS-343	MAR 06	SOIL	1	HNO3															
OS-353	"	"	1	"															
OS-354	"	"	1	"															
OS-378	"	"	1	"															
OS-397	"	"	1	"															
OS-343F	"	"	1	"															
OS-353F	"	"	1	"															
OS-354F	"	"	1	"															
OS-378F	"	"	1	"															
OS-397F	"	"	1	"															

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
RUI OLIVEIRA			Mar 7/05 3pm
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1

NO: 3168

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cantox Environmental Inc.
136-1900 Minnesota Crt.
Mississauga ON

Contact: Chris Huser / Chat Sigal

Phone: 905-814-7800, 206 x 222 Fax: _____

Invoice to (if other than above):

PASC Quote # : _____ Page ____ of ____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

Analysis Required:

Sieve - 63 µm
Soil
Bioaccessibility

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	510-org.					
2	512-org.					
3	517-org.					
4	560-org.					
5	521-org.					
6	529-org.					
7	520-org.					
8	533-org.					
9	530-org.					
10	525-org.					
11	552-org.					
12	584-org.					

Samples Relinquished to PASC by: (Client Signature) GA. Gina Muser — Date: March 7/05 — Time: — Method of Shipment:

Samples Received in lab by: — Date: — Time: — Condition of samples upon receipt at lab:

Rev.PSC-COC.5.26.02

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

№ 73498

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cantox Environmental Inc.
130-1900 Minnesota Crt.
Mississauga,

Contact: Gina Musca / Ellen Segal

Phone: 905 804-7800 x 206 x 223

Fax: _____

PASC Quote # : _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

Page _____ of _____

Invoice to (if other than above):

Notes: These samples are NOT to have bioassays. Tests only speciation.

Analysis Required:

(Cr+6 Sieve - Speciation)

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	Soil-					
2	SED-					
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Samples Relinquished to PASC by: (Client Signature) GA. GINA Musca	Date: March 7/05	Time:	Method of Shipment:
Samples Received in lab by: [illegible]	Date: Mar 8/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

73300

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cortex Environmental Inc.
130 - 1900 Minnesota Crt.

Contact: Gina Musca / Elliot Segal

Phone: 905-814-7800 x 206 x 227. Fax: _____

Invoice to (if other than above):

PASC Quote # : _____ Page _____ of _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Analysis Required:	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	620 - dry						
2	620 - lab			✓ ✓			
3	534 - dry						
4	534 - lab			✓ ✓			
5	514 - dry						
6	514 - lab			✓ ✓			
7	515 - dry						
8	515 - lab			✓ ✓			
9	522 - dry						
10	522 - lab			✓ ✓			
11							
12							

Samples Relinquished to PASC by: (Client Signature) Golder Associates Gina Musca	Date: March 7/05	Time:	Method of Shipment:
Samples Received in lab by: Mike Dalton	Date: Mar 07/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

№ 73497

PSC ANALYTICAL SERVICES

5735 Adam Road
Mississauga
Ontario L4Z 1N9

Tel: (905) 890-8566
Fax: (905) 890-8575
Toll Free: 1-800-263-9040

LABORATORY USE ONLY

Work Order: _____

Comments: _____

CHAIN OF CUSTODY RECORD

Client: Cantox Environmental Inc.
130 - 1900 Minnesota Crt.
Mississauga, ON
Contact: Gina Hawira / Elliot Sigal
Phone: 905-814-1800 x 222 Fax: _____
x206

PASC Quote # : _____ Page _____ of _____

Client P.O. # : _____

Client Project # : _____

Sampled by: _____

Please specify Guideline (if applicable) _____

Invoice to (if other than above):

_____

_____

_____

_____

Analysis Required:

split sieve - 63um
bioaccessibility

TAT (Turnaround Time)

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Some exceptions apply. Please contact Lab

STD 5-7 Business Days ☐

RUSH Specify Date: _____

Time: _____

Sample #	Client Sample I.D.	Date Sampled	Time Sampled	Sample Matrix	No.of Containers	Comments/Contamination/ Site History
1	6006 - dig.					
2	601 - dig.					
3	11 - dig.					
4	602 - dig.					
5						
6						
7						
8						
9						
10						
11						
12						

Samples Relinquished to PASC by: (Client Signature) Gina Hawira	Date: March 7/05	Time:	Method of Shipment:
Samples Received in lab by: Mike Dutton Mike Dutton	Date: Mar 07/05	Time:	Condition of samples upon receipt at lab:

White: PSC *Yellow:* Mail *Pink:* Receiver *Goldenrod:* Client

Rev.PSC-COC.5.26.02

№ 73499

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T113564
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd
Mississauga
Phone: 905-567-4444 Fax: 905-567-6561
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: **(please provide prior notification)**
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☑ GUCSO Table Reg 153/04 2 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	✓ As & OS-114	✓ Co, Cu, Pb, Ni, Se, Ag	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
CWA Soil 01		Soil	1															
CWA Soil 02		"	1															
CWA Soil 03		"	1															

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton			
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 1
NO: 3167

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
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Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #1

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05 T 11127
Notes:

Client Information

Company: Golder
Contact: Mike Duttan
Address: 2390 Argentia Road
Mississauga
Phone: 905-567-44444 Fax:
PO #:
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Duttan
   Email: mduttan@golder.com
2. Name: Rui Oliviera
   Email: roliviera@golder.com
3. Name:
   Email:
4. Name:
   Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☑ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Tues Feb 8/05
TIME REQUIRED: end of day

Regulatory Guideline Required:

☑ GUCSO Table Reg 153/04 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	B(a)P Grotesque	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-392		Soil	1														
05-394			1														
05-400			1														
05-398			1														
05-413			1														
05-415			1														
05-351			1														
05-352			1														
05-354			1														
05-359			1														
05-364			1														
05-365			1														

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Duttan Mike Dut	Feb 4/05 14:00	Oscar Lochman	Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			7:00 PM

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3174

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #1

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: M. Dutton
Address: 2390 Argentia Rd.
Mississauga
Phone: _____ Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
Email: mdutton@golder.com
2. Name: Rui Oliviera
Email: roliviera@golder.com
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☑ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: Tuesday Feb 8/05
TIME REQUIRED: end of day.

Regulatory Guideline Required:

☑ GUCSO Table Reg153/04 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-372		Soil	1													
05-376			1													
05-396			1													
05-371			1													
05-344			1													
05-346			1													
05-343			1													
05-369			1													
05-369			1													
05-391			1													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton	04 Feb/05 14:00	Oscar Bachman	4/Feb/05 14:00
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2
NO: 3177

CHAIN OF CUSTODY RECORD

Batch #2

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: _____
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED: Wed. 09 Feb 05
TIME REQUIRED: end of day.

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As per QUOTE 05-114	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-361																	
05-357																	
05-353																	
05-420																	
05-414																	
05-412																	
05-411																	
05-410																	
05-409																	
05-399																	
05-401																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	4/Feb/05 14:00	OSCAR BECHMAN	9/Feb/05 2:00 pm
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 3175

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch # 2

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T111211
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia
Mississauga
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: Rui Oliviera
   Email: roliviera@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☑ 48 to 72 Hours

DATE REQUIRED: Wed 09/Feb/05
TIME REQUIRED: end of day

Regulatory Guideline Required:

☐ O.Reg 153/04 GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Metals Scan (MOE Site Decom)	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-395		Soil	1													
05-385			1													
05-384			1													
05-383			1													
05-381			1													
05-393			1													
05-347			1													
05-390			1													
05-342			1													
05-345			1													
05-371			1													
05-363			1													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton	04 Feb, 05 14:00	Oscar Beckyaw	4/FEB/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			2:00

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3176

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T1112-19
Notes: _____

Batch #3

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd.
Mississauga
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
Email: mdutton@golder.com
2. Name: Rui Oliveira
Email: roliveira@golder.com
3. Name: _____
Email: _____
4. Name: _____
Email: _____

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED: Thurs 10 Feb 05
TIME REQUIRED: end of day

Regulatory Guideline Required:

Res. 153
☐ GUCSO Table 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As per cust.	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-334		soil	1														
05-335																	
05-337																	
05-339																	
05-340																	
05-349																	
05-355																	
05-356																	
05-358																	
05-362																	
05-367																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton			Feb 4/05 4pm
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3178

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #3

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: _____
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: see #3179
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: Thurs. 10 Feb 05
TIME REQUIRED: end of day

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Received	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-370																	
05-373																	
05-374																	
05-375																	
05-377																	
05-379																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton Mike Dutton			Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 3179

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #4

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05 7111 582
Notes: _____

Client Information

Company: Golder
Contact: Mike Dutton
Address: 2390 Argentia Rd.
Mississauga
Phone: 905-567-4444 Fax: _____
PO #: _____
Client Project #: 04-1112-069
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: Mike Dutton
   Email: mdutton@golder.com
2. Name: Rui Oliviera
   Email: roliviera@golder.com
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours Thurs.

DATE REQUIRED: Fri. 10 Feb 05
TIME REQUIRED: end of day

Regulatory Guideline Required:

Reg 153
☐ GUCSO Table 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Before Grade	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-379		soil	1	166													
05-380				167													
05-396																	
05-397																	
05-398																	
05-399																	
05-392																	
05-397																	
05-402																	
05-403																	
05-404																	
05-405																	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dutton			Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 1 of 2

NO: 3180

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Batch #4

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")

Arrival Temperature: _____

AGAT Job Number: _____

Notes: _____

Client Information

Company: Golder

Contact: Mike Dalton

Address: _____

Phone: 905-567-4444 Fax: _____

PO #: _____

Client Project #: 04-1112-089

AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: see # 3190
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page

☑ Multiple Samples per page

☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:

☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)

☐ 24 to 48 hours

☐ 48 to 72 Hours Thurs

DATE REQUIRED: Thurs 10 Feb 05

TIME REQUIRED: end of day

Regulatory Guideline Required:

Reg 153

☐ GUCSO Table 1 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag

☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME

☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	As Received	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-406		soil	1														
05-407		"	"														
05-416		"	"														
05-417		"	"														
05-418		"	"														
05-419		"	"														
05-421		"	"														
			—														
			—														
			—														
			—														
			—														

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Mike Dalton			Feb 4/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 6462

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: SARA Group c/o Cantox
Address: 130-1900 Minnesota Crt.
Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: (905) 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☑ Fax ☑ Email
☐ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE: _____

split

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	CONTAINERS RECEIVED
Dec 13		G	S	584-55	1		
Jan 6		G	S	518-55			
Nov 30		G	S	550-55			
Dec 13		G	S	522-55			
Nov 30		G	S	502-55			
Nov 30		G	S	542-55			

LABORATORY USE ONLY
WORK ORDER NUMBER:
ENTERED BY:
TEMP | LAB ID

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

Page 1 of 1

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other: _____

COMMENTS:

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
SARA GROUP				
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
Golde	1/13/05			

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

MIKE DUTTON / RUI

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: 05T113277
Notes: _____

Client Information

Company: GOLDER ASSOC.
Contact: _____
Address: 2390 ARGENTIA RD.
_____
Phone: 905 567 4444 Fax: _____
PO #: _____
Client Project #: 04-1120-861
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
   Email: ROLIVEIRA@GOLDER.COM
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☑ ~~GUCSO Table~~ O.Reg 153 1
(Indicate one)
☐ Ind/Com
☑ Res/Park
☐ Ag

☐ Sewer Use
Region _____
(Indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME

☐ Other (indicate)
_____
_____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	Sb, As, Ba, Be	Cu, Pb, Zn	B, Hg, Cr6	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-425	05.02.13	SOIL	1																
05-435	"	"	1																
05-437	"	"	1																
05-440	"	"	1																
05-444	"	"	1																
05-450	"	"	1																
05-451	"	"	1																
05-459	"	"	1																
05-461	"	"	1																
05-463	"	"	1																
05-464	"	"	1																
05-467	"	"	1																

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
RUI OLIVEIRA			1:20 PM
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 3166

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Client Information

Company: SAME AS 3166
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____ Email: _____
2. Name: _____ Email: _____
3. Name: _____ Email: _____
4. Name: _____ Email: _____

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH – (gas/Diesel)	TPH – (gas/Diesel)	VOCs	PAHs	PCBs
05-475	05.02.19	Soil	1													
05-476		"	1													
05-477		"	1													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Feb 22/05
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 10000

CHAIN OF CUSTODY RECORD

AGAT Laboratories Limited
5623 McAdam Road
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com

Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature:
AGAT Job Number: 05T1132 77
Notes:

Client Information

Company: Golder Assoc.
Contact:
Address: 2390 Argentia Rd.
Phone: 905-567-4447 Fax: 905-567-6561
PO #:
Client Project #: 04-1120-961
AGAT Quotation #: 05-114

Report Information - reports to be sent to:

1. Name: RUI OLIVEIRA
Email: ROLIVEIRA@GOLDER.COM
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

☐ Single Sample per page
☑ Multiple Samples per page
☑ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
☐ 24 to 48 hours
☐ 48 to 72 Hours
DATE REQUIRED:
TIME REQUIRED:

Regulatory Guideline Required:

☑ GUCSO Table 1 Reg 153 (Indicate one) ☐ Ind/Com ☑ Res/Park ☐ Ag
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME
☐ Other (indicate)
For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	4 Sb, As, Ba, Be, Cu, Pb, Zn, Hg ICP-MS	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-422 (A)	05-02-18	WATER		HNO3 PRES													
05-422 (B)	"	"		"													
05-425 (A)	"	"		"													
05-425 (A)F	"	"		"													
05-425 (B)	"	"		"													
05-435	"	"		"													
05-437	"	"		"													
05-440	"	"		"													
05-444	"	"		"													
05-444F	"	"		"													
05-450	"	"		"													
05-451	"	"		"													

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
RUI Guy OLIVEIRA			Feb 22/10
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT

NC 6702

5623 [illegible]
Mississauga, Ontario L4Z 1N9
http://webearth.agatlabs.com
Phone: 905-501-9998
Fax: 905-501-0589
Toll free: 800-856-6261
www.agatlabs.com

Arrival Temperature: _____
AGAT Job Number: [illegible]
Notes: _____

Client Information

Company: SANE AS 6702
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO #: _____
Client Project #: _____
AGAT Quotation #: _____

Report Information - reports to be sent to:

1. Name: _____
   Email: _____
2. Name: _____
   Email: _____
3. Name: _____
   Email: _____
4. Name: _____
   Email: _____

Report Format

- ☐ Single Sample per page
- ☐ Multiple Samples per page
- ☐ Excel Format Included

Turnaround Time (TAT) Required

Regular TAT:
- ☐ 5 to 7 Working Days

Rush TAT: (please provide prior notification)
- ☐ 24 to 48 hours
- ☐ 48 to 72 Hours

DATE REQUIRED: _____
TIME REQUIRED: _____

Regulatory Guideline Required:

- ☐ GUCSO Table _____ (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag
- ☐ Sewer Use Region _____ (Indicate one) ☐ Sanitary ☐ Storm
- ☐ PWQO ☐ Reg 558 ☐ CCME
- ☐ Other (indicate) _____ _____

For regulated drinking water samples – please use the Drinking Water Chain of Custody Record

Sample Identification	Date/Time Sampled	Sample Matrix	# of Containers	Comments- Site/ Sample Info. Sample Containment	MOE Site Decom	Metals Scan (not incl. Hg, B, Cr6)	Reg 558 Metals/Inorg	Reg 558	Storm Sewer Use	Sanitary Sewer Use	CCME Fractions 1 to 4	BTEX/TPH - (gas/Diesel)	TPH - (gas/Diesel)	VOCs	PAHs	PCBs
05-459	05.02.18	WATER		WHO, MIXED												
05-461	"	"		"												
05-463	"	"		"												
05-464	"	"		"												
05-467	"	"		"												
05-475	"	"		"												
05-476	"	"		"												
05-477	"	"		"												

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
			Feb 22/18 5P
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

PAGE 2 of 2

NO: 6703

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court, Mississauga, Ont.
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☐ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

LABORATORY USE ONLY
WORK ORDER NUMBER: 15222
ENTERED BY:

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ICP-MS Metals	CONTAINERS RECEIVED	TEMP	LAB ID
Nov 6		G	S	541-SS	1	✓		5.8	15222-1
Nov 2		G	S	504-SS	1	✓		5.8	-2
Nov 16		G	S	514-SS	1	✓			-3
~~Nov 1~~		G	S	502	1	✓			-4
Nov 8		G	S	564-SS	1	✓			-5
Nov 3		G	S	512-SS	1	✓			-6
Nov 5		G	S	531-SS	1	✓			-7
Nov 4		G	S	526-SS	1	✓			-8
Nov 5		G	S	532-SS	1	✓			-9
Nov 17		G	S	515-SS	1	✓			-10
Nov 4		G	S	519-SS	1	✓			-11
~~Nov 3~~		G	S	510	1	✓			-12
Nov 4		G	S	521-SS	1	✓			-13
Nov 16		G	S	534-SS	1	✓			-14

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

Page 3 of 4

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other:

COMMENTS: As Per SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference	
Sara Group					
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date**	**Time**
	Nov 30th	2:50		Nov 30	14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minesota Court Mississauga, ON
Contact: Elliot Sigal
Phone: (905) 814-7800 Fax: (905) 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 871010-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE:

SAMPLING				SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED: TCP-MS Metals	CONTAINERS RECEIVED	LABORATORY USE ONLY: WORK ORDER NUMBER: 147234 ENTERED BY:	
DATE	TIME	TYPE	MATRIX					TEMP	LAB ID
Nov 6		G	S	554-SS	1	✓		5.8/5.5	407
Nov 10		G	S	574-SS	1	✓		5.8/5.5	408
Nov 24		G	S	612-SS	1	✓			409
Nov 18		G	S	600-SS	1	✓			410
Nov 23		G	S	607-SS	1	✓			411
Nov 9/11		G	S	572-SS	1	✓			412
Nov 15		G	S	522-SS	1	✓			413
Nov 4		G	S	524-SS	1	✓			414
Nov 3		G	S	517-SS	1	✓			415
Nov 11		G	S	501-SS	1	✓			416
Nov 4		G	S	525-SS	1	✓			417
~~Nov 4~~		G	S	542	1	✓			~~418~~
Nov 5		G	S	547-SS	1	✓			419
~~Nov 2~~		G	S	503	1	✓			~~420~~

LEGEND
TYPE: G=Grab; C=Composite
MATRIX: A=Air; O=Oil; B=Biota; P=Paint; DW=Drinking Water; S=Soil; F=Fish; Sed=Sediment; GW=Groundwater; SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ ODWS (O.Reg. 170)
☐ PWQO
☐ ODWS (Non-Regulated)
☐ Other:
☐ MISA
☐ O.Reg. 558

COMMENTS: AS PER SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
SARA Group				
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date** / **Time**
	NOV 30th	2:50		Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: SARA Group % Cantox
Address: 130-1900 Minnesota Court Mississauga, ON
Contact: Elliot Sigal
Phone: 905) 814-7800 Fax: 905) 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☐ Email
☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE:

SAMPLING				SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	CONTAINERS RECEIVED	LABORATORY USE ONLY
DATE	TIME	TYPE	MATRIX			ICP-MS Metals		WORK ORDER NUMBER: 1-e224 ENTERED BY: TEMP / LAB ID
Nov 29		G	S	610	1	✓		57795
Nov 30		G	S	613-SS	1	✓		57796
Nov 22		G	S	605-SS	1	✓		57795
Nov 3		G	S	510-SS	1	✓		57796
Nov 4		G	S	523-SS	1	✓		57797
Nov 5		G	S	529-SS	1	✓		57798
Nov 21		G	S	611-SS	1	✓		57799
Nov 2		G	S	505-SS	1	✓		57800
Nov 5		G	S	533-SS	1	✓		57801
Nov 3		G	S	Blank-100	1	✓		57802
Nov 4		G	S	B-101	1	✓		57803
Nov 5		G	S	B-102	1	✓		57804
Nov 6		G	S	B-103	1	✓		57805
Nov 7		G	S	B-104	1	✓		57806

LEGEND
TYPE: G=Grab; C=Composite
MATRIX: A=Air; O=Oil; B=Biota; P=Paint; DW=Drinking Water; S=Soil; F=Fish; Sed=Sediment; GW=Groundwater; SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other:

COMMENTS: As Per SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
SARA Group			Hand	
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
Elliot St-Onge	Nov 30th	2:50		Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court Mississauga, Ontario
Contact: Elliot Sigal
Phone: 905)814-7800 Fax: (905)814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☐ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

LABORATORY USE ONLY
WORK ORDER NUMBER: 14223
ENTERED BY:

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ICP-MS Metals	CONTAINERS RECEIVED	TEMP	LAB ID
NOV 4		G	S	529-SS	1	✓		5.7/9.2	5.7 379
NOV 5		G	S	530-SS	1	✓		5.7/8.0	380
NOV 11		G	S	580-SS	1	✓			381
NOV 13		G	S	586-SS	1	✓			382
NOV 8		G	S	567-SS	1	✓			383
NOV 7		G	S	557-SS	1	✓			384
~~NOV 12~~		G	S	583	1	✓			385
NOV 7		G	S	561-SS	1	✓			386
NOV 8		G	S	602-SS	1	✓			387
NOV 3		G	S	513-SS	1	✓			388
NOV 8		G	S	566-SS	1	✓			389
NOV 3		G	S	509-SS	1	✓		3.4	390
		G	S	[illegible]	1	✓			391
		G	S		1	✓			392

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

Page 4 of 4

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other:

COMMENTS: As Per SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group				
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date** / **Time**
[illegible]	Nov 30th	2:50		Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7800 Fax 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☐ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE:

LABORATORY USE ONLY
WORK ORDER NUMBER: 14223
ENTERED BY:

SAMPLING				SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	CONTAINERS RECEIVED	TEMP °C	LAB ID
DATE	TIME	TYPE	MATRIX			ICP-MS Metals			
Nov 16		G	S	592-SS	1	✓		5.7	365
Nov 13		G	S	585-SS	1	✓		5.7	366
Nov 16		G	S	590-SS	1	✓			367
Nov 7		G	S	562-SS	1	✓			368
Nov 18		G	S	601-SS	1	✓			369
Nov 16		G	S	593-SS	1	✓			370
Nov 13		G	S	573-SS	1	✓			371
~~Nov 5~~		~~G~~	~~S~~	~~556~~	1	✓			~~372~~
Nov 6		G	S	551-SS	1	✓			373
Nov 9		G	S	571-SS	1	✓			374
Nov 9		G	S	~~568~~ 568-SS	1	✓			375
Nov 7		G	S	563-SS	1	✓			376
Nov 9		G	S	570-SS	1	✓			377
Nov 12		G	S	577-SS	1	✓			378

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, B=Biota, DW=Drinking Water, F=Fish, GW=Groundwater, O=Oil, P=Paint, S=Soil, Sed=Sediment, SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other:

COMMENTS: As Per Sara MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group			Land	
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
Hill St-On X	Nov 30th	2:50		Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court, Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 871c10-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email
☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	KD-MS Metals	CONTAINERS RECEIVED	TEMP	LAB ID
Nov 6		G	S	553-SS	1	✓		5.7.751	51351
Nov 11		G	S	581-SS	1	✓		5.7.752	352
Nov 17		G	S	598-SS	1	✓		753	353
Nov 17		G	S	596-SS	1	✓		754	354
Nov 7		G	S	560-SS	1	✓			355
~~Nov 11~~		G	S	578	1	✓			356
Nov 4		G	S	520-SS	1	✓			357
Nov 12		G	S	582-SS	1	✓			358
Nov 16		G	S	589-SS	1	✓			359
Nov 3		G	S	516-SS	1	✓			360
Nov 16		G	S	599-SS	1	✓			361
Nov 15		G	S	588-SS	1	✓			362
Nov 17		G	S	597-SS	1	✓			363
~~Nov 6~~		G	S	550	1	✓			364

LABORATORY USE ONLY
WORK ORDER NUMBER: 14223
ENTERED BY:

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, B=Biota, DW=Drinking Water, F=Fish, GW=Groundwater, O=Oil, P=Paint, S=Soil, Sed=Sediment, SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other:

COMMENTS: AS PER SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group			hand	

Relinquished to Testmark By (Signature)	Date	Time	Received at Testmark By	Date	Time
	Nov 30th	2:50		Nov 30	14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.
Committed to Quality and Service
7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court
Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email
☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

SAMPLING DATE	SAMPLING TIME	SAMPLING TYPE	SAMPLING MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ICP-MS Metals	CONTAINERS RECEIVED	LABORATORY USE ONLY: TEMP	LAB ID
Nov 6		G	S	552-55	1	✓		5.1	51337
Nov 8		G	S	565-55	1	✓		9.8	338
Nov 7		G	S	559-55	1	✓		7.3	339
Nov 5		G	S	528-55	1	✓			340
Nov 3		G	S	511-55	1	✓			341
Nov 5		G	S	546-55	1	✓			342
Nov 23		G	S	608-55	1	✓			343
Nov 15		G	S	594-55	1	✓			344
Nov 22		G	S	606-55	1	✓			345
Nov 2		G	S	507-55	1	✓			346
Nov 2		G	S	506-55	1	✓			347
Nov 16		G	S	591-55	1	✓			348
[illegible]		G	S	[illegible]	1	✓			[illegible]
Nov 19		G	S	579-55	1	✓			350

CONTAINERS RECEIVED
WORK ORDER NUMBER: 1-1223
ENTERED BY:

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other:

COMMENTS: As Per Sara MDLs

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group			hand	
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date** / **Time**
[signature]	Nov 30th	2:50	[signature]	Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

SARA
GROUP
c/o CANTOX ENVIRONMENTAL INC.
1900 Minnesota Court, Suite 130
Mississauga, Ontario L5N 3C9
Phone: 905 814 7800
Fax: 905 814 4954

December 21, 2004

Mike Dutton
Golder Associates
2390 Argentia Road
Mississauga, ON L5N 2Z7

Re: Chain of Custody for Soil Samples

Dear Mike:

Please consider this letter and the attached Testmark Laboratory chain of custody forms as the chain of custody sign-off for the soil samples being transferred from the SARA group to Golder Associates for the purpose of Bio-Accessibility testing. As indicated on the attached forms, we are transferring 81 samples to Golder for the purpose of the study. The study is to follow the agreed upon protocol as indicated in Golder's proposals, to the SARA group dated September 20, 2004, and any and all amendments as agreed to in writing.

Yours sincerely,
CANTOX ENVIRONMENTAL INC.

Per: _____ Date: 21/12/04
Elliot Sigal
Vice President, Eastern Region / Senior Scientist

ACCEPTANCE

We acknowledge receipt of the attached samples:

Golder Associates

Per: _____ Date: 21 Dec 04

SARA
GROUP
c/o CANTOX ENVIRONMENTAL INC.
1900 Minnesota Court, Suite 130
Mississauga, Ontario L5N 3C9
Phone: 905 814 7800
Fax: 905 814 4954

December 21, 2004

Mike Dutton
Golder Associates
2390 Argentia Road
Mississauga, ON L5N 2Z7

Re: Chain of Custody for Soil Samples

Dear Mike:

Please consider this letter and the attached Testmark Laboratory chain of custody forms as the chain of custody sign-off for the soil samples being transferred from the SARA group to Golder Associates for the purpose of Bio-Accessibility testing. As indicated on the attached forms, we are transferring 81 samples to Golder for the purpose of the study. The study is to follow the agreed upon protocol as indicated in Golder's proposals, to the SARA group dated September 20, 2004, and any and all amendments as agreed to in writing.

Yours sincerely,
CANTOX ENVIRONMENTAL INC.

Per: _____ Date: 21/12/04
Elliot Sigal
Vice President, Eastern Region / Senior Scientist

ACCEPTANCE

We acknowledge receipt of the attached samples:

Golder Associates

Per: _____ Date: 21 Dec 04

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court, Mississauga, Ont.
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☐ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE:

SAMPLING				SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED: ICP-MS Metals	CONTAINER RECEIVED	LABORATORY USE ONLY: WORK ORDER NUMBER 1-15234 ENTERED BY: TEMP	LAB ID
DATE	TIME	TYPE	MATRIX						
NOV 16		G	S	541-SS	1	✓		5°C	21
NOV 2		G	S	504-SS	1	✓		5°C	22
NOV 16		G	S	514-SS	1	✓			23
~~NOV 1~~		~~G~~	~~S~~	502	1	✓			24
NOV 8		G	S	564-SS	1	✓			25
NOV 3		G	S	512-SS	1	✓			26
NOV 5		G	S	531-SS	1	✓			27
NOV 4		G	S	526-SS	1	✓			28
NOV 5		G	S	532-SS	1	✓			29
NOV 17		G	S	515-SS	1	✓			30
NOV 4		G	S	519-SS	1	✓			31
~~NOV 3~~		~~G~~	~~S~~	518	1	✓			32
NOV 4		G	S	521-SS	1	✓			33
NOV 16		G	S	534-SS	1	✓			34

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

Page 3 of 4

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other:

COMMENTS: As Per SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group				

Relinquished to Testmark By (Signature)	Date	Time	Received at Testmark By	Date	Time
	Nov 30th	2:50		Nov 30	14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minesota Court Mississauga, ON
Contact: Elliot Sigal
Phone: (905) 814-7800 Fax: (905) 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 876010-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE: _____

SAMPLING				SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	CONTAINERS RECEIVED	LABORATORY USE ONLY
DATE	TIME	TYPE	MATRIX			TCP-MS Metals		WORK ORDER NUMBER: 147234
								ENTERED BY:
							TEMP	LAB ID
Nov 6		G	S	554-SS	1	✓	5.8°C	407
Nov 10		G	S	574-SS	1	✓	5.8°C	408
Nov 24		G	S	612-SS	1	✓		409
Nov 18		G	S	600-SS	1	✓		410
Nov 23		G	S	607-SS	1	✓		411
Nov 9+1		G	S	572-SS	1	✓		412
Nov 15		G	S	522-SS	1	✓		413
Nov 4		G	S	524-SS	1	✓		414
Nov 3		G	S	517-SS	1	✓		415
Nov 11		G	S	501-SS	1	✓		416
Nov 4		G	S	525-SS	1	✓		417
~~Nov 4~~		G	S	542	1	✓		418
Nov 5		G	S	547-SS	1	✓		419
~~Nov 2~~		G	S	503	1	✓		420

LEGEND
TYPE: G=Grab; C=Composite
MATRIX: A=Air; B=Biota; DW=Drinking Water; F=Fish; GW=Groundwater; O=Oil; P=Paint; S=Soil; Sed=Sediment; SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other: _____

COMMENTS: AS PER SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
SARA Group				
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
	Nov 30th	2:50		Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: SARA Group % Cantox
Address: 130-1900 Minnesota Court Mississauga, ON
Contact: Elliot Sigal
Phone: 905) 814-7800 Fax: 905) 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email ☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

LABORATORY USE ONLY
WORK ORDER NUMBER: 14224
ENTERED BY:

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ICP-MS Metals	CONTAINERS RECEIVED	TEMP	LAB ID
NOV 29		G	S	610	1	✓			
NOV 30		G	S	613-SS	1	✓			
NOV 22		G	S	605-SS	1	✓			
NOV 3		G	S	510-SS	1	✓			
NOV 4		G	S	523-SS	1	✓			
NOV 5		G	S	529-SS	1	✓			
NOV 21		G	S	611-SS	1	✓			
NOV 2		G	S	505-SS	1	✓			
NOV 5		G	S	533-SS	1	✓			
~~NOV 3~~		~~G~~	~~S~~	~~B-100~~	~~1~~	~~✓~~			
~~NOV 4~~		~~G~~	~~S~~	~~B-101~~	~~1~~	~~✓~~			
~~NOV 5~~		~~G~~	~~S~~	~~B-102~~	~~1~~	~~✓~~			
~~NOV 6~~		~~G~~	~~S~~	~~B-103~~	~~1~~	~~✓~~			
~~NOV 7~~		~~G~~	~~S~~	~~B-104~~	~~1~~	~~✓~~			

LEGEND
TYPE: G=Grab; C=Composite
MATRIX: A=Air; B=Biota; DW=Drinking Water; F=Fish; GW=Groundwater; O=Oil; P=Paint; S=Soil; Sed=Sediment; SW=Surface Water

Page 1 of 4

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other:

COMMENTS: As Per SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
SARA Group			Hand	
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
Elliot St-Onge	NOV 30/14	2:50		NOV 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130- 1900 Minnesota Court Mississauga, Ontario
Contact: Elliot Sigal
Phone: (905)814-7800 Fax: (905)814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email
☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE:

SAMPLING				SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	CONTAINERS RECEIVED	LABORATORY USE ONLY	
DATE	TIME	TYPE	MATRIX			ICP-MS Metals		TEMP	LAB ID
Nov 4		G	S	569-SS	1	✓		5°C	57379
Nov 5		G	S	530-SS	1	✓		5°C	57380
Nov 11		G	S	580-SS	1	✓			381
Nov 13		G	S	586-SS	1	✓			382
Nov 8		G	S	567-SS	1	✓			383
Nov 7		G	S	557-SS	1	✓			384
~~Nov 12~~		G	S	583	1	✓			385
Nov 7		G	S	561-SS	1	✓			386
Nov 18		G	S	602-SS	1	✓			387
Nov 3		G	S	513-SS	1	✓			388
Nov 8		G	S	566-SS	1	✓			389
Nov 3		G	S	509-SS	1	✓		3	390
		G	S	[redacted]	1	✓			391
		G	S		1	✓			392

LEGEND
TYPE: G=Grab; C=Composite
MATRIX: A=Air; B=Biota; DW=Drinking Water; F=Fish; GW=Groundwater; O=Oil; P=Paint; S=Soil; Sed=Sediment; SW=Surface Water

Page 4 of 4

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other:

COMMENTS: As Per SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group				
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
	Nov 30th	2:50		Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court Mississauga, ON
Contact: Elliot Sigal.
Phone: 905 814-7820 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

Reporting Format: ☐ Fax ☑ Email ☑ Mail ☑ Courier

Sample Disposal: ☐ Dispose ☑ Return

Turnaround Time (TAT): ☐ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☑ Standard

Specific Date: _____

Sampling: Date	Time	Type	Matrix	Sample Description (This Will Appear On The Report)	Number of Containers	Analysis Requested: ICP-MS Metals	Containers Received	Laboratory Use Only: Work Order Number: 14223 — Temp	Lab ID
Nov 14		G	S	592-SS	1	✓		5.7°C	365
Nov 13		G	S	585-SS	1	✓		5.7°C	366
Nov 16		G	S	590-SS	1	✓			367
Nov 7		G	S	562-SS	1	✓			368
Nov 18		G	S	601-SS	1	✓			369
Nov 16		G	S	593-SS	1	✓			370
Nov 10		G	S	573-SS	1	✓			371
Nov 5		G	S	556	1	✓			372
Nov 10		G	S	551-SS	1	✓			373
Nov 9		G	S	571-SS	1	✓			374
Nov 9		G	S	568-SS	1	✓			375
Nov 7		G	S	563-SS	1	✓			376
Nov 9		G	S	570-SS	1	✓			377
Nov 12		G	S	577-SS	1	✓			378

Legend — Type: G=Grab, C=Composite. Matrix: A=Air, B=Biota, DW=Drinking Water, F=Fish, GW=Groundwater, O=Oil, P=Paint, S=Soil, Sed=Sediment, SW=Surface Water

Page 3 of 4

Regulation: ☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA ☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558 ☐ PWQO ☐ Other: _____

COMMENTS: As Per Sara MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group.			Land	

Relinquished to Testmark By (Signature)	Date	Time	Received at Testmark By	Date	Time
Hill St-On Sc	Nov 30th	2:50		Nov 30	14:55

Instructions and Agreement Provisions on Reverse Side

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court
Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7800 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 871c10-11
Water Works #: N/A
Email Address: esigal@cantoxenvironmental.com

REPORTING FORMAT
☐ Fax ☑ Email
☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	KCD-MS Metals	CONTAINERS RECEIVED	TEMP	LAB ID
Nov 6		G	S	553-SS	1	✓		5.7	351
Nov 11		G	S	581-SS	1	✓		5.7	352
Nov 17		G	S	598-SS	1	✓			353
Nov 17		G	S	596-SS	1	✓			354
Nov 7		G	S	560-SS	1	✓			355
~~Nov 11~~		G	S	578	1	✓			356
Nov 4		G	S	520-SS	1	✓			357
Nov 12		G	S	582-SS	1	✓			358
Nov 10		G	S	589-SS	1	✓			359
Nov 3		G	S	516-SS	1	✓			360
Nov 18		G	S	599-SS	1	✓		4	361
Nov 15		G	S	588-SS	1	✓			362
Nov 17		G	S	597-SS	1	✓		4	363
~~Nov 6~~		G	S	550	1	✓			364

LABORATORY USE ONLY
WORK ORDER NUMBER: 1-4223
ENTERED BY:

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F) ☐ MISA
☐ ODWS (O.Reg. 170) ☐ ODWS (Non-Regulated) ☐ O.Reg. 558
☐ PWQO ☐ Other:

COMMENTS: AS PER SARA MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group			hand	

Relinquished to Testmark By (Signature)	Date	Time	Received at Testmark By	Date	Time
[signature]	Nov 30th	2:50	[signature]	Nov 30	14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

TESTMARK Laboratories Ltd.

Committed to Quality and Service

7 Margaret St.
Garson, ON CANADA P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124
Email: customer.service@testmark.ca

Client: Sara Group c/o Cantox
Address: 130-1900 Minnesota Court
Mississauga, ON
Contact: Elliot Sigal
Phone: 905 814-7820 Fax: 905 814-4954

Testmark Quote #:
Client P.O. #:
Client Project #: 87610-11
Water Works #: N/A
Email Address: esigal@cantox environmental.com

REPORTING FORMAT
☐ Fax ☑ Email
☑ Mail ☑ Courier

SAMPLE DISPOSAL
☐ Dispose ☑ Return

TURNAROUND TIME (TAT)
☐ 24 Hrs ☐ 48 Hrs
☐ 3 Days ☑ Standard
SPECIFIC DATE:

ANALYSIS REQUESTED

SAMPLING DATE	TIME	TYPE	MATRIX	SAMPLE DESCRIPTION (This Will Appear On The Report)	NUMBER OF CONTAINERS	ICP-MS Metals	CONTAINERS RECEIVED	LABORATORY USE ONLY: TEMP	LAB ID
NOV 6		G	S	552-55	1	✓		5.7	51337
NOV 8		G	S	565-55	1	✓		6.8	338
NOV 7		G	S	559-55	1	✓		7.9	339
NOV 5		G	S	528-55	1	✓			340
NOV 3		G	S	511-55	1	✓			341
NOV 5		G	S	546-55	1	✓			342
NOV 23		G	S	608-55	1	✓			343
NOV 15		G	S	594-55	1	✓			344
NOV 22		G	S	600-55	1	✓			345
NOV 2		G	S	507-55	1	✓			346
NOV 2		G	S	506-55	1	✓			347
NOV 14		G	S	591-55	1	✓			348
NOV 13		G	S	584	1	✓			349
NOV 19		G	S	579-55	1	✓			350

WORK ORDER NUMBER: 14223
ENTERED BY:

LEGEND
TYPE: G=Grab, C=Composite
MATRIX: A=Air, O=Oil, B=Biota, P=Paint, DW=Drinking Water, S=Soil, F=Fish, Sed=Sediment, GW=Groundwater, SW=Surface Water

REGULATION
☐ MOE Clean Up Criteria: Table (☐ A ☐ B ☐ C ☐ D ☐ E ☐ F)
☐ MISA
☐ ODWS (O.Reg. 170)
☐ ODWS (Non-Regulated)
☐ O.Reg. 558
☐ PWQO
☐ Other:

COMMENTS: As Per Sara MDLS

Sampled By (Signature)	Date	Time	Shipped By	Shipping Reference
Sara Group			hand	
Relinquished to Testmark By (Signature)	**Date**	**Time**	**Received at Testmark By**	**Date / Time**
[signature]	Nov 30th	2:50	[signature]	Nov 30 / 14:55

INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

APPENDIX B

LABORATORY ANALYTICAL DATA

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Jennifer Kirk**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T128599**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
SOIL ANALYSIS REVIEWED BY:	**Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.**
DATE REPORTED:	**July 28, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories
5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER **05T128599**

CLIENT PROJECT NUMBER **04-1112-069**

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Jennifer Kirk

Ni in Soil

Date Sampled: Jul 5, 2005 **Date Received:** Jul 6, 2005 **Date Reported:** Jul 28, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05 - 3578 452635	05 - 3579 452636	05 - 3580 452637
Nickel	µg/g	0.6		85.5	86.5	1.5

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

AGAT Laboratories
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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9
TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

AGAT WORK ORDER **05T128599**

CLIENT PROJECT NUMBER **04-1112-069**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Jennifer Kirk

Ni in Water

Date Sampled: Jul 5, 2005 **Date Received:** Jul 6, 2005 **Date Reported:** Jul 28, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05 - 3578 452632	05 - 3579 452633	05 - 3580 452634
Nickel	mg/L	0.003		0.854	0.927	0.185

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotokowska

AGAT® Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Certificate of Analysis - Sample Comments

Workorder 05T128599

Ni in Soil

Guideline / Standard None

Sample	Comments
452635	M.D.L. - Method Detection Limit
452636	M.D.L. - Method Detection Limit
452637	M.D.L. - Method Detection Limit

Ni in Water

Guideline / Standard None

Sample	Comments
452632	M.D.L. - Method Detection Limit
452633	M.D.L. - Method Detection Limit
452634	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

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FAX: (905) 501-0589
www.agatlabs.com

Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T128599

ATTENTION TO: Jennifer Kirk

CLIENT PROJECT NUMBER 04-1112-069

Soil

DATE Jul 28, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	**Sample ID**	**Dup #1**	**Dup #2**	**RPD**	**Method Blank**	**Measured Value**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**	
								Lower	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Ni in Soil															
Nickel	1		85.5	84.6	1.1%	< 0.6	103%	90%	110%	99%	70%	130%	97%	70%	130%

Certified By:

Jacky Takeuchi

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Method Summary

Client Name: GOLDER ASSOCIATES LTD.

Attention To: Jennifer Kirk

AGAT Work Order: 05T128599

Client Project Number:: Field4

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Method Summary

Client Name: GOLDER ASSOCIATES LTD.

Attention To: Jennifer Kirk

AGAT Work Order: 05T128599

Client Project Number:: Field4

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Jennifer Kirk

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T129444

WATER ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

DATE REPORTED: July 21, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER **05T129444**

CLIENT PROJECT NUMBER **04-1112-069**

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Jennifer Kirk

Ni in Water

Date Sampled: Jul 5, 2005 **Date Received:** Jul 13, 2005 **Date Reported:** Jul 21, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-3578 454126	05-3579 454127	05-3579R 454128	05-3580 454129
Nickel	mg/L	0.003		1.08	1.21	1.31	0.250

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

AGAT® Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Certificate of Analysis - Sample Comments

Workorder 05T129444

Ni in Water

Guideline / Standard None

Sample	Comments
454126	M.D.L. - Method Detection Limit
454127	M.D.L. - Method Detection Limit
454128	M.D.L. - Method Detection Limit
454129	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD. **AGAT WORK ORDER:** 05T129444

ATTENTION TO: Jennifer Kirk **CLIENT PROJECT NUMBER** 04-1112-069

Water

DATE Jul 21, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	**Sample ID**	**Dup #1**	**Dup #2**	**RPD**	**Method Blank**	**Measured Value**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**	
								Lower	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Ni in Water															
Nickel	1		< 0.003	< 0.003	0.0%	< 0.003	105%	90%	110%	100%	70%	130%	88%	70%	130%

Certified By: Elizabeth Rolakowska

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Method Summary

Client Name: GOLDER ASSOCIATES LTD.

Attention To: Jennifer Kirk

AGAT Work Order: 05T129444

Client Project Number:: Field4

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira (04-1112-069)

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T124900

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

DATE REPORTED: June 08, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT® Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

AGAT WORK ORDER **05T124900**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Jun 3, 2005 **Date Received:** Jun 3, 2005 **Date Reported:** Jun 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-339 S 446081	05-341 S 446082	05-355 S 446083	05-358 S 446084	05-359 S 446085	05-362 S 446086	05-363 S 446087
Arsenic	µg/g	0.6	17	**78.4**	14.3	10.3	**50.0**	9.7	3.5	**228**
Cobalt	µg/g	0.3	21	**82.5**	16.9	15.4	**65.0**	8.8	5.9	**68.0**
Copper	µg/g	0.3	85	**1230**	**760**	**266**	**1240**	84.6	**89.6**	**1450**
Lead	µg/g	0.5	120	97.7	32.0	35.3	81.0	19.7	15.2	**121**
Nickel	µg/g	0.6	43	**1480**	**546**	**338**	**1160**	**118**	**81.3**	**1370**
Selenium	µg/g	0.8	1.9	**3.3**	**4.2**	1.0	**2.7**	<0.8	0.9	**5.2**

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

AGAT Certificate of Analysis

AGAT Laboratories (Calgary, Mississauga) is accredited by the Standards Council of Canada (SCC) and/or the Canadian Association for Environmental Analytical Laboratories (CAEAL) for specific environmental tests listed in the scope of accreditation. Accreditations are based on the ISO/IEC 17025:2005 standard. A complete listing of parameters is available from the SCC and/or CAEAL. Results relate only to the items tested. Results may not necessarily be included

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CANADA L4Z 1N9

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

Certificate of Analysis - Sample Comments

Workorder 05T124900

O. Reg. 153 Metals in Soil

Guideline T1(All)

Sample	Comments
446081	M.D.L. - Method Detection Limit
446082	M.D.L. - Method Detection Limit
446083	M.D.L. - Method Detection Limit
446084	M.D.L. - Method Detection Limit
446085	M.D.L. - Method Detection Limit
446086	M.D.L. - Method Detection Limit
446087	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T124900

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE	Jun 8, 2005	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	445081	78.4	76.6	2.3%	< 0.6	89%	80%	120%	94%	70%	130%	93%	70%	130%
Cobalt	1	445081	82.5	81.8	0.9%	< 0.3	103%	90%	110%	103%	70%	130%	99%	70%	130%
Copper	1	445081	1230	1390	12.2%	< 0.3	99%	90%	110%	102%	70%	130%	77%	70%	130%
Lead	1	445081	97.7	98.6	0.9%	< 0.5	95%	90%	110%	108%	70%	130%	102%	70%	130%
Nickel	1	445081	1480	1650	10.9%	< 0.6	101%	90%	110%	104%	70%	130%	97%	70%	130%
Selenium	1	445081	3.3	3.2	3.1%	< 0.8	94%	90%	110%	107%	70%	130%	106%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T124900

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira (04-1112-069)

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T125157

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

DATE REPORTED: June 08, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T125157**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Jun 6, 2005 **Date Received:** Jun 6, 2005 **Date Reported:** Jun 8, 2005 **Sample Type:** powder

	Unit	MDL	Guideline	PANCREATIN 1-1 446449	PANCREATIN 1-2 446450	PANCREATIN 2-1 446451	PANCREATIN 2-2 446452	Bile 1-1 446453	Bile 1-2 446454
Arsenic	µg/g	0.6	17	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Cobalt	µg/g	0.3	21	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper	µg/g	0.3	85	1.0	0.9	1.0	0.9	5.1	5.1
Lead	µg/g	0.5	120	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	0.6	43	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Selenium	µg/g	0.8	1.9	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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Certificate of Analysis - Sample Comments

Workorder 05T125157

O. Reg. 153 Metals in Soil

Guideline T1(All)

Sample	Comments
446449	M.D.L. - Method Detection Limit
446450	M.D.L. - Method Detection Limit
446451	M.D.L. - Method Detection Limit
446452	M.D.L. - Method Detection Limit
446453	M.D.L. - Method Detection Limit
446454	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T125157

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE	Jun 8, 2005	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	446454	< 0.6	< 0.6	0.0%	< 0.6	98%	90%	110%	94%	70%	130%	100%	70%	130%
Cobalt	1	446454	< 0.3	< 0.3	0.0%	< 0.3	100%	80%	120%	104%	70%	130%	100%	70%	130%
Copper	1	446454	5.1	5.3	3.8%	< 0.3	97%	90%	110%	103%	70%	130%	98%	70%	130%
Lead	1	446454	< 0.5	< 0.5	0.0%	< 0.5	93%	90%	110%	106%	70%	130%	105%	70%	130%
Nickel	1	446454	0.5	0.7	33.3%	< 0.6	110%	90%	110%	106%	70%	130%	98%	70%	130%
Selenium	1	446454	< 0.8	< 0.8	0.0%	< 0.8	99%	90%	110%	108%	70%	130%	118%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T125157

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Mike Dutton

AGAT WORK ORDER: 05T124770

WATER ANALYSIS REVIEWED BY: Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.

DATE REPORTED: June 02, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T124770**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton

O. Reg 153 - Metals in Water

Date Sampled: Jun 1, 2005 **Date Received:** Jun 2, 2005 **Date Reported:** Jun 2, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	Distilled Water# 0 445811	Stored Water# 1 445812	Stored Water# 2 445813	Stored Water# 3 445814	Stored Water# 4 445815	Stored Water# 5 445816
Antimony	ug/L	1.53		<1.53	<1.53	<1.53	<1.53	<1.53	<1.53
Arsenic	ug/L	0.57		<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Barium	ug/L	0.41		2.49	0.53	0.94	0.65	0.72	0.68
Beryllium	ug/L	1.84		<1.84	<1.84	<1.84	<1.84	<1.84	<1.84
Boron	ug/L	8.00		1030	592	535	521	476	801
Cadmium	ug/L	0.67		<0.67	<0.67	<0.67	<0.67	<0.67	<0.67
Chromium	ug/L	0.57		<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Cobalt	ug/L	0.96		<0.96	<0.96	<0.96	<0.96	<0.96	<0.96
Copper	ug/L	0.78		556	16.8	78.2	33.1	16.6	36.4
Lead	ug/L	0.44		1.25	<0.44	0.63	<0.44	<0.44	<0.44
Molybdenum	ug/L	0.47		<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
Nickel	ug/L	0.63		5.78	<0.63	1.15	<0.63	2.67	0.75
Selenium	ug/L	0.81		<0.81	<0.81	<0.81	<0.81	<0.81	<0.81
Silver	ug/L	0.70		<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Thallium	ug/L	0.36		<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
Vanadium	ug/L	0.40		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Zinc	ug/L	0.41		1130	12.9	63.8	45.0	72.1	20.1

M.D.L. - Method Detection Limit

Certified By: Jody Takewaki

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Certificate of Analysis

AGAT WORK ORDER **05T124770**

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton

M.D.L. - Method Detection Limit

Certified By: Jordy Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T124770

O. Reg 153 - Metals in Water

Guideline None

Sample	Comments
445811	M.D.L. - Method Detection Limit
445812	M.D.L. - Method Detection Limit
445813	M.D.L. - Method Detection Limit
445814	M.D.L. - Method Detection Limit
445815	M.D.L. - Method Detection Limit
445816	M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T124770

ATTENTION TO: Mike Dutton

Water

DATE Jun 2, 2005

Parameter	Batch	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
		Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg 153 - Metals in Water															
Antimony	1	445811	< 1.53	< 1.53	0.0%	< 1.53	103%	90%	110%	93%	70%	130%	85%	70%	130%
Antimony	1	445816	< 1.53	< 1.53	0.0%	< 1.53		90%	110%		70%	130%		70%	130%
Arsenic	1	445811	< 0.57	< 0.57	0.0%	< 0.57	100%	90%	110%	91%	90%	110%	86%	70%	130%
Arsenic	1	445816	< 0.57	< 0.57	0.0%	< 0.57		90%	110%		90%	110%		70%	130%
Barium	1	445811	2.49	2.44	2.0%	< 0.41	98%	90%	110%	96%	90%	110%	84%	70%	130%
Barium	1	445816	0.68	0.68	0.0%	< 0.41		90%	110%		90%	110%		70%	130%
Beryllium	1	445811	< 1.84	< 1.84	0.0%	< 1.84	111%	80%	120%	99%	90%	110%	92%	70%	130%
Beryllium	1	445816	< 1.84	< 1.84	0.0%	< 1.84		90%	110%		90%	110%		70%	130%
Boron	1	445811	1030	1090	5.7%	< 8.00	106%	90%	110%	105%	90%	110%		70%	130%
Boron	1	445816	801	822	2.6%	< 8.00		90%	110%		90%	110%		70%	130%
Cadmium	1	445811	< 0.67	< 0.67	0.0%	< 0.67	107%	90%	110%	104%	90%	110%	97%	70%	130%
Cadmium	1	445816	< 0.67	< 0.67	0.0%	< 0.67		90%	110%		90%	110%		70%	130%
Chromium	1	445811	< 0.57	< 0.57	0.0%	< 0.57	106%	90%	110%	101%	90%	110%	86%	70%	130%
Chromium	1	445816	< 0.57	< 0.57	0.0%	< 0.57		90%	110%		90%	110%		70%	130%
Cobalt	1	445811	< 0.96	< 0.96	0.0%	< 0.96	103%	90%	110%	97%	90%	110%	84%	70%	130%
Cobalt	1	445816	< 0.96	< 0.96	0.0%	< 0.96		90%	110%		90%	110%		70%	130%
Copper	1	445811	556	569	2.3%	< 0.78	108%	90%	110%	100%	90%	110%	87%	70%	130%
Copper	1	445816	36.4	36.0	1.1%	< 0.78		90%	110%		90%	110%		70%	130%
Lead	1	445811	1.25	0.83		< 0.44	110%	90%	110%	94%	90%	110%	83%	70%	130%
Lead	1	445816	< 0.44	< 0.44	0.0%	< 0.44		90%	110%		90%	110%		70%	130%

Certified By:

Jordy Takewell

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T124770

ATTENTION TO: Mike Dutton

Water

DATE Jun 2, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg 153 - Metals in Water															
Molybdenum	1	445811	< 0.47	< 0.47	0.0%	< 0.47	110%	90%	110%	91%	90%	110%	79%	70%	130%
Molybdenum	1	445816	< 0.47	< 0.47	0.0%	< 0.47		90%	110%		90%	110%		70%	130%
Nickel	1	445811	5.78	5.84	1.0%	< 0.63	108%	90%	110%	100%	90%	110%	87%	70%	130%
Nickel	1	445816	0.75	0.71	5.5%	< 0.63		90%	110%		90%	110%		70%	130%
Selenium	1	445811	< 0.81	< 0.81	0.0%	< 0.81	105%	90%	110%	99%	90%	110%	102%	70%	130%
Selenium	1	445816	< 0.81	< 0.81	0.0%	< 0.81		90%	110%		90%	110%		70%	130%
Silver	1	445811	< 0.70	< 0.70	0.0%	< 0.70	111%	80%	120%	113%	80%	120%	97%	70%	130%
Silver	1	445816	< 0.70	< 0.70	0.0%	< 0.70		90%	110%		90%	110%		70%	130%
Thallium	1	445811	< 0.36	< 0.36	0.0%	< 0.36	107%	90%	110%	99%	90%	110%	88%	70%	130%
Thallium	1	445816	< 0.36	< 0.36	0.0%	< 0.36		90%	110%		90%	110%		70%	130%
Vanadium	1	445811	< 0.40	< 0.40	0.0%	< 0.40	105%	90%	110%	99%	90%	110%	84%	70%	130%
Vanadium	1	445816	< 0.40	< 0.40	0.0%	< 0.40		90%	110%		90%	110%		70%	130%
Zinc	1	445811	1130	1150	1.8%	< 0.41	113%	80%	120%	107%	90%	110%	98%	70%	130%
Zinc	1	445816	20.1	21.1	4.9%	< 0.41		90%	110%		90%	110%		70%	130%

Certified By:

Jordy Takewaki

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T124770

Attention To: Mike Dutton

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Antimony	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Arsenic	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Barium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Beryllium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Boron	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cadmium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Chromium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Molybdenum	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Silver	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Thallium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Vanadium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Zinc	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

AGAT® Laboratories

5623 McAdam Road
Mississauga, Ontario
L4Z 1N9

Tel:(905) 501-9998
Fax:(905) 501-0589

INVOICE NO. 05K76284

Date: 20/Apr/05

GST #: R100073238

Customer No	WorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	District	Product
4021511	05T118666	T		10				0

RE: Project 04-1112-069

Product ID	Product Description	Quantity	Unit Price	Extended Price
94-101	O. Reg. 153 - Metals(Co, Cu,Pb, As, Se, Ni)	30.00	$30.00	$900.00

****
* **Should you require any information regarding this analysis, please contact a Technical Service Rep @ (905) 501-9998** *
****

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

Subtotal:	$900.00
0.0% PST:	$0.00
7.0% GST:	$63.00
Total:	**$963.00**

GOLDER ASSOCIATES LTD.

CHECKED:		APPROVED:		
H P		DUE:		
PROJECT	TASK	COST	G/L A/C	AMOUNT
GST		0330	260[illegible]	
VENDOR			TOTAL	

Corporate Office:
GOLDER ASSOCIATES LTD.
1000, 940 - 6TH AVE SW
CALGARY AB T2P3T1

Invoice To:
GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA ON L5N5Z7
Attn To: Rui Oliveira (04-1112-069)

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T123501

WATER ANALYSIS REVIEWED BY: Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.

DATE REPORTED: June 03, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T123501**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira

Metals Scan [liquid]

Date Sampled: May 17, 2005 **Date Received:** May 19, 2005 **Date Reported:** Jun 3, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-410 443462	05-412(repeat) 443464	05-415(repeat) 443465	05-416 443467	05-419 443469	05-420 443470	Spike Not Tested 443471	Spike Tested 443472
Arsenic	ug/L	1.0		14.5	6.5	8.0	19.9	15.1	521	997	978
Cobalt	ug/L	0.5		17.4	7.8	8.1	28.1	10.1	178	9210	7720
Copper	ug/L	1.0		686	224	268	3530	308	4860	9110	8620
Lead	ug/L	2.0		28.4	9.7	10.4	17.3	15.2	170	9190	7110
Nickel	ug/L	1.0		379	170	237	1110	267	5010	16.1	8753
Selenium	ug/L	2.0		<2.0	<2.0	<2.0	5.7	2.1	9.1	1170	1150

M.D.L. - Method Detection Limit

Certified By: Jordy Takewaki

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AGAT WORK ORDER **05T123501**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira

Metals Scan [liquid]

Date Sampled: May 17, 2005 **Date Received:** May 19, 2005 **Date Reported:** Jun 3, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	Blank 443473	05-357(repeat) 443474	05-389(repeat) 443475	05-408 443476	05-412 443477	05-413 443478	05-415 443479	Spiked 443480
Arsenic	ug/L	1.0		1.3	17.9	7.2	182	4.0	49.0	11.9	961
Cobalt	ug/L	0.5		3.5	16.6	8.4	170	7.6	60.0	9.7	9330
Copper	ug/L	1.0		61.4	456	265	8190	272	5940	365	8960
Lead	ug/L	2.0		10.4	27.4	20.9	242	5.3	97.4	31.0	8870
Nickel	ug/L	1.0		146	402	210	8390	193	2490	336	10300
Selenium	ug/L	2.0		<2.0	4.3	<2.0	7.3	<2.0	15.0	<2.0	1160

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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AGAT WORK ORDER **05T123501**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira

Metals Scan [liquid]

Date Sampled: May 16, 2005 **Date Received:** May 19, 2005 **Date Reported:** Jun 3, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	Spiked Tested 443481	Blank 443482	Extraction Fluid 443483
Arsenic	ug/L	1.0		1020	2.3	<1.0
Cobalt	ug/L	0.5		8210	5.9	3.3
Copper	ug/L	1.0		8090	121	49.5
Lead	ug/L	2.0		7420	28.5	8.0
Nickel	ug/L	1.0		9230	178	34.0
Selenium	ug/L	2.0		1200	2.3	<2.0

M.D.L. - Method Detection Limit

Certified By: Jordy Takewaki

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Certificate of Analysis - Sample Comments

Workorder 05T123501

Metals Scan [liquid]

Guideline None

Sample	Comments
443462	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443464	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443465	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443467	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443469	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443470	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443471	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443472	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jacky Takewaki

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Certificate of Analysis - Sample Comments

Workorder 05T123501

Metals Scan [liquid]

Guideline None

Sample	Comments
443473	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443474	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443475	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443476	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443477	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443478	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443479	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443480	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T123501

Metals Scan [liquid]

Guideline None

Sample	Comments
443481	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443482	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
443483	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jacky Takeuchi

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T123501

ATTENTION TO: Rui Oliveira

Water

DATE Jun 3, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]															
Arsenic	1	443462	14.4	14.5	0.7%	< 1.0	90%	90%	110%	90%	90%	110%	103%	70%	130%
Cobalt	1	443462	16.7	17.4	4.1%	< 0.5	99%	90%	110%	108%	90%	110%	94%	70%	130%
Copper	1	443462	625	689	9.7%	< 1.0	100%	90%	110%	106%	90%	110%	90%	70%	130%
Lead	1	443462	27.3	28.4	3.9%	< 2.0	98%	90%	110%	92%	80%	120%	93%	70%	130%
Nickel	1	443462	350	379	8.0%	< 1.0	102%	90%	110%	109%	90%	110%	94%	70%	130%
Selenium	1	443462	< 2.0	< 2.0	0.0%	< 2.0	99%	90%	110%	100%	90%	110%	125%	70%	130%

Certified By: Jonby Takeuchi

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T123501

Attention To: Rui Oliveira

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS

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CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira (04-1112-069)

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T123495

SOIL ANALYSIS REVIEWED BY: Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.

DATE REPORTED: June 02, 2005

PAGES (INCLUDING COVER): 1

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All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T123495**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: May 17, 2005 **Date Received:** May 19, 2005 **Date Reported:** Jun 2, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-408 S 443423	05-412 S 443426	05-413 S 443427	05-415 S 443429	05-410 S 443430	05-416 S 443432	05-419 S 443434	05-420 S 443435
Arsenic	µg/g	0.6		85.7	2.5	12.5	2.4	4.3	5.5	174	4.6
Cobalt	µg/g	0.3		49.2	3.9	18.7	4.2	6.9	8.0	46.1	3.6
Copper	µg/g	0.3		1200	28.5	799	38.4	105	427	741	40.2
Lead	µg/g	0.5		126	10.0	58.8	8.2	24.6	19.4	110	12.8
Nickel	µg/g	0.6		1230	34.9	564	45.0	90.5	197	891	40.2
Selenium	µg/g	0.8		4.0	<0.8	5.1	<0.8	<0.8	2.9	2.9	<0.8

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T123495

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
443423	M.D.L. - Method Detection Limit
443426	M.D.L. - Method Detection Limit
443427	M.D.L. - Method Detection Limit
443429	M.D.L. - Method Detection Limit
443430	M.D.L. - Method Detection Limit
443432	M.D.L. - Method Detection Limit
443434	M.D.L. - Method Detection Limit
443435	M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T123495

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE Jun 2, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	443429	2.4	2.5	4.1%	< 0.6	92%	90%	120%	94%	70%	130%	90%	70%	130%
Cobalt	1	443429	4.2	4.1	2.4%	< 0.3	100%	90%	110%	100%	70%	130%	95%	70%	130%
Copper	1	443429	38.4	36.5	5.1%	< 0.3	90%	90%	110%	102%	70%	130%	89%	70%	130%
Lead	1	443429	8.2	8.2	0.0%	< 0.5	106%	90%	110%	106%	70%	130%	108%	70%	130%
Nickel	1	443429	45.0	43.5	3.4%	< 0.6	98%	90%	110%	101%	70%	130%	94%	70%	130%
Selenium	1	443429	< 0.8	< 0.8	0.0%	< 0.8	90%	90%	110%	107%	70%	130%	100%	70%	130%

Certified By: Jacky Takeuchi

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T123495

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira (04-1112-069)

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T122667

WATER ANALYSIS REVIEWED BY: Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.

DATE REPORTED: May 20, 2005

PAGES (INCLUDING COVER): 1

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All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T122667**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 11, 2005 **Date Received:** May 12, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-344 441780	05-346 441784	05-350R 441785	05-352 441786	05-377 441787	05-418 441788	spiked tested 441789	blank 441790
Arsenic	ug/L	1.0		9.2	9.5	106	93.4	9.47	11.7	911	2.4
Cobalt	ug/L	0.5		14.2	13.6	73.1	103	12.9	11.2	9170	2.9
Copper	ug/L	1.0		366	378	1930	9500	310	238	9090	45.2
Lead	ug/L	2.0		70.3	43.3	27.1	178	15.3	7.1	2350	2.3
Nickel	ug/L	1.0		214	273	1290	4390	289	344	9130	165
Selenium	ug/L	2.0		<2.0	<2.0	<2.0	20.7	<2.0	<2.0	931	<2.0

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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AGAT WORK ORDER **05T122667**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 11, 2005 **Date Received:** May 12, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	extraction fluid 441791	spiked 441792
Arsenic	ug/L	1.0		<1.0	1130
Cobalt	ug/L	0.5		<0.5	10000
Copper	ug/L	1.0		24.8	10000
Lead	ug/L	2.0		3.49	9870
Nickel	ug/L	1.0		28.2	9970
Selenium	ug/L	2.0		<2.0	975

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122667

Metals Scan [liquid]

Guideline None

Sample	Comments
441780	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441784	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441785	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441786	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441787	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441788	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441789	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441790	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jordy Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122667

Metals Scan [liquid]

Guideline None

Sample	Comments
441791	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441792	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jacky Takeuchi

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122667

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE May 20, 2005		Duplicate	Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	**RPD**	**Method Blank**	**Measured Value**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**	
					Lower	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Metals Scan [liquid]												
Arsenic	1	0.0%	< 1.0	103%	90%	110%	104%	90%	110%	90%	70%	130%
Cobalt	1	1.0%	< 0.5	103%	90%	110%	104%	90%	110%	96%	70%	130%
Copper	1	1.0%	< 1.0	104%	90%	110%	104%	90%	110%	97%	70%	130%
Lead	1	1.8%	< 2.0	105%	90%	110%	100%	80%	120%	95%	70%	130%
Nickel	1	0.1%	< 1.0	105%	90%	110%	104%	90%	110%	95%	70%	130%
Selenium	1	0.0%	< 2.0	95%	90%	110%	105%	90%	110%	94%	70%	130%

Certified By: Jordy Takewaki

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122667

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD.** **2390 ARGENTIA ROAD** **MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Mike Dutton (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T122154**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**May 10, 2005**
PAGES (INCLUDING COVER):	**1**

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Certificate of Analysis - Sample Comments

Workorder 05T122154

Metals Scan (water)

Guideline None

Sample	Comments
441063	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122154

ATTENTION TO: Mike Dutton (04-1112-069)

Water

DATE May 10, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan (water)															
Arsenic	1	441063	597	576	3.6%	< 0.57	91%	90%	110%	88%	80%	120%	97%	70%	130%
Cobalt	1	441063	7290	7470	2.4%	< 0.96	98%	90%	110%	104%	90%	110%	105%	70%	130%
Copper	1	441063	6850	7060	3.0%	< 0.78	99%	90%	110%	101%	90%	110%	94%	70%	130%
Lead	1	441063	7540	7960	5.4%	< 0.44	101%	90%	110%	103%	90%	110%	99%	70%	130%
Nickel	1	441063	6820	6590	3.4%	< 0.63	98%	90%	110%	103%	90%	110%	105%	70%	130%
Selenium	1	441063	719	677	6.0%	< 0.81	96%	90%	110%	104%	90%	110%	116%	70%	130%

Certified By: Elizabeth Potokowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122154

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8,SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8,SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8,SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8,SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8,SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8,SM 3125 B	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD.** **2390 ARGENTIA ROAD** **MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Rui Oliveira (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T122448**
WATER ANALYSIS REVIEWED BY:	**Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.**
SOIL ANALYSIS REVIEWED BY:	**Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.**
DATE REPORTED:	**May 24, 2005**
PAGES (INCLUDING COVER):	**1**

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All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T122448**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: May 5, 2005 **Date Received:** May 11, 2005 **Date Reported:** May 24, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-335 441448	05-344 441449	05-346 441450	05-352 441451	05-386 441452	05-387 441453	05-405 441454	05-418 441455
Arsenic	µg/g	0.6		196	4.0	3.8	23.6	12.6	17.6	2.9	4.8
Cobalt	µg/g	0.3		37.2	10.2	6.9	28.5	21.1	19.1	6.9	4.9
Copper	µg/g	0.3		982	67.0	60.0	1260	326	502	24.5	29.8
Lead	µg/g	0.5		150	74.0	23.0	85.5	54.6	54.7	6.4	9.1
Nickel	µg/g	0.6		672	67.3	57.1	872	483	432	32.6	60.5
Selenium	µg/g	0.8		4.3	<0.8	<0.8	9.5	1.4	3.3	<0.8	<0.8

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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AGAT WORK ORDER **05T122448**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 5, 2005 **Date Received:** May 11, 2005 **Date Reported:** May 24, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-334 441437	05-335 441438	05-386 441439	05-387 441440	05-393 441441	05-405 441442	BLANK 441443	Extraction Fluid 441444
Arsenic	ug/L	1.0		250	407	35.6	54.7	14.6	7.9	<1.0	<1.0
Cobalt	ug/L	0.5		171	94.6	74.6	56.9	16.4	11.8	<0.5	<0.5
Copper	ug/L	1.0		5810	6770	1820	3800	525	141	41.6	31.2
Lead	ug/L	2.0		156	241	87.2	70.2	15.7	7.6	<2.0	2.1
Nickel	ug/L	1.0		5260	3560	1830	2260	428	189	119	9.3
Selenium	ug/L	2.0		3.3	9.1	<2.0	6.5	<2.0	<2.0	<2.0	<2.0

M.D.L. - Method Detection Limit

Certified By: Jordy Takeuchi

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AGAT WORK ORDER **05T122448**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 5, 2005 **Date Received:** May 11, 2005 **Date Reported:** May 24, 2005 **Sample Type:** Wate

	Unit	MDL	Guideline	Spiked 441446	Spiked Tested 441447
Arsenic	ug/L	1.0		1290	1030
Cobalt	ug/L	0.5		10300	8790
Copper	ug/L	1.0		10400	8500
Lead	ug/L	2.0		10300	1160
Nickel	ug/L	1.0		10600	1120
Selenium	ug/L	2.0		1300	8990

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122448

Metals Scan [liquid]

Guideline None

Sample	Comments
441437	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441438	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441439	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441440	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441441	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441442	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441443	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441444	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jordy Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122448

Metals Scan [liquid]

Guideline None

Sample	Comments
441446	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441447	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
441448	M.D.L. - Method Detection Limit
441449	M.D.L. - Method Detection Limit
441450	M.D.L. - Method Detection Limit
441451	M.D.L. - Method Detection Limit
441452	M.D.L. - Method Detection Limit
441453	M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122448

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
441454	M.D.L. - Method Detection Limit
441455	M.D.L. - Method Detection Limit

Certified By: Jacky Takewaki

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122448

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE	May 24, 2005	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	441448	196	209	6.4%	< 0.6	95%	90%	110%	94%	90%	110%	116%	70%	130%
Cobalt	1	441448	37.2	40.3	8.0%	< 0.3	103%	90%	110%	103%	90%	110%	107%	70%	130%
Copper	1	441448	982	1030	4.8%	< 0.3	105%	90%	110%	102%	90%	110%	118%	70%	130%
Lead	1	441448	150	154	2.6%	< 0.5	99%	90%	110%	91%	80%	120%	77%	70%	130%
Nickel	1	441448	672	707	5.1%	< 0.6	103%	90%	110%	103%	90%	110%	107%	70%	130%
Selenium	1	441448	4.3	4.6	6.7%	< 0.8	100%	90%	110%	99%	90%	110%	130%	70%	130%

Certified By: Jordy Takeuchi

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122448

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE May 24, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]															
Arsenic	1				0.0%	< 1.0	103%	90%	110%	101%	90%	110%	90%	70%	130%
Cobalt	1				1.0%	< 0.5	103%	90%	110%	105%	90%	110%	96%	70%	130%
Copper	1				1.0%	< 1.0	104%	90%	110%	100%	90%	110%	97%	70%	130%
Lead	1				1.8%	< 2.0	105%	90%	110%	102%	80%	120%	95%	70%	130%
Nickel	1				0.1%	< 1.0	105%	90%	110%	104%	90%	110%	95%	70%	130%
Selenium	1				0.0%	< 2.0	95%	90%	110%	102%	90%	110%	94%	70%	130%

Certified By: Jordy Takewaki

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122448

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122448

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Rui Oliveira (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T122808**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**May 20, 2005**
PAGES (INCLUDING COVER):	**1**

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AGAT WORK ORDER **05T122808**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: May 5, 2005 **Date Received:** May 13, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-400 442064	05-401 442065	05-417 442066	05-421 442067
Arsenic	µg/g	0.6		12.0	4.3	2.4	20.4
Cobalt	µg/g	0.3		21.7	9.4	5.8	14.6
Copper	µg/g	0.3		943	113	34.9	268
Lead	µg/g	0.5		74.2	48.1	7.7	33.3
Nickel	µg/g	0.6		491	123	47.9	398
Selenium	µg/g	0.8		3.8	0.9	<0.8	1.2

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T122808**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 5, 2005 **Date Received:** May 13, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-349R 442054	05-382R 442055	05-400 442056	05-401 442057	05-417 442058	05-421 442059	SPIKED TESTED 442060	BLANK 442061
Arsenic	ug/L	1.0		48.4	13.5	51.9	18.6	6.96	71.4	988	<1.0
Cobalt	ug/L	0.5		55.1	38.7	62.2	25.1	10.7	44.2	8230	3.97
Copper	ug/L	1.0		158	161	571	788	228	1440	7870	50.4
Lead	ug/L	2.0		58.1	83.0	170	115	9.89	60.0	8090	7.63
Nickel	ug/L	1.0		1660	736	186	589	300	1640	8500	223
Selenium	ug/L	2.0		3.79	<2.0	11.2	<2.0	<2.0	<2.0	1090	<2.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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AGAT WORK ORDER **05T122808**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 5, 2005 **Date Received:** May 13, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	EXTRACTION FLUID 442062	SPIKED 442063
Arsenic	ug/L	1.0		<1.0	1010
Cobalt	ug/L	0.5		0.55	9550
Copper	ug/L	1.0		107	9430
Lead	ug/L	2.0		7.6	10800
Nickel	ug/L	1.0		53.1	9690
Selenium	ug/L	2.0		<2.0	1140

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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Certificate of Analysis - Sample Comments

Workorder 05T122808

Metals Scan [liquid]

Guideline None

Sample	Comments
442054	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442055	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442056	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442057	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442058	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442059	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442060	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442061	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T122808

Metals Scan [liquid]

Guideline None

Sample	Comments
442062	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
442063	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
442064	M.D.L. - Method Detection Limit
442065	M.D.L. - Method Detection Limit
442066	M.D.L. - Method Detection Limit
442067	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122808

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE May 20, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	442066	2.4	2.4	0.0%	< 0.6	95%	90%	110%	104%	70%	130%	105%	70%	130%
Cobalt	1	442066	5.8	5.6	3.5%	< 0.3	111%	80%	120%	104%	70%	130%	101%	70%	130%
Copper	1	442066	35.3	35.0	0.9%	< 0.3	95%	90%	110%	103%	70%	130%	97%	70%	130%
Lead	1	442066	7.7	7.6	1.3%	< 0.5	110%	90%	110%	100%	70%	130%	96%	70%	130%
Nickel	1	442066	47.9	45.3	5.6%	< 0.6	108%	90%	110%	104%	70%	130%	95%	70%	130%
Selenium	1	442066	<0.8	<0.8	0.0%	< 0.8	89%	80%	120%	105%	70%	130%	105%	70%	130%

Certified By: Elizabeth Pokokowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122808

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE May 20, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]															
Arsenic	1	442063	1010	978	3.2%	< 1.0	95%	90%	110%	94%	90%	110%	116%	70%	130%
Cobalt	1	442063	9550	9270	3.0%	< 0.5	103%	90%	110%	103%	90%	110%	107%	70%	130%
Copper	1	442063	9430	9150	3.0%	< 1.0	105%	90%	110%	102%	90%	110%	118%	70%	130%
Lead	1	442063	10800	10540	2.4%	< 2.0	99%	90%	110%	91%	80%	120%	77%	70%	130%
Nickel	1	442063	9690	9350	3.6%	< 1.0	103%	90%	110%	103%	90%	110%	107%	70%	130%
Selenium	1	442063	1140	1130	0.9%	< 2.0	100%	90%	110%	99%	90%	110%	130%	70%	130%

Certified By: Elizabeth Rolakowska

AGAT Laboratories (Calgary, Mississauga) is accredited by the Standards Council of Canada (SCC) and/or the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific environmental tests listed in the scope of accreditation. Accreditations are location and parameter specific and a complete listing of parameters is available from www.scc.ca and/or www.caeal.ca. The tests in this report may not necessarily be included in the scope of this accreditation.

AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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CANADA L4Z 1N9

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122808

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122808

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS

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L4Z 1N9

Tel:(905) 501-9998
Fax:(905) 501-0589

INVOICE NO. 05K77284

Date: 29/Apr/05

GST #: R100073238

Customer No	WorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	District	Product
4021511	05T120291	T		10				0

Product ID	Product Description	Quantity	Unit Price	Extended Price
	RE:			
		7.00	$23.00	$161.00
93-043	As, Be - soils & grass	2.00	$23.00	$46.00
94-035	As, Be - water		**Subtotal:**	$207.00
	**********			
	* **Should you require any information regarding this analysis, please contact a** *		**0.0% PST:**	$0.00
	* **Technical Service Rep @ (905) 501-9998** *		**7.0% GST:**	$14.49
	**********		**Total:**	**$221.49**

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

GOLDER ASSOCIATES LTD.				
CHECKED:		APPROVED:		
H P		DUE:		
PROJECT	TASK	DEPT	G/L A/C	AMOUNT
GST		0000	2600-00	
VENDOR			TOTAL	

Corporate Office:
GOLDER ASSOCIATES LTD.
1000, 940 - 6TH AVE SW
CALGARY AB T2P3T1

Invoice To:
GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA ON L5N5Z7
Attn To: Rui Oliveira

AGAT Laboratories

AGAT WORK ORDER **05T122448**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: May 5, 2005 **Date Received:** May 11, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-335 441448	05-344 441449	05-346 441450	05-352 441451	05-386 441452	05-387 441453	05-405 441454	05-418 441455
Arsenic	µg/g	0.6		196	4.0	3.8	23.6	12.6	17.6	2.9	4.8
Cobalt	µg/g	0.3		37.2	10.2	6.9	28.5	21.1	19.1	6.9	4.9
Copper	µg/g	0.3		982	67.0	60.0	1260	326	502	24.5	29.8
Lead	µg/g	0.5		150	74.0	23.0	85.5	54.6	54.7	6.4	9.1
Nickel	µg/g	0.6		672	67.3	57.1	872	483	432	32.6	60.5
Selenium	µg/g	0.8		4.3	<0.8	<0.8	9.5	1.4	3.3	<0.8	<0.8

M.D.L. - Method Detection Limit

Certified By: Jordy Takewaki

AGAT WORK ORDER **05T122448**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 5, 2005 **Date Received:** May 11, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-334 441437	05-335 441438	05-386 441439	05-387 441440	05-393 441441	05-405 441442	BLANK 441443	Extraction Fluid 441444
Arsenic	ug/L	1.0		250	407	35.6	54.7	14.6	7.9	<1.0	<1.0
Cobalt	ug/L	0.5		171	94.6	74.6	56.9	16.4	11.8	<0.5	<0.5
Copper	ug/L	1.0		5810	6770	1820	3800	525	141	41.6	31.2
Lead	ug/L	2.0		156	241	87.2	70.2	15.7	7.6	<2.0	2.1
Nickel	ug/L	1.0		5260	3560	1830	2260	428	189	119	9.3
Selenium	ug/L	2.0		3.3	9.1	<2.0	6.5	<2.0	<2.0	<2.0	<2.0

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

AGAT Laboratories

AGAT WORK ORDER **05T122448**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 5, 2005 **Date Received:** May 11, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Wate

	Unit	MDL	Guideline	Spiked 441446	Spiked Tested 441447
Arsenic	ug/L	1.0		1290	1030
Cobalt	ug/L	0.5		10300	8790
Copper	ug/L	1.0		10400	8500
Lead	ug/L	2.0		10300	1160
Nickel	ug/L	1.0		10600	8990
Selenium	ug/L	2.0		1300	1120

M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122448

Metals Scan [liquid]

Guideline None

Sample	Comments
441437	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441438	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441439	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441440	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441441	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441442	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441443	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441444	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Jordy Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122448

Metals Scan [liquid]

Guideline None

Sample	Comments
441446	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441447	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
441448	M.D.L. - Method Detection Limit
441449	M.D.L. - Method Detection Limit
441450	M.D.L. - Method Detection Limit
441451	M.D.L. - Method Detection Limit
441452	M.D.L. - Method Detection Limit
441453	M.D.L. - Method Detection Limit

Certified By: Jacky Takeuchi

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Certificate of Analysis - Sample Comments

Workorder 05T122448

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
441454	M.D.L. - Method Detection Limit
441455	M.D.L. - Method Detection Limit

Certified By: Jacky Takewaki

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CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Rui Oliveira (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T122259**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**May 20, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T122259**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: May 4, 2005 **Date Received:** May 10, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-334 441235	05-337 441236	05-385 441237	05-393 441238	05-394 441239	05-395 441240	05-399 441241	05-404 441242
Arsenic	µg/g	0.6		112	17.6	63.4	4.1	10.7	130	24.8	4.0
Cobalt	µg/g	0.3		60.1	24.1	66.3	6.2	17.6	36.2	25.4	7.0
Copper	µg/g	0.3		1040	1140	1050	69.3	814	538	1660	90.0
Lead	µg/g	0.5		94.1	154	105	13.1	57.4	60.8	90.6	20.5
Nickel	µg/g	0.6		1030	685	1240	69.9	468	656	808	82.0
Selenium	µg/g	0.8		4.1	8.8	3.0	<0.8	6.4	2.7	9.1	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T122259**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: May 4, 2005 **Date Received:** May 10, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	05-407 441243	05-414 441244
Arsenic	µg/g	0.6		6.6	1.6
Cobalt	µg/g	0.3		11.9	4.3
Copper	µg/g	0.3		226	20.0
Lead	µg/g	0.5		37.2	4.6
Nickel	µg/g	0.6		157	20.1
Selenium	µg/g	0.8		1.8	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T122259**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 4, 2005 **Date Received:** May 10, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	Extraction Fluid 441245	05-334 441246	05-337 441247	05-385 441248	05-393 441249	05-394 441250	05-395 441252	05-399 441253
Arsenic	ug/L	1.0		<1.0	156	42.5	202	15.1	46.1	266	72.9
Cobalt	ug/L	0.5		<0.5	162	66.8	172	16.2	78.9	117	45.7
Copper	ug/L	1.0		23.7	5730	8050	4970	490	6330	2400	1170
Lead	ug/L	2.0		2.61	125	322	280	17.9	159	93.8	217
Nickel	ug/L	1.0		2.36	4840	3070	5150	398	2770	3420	2930
Selenium	ug/L	2.0		<2.0	<2.0	6.74	<2.0	<2.0	13.7	<2.0	15.9

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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AGAT WORK ORDER **05T122259**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: May 4, 2005 **Date Received:** May 10, 2005 **Date Reported:** May 20, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	05-404 441254	05-407 441255	05-414 441256
Arsenic	ug/L	1.0		12.3	20.1	4.5
Cobalt	ug/L	0.5		16.4	23.2	5.2
Copper	ug/L	1.0		617	1810	159
Lead	ug/L	2.0		23.6	72.3	6.4
Nickel	ug/L	1.0		481	932	199
Selenium	ug/L	2.0		<2.0	2.81	<2.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T122259

Metals Scan [liquid]

Guideline None

Sample	Comments
441245	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441246	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441247	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441248	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441249	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441250	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441252	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441253	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Elizabeth Rotakowska

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Certificate of Analysis - Sample Comments

Workorder 05T122259

Metals Scan [liquid]

Guideline None

Sample	Comments
441254	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441255	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
441256	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
441235	M.D.L. - Method Detection Limit
441236	M.D.L. - Method Detection Limit
441237	M.D.L. - Method Detection Limit
441238	M.D.L. - Method Detection Limit
441239	M.D.L. - Method Detection Limit

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Certificate of Analysis - Sample Comments

Workorder 05T122259

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
441240	M.D.L. - Method Detection Limit
441241	M.D.L. - Method Detection Limit
441242	M.D.L. - Method Detection Limit
441243	M.D.L. - Method Detection Limit
441244	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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FAX: (905) 501-0589
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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122259

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE May 20, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	441235	112	113	0.9%	< 0.6	95%	90%	110%	104%	70%	130%	105%	70%	130%
Cobalt	1	441235	60.1	60.7	1.0%	< 0.3	111%	80%	120%	104%	70%	130%	101%	70%	130%
Copper	1	441235	1040	1050	1.0%	< 0.3	95%	90%	110%	103%	70%	130%	97%	70%	130%
Lead	1	441235	94.1	94.2	0.1%	< 0.5	110%	90%	110%	100%	70%	130%	96%	70%	130%
Nickel	1	441235	1030	1030	0.0%	< 0.6	108%	90%	110%	104%	70%	130%	95%	70%	130%
Selenium	1	441235	4.1	4.0	2.5%	< 0.8	89%	80%	120%	105%	70%	130%	105%	70%	130%

Certified By: Elizabeth Polakowska

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FAX: (905) 501-0589
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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T122259

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE May 20, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]															
Arsenic	1	441245	< 1.0	< 1.0	0.0%	< 1.0	96%	90%	110%	91%	90%	110%	91%	70%	130%
Cobalt	1	441245	< 0.5	< 0.5	0.0%	< 0.5	100%	90%	110%	103%	90%	110%	98%	70%	130%
Copper	1	441245	23.7	23.0	3.0%	< 1.0	101%	90%	110%	101%	90%	110%	96%	70%	130%
Lead	1	441245	2.61	2.71	3.8%	< 2.0	103%	90%	110%	92%	80%	120%	85%	70%	130%
Nickel	1	441245	2.36	2.76	15.6%	< 1.0	103%	90%	110%	103%	90%	110%	98%	70%	130%
Selenium	1	441245	< 2.0	< 2.0	0.0%	< 2.0	101%	90%	110%	101%	90%	110%	102%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122259

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CANADA L4Z 1N9

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T122259

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**RUI OLIVEIRA (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T120507**
WATER ANALYSIS REVIEWED BY:	**Jacky Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C.**
DATE REPORTED:	**May 03, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER 05T120507

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: RUI OLIVEIRA (04-1112-069)

O. Reg. 153 Metals in Water

DATE SAMPLED: Apr 22, 2005 **DATE RECEIVED:** Apr 25, 2005 **DATE REPORTED:** May 03, 2005 **SAMPLE TYPE:** Water

	Unit	MDL	Guideline	05 - 1290 438470	05 - 1293 438472	05 - 1295 438473	05 - 1296 438474	05 - 1299 438475	05 - 1301 438476	05 - 1307 438477
Arsenic	ug/L	0.57	25	7.16	9.18	6.86	10.2	3.88	1.63	2.19
Cobalt	ug/L	0.96	0.9	**10.5**	**7.46**	**25.8**	**14.7**	**13.7**	**2.38**	**2.98**
Copper	ug/L	0.78	2.5	**340**	**567**	**260**	**245**	**431**	**207**	**61.4**
Lead	ug/L	0.44	1	**41.0**	**23.2**	**64.4**	**32.3**	**52.6**	**13.5**	**4.54**
Nickel	ug/L	0.63	25	**198**	**232**	**356**	**189**	**231**	**77.1**	**56.3**
Selenium	ug/L	0.81	5.0	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81

	Unit	MDL	Guideline	05 - 1308 438478	05 - 1309 438479	05 - 1311 438480
Arsenic	ug/L	0.57	25	7.86	1.25	2.29
Cobalt	ug/L	0.96	0.9	**6.70**	**1.01**	**3.24**
Copper	ug/L	0.78	2.5	**260**	**75.6**	**265**
Lead	ug/L	0.44	1	**134**	**9.30**	**49.0**
Nickel	ug/L	0.63	25	**173**	**47.0**	**180**
Selenium	ug/L	0.81	5.0	<0.81	<0.81	<0.81

COMMENTS: M.D.L. - Method Detection Limit
Guideline refers to Table 1 - Full Depth Background Site Condition Standards - Groundwater - All Types of Property Use

Certified By: Jody Takeuchi

y Takeuchi, BSc.H(Chem. Eng), BSc (Biology), C. C

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER 05T120507

ATTENTION TO: RUI OLIVEIRA (04-1112-069)

Water Analysis

RPT DATE: May 03, 2005

PARAMETER	Batch	Sample ID	DUPLICATE			REFERENCE MATERIAL				METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup. #1	Dup. #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O[illegible]. 153 Metals in Water															
Arsenic (ug/L)	1	438479	1.25	1.23	1.6%	< 0.57	95%	90%	110%	85%	80%	120%	96%	70%	130%
Cobalt (ug/L)	1	438479	1.01	0.84	18.4%	< 0.96	99%	90%	110%	92%	90%	110%	92%	70%	130%
Copper (ug/L)	1	438479	75.6	61.6	20.4%	< 0.78	102%	90%	110%	93%	90%	110%	89%	70%	130%
Lead (ug/L)	1	438479	9.30	7.61	20.0%	< 0.44	101%	90%	110%	83%	80%	120%	82%	70%	130%
Nickel (ug/L)	1	438479	47.0	39.7	16.8%	< 0.63	101%	90%	110%	94%	90%	110%	93%	70%	130%
Selenium (ug/L)	1	438479	< 0.81	< 0.81	0.0%	< 0.81	99%	90%	110%	93%	90%	110%	104%	70%	130%

Certified By: Jordy Takeuchi

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD. **AGAT WORK ORDER** **05T120507**

ATTENTION TO: RUI OLIVEIRA (04-1112-069)

PARAMETER	AGAT S.O.P.	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

S.O.P - Standard Operating Procedure

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CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**RUI OLIVEIRA (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T120504**
SOIL ANALYSIS REVIEWED BY:	**Marcus Maguire, Bsc. General Manager**
DATE REPORTED:	**May 02, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER 05T120504

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: RUI OLIVEIRA (04-1112-069)

O. Reg. 153 Metals in Soil

DATE SAMPLED: Apr 21, 2005 **DATE RECEIVED:** Apr 25, 2005 **DATE REPORTED:** May 02, 2005 **SAMPLE TYPE:** Dust

	Unit	MDL	Guideline	05 - 1290 438459	05 - 1293 438460	05 - 1295 438461	05 - 1296 438462	05 - 1299 438463	05 - 1301 438464	05 - 1307 438465
Arsenic	µg/g	0.3		12.4	16.1	10.9	29.1	47.9	3.8	4.9
Cobalt	µg/g	0.2		21.5	31.0	83.3	61.4	48.7	7.6	9.2
Copper	µg/g	0.2		562	1180	454	519	1420	260	98.3
Lead	µg/g	0.3		114	92.9	86.1	152	219	45.6	23.6
Nickel	µg/g	0.3		406	814	627	622	705	133	79.4
Selenium	µg/g	0.4		5.1	4.9	1.7	2.1	2.4	2.3	0.9

	Unit	MDL	Guideline	05 - 1308 438466	05 - 1309 438467	05 - 1311 438468
Arsenic	µg/g	0.3		24.1	9.8	3.5
Cobalt	µg/g	0.2		28.7	6.4	9.7
Copper	µg/g	0.2		666	210	410
Lead	µg/g	0.3		370	39.4	106
Nickel	µg/g	0.3		552	121	280
Selenium	µg/g	0.4		6.3	1.5	3.0

COMMENTS: M.D.L. - Method Detection Limit

Certified By:

Marcus Maguire, Bsc. General Manager

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER 05T120504

ATTENTION TO: RUI OLIVEIRA (04-1112-069)

Soil Analysis

RPT DATE: May 02, 2005

PARAMETER	Batch	Sample ID	DUPLICATE			REFERENCE MATERIAL				METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup. #1	Dup. #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Reg. 153 Metals in Soil															
Arsenic (µg/g)	1	438463	47.9	50.0	4.3%	< 0.3	94%	90%	110%	100%	70%	130%	94%	70%	130%
Cobalt (µg/g)	1	438463	48.7	50.1	2.8%	< 0.2	100%	90%	110%	92%	70%	130%	83%	70%	130%
Copper (µg/g)	1	438463	1420	1450	2.1%	< 0.2	91%	90%	110%	92%	70%	130%	82%	70%	130%
Lead (µg/g)	1	438463	219	238	8.3%	< 0.3	91%	90%	110%	86%	70%	130%	82%	70%	130%
Nickel (µg/g)	1	438463	705	746	5.7%	< 0.3	94%	90%	110%	92%	70%	130%	81%	70%	130%
Selenium (µg/g)	1	438463	2.4	2.2	8.7%	< 0.4	96%	90%	110%	97%	70%	130%	92%	70%	130%

Certified By:

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER 05T120504

ATTENTION TO: RUI OLIVEIRA (04-1112-069)

PARAMETER	AGAT S.O.P.	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

S.O.P - Standard Operating Procedure

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CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**RUI OLIVEIRA (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T119040**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**April 20, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T119040**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: RUI OLIVEIRA (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Apr 8, 2005 **Date Received:** Apr 12, 2005 **Date Reported:** Apr 20, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	436570 05 - 365 S	436572 05 - 367 S	436573 05 - 368 S	436574 05 - 369 S	436575 05 - 370 S	436576 05 - 371 S	436577 05 - 372 S	436578 05 - 373 S
Arsenic	µg/g	0.6		201	3.0	4.1	4.5	3.8	2.4	4.7	7.1
Cobalt	µg/g	0.3		80.5	2.4	4.1	7.5	7.5	4.9	13.6	11.0
Copper	µg/g	0.3		1630	30.9	45.3	64.8	65.5	31.7	148	152
Lead	µg/g	0.5		218	8.7	14.7	17.3	11.4	18.8	25.1	27.0
Nickel	µg/g	0.6		1640	25.9	43.2	76.9	66.1	37.2	259	195
Selenium	µg/g	0.8		5.6	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	0.9

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T119040**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: RUI OLIVEIRA (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Apr 8, 2005 **Date Received:** Apr 12, 2005 **Date Reported:** Apr 20, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	436579 05 - 375 S	436580 05 - 384 S
Arsenic	µg/g	0.6		5.2	3.9
Cobalt	µg/g	0.3		13.1	6.8
Copper	µg/g	0.3		108	81.2
Lead	µg/g	0.5		18.8	18.6
Nickel	µg/g	0.6		150	84.2
Selenium	µg/g	0.8		<0.8	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T119040

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
436570	M.D.L. - Method Detection Limit
436572	M.D.L. - Method Detection Limit
436573	M.D.L. - Method Detection Limit
436574	M.D.L. - Method Detection Limit
436575	M.D.L. - Method Detection Limit
436576	M.D.L. - Method Detection Limit
436577	M.D.L. - Method Detection Limit
436578	M.D.L. - Method Detection Limit
436579	M.D.L. - Method Detection Limit
436580	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T119040

ATTENTION TO: RUI OLIVEIRA (04-1112-069)

Soil

DATE Apr 20, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	436580	3.9	3.8	2.6%	< 0.6	103%	90%	110%	98%	70%	130%	85%	70%	130%
Cobalt	1	436580	6.8	6.7	1.5%	< 0.3	102%	90%	110%	97%	70%	130%	78%	70%	130%
Copper	1	436580	81.2	79.3	2.4%	< 0.3	106%	90%	110%	100%	70%	130%	82%	70%	130%
Lead	1	436580	18.6	18.3	1.6%	< 0.5	104%	90%	110%	93%	70%	130%	78%	70%	130%
Nickel	1	436580	84.2	85.1	1.1%	< 0.6	106%	90%	110%	99%	70%	130%	88%	70%	130%
Selenium	1	436580	< 0.8	< 0.8	0.0%	< 0.8	102%	90%	110%	107%	70%	130%	91%	70%	130%

Certified By: Elizabeth Polakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T119040

Attention To: RUI OLIVEIRA (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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INVOICE NO. 05K76971

Date: 28/Apr/05

GST #: R100073238

Customer No	WorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	District	Product
4021511	05T119040	T		10				0

Product ID	Product Description	Quantity	Unit Price	Extended Price
	RE: Project 04-1112-069			
94-102	O. Reg. 153 - Metals (Co,Cu,Pb,As,Se,Ni) (Table 1)	10.00	$30.00	$300.00

****
* **Should you require any information regarding this analysis, please contact a Technical Service Rep @ (905) 501-9998** *
****

Subtotal:	$300.00
0.0% PST:	$0.00
7.0% GST:	$21.00
Total:	**$321.00**

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

GOLDER ASSOCIATES LTD.

CHECKED:		APPROVED		
		DUE:		
PROJECT	[illegible]	DEPT	[illegible]	ACCOUNT
GST		0000		
VENDOR				

Corporate Office:

GOLDER ASSOCIATES LTD.
1000, 940 - 6TH AVE SW
CALGARY AB T2P3T1

Invoice To:

GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA ON L5N5Z7
Attn To: RUI OLIVEIRA (04-1112-069)

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CLIENT:	**GOLDER ASSOCIATES LTD.** **2390 ARGENTIA ROAD** **MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Rui Oliveira (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T119054**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**April 25, 2005**
PAGES (INCLUDING COVER):	**1**

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AGAT WORK ORDER **05T119054**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 8, 2005 **Date Received:** Apr 12, 2005 **Date Reported:** Apr 25, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436583 05-365	436584 05-367	436585 05-368	436586 05-369	436587 05-370	436588 05-371	436589 05-372	436590 05-373
Arsenic	ug/L	1.0		628	13.1	7.4	12.7	15.2	9.8	20.1	24.2
Cobalt	ug/L	0.5		169	4.6	9.8	20.7	18.1	11.2	39.2	31.8
Copper	ug/L	1.0		7370	257	341	442	475	261	849	897
Lead	ug/L	2.0		296	11.6	8.5	18.3	9.1	29.7	52.6	27.4
Nickel	ug/L	1.0		4930	242	281	386	389	271	1060	752
Selenium	ug/L	2.0		16.8	3.8	<2.0	<2.0	3.2	<2.0	<2.0	2.5

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

AGAT® Laboratories

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AGAT WORK ORDER **05T119054**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 8, 2005 **Date Received:** Apr 12, 2005 **Date Reported:** Apr 25, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436591 05-375	436592 05-384
Arsenic	ug/L	1.0		16.4	13.7
Cobalt	ug/L	0.5		35.8	14.5
Copper	ug/L	1.0		581	509
Lead	ug/L	2.0		14.2	23.7
Nickel	ug/L	1.0		692	371
Selenium	ug/L	2.0		<2.0	<2.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Pololowska

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Certificate of Analysis - Sample Comments

Workorder 05T119054

Metals Scan [liquid]

Guideline None

Sample	Comments
436583	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436584	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436585	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436586	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436587	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436588	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436589	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436590	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436591	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Elizabeth Rotakowska

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Certificate of Analysis - Sample Comments

Workorder 05T119054

Metals Scan [liquid]

Guideline None

Sample	Comments
436592	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T119054

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE	Apr 25, 2005	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	**Sample ID**	**Dup #1**	**Dup #2**	**RPD**	**Method Blank**	**Measured Value**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**	
								Lower	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Metals Scan [liquid]															
Arsenic	1	436583	628	607	3.4%	< 1.0	103%	90%	110%	96%	90%	110%		70%	130%
Cobalt	1	436583	169	161	4.8%	< 0.5	102%	90%	110%	99%	90%	110%		70%	130%
Copper	1	436583	7370	7046	4.5%	< 1.0	106%	90%	110%	102%	90%	110%		70%	130%
Lead	1	436583	296	276	7.0%	< 2.0	101%	90%	110%	103%	80%	120%		70%	130%
Nickel	1	436583	4930	4780	3.1%	< 1.0	106%	90%	110%	100%	90%	110%		70%	130%
Selenium	1	436583	16.8	16.1	4.3%	< 2.0	102%	90%	110%	103%	90%	110%		70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T119054

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8, SM 3125 B	ICP-MS

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Mississauga, Ontario
L4Z 1N9

Tel:(905) 501-9998
Fax:(905) 501-0589

INVOICE NO. 05K76985

Date: 28/Apr/05

GST #: R100073238

Customer No	WorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	District	Product
4021511	05T119054	T		10				0

Product ID	Product Description	Quantity	Unit Price	Extended Price
	RE: Project 04-1112-069			
94-101	O. Reg. 153 - Metals (Co, Cu, Pb, As, Se, Ni)	10.00	$30.00	$300.00

****
* **Should you require any information regarding this analysis, please contact a Technical Service Rep @ (905) 501-9998** *
****

	Subtotal:	$300.00
0.0%	**PST:**	$0.00
7.0%	**GST:**	$21.00
	Total:	**$321.00**

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

GOLDER ASSOCIATES LTD.

CHECKED:		APPROVED:		
N P		DUE:		
PROJECT	TASK	DEPT	G/L A/C	ACCOUNT
GST		0000	2600-00	
VENDOR			TOTAL	

Corporate Office:
GOLDER ASSOCIATES LTD.
1000, 940 - 6TH AVE SW
CALGARY AB T2P3T1

Invoice To:
GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA ON L5N5Z7
Attn To: Rui Oliveira (04-1112-069)

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CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Rui Oliveira (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T118825**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**April 15, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T118825**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Apr 7, 2005 **Date Received:** Apr 7, 2005 **Date Reported:** Apr 15, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	436273 05-340 S	436274 05-342 S	436275 05-345 S	436276 05-347 S	436277 05-348 S	436278 05-349 S	436279 05-351 S	436280 05-356 S
Arsenic	µg/g	0.6		6.0	5.7	29.7	18.6	71.8	15.7	8.0	9.3
Cobalt	µg/g	0.3		11.8	8.4	39.8	21.5	26.3	15.4	12.2	10.0
Copper	µg/g	0.3		405	190	1480	487	395	272	230	170
Lead	µg/g	0.5		14.1	20.3	189	131	50.4	30.5	63.0	22.6
Nickel	µg/g	0.6		359	132	1230	742	503	376	199	210
Selenium	µg/g	0.8		2.6	2.0	6.6	1.8	1.7	1.3	1.8	0.9

M.D.L. - Method Detection Limit

Certified By: Elizabeth Pololowska

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AGAT WORK ORDER **05T118825**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Apr 7, 2005 **Date Received:** Apr 7, 2005 **Date Reported:** Apr 15, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	436281 05-357 S	436282 05-361 S	436283 05-364 S	436284 05-374 S	436285 05-376 S	436286 05-377 S	436287 05-379 S	436288 05-380 S
Arsenic	µg/g	0.6		4.0	10.3	16.1	18.6	4.1	3.3	2.4	12.3
Cobalt	µg/g	0.3		6.0	14.1	24.7	14.6	4.5	6.1	3.8	17.5
Copper	µg/g	0.3		61.0	540	1190	424	46.5	46.4	26.9	545
Lead	µg/g	0.5		14.5	40.2	68.8	40.1	23.2	11.3	7.9	41.3
Nickel	µg/g	0.6		85.6	429	656	520	49.8	51.5	31.6	377
Selenium	µg/g	0.8		<0.8	5.1	5.8	1.5	<0.8	<0.8	<0.8	3.2

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T118825**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Apr 7, 2005 **Date Received:** Apr 7, 2005 **Date Reported:** Apr 15, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	436289 05-381 S	436290 05-382 S	436291 05-383 S	436292 05-388 S	436293 05-389 S	436294 05-390 S	436295 05-391 S	436296 05-392 S
Arsenic	µg/g	0.6		4.7	5.1	4.9	55.2	2.8	31.7	3.6	20.9
Cobalt	µg/g	0.3		7.5	11.1	10.8	48.5	3.7	21.3	6.2	41.8
Copper	µg/g	0.3		76.1	209	207	768	29.8	305	37.0	687
Lead	µg/g	0.5		21.7	35.8	24.0	66.6	7.9	31.2	17.6	37.8
Nickel	µg/g	0.6		93.1	148	239	1090	35.4	399	46.1	910
Selenium	µg/g	0.8		<0.8	1.5	1.0	2.2	<0.8	1.6	<0.8	1.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T118825**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Apr 7, 2005 **Date Received:** Apr 7, 2005 **Date Reported:** Apr 15, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	436297 05-396 S	436298 05-398 S	436299 05-402 S	436300 05-403 S	436301 05-406 S	436302 05-411 S
Arsenic	µg/g	0.6		2.7	17.8	2.5	4.0	1.9	2.6
Cobalt	µg/g	0.3		7.7	17.6	5.4	6.2	3.6	3.8
Copper	µg/g	0.3		42.0	490	45.8	47.0	25.9	23.2
Lead	µg/g	0.5		7.4	112	5.7	9.3	13.2	6.1
Nickel	µg/g	0.6		55.0	406	47.2	54.5	29.1	28.7
Selenium	µg/g	0.8		<0.8	3.4	<0.8	0.9	<0.8	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T118825**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 7, 2005 **Date Received:** Apr 7, 2005 **Date Reported:** Apr 15, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436303 05-376	436304 05-377	436305 05-379	436306 05-380	436307 05-382	436308 05-383	436309 05-388	436310 05-391
Arsenic	ug/L	1.0		14.4	13.1	8.9	38.4	21.8	27.9	200	10.6
Cobalt	ug/L	0.5		15.1	13.7	8.5	52.0	38.3	21.6	158	13.8
Copper	ug/L	1.0		368	343	239	4530	1500	1320	4420	333
Lead	ug/L	2.0		80.0	20.1	12.8	81.3	96.7	70.1	157	31.6
Nickel	ug/L	1.0		354	329	224	2340	704	617	5240	369
Selenium	ug/L	2.0		3.8	<2.0	<2.0	6.4	5.2	2.6	9.2	<2.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T118825**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 7, 2005 **Date Received:** Apr 7, 2005 **Date Reported:** Apr 15, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436311 MONTANA
Arsenic	ug/L	1.0		428
Cobalt	ug/L	0.5		31.3
Copper	ug/L	1.0		558
Lead	ug/L	2.0		1960
Nickel	ug/L	1.0		248
Selenium	ug/L	2.0		<5.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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Certificate of Analysis - Sample Comments

Workorder 05T118825

Metals Scan [liquid]

Guideline None

Sample	Comments
436303	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436304	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436305	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436306	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436307	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436308	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436309	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436310	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
436311	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By: Elizabeth Rolakowska

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
436273	M.D.L. - Method Detection Limit
436274	M.D.L. - Method Detection Limit
436275	M.D.L. - Method Detection Limit
436276	M.D.L. - Method Detection Limit
436277	M.D.L. - Method Detection Limit
436278	M.D.L. - Method Detection Limit
436279	M.D.L. - Method Detection Limit
436280	M.D.L. - Method Detection Limit
436281	M.D.L. - Method Detection Limit
436282	M.D.L. - Method Detection Limit
436283	M.D.L. - Method Detection Limit
436284	M.D.L. - Method Detection Limit
436285	M.D.L. - Method Detection Limit
436286	M.D.L. - Method Detection Limit
436287	M.D.L. - Method Detection Limit
436288	M.D.L. - Method Detection Limit
436289	M.D.L. - Method Detection Limit
436290	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T118825

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
436291	M.D.L. - Method Detection Limit
436292	M.D.L. - Method Detection Limit
436293	M.D.L. - Method Detection Limit
436294	M.D.L. - Method Detection Limit
436295	M.D.L. - Method Detection Limit
436296	M.D.L. - Method Detection Limit
436297	M.D.L. - Method Detection Limit
436298	M.D.L. - Method Detection Limit
436299	M.D.L. - Method Detection Limit
436300	M.D.L. - Method Detection Limit
436301	M.D.L. - Method Detection Limit
436302	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rotakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T118825

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE Apr 15, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	436273	6.0	6.0	0.0%	< 0.6	99%	90%	110%	100%	70%	130%	90%	70%	130%
Arsenic	1	436283	16.1	16.2	0.6%	< 0.6		90%	110%		70%	130%		70%	130%
Arsenic	1	436293	2.8	2.7	3.6%	< 0.6		90%	110%		70%	130%		70%	130%
Cobalt	1	436273	11.8	11.7	0.9%	< 0.3	105%	90%	110%	99%	70%	130%	87%	70%	130%
Cobalt	1	436293	3.7	3.4	8.5%	< 0.3		90%	110%		70%	130%		70%	130%
Cobalt	1	436283	24.7	25.5	3.2%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	436273	405	413	2.0%	< 0.3	93%	90%	110%	104%	70%	130%		70%	130%
Copper	1	436283	1190	1220	2.5%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	436293	29.8	27.9	6.6%	< 0.3		90%	110%		70%	130%		70%	130%
Lead	1	436273	14.1	14.0	0.7%	< 0.5	100%	90%	110%	95%	70%	130%	77%	70%	130%
Lead	1	436293	7.9	7.5	5.2%	< 0.5		90%	110%		70%	130%		70%	130%
Lead	1	436283	68.8	70.6	2.6%	< 0.5		90%	110%		70%	130%		70%	130%
Nickel	1	436273	359	359	0.0%	< 0.6	105%	90%	110%	100%	70%	130%	74%	70%	130%
Nickel	1	436293	35.4	34.0	4.0%	< 0.6		90%	110%		70%	130%		70%	130%
Nickel	1	436283	656	675	2.9%	< 0.6		90%	110%		70%	130%		70%	130%
Selenium	1	436273	2.6	2.6	0.0%	< 0.8	122%	70%	130%	109%	70%	130%	94%	70%	130%
Selenium	1	436293	< 0.8	< 0.8	0.0%	< 0.8		80%	120%		70%	130%		70%	130%
Selenium	1	436283	5.8	5.9	1.7%	< 0.8		80%	120%		70%	130%		70%	130%

Certified By: Elizabeth Rolokowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T118825

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE Apr 15, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	**Sample ID**	**Dup #1**	**Dup #2**	**RPD**	**Method Blank**	**Measured Value**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**		**Recovery**	**Acceptable Limits**	
								Lower	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Metals Scan [liquid]															
Arsenic	1	436311	506	500	1.2%	< 1.0	102%	90%	110%	110%	90%	110%	113%	70%	130%
Cobalt	1	436311	31.3	31.3	0.0%	< 0.5	104%	90%	110%	96%	90%	110%	95%	70%	130%
Copper	1	436311	558	549	1.6%	< 1.0	105%	90%	110%	99%	90%	110%	89%	70%	130%
Lead	1	436311	1960	1890	3.6%	< 2.0	102%	90%	110%	85%	80%	120%	76%	70%	130%
Nickel	1	436311	248	235	5.4%	< 1.0	105%	90%	110%	98%	90%	110%	91%	70%	130%
Selenium	1	436311	1.8	3.6		< 5.0	105%	90%	110%	98%	90%	110%	127%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T118825

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T118825

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

AGAT® Laboratories

5623 McAdam Road
Mississauga, Ontario
L4Z 1N9

Tel:(905) 501-9998
Fax:(905) 501-0589

INVOICE NO. 05K76287

Date: 20/Apr/05

GST #: R100073238

Customer No	WorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	District	Product
4021511	05T118825	T		10				0

Product ID	Product Description	Quantity	Unit Price	Extended Price
	RE: Project 04-1112-069			
93-103	O. Reg. 153 - Metals (Table 1) - Co,Cu,Pb,As,Se	30.00	$30.00	$900.00
94-102	O. Reg. 153 - Metals (Table 1) - Co,Cu,Pb,As,Se	9.00	$30.00	$270.00
			Subtotal:	$1,170.00
			0.0% PST:	$0.00
			7.0% GST:	$81.90
			Total:	**$1,251.90**

****
* **Should you require any information regarding this analysis, please contact a Technical Service Rep @ (905) 501-9998** *
****

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

Corporate Office:
GOLDER ASSOCIATES LTD.
1000, 940 - 6TH AVE SW
CALGARY AB T2P3T1

Invoice To:
GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA ON L5N5Z7
Attn To: Rui Oliveira (04-1112-069)

5623 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N9

AGAT® Laboratories

TEL: (905) 501-9998
FAX: (905) 501-0589
www.agatlabs.com

CLIENT:	**GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Rui Oliveira (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T118666**
WATER ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**April 14, 2005**
PAGES (INCLUDING COVER):	**1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T118666**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 5, 2005 **Date Received:** Apr 6, 2005 **Date Reported:** Apr 14, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436097 05-339	436098 05-340	436099 05-341	436100 05-342	436101 05-345	436102 05-347	436103 05-348	436104 05-349
Arsenic	ug/L	5.0		142	31.5	56.0	18.1	183	38.3	119	53.1
Cobalt	ug/L	5.0		186	37.5	54.7	18.9	198	87.3	75.3	50.2
Copper	ug/L	10		5430	3030	5700	1350	6830	3730	2430	1740
Lead	ug/L	5.0		124	30.4	51.9	41.6	134	239	46.9	65.4
Nickel	ug/L	10		4620	1860	2680	545	6820	4120	2040	1760
Selenium	ug/L	5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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AGAT WORK ORDER **05T118666**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 5, 2005 **Date Received:** Apr 6, 2005 **Date Reported:** Apr 14, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436105 05-351	436106 05-355	436107 05-356	436108 05-357	436109 05-358	436110 05-359	436111 05-361	436112 05-362
Arsenic	ug/L	5.0		31.8	39.8	30.2	12.9	138	36.3	49.4	28.2
Cobalt	ug/L	5.0		27.1	46.7	29.7	16.7	167	26.7	48.5	18.3
Copper	ug/L	10		1560	1750	1160	436	5380	596	4310	821
Lead	ug/L	5.0		108	76.1	50.0	38.6	139	42.8	98.7	31.5
Nickel	ug/L	10		892	1380	703	405	3510	649	2700	434
Selenium	ug/L	5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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AGAT WORK ORDER **05T118666**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 5, 2005 **Date Received:** Apr 6, 2005 **Date Reported:** Apr 14, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436113 05-363	436114 05-364	436115 05-374	436116 05-381	436117 05-389	436118 05-390	436119 05-392	436120 05-396
Arsenic	ug/L	5.0		935	47.6	89.3	19.2	12.4	86.6	67.9	13.2
Cobalt	ug/L	5.0		320	56.1	61.5	28.4	8.3	84.8	127	12.9
Copper	ug/L	10		9680	8510	4170	571	232	1780	3460	258
Lead	ug/L	5.0		425	125	119	52.2	16.4	69.5	74.0	7.7
Nickel	ug/L	10		7890	2380	3690	469	172	2340	4280	218
Selenium	ug/L	5.0		11.2	<5.0	<5.0	<5.0	6.9	<5.0	7.1	<5.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T118666**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

Metals Scan [liquid]

Date Sampled: Apr 5, 2005 **Date Received:** Apr 6, 2005 **Date Reported:** Apr 14, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	436121 05-398	436122 05-402	436123 05-403	436124 05-406	436125 05-411	436126 MONTANA
Arsenic	ug/L	5.0		72.5	17.4	22.1	21.6	13.8	408
Cobalt	ug/L	5.0		54.6	11.7	14.4	9.4	7.7	31.9
Copper	ug/L	10		3520	320	262	248	210	574
Lead	ug/L	5.0		352	14.4	18.9	52.2	12.9	1770
Nickel	ug/L	10		1900	251	272	189	159	145
Selenium	ug/L	5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T118666

Metals Scan [liquid]

Guideline None

Sample	Comments
436097	M.D.L. - Method Detection Limit Liquid samples were diluted 100x prior to Metals scan; the reported MDL has been increased according to dilution.
436098	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436099	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436100	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436101	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436102	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436103	M.D.L. - Method Detection Limit

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Certificate of Analysis - Sample Comments

Workorder 05T118666

Metals Scan [liquid]

Guideline None

Sample	Comments
	Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436104	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436105	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436106	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436107	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436108	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436109	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the

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Certificate of Analysis - Sample Comments

Workorder 05T118666

Metals Scan [liquid]

Guideline None

Sample	Comments
	reported MDL has been increased according to dilution.
436110	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436111	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436112	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436113	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436114	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436115	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.

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Certificate of Analysis - Sample Comments

Workorder 05T118666

Metals Scan [liquid]

Guideline None

Sample	Comments
436116	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436117	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436118	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436119	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436120	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436121	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436122	M.D.L. - Method Detection Limit

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Certificate of Analysis - Sample Comments

Workorder 05T118666

Metals Scan [liquid]

Guideline None

Sample	Comments
	Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436123	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436124	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436125	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
436126	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.

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CANADA L4Z 1N9

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T118666

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE Apr 14, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]															
Arsenic	1	436097	142	153	7.5%	< 5.0	93%	90%	110%	92%	90%	110%	95%	70%	130%
Arsenic	1	436106	39.8	41.8	4.9%	< 5.0		90%	110%		90%	110%		70%	130%
Arsenic	1	436125	13.8	17.0	20.8%	< 5.0		90%	110%		90%	110%		70%	130%
Cobalt	1	436097	186	204	9.2%	<5.0	102%	90%	110%	102%	90%	110%	96%	70%	130%
Cobalt	1	436125	7.7	7.9	2.6%	< 5.0		90%	110%		90%	110%		70%	130%
Cobalt	1	436106	46.7	47.0	0.6%	< 5.0		90%	110%		90%	110%		70%	130%
Copper	1	436097	5430	5900	8.3%	< 10	102%	90%	110%	101%	90%	110%	95%	70%	130%
Copper	1	436106	1750	1710	2.3%	< 10		90%	110%		90%	110%		70%	130%
Copper	1	436125	210	234	10.8%	< 10		90%	110%		90%	110%		70%	130%
Lead	1	436097	124	140	12.1%	< 5.0	104%	90%	110%	101%	90%	110%	84%	70%	130%
Lead	1	436125	12.9	16.5	24.5%	< 5.0		90%	110%		90%	110%		70%	130%
Lead	1	436106	76.1	69.7	8.8%	< 5.0		90%	110%		90%	110%		70%	130%
Nickel	1	436097	4620	5050	8.9%	< 10	103%	90%	110%	102%	90%	110%	103%	70%	130%
Nickel	1	436125	159	162	1.9%	< 10		90%	110%		90%	110%		70%	130%
Nickel	1	436106	1380	1410	2.2%	< 10		90%	110%		90%	110%		70%	130%
Selenium	1	436097	< 2.0	< 2.0	0.0%	< 5.0	102%	90%	110%	101%	90%	110%	95%	70%	130%
Selenium	1	436125	< 2.0	< 2.0	0.0%	< 5.0		90%	110%		90%	110%		70%	130%
Selenium	1	436106	< 2.0	< 2.0	0.0%	< 5.0		90%	110%		90%	110%		70%	130%

Certified By: Elizabeth Rolokowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T118666

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

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CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira (04-1112-069)

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T115662

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

DATE REPORTED: March 15, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T115662**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Mar 11, 2005 **Date Received:** Mar 14, 2005 **Date Reported:** Mar 15, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	433052 05-343	433053 05-353	433054 05-354	433055 05-378	433056 05-397
Arsenic	µg/g	0.6		27.7	285	255	14.5	40.5
Cobalt	µg/g	0.3		38.4	135	163	18.2	31.3
Copper	µg/g	0.3		1620	2680	3060	305	1380
Lead	µg/g	0.5		195	201	206	155	315
Nickel	µg/g	0.6		1320	2890	4080	362	874
Selenium	µg/g	0.8		6.4	8.0	6.9	1.5	7.4

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T115662

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
433052	M.D.L. - Method Detection Limit
433053	M.D.L. - Method Detection Limit
433054	M.D.L. - Method Detection Limit
433055	M.D.L. - Method Detection Limit
433056	M.D.L. - Method Detection Limit

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T115662

ATTENTION TO: Rui Oliveira (04-1112-069)

Soil

DATE Mar 15, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	433056	40.5	38.6	4.8%	< 0.6	87%	80%	120%	92%	70%	130%	87%	70%	130%
Cobalt	1	433056	31.3	30.4	2.9%	< 0.3	109%	90%	110%	94%	70%	130%	88%	70%	130%
Copper	1	433056	1380	1530	10.3%	< 0.3	95%	90%	110%	96%	70%	130%	87%	70%	130%
Lead	1	433056	315	318	0.9%	< 0.5	103%	90%	110%	94%	70%	130%	88%	70%	130%
Nickel	1	433056	874	894	2.3%	< 0.6	105%	90%	110%	97%	70%	130%	90%	70%	130%
Selenium	1	433056	7.4	7.4	0.0%	< 0.8	98%	90%	110%	102%	70%	130%	90%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T115662

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT: GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: Rui Oliveira (04-1112-069)

CLIENT PROJECT # / NAME: 04-1112-069

AGAT WORK ORDER: 05T114983

WATER ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

DATE REPORTED: March 15, 2005

PAGES (INCLUDING COVER): 1

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER **05T114983**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals [liquid]

Date Sampled: Mar 5, 2005 **Date Received:** Mar 8, 2005 **Date Reported:** Mar 15, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	432315 05-343	432320 05-353	432321 05-354	432322 05-378	432324 05-397	432328 05-343F	432329 05-353F	432330 05-354F
Arsenic	ug/L	1.0		69.0	563	562	44.0	107	96.8	392	429
Cobalt	ug/L	0.5		137	373	417	92.8	95.0	132	263	308
Copper	ug/L	10		10300	12300	11400	2130	8500	10500	13700	12200
Lead	ug/L	2.0		1260	743	895	1260	2300	512	129	213
Nickel	ug/L	10		5240	11700	10100	1360	3130	5040	9960	10100
Selenium	ug/L	2.0		15.1	9.96	14.2	6.88	11.5	20.9	8.86	7.81

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T114983**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Rui Oliveira (04-1112-069)

O. Reg. 153 Metals [liquid]

Date Sampled: Mar 5, 2005 **Date Received:** Mar 8, 2005 **Date Reported:** Mar 15, 2005 **Sample Type:** Water

	Unit	MDL	Guideline	432331 05-378F	432332 05-397F
Arsenic	ug/L	1.0		39.8	168
Cobalt	ug/L	0.5		73.3	85.3
Copper	ug/L	10		2100	8240
Lead	ug/L	2.0		377	847
Nickel	ug/L	10		1270	3220
Selenium	ug/L	2.0		<2.0	11.9

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T114983

O. Reg. 153 Metals [liquid]

Guideline None

Sample	Comments
432315	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432320	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432321	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432322	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432324	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432328	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432329	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432330	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.
432331	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.

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Certificate of Analysis - Sample Comments

Workorder 05T114983

O. Reg. 153 Metals [liquid]

Guideline None

Sample	Comments
432332	M.D.L. - Method Detection Limit All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution.

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T114983

ATTENTION TO: Rui Oliveira (04-1112-069)

Water

DATE Mar 15, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals [liquid]															
Arsenic	1	431315	69.0	68.6	0.6%	< 1.0	94%	90%	110%	92%	90%	110%	107%	70%	130%
Cobalt	1	431315	137	136	0.7%	< 0.5	95%	90%	110%	97%	90%	110%	97%	70%	130%
Copper	1	431315	9500	9690	2.0%	< 10	97%	90%	110%	98%	90%	110%	102%	70%	130%
Lead	1	431315	1260	1260	0.0%	< 2.0	102%	90%	110%	96%	90%	110%	93%	70%	130%
Nickel	1					< 10	101%	90%	110%	99%	70%	130%		70%	130%
Selenium	1	431315	15.1	14.3	5.4%	< 2.0	96%	90%	110%	96%	90%	110%	122%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T114983

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

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Mississauga, Ontario
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Fax:(905) 501-0589

INVOICE NO.05K73572

Date:17/Mar/05

GST #: R100073238

Customer No	WorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	District	Product
4021511	05T115662	T		10				0

Product ID	Product Description	Quantity	Unit Price	Extended Price
	RE: Project 04-1112-069			
		5.00	$30.00	$150.00
93-101	O. Reg. 153 - Metals (Co, Cu, Pb, As, Se)	5.00	$30.00	$150.00
93-899	Rush Surcharge on Metals (Co, Cu. Pb, As, Se) -100%		**Subtotal:**	$300.00
	**********			
	* Should you require any information regarding this analysis, please contact a *		**0.0% PST:**	$0.00
	* Technical Service Rep @ (905) 501-9998 *		**7.0% GST:**	$21.00
	**********		**Total:**	**$321.00**

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

Corporate Office:
GOLDER ASSOCIATES LTD.
1000, 940 - 6TH AVE SW
CALGARY AB T2P3T1

Invoice To:
GOLDER ASSOCIATES LTD.
2390 ARGENTIA ROAD
MISSISSAUGA ON L5N5Z7
Attn To: Rui Oliveira (04-1112-069)

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CLIENT: **GOLDER ASSOCIATES LTD.**
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: **Mike Dutton (04-1112-069)**

CLIENT PROJECT # / NAME: **04-1112-069**

AGAT WORK ORDER: **05T113564**

SOIL ANALYSIS REVIEWED BY: **Elizabeth Polakowska, Analyst**

DATE REPORTED: **February 28, 2005**

PAGES (INCLUDING COVER): **1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER **05T113564**

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 24, 2005 **Date Reported:** Feb 28, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	430802 CWA soil 01	430803 CWA soil 02	430804 CWA soil 03
Arsenic	µg/g	0.6		12.3	12.4	12.7
Cobalt	µg/g	0.3		11.4	11.4	11.6
Copper	µg/g	0.3		28.2	28.5	29.6
Lead	µg/g	0.5		12.1	12.2	12.8
Nickel	µg/g	0.6		71.1	71.7	74.3
Selenium	µg/g	0.8		0.9	1.0	1.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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Certificate of Analysis - Sample Comments

Workorder 05T113564

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
430802	M.D.L. - Method Detection Limit
430803	M.D.L. - Method Detection Limit
430804	M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T113564

ATTENTION TO: Mike Dutton (04-1112-069)

Soil

DATE	Feb 28, 2005	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	430804	12.7	12.2	4.0%	< 0.6	107%	90%	110%	98%	70%	130%	89%	70%	130%
Cobalt	1	430804	11.6	11.2	3.5%	< 0.3	101%	90%	110%	109%	70%	130%	95%	70%	130%
Copper	1	430804	29.6	28.3	4.5%	< 0.3	100%	90%	110%	112%	70%	130%	91%	70%	130%
Lead	1	430804	12.8	12.3	4.0%	< 0.5	104%	90%	110%	109%	70%	130%	92%	70%	130%
Nickel	1	430804	74.3	71.5	3.8%	< 0.6	90%	90%	110%	109%	70%	130%	97%	70%	130%
Selenium	1	430804	1.0	1.0	0.0%	< 0.8	103%	90%	110%	110%	70%	130%	95%	70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T113564

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT: **GOLDER ASSOCIATES LTD.**
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: **Mike Dutton (04-1112-069)**

CLIENT PROJECT # / NAME: **04-1112-069**

AGAT WORK ORDER: **05T111302**

SOIL ANALYSIS REVIEWED BY: **Elizabeth Polakowska, Analyst**

DATE REPORTED: **February 10, 2005**

PAGES (INCLUDING COVER): **1**

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AGAT WORK ORDER **05T111302**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 10, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428666 05-379	428667 05-380	428668 05-386	428669 05-387	428670 05-388	428671 05-389	428672 05-392	428673 05-397
Arsenic	µg/g	0.6		2.8	36.3	12.9	16.0	66.0	2.5	20.2	36.6
Cobalt	µg/g	0.3		4.3	16.5	24.2	17.2	60.2	3.8	49.1	32.8
Copper	µg/g	0.3		34.0	553	355	428	921	27.3	870	1370
Lead	µg/g	0.5		8.7	35.8	67.7	42.1	91.6	7.7	46.2	291
Nickel	µg/g	0.6		36.5	365	545	407	1320	36.3	1090	927
Selenium	µg/g	0.8		<0.8	3.3	1.7	2.7	3.0	<0.8	2.4	7.4

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T111302**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 10, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428674 05-402	428675 05-403	428676 05-404	428677 05-405	428678 05-406	428679 05-407	428680 05-416	428681 05-417
Arsenic	µg/g	0.6		2.8	4.1	4.0	2.7	2.2	6.5	5.7	2.3
Cobalt	µg/g	0.3		6.7	6.7	7.5	7.9	4.6	12.5	9.1	7.5
Copper	µg/g	0.3		42.7	50.0	93.6	25.3	28.2	244	406	39.8
Lead	µg/g	0.5		6.9	10.0	17.2	5.7	15.7	32.2	15.0	6.3
Nickel	µg/g	0.6		57.2	59.9	94.7	35.1	35.2	190	229	52.9
Selenium	µg/g	0.8		<0.8	1.2	1.1	<0.8	<0.8	2.0	2.9	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T111302**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 10, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428682 05-418	428683 05-419	428684 05-421
Arsenic	µg/g	0.6		4.3	4.4	18.9
Cobalt	µg/g	0.3		4.9	4.2	15.1
Copper	µg/g	0.3		28.1	37.7	279
Lead	µg/g	0.5		7.2	10.3	27.6
Nickel	µg/g	0.6		53.4	48.5	429
Selenium	µg/g	0.8		<0.8	<0.8	1.5

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T111302

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
428666	M.D.L. - Method Detection Limit
428667	M.D.L. - Method Detection Limit
428668	M.D.L. - Method Detection Limit
428669	M.D.L. - Method Detection Limit
428670	M.D.L. - Method Detection Limit
428671	M.D.L. - Method Detection Limit
428672	M.D.L. - Method Detection Limit
428673	M.D.L. - Method Detection Limit
428674	M.D.L. - Method Detection Limit
428675	M.D.L. - Method Detection Limit
428676	M.D.L. - Method Detection Limit
428677	M.D.L. - Method Detection Limit
428678	M.D.L. - Method Detection Limit
428679	M.D.L. - Method Detection Limit
428680	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T111302

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
428681	M.D.L. - Method Detection Limit
428682	M.D.L. - Method Detection Limit
428683	M.D.L. - Method Detection Limit
428684	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD. **AGAT WORK ORDER:** 05T111302

ATTENTION TO: Mike Dutton (04-1112-069)

Soil

DATE Feb 10, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	428667	2.8	2.8	0.0%	< 0.6	94%	90%	110%	85%	70%	130%	91%	70%	130%
Arsenic	1	428676	4.0	3.7	7.8%	< 0.6		90%	110%		70%	130%		70%	130%
Cobalt	1	428667	4.3	4.3	0.0%	< 0.3	92%	90%	110%	93%	70%	130%	96%	70%	130%
Cobalt	1	428676	7.5	7.4	1.3%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	428667	34.0	35.7	4.9%	< 0.3	103%	90%	110%	94%	70%	130%	109%	70%	130%
Copper	1	428676	93.6	89.0	5.0%	< 0.3		90%	110%		70%	130%		70%	130%
Lead	1	428667	8.7	8.8	1.1%	< 0.5	104%	90%	110%	83%	70%	130%	88%	70%	130%
Lead	1	428676	17.2	16.5	4.2%	< 0.5		90%	110%		70%	130%		70%	130%
Nickel	1	428667	36.5	37.8	3.5%	< 0.6	105%	90%	110%	96%	70%	130%	130%	70%	130%
Nickel	1	428676	94.7	90.4	4.6%	< 0.6		90%	110%		70%	130%		70%	130%
Selenium	1	428667	<0.8	<0.8	0.0%	< 0.8	111%	80%	120%	96%	70%	130%	101%	70%	130%
Selenium	1	428676	1.05	0.93	12.1%	< 0.8		90%	110%		70%	130%		70%	130%

Certified By: Elizabeth Polakowska

5623 McADAM ROAD
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AGAT® Laboratories

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T111302

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD.** **2390 ARGENTIA ROAD** **MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Mike Dutton (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T111299**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**February 10, 2005**
PAGES (INCLUDING COVER):	**1**

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AGAT WORK ORDER **05T111299**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 10, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428643 05-334	428644 05-335	428645 05-337	428646 05-339	428647 05-340	428648 05-348	428650 05-349	428651 05-355
Arsenic	µg/g	0.6		93.0	164	15.0	66.8	5.0	53.5	14.1	9.8
Cobalt	µg/g	0.3		65.5	37.4	26.2	78.1	10.9	33.1	16.8	14.8
Copper	µg/g	0.3		1180	1130	1400	1160	377	412	285	249
Lead	µg/g	0.5		76.3	118	145	84.3	11.9	121	29.9	30.8
Nickel	µg/g	0.6		1050	682	753	1310	332	499	397	323
Selenium	µg/g	0.8		3.6	4.4	9.6	3.1	2.3	1.9	1.2	1.0

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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AGAT WORK ORDER **05T111299**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 10, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428652 05-356	428653 05-358	428654 05-362	428655 05-367	428656 05-370	428657 05-373	428658 05-374	428659 05-375
Arsenic	µg/g	0.6		8.2	37.5	3.6	2.5	3.4	5.8	18.5	4.9
Cobalt	µg/g	0.3		10.3	55.1	6.3	2.7	7.3	10.2	17.2	13.6
Copper	µg/g	0.3		163	809	98.7	37.1	54.8	135	535	96.3
Lead	µg/g	0.5		23.0	57.9	13.2	6.4	8.3	17.6	42.9	12.9
Nickel	µg/g	0.6		204	754	78.7	30.3	62.2	175	586	138
Selenium	µg/g	0.8		<0.8	2.4	<0.8	<0.8	<0.8	<0.8	1.6	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis

AGAT WORK ORDER **05T111299**

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 10, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428660 05-377	428661 05-378
Arsenic	µg/g	0.6		3.1	11.4
Cobalt	µg/g	0.3		6.7	19.5
Copper	µg/g	0.3		47.5	261
Lead	µg/g	0.5		11.0	185
Nickel	µg/g	0.6		52.8	326
Selenium	µg/g	0.8		<0.8	1.0

M.D.L. - Method Detection Limit

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Certificate of Analysis - Sample Comments

Workorder 05T111299

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
428643	M.D.L. - Method Detection Limit
428644	M.D.L. - Method Detection Limit
428645	M.D.L. - Method Detection Limit
428646	M.D.L. - Method Detection Limit
428647	M.D.L. - Method Detection Limit
428648	M.D.L. - Method Detection Limit
428650	M.D.L. - Method Detection Limit
428651	M.D.L. - Method Detection Limit
428652	M.D.L. - Method Detection Limit
428653	M.D.L. - Method Detection Limit
428654	M.D.L. - Method Detection Limit
428655	M.D.L. - Method Detection Limit
428656	M.D.L. - Method Detection Limit
428657	M.D.L. - Method Detection Limit
428658	M.D.L. - Method Detection Limit

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Certificate of Analysis - Sample Comments

Workorder 05T111299

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
428659	M.D.L. - Method Detection Limit
428660	M.D.L. - Method Detection Limit
428661	M.D.L. - Method Detection Limit

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T111299

ATTENTION TO: Mike Dutton (04-1112-069)

Soil

DATE Feb 10, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	428643	93.0	90.6	2.6%	< 0.6	90%	90%	110%	89%	70%	130%	88%	70%	130%
Arsenic	1	428654	3.6	3.5	2.8%	< 0.6		90%	110%		70%	130%		70%	130%
Cobalt	1	428643	65.5	61.8	5.8%	< 0.3	108%	90%	110%	98%	70%	130%	96%	70%	130%
Cobalt	1	428654	6.3	6.3	0.0%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	428643	1180	1200	1.7%	< 0.3	96%	90%	110%	99%	70%	130%	109%	70%	130%
Copper	1	428654	98.7	94.2	4.7%	< 0.3		90%	110%		70%	130%		70%	130%
Lead	1	428643	76.3	78.0	2.2%	< 0.5	96%	90%	110%	90%	70%	130%	101%	70%	130%
Lead	1	428654	13.2	12.8	3.1%	< 0.5		90%	110%		70%	130%		70%	130%
Nickel	1	428643	1050	1070	1.9%	< 0.6	103%	90%	110%	98%	70%	130%	130%	70%	130%
Nickel	1	428654	78.7	79.6	1.1%	< 0.6		90%	110%		70%	130%		70%	130%
Selenium	1	428643	3.6	3.7	2.7%	< 0.8	95%	80%	120%	99%	70%	130%	97%	70%	130%
Selenium	1	428654	0.79	0.83	4.9%	< 0.8		80%	120%		70%	130%		70%	130%

Certified By: Elizabeth Rolakowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T111299

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020, SM 31250 B	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD.** **2390 ARGENTIA ROAD** **MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Mike Dutton (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T111274**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**February 08, 2005**
PAGES (INCLUDING COVER):	**1**

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AGAT WORK ORDER **05T111274**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428590 05-382	428591 05-394	428592 05-400	428593 05-398	428594 05-413	428595 05-415	428596 05-351	428597 05-352
Arsenic	µg/g	0.6	17	4.8	9.4	11.2	15.8	12.4	2.6	7.7	**20.4**
Cobalt	µg/g	0.3	21	9.8	15.8	**21.5**	16.1	17.9	4.3	9.3	**25.3**
Copper	µg/g	0.3	85	**224**	**858**	**1100**	**507**	**913**	37.1	**204**	**1370**
Lead	µg/g	0.5	120	50.7	47.9	71.4	**134**	52.9	7.4	59.5	79.4
Nickel	µg/g	0.6	43	**131**	**437**	**495**	**360**	**522**	**44.9**	**156**	**794**
Selenium	µg/g	0.8	1.9	1.6	**6.0**	**4.6**	**3.7**	**5.0**	<0.8	1.5	**8.9**

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER **05T111274**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428598 05-354	428599 05-359	428600 05-364	428601 05-365	428602 05-372	428603 05-376	428604 05-396	428605 05-341
Arsenic	µg/g	0.6	17	**231**	9.5	**17.1**	**145**	10.6	4.3	2.7	13.7
Cobalt	µg/g	0.3	21	**159**	8.2	**26.7**	**64.2**	16.8	5.1	8.4	15.7
Copper	µg/g	0.3	85	**2830**	81.9	**1540**	**1240**	**226**	51.3	38.1	**674**
Lead	µg/g	0.5	120	**207**	19.0	107	**142**	29.7	29.2	8.1	27.7
Nickel	µg/g	0.6	43	**3390**	**111**	**711**	**1240**	**304**	**53.8**	**58.6**	**490**
Selenium	µg/g	0.8	1.9	**6.5**	<0.8	**7.5**	**4.0**	0.8	<0.8	<0.8	**3.6**

M.D.L. - Method Detection Limit
Guideline refers to T1(All)

Certified By: Elizabeth Rolokowska

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Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: **Date Received:** Feb 7, 2005 **Date Reported:** Feb 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428606 05-344	428607 05-346	428608 05-343	428609 05-368	428610 05-369	428611 05-391
Arsenic	µg/g	0.6	17	4.0	3.5	**31.5**	3.6	3.9	3.4
Cobalt	µg/g	0.3	21	9.6	6.7	**38.3**	4.1	7.1	6.3
Copper	µg/g	0.3	85	62.0	56.7	**1850**	37.0	55.9	35.3
Lead	µg/g	0.5	120	88.8	17.7	**235**	12.8	15.9	21.5
Nickel	µg/g	0.6	43	**60.6**	**54.3**	**1320**	39.8	**69.2**	**48.0**
Selenium	µg/g	0.8	1.9	<0.8	<0.8	**7.6**	<0.8	<0.8	<0.8

M.D.L. - Method Detection Limit
Guideline refers to T1(All)

Certified By: Elizabeth Pololowska

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Certificate of Analysis - Sample Comments

Workorder 05T111274

O. Reg. 153 Metals in Soil

Guideline T1(All)

Sample	Comments
428590	M.D.L. - Method Detection Limit
428591	M.D.L. - Method Detection Limit
428592	M.D.L. - Method Detection Limit
428593	M.D.L. - Method Detection Limit
428594	M.D.L. - Method Detection Limit
428595	M.D.L. - Method Detection Limit
428596	M.D.L. - Method Detection Limit
428597	M.D.L. - Method Detection Limit
428598	M.D.L. - Method Detection Limit
428599	M.D.L. - Method Detection Limit
428600	M.D.L. - Method Detection Limit
428601	M.D.L. - Method Detection Limit
428602	M.D.L. - Method Detection Limit
428603	M.D.L. - Method Detection Limit
428604	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T111274

O. Reg. 153 Metals in Soil

Guideline T1(All)

Sample	Comments
428605	M.D.L. - Method Detection Limit
428606	M.D.L. - Method Detection Limit
428607	M.D.L. - Method Detection Limit
428608	M.D.L. - Method Detection Limit
428609	M.D.L. - Method Detection Limit
428610	M.D.L. - Method Detection Limit
428611	M.D.L. - Method Detection Limit

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD. **AGAT WORK ORDER:** 05T111274

ATTENTION TO: Mike Dutton (04-1112-069)

Soil

DATE Feb 8, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	428590	4.8	4.9	2.1%	< 0.6	95%	90%	110%	90%	70%	130%	90%	70%	130%
Arsenic	1	428600	17.1	17.2	0.6%	< 0.6		90%	110%		70%	130%		70%	130%
Cobalt	1	428590	9.8	10.0	2.0%	< 0.3	108%	90%	110%	92%	70%	130%	89%	70%	130%
Cobalt	1	428600	26.7	26.7	0.0%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	428590	224	236	5.2%	< 0.3	100%	90%	110%	98%	70%	130%	98%	70%	130%
Copper	1	428600	1540	1570	1.9%	< 0.3		90%	110%		70%	130%		70%	130%
Lead	1	428590	50.7	53.4	5.2%	< 0.5	108%	90%	110%	91%	70%	130%	98%	70%	130%
Lead	1	428600	107	104	2.8%	< 0.5		90%	110%		70%	130%		70%	130%
Nickel	1	428590	131	139	5.9%	< 0.6	109%	90%	110%	95%	70%	130%	94%	50%	150%
Nickel	1	428600	711	708	0.4%	< 0.6		90%	110%		70%	130%		70%	130%
Selenium	1	428590	1.6	1.7	6.1%	< 0.8	104%	80%	120%	102%	70%	130%	99%	70%	130%
Selenium	1	428600	7.5	8.0	6.5%	< 0.8		80%	120%		70%	130%		70%	130%

Certified By: Elizabeth Rolokowska

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T111274

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT:	**GOLDER ASSOCIATES LTD.** **2390 ARGENTIA ROAD** **MISSISSAUGA, ON L5N5Z7**
ATTENTION:	**Mike Dutton (04-1112-069)**
CLIENT PROJECT # / NAME:	**04-1112-069**
AGAT WORK ORDER:	**05T111277**
SOIL ANALYSIS REVIEWED BY:	**Elizabeth Polakowska, Analyst**
DATE REPORTED:	**February 08, 2005**
PAGES (INCLUDING COVER):	**1**

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AGAT WORK ORDER **05T111277**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Feb 4, 2005 **Date Received:** Feb 4, 2005 **Date Reported:** Feb 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428612 05-395	428613 05-385	428614 05-384	428615 05-383	428616 05-381	428617 05-393	428618 05-347	428619 05-390
Arsenic	µg/g	0.6		105	66.6	3.7	5.4	4.8	3.5	18.7	29.4
Cobalt	µg/g	0.3		31.1	66.1	7.0	11.9	7.7	6.0	23.4	24.6
Copper	µg/g	0.3		493	1160	80.2	266	80.7	70.5	555	287
Lead	µg/g	0.5		50.1	112	15.8	29.7	23.7	11.0	150	36.2
Nickel	µg/g	0.6		584	1260	82.2	273	90.0	68.7	772	396
Selenium	µg/g	0.8		2.4	3.0	<0.8	1.2	<0.8	<0.8	1.9	1.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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AGAT WORK ORDER 05T111277

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Feb 4, 2005 **Date Received:** Feb 4, 2005 **Date Reported:** Feb 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428620 05-342	428621 05-345	428622 05-371	428623 05-363	428624 05-361	428625 05-357	428626 05-353	428627 05-420
Arsenic	µg/g	0.6		5.1	83.6	2.2	250	10.1	4.1	262	214
Cobalt	µg/g	0.3		8.1	112	4.9	79.6	150	6.7	135	55.0
Copper	µg/g	0.3		168	1560	28.0	1550	553	62.0	2440	1060
Lead	µg/g	0.5		24.7	105	16.8	139	45.1	15.1	179	119
Nickel	µg/g	0.6		121	1810	35.6	1300	421	85.2	2460	1070
Selenium	µg/g	0.8		1.6	4.3	<0.8	6.0	4.7	<0.8	8.2	3.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER **05T111277**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Feb 4, 2005 **Date Received:** Feb 4, 2005 **Date Reported:** Feb 8, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428628 05-414	428629 05-412	428630 05-411	428631 05-410	428632 05-408	428633 05-399	428634 05-401
Arsenic	µg/g	0.6		1.5	2.9	2.7	5.4	93.9	22.7	4.5
Cobalt	µg/g	0.3		4.6	4.0	4.3	9.3	56.2	29.8	10.2
Copper	µg/g	0.3		15.4	30.4	20.2	110	1550	1940	124
Lead	µg/g	0.5		3.3	8.7	6.7	25.1	129	81.2	46.5
Nickel	µg/g	0.6		21.8	36.2	29.7	110	1290	847	125
Selenium	µg/g	0.8		<0.8	<0.8	<0.8	<0.8	4.2	8.9	0.9

M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolokowska

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Certificate of Analysis - Sample Comments

Workorder 05T111277

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
428612	M.D.L. - Method Detection Limit
428613	M.D.L. - Method Detection Limit
428614	M.D.L. - Method Detection Limit
428615	M.D.L. - Method Detection Limit
428616	M.D.L. - Method Detection Limit
428617	M.D.L. - Method Detection Limit
428618	M.D.L. - Method Detection Limit
428619	M.D.L. - Method Detection Limit
428620	M.D.L. - Method Detection Limit
428621	M.D.L. - Method Detection Limit
428622	M.D.L. - Method Detection Limit
428623	M.D.L. - Method Detection Limit
428624	M.D.L. - Method Detection Limit
428625	M.D.L. - Method Detection Limit
428626	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Certificate of Analysis - Sample Comments

Workorder 05T111277

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments
428627	M.D.L. - Method Detection Limit
428628	M.D.L. - Method Detection Limit
428629	M.D.L. - Method Detection Limit
428630	M.D.L. - Method Detection Limit
428631	M.D.L. - Method Detection Limit
428632	M.D.L. - Method Detection Limit
428633	M.D.L. - Method Detection Limit
428634	M.D.L. - Method Detection Limit

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T111277

ATTENTION TO: Mike Dutton (04-1112-069)

Soil

DATE	Feb 8, 2005	Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	428612	105	110	4.7%	< 0.6	96%	90%	110%	91%	70%	130%	79%	70%	130%
Arsenic	1	428622	2.2	2.2	0.0%	< 0.6		90%	110%		70%	130%		70%	130%
Arsenic	1	428632	93.9	96.2	2.4%	< 0.6		90%	110%		70%	130%		70%	130%
Cobalt	1	428612	31.3	32.2	2.8%	< 0.3	110%	90%	110%	99%	70%	130%	111%	70%	130%
Cobalt	1	428632	56.2	55.3	1.6%	< 0.3		90%	110%		70%	130%		70%	130%
Cobalt	1	428622	4.9	4.9	0.0%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	428612	493	510	3.4%	< 0.3	102%	90%	110%	99%	70%	130%	94%	70%	130%
Copper	1	428622	28.0	27.6	1.4%	< 0.3		90%	110%		70%	130%		70%	130%
Copper	1	428632	1550	1540	0.6%	< 0.3		90%	110%		70%	130%		70%	130%
Lead	1	428612	50.1	50.8	1.4%	< 0.5	103%	90%	110%	87%	70%	130%	71%	70%	130%
Lead	1	428632	129	128	0.8%	< 0.5		90%	110%		70%	130%		70%	130%
Lead	1	428622	16.8	16.9	0.6%	< 0.5		90%	110%		70%	130%		70%	130%
Nickel	1	428612	584	602	3.0%	< 0.6	105%	90%	110%	98%	70%	130%	94%	70%	130%
Nickel	1	428632	1290	1270	1.6%	< 0.6		90%	110%		70%	130%		70%	130%
Nickel	1	428622	35.6	35.7	0.3%	< 0.6		90%	110%		70%	130%		70%	130%
Selenium	1	428612	2.4	2.6	8.0%	< 0.8	106%	80%	120%	102%	70%	130%	90%	70%	130%
Selenium	1	428632	4.2	4.2	0.0%	< 0.8		80%	120%		70%	130%		70%	130%
Selenium	1	428622	<0.8	<0.8	0.0%	< 0.8		80%	120%		70%	130%		70%	130%

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T111277

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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CLIENT: **GOLDER ASSOCIATES LTD.**
2390 ARGENTIA ROAD
MISSISSAUGA, ON L5N5Z7

ATTENTION: **Mike Dutton (04-1112-069)**

CLIENT PROJECT # / NAME: **04-1112-069**

AGAT WORK ORDER: **05T110637**

WATER ANALYSIS REVIEWED BY: **Elizabeth Polakowska, Analyst**

SOIL ANALYSIS REVIEWED BY: **Elizabeth Polakowska, Analyst**

DATE REPORTED: **February 02, 2005**

PAGES (INCLUDING COVER): **1**

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998 or by email at env@agatlabs.com

All Samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T110637

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Arsenic	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Cobalt	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Copper	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Lead	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS
Selenium	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS

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Method Summary

Client Name: GOLDER ASSOCIATES LTD. **AGAT Work Order:** 05T110637

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			
Arsenic	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Cobalt	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Copper	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Lead	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Nickel	MET 1003	EPA SW 846 3050B & 6020	ICP-MS
Selenium	MET 1003	EPA SW 846 3050B & 6020	ICP-MS

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T110637

ATTENTION TO: Mike Dutton (04-1112-069)

Water

DATE Feb 2, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]															
Arsenic	1	428292	222	195	12.9%	<1.0	103%	90%	110%		90%	110%		70%	130%
Cobalt	1	428292	278	282	1.4%	<0.5	101%	90%	110%		90%	110%		70%	130%
Copper	1	428292	4600	4930	6.9%	<1.0	103%	90%	110%		90%	110%		70%	130%
Lead	1	428292	382	406	6.1%	<2.0	103%	90%	110%		90%	110%		70%	130%
Nickel	1	428292	6620	6700	1.2%	< 1.0	101%	90%	110%		90%	110%		70%	130%
Selenium	1	428292	7.3	6.4	13.1%	< 2.0	103%	90%	110%		90%	110%		70%	130%

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 05T110637

ATTENTION TO: Mike Dutton (04-1112-069)

Soil

DATE Feb 2, 2005		Duplicate				Reference Material				Method Blank Spike			Matrix Spike		
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 Metals in Soil															
Arsenic	1	428276	53.0	57.3	7.8%	< 0.6	101%	90%	110%	97%	70%	130%		70%	130%
Cobalt	1	428276	68.8	72.2	4.8%	< 0.3	94%	90%	110%	98%	70%	130%		70%	130%
Copper	1	428276	1013	1058	4.3%	< 0.3	97%	90%	110%	98%	70%	130%		70%	130%
Lead	1	428276	57.3	62.8	9.2%	< 0.5	108%	90%	110%	94%	70%	130%		70%	130%
Nickel	1	428276	1342	1403	4.4%	< 0.6	107%	90%	110%	99%	70%	130%		70%	130%
Selenium	1	428276	2.5	2.7	7.7%	< 0.8	113%	80%	120%	104%	70%	130%		70%	130%

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Certificate of Analysis - Sample Comments

Workorder 05T110637

428268	M.D.L. - Method Detection Limit
428269	M.D.L. - Method Detection Limit
428270	M.D.L. - Method Detection Limit
428271	M.D.L. - Method Detection Limit
428272	M.D.L. - Method Detection Limit
428273	M.D.L. - Method Detection Limit
428274	M.D.L. - Method Detection Limit
428275	M.D.L. - Method Detection Limit
428276	M.D.L. - Method Detection Limit
428277	M.D.L. - Method Detection Limit

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Certificate of Analysis - Sample Comments

Workorder 05T110637

Metals Scan [liquid]

Guideline None

Sample	Comments
428278	M.D.L. - Method Detection Limit Liquid samples were diluted prior to Metals scan due to their organic nature and high Chloride concentration; the reported MDL has been increased according to dilution.
428280	M.D.L. - Method Detection Limit
428281	M.D.L. - Method Detection Limit
428283	M.D.L. - Method Detection Limit
428284	M.D.L. - Method Detection Limit
428285	M.D.L. - Method Detection Limit
428288	M.D.L. - Method Detection Limit
428289	M.D.L. - Method Detection Limit
428291	M.D.L. - Method Detection Limit
428292	M.D.L. - Method Detection Limit

O. Reg. 153 Metals in Soil

Guideline None

Sample	Comments

Certified By: Elizabeth Rolakowska

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Certificate of Analysis

AGAT WORK ORDER **05T110637**

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

Metals Scan [liquid]

Date Sampled: Dec 13, 2004 **Date Received:** Feb 1, 2005 **Date Reported:** Feb 2, 2005 **Sample Type:** liquid

	Unit	MDL	Guideline	428291 05-366	428292 05-409
Arsenic	ug/L	1.0		5.3	222
Cobalt	ug/L	0.5		16.5	278
Copper	ug/L	1.0		461	4610
Lead	ug/L	2.0		57.4	382
Nickel	ug/L	1.0		204	6620
Selenium	ug/L	2.0		4.3	7.3

M.D.L. - Method Detection Limit

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AGAT WORK ORDER **05T110637**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

Metals Scan [liquid]

Date Sampled: Dec 13, 2004 **Date Received:** Feb 1, 2005 **Date Reported:** Feb 2, 2005 **Sample Type:** liquid

	Unit	MDL	Guideline	428278 05-336 FULL	428280 05-338 FULL	428281 05-350 FULL	428283 05-366 FULL	428284 05-409 FULL	428285 05-336	428288 05-338	428289 05-350
Arsenic	ug/L	1.0		40.6	105	97.5	10.7	184	45.6	71.2	125
Cobalt	ug/L	0.5		56.0	167	80.7	15.4	221	67.0	190	94.9
Copper	ug/L	1.0		5530	22300	2250	462	5360	5030	21700	1830
Lead	ug/L	2.0		160	220	24.6	22.4	126	750	604	175
Nickel	ug/L	1.0		1840	6960	1420	333	6150	1860	7170	1260
Selenium	ug/L	2.0		15.7	42.0	14.2	<2.0	16.7	8.7	21.6	5.0

M.D.L. - Method Detection Limit

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AGAT WORK ORDER **05T110637**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Dec 13, 2004 **Date Received:** Feb 1, 2005 **Date Reported:** Feb 2, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428276 05-409 #60	428277 05-409 TOTAL
Arsenic	µg/g	0.6		53.0	56.5
Cobalt	µg/g	0.3		68.8	72.1
Copper	µg/g	0.3		1010	1050
Lead	µg/g	0.5		57.3	64.7
Nickel	µg/g	0.6		1340	1380
Selenium	µg/g	0.8		2.5	2.7

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

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AGAT WORK ORDER **05T110637**

Certificate of Analysis

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION: Mike Dutton (04-1112-069)

O. Reg. 153 Metals in Soil

Date Sampled: Nov 30, 2004 **Date Received:** Feb 1, 2005 **Date Reported:** Feb 2, 2005 **Sample Type:** Soil

	Unit	MDL	Guideline	428268 05-336 TOTAL	428269 05-338 TOTAL	428270 05-350 TOTAL	428271 05-366 TOTAL	428272 05-336 #60	428273 05-338 #60	428274 05-350 #60	428275 05-366 #60
Arsenic	µg/g	0.6		13.5	25.8	39.5	2.8	15.5	25.7	37.6	3.0
Cobalt	µg/g	0.3		19.5	46.3	26.9	6.3	18.5	47.8	25.9	6.1
Copper	µg/g	0.3		819	2750	301	50.9	754	2670	330	58.9
Lead	µg/g	0.5		102	84.8	31.2	9.0	105	83.9	29.6	9.2
Nickel	µg/g	0.6		485	1470	343	55.4	481	1500	370	59.1
Selenium	µg/g	0.8		4.9	13.2	1.2	<0.8	4.3	13.2	1.2	<0.8

M.D.L. - Method Detection Limit

Certified By: Elizabeth Polakowska

APPENDIX C

GOLDER'S METHOD DEVELOPMENT RATIONALE

C.0 GOLDER'S METHOD DEVELOPMENT RATIONALE

C.1 Literature Review

As the first step in the development of an *in vitro* digestion method to investigate bioaccessibility of soil contaminants, Golder conducted a comprehensive literature review to access the work completed to date on *in vitro* bioaccessibility testing. The majority of the *in vitro* methods developed are sequential extractions with two major phases: (i) a gastric phase extraction to simulate the acidic environment of the stomach; and, (ii) an intestinal phase extraction to simulate the environment of the small intestine. Of the methods published to date, differences among the various methods include the following experimental parameters:

- composition of the extraction fluids;
- residence time (in the gastric and intestinal compartments);
- pH (of the gastric and intestinal compartments);
- fluid volume-to-soil ratios;
- soil fraction size; and,
- method of mixing.

Despite these differences, bioaccessibility measurements among methods, particularly for lead and arsenic, have been shown to compare favourably, indicating that these methods can be used to accurately predict bioavailability. It should be noted that bioaccessibility is an overestimation of bioavailability as it takes into account only what is solubilized from the soil matrix. Only a portion of the metal that is solubilized will pass through the intestinal epithelium, and only a portion of that amount will escape metabolism and/or excretion and exert toxicity. Therefore, by assuming that bioaccessibility is equal to bioavailability in a HHRA, an extra conservative measure is taken.

C.2 Parameters Used in Golder's Methodology

Golder's method was developed to represent a worst-case scenario of oral exposure to metal-contaminated soil, but also to be realistic and technically feasible. As such, it was designed to mimic the gastrointestinal physiology of a human under fasting conditions. Children are believed to be at the greatest risk for metal exposure due to incidental soil ingestion from frequent hand-to-mouth behaviour and fasting conditions tend to produce the highest concentrations of dissolved metals, and hence, the highest estimates of bioaccessibility. However, the residence time in the gut of a child is much shorter and the pH is higher than in an adult, suggesting that the bioaccessibility of metal-contaminated soils would be less in children. However, for some metals tested, children tend to absorb much more than an adult due to differences in the physiology of the intestinal membrane (non-selective uptake of metals in children)(Daston *et al.*, 2004).

However, to predict the worst-case scenario for bioaccessibility, Golder's method uses lower pH values and longer residence times, as measured in adults

C.2.1 Compartments of the Gastrointestinal Tract

The human gastrointestinal tract is comprised of the mouth, esophagus, stomach, small intestine, large intestine and rectum. Since food digestion and absorption, and metal mobilization and absorption (Diamond *et al.*, 1997) mainly occur in the stomach and small intestine, only these compartments were considered in this model. In addition, temperature throughout the procedure was maintained at 37°C to mimic normal human body temperature.

C.2.2 Soil Fraction Size

Although there continues to be some controversy surrounding the issue of soil fraction size the ≤250 μm fraction is the soil fraction thought to most likely adhere to hands and be ingested from hand-to-mouth behaviour (Driver *et al.*, 1989). In addition, it is the soil fraction size that has been used to validate the *in vitro* methods to *in vivo* animal studies (Ruby *et al.*, 1996;Rodriguez *et al.*, 1999a);(Schroder *et al.*, 2004). For these reasons, Golder uses this soil fraction in its bioaccessibility testing. However, research is currently being conducted to determine if smaller fractions could potentially be more representative.

C.2.3 Fluid Volume-to-Soil Ratio

The fluid volume-to-soil ratio is another aspect of bioaccessibility testing that is currently the focus of research, including the method validation research being conducted at Golder. Approximately, 2 L of gastric juice is released to the stomach of a child or an adult in a 24-hour period under fed conditions (Lentner, 1981), yielding a throughput of approximately 80 mL per hour. However, the volume of gastric juice released is likely to be less under fasting conditions. A child, typically ingest more soil than an adult, typically anywhere from 80 (CCME, 1996) to 400 mg (U.S.EPA, 1997)(US EPA, 2000) of soil per day, yielding a fluid volume-to-soil ratio of 1000:1 and 200:1 in the stomach, respectively, if all of the soil is consumed within 1 hour. Given that the average toddler is outdoors for 175 min/day (U.S.EPA, 1997), and assuming the daily volume of soil is consumed over a 3-hour period, then the ratios could be as high as 3000:1 and 601:1, for ingestion of 80 and 100 mg of soil, respectively. Golder has selected a fluid volume-to-soil ratio of 100:1 for its method for a number of reasons, despite the view that a higher fluid volume-to-soil ratio would be more physiologically representative. The rationale for this is as follows:

- the 100:1 fluid volume-to-soil ratio is used in other *in vitro* methods that have been validated with *in vivo* studies, that is, results of the *in vitro* methods were able to accurately predict bioavailability in the animal studies, and Golder's method is similar to these validated *in vitro* methods;

- a 100:1 fluid volume-to-soil ratio does not result in any solubility limitations on metal bioaccessibility for the metals studied (i.e., as the concentration of the metal increased, the bioaccessibility increased). If solubility limitations were an issue, bioaccessibility may have decreased as the metal concentration increased); and,
- the use of a 100:1 fluid volume-to-soil ratio alleviates some of the issues related to analytical detection of the metals. If higher dilution ratios are used, there is a risk of diluting the contaminant to below method detection limits (MDLs) thereby underestimating potential bioavailability.

Golder's review of these various bioaccessibility methods in the literature suggested that the primary source of variability for extraction would be the ratio of soil to extraction fluid, as the digestive process is essentially a hydrochloric acid digestion of ingested particles (i.e., food, soil, etc.). In order for a metal or metalloid to be entirely released from the soil matrix, there must be an excess of acid, as soils have a general capacity to buffer strong acid. This buffering capacity of soils can be quite variable, and as a general principle for the development of a soil bioaccessibility method, a large ratio of extraction fluid (e.g., simulated stomach acid) to soil is required to provide sufficient acidity to maximize the leaching process and provide a conservative assessment of bioaccessibility. To test this, a series of extractant : soil ratios were examined for a certified reference soil (Montana Standard 2711; NIST (U.S. National Institute of Standards and Technology)) in order to determine the appropriate conditions for leaching.

Figure C-1 illustrates isotherms for the extraction of four metals (i.e. bioaccessibility estimates) for the range of extractant : soil ratios examined. Clear trends in increased extraction were observed with increasing ratios of acid relative to soil. These findings are similar to those of Oomen *et al.* (2002), who observed the highest degree of extraction in the methods with the highest ratio of extraction fluid to soil. Other researchers (Hamel *et al.* 1998) have demonstrated that extractant : soil ratios between 100 and 5000 did not appreciably increase bioaccessibility from a certified reference soil.

C.2.4 Residence Time and pH

Golder's bioaccessibility testing method utilizes a residence time of 2 hours in the stomach and 2 hours in the small intestine. The residence time in the stomach is longer and in the small intestine shorter than times reported in the literature of 1 hour (Smith *et al.*, 1993) and 3.5 hours (Murphy *et al.*, 1988;Vajro *et al.*, 1988), respectively, in children, in a fed state. However, the residence times in the unfed state, the state simulated in Golder's method, are expected to be much shorter. Regardless, the longer residence times used by Golder are more representative of the residence times in adults (Daugherty and Mrsny, 1999) and will overestimate metal bioaccessibility, keeping with the overall conservative nature of the method.

The pH of the gastric compartment will vary depending on the proximity to a feeding event. The lowest pH values are detected during an unfed state, and result in the highest solubilization of

metals from soil. Mean gastric pH values of 1.8 and 2.0 have been recorded in children (Anderson *et al.*, 1999). However, given the sample size (n=81) and the method used to obtain the pH values in that study, Golder chose to remain conservative and use a pH value of 1.5 for the gastric phase. The pH value of the small intestine changes from 4-5.5 in the duodenum to 7-7.5 in the ileum (Daugherty and Mrsny, 1999). A pH value of 7 was used for the intestinal phase.

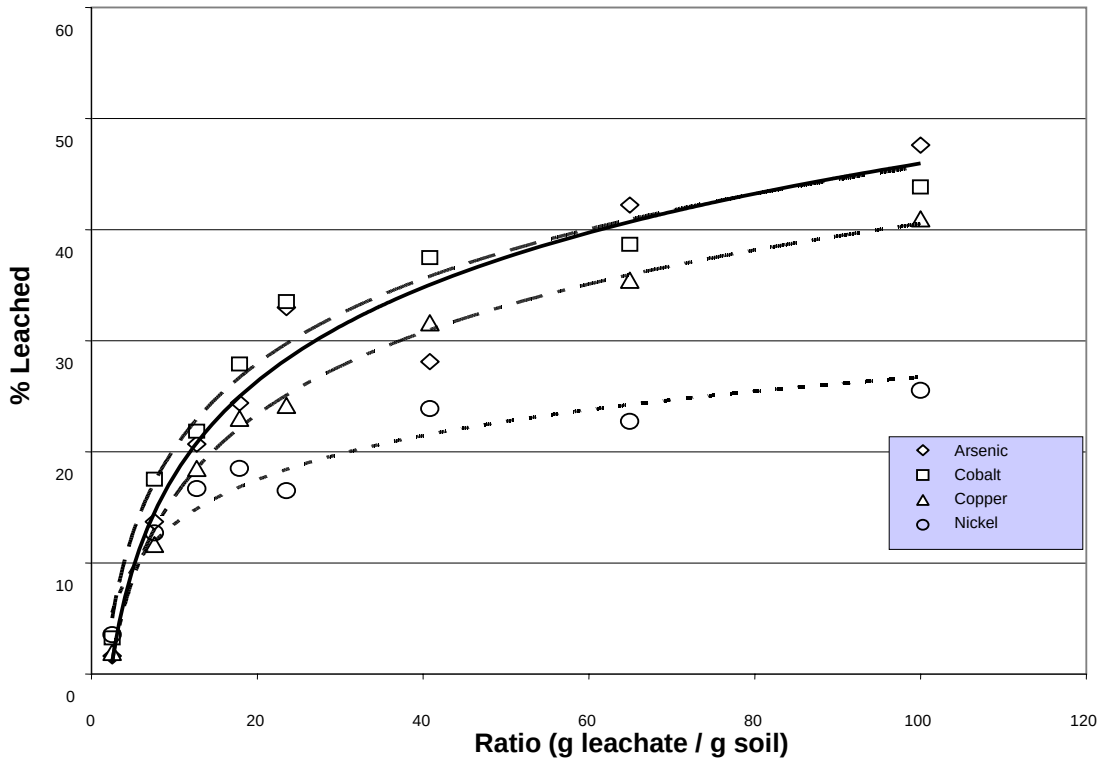

Figure C-1: Bioaccessibility of Elements from NIST Montana II Soil Using Different Extractant-to-Soil Ratios.

C.2.5 Mixing and Extraction Apparatus

Mixing in the stomach and small intestine occurs by peristalsis, whereby smooth muscle contractions mix and propel food through the gastrointestinal system. To simulate gastric and intestinal mixing, published *in vitro* models have utilized end-over-end mixing in a water bath (Oomen *et al.*, 2003), paddle stirring in a water bath (Schroder *et al.*, 2003) (Rodriguez *et al.*, 1999b), wrist-action shaking in a water bath (Ruby *et al.*, 1993), and rotary-shaking in a water bath (Kientz *et al.*, 2003). Golder's methodology utilizes a back-and-forth rocking motion (at an angle of 11°) in an incubation oven (Boekel "Shake 'N Bake" DNA hybridization oven) maintained at a temperature of 37°C (Figure C-2). This oven is equipped with a rotating rotor hinged to one side of the incubator. This allows for a back-and-forth/up-and-down rocking motion at a speed of 25 strokes per minute; this is thought to be more representative of conditions

most likely to exist in humans during the digestive process. This apparatus also allows for the use of disposable incubation vessels (WhirlPak Bags, Nasco) that reduce the potential for cross-contamination among samples. Testing conducted to date using this method indicates that the extraction of a certified standard reference soil (NIST SRM 2711) is comparable with that reported in the literature. Therefore, this extraction apparatus is appropriate and has been adopted by Golder for routine bioaccessibility testing.

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Figure C-2: Bioaccessibility Incubator Apparatus (Boekel Scientific Shake N' Bake DNA Hybridization Oven, Model 136400).

For a summary of the Golder method please refer to section 2.2 of the Report.

APPENDIX D

SOIL, DUST AND EXTRACTION FLUID ANAYLTICAL RESULTS AND BIOACCESSIBILITY ESTIMATES

Soil and Extraction Fluid Analytical Results and Bioaccessibility Estimates

		Golder ID	05-334	05-335	05-336	05-337	05-338	05-339	05-340	05-341	05-342	05-343	05-344	05-345	05-346	05-347	05-348	05-349	05-350	05-351	05-352	05-353	05-354	05-355	05-356	05-357	05-358	05-359	05-361
		CANTOX ID	501	502	504	505	506	507	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	528	529	530
Parameter	**Units**	**Detection Limit**																											
Arsenic	µg/L	1	154.6	405.6	39.2	41.1	103.6	140.6	30.1	54.6	16.7	95.4	7.8	181.6	8.1	36.9	117.6	51.7	96.1	30.4	92	390.6	427.6	38.4	28.8	11.5	136.6	34.9	48
Cobalt	µg/L	0.5	158.7	91.3	52.7	63.5	163.7	182.7	34.2	51.4	15.6	128.7	10.9	194.7	10.3	84	72	46.9	77.4	23.8	99.7	259.7	304.7	43.4	26.4	13.4	163.7	23.4	45.2
Copper	µg/L	1	5666.08	6706.08	5466.08	7986.08	22236.08	5366.08	2966.08	5636.08	1286.08	10436.08	302.08	6766.08	314.08	3666.08	2366.08	1676.08	2186.08	1496.08	9436.08	13636.08	12136.08	1686.08	1096.08	372.08	5316.08	532.08	4246.08
Lead	µg/L	2	115.03	231.03	150.03	312.03	210.03	114.03	20.43	41.93	31.63	502.03	60.33	124.03	33.33	229.03	36.93	55.43	14.63	98.03	168.03	119.03	203.03	66.13	40.03	28.63	129.03	32.83	88.73
Nickel	µg/L	1	4673.8	3393.8	1673.8	2903.8	6793.8	4453.8	1693.8	2513.8	378.8	4873.8	47.8	6653.8	106.8	3953.8	1873.8	1593.8	1253.8	725.8	4223.8	9793.8	9933.8	1213.8	536.8	238.8	3343.8	482.8	2533.8
Selenium	µg/L	2	-0.26	7.84	14.44	5.48	40.74	1.24	1.24	1.24	1.24	19.64	0	1.24	0	1.24	1.24	0	12.94	1.24	19.44	7.6	6.55	1.24	1.24	1.24	1.24	1.24	1.24
Parameter	**Units**	**Detection Limit**																											
Arsenic	µg/g	0.6	112	196	15.5	17.6	25.7	78.4	6	14.3	5.7	27.7	4	29.7	3.8	18.6	71.8	15.7	37.6	8	23.6	285	255	10.3	9.3	4	50	9.7	10.3
Cobalt	µg/g	0.3	60.1	37.2	18.5	24.1	47.8	82.5	11.8	16.9	8.4	38.4	10.2	39.8	6.9	21.5	26.3	15.4	25.9	12.2	28.5	135	163	15.4	10	6	65	8.8	14.1
Copper	µg/g	0.3	1040	982	754	1140	2670	1230	405	760	190	1620	67	1480	60	487	395	272	330	230	1260	2680	3060	266	170	61	1240	84.6	540
Lead	µg/g	0.5	94.1	150	105	154	83.9	97.7	14.1	32	20.3	195	74	189	23	131	50.4	30.5	29.6	63	85.5	201	206	35.3	22.6	14.5	81	19.7	40.2
Nickel	µg/g	0.6	1030	672	481	685	1500	1480	359	546	132	1320	67.3	1230	57.1	742	503	376	370	199	872	2890	4080	338	210	85.6	1160	118	429
Selenium	µg/g	0.8	4.1	4.3	4.3	8.8	13.2	3.3	2.6	4.2	2	6.4	*0.4*	6.6	*0.4*	1.8	1.7	1.3	1.2	1.8	9.5	8	6.9	1	0.9	*0.4*	2.7	*0.4*	5.1
Parameter	**Units**	**Detection Limit**																											
Arsenic	µg/g	0.6	93	164	13.50	15	25.80	66.8	5	13.7	5.1	31.5	4	83.6	3.5	18.7	53.5	14.1	39.50	7.7	20.4	262	231	9.8	8.2	4.1	37.5	9.5	10.1
Cobalt	µg/g	0.3	65.5	37.4	19.50	26.2	46.30	78.1	10.9	15.7	8.1	38.3	9.6	112	6.7	23.4	33.1	16.8	26.90	9.3	25.3	135	159	14.8	10.3	6.7	55.1	8.2	150
Copper	µg/g	0.3	1180	1130	819.00	1400	2750.00	1160	377	674	168	1850	62	1560	56.7	555	412	285	301.00	204	1370	2440	2830	249	163	62	809	81.9	553
Lead	µg/g	0.5	76.3	118	102.00	145	84.80	84.3	11.9	27.7	24.7	235	88.8	105	17.7	150	121	29.9	31.20	59.5	79.4	179	207	30.8	23	15.1	57.9	19	45.1
Nickel	µg/g	0.6	1050	682	485.00	753	1470.00	1310	332	490	121	1320	60.6	1810	54.3	772	499	397	343.00	156	794	2460	3390	323	204	85.2	754	111	421
Selenium	µg/g	0.8	3.6	4.4	4.90	9.6	13.20	3.1	2.3	3.6	1.6	7.6	*0.40*	4.3	*0.40*	1.9	1.9	1.2	1.20	1.5	8.9	8.2	6.5	1	*0.40*	*0.40*	2.4	*0.40*	4.7
Total volume of extraction fluid (L)			0.1025	0.1026	0.1022	0.1025	0.1026	0.1022	0.1023	0.1022	0.1029	0.1023	0.1022	0.1022	0.1022	0.1026	0.1025	0.1026	0.1021	0.1026	0.1028	0.1022	0.1022	0.1024	0.1027	0.1026	0.1024	0.1024	0.1026
Total mass of soil (g)			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parameter	**Units**	**Detection Limit**																											
Arsenic	%	na	14.1	21.2	25.8	23.9	41.4	18.3	51.3	39.0	30.1	35.2	19.9	62.5	21.8	20.4	16.8	33.8	26.1	39.0	40.1	14.0	17.1	38.2	31.8	29.5	28.0	36.8	47.8
Cobalt	%	na	27.1	25.2	29.1	27.0	35.1	22.6	29.6	31.1	19.1	34.3	10.9	50.0	15.3	40.1	28.1	31.2	30.5	20.0	36.0	19.7	19.1	28.9	27.1	22.9	25.8	27.2	32.9
Copper	%	na	55.8	70.1	74.1	71.8	85.4	44.6	74.9	75.8	69.7	65.9	46.1	46.7	53.5	77.2	61.4	63.2	67.6	66.7	77.0	52.0	40.5	64.9	66.2	62.6	43.9	64.4	80.7
Lead	%	na	12.5	15.8	14.6	20.8	25.7	11.9	14.8	13.4	16.0	26.3	8.3	6.7	14.8	17.9	7.5	18.6	5.0	16.0	20.2	6.1	10.1	19.2	18.2	20.3	16.3	17.1	22.6
Nickel	%	na	46.5	51.8	35.6	43.5	46.5	30.8	48.3	47.1	29.5	37.8	7.3	55.3	19.1	54.7	38.2	43.5	34.6	37.4	49.8	34.6	24.9	36.8	26.3	28.6	29.5	41.9	60.6
Selenium	%	na	0.0	18.7	34.3	6.4	31.7	3.8	4.9	3.0	6.4	31.4	0.0	1.9	0.0	7.1	7.5	0.0	110.1	7.1	21.0	9.7	9.7	12.7	14.1	31.8	4.7	31.7	2.5

Notes:

Concentrations in italics represent concentrations that were below method detection limits.

Extraction fluid metal concentrations were corrected for the mean bottle blanks of 1.4, 3.3, 63.92, 9.97, 166.2 and 1.26 µg/L for arsenic, cobalt, copper, lead, nickel and selenium, respectively.

Metal soil bioaccessibilities were calculated based on the metal concentrations in the <250 µm fraction.

na = not applicable.

Data for sample 05-420 was not included on any Figures or in the calculations of the means and 95UCLs for all metals because of an analytical issue with the laboratory that could not be resolved.

05-362	05-363	05-364	05-365	05-366	05-367	05-368	05-369	05-370	05-371	05-372	05-373	05-374	05-375	05-376	05-377	05-378	05-379	05-380	05-381	05-382	05-383	05-384	05-385	05-386	05-387	05-388	05-389	05-390	05-391	05-392	05-393
531	532	533	534	541	542	546	547	550	551	552	553	554	557	559	530	561	562	563	564	565	566	567	568	569	570	571	572	573	574	577	579
Metal Concentration in Extraction Fluid																															
26.8	933.6	46.2	626.6	9.3	11.7	6	11.3	13.8	8.4	18.7	22.8	87.9	15	13	11.7	38.4	7.5	37	17.8	20.4	26.5	12.3	200.6	34.2	53.3	198.6	11	85.2	9.2	66.5	13.7
15	316.7	52.8	165.7	12.1	1.3	6.5	17.4	14.8	7.9	35.9	28.5	58.2	32.5	11.8	10.4	70	5.2	48.7	25.1	35	18.3	11.2	168.7	71.3	53.6	154.7	5	81.5	10.5	123.7	12.9
757.08	9616.08	8446.08	7306.08	398.08	193.08	277.08	378.08	411.08	197.08	785.08	833.08	4106.08	517.08	304.08	279.08	2036.08	175.08	4466.08	507.08	1436.08	1256.08	445.08	4906.08	1756.08	3736.08	4356.08	168.08	1716.08	269.08	3396.08	426.08
21.53	415.03	115.03	286.03	12.43	1.63	0	8.33	0	19.73	42.63	17.43	109.03	4.23	70.03	10.13	367.03	2.83	71.33	42.23	86.73	60.13	13.73	270.03	77.23	60.23	147.03	6.43	59.53	21.63	64.03	7.93
267.8	7723.8	2213.8	4763.8	166.8	75.8	114.8	219.8	222.8	104.8	893.8	585.8	3523.8	525.8	187.8	162.8	1103.8	57.8	2173.8	302.8	537.8	450.8	204.8	4983.8	1663.8	2093.8	5073.8	5.8	2173.8	202.8	4113.8	231.8
1.24	9.94	1.24	15.54	0	2.54	0	0	1.94	0	0	1.24	1.24	0	2.54	0	0	0	5.14	1.24	3.94	1.34	0	0	0	5.24	7.94	5.64	1.24	0	5.84	0
Metal Concentration in <250 µm Soil Fraction																															
3.5	228	16.1	201	3	3	4.1	4.5	3.8	2.4	4.7	7.1	18.6	5.2	4.1	3.3	14.5	2.4	12.3	4.7	5.1	4.9	3.9	63.4	12.6	17.6	55.2	2.8	31.7	3.6	20.9	4.1
5.9	68	24.7	80.5	6.1	2.4	4.1	7.5	7.5	4.9	13.6	11	14.6	13.1	4.5	6.1	18.2	3.8	17.5	7.5	11.1	10.8	6.8	66.3	21.1	19.1	48.5	3.7	21.3	6.2	41.8	6.2
89.6	1450	1190	1630	58.9	30.9	45.3	64.8	65.5	31.7	148	152	424	108	46.5	46.4	305	26.9	545	76.1	209	207	81.2	1050	326	502	768	29.8	305	37	687	69.3
15.2	121	68.8	218	9.2	8.7	14.7	17.3	11.4	18.8	25.1	27	40.1	18.8	23.2	11.3	155	7.9	41.3	21.7	35.8	24	18.6	105	54.6	54.7	66.6	7.9	31.2	17.6	37.8	13.1
81.3	1370	656	1640	59.1	25.9	43.2	76.9	66.1	37.2	259	195	520	150	49.8	51.5	362	31.6	377	93.1	148	239	84.2	1240	483	432	1090	35.4	399	46.1	910	69.9
0.9	5.2	5.8	5.6	*0.4*	*0.4*	*0.4*	*0.4*	*0.4*	*0.4*	*0.4*	0.9	1.5	*0.4*	*0.4*	*0.4*	1.5	*0.4*	3.2	*0.4*	1.5	1	*0.4*	3	1.4	3.3	2.2	*0.4*	1.6	*0.4*	1.8	*0.4*
Metal Concentration in 2 mm Soil Fraction																															
3.6	250	17.1	145	2.80	2.5	3.6	3.9	3.4	2.2	10.6	5.8	18.5	4.9	4.3	3.1	11.4	2.8	36.3	4.8	4.8	5.4	3.7	66.6	12.9	16	66	2.5	29.4	3.4	20.2	3.5
6.3	79.6	26.7	64.2	6.30	2.7	4.1	7.1	7.3	4.9	16.8	10.2	17.2	13.6	5.1	6.7	19.5	4.3	16.5	7.7	9.8	11.9	7	66.1	24.2	17.2	60.2	3.8	24.6	6.3	49.1	6
98.7	1550	1540	1240	50.90	37.1	37	55.9	54.8	28	226	135	535	96.3	51.3	47.5	261	34	553	80.7	224	266	80.2	1160	355	428	921	27.3	287	35.3	870	70.5
13.2	139	107	142	9.00	6.4	12.8	15.9	8.3	16.8	29.7	17.6	42.9	12.9	29.2	11	185	8.7	35.8	23.7	50.7	29.7	15.8	112	67.7	42.1	91.6	7.7	36.2	21.5	46.2	11
78.7	1300	711	1240	55.40	30.3	39.8	69.2	62.2	35.6	304	175	586	138	53.8	52.8	326	36.5	365	90	131	273	82.2	1260	545	407	1320	36.3	396	48	1090	68.7
0.40	6	7.5	4	*0.40*	*0.40*	*0.40*	*0.40*	*0.40*	*0.40*	0.8	*0.40*	1.6	*0.40*	*0.40*	*0.40*	1	*0.40*	3.3	*0.40*	1.6	1.2	*0.40*	3	1.7	2.7	3	*0.40*	1.8	*0.40*	2.4	*0.40*
0.1036	0.1026	0.1026	0.1024	0.102	0.1026	0.1022	0.1022	0.1022	0.1024	0.1022	0.1024	0.1022	0.1022	0.1025	0.1025	0.1022	0.1025	0.1025	0.1022	0.1025	0.1025	0.1022	0.1025	0.1024	0.1028	0.1025	0.1022	0.1024	0.1025	0.1024	0.1025
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Soil Metal Bioaccessibility																															
79.3	42.0	29.4	31.9	31.6	40.0	15.0	25.7	37.1	35.8	40.7	32.9	48.3	29.5	32.5	36.3	27.1	32.0	30.8	38.7	41.0	55.4	32.2	32.4	27.8	31.1	36.9	40.2	27.5	26.2	32.6	34.3
26.3	47.8	21.9	21.1	20.2	5.6	16.2	23.7	20.2	16.5	27.0	26.5	40.7	25.4	26.9	17.5	39.3	14.0	28.5	34.2	32.3	17.4	16.8	26.1	34.6	28.8	32.7	13.8	39.2	17.4	30.3	21.3
87.5	68.0	72.8	45.9	68.9	64.1	62.5	59.6	64.1	63.7	54.2	56.1	99.0	48.9	67.0	61.7	68.2	66.7	84.0	68.1	70.4	62.2	56.0	47.9	55.2	76.5	58.1	57.6	57.6	74.5	50.6	63.0
14.7	35.2	17.2	13.4	13.8	1.9	0.0	4.9	0.0	10.7	17.4	6.6	27.8	2.3	30.9	9.2	24.2	3.7	17.7	19.9	24.8	25.7	7.5	26.4	14.5	11.3	22.6	8.3	19.5	12.6	17.3	6.2
34.1	57.8	34.6	29.7	28.8	30.0	27.2	29.2	34.4	28.8	35.3	30.8	69.3	35.8	38.7	32.4	31.2	18.7	59.1	33.2	37.2	19.3	24.9	41.2	35.3	49.8	47.7	1.7	55.8	45.1	46.3	34.0
14.3	19.6	2.2	28.4	0.0	65.2	0.0	0.0	49.6	0.0	0.0	14.1	8.4	0.0	65.1	0.0	0.0	0.0	16.5	31.7	26.9	13.7	0.0	0.0	0.0	16.3	37.0	144.1	7.9	0.0	33.2	0.0

05-394	05-395	05-396	05-397	05-398	05-399	05-400	05-401	05-402	05-403	05-404	05-405	05-406	05-407	05-408	05-409	05-410	05-411	05-412	05-413	05-414	05-415	05-416	05-417	05-418	05-419	05-420	05-421
580	581	582	584	585	586	588	589	590	591	592	593	594	596	597	598	599	600	601	602	605	606	607	608	611	612	613	648
44.7	264.6	11.8	166.6	71.1	71.5	50.5	17.2	16	20.7	10.9	6.5	20.2	18.7	180.6	182.6	13.1	12.4	2.6	47.6	3.1	10.5	18.5	5.56	10.3	13.7	519.6	70
75.6	113.7	9.6	82	51.3	42.4	58.9	21.8	8.4	11.1	13.1	8.5	6.1	19.9	166.7	217.7	14.1	4.4	4.3	56.7	1.9	6.4	24.8	7.4	7.9	6.8	174.7	40.9
6266.08	2336.08	194.08	8176.08	3456.08	1106.08	507.08	724.08	256.08	198.08	553.08	77.08	184.08	1746.08	8126.08	5296.08	622.08	146.08	208.08	5876.08	95.08	301.08	3466.08	164.08	174.08	244.08	4796.08	1376.08
149.03	83.83	0	837.03	342.03	207.03	160.03	105.03	4.43	8.93	13.63	0	42.23	62.33	232.03	116.03	18.43	2.93	0	87.43	0	21.03	7.33	0	0	5.23	160.03	50.03
2603.8	3253.8	51.8	3053.8	1733.8	2763.8	19.8	422.8	84.8	105.8	314.8	22.8	22.8	765.8	8223.8	5983.8	212.8	0	26.8	2323.8	32.8	169.8	943.8	133.8	177.8	100.8	4843.8	1473.8
12.44	0	1.24	10.64	1.24	14.64	9.94	0	1.24	1.24	0	0	1.24	1.55	6.04	15.44	0	1.24	0	13.74	0	0	4.44	0	0	0.84	7.84	0
10.7	130	2.7	40.5	17.8	24.8	12	4.3	2.5	4	4	2.9	1.9	6.6	85.7	53	4.3	2.6	2.5	12.5	1.6	2.4	5.5	2.4	4.8	174	4.6	20.4
17.6	36.2	7.7	31.3	17.6	25.4	21.7	9.4	5.4	6.2	7	6.9	3.6	11.9	49.2	68.8	6.9	3.8	3.9	18.7	4.3	4.2	8	5.8	4.9	46.1	3.6	14.6
814	538	42	1380	490	1660	943	113	45.8	47	90	24.5	25.9	226	1200	1010	105	23.2	28.5	799	20	38.4	427	34.9	29.8	741	40.2	268
57.4	60.8	7.4	315	112	90.6	74.2	48.1	5.7	9.3	20.5	6.4	13.2	37.2	126	57.3	24.6	6.1	10	58.8	4.6	8.2	19.4	7.7	9.1	110	12.8	33.3
468	656	55	874	406	808	491	123	47.2	54.5	82	32.6	29.1	157	1230	1340	90.5	28.7	34.9	564	20.1	45	197	47.9	60.5	891	40.2	398
6.4	2.7	*0.4*	7.4	3.4	9.1	3.8	0.9	*0.4*	0.9	*0.4*	*0.4*	*0.4*	1.8	4	2.5	*0.4*	*0.4*	*0.4*	5.1	*0.4*	*0.4*	2.9	*0.4*	*0.4*	2.9	*0.4*	1.2
9.4	105	2.7	36.6	15.8	22.7	11.2	4.5	2.8	4.1	4	2.7	2.2	6.5	93.9	56.50	5.4	2.7	2.9	12.4	1.5	2.6	5.7	2.3	4.3	4.4	214	18.9
15.8	31.1	8.4	32.8	16.1	29.8	21.5	10.2	6.7	6.7	7.5	7.9	4.6	12.5	56.2	72.10	9.3	4.3	4	17.9	4.6	4.3	9.1	7.5	4.9	4.2	55	15.1
858	493	38.1	1370	507	1940	1100	124	42.7	50	93.6	25.3	28.2	244	1550	1050.00	110	20.2	30.4	913	15.4	37.1	406	39.8	28.1	37.7	1060	279
47.9	50.1	8.1	291	134	81.2	71.4	46.5	6.9	10	17.2	5.7	15.7	32.2	129	64.70	25.1	6.7	8.7	52.9	3.3	7.4	15	6.3	7.2	10.3	119	27.6
437	584	58.6	927	360	847	495	125	57.2	59.9	94.7	35.1	35.2	190	1290	1380.00	110	29.7	36.2	522	21.8	44.9	229	52.9	53.4	48.5	1070	429
6	2.4	*0.40*	7.4	3.7	8.9	4.6	0.9	*0.40*	1.2	1.1	*0.40*	*0.40*	2	4.2	2.70	*0.40*	*0.40*	*0.40*	5	*0.40*	*0.40*	2.9	*0.40*	*0.40*	*0.40*	3.8	1.5
0.1025	0.1025	0.1022	0.1023	0.1024	0.1025	0.1044	0.1043	0.1022	0.1022	0.1025	0.1026	0.1022	0.1025	0.1026	0.1022	0.1024	0.1024	0.1024	0.1028	0.1025	0.1022	0.1024	0.1034	0.1024	0.1024	0.1028	0.1035
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
42.8	20.9	44.7	42.1	40.9	29.6	43.9	41.7	65.4	52.9	27.9	23.0	108.7	29.0	21.6	35.2	31.2	48.8	10.6	39.1	19.9	44.7	34.4	24.0	22.0	0.8	1161.2	35.5
44.0	32.2	12.7	26.8	29.8	17.1	28.3	24.2	15.9	18.3	19.2	12.6	17.3	17.1	34.8	32.3	20.9	11.9	11.3	31.2	4.5	15.6	31.7	13.2	16.5	1.5	498.9	29.0
78.9	44.5	47.2	60.6	72.2	6.8	5.6	66.8	57.1	43.1	63.0	32.3	72.6	79.2	69.5	53.6	60.7	64.5	74.8	75.6	48.7	80.1	83.1	48.6	59.8	3.4	1226.5	53.1
26.6	14.1	0.0	27.2	31.3	23.4	22.5	22.8	7.9	9.8	6.8	0.0	32.7	17.2	18.9	20.7	7.7	4.9	0.0	15.3	0.0	26.2	3.9	0.0	0.0	0.5	128.5	15.5
57.0	50.8	9.6	35.7	43.7	35.1	0.4	35.9	18.4	19.8	39.4	7.2	8.0	50.0	68.6	45.6	24.1	0.0	7.9	42.4	16.7	38.6	49.1	28.9	30.1	1.2	1238.7	38.3
19.9	0.0	31.7	14.7	3.7	16.5	27.3	0.0	31.7	14.1	0.0	0.0	31.7	8.8	15.5	63.1	0.0	31.7	0.0	27.7	0.0	0.0	15.7	0.0	0.0	3.0	201.5	0.0

Prepared by: TPM
Checked by: JK

Dust and Extraction Fluid Analytical Results and Bioaccessibility Estimates

		Golder Sample ID	05 - 1290	05 - 1293	05 - 1295	05 - 1296	05 - 1299	05 - 1301	05 - 1307	05 - 1308	05 - 1309	05 - 1311
		CANTOX Sample ID	504	515	522	523	534	550	582	584	600	602
Parameter	**Units**	**Detection Limit**	**Metal Concentration in Extraction Fluid**									
Arsenic	µg/L	0.57	5.76	7.78	5.46	8.8	2.48	0.23	0.79	6.46	0	0.89
Cobalt	µg/L	0.96	7.2	4.16	22.5	11.4	10.4	0	0	3.4	0	0
Copper	µg/L	0.78	276.08	503.08	196.08	181.08	367.08	143.08	0	196.08	11.68	201.08
Lead	µg/L	0.44	31.03	13.23	54.43	22.33	42.63	3.53	0	124.03	0	39.03
Nickel	µg/L	0.63	31.8	65.8	189.8	22.8	64.8	0	0	6.8	0	13.8
Selenium	µg/L	0.81	0	0	0	0	0	0	0	0	0	0
Parameter	**Units**	**Detection Limit**	**Metal Concentration in <60 µm Dust Fraction)**									
Arsenic	µg/g	0.3	12.4	16.1	10.9	29.1	47.9	3.8	4.9	24.1	9.8	3.5
Cobalt	µg/g	0.2	21.5	31	83.3	61.4	48.7	7.6	9.2	28.7	6.4	9.7
Copper	µg/g	0.2	562	1180	454	519	1420	260	98.3	666	210	410
Lead	µg/g	0.3	114	92.9	86.1	152	219	45.6	23.6	370	39.4	106
Nickel	µg/g	0.3	406	814	627	622	705	133	79.4	552	121	280
Selenium	µg/g	0.4	5.1	4.9	1.7	2.1	2.4	2.3	0.9	6.3	1.5	3
Volume of extraction fluid (L)			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Mass of dust (g)			0.5002	0.5006	0.462	0.5	0.5006	0.4594	0.5001	0.5	0.5004	0.5006
Parameter	**Units**	**Detection Limit**	**Dust Metal Bioaccessibility**									
Arsenic	na	na	4.6	4.8	5.4	3.0	0.5	0.7	1.6	2.7	0.0	2.5
Cobalt	na	na	3.3	1.3	2.9	1.9	2.1	0.0	0.0	1.2	0.0	0.0
Copper	na	na	4.9	4.3	4.7	3.5	2.6	6.0	0.0	2.9	0.6	4.9
Lead	na	na	2.7	1.4	6.8	1.5	1.9	0.8	0.0	3.4	0.0	3.7
Nickel	na	na	0.8	0.8	3.3	0.4	0.9	0.0	0.0	0.1	0.0	0.5
Selenium	na	na	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Notes:

na = not applicable.

Extraction fluid metal concentrations were corrected for the mean bottle blanks of 1.4, 3.3, 63.92, 9.97, 166.2 and 1.26 µg/L for arsenic, cobalt, copper, lead, nickel and selenium, respectively.

Metal dust bioaccessibilities were calculated based on the metal concentrations in the <60 µm fraction.

Prepared by: TPM

Checked by: JK

Soil and Extraction Fluid Analytical Results and Bioaccessibility Estimates: Gastric Extractions

		Golder ID	05-336	05-338	05-350	05-366	05-409	05-343	05-353	05-354	05-378	05-397
Parameter	**Units**	**Detection Limit**	**Metal Concentration in Extraction Fluid**									
Arsenic	ug/L	1	44.2	69.8	123.6	3.9	220.6	67.6	561.6	560.6	42.6	105.6
Cobalt	ug/L	0.5	63.7	186.7	91.6	13.2	274.7	133.7	369.7	413.7	89.5	91.7
Copper	ug/L	1	4966.08	21636.08	1766.08	397.08	4546.08	10236.08	12236.08	11336.08	2066.08	8436.08
Lead	ug/L	2	740.03	594.03	165.03	47.43	372.03	1250.03	733.03	885.03	1250.03	2290.03
Nickel	ug/L	1	1693.8	7003.8	1093.8	37.8	6453.8	5073.8	11533.8	9933.8	1193.8	2963.8
Selenium	ug/L	2	7.44	20.34	3.74	3.04	6.04	13.84	8.7	12.94	5.62	10.24
Parameter	**Units**	**Detection Limit**	**Metal Concentration in 2 mm Soil Fraction**									
Arsenic	µg/g	0.6	13.5	25.8	39.5	2.8	56.5	31.5	262	231	11.4	36.6
Cobalt	µg/g	0.3	19.5	46.3	26.9	6.3	72.1	38.3	135	159	19.5	32.8
Copper	µg/g	0.3	819	2750	301	50.9	1050	1850	2440	2830	261	1370
Lead	µg/g	0.5	102	84.8	31.2	9	64.7	235	179	207	185	291
Nickel	µg/g	0.6	485	1470	343	55.4	1380	1320	2460	3390	326	927
Selenium	µg/g	0.8	4.9	13.2	1.2	0.8	2.7	7.6	8.2	6.5	1	7.4
Parameter	**Units**	**Detection Limit**	**Metal Concentration in <250 µm Soil Fraction**									
Arsenic	µg/g	0.6	15.5	25.7	37.6	3	53	27.7	285	255	14.5	40.5
Cobalt	µg/g	0.3	18.5	47.8	25.9	6.1	68.8	38.4	135	163	18.2	31.3
Copper	µg/g	0.3	754	2670	330	58.9	1010	1620	2680	3060	305	1380
Lead	µg/g	0.5	105	83.9	29.6	9.2	57.3	195	201	206	155	315
Nickel	µg/g	0.6	481	1500	370	59.1	1340	1320	2890	4080	362	874
Selenium	µg/g	0.8	4.3	13.2	1.2	0.8	2.5	6.4	8	6.9	1.5	7.4
Total Volume of Extraction Fluid (L)			0.1022	0.1026	0.1021	0.102	0.1022	0.1022	0.1022	0.1022	0.1022	0.1023
Total Mass of Soil (g)			1	1	1	1	1	1	1	1	1	1
Parameter	**Units**	**Soil Fraction**	**Soil Metal Bioaccessibility**									
Arsenic	%	2 mm	32.74074	27.05426	31.29114	13.92857	39.04425	21.46032	21.43511	24.2684	37.36842	28.85246
Cobalt	%	2 mm	32.66667	40.32397	34.05204	20.95238	38.09986	34.90862	27.38519	26.01887	45.89744	27.95732
Copper	%	2 mm	60.6359	78.67665	58.67375	78.01179	43.296	55.33016	50.14787	40.05682	79.16015	61.57723
Lead	%	2 mm	72.55196	70.05071	52.89423	52.7	57.50077	53.19277	40.9514	42.75507	67.56919	78.69519
Nickel	%	2 mm	34.92371	47.6449	31.88921	6.823105	46.76667	38.43788	46.88537	29.30324	36.61963	31.97195
Selenium	%	2 mm	15.18367	15.40909	31.16667	38	22.37037	18.21053	10.60976	19.90769	56.2	13.83784
Arsenic	%	<250 µm	28.51613	27.15953	32.87234	13	41.62264	24.40433	19.70526	21.98431	29.37931	26.07407
Cobalt	%	<250 µm	34.43243	39.05858	35.3668	21.63934	39.92733	34.81771	27.38519	25.38037	49.17582	29.29712
Copper	%	<250 µm	65.86313	81.03401	53.51758	67.41596	45.01069	63.18568	45.65701	37.04601	67.74033	61.13101
Lead	%	<250 µm	70.47905	70.80215	55.75338	51.55435	64.9267	64.1041	36.46915	42.96262	80.6471	72.69937
Nickel	%	<250 µm	35.21414	46.692	29.56216	6.395939	48.16269	38.43788	39.90934	24.34755	32.9779	33.91076
Selenium	%	<250 µm	17.30233	15.40909	31.16667	38	24.16	21.625	10.875	18.75362	37.46667	13.83784

Notes:

Extraction fluid metal concentrations were corrected for the mean bottle blanks of 1.4, 3.3, 63.92, 9.97, 166.2 and 1.26 µg/L for arsenic, cobalt, copper, lead, nickel and selenium, respectively.

Prepared by: TPM

Checked by: JK

Soil and Extraction Fluid Analytical Results and Bioaccessibility Estimates: Gastric and Intestinal Extractions

		Golder ID	05-336	05-338	05-350	05-366	05-409	05-343	05-353	05-354	05-378	05-397
Parameter	**Units**	**Detection Limit**	**Metal Concentration in Extraction Fluid**									
Arsenic	ug/L	1	39.2	103.6	96.1	9.3	182.6	95.4	390.6	427.6	38.4	166.6
Cobalt	ug/L	0.5	52.7	163.7	77.4	12.1	217.7	128.7	259.7	304.7	70	82
Copper	ug/L	1	5466.08	22236.08	2186.08	398.08	5296.08	10436.08	13636.08	12136.08	2036.08	8176.08
Lead	ug/L	2	150.03	210.03	14.63	12.43	116.03	502.03	119.03	203.03	367.03	837.03
Nickel	ug/L	1	1673.8	6793.8	1253.8	166.8	5983.8	4873.8	9793.8	9933.8	1103.8	3053.8
Selenium	ug/L	2	14.44	40.74	12.94	0	15.44	19.64	7.6	6.55	0	10.64
Parameter	**Units**	**Detection Limit**	**Metal Concentration in 2 mm Soil Fraction**									
Arsenic	µg/g	0.6	13.5	25.8	39.5	2.8	56.5	31.5	262	231	11.4	36.6
Cobalt	µg/g	0.3	19.5	46.3	26.9	6.3	72.1	38.3	135	159	19.5	32.8
Copper	µg/g	0.3	819	2750	301	50.9	1050	1850	2440	2830	261	1370
Lead	µg/g	0.5	102	84.8	31.2	9	64.7	235	179	207	185	291
Nickel	µg/g	0.6	485	1470	343	55.4	1380	1320	2460	3390	326	927
Selenium	µg/g	0.8	4.9	13.2	1.2	0.8	2.7	7.6	8.2	6.5	1	7.4
Parameter	**Units**	**Detection Limit**	**Metal Concentration in <250 µm Soil Fraction**									
Arsenic	µg/g	0.6	15.5	25.7	37.6	3	53	27.7	285	255	14.5	40.5
Cobalt	µg/g	0.3	18.5	47.8	25.9	6.1	68.8	38.4	135	163	18.2	31.3
Copper	µg/g	0.3	754	2670	330	58.9	1010	1620	2680	3060	305	1380
Lead	µg/g	0.5	105	83.9	29.6	9.2	57.3	195	201	206	155	315
Nickel	µg/g	0.6	481	1500	370	59.1	1340	1320	2890	4080	362	874
Selenium	µg/g	0.8	4.3	13.2	1.2	0.8	2.5	6.4	8	6.9	1.5	7.4
Total Volume of Extraction Fluid (L)			0.1022	0.1026	0.1021	0.102	0.1022	0.1022	0.1022	0.1022	0.1022	0.1023
Total Mass of Soil (g)			1	1	1	1	1	1	1	1	1	1
Parameter	**Units**	**Soil Fraction**	**Soil Metal Bioaccessibility**									
Arsenic	%	2 mm	29.67585	41.19907	24.84003	33.87857	33.02959	30.952	15.23638	18.91806	34.42526	46.56607
Cobalt	%	2 mm	27.62021	36.27564	29.37747	19.59048	30.85845	34.3424	19.66025	19.58512	36.68718	25.575
Copper	%	2 mm	68.2092	82.96079	74.15241	79.77242	51.54851	57.65229	57.11506	43.82712	79.72696	61.05204
Lead	%	2 mm	15.03242	25.41165	4.787574	14.08733	18.32808	21.83296	6.796015	10.02399	20.27593	29.42549
Nickel	%	2 mm	35.27059	47.41795	37.32157	30.71047	44.31481	37.73503	40.68806	29.94792	34.60379	33.70051
Selenium	%	2 mm	30.11771	31.66609	110.0978	0	58.44326	26.41063	9.472195	10.29862	0	14.70908
Arsenic	%	<250 µm	25.84671	41.35938	26.09524	31.62	35.21079	35.19812	14.00678	17.13754	27.06538	42.08193
Cobalt	%	<250 µm	29.11319	35.13728	30.51174	20.23279	32.33858	34.25297	19.66025	19.1045	39.30769	26.80064
Copper	%	<250 µm	74.08931	85.44651	67.63599	68.93745	53.59004	65.83749	52.00028	40.53292	68.22537	60.60964
Lead	%	<250 µm	14.60292	25.68424	5.046361	13.78109	20.69505	26.31152	6.052172	10.07265	24.2003	27.18355
Nickel	%	<250 µm	35.5639	46.46959	34.5981	28.78782	45.63764	37.73503	34.63413	24.8832	31.16253	35.74414
Selenium	%	<250 µm	34.32019	31.66609	110.0978	0	63.11872	31.36263	9.709	9.701594	0	14.70908

Notes:

Extraction fluid metal concentrations were corrected for the mean bottle blanks of 1.4, 3.3, 63.92, 9.97, 166.2 and 1.26 µg/L for arsenic, cobalt, copper, lead, nickel and selenium, respectively.

Prepared by: TPM

Checked by: JK

APPENDIX E

PROUCL OUTPUTS FOR METALS IN SOIL AND DUST

General Statistics

Data File					Variable:	Arsenic (dust)		
Raw Statistics				Normal Distribution Test				
Number of Valid Samples			10	Shapiro-Wilk Test Statisitic				0.933602
Number of Unique Samples			10	Shapiro-Wilk 5% Critical Value				0.842
Minimum			0	Data are normal at 5% significance level				
Maximum			5.421184					
Mean			2.592316	95% UCL (Assuming Normal Distribution)				
Median			2.610154	Student's-t UCL				3.704403
Standard Deviation			1.918447					
Variance			3.680438					
Coefficient of Variation			0.740051					
Skewness			0.156781					
Gamma Statistics Not Available								
Lognormal Statistics Not Available								
				95% Non-parametric UCLs				
				CLT UCL				3.590193
				Adj-CLT UCL (Adjusted for skewness)				3.622331
				Mod-t UCL (Adjusted for skewness)				3.709416
				Jackknife UCL				3.704403
				Standard Bootstrap UCL				3.550438
				Bootstrap-t UCL				3.774433
RECOMMENDATION				Hall's Bootstrap UCL				3.494932
Data are normal (0.05)				Percentile Bootstrap UCL				3.540993
				BCA Bootstrap UCL				3.547922
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL				5.236712
				97.5% Chebyshev (Mean, Sd) UCL				6.380945
				99% Chebyshev (Mean, Sd) UCL				8.628567

General Statistics

Data File					Variable:	Cobalt (dust)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			8	Shapiro-Wilk Test Statisitic			0.940743
Number of Unique Samples			7	Shapiro-Wilk 5% Critical Value			0.818
Minimum			0	Data are normal at 5% significance level			
Maximum			3.347498				
Mean			1.598173	95% UCL (Assuming Normal Distribution)			
Median			1.598502	Student's-t UCL			2.419118
Standard Deviation			1.225594				
Variance			1.502081				
Coefficient of Variation			0.766872				
Skewness			-0.041574				
Gamma Statistics Not Available							
Lognormal Statistics Not Available							
				95% Non-parametric UCLs			
				CLT UCL			2.310909
				Adj-CLT UCL (Adjusted for skewness)			2.304104
				Mod-t UCL (Adjusted for skewness)			2.418057
				Jackknife UCL			2.419118
				Standard Bootstrap UCL			2.263631
				Bootstrap-t UCL			2.493391
RECOMMENDATION				Hall's Bootstrap UCL			2.426477
Data are normal (0.05)				Percentile Bootstrap UCL			2.294743
				BCA Bootstrap UCL			2.244984
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL			3.486941
				97.5% Chebyshev (Mean, Sd) UCL			4.304212
				99% Chebyshev (Mean, Sd) UCL			5.909583

General Statistics

Data File					Variable:	Copper (dust)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			10	Shapiro-Wilk Test Statisitic			0.922086
Number of Unique Samples			10	Shapiro-Wilk 5% Critical Value			0.842
Minimum			0	Data are normal at 5% significance level			
Maximum			5.989418				
Mean			3.430176	95% UCL (Assuming Normal Distribution)			
Median			3.873649	Student's-t UCL			4.558827
Standard Deviation			1.947019				
Variance			3.790884				
Coefficient of Variation			0.567615				
Skewness			-0.737059				
Gamma Statistics Not Available							
Lognormal Statistics Not Available							
				95% Non-parametric UCLs			
				CLT UCL			4.442915
				Adj-CLT UCL (Adjusted for skewness)			4.289576
				Mod-t UCL (Adjusted for skewness)			4.534909
				Jackknife UCL			4.558827
				Standard Bootstrap UCL			4.400269
				Bootstrap-t UCL			4.357112
RECOMMENDATION				Hall's Bootstrap UCL			4.301433
Data are normal (0.05)				Percentile Bootstrap UCL			4.356078
				BCA Bootstrap UCL			4.290281
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL			6.113957
				97.5% Chebyshev (Mean, Sd) UCL			7.275231
				99% Chebyshev (Mean, Sd) UCL			9.55633

General Statistics

Data File					Variable:	Lead (dust)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			10	Shapiro-Wilk Test Statisitic			0.900078
Number of Unique Samples			9	Shapiro-Wilk 5% Critical Value			0.842
Minimum			0	Data are normal at 5% significance level			
Maximum			6.841687				
Mean			2.227062	95% UCL (Assuming Normal Distribution)			
Median			1.706661	Student's-t UCL			3.418933
Standard Deviation			2.05608				
Variance			4.227466				
Coefficient of Variation			0.923226				
Skewness			1.232609				
Gamma Statistics Not Available							
Lognormal Statistics Not Available							
				95% Non-parametric UCLs			
				CLT UCL			3.296528
				Adj-CLT UCL (Adjusted for skewness)			3.567327
				Mod-t UCL (Adjusted for skewness)			3.461172
				Jackknife UCL			3.418933
				Standard Bootstrap UCL			3.256445
				Bootstrap-t UCL			3.870225
RECOMMENDATION				Hall's Bootstrap UCL			4.304373
Data are normal (0.05)				Percentile Bootstrap UCL			3.288228
				BCA Bootstrap UCL			3.485709
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL			5.061173
				97.5% Chebyshev (Mean, Sd) UCL			6.287495
				99% Chebyshev (Mean, Sd) UCL			8.696367

General Statistics

Data File					Variable:	Nickel (dust)		
Raw Statistics				Normal Distribution Test				
Number of Valid Samples			10	Shapiro-Wilk Test Statisitic				0.688487
Number of Unique Samples			8	Shapiro-Wilk 5% Critical Value				0.842
Minimum			0	Data not normal at 5% significance level				
Maximum			3.276097					
Mean			0.676648	95% UCL (Assuming Normal Distribution)				
Median			0.429413	Student's-t UCL				1.245072
Standard Deviation			0.980579					
Variance			0.961536					
Coefficient of Variation			1.449172					
Skewness			2.422777					
Gamma Statistics Not Available								
Lognormal Statistics Not Available								
				95% Non-parametric UCLs				
				CLT UCL				1.186695
				Adj-CLT UCL (Adjusted for skewness)				1.440545
				Mod-t UCL (Adjusted for skewness)				1.284667
				Jackknife UCL				1.245072
				Standard Bootstrap UCL				1.155332
				Bootstrap-t UCL				1.886933
RECOMMENDATION				Hall's Bootstrap UCL				3.150894
Data are Non-parametric (0.05)				Percentile Bootstrap UCL				1.233828
				BCA Bootstrap UCL				1.584661
)5% Chebyshev (Mean, Sd) UCL				95% Chebyshev (Mean, Sd) UCL				2.028283
				97.5% Chebyshev (Mean, Sd) UCL				2.613137
				99% Chebyshev (Mean, Sd) UCL				3.761969

General Statistics

Data File					Variable:	Arsenic (soil)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			86	Lilliefors Test Statisitic			0.131736
Number of Unique Samples			86	Lilliefors 5% Critical Value			0.09554
Minimum			0.806253	Data not normal at 5% significance level			
Maximum			108.6547				
Mean			34.18391	95% UCL (Assuming Normal Distribution)			
Median			32.46569	Student's-t UCL			36.80568
Standard Deviation			14.62034				
Variance			213.7543	Gamma Distribution Test			
Coefficient of Variation			0.427696	A-D Test Statistic			1.701323
Skewness			1.854081	A-D 5% Critical Value			0.754665
				K-S Test Statistic			0.103197
Gamma Statistics				K-S 5% Critical Value			0.096646
k hat			4.982965	Data do not follow gamma distribution			
k star (bias corrected)			4.816892	at 5% significance level			
Theta hat			6.860155				
Theta star			7.096673	95% UCLs (Assuming Gamma Distribution)			
nu hat			857.0699	Approximate Gamma UCL			37.13368
nu star			828.5055	Adjusted Gamma UCL			37.18566
Approx.Chi Square Value (.05)			762.6918				
Adjusted Level of Significance			0.047209	Lognormal Distribution Test			
Adjusted Chi Square Value			761.6257	Lilliefors Test Statisitic			0.148581
				Lilliefors 5% Critical Value			0.09554
Log-transformed Statistics				Data not lognormal at 5% significance level			
Minimum of log data			-0.215358				
Maximum of log data			4.688175	95% UCLs (Assuming Lognormal Distribution)			
Mean of log data			3.42807	95% H-UCL			40.05663
Standard Deviation of log data			0.549298	95% Chebyshev (MVUE) UCL			45.59964
Variance of log data			0.301728	97.5% Chebyshev (MVUE) UCL			49.85577
				99% Chebyshev (MVUE) UCL			58.21613
				95% Non-parametric UCLs			
				CLT UCL			36.77711
				Adj-CLT UCL (Adjusted for skewness)			37.1139
				Mod-t UCL (Adjusted for skewness)			36.85821
				Jackknife UCL			36.80568
				Standard Bootstrap UCL			36.78114
				Bootstrap-t UCL			37.24839
RECOMMENDATION				Hall's Bootstrap UCL			37.55146
Data are Non-parametric (0.05)				Percentile Bootstrap UCL			36.8362
				BCA Bootstrap UCL			36.98616
Use 95% Chebyshev (Mean, Sd) UCL				95% Chebyshev (Mean, Sd) UCL			41.05594
				97.5% Chebyshev (Mean, Sd) UCL			44.02947
				99% Chebyshev (Mean, Sd) UCL			49.8704

General Statistics

Data File					Variable:	Cobalt (soil)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			86	Lilliefors Test Statisitic			0.05956
Number of Unique Samples			85	Lilliefors 5% Critical Value			0.09554
Minimum			1.510456	Data are normal at 5% significance level			
Maximum			49.99583				
Mean			24.72394	95% UCL (Assuming Normal Distribution)			
Median			25.93506	Student's-t UCL			26.40364
Standard Deviation			9.366839				
Variance			87.73767	Gamma Distribution Test			
Coefficient of Variation			0.378857	A-D Test Statistic			1.179865
Skewness			0.138905	A-D 5% Critical Value			0.754462
				K-S Test Statistic			0.109295
Gamma Statistics				K-S 5% Critical Value			0.096627
k hat			5.28626	Data do not follow gamma distribution			
k star (bias corrected)			5.109608	at 5% significance level			
Theta hat			4.67702				
Theta star			4.838717	95% UCLs (Assuming Gamma Distribution)			
nu hat			909.2367	Approximate Gamma UCL			26.79138
nu star			878.8525	Adjusted Gamma UCL			26.82776
Approx.Chi Square Value (.05)			811.0334				
Adjusted Level of Significance			0.047209	Lognormal Distribution Test			
Adjusted Chi Square Value			809.9336	Lilliefors Test Statisitic			0.124263
				Lilliefors 5% Critical Value			0.09554
Log-transformed Statistics				Data not lognormal at 5% significance level			
Minimum of log data			0.412411				
Maximum of log data			3.91194	95% UCLs (Assuming Lognormal Distribution)			
Mean of log data			3.110216	95% H-UCL			28.34499
Standard Deviation of log data			0.512857	95% Chebyshev (MVUE) UCL			32.04128
Variance of log data			0.263022	97.5% Chebyshev (MVUE) UCL			34.85705
				99% Chebyshev (MVUE) UCL			40.3881
				95% Non-parametric UCLs			
				CLT UCL			26.38533
				Adj-CLT UCL (Adjusted for skewness)			26.4015
				Mod-t UCL (Adjusted for skewness)			26.40616
				Jackknife UCL			26.40364
				Standard Bootstrap UCL			26.39724
				Bootstrap-t UCL			26.33477
RECOMMENDATION				Hall's Bootstrap UCL			26.47196
Data are normal (0.05)				Percentile Bootstrap UCL			26.43111
				BCA Bootstrap UCL			26.36718
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL			29.12666
				97.5% Chebyshev (Mean, Sd) UCL			31.03172
				99% Chebyshev (Mean, Sd) UCL			34.77384

Data File					Variable:	Copper (soil)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			86	Lilliefors Test Statisitic			0.094186
Number of Unique Samples			86	Lilliefors 5% Critical Value			0.09554
Minimum			3.372981	Data are normal at 5% significance level			
Maximum			98.97202				
Mean			61.50498	95% UCL (Assuming Normal Distribution)			
Median			63.44258	Student's-t UCL			64.40273
Standard Deviation			16.15935				
Variance			261.1247	Gamma Distribution Test			
Coefficient of Variation			0.262732	A-D Test Statistic			6.749031
Skewness			-1.290938	A-D 5% Critical Value			0.75344
				K-S Test Statistic			0.182331
Gamma Statistics				K-S 5% Critical Value			0.09653
k hat			6.872284	Data do not follow gamma distribution			
k star (bias corrected)			6.640305	at 5% significance level			
Theta hat			8.949715				
Theta star			9.262373	95% UCLs (Assuming Gamma Distribution)			
nu hat			1182.033	Approximate Gamma UCL			65.98082
nu star			1142.132	Adjusted Gamma UCL			66.05914
Approx.Chi Square Value (.05)			1064.655				
Adjusted Level of Significance			0.047209	Lognormal Distribution Test			
Adjusted Chi Square Value			1063.393	Lilliefors Test Statisitic			0.232505
				Lilliefors 5% Critical Value			0.09554
Log-transformed Statistics				Data not lognormal at 5% significance level			
Minimum of log data			1.215797				
Maximum of log data			4.594837	95% UCLs (Assuming Lognormal Distribution)			
Mean of log data			4.044601	95% H-UCL			71.85447
Standard Deviation of log data			0.507215	95% Chebyshev (MVUE) UCL			81.13457
Variance of log data			0.257267	97.5% Chebyshev (MVUE) UCL			88.19559
				99% Chebyshev (MVUE) UCL			102.0656
				95% Non-parametric UCLs			
				CLT UCL			64.37115
				Adj-CLT UCL (Adjusted for skewness)			64.11196
				Mod-t UCL (Adjusted for skewness)			64.3623
				Jackknife UCL			64.40273
				Standard Bootstrap UCL			64.26168
				Bootstrap-t UCL			64.17027
RECOMMENDATION				Hall's Bootstrap UCL			64.08029
Data are normal (0.05)				Percentile Bootstrap UCL			64.2067
				BCA Bootstrap UCL			64.0827
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL			69.1004
				97.5% Chebyshev (Mean, Sd) UCL			72.38694
				99% Chebyshev (Mean, Sd) UCL			78.84272

General Statistics

Data File					Variable:	Lead (soil)		
Raw Statistics				Normal Distribution Test				
Number of Valid Samples			86	Lilliefors Test Statisitic				0.06737
Number of Unique Samples			79	Lilliefors 5% Critical Value				0.09554
Minimum			0	Data are normal at 5% significance level				
Maximum			35.1918					
Mean			14.43141	95% UCL (Assuming Normal Distribution)				
Median			14.81637	Student's-t UCL				16.02748
Standard Deviation			8.900502					
Variance			79.21893					
Coefficient of Variation			0.616745					
Skewness			0.085967					
Gamma Statistics Not Available								
Lognormal Statistics Not Available								
				95% Non-parametric UCLs				
				CLT UCL				16.01008
				Adj-CLT UCL (Adjusted for skewness)				16.01959
				Mod-t UCL (Adjusted for skewness)				16.02896
				Jackknife UCL				16.02748
				Standard Bootstrap UCL				15.98504
				Bootstrap-t UCL				16.00956
RECOMMENDATION				Hall's Bootstrap UCL				16.1044
Data are normal (0.05)				Percentile Bootstrap UCL				15.98024
				BCA Bootstrap UCL				16.03181
Use Student's-t UCL				95% Chebyshev (Mean, Sd) UCL				18.61493
				97.5% Chebyshev (Mean, Sd) UCL				20.42514
				99% Chebyshev (Mean, Sd) UCL				23.98096

General Statistics

Data File					Variable:	Nickel (soil)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			86	Lilliefors Test Statisitic			0.107049
Number of Unique Samples			86	Lilliefors 5% Critical Value			0.09554
Minimum			0	Data not normal at 5% significance level			
Maximum			69.25622				
Mean			34.88467	95% UCL (Assuming Normal Distribution)			
Median			35.2714	Student's-t UCL			37.60015
Standard Deviation			15.14293				
Variance			229.3083				
Coefficient of Variation			0.434085				
Skewness			-0.316608				
Gamma Statistics Not Available							
Lognormal Statistics Not Available							
				95% Non-parametric UCLs			
				CLT UCL			37.57056
				Adj-CLT UCL (Adjusted for skewness)			37.51099
				Mod-t UCL (Adjusted for skewness)			37.59086
				Jackknife UCL			37.60015
				Standard Bootstrap UCL			37.51125
				Bootstrap-t UCL			37.47818
RECOMMENDATION				Hall's Bootstrap UCL			37.53906
Data are Non-parametric (0.05)				Percentile Bootstrap UCL			37.51378
				BCA Bootstrap UCL			37.44149
Use 95% Chebyshev (Mean, Sd) UCL				95% Chebyshev (Mean, Sd) UCL			42.00233
				97.5% Chebyshev (Mean, Sd) UCL			45.08215
				99% Chebyshev (Mean, Sd) UCL			51.13186

General Statistics

Data File					Variable:	Selenium (soil; all data; n=86)		
Raw Statistics				Normal Distribution Test				
Number of Valid Samples			85	Lilliefors Test Statisitic				0.248064
Number of Unique Samples			53	Lilliefors 5% Critical Value				0.0961
Minimum			0	Data not normal at 5% significance level				
Maximum			144.102					
Mean			16.03896	95% UCL (Assuming Normal Distribution)				
Median			7.936	Student's-t UCL				20.29026
Standard Deviation			23.56607					
Variance			555.3598					
Coefficient of Variation			1.469302					
Skewness			3.010625					
Gamma Statistics Not Available								
Lognormal Statistics Not Available								
				95% Non-parametric UCLs				
				CLT UCL				20.24337
				Adj-CLT UCL (Adjusted for skewness)				21.13525
				Mod-t UCL (Adjusted for skewness)				20.42937
				Jackknife UCL				20.29026
				Standard Bootstrap UCL				20.13311
				Bootstrap-t UCL				21.49966
RECOMMENDATION				Hall's Bootstrap UCL				22.56605
Data are Non-parametric (0.05)				Percentile Bootstrap UCL				20.26062
				BCA Bootstrap UCL				21.25308
Use 95% Chebyshev (Mean, Sd) UCL				95% Chebyshev (Mean, Sd) UCL				27.18074
				97.5% Chebyshev (Mean, Sd) UCL				32.0018
				99% Chebyshev (Mean, Sd) UCL				41.47183

General Statistics

Data File					Variable:	Selenium (soil; n=54; excluding	
						data where selenium in seived	
						soil at or below the MDL)	
Raw Statistics				Normal Distribution Test			
Number of Valid Samples			53	Lilliefors Test Statisitic			0.197984
Number of Unique Samples			46	Lilliefors 5% Critical Value			0.121701
Minimum			0	Data not normal at 5% significance level			
Maximum			110.0978				
Mean			15.4223	95% UCL (Assuming Normal Distribution)			
Median			12.6976	Student's-t UCL			19.60174
Standard Deviation			18.16861				
Variance			330.0985				
Coefficient of Variation			1.178074				
Skewness			3.162061				
Gamma Statistics Not Available							
Lognormal Statistics Not Available							
				95% Non-parametric UCLs			
				CLT UCL			19.52729
				Adj-CLT UCL (Adjusted for skewness)			20.68552
				Mod-t UCL (Adjusted for skewness)			19.7824
				Jackknife UCL			19.60174
				Standard Bootstrap UCL			19.63687
				Bootstrap-t UCL			21.75816
RECOMMENDATION				Hall's Bootstrap UCL			29.02251
Data are Non-parametric (0.05)				Percentile Bootstrap UCL			19.87655
				BCA Bootstrap UCL			20.8607
Use 95% Chebyshev (Mean, Sd) UCL				95% Chebyshev (Mean, Sd) UCL			26.30059
				97.5% Chebyshev (Mean, Sd) UCL			31.00764
				99% Chebyshev (Mean, Sd) UCL			40.25372

Data File					Variable:	Selenium (soil; n=24; excluding		
						data where selenium in seived		
						soil or extraction fluid at or below		
						the MDL)		

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	24
Minimum	6.382955
Maximum	110.0978
Mean	26.38701
Median	19.76791
Standard Deviation	21.61553
Variance	467.2313
Coefficient of Variation	0.819173
Skewness	2.852989

Gamma Statistics	
k hat	2.517267
k star (bias corrected)	2.230387
Theta hat	10.48241
Theta star	11.83069
nu hat	120.8288
nu star	107.0586
Approx.Chi Square Value (.05)	84.17483
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	82.74839

Log-transformed Statistics	
Minimum of log data	1.853631
Maximum of log data	4.701369
Mean of log data	3.061287
Standard Deviation of log data	0.630973
Variance of log data	0.398126

RECOMMENDATION
Data follow gamma distribution (0.05)
Use Approximate Gamma UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.690489
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	
95% UCL (Assuming Normal Distribution)	
Student's-t UCL	33.94905
Gamma Distribution Test	
A-D Test Statistic	0.698931
A-D 5% Critical Value	0.753017
K-S Test Statistic	0.13622
K-S 5% Critical Value	0.179683
Data follow gamma distribution	
at 5% significance level	
95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	33.56057
Adjusted Gamma UCL	34.1391
Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.963001
Shapiro-Wilk 5% Critical Value	0.916
Data are lognormal at 5% significance level	
95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	34.31952
95% Chebyshev (MVUE) UCL	41.18815
97.5% Chebyshev (MVUE) UCL	47.84379
99% Chebyshev (MVUE) UCL	60.91752
95% Non-parametric UCLs	
CLT UCL	33.64452
Adj-CLT UCL (Adjusted for skewness)	36.39011
Mod-t UCL (Adjusted for skewness)	34.3773
Jackknife UCL	33.94905
Standard Bootstrap UCL	33.43439
Bootstrap-t UCL	39.9496
Hall's Bootstrap UCL	70.74789
Percentile Bootstrap UCL	34.16548
BCA Bootstrap UCL	36.6068
95% Chebyshev (Mean, Sd) UCL	45.61958
97.5% Chebyshev (Mean, Sd) UCL	53.94152
99% Chebyshev (Mean, Sd) UCL	70.28837

APPENDIX F

SAMPLE CALCULATIONS

F.0 SAMPLE CALCULATIONS

F.1 Bioaccessibility of Metals in Soil

An example of the calculation used for the estimation of nickel bioaccessibility in soil is provided below for soil sample 05-334;

$[metal]_{extract}$ = 4840 µg/L
$[metal]_{blank}$ = 166.20 µg/L
Volume of extract = 0.1025L
$[metal]_{soil}$ = 1030 µg/g
Mass of soil = 1.0 g

$$Bioaccessibility\,(\%) = \frac{mass\ \ metal\,in\ \ extract}{mass\ \ metal\,in\ \ soil} \times 100 = \frac{([metal]_{extract} \times volume\ \ of\ \ extract}{[metal]_{soil} \times mass\ \ of\ \ soil} \times 100$$

$$= \frac{(4840ug/L - 166.20ug/L) \times 0.1025L}{1030ug/g \times 1.0g} \times 100$$

= 46.5%

Note that the metal concentrations in the extraction fluids were corrected by subtracting the metal concentrations in the bottle blank.

F.2 Bioaccessibility of Metals in Dust

An example of the calculation used for the estimation of nickel bioaccessibility in dust is provided below for dust sample 05-1290;

$[metal]_{extract}$ = 198 µg/L
$[metal]_{blank}$ = 166.2 µg/L
Volume of extract = 0.05 (50 mL)
$[metal]_{dust}$ = 406 µg/g
Mass of dust = 0.5002 g

$$Bioaccessibility\,(\%) = \frac{mass\ \ metal\,in\ \ extract}{mass\ \ metal\,in\ \ dust} \times 100 = \frac{([metal]_{extract} \times volume\ \ of\ \ extract}{[metal]_{dust} \times mass\ \ of\ \ dust} \times 100$$

$$= \frac{(198ug/L - 166.2ug/L) \times 0.05L}{406ug/g \times 0.5002g} \times 100$$

= 0.78%

Note that the metal concentrations in the extraction fluids were corrected by subtracting the metal concentrations in the bottle blank.