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FINAL DRAFT REPORT FOR PEER REVIEW

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

Submitted to:

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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 $<250 \mu$ m or $<60 \mu$ m size fractions, respectively. The 250 μ m 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).

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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:

- 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:

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

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= 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 noobservable effect level (NOEL) was 100 mg/kg nickel in chow. Therefore, the bioaccessibility of NiSO₄-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-ofcustody forms for all samples are provided in Appendix A). All samples were dried at 40°C to a constant weight and sieved through a #60 sieve (soil particles passing the #60 sieve represent the <250 μ m fraction). As indicated in MOE (2002), the <250 μ m 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 (chainof-custody forms are provided in Appendix A). All samples were dried at 40°C to a constant weight and sieved through a 60 μ m 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 °C) 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 °C 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 °C 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 μ g/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 μ g/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 000g 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 $<250 \mu m$ soil fraction or $<60 \mu m$ dust fraction as follows:

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

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 μ m 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 <u>http://www.epa.gov/esd/tsc/software.htm</u>). 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 end	ach 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.	

	Bio	accessibility in	Soil	Bioaccessibility in House Dust				
Element	Mean	95UCL	95UCL	Mean	95UCL	95UCL		
	(µg/L)	(Student's-t)	(Chebyshev)	(µg/L)	(Student's -t)	(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 ,	20.3 ^a , 19.6 ^b ,	27.2 ^a , 26.3 ^b ,	N/A ^d	N/A ^d	N/A ^d		
	26.4 ^c	33.9 ^c	41.2 ^c					

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 \pm 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= 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 μ g/L or 0.24 μ g, 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 μ g/g in pancreatin, and at 5.1 μ g/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 μ g/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;

$$RPD = 100 \times \frac{\left[metal \quad duplicate \quad 1\right] - \left[metal \quad duplicate \quad 2\right]}{mean} \left(duplicate \quad 1, \quad duplicate \quad 2\right)$$

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 μ g/L. The difference between 1 and 2 μ g/L represents a small difference of 0.1 and 0.2 μ g. 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 bioaccessibilities 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.

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REFERENCES

- Ambrose, A.M., Larson, P.S., Borzelleca, J.F. and Hennigar Jr., G.R. 1976. Long Term Toxicologic Assessment of Nickel in Rats and Dogs. Journal of Food Science and Technology 13: 181-187.
- Anderson, B.J., Rees, S.G., Liley, A., Stewart, A.W., and Wardill, M.J. 1999. Effect of preoperative paracetamol on gastric volumes and pH in children. Paediatric Anaesthesia 9: 203-207.
- ATSDR, 1999. Toxicological Profile of Lead. Agency for Toxic Substances and Disease Registry Division of Toxicology/Toxicology Information Branch, Atlanta Georgia.
- Casteel, S.W., Cowart, R.P., Weis, C.P., Henningsen, .M., Hoffman, E., Brattin, W.J. et al. 1997. Bioavailability of Lead to Juvenile Swine Dosed with Soil from the Smuggler Mountain NPL Site of Aspen, Colorado. Fund. Appl. Toxicol. 36: 177-187.
- CCME. A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines. CCME-EPC-101E. 1996. Winnipeg, MB.
- Daston, G., Faustman, E., Ginsberg, G., Fenner-Crisp, P., Olin, S., Sonawane, B. et al. 2004. A Framework for Assessing Risks to Children from Exposure to Environmental Agents. Environ. Health Perspect **112**: 238-256.
- Daugherty, A.L., and Mrsny, R.J. 1999. Transcellular uptake mechanisms of the intestinal epithelial barrier. Part one. Pharm. Sci Technol. Today 2: 144-151.
- Diamond, G.L., Goodrum, P.E., Felter, S.P., and Ruoff, W.L. 1997. Gastrointestinal absorption of metals. Drug Chem Toxicol. 39: 345-368.
- Driver, J.H., Konz, J.J., and and Whitmyre, G.K. 1989. Soil Adherence to Human Skin. Environ. Contam. Toxicol. **43**: 814-820.
- Ellickson, K.M., Meeker, R.J., Gallo, M.A., Buckley, B.T. and Lioy, P.J. 2001. Oral bioavailability of lead and arsenic from a NIST standard reference soil material. Arch. Environ. Contam. Toxicol., **40**: 128-135.
- Environment Agency. Environment Agency's Science Update on the Use of Bioaccessibility Testing in Risk Assessment of Land Contamination. 2005.
- Environment Agency and British Geological Society. 2002. In-vitro Methods for the Measurement of the Oral Bioaccessibility of Selected Metals and Metalloids in Soils: A Critical Review. R&D Technical Report P5-062/TR/01.
- Exponent. 2001. Bioaccessibility of metals from soils. Prepared for MOE by Exponent; Boulder, CO, USA. June 2001 (and Cadmium Addendum, July, 2001).
- Hamel, S.C., B. Buckley, and P.J. Lioy. 1998. Bioaccessibility of metals in soils for different liquid to solid ratios in synthetic gastric fluid. Environ. Sci. Technol. 32: 358-362.
- Kientz, K., Jiménez, B.D., Pérez, L., and Rodríguez-Sierra, C.J. 2003. In Vitro Bioaccessibility of Metals in Soils from a Superfund Site in Puerto Rico. Bull. Environ. Contam. Toxicol. 70: 927-934.
- Lentner, C. 1981. Geigy Scientific Tables: Unites of Measurement, Body Fluids, Composition of the Body, Nutrition West Caldwell, N.J.: CIBA-GEIGY.
- Maddaloni, M.A. 2004. Bioavailability of Soil-Borne Chemicals: A Regulatory Perspective. Human Ecol. Risk Assess. **10**: 657-663.

- Miller, D.D., Schricker, B.R., Rasmussen, R.R., and Van Campen, D. 1981. An in vitro Method for Estimation of Iron Availability From Meals. Amer. J. Clinical Nutrit. **34**: 2248-2256.
- MOE, 2002. Soil Investigation and Human Health Risk Assessment for the Rodney Street Community, Port Colborne.
- Murphy, M.S., Nelson, K., and Eastham, E.J. 1988. Measurement of Small Intestinal Transit Time in Children. Acta Paediatrica Scandinavica **77**: 802-806.
- Oomen, A.G., Hack, A., Minekus, M., Zeijdner, E., Cornelis, C., Schoeters, G., Verstraete, W., van de Wiele, T., Wragg, J., Rompelberg, C.J.M., Sips, A.J.A.M., van Wijnen, J.H. 2002. Comparison of five in vitro digestion models to study the bioaccessibility of soil contaminants. Environ. Sci. Technol. **36**:3326-3334.
- Oomen, A.G., Rompelberg, C.J.M., Bruil, M.A., Dobbe, C.J.G., Pereboom, D.P.K.H., and Sips, A.J.A.M. 2003. Development of an In Vitro Digestion Model for Estimating the Bioaccessibility of Soil Contaminants. Arch Environ Contam Toxicol 44: 281-287.
- Oomen, A.G., Rompelberg, C.J.M., Van de Kamp, E., Pereboom, D.P.K.H., De Zwat, L.L., and Sips, A.J.A.M. 2004. Effect of Bile Type on the Bioaccessibility of Soil Contaminants in an In Vitro Digestion Model. Arch. Environ. Contam. Toxicol. 46: 183-188.
- Rodriguez, R.R., Basta, N.T., Casteel, S.W., and Pace, L.W. 1999a. An In Vitro Gastrointestinal Method to Estimate Bioavailable Arsenic in Contaminated Soils and Solid Media. Environ. Sci. Technol. 33: 642-649.
- Rodriguez, R.R., Basta, N.T., Casteel, S.W., and Pace, L.W. 1999b. An In Vitro Gastrointestinal Method to Estimate Bioavailable Arsenic in Contaminated Soils and Solid Media. Environ. Sci. Technol. 33: 642-649.
- Ruby, M.V., Davis, A., Link, T.E., Schoof, R., Chaney, R.L., Freeman, G.B., and Bergstrom, P.D. 1993. Development of an In Vitro Screening Test to Evaluate the In Vivo Bioaccessibility of Ingested Mine-Waste Lead. Environ. Sci. Technol. 27: 2870-2877.
- Ruby, M.V., Schoof, R., Brattin, W., Goldade, M., Post,G., Harnois, M. et al. 1999 Advances in Evaluating the Oral Bioavailability of Inorganics in Soil for Use in Human Health Risk Assessment. Environ. Sci. Technol. 33: 3697-3705.
- Ruby, M.V., Davis, A., Schoof, R., Eberle, S., and Sellstone, C.M. 1996. Estimation of Lead and Arsenic Bioavailability Using a Physiologically Based Extraction Test. Environ. Sci. Technol 30: 422-430.
- Ruby, M.V. 2004. Bioavailability of Soil-Borne Chemicals: Abiotic Assessment Tools. Human Ecol Risk Assess. **10**: 647-656.
- SARA Group, The (SARA). 2004. A proposed standard operating procedure to conduct sitespecific bioaccessibility testing on Sudbury soil samples.
- Schroder, J.L., Basta, N.T., Casteel, S.W., Evans, T.J., Payton, M.E., and Si, J. 2004. Validation of the In Vitro Gastrointestinal (IVG) method to Estimate Relative Bioavailable Lead in Contaminated Soils. J. Environ. Qual. 33: 513-521.
- Schroder, J.L., Basta, N.T., Si, J., Casteel, S.W., Evans, T., and Payton, M. 2003. In Vitro Gastrointestinal Method to Estimate Relative Bioavailable Cadmium in Contaminated Soil. Environ. Sci.Technol. 37: 1365-1370.
- Smith, H.L., Hollins, G.W., and Booth, I.W. 1993. Epigastric Impedence Recording for Measuring Gastric Emptying in Children: How Useful is it? J Ped. Gastroenterology Nutrition 17: 201-206.

- U.S.EPA. Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A). EPA/540/1-89/002. 1989. Washington, D.C., Office of Emergency and Remedial Response, U.S. Environmental Protection Agency.
- U.S.EPA. Exposure Factors Handbook Volume III. Office of Research and Development. EPA/600/P-95/002Fc. 1997.
- U.S. EPA Pro UCL Version 3.0 User Guide. EPA/600/R04/079. April 2004.
- U.S.EPA. IRIS Database. 2006.
- Vajro, P., Silano, G., Longo, D., Staiano, A., and Fontanella, A. 1988. Orocoecal Transit Time in Healthy and Constipated Children. Acta Paediatrica Scandinavica **77**: 583-586.

Table 1: Mean and 95% upper confidence limit for estimating the bioaccessibility of estimating	ach 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.	

	Bio	accessibility in	Soil	Bioaccessibility in House Dust				
Element	Mean	95UCL	95UCL	Mean	95UCL	95UCL		
	(µg/L)	(Student's-t)	(Chebyshev)	(µg/L)	(Student's -t)	(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 ,	20.3 ^a , 19.6 ^b ,	27.2 ^a , 26.3 ^b ,	N/A ^d	N/A ^d	N/A ^d		
	26.4 ^c	33.9°	41.2^c					

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)

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	Bottle	Reagent	Bottle	Reagent	Bottle	Reagent	Bottle	Reagent	Bottle	Reagent	Bottle
	Blank	Blank	Blank	Blank	Blank	Blank	Blank	Blank	Blank	Blank	Blank	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:	

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		Detection						
Parameter	Units	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

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

Prepared by:	
Verified by:	

Paramet	er	Detection							
		Limit	dH201	dH2O 2	dH2O 3	dH204	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

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

Prepared by:	
Verified by:_	

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Duplicate	Arsenic		Copper	.	Nickel	Selenium	Mass of
Samples	(µg/L)	Cobalt(µg/L)	(µg/L)	Lead (µg/L)	(µg/L)	(µg/L)	Soll (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	16.62	5 5 1	1.40	22.75	0.00	200.00	
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		0.00	10.00	1110	6 1 0	20.00	
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	51.00		7.20	17.15	5 7 0	200.00	
Difference	51.08	1.14	/.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	64.04		• (1.50.00	27/4	
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
% Kelative	15 61	29.57	29.40	101.00	en no	NIA	
Difference	43.01	28.37	272.09	191.99	02.29	1 2 4	-
05-357	11.50	13.40	372.08	28.03	238.80	1.24	1.00
05-35/K	10.50	15.50	392.08	17.43	233.80	5.04	1.00
70 Kelauve	35 71	0.75	5 23	48.63	1.26	84.11	
05_380	11.00	5.00	168.08	6/3	5.80	5.64	1.00
05-307 05_380P	5.80	5.00	201.08	10.43	/3.80	MDI	1.00
% Relative	5.00	5.10	201.00	10.73	+5.00	MDL	1.00
Difference	61.90	1 98	17.88	51.84	153 23	200.00	
Difference	01.70	1.70	17.00	J1.07	155.45	200.00	

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	Arsenic		Copper		Nickel	Selenium	Mass of
Samples	(µg/L)	Cobalt(µg/L)	(µg/L)	Lead (µg/L)	(µg/L)	$(\mu g/L)$	Soil (g)
Stats		Summ	nary Statistics f	or Table 2- All o	lata		
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	Summa	ry Statistics for	Table 2- With	samples 05-415	and 05-389 Rei	noved	
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 followinggastric 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

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Table 5C: Percent relative differences in metal	concentrations of the extraction fluids following
gastric and intestinal extraction of replic	cate 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.

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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								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 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)

[Copper] in 250 µm soil fraction (mg/kg)



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

[Lead] in 250 µm soil fraction (mg/kg)



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

[Nickel] in 250 µm soil fraction (mg/kg)



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







Figure 8: Bioaccessibility of Cobalt in Soils

[Co] in 250 µm soil fraction (mg/kg)



Figure 9: Bioaccessibility of Copper in Soils

[Cu] in 250 µm soil fraction (mg/kg)



Figure 10: Bioaccessibility of Lead in Soils

[Pb] in 250 µm soil fraction (mg/kg)



Figure 11: Bioaccessibility of Nickel in Soils

[Ni] in 250 µm soil fraction (mg/kg)



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: Bioaccessibility of Selenium-excluding data below MDL in either the extraction fluid or the sieved soil fraction

[Se] in 250 µm soil fraction (mg/kg)

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

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

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

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Client Information Company: Star ASIAL. Contact: Star ASIAL. Contact: Star ASIAL. Address: Fax: ASIAL. Phone: Fax: ASIAL. Po #: Address: ASIAL.	Regulatory Guideline Required: GUCSO Table Esser Use Indicate one) Esser Use Indicate one) Region Res/Park Santary Ag Storm	Sample Identification Date/Time Sampled Matrix	05-3579	05-3592 01-3582		Samples Relinquished By (print name & sign)	Samples Relinquished By (print name & sign)

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CHAIN OF CUSTODY RECORD

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

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

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CHAIN OF CUSTOR RECORD

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

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CHAIN OF CUSTORY RECORD

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CHAIN OF CUSTORY RECORD

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

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

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6AT Laboratories Limited 23 McAdam Road ssissauga, Ontario L4Z 1N9 tp://webearth.agatlabs.com

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

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

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

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PSC SERVICI	ES	5735 Adam Road Mississauga Ontario L4Z 1N9	Tel: (905) 890-8566 Fax: (905) 890-8575 Toll Free: 1-800-263-9040	Work Order:	ABORATORY USE ONLY
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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

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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

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Arrival Condition: Good	Poor (complete "notes")
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Phone: 905-501-9998 Fax: 905-501-0589 Toll free: 800-856-6261 www.agatlabs.com

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

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

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AGAT Laboratories Limited Phone: 5623 McAdam Road Fax: 90 Mississauga, Ontario L4Z 1N9 Toll free http://webearth.agatlabs.com www.ag

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Arrival Condition:	Poor (complete "notes")
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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

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TODY RECORD LABOR	Phone: 905-501-9998 Arrival Cc Fax: 905-501-0589 Arrival Te Toll free: 800-856-6261 AGAT Job	www.agatlabs.com	eport Information - reports to be sent to:	Name: Mike Dutton Email: Mclutton C cylor.com	Name: Kur Uliviero	Name:	Email:		Other (indicate)	10	g water samples - please r Chain of Custody Record	Comments- Site/ Sample Info. Sample Containment											Samples Received By (print name & sigh)	Samples Received By (print name & sign)
CHAIN OF CUS	AGAT Laboratories Limited 5623 McAdam Road Mississauga, Ontario L42 1N9	ALL # Http://webearth.agatlabs.com	Client Information Ro	Company: Golder 1. Contact: Milee Detain 1.	Address: 2390 Arganter Ro. 2.	Phone: 25 - 563 - 444 Fax:	PO #: Client Project #: <u>Ut - 1/1 JL 9</u> AGAT Quotation #: <u>05 - 1/14</u> 4.	Regulatory Guideline Required:	Key 15 ? Gucso Table 2 Sewer Use	(Indicate one) Region Reg 558	Ag Ag Storm Use the Drinking Water	Sample Identification Date/Time Sample # of Sampled Matrix Containers	25-379 June 11	UT - 320	05 - 336	45-337	JN - 700 NN - 700	25 - 39-2	4 56 - XC	 75-403	UT-404	JY - 405 V V	Samples Relinquished By (print name & sign) Date/Time	Samples Relinquished By (print name & sign) Date/Time

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DY RECORD	Phone: 905-501-9998 Arrival Fax: 905-501-0589 Arrival Toll free: 800-856-6261 AGAT J www.agatlabs.com Notes:		Report Information - reports to be sent to:	1. Name: 50% # 3180	Email:	2. Name:	Email:	Email:	. Name:	~	Other (indicate)		ng water samples – please er Chain of Custody Record	Comments- Site/ Sample Info. Sample Containment										Samples Received By (print name & sign)	Samples Received By (print hame & sign)
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CHAIN OF CUSTONY 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

LABOR DRY USE ONLY	[
Arrival Condition: Good	Poor (complete "notes")
Arrival Temperature:	
AGAT Job Number:	
Notes:	

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CHAIN OF CUSTORY 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

LABOR	SE ONLY	[
Arrival Condition:	Cood	📙 Poor (complete "notes")
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Client Information Company: Calde Compact: Calde Contact: Calde Address: C390 ASS Address: C390 ASS Phone: <u>905-567-4447</u> Po #: <u>04-111</u> Client Project #: <u>04-111</u> AGAT Quotation #: <u>05-411</u>	ASSUL Fax: awr.	1759-22	Report Inform 1. Name: 2 U I Email: 2 U I 2. Name: 3. Name: 3. Name: 4. Name: Email: 5. Email: Email: 5. Email:	ation - reports to	be sent to: \mathcal{F} \mathcal{K} , (\circ \cap	Report Format Single Sample per page Excel Format	Turnaroun Regular T/ Rush TAT: Rush TAT: DATE REQUI	d Time (1 AT: 5 to 7 Workin (please provid 24 to 48 hour 28 to 72 Hour 18ED:	g Days e prior notifies	quired cation)
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INSTRUCTIONS AND AGREEMENT PROVISIONS ON REVERSE SIDE

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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

CANTOX ENVIRONMENTAL INC.

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,

Per:

Date: 21/12/04

Vice President, Eastern Region / Senior Scientist

ACCEPTANCE

Elfor Sigal

We acknowledge receipt of the attached samples:

Golder Associates

Per:

Date: 21 1)ec OC



c/o CANTOX ENVIRONMENTAL INC.

1900 Minnesota Court, Suite 130 Mississauga, Ontario L5N 3C9 Phone: 905 814 7800 Fax: 905 814 4954

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Per: Elliot Sigal Vice President, Eastern Region / Senior Scientist

Date: 21/12/04

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Per:

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OUD CIO CONTOX HUITINGSOLZ, CONCH Client P.O. #: SAUGA ON Client Project #: Vater Works #: Stock ASSIL - UPSY Email Address:	ANALYSIS REQUESTED										,						F=Fish GW=Groundwater	Sed=Sediment SW=Surface Water	COMMENTS	SSS AS RE SARA		Shipped By	Received at Testmark By-	
e Client. Sara Sy Address: 130-1900 93-1124 Contact: 203 814-7	NAROUND TIME (TAT)	4 Hrs 1 48 Hrs Days 1 Standard Aivers		SAMPLE DESCRIPTION	× 23 - 55	581-SS 114	598-SS 114	546-SS 114	+ 11 Sz-0015	S20-55 11L	582-55 1111	S89-85 11 4	S16-55 114	S44-55	S88-SS		B=Biota DW=Drinking Water	P=Paint S=Soil		on-Regulated)		Tour Date Time	Date Date Time	ZEVERSE STOR
TESTMARK Laboratorie Committed to Quality and Servic 7 Margaret St. Garson, ON CANADA P3L 1E1 Phone: (705) 693-1121 Fax: (705) 6 Email: customer.service@testmark.c	REPORTING FORMAT TURI	DFax CEmail DCourier D3	Dispose La Return	SAMPLING SAMPLING	N(0 5 5	Jov N B S	JONTI G S	2 L) 11N0	S S LA	UN4 15 15 1	Juvizt 6 5	volla G S		VING C X	NW B C >		P m C=Grab S = A=Air	C=Composite	Z D MOE Clean Up Criteria: Table (D A D)	DDWS (O.Reg. 170) DDWS (N	R Other: Other:	Sampled By (Signature) SQYA GY	Relinquished to Testmark By (Signature) - ()	Internations/Ann ACBERNENT PROVISIONS IN

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APPENDIX B

LABORATORY ANALYTICAL DATA



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.

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BDB	Labora	itories	Рада	Certifi	cate of A	Analysis	5623 McAD MISSISSAU CANADA L4	AGAT WORK (MUNDRQJECT NI ^{2,1N9}	ORDER 05T128599 UMBER 04-11前約:00095 501-9998 UMBER 04-11前約:00995 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	CIATES LTD				•	TTENTION: Jenn	ifer Kirk	
				4	li in Wat	er			
Date Sampled:	Jul 5, 2005	Date Receiv	red: Jul 6,	, 2005	Date Re	ported:	Jul 28, 2005	Sample Type:	Water
		WDL	Guideline	05 - 3578 11-00-05	05 - 3579 157523	05 - 3580 157624			
Nickel	mg/L	0.00	3	0.854	0.927	0.185			
M.D.L Method I	Detection Limit								
						S	ertified	By:	abeth Rotokowska
AGAT Certificate of A AGAT Laboratories (Canada (SCC) and/c (CAEAL), for specific are location and par www.scc.ca and/or w in the scope of this a	Analysis Calgary, Mississaug: or the Canadian Asso : environmental tests ameter specific and a www.caeal.ca. The te ccreditation.	a) is accredited cotation for Envir listed in the sco r complete listing sts in this report	by the Standards onmental Analyti pe of accreditati j of parameters is may not necessi	Council of ical Laborato on. Accredita s available fr arily be inclu	ries ttions ded		AGAT Industr	Laboratories Calgary i ial Hygiene Associatio	Page 2 s accredited by the American n (AIHA) for specific tests.



5623 McADAM ROAD 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

452635M.D.L. - Method Detection Limit452636M.D.L. - Method Detection Limit452637M.D.L. - Method Detection Limit

Ni in Water

Guideline / Standard None

Comments	M.D.L Method Detection Limit	M.D.L Method Detection Limit	M.D.L Method Detection Limit
Sample	452632	452633	452634

Elijabeth Rolakowska Certified By:

AGAT Certificate of Analysis

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Page 3


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Quality Assurance

GOLDER ASSOCIATES LTD. **CLIENT NAME:**

AGAT WORK ORDER:

05T128599

ATTENTION TO:

Г

Jennifer Kirk

CLIENT PROJECT NUMBER

04-1112-069

							0011									
DATE	Jul 28, 2	2005		Dup	licate		F	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike	Э
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Accej Lin	otable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									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%

Soil

Certified By:

Jordy Takeweli

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.

1



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Method Summary

Client Name: GOLDER ASSOCIATES LTD.

D. AGAT Work Order: 05T128599 Client Project Number:: Field4

Attention To: Jennifer Kirk

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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Method Summary

Client Name: GOLDER ASSOCIATES LTD.

TD. AGAT Work Order: 05T128599 Client Project Number:: Field4

Attention To: Jennifer Kirk

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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5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

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

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Ni in Water Date Samplet: Jul 5, 2005 Date Reported: Jul 21, 2005 Sample Type: Water Date Samplet: Jul 5, 2005 Date Reported: Jul 21, 2005 Sample Type: Water Water Unit MDL Out and the same state state searce state searce state state searce state state searce state searce state state state searce state state state searce state sta
(GAT Certificate of Analysis (GAT Laboratories (Calgary, Mississauga) is accredited by the Standards Council of (GAT Laboratories (Calgary, Mississauga) is accredited by the American and/or the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific environmental tests listed in the scope of accreditation. Accreditations is a location and parameter specific and a complete listing of parameters is available from



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Certificate of Analysis - Sample Comments

Workorder	05T129444		
	Ni in Water		
	Guideline / \$	Standard None	
	Sample	Comments	

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

Page 2 Certified By: Elijabeth Polokowska

AGAT Certificate of Analysis



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Quality Assurance

GOLDER ASSOCIATES LTD. **CLIENT NAME:**

AGAT WORK ORDER:

05T129444

ATTENTION TO:

Г

Jennifer Kirk

CLIENT PROJECT NUMBER

04-1112-069

							mator									
DATE	Jul 21,	2005	[Dupl	icate		R	eference M	aterial		Method	Blank S	pike	Matr	ix Spike	e
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Accej Lin	otable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									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%

Wator

Certified By:

Elizabeth Rotokowska

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.

1



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Method Summary

Client Name: GOLDER ASSOCIATES LTD.

AGAT Work Order:05T129444Client Project Number::Field4

Attention To: Jennifer Kirk

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters			
Nickel	MET 1002	EPA SW-846 6020 & 200.8	ICP-MS



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

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FR 05T124900 FEL: (905) 501-9998 FAX: (905) 501-0589 FAX: (905) 501-0589 Www.agatiabs.com	oi.	05-363 S 446087 228 68.0	121 1370 5.2
ADAM ROAD ADAM ROAD ADAM ROAD	A L4Z 1N9 Rui Oliveira (04-1112-069) Sample Type: S	05-359 S 05-362 S 446085 446086 9.7 3.5 9.7 5.9	84.6 89.6 89.6 15.2 19.7 15.2 19.7 81.3 <0.8 0.9 <0.9
	Of Analysis ATTENTION: Metals in Soil	Date Reported: Jun 0 05-341 S 05-355 S 05-358 S 446082 10.3 50.0	14.3 15.4 65.0 16.9 15.4 1240 760 266 81.0 32.0 35.3 1160 32.1 338 2.7 4.2 1.0 2.7
	Certificate 0. Reg. 153	ed: Jun 3, 2005 05-339 S	L Guideline 440001 3 17 78.4 3 21 78.5 3 85 97.7 .6 43 3.3 .6 1.9 3.3
	Laboratories	Jun 3, 2005 Date Receive	Unit 0.6 Unit 0.6 Ug(9 0.3 Ug(9 0.3 Ug(9 0.1 Ug(9 0.0)
		CLIENT NAME: GC Date Sampled:	Arsenic Cobalt Lead Nickel

Selenium

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Elizabeth Rolohowstra Certified By: AGAT Laboratories (Calgary, Mississauga) is accredited by the Standards Council of Accreditations accreditation for Environmental Analytical Laboratories (Calgary, Mississauga) is accredited for accreditation. Accreditations accreditation for Environmental tests listed in the scope of accreditation and/or the Canadian Laboratories listed in the scope of accreditation from M.D.L. - Method Detection Limit



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Certificate of Analysis - Sample Comments

Workorder 05T124900

O. Reg. 153 Metals in Soil Guideline T1(All)

Sample	Comments
146081	M.D.L Method Detection Limit
146082	M.D.L Method Detection Limit
146083	M.D.L Method Detection Limit
146084	M.D.L Method Detection Limit
146085	M.D.L Method Detection Limit
146086	M.D.L Method Detection Limit
146087	M.D.L Method Detection Limit

Elijabeth Rolakowskia Certified By:

AGAT Certificate of Analysis

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Page 2



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Quality Assurance

GOLDER ASSOCIATES LTD. **CLIENT NAME:**

AGAT WORK ORDER:

05T124900

ATTENTION TO: Rui Oliveira (04-1112-069)

						Soil									
DATE	Jun 8, 2005		Dup	licate		F	Reference M	laterial		Method	Blank S	píke	Mati	ix Spike	Э
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153	3 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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specific tests.



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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

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	Labor	atories ⁴	4961	Certific	ate of An	sisvie	DOZJ INUCA MISSISSA CANADA	DAM ROAD NUGA, ONTARIO L4Z 1N9		TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
JENT NAME:	GOLDER ASS	OCIATES LTD.				A A	TTENTION:	Rui Oliveira	(04-1112-069	(6
). Reg. 1	53 Metal	s in Soi				
e Sampled:	Jun 6, 2005	Date Receive	d: Jun	6, 2005	Date Repo	orted: J	un 8, 2005	Sampl	e Type:	powder
	Cuit	WDL	Guideline	PANCREATIN 1-1 44649	PANCREATIN 1-246450	PANCREATIN 2-1 446451	PANCREATIN 2-2 446452	Bile 1-1 44645	3 Bile 1-2 446454	
	6/6rl	0.6	17	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	
	6/6r1	0.3	21	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
L	6/6r1	0.3	85	1.0	0.9	1.0	0.9	5.1	5.1	
	6/61	0.5	120	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/6rf	0.6	43	≤0.6	<0.6	<0.6	<0.6	≤0.6	<0.6	
E	6/61	0.8	1.9	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	
L Method E	Jetection Limit									
						ပိ	rtified	d By:	Elijabet	4 Repeasing
Certificate of A	Vachueie									



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agattabs.com

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

Elijabeth Rololiowska Certified By:

AGAT Certificate of Analysis

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Page 2



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T125157

ATTENTION TO:

Rui Oliveira (04-1112-069)

							Soil									
DATE	Jun 8, 2	2005		Dupl	icate		R	Reference M	aterial		Method	Blank S	pike	Matr	rix Spike	3
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Accer Lin	ptable nits	Recovery	Accej Lin	ptable nits
									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

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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



5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

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.

AGAT Laboratories

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	Labor	atories	Lee	Certific	ate of An	lalysis	5623 McA MISSISSA CANADA	DAM ROAD AUGA, ONTARI L4Z 1N9	0	TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.				•	ATTENTION:	Mike Dutto	u	
			Ö	Reg 153	- Metals	in Wa	iter			
Date Sampled:	Jun 1, 2005	Date Received:	Jun 2	, 2005	Date Repo	orted:	Jun 2, 2005	Sam	ple Type:	Water
	Cuit	WDL	Guideline	Distilled Water 0 445811	# Stored Water# 1 445812	Stored Wate 445813	ir# 2 Stored Water# 445814	3 Stored Wate 445815	/# 4 Stored Water# 5 445816	5
Antimony	ng/L	1.53		<1.53	<1.53	<1.53	<1.53	<1.53	<1.53	
Arsenic	ng/L	0.57		<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	
Barium	ng/L	0.41		2.49	0.53	0.94	0.65	0.72	0.68	
Beryllium	ng/L	1.84		<1.84	<1.84	<1.84	<1.84	<1.84	<1.84	
Boron	ng/L	8.00		1030	592	535	521	476	801	
Cadmium	ng/L	0.67		<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	
Chromium	ng/L	0.57		<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	
Cobalt	ng/L	0.96		<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	
Copper	ng/L	0.78		556	16.8	78.2	33.1	16.6	36.4	
Lead	ng/L	0.44		1.25	<0.44	0.63	<0.44	<0.44	<0.44	
Molybdenum	ng/L	0.47		<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	
Nickel	ng/L	0.63		5.78	<0.63	1.15	<0.63	2.67	0.75	
Selenium	ng/L	0.81		<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	
Silver	ng/L	0.70		<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	
Thallium	ng/L	0.36		<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	
Vanadium	ng/L	0.40		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
Zinc	ng/L	0.41		1130	12.9	63.8	45.0	72.1	20.1	
M.D.L Method D	etection Limit									
						Ŭ	ertifie	d By:		ady Takendi
AGAT Certificate of A	nalysis									Page
AGAT Laboratories (C Canada (SCC) and/or (CAEAL), for specific are location and parar www.scc.ca and/or wv	Calgary, Mississaug the Canadian Ass environmental test meter specific and a ww.caeal.ca. The te	ga) is accredited by the cociation for Environm s listed in the scope c a complete listing of p ests in this report may	The Standards Thental Analyti of accreditatic Darameters is y not necess:	Council of cal Laboratorik on. Accreditatic available fron arily be include	se suc bí		AG	AT Laborator ustrial Hygier	ies Calgary is ac ie Association (A	credited by the American .IHA) for specific tests.
in the scope of this ac	creditation.									



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AGAT "aboratories

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TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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

Jordy Takewelli Certified By:

AGAT Certificate of Analysis

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Page 3



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

Wator

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T124770

ATTENTION TO:

Mike Dutton

						Water									
DATE	Jun 2, 2005		Dup	licate		F	Reference M	laterial		Method	Blank S	Spike	Matr	ix Spik	e
Parameter	Batch	Sample I ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits
								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	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 1	1030	1090	5.7%	< 8.00	106%	90%	110%	105%	90%	110%		70%	130%
Boron	1	445816 8	301	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 5	556	569	2.3%	< 0.78	108%	90%	110%	100%	90%	110%	87%	70%	130%
Copper	1	445816 3	36.4	36.0	1.1%	< 0.78		90%	110%		90%	110%		70%	130%
Lead	1	445811 1	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:

Jacky Takewehi

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American Industrial Hygiene Association (AIHA) for specific tests.

1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T124770

ATTENTION TO:

Mike Dutton

					Water									
DATE	Jun 2, 2005	[Duplicate		F	Reference M	laterial		Method	Blank S	Spike	Mat	rix Spik	е
Parameter	Batch	Sample Dup ID	#1 Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits
							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	5 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 113	0 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:

Jorby Takunchi

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.

2



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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

Biolocatories 563 McAdam Road Mississuga, Ontario La 100, 501-9998 Factories Ses McAdam Road La 2100, 501-9998 Factories Dission D T Dission D T Dission D Froduct basenploin Holduct basenploin Mission D Mission D	Page 1 of INVOICE NO. 05K76284 Date: 20/Apr/05 Code District Product	Quantity Unit Price Extended Price 30.00 \$30.00 \$900.00 Subtotal: \$900.00 0.0% PST: \$0.00 7.0% GST: \$63.00	^{10tal;} \$963.00		
aboratories Customer P.o. T T Branch Customer P.o. T Product Description Pubb. As, Se, Ni) Product Description U.Pb. As, Se, Ni) Product Description d you require any information regarding this Technical Service Rep @ (905) 5 EST CHARGED ON OVERDUE ACCOUNTS AT THE CHECKED: GOLDER ASSO GST TARE PROFECT TARE CHECKED: OULBER ASSO GST FLORE VENDOR DUR	5623 McAdam Road Mississauga, Ontario L4Z 1N9 L4Z 1N9 L4Z 1N9 Fax:(905) 501-9998 Fax:(905) 501-0589 Fax:(905) analysis, please contact a * 01-9998 * 	CLATES LTD.	T. A.	nvoice To: GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA ON L5N5Z7 ttt To: Rui Oliveira (nd.111,000)	
aboratorie Branch T T T d you require any inte Technica EST CHARGED ON OVEF BROFECT CHECKED: H P PROFECT VENDOR	Customer P.O.	rmation regarding this Service Rep @ (905) (RDUE ACCOUNTS AT THE	OOLDER ASSO APPROVIN		
	aboratorie	J.Pb, As, Se, Ni) ************************************	CHECKED: H p	PROFECT	T2P3T1



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

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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.

AGAT Laboratories

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	Ċ)	AGAT	r work o	RDER 0:	5T123501
	Laborato	ries	LU	Certifica	ate of An	alysis	5623 McAD, MISSISSAU CANADA L4	4M ROAD GA, ONTARIO Z 1N9		ΨΑ	L: (905) 501-9998 X: (905) 501-0589 ww.agatlabs.com
CLIENT NAME:	GOLDER ASSOCIA	TES LTD.				4	ATTENTION: R	ui Oliveira			
				Metals	Scan [li	quid]					
Date Sampled:	May 17, 2005 Dat	te Received:	May '	19, 2005	Date Repo	orted:	Jun 3, 2005	Sample T	Type:	Water	
	Unit	MDL	Guideline	05-410 443462	05-412(repeat) 443464	05-415(repeat 443465	t) 05-416 443467	05-419 443469 05	5-420 443470	Spike Not Tested 44347	Spike Tested 1 443472
Arsenic	ng/L	1.0		14.5	6.5	8.0	19.9	15.1 52	21	997	978
Cobalt	ng/L	0.5		17.4	7.8	8.1	28.1	10.1 17	78	9210	7720
Copper	ng/L	1.0		686	224	268	3530	308 48	860	9110	8620
Lead	ng/L	2.0		28.4	9.7	10.4	17.3	15.2 11	20	9190	7110
Nickel	ng/L	1.0		379	170	237	1110	267 5(010	16.1	8753
Selenium	ng/L	2.0		<2.0	<2.0	<2.0	5.7	2.1 9.	• .	1170	1150

M.D.L. - Method Detection Limit

Jordy Takeweldi Certified By:

AGAT Certificate of Analysis

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Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

				_				AG∕	AT WORK C	RDER 05	T123501
	Laboratori	SS	L.	Certific	ate of Ar	alysis	5623 McAD MISSISSAU CANADA L4	AM ROAD IGA, ONTARIO IZ 1N9		TEI FA) W	.: (905) 501-9998 K: (905) 501-0589 ww.agatlabs.com
CLIENT NAME:	GOLDER ASSOCIATE:	S LTD.				-	ATTENTION: R	ui Oliveira			
				Metals	Scan [li	quid]					
Date Sampled:	May 17, 2005 Date F	Received:	May [.]	19, 2005	Date Repo	orted:	Jun 3, 2005	Sample	Type:	Water	
	Unit	MDL	Guideline	Blank 443473	05-357(repeat) 443474	05-389(repea 443475	at) 05-408 443476	05-412 443477	05-413 443478	05-415 443479	Spiked 443480
Arsenic	ng/L	1.0		1.3	17.9	7.2	182	4.0	49.0	11.9	961
Cobalt	ng/L	0.5		3.5	16.6	8.4	170	7.6	60.0	9.7	9330
Copper	ng/L	1.0		61.4	456	265	8190	272	5940	365	8960
Lead	ng/L	2.0		10.4	27.4	20.9	242	5.3	97.4	31.0	8870
Nickel	ng/L	1.0		146	402	210	8390	193	2490	336	10300
Selenium	ng/L	2.0		<2.0	4.3	<2.0	7.3	<2.0	15.0	<2.0	1160

M.D.L. - Method Detection Limit

Page 2 Jocky Takeweldi Certified By:

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AGAT Certificate of Analysis

		International Access to a subset of the subs)	AGAT WORK O	RDER 05T123501
	Laborat	tories	AGAT	Certific:	ate of Ar	alvsis	5623 MCADAM F MISSISSAUGA, CANADA I 47 11	ROAD ONTARIO Va	TEL: (905) 501-99 FAX: (905) 501-09 www.agatlabs.cc
CLIENT NAME:	GOLDER ASSO(CIATES LTD.				AT	TENTION: Rui	Oliveira	
				Metals	Scan [li	quid]			
Date Sampled:	May 16, 2005	Date Received	1: May	19, 2005	Date Repo	orted: Ju	n 3, 2005	Sample Type:	Water
	Cuit	WDL	Guideline	Spiked Tested 443481	Blank 443482	Extraction Fluid 443483			
Arsenic	ng/L	1.0		1020	2.3	<1.0			
Cobalt	ng/L	0.5		8210	5.9	3.3			
Copper	ng/L	1.0		8090	121	49.5			
Lead	ng/L	2.0		7420	28.5	8.0			
Nickel	ng/L	1.0		9230	178	34.0			
Selenium	ng/L	2.0		1200	2.3	<2.0			
M.D.L Method D	etection Limit								
						Cei	rtified I	By:	why atenda
AGAT Certificate of Ai AGAT Laboratories (C Canada (SCC) and/or (CAEAL), for specific are location and paran www.scc.ca and/or wv in the scope of this acc	nalysis algary, Mississauga) the Canadian Associ anvironmental tests li neter specific and a c ww.caeal.ca. The test creditation.	is accredited by lation for Environ sted in the scope complete listing of s in this report m	the Standards mental Analyti of accreditatic parameters is ay not necess:	s Council of Ical Laboratories on. Accreditation a available from arily be includec			AGAT La Industria	aboratories Calgary is acci I Hygiene Association (All	Pag redited by the American HA) for specific tests.



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Certificate of Analysis - Sample Comments

Metals Scan [liquid] Guideline None

05T123501

Workorder

Comments
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

Certified By:

AGAT Certificate of Analysis

Page 4 Jordy Takewelli



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Certificate of Analysis - Sample Comments

Metals Scan [liquid]

05T123501

Workorder

lideline	None	
mple	Comments	
3473	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has beer	n modified.
3474	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has beer	n modified.
3475	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has beer	n modified.
13476	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has beer	n modified.
13477	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has beer	n modified.
13478	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has beer	n modified.
13479	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been	n modified.
13480	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been	n modified.

Certified By:

AGAT Certificate of Analysis

Page 5 Jordy Takendi



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Certificate of Analysis - Sample Comments

Workorder	05T123501	
	Metals Sci	an [liquid]
	Guideline	None
	Sample	Comments
	443481	M.D.L Method Detection Limit Ligning samples were dijuted prior to Metals scan: the remoted MDL had have 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:

AGAT Certificate of Analysis

Page 6 Jordy Takewelli



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Quality Assurance

GOLDER ASSOCIATES LTD. **CLIENT NAME:**

AGAT WORK ORDER:

05T123501

ATTENTION TO:

Rui Oliveira

						Water									
DATE	Jun 3, 2005	[Dupli	cate		R	eference M	laterial		Method	Blank S	Spike	Matr	ix Spike	e
Parameter	Batch	Sample I ID	Dup #1	Dup #2	RPD	Method Biank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Scan [liquid]														
Arsenic	1	443462 1	14.4	14.5	0.7%	< 1.0	90%	90%	110%	90%	90%	110%	103%	70%	130%
Cobalt	1	443462 1	16.7	17.4	4.1%	< 0.5	99%	90%	110%	108%	90%	110%	94%	70%	130%
Copper	1	443462 6	625	689	9.7%	< 1.0	100%	90%	110%	106%	90%	110%	90%	70%	130%
Lead	1	443462 2	27.3	28.4	3.9%	< 2.0	98%	90%	110%	92%	80%	120%	93%	70%	130%
Nickel	1	443462 3	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:

Jocky Takewski

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1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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		1	<u> </u>
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



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

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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Environmental Services Association of Alberta (ESAA)
ADALOGICAL STATES AND A STOLEN AND A STATE	enauro ena la constante en la constante en la constante en la constante en la constante en la constante en la c	¥						Ă	GAT WORK	ORDER	05T123495
	Laborato	ries a		Certific	sate of A	unalysis	5623 McAl MISSISSA CANADA I	DAM ROAD UGA, ONTARIO -4Z 1N9			TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSOCIA	TES LTD.					ATTENTION:	Rui Oliveira	a (04-1112-0	(69	
			0	. Reg. 1	153 Meta	lls in Sc	li				
Date Sampled:	May 17, 2005 Dat	te Received:	May 1	19, 2005	Date Re	ported:	Jun 2, 2005	Samp	le Type:	Soil	
	Unit	WDL (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	6/6rl	0.6		85.7	2.5	12.5	2.4	4.3	5.5	174	4.6
Cobalt	6/6rl	0.3		49.2	3.9	18.7	4.2	6.9	8.0	46.1	3.6
Copper	6/6rl	0.3		1200	28.5	799	38.4	105	427	741	40.2
Lead	6/6r1	0.5		126	10.0	58.8	8.2	24.6	19.4	110	12.8
Nickel	6/6rl	0.6		1230	34.9	564	45.0	90.5	197	891	40.2
Selenium	6/6rl	0.8		4.0	<0.8	5.1	<0.8	<0.8	2.9	2.9	<0.8

M.D.L. - Method Detection Limit

Jorday Takewelli Certified By:

Page 1

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Certificate of Analysis - Sample Comments

sample	Comments
43423	M.D.L Method Detection Limit
43426	M.D.L Method Detection Limit
43427	M.D.L Method Detection Limit
43429	M.D.L Method Detection Limit
43430	M.D.L Method Detection Limit
43432	M.D.L Method Detection Limit
43434	M.D.L Method Detection Limit
143435	M.D.L Method Detection Limit

Jordy Takewerki **Certified By:**

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Page 2



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T123495

ATTENTION TO:

Rui Oliveira (04-1112-069)

					Soil									
DATE	Jun 2, 2005		Duplicate		F	Reference N	laterial		Method	Blank S	Spike	Matr	ix Spike	Э
Parameter	Batch	Sample Du ID	p #1 Dup #	2 RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits
							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 < ().8 < 0.8	0.0%	< 0.8	90%	90%	110%	107%	70%	130%	100%	70%	130%

Certified By:

Jordy Takeweli

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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

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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	B							AGA	T WORK C	ORDER (J5T122667
エラエ	Laborato	ories 💘	E	Certific	ate of Ar	alysis	5623 McAD MISSISSAU CANADA L₄	am Road Jga, ontario 42 1N9			TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSOCI	ATES LTD.				-	ATTENTION: R	ui Oliveira (0	4-1112-06	6)	
				Metals	Scan [li	quid]					
Date Sampled:	May 11, 2005 Di	ate Received:	May 1	2, 2005	Date Rep	orted:	May 20, 2005	Sample	Type:	Water	
	Unit	MDL	Guideline	05-344 441780	05-346 441784	05-350R 441	785 05-352 441786	05-377 441787 0	15-418 441788	spiked tester 441789	d blank 441790
Arsenic	ng/L	1.0		9.2	9.5	106	93.4	9.47 1	1.7	911	2.4
Cobalt	ng/L	0.5		14.2	13.6	73.1	103	12.9 1	1.2	9170	2.9
Copper	ng/L	1.0		366	378	1930	9500	310 2	238	0606	45.2
Lead	ng/L	2.0		70.3	43.3	27.1	178	15.3 7		2350	2.3
Nickel	ng/L	1.0		214	273	1290	4390	289 3	344	9130	165
Selenium	ng/L	2.0		<2.0	<2.0	<2.0	20.7	<2.0 <	<2.0	931	<2.0

M.D.L. - Method Detection Limit

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Jordy Takewelli **Certified By:**

AGAT Certificate of Analysis

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	Laboratories	Адат	Certific	ate of Analvsi	5623 McADAN MISSISSAUG CANADA L4Z	AGAI WOKK C 1 ROAD A, ONTARIO 119	KDER 051122667 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agattabs.com	രഗ
CLIENT NAME:	GOLDER ASSOCIATES LTI	D .			ATTENTION: Rui	i Oliveira (04-1112-06	. (1	
			Metals	Scan [liquid]				
Date Sampled:	May 11, 2005 Date Recei	ved: Ma	y 12, 2005	Date Reported:	May 20, 2005	Sample Type:	Water	
								Т
	Unit MDI	- Guideline	extraction fluid 441791	spiked 441792				
Arsenic	ug/L 1.0		<1.0	1130				7-
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	0266				
Selenium	ug/L 2.0		<2.0	975				
M.D.L Method De	tection Limit							Г
						c		
				Ŭ	ertified	By:	by Takewelli	
AGAT Certificate of Ani	alysis							
AGAT Laboratories (Ca Canada (SCC) and/or ti (CAEAL), for specific er are location and param www.scc.ca and/or www in the scope of this accr	Ilgary, Mississauga) is accredited b he Canadian Association for Enviro nvironmental tests listed in the scor eter specific and a complete listing <i>w</i> .caeal.ca. The tests in this report reditation.	y the Standard onmental Analy pe of accreditai of parameters may not neces	s Council of tical Laboratories ion. Accreditation is available from sarily be included	Ø	AGAT La Industria	iboratories Calgary is accre I Hygiene Association (AIH	r age z dited by the American A) for specific tests.	



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Certificate of Analysis - Sample Comments

Metals Scan [liquid] Guideline None

05T122667

Workorder

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:

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Page 3 Jordy Takenehi



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Certificate of Analysis - Sample Comments

Workorder	05T122667	
	Metals Scan	[liquid]
	Guideline No	ne
	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.

Jordy Takendri **Certified By:**

AGAT Certificate of Analysis

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TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T122667

Rui Oliveira (04-1112-069) **ATTENTION TO:**

			Water									
DATE	May 20, 2005	Duplicate	F	Reference M	laterial		Method	Blank S	Spike	Mati	rix Spike	e
Parameter	Batch	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits
					Lower	Upper		Lower	Upper		Lower	Upper
Metals Sca	n [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:

Jacky Takewedi

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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	_L	.	
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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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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Environmental Services Association of Alberta (ESAA)

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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

Elijabeth Rolakowskia Certified By:

AGAT Certificate of Analysis

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Page 2



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Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T122154

Mike Dutton (04-1112-069) **ATTENTION TO:**

						Water									
DATE	May 10, 2005		Duplicate			F	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike	Э
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	/ Acceptable Limits		Recovery	Accer Lin	ptable nits
								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 Rolakowska

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.

1



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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

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

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Cate of Analysis canada 42 109 mississauga, ontario FAX: (905) 50 Easter of Analysis canada 42 109	ATTENTION: Rui Oliveira (04-1112-069)	153 Metals in Soil	Date Reported: May 24, 2005 Sample Type: Soil	48 05-344 441449 05-346 441450 05-352 441451 05-386 441452 05-387 441453 05-405 441454 05-418 4	4.0 3.8 23.6 12.6 17.6 2.9 4.8	10.2 6.9 28.5 21.1 19.1 6.9 4.9	67.0 60.0 1260 326 502 24.5 29.8	74.0 23.0 85.5 54.6 54.7 6.4 9.1	67.3 57.1 872 483 432 32.6 60.5	<0.8 <0.8 9.5 1.4 3.3 <0.8 <0.8
Certificate		O. Reg. 153 I	ay 11, 2005 Da	e 05-335 441448 05-34	196 4.0	37.2 10.2	982 67.0	150 74.0	67.3	4.3 <0.8
AGAT			:pa	Guidelin						
atories	CIATES LTD.		Date Receive	MDL	0.6	0.3	0.3	0.5	0.6	0.8
Labore	GOLDER ASSC		May 5, 2005	Unit	6/611	6/6rl	6/6rl	b/brl	6/6rt	6/6rt
	CLIENT NAME:		Date Sampled:		Arsenic	Cobalt	Copper	-ead	Vickel	Sefenium

M.D.L. - Method Detection Limit

Certified By:

Page 1 Jordy Toteweki

AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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AGAT Certificate of Analysis

M.D.L. - Method Detection Limit

Certified By:

Joshy Totemki

Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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AGAT Certificate of Analysis

	a na na na mana si si si si si si si si si si si si si		A RECEIPTION OF A RECEIPTION O						
	Labore	atories	Lube		-	5623 McADAI MISSISSAUG	AGAT WORK M ROAD iA, ONTARIO	<pre>< ORDER 051 TEL TEL FAX</pre>	r122448 .: (905) 501-9998 :: (905) 501-0589
			-	Certific	ate of Analysi	S CANADA L4Z	1N9	MM	w.agatlabs.com
CLIENI NAME:	GOLDER ASS	OCIATES LTD.				ATTENTION: RU	i Oliveira (04-1112-(069)	
				Metals	Scan [liquid]				
Date Sampled:	May 5, 2005	Date Receive	d : May	11, 2005	Date Reported:	May 24, 2005	Sample Type:	Wate	
	Unit	MDL	Guideline	Spiked 441446	Spiked Tested 441447				
Arsenic	ng/L	1.0		1290	1030				
Cobalt	ng/L	0.5		10300	8790				
Copper	ng/L	1.0		10400	8500				
Lead	ng/L	2.0		10300	1160				
Nickel	ng/L	1.0		10600	1120				
Selenium	ng/L	2.0		1300	0668				
M.D.L Method De	tection Limit								
					Ŭ	ertified	By:	Jordy Take	ahi.
AGAT Certificate of An	alysis							11	Dogo 2
AGAT Laboratories (Cc Canada (SCC) and/or t (CAEAL), for specific en are location and param www.scc.ca and/or www in the scope of this accr	algary, Mississauga the Canadian Assou nvironmental tests eter specific and a w.caeal.ca. The tes editation.	 is accredited by 1 clation for Environr listed in the scope complete listing of sits in this report me 	the Standards mental Analytic of accreditation parameters is iy not necessai	Council of sal Laboratories n. Accreditation available from rily be included	ω	AGAT L Industris	aboratories Calgary is ac al Hygiene Association (/	ccredited by the A AIHA) for specific	rage 3 American tests.



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Certificate of Analysis - Sample Comments

Metals Scan [liquid]

05T122448

Workorder

Guideline	lone
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:

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Page 4 Jordy Takenehi



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Certificate of Analysis - Sample Comments

Workorder 05T122448

SampleComments441446M.D.L Me441447M.D.L Me441447M.D.L MeLiquid sampO. Reg. 153 Metals in SoilGuidelineNoneSampleCommente	
441447 M.D.L Me Liquid samp O. Reg. 153 Metals in Soil Guideline None	s ethod Detection Limit iples were diluted prior to Metals scan; the reported MDL has been modified.
O. Reg. 153 Metals in Soil Guideline None Samula	ethod Detection Limit ples were diluted prior to Metals scan; the reported MDL has been modified.
Sample Comments	
441448 M.D.L Me	s ethod Detection Limit
441449 M.D.L Mei	ethod Detection Limit
441450 M.D.L Mei	ethod Detection Limit
441451 M.D.L Mei	ethod Detection Limit
441452 M.D.L Mei	ethod Detection Limit
441453 M.D.L Mei	ethod Detection Limit

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Page 5 Joshy Takenthi



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Certificate of Analysis - Sample Comments

Workorder	05T122448
	O. Reg. 153 Metals in Soil
	Guideline None

Joshy Takewerki **Certified By:**

AGAT Certificate of Analysis

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Page 6



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Quality Assurance

GOLDER ASSOCIATES LTD. **CLIENT NAME:**

AGAT WORK ORDER:

05T122448

Rui Oliveira (04-1112-069) **ATTENTION TO:**

							Soil									
DATE	May 24, 2	2005		Dupl	icate		F	Reference M	laterial		Method	Blank S	pike	Matr	rix Spike	e
Parameter	В	atch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Accej Lin	ptable nits	Recovery	Acce Lir	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 N	letals in S	ioil														
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 Takewehi

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American Industrial Hygiene Association (AIHA) for specific tests.

1



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Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T122448

Rui Oliveira (04-1112-069) **ATTENTION TO:**

							Water									
DATE	May 24,	, 2005		Dupl	licate		F	Reference M	laterial		Method	Blank S	Spike	Matr	ix Spike	
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits
									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 Takeweli

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2



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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		L	
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. 1000 ADOCNITIA DOAD

	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 Laboratories

5623 McADAM ROAD

CANADA L4Z 1N9

MISSISSAUGA, ONTARIO

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Environmental Services Association of Alberta (ESAA)

NEW CONTRACTOR OF THE OWNER OWNER OWNER OWNER	On the subscript of the			-						
	©	-)	AGAT WOR	(ORDER	05T122808
ヒッレ	Labore	atories	HGRT	Certific	ate of Anal	lysis	5623 McADAM MISSISSAUGA CANADA L4Z 1	ROAD , ONTARIO N9		TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				ATTE	ENTION: Rui	Oliveira (04-1112-	(690	
			J	D. Reg. 1:	53 Metals i	n Soil				
Date Sampled:	May 5, 2005	Date Receive	ed: May	13, 2005	Date Reporte	ed: May	20, 2005	Sample Type:	Soil	
	C D nit	MDL	Guideline	DE ADO AZORA		300077 277				
Arsenic	6/6rl	0.6		12.0	4.3 2.4	21 442000 00	0.4			
Cobalt	6/6rl	0.3		21.7	9.4 5.8	4	4.6			
Copper	6/6ri	0.3		943	113 34.	9 2(38			
Lead	6/6r1	0.5		74.2	48.1 7.7	ž	3.3			
Nickel	6/6H	0.6		491	123 47.	6	98			
Selenium	6/6rl	0.8		3.8	0.9 <0.1	8 1.	2			
M.D.L Method De	etection Limit									
						Cert	ified <i>E</i>	3y: Elija	eth Polo	loustra
AGAT Certificate of An	alysis									Pare 1
AGAT Laboratories (C: Canada (SCC) and/or1 (CAEAL), for specific e are location and param www.scc.ca and/or ww in the scope of this acci	algary, Mississauga, the Canadian Assoc nvironmental tests li leter specific and a c w.caeal.ca. The test reditation.) is accredited by liation for Environu isted in the scope complete listing of ts in this report ma	the Standards mental Analyti of accreditatic parameters is ay not necesse	Council of cal Laboratories m. Accreditation available from arily be included	Ø		AGAT La Industrial	boratories Calgary is a Hygiene Association (,	ccredited by . AIHA) for spe	the American crific tests.

	B	1				FEO3 MCAD		JKUEK	UD I I 2 2000 TEL: (905) 501-9998
シリモ	Labora	atories 💐	I det	Certific	ate of Analys	MISSISSAU MISSISSAU CANADA La	IGA, ONTARIO 42 1N9		FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME	GOI DER ASSO	CIATES LTD.			•	ATTENTION: R	ui Oliveira (04-1112-06	(6)	
				Metals	Scan [liquid				
Date Sampled:	May 5, 2005	Date Received	: May 1	13, 2005	Date Reported:	May 20, 2005	Sample Type:	Water	
								SPIKED	
	Unit	MDL	Guideline	05-349R 442(154 05-382R 442055 05-400 4	42056 05-401 442057	05-417 442058 05-421 442059	442060	BLANK 442061
	/vii	10		48.4	13.5 51.9	18.6	6.96 71.4	988	<1.0
Arsenic	ug/L	0 C		55.1	38.7 62.2	25.1	10.7 44.2	8230	3.97
CODBIL	ug/r 10/1	0.0		158	161 571	788	228 1440	7870	50.4
Lopper	ug/L	0 c		58.1	83.0 170	115	9.89 60.0	8090	7.63
Lead	ug/L			1660	736 186	589	300 1640	8500	223
Nickel	ug/L ug/L	2.0		3.79	<2.0 11.2	<2.0	<2.0 <2.0	1090	<2.0
OCICIIIIII									

M.D.L. - Method Detection Limit

Elizabeth Robokowskia Certified By:

AGAT Certificate of Analysis

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Certificate of Analysis - Sample Comments

	Cellincale UL
Norkorder	05T122808
	Metals Scan [liquid]
	Guideline None

been modified.	been modified.	been modified.	been modified.	been modified.	been modified.	been modified.	been modified.
the reported MDL has	the reported MDL has	the reported MDL has	the reported MDL has	the reported MDL has	the reported MDL has	the reported MDL has	the reported MDL has
Comments M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan;
Sample 442054	442055	442056	442057	442058	442059	442060	442061

Elijabeth Relationstia Certified By:

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Page 4



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Certificate of Analysis - Sample Comments	r 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
	Workorder							

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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	;	Dupl	icate		F	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike	Э
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Accej Lin	ptable nits	Recovery	Acce Lin	ptable nits
								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 Rolakowska

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.

1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

GOLDER ASSOCIATES LTD. **CLIENT NAME:**

AGAT WORK ORDER:

05T122808

ATTENTION TO:

Rui Oliveira (04-1112-069)

Water															
DATE	May 20, 200	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 QUALITY ASSURANCE REPORT

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specific tests.

2



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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	I					
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			
AGAT® Laboratories						
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5623 McAdam Road Mississauga, Ontario L4Z 1N9

Tel:(905) 501-9998 Fax:(905) 501-0589

INVOICE NO. 05K77284 Date: 29/Apr/05

GST #: R100073238

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	MorkOrder No	Branch	Customer P.O.	Division ID	AFE	Acct Code	DISTRICT		-Induce
Customer No	MOINOIDEI MO			C +					0
4021511	05T120291	⊢		01					
							atity Ilnit D	rica F	xtended Price
Product ID			Product Descripti	uo		3 1 3			
Ľ	če:								
							7.00 \$:23.00	\$161.00
93-043 A	As, Be - soils & grass						2.00	\$23.00	\$46.00

 soils & grass water * Should you requir * * * * *****************************	2.00 \$23.00 \$46.00	Subtotal: \$207.00	e any information regarding this analysis, please contact a * 0.0% PST: \$0.00	Technical Service Rep @ (303) 301-3330 314.49	ED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM). Total: \$221.49	
As, Be As, Be TERM	As, Be - soils & grass	As, Be - water	* Should you require any information regarding this analysis, please co		TERMS: NET 30 DAYS INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MC	

CHECKED:	APPROV	ED:	an and the 's subscription of the one of the work of the subscription will be a subscription of the
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TSD	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 Attn To: Rui Oliveira

Page 1 of 1

FGGT[®] Certificate of Analysis

CIVES I TD (

ATTENTION: Rui Oliveira (04-1112-069)

AGAT WORK ORDER 05T122448

CLIENT NAME:	GOLDER ASSC	DCIATES LTD.					ATTENTION:	Rui Oliv	eira (04-11	12-069)		
			o.	Reg. 1	53 Meta	ls in So						
Date Sampled:	May 5, 2005	Date Received:	May 11,	2005	Date Rep	oorted:	May 20, 200	5 S a	mple Type		Soil	
	New York Control of the State o											
	Unit	WDL (Suideline)5-335 441448	3 05-344 44144	9 05-346 44145	50 05-352 4414	51 05-386 4	11452 05-387	441453 ()5-405 441454	05-418 441455
Arsenic	6/6rl	0.6		96	4.0	3.8	23.6	12.6	17.6		5.9	4.8
Cobalt	6/6ri	0.3	.,	37.2	10.2	6.9	28.5	21.1	19.1	Ű	3.9	4.9
Copper	6/6r1	0.3	0,	382	67.0	60.0	1260	326	502		24.5	29.8
Lead	6/6rt	0.5		150	74.0	23.0	85.5	54.6	54.7	U.	5.4	9.1
Nickel	6/6rl	0.6)	572	67.3	57.1	872	483	432		32.6	60.5
Selenium	6/6rl	0.8	7	1.3	<0.8	<0.8	9.5	1.4	3.3	·	≤0.8	<0.8

M.D.L. - Method Detection Limit

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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 AGAT Laboratories (Calgary, Mississauga) is accredited by the Standards Council of in the scope of this accreditation. AGAT WORK ORDER 05T122448



CLIENT NAME: GOLDER ASSOCIATES LTD.

Extraction Fluid 441444 v.0 <0.5 31.2 <2:0 9.3 2.1 05-405 441442 BLANK 441443 Water <0.5 41.6 <2.0 ₹1.0 1.0 <2.0 119 ATTENTION: Rui Oliveira (04-1112-069) Sample Type: 11.8 <2.0 141 7.6 189 6.7 05-334 441437 05-335 441438 05-386 441439 05-387 441440 05-393 441441 16.4 <2.0 14.6 525 15.7 428 May 20, 2005 3800 56.9 70.2 2260 54.7 6.5 Metals Scan [liquid] Date Reported: 74.6 1820 1830 35.6 87.2 <2.0 6770 3560 94.6 241 407 9.1 May 11, 2005 5810 5260 156 171 3.3 250 Guideline Date Received: MDL 0.5 1:0 2.0 1.0 1.0 2.0 Unit May 5, 2005 ng/L ng/L ng/L ng/L ng/L ng/L Date Sampled: Selenium Copper Arsenic Cobalt Nickel Lead

M.D.L. - Method Detection Limit

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				Certific	T [®] Laboratories ◀		AGAT WOR	K ORDER 05T122448
CLIENT NAME:	GOLDER ASS(OCIATES LTD.				ATTENTION: Rui	i 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
		, N	Guideline		Spiked Tested			
Arsenic	na/F	1.0		Spiked 441446 1290	1030			
Cobalt	ng/L	0.5		10300	8790			
Copper	ng/L	1.0		10400	8500			
Lead	ng/L	2.0		10300	1160			
Nickel	ng/L	1.0		10600	8990			
Selenium	ng/L	2.0		1300	1120			
M.D.L Method I	Detection Limit							
					U	Sertified	By:	Jordy Takewedi
AGAT Certificate of	Analysis						-	Page
AGAT Laboratories	(Calgary, Mississauç or the Canadian Ass	ga) is accredited by the sociation for Environm	he Standards nental Analyti	 Council of cal Laboratorie 	ŝ	AGAT Industr	Laboratories Calgary is ial Hygiene Associatior	s accredited by the American 1 (AIHA) for specific tests.
			•					

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Workorder 05T122448

Metals Scan [liquid] Guideline None

Sample 441437	Comments M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441438	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441439	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441440	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441441	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441442	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441443	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	ported MDL has been modified.
441444	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the rep	sported MDL has been modified.

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Page 4 Jouly Tatenuti



05T122448	Metals Scan [liquid]
Workorder	

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

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Jouly Takenthi

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Page 5



Workorder 05T122448

O. Reg. 153 Metals in Soil Guideline None SampleComments441454M.D.L. - Method Detection Limit441455M.D.L. - Method Detection Limit

Jouly Takenthi Certified By:

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Page 6



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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.

AGAT Laboratories

5623 McADAM ROAD

CANADA L4Z 1N9

MISSISSAUGA, ONTARIO

Member of: Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) Western Enviro-Agricultural Laboratory Association (WEALA)

Environmental Services Association of Alberta (ESAA)

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	NAMES OF A DESCRIPTIONO	NAVOUR COMPANY AND AND AND AND AND AND AND AND AND AND						AG/	AT WORK C	RDER 051	122259
	Laboré	atories	HGA1	Certific	ate of Aı	nalysis	5623 McAl MISSISSA CANADA I	DAM ROAD UGA, ONTARIO 4Z 1N9		TEL FAX ww	: (905) 501-9998 : (905) 501-0589 w.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.					ATTENTION: F	kui Oliveira (04-1112-06	9)	
				O. Reg. 1	53 Metal	s in So	il				
Date Sampled:	May 4, 2005	Date Receive	d: Ma	y 10, 2005	Date Rep	orted:	May 20, 2005	Sample	Type:	Soil	
	Unit	MDL	Guideline	05-334 44123	5 05-337 441236	05-385 4412:	37 05-393 441238	05-394 441239	05-395 441240	05-399 441241	05-404 441242
Arsenic	6/6rl	0.6		112	17.6	63.4	4.1	10.7	130	24.8	4.0
Cobalt	6/6rl	0.3		60.1	24.1	66.3	6.2	17.6	36.2	25.4	7.0
Copper	6/6rl	0.3		1040	1140	1050	69.3	814	538	1660	0.06
Lead	6/6rl	0.5		94.1	154	105	13.1	57.4	60.8	90.6	20.5
Nickel	6/6rl	0.6		1030	685	1240	6.69	468	656	808	82.0
Selenium	6/6rl	0.8		4.1	8.8	3.0	<0.8	6.4	2.7	9.1	<0.8
			we want want want wat had been all want want want wat want wat want wat want wat wat wat wat wat wat wat wat w								

M.D.L. - Method Detection Limit

Page 1 Certified By: Sijateth Relationstia

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	Labor	atories	LHDH	i	-	5623 McADAA MISSISSAUG.	AGAI WORK U A ROAD A, ONTARIO	17005172259 TEL: (905) 501-9998 FAX: (905) 501-0589
CLIENT NAME:	GOLDER ASSO	DCIATES LTD.		Certific	cate of Analysi	S CANADA L4Z	1N9 i Oliveira (04-1112-069	www.agatlabs.com
				O. Reg.	153 Metals in S	oil		
Date Sampled:	May 4, 2005	Date Receive	d: Mi	ay 10, 2005	Date Reported:	May 20, 2005	Sample Type:	Soil
	Unit	MDL	Guidelin	e 05-407 4412 [,]	13 05-414 441244			
Arsenic	6/6rl	0.6		6.6	1.6			
Cobalt	6/6rl	0.3		11.9	4.3			
Copper	6/6rl	0.3		226	20.0			
Lead	6/6rl	0.5		37.2	4.6			
Nickel	6/6rl	0.6		157	20.1			
Selenium	6/6rl	0.8		1.8	<0.8			
- - - - -								
M.D.L Method C	Detection Limit							
					S	ertified	By: Elijabet	h Rolakowska
AGAT Certificate of A AGAT Laboratories ((Canada (SCC) and/oi (CAEAL), for specific are location and paran www.scc.ca and/or w in the scope of this ac	unalysis Calgary, Mississaug: tr the Canadian Asso environmental tests meter specific and a ww.caeal.ca. The te: creditation.	 a) is accredited by ociation for Environi ilisted in the scope i complete listing of sts in this report me 	the Standa mental Ana of accredit parameter ay not nece	ds Council of lytical Laboratori ation. Accreditati s is available fror ssarily be includ	se suo suo si	AGAT L Industri	aboratories Calgary is accr al Hygiene Association (AIF	Page 2 edited by the American IA) for specific tests.

	AGAT WORK ORDER 05T12259 5623 McADAM ROAD TEL: (905) 501-9998 TEL: (905) 501-9998 FAX: (905) 501-0589 CANADA L4Z 1N9 WWW.aqatatas.com	TTENTION: Rui Oliveira (04-1112-069)		lay 20, 2005 Sample Type: Water	05-385 441248 05-393 441249 05-394 441250 05-395 441252 05-390 441253	202 15.1 46.1 266 72.9	172 16.2 78.9 117 45.7	4970 490 6330 2400 1170	280 17.9 159 93.8 217	5150 398 2770 3420 2930	<2.0 <2.0 13.7 <2.0 15.9
	cate of Analvsis	A	s Scan [liquid]	Date Reported: N	uid 05-334 441246 05-337 441247	156 42.5	162 66.8	5730 8050	125 322	4840 3070	<2.0 6.74
Construction of the second sec	Certific		Metal	May 10, 2005	deline Extraction Flue	<1.0	<0.5	23.7	2.61	2.36	<2.0
A NAME AND A DESCRIPTION OF A	tories	CIATES LTD.		Date Received:	MDL Gu	1.0	0.5	1.0	2.0	1.0	2.0
Ministration and a substantiant of the propriet provide an advantage of the substantiant of	Laborat	GOLDER ASSOC		May 4, 2005 1	Cuit	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
		CLIENT NAME:		Date Sampled:		Arsenic	Cobalt	Copper	Lead	Nickel	Selenium

M.D.L. - Method Detection Limit

Page 3 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Elijabeth Rolokowskia Certified By:

AGAT Certificate of Analysis

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		AD VERSION OF THE ADDRESS				•			
	∎ ¶®	atorioc	RGAT			5623 Mc	AGAT W ADAM ROAD	ORK ORDER	05T122259 TEL: (905) 501-9998
CI IENT NAME		VINTES I TD		Certifica	ate of Analy	ISIS CANAD.	A L4Z 1N9		FAX: (905) 501-0589 www.agatlabs.com
	OULUEN AUG						Kui Oliveira (04-1	112-069)	
				INIETAIS	scan liiqui	aj			
Date Sampled:	May 4, 2005	Date Receive	ed: May	10, 2005	Date Reported	: May 20, 200	5 Sample Typ	e: Water	
	Unit	WDL	Guideline						
Arsenic	ng/L	1.0		12.3	20.1 44 12 00 -41	4 44 1 200			
Cobalt	ng/L	0.5		16.4	23.2 5.2				
Copper	ng/L	1.0		617	1810 159				
Lead	ng/L	2.0		23.6	72.3 6.4				
Nickel	ng/L	1.0		481	932 199				
Selenium	ng/L	2.0		<2.0	2.81 <2.0				
M.D.L Method De	tection Limit					and development of the second second second second second second second second second second second second seco			
						Certifie	d By: δ	Ujabeth Role	howsha
AGAT Certificate of An	alysis								Pane 4
AGAT Laboratories (Cé Canada (SCC) and/or t (CAEAL), for specific er are location and param www.scc.ca and/or ww in the scope of this accr	ilgary, Mississauga he Canadian Assoc nvironmental tests I eter specific and a <i>w</i> .caeal.ca. The tes editation.) is accredited by clation for Enviror listed in the scope complete listing o ts in this report m	the Standards mental Analytic o of accreditatio of parameters is lay not necessa	Council of cal Laboratories n. Accreditation: available from trily be included	ß	AG	AT Laboratories Calgar ustrial Hygiene Associa	y is accredited by tion (AIHA) for sp	the American ecific tests.



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Certificate of Analysis - Sample Comments

05T122259	Metals Scan [liquid]
Workorder	

Guideline None

Sample 441245	Comments 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.

Elijabeth Rololionslia Certified By:

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Page 5



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Certificate of Analysis - Sample Comments

Workorder	05T122259	
	Metals Scan	[liquid]
	Guideline Nr	ne en en en en en en en en en en en en e
	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 Guideline N	Aetals in Soil ne
	Sample 441235	Comments M.D.L Method Detection Limit
	441236	M.D.L Method Detection Limit
	441237	M.D.L Method Detection Limit

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Page 6

Elijabeth Rotakowskia

Certified By:

M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit

441238 441239

AGAT® Laboratories

5623 MCADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

Certificate of Analysis - Sample Comments

Workorder 05T122259 O. Reg. 153 Metals in Soil

O. Reg. 153 Metals in S 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	

Page 7 Elijabeth Rolakowskia Certified By:

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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, 2	2005		Dupl	icate		R	leference M	aterial		Method	Blank S	pike	Matr	ix Spike	Э
Parameter	Ba	atch Sa	ample)	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Accer Lin	ptable nits	Recovery	Acce Lin	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153	Metals in S	oil														
Arsenic	1	44	41235	112	113	0.9%	< 0.6	95%	90%	110%	104%	70%	130%	105%	70%	130%
Cobalt	1	44	41235	60.1	60.7	1.0%	< 0.3	111%	80%	120%	104%	70%	130%	101%	70%	130%
Copper	1	44	41235	1040	1050	1.0%	< 0.3	95%	90%	110%	103%	70%	130%	97%	70%	130%
Lead	1	44	41235	94.1	94.2	0.1%	< 0.5	110%	90%	110%	100%	70%	130%	96%	70%	130%
Nickel	1	44	41235	1030	1030	0.0%	< 0.6	108%	90%	110%	104%	70%	130%	95%	70%	130%
Selenium	1	44	41235	4.1	4.0	2.5%	< 0.8	89%	80%	120%	105%	70%	130%	105%	70%	130%

Certified By:

Elizabeth Rolphowska

AGAT QUALITY ASSURANCE REPORT

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American Industrial Hygiene Association (AIHA) for specific tests.

1



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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		Dupl	icate		F	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike	Э
Parameter	Batch	Sample D ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
								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 2	23.7	23.0	3.0%	< 1.0	101%	90%	110%	101%	90%	110%	96%	70%	130%
Lead	1	441245 2	2.61	2.71	3.8%	< 2.0	103%	90%	110%	92%	80%	120%	85%	70%	130%
Nickel	1	441245 2	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 Rotokowska

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American Industrial Hygiene Association (AIHA) for specific tests.

2



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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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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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5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

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:	Мау 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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Western Enviro-Agricultural Laboratory Association (WEALA) Environmental Services Association of Alberta (ESAA) 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.

	ang san an					0	AGA	T WORK ORDER	05T120507	
	Labo	orate	ories	RGAT	Certificate of	Analysis	5623 McADAM MISSISSAUGA CANADA L4Z 1	ROAD , ONTARIO N9		TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME: (GOLDER ASS	DCIATE	ES LTD.			ATTENTIO	DN: RUI OLIVE	IRA (04-1112	-069)	ж. Ак 2
				Ö	Reg. 153 Met	als in Water				
DATE SAMPLED:	Apr 22, 2005		DATE	RECEIVED:	Apr 25, 2005	DATE REPOR	TED: May 03, 2	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
	1/201	0.67	25	7 16	9.18	6.86	10.2	3.88	1.63	2.19
Arsenic	ug/L	0.06	50	10.5	7.46	25.8	14.7	13.7	2.38	2.98
Copail	ug/L	0.78	2.5	340	567	260	245	431	207	61.4
Copper	ug/L 110/J	0.44	; -	41.0	23.2	64.4	32.3	52.6	13.5	4.54
Nickel	- 101 101	0.63	25	198	232	356	189	231	1.77	56.3
Selenium	ng/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	ua/L	0.57	25	7.86	1.25	2.29				
Cohalt	ng/L	0.96	0.9	6.70	1.01	3.24				
Conner	na/L	0.78	2.5	260	75.6	265				
l ead	- 8-	0.44		134	9.30	49.0				
Nickel	- 6-	0.63	25	173	47.0	180				
Selenium	ng/L	0.81	5.0	<0.81	<0.81	<0.81				
COMMENTS: M.I.	D.L Method Detec ideline refers to Tal	ction Limi ble 1 - Fu	t III Deoth Backt	around Site Con	dition Standards - Ground	water - All Types of Pr	operty Use			
5		2 - - -								
							Certified B	y: John	Tokuchi	
								y Takeuchi,	BSc.H(Chem. Eng),	BSc (Biology), C. C

AGAT CERTIFICATE OF ANALYSIS

Page 1



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Quality Assurance

GOLDER ASSOCIATES LTD. CLIENT NAME:

AGAT WORK ORDER 05T120507

RUI OLIVEIRA (04-1112-069) ATTENTION TO:

Water Analysis

PPT DATE: May 03 2005			DUPLI	CATE		R	EFERENCE	MATERI	AL	METHOD	BLANK	SPIKE	MAT	RIX SPIK	٢E
PARAMETER	Batch	Sample ID	Dup. #1	Dup. #2	RPD	Method Blank	Measured Value	Acceş Lin	otable nits	Recovery	Accep Lin	otable nits	Recovery	Accep Lin	otable nits
								Lower	Upper		Lower	Upper		Lower	Upper
O 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: Jorby Takurchi

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Page 1



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Method Summary

GOLDER ASSOCIATES LTD. CLIENT NAME: ATTENTION TO: RUI OLIVEIRA (04-1112-069)

AGAT WORK ORDER 05T120507

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 F	Procedure		



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: 05T120504 SOIL ANALYSIS REVIEWED BY: Marcus Maguire, Bsc. General Manager DATE REPORTED: May 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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Western Enviro-Agricultural Laboratory Association (WEALA) Environmental Services Association of Alberta (ESAA)

								V G	AT WORK ORDER	051120504
HDH	Lab	orat(ories	AGAT	Certificate of	Analysis	5623 McADAM MISSISSAUGA CANADA L4Z	ROAD V, ONTARIO IN9		TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatilabs.com
CLIENT NAME: (30LDER ASS(OCIATE	ES LTD.			ATTENTI	ON: RUI OLIVE	IRA (04-111	2-069)	
). Reg. 153 Me	tals in Soil				
DATE SAMPLED:	Apr 21, 2005		DATEI	RECEIVED:	Apr 25, 2005	DATE REPOF	TED: 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	ηα/α	0.3	÷	12.4	16.1	10.9	29.1	47.9	3.8	4.9
Cobalt	na/a	0.2		21.5	31.0	83.3	61.4	48.7	7.6	9.2
Copper	na/a	0.2		562	1180	454	519	1420	260	98.3
Lead	6/6n	0.3		114	92.9	86.1	152	219	45.6	23.6
Nickel	6/6rl	0.3		406	814	627	622	705	133	79.4
Selenium	6/6rl	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	110/0	0.3	1	24.1	9.8	3.5				
Cohalt	6.6-1	0 0		28.7	6.4	9.7				
Convair	5/01 0/01	2.0 0 0		666	210	410				
lood	5/01			370	30.4	106				
Nickel	6/6rl	0.0 0		552	121	280				
NCAE	R/RH			100	- 1	000				
Selenium	6/6rt	0.4		6.3	1.5	3.0				
COMMENTS: M.D	.L Method Detec	tion Limit								
							Certified B	y: M.A	A L	

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AGAT CERTIFICATE OF ANALYSIS

Marcus Maguire, Bsc. General Manager

Page 1



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Quality Assurance

GOLDER ASSOCIATES LTD. CLIENT NAME:

AGAT WORK ORDER 05T120504

RUI OLIVEIRA (04-1112-069) **ATTENTION TO:**

Soil Analysis

PPT DATE: May 02 2005			DUPLI	CATE		R	EFERENCE	MATERI	AL	METHOD	BLANK	SPIKE	MAT	RIX SPI	ΚE
PARAMETER	Batch	Sample ID	Dup. #1	Dup. #2	RPD	Method Blank	Measured Value	Accej Lin	otable nits	Recovery	Accep Lin	otable nits	Recovery	Accep Lin	otable nits
								Lower	Upper		Lower	Upper		Lower	Upper
eg. 153 Metals in Soil															
Ausenic (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: MM

AGAT QUALITY ASSURANCE REPORT

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Page 1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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 F	rocedure		



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5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

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.

AGAT Laboratories

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Western Enviro-Agricultural Laboratory Association (WEALA) Environmental Services Association of Alberta (ESAA)

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	C Victoriosena	NAN ANA ANA ANA ANA ANA ANA ANA ANA ANA)				I	A	GAT WORK	ORDER	05T119040
	Labor	atories 💐	RGAT	Certific	ate of /	Analysi	5623 McA MISSISSA CANADA	DAM ROAD NUGA, ONTARI L4Z 1N9	0		TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.					ATTENTION: F	SUI OLIVE	IRA (04-111.	2-069)	
			0	. Reg. 1	53 Met	als in S	oil				
Date Sampled:	Apr 8, 2005	Date Received:	: Apr 1	2, 2005	Date Re	sported:	Apr 20, 2005	Samp	ole Type:	Soil	
	Unit	MDL	Guideline	436570 05 - 3 S	365 436572 05 - S	367 436573 05 S	- 368 436574 05 - 36 S	9 436575 05 -	370 436576 05 - 3 S	71 436577 05 S	- 372 436578 05 - 373 S
Arsenic	6/6rl	0.6		201	3.0	4.1	4.5	3.8	2.4	4.7	7.1
Cobalt	6/6rl	0.3		80.5	2.4	4.1	7.5	7.5	4.9	13.6	11.0
Copper	6/6rl	0.3		1630	30.9	45.3	64.8	65.5	31.7	148	152
Lead	6/6rl	0.5		218	8.7	14.7	17.3	11.4	18.8	25.1	27.0
Nickel	6/6rl	0.6		1640	25.9	43.2	76.9	66.1	37.2	259	195
Selenium	6/6r1	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: Digate Relation Strated AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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AGAT Certificate of Analysis

9998)589 om					7-								5
 U51119040 TEL: (905) 501-9 FAX: (905) 501-c www.agatlabs.c 												okowsha	Page y the American pecific tests.
	2-069)		Soil									keth Red	ccredited b AIHA) for s
AGAI WUKI ROAD , ONTARIO IN9	OLIVEIRA (04-111		Sample Type:									3y: Elija	boratories Calgary is a Hygiene Association (
5623 McADAM MISSISSAUGA CANADA L4Z 1	ATTENTION: RUI	Dil	Apr 20, 2005									ertified E	AGAT Lat Industrial
cate of Analysis		153 Metals in So	Date Reported:	375 436580 05 - 384 S	3.9	6.8	81.2	18.6	84.2	<0.8		ŭ	
Certifi		. Reg.	2, 2005	436579 05 - S	5.2	13.1	108	18.8	150	<0.8),in boratories be SCC
ų		Ó	Apr 12	Guideline									anada (SCC) Analytical Lab
tories	IATES LTD.		Date Received:	WDL	0.6	0.3	0.3	0.5	0.6	0.8			idards Council of C for Environmental / e of accreditation a
Labora	OLDER ASSOC		Apr 8, 2005 I	Unit	6/6rt	6/6r1	6/6rt	6/6rt	6/6rl	6/6rt	sction Limit		ysis credited by the Star nadian Association 1 is listed in the scone
	CLIENT NAME: G		Date Sampled:		Arsenic	Cobalt	Copper	Lead	Nickel	Selenium	M.D.L Method Dete		AGAT Certificate of Anal AGAT Laboratories is ac co-operation with the Cai (CAEAL). for specific tesi



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Certificate of Analysis - Sample Comments

Workorder 05T119040

O. Reg. 153 Metals in Soil Guideline None

lideline 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

Elijabeth Rolakowskia Certified By:

AGAT Certificate of Analysis

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Page 3



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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, 2	2005		Dupl	icate		F	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike	
Parameter	ł	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	otable nits	Recovery	Accer Lin	ptable nits	Recovery	Accer Lin	ptable nits
		1							Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153	Metals in S	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 Rolakowska

AGAT QUALITY ASSURANCE REPORT

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TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Method Summary

Client Name: GOLDER ASSOCIATES LTD.

AGAT Work Order:

05T119040

1

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

Page 1 of 1 05K76971	28/Apr/05	Product	0 xtended Price		\$300.00 \$0.00	\$21.00	\$321.00			11/1001 - 1001 - 1002 - 1002 - 100 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 - 1011 -	986 - 1 mar - 25 mar 1986 - 1 mar 1986 - 1 mar 1986 - 1 mar 1987 - 1 mar 1987 - 1 mar 1987 - 1 mar 1987 - 1 mar 1987 - 1 mar 1987 - 1 2	eyser soci sa dagaga 's gan dagaga 's gan dagaga			
NVOICE NO.	Date:	District	Quantity Unit Price E	10.00 \$30.00	Subtotal: 0.0% PST:	7.0% GST:	GLISSIN				e des services	non de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de La contra de la contr	→		
•		Acct Code			ct * * *	H (24% PER ANNUM).	GOLDER ASSOCIA	The second s					та до то то до на то до на констракциона рекората на подата на такото на подата на такото на такото на такото н О тот то тот ра во са то селото си со составата на подата на такото на подата на такото на такото на такото на т		TES LTD. Ad ON L5N527 A (04-1112-069)
5623 McAdam Road Mississauga, Ontario L4Z 1N9	l el:(905) 501-9998 Fax:(905) 501-0589	Division (D AFE	2		**************************************	HE RATE OF 2% PER MONTH		and the second s	inter-statement of the statement of the			an an an announce of the second second second second second second second second second second second second s	VEWERE AN		Invoice To: GOLDER ASSOCIAT 2390 ARGENTIA RO, MISSISSAUGA Attn To: RUI OLIVEIRA
SS		Customer P.O.	Product Description	le 1)	information regarding th iical Service Rep @ (905	DVERDUE ACCOUNTS AT T									
® Laboratorie		Branch		2o,Cu,Pb,As,Se,Ni) (Tab	hould you require any Techr	NTEREST CHARGED ON (ES LTD. SW AB T2P3T1
AGAT	100073238	No WorkOrder No 05T119040	RE: Project 04-1112-069	O. Reg. 153 - Metals (C	<i>v</i> , * * *	TERMS: NET 30 DAYS . II								Corporate Office:	GOLDER ASSOCIATI 1000, 940 - 6TH AVE (CALGARY
	GST #: R	Customer 4021511	Product ID	94-102											



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5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

W.

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							
ATER ANALYSIS REVIEWED BY:	Elizabeth Polakowska, Analyst							
DATE REPORTED: PAGES (INCLUDING COVER):	April 25, 2005 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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iT119054	EL: (905) 501-9998 \X: (905) 501-0589 \ww.agatlabs.com				2 436590 05-373	24.2	31.8	897	27.4	752	2.5
ORDER 05	7f F 7	ENTION: Rui Oliveira (04-1112-069)		Water	436589 05-372	20.1	39.2	849	52.6	1060	<2.0
AT WORK				Sample Type:	436588 05-371	9.8	11.2	261	29.7	271	<2.0
AG	AM ROAD IGA, ONTARIO IZ 1N9				436587 05-370	15.2	18.1	475	9.1	389	3.2
)	5623 McAD MISSISSAU CANADA L4			25, 2005	436586 05-369	12.7	20.7	442	18.3	386	<2.0
	alysis	ATT	uid]	ted: Apr	136585 05-368	7.4	9.8	341 ,	3.5	281	<2.0
	Certificate of An		scan [liq	Date Repor	36584 05-367 4	3.1 7	9.1	257 3	1.6 8	242	8.8
			Metals S	, 2005	436583 05-365 4	628 1	169 4	7370 2	296 1	4930 2	16.8
				Apr 12,	Guideline					•	
	ries 4	E: GOLDER ASSOCIATES LTD.		3, 2005 Date Received:	MDL	1.0	0.5	1.0	2.0	1.0	2.0
	aborator				Unit	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
			E: GOLDE	d: Apr 8							
		CLIENT NAN		Date Sample		Arsenic	Cobalt	Copper	Lead	Nickel	Selenium

M.D.L. - Method Detection Limit

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

Elijabeth Rolokowska

Certified By:

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AGAT Certificate of Analysis
	IN DOMESTIC OF THE OWNER AND AND AND AND AND AND AND AND AND AND)	AGAT WORK ORDER	R 05T119054
	Labor	atories	THOM	Certific	cate of Analysis	5623 McADAN MISSISSAUG CANADA L4Z	A ROAD A, ONTARIO 1N9	TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.				ATTENTION: Rui	Oliveira (04-1112-069)	
				Metal	s Scan [liquid]			
Date Sampled:	Apr 8, 2005	Date Receive	id: Apr 1	12, 2005	Date Reported:	Apr 25, 2005	Sample Type: Water	
	Cuit	WDL	Guideline	436591 05-3	75 436E92 05-384			
Arsenic	ng/L	1.0		16.4	13.7			
Cobalt	ng/L	0.5		35.8	14.5			
Copper	ng/L	1.0		581	509			
Lead	ng/L	2.0		14.2	23.7			
Nickel	ng/L	1.0		692	371			
Selenium	ng/L	2.0		<2.0	<2.0			
M.D.L Method D	etection Limit							
					Ŭ	ertified	By: Elisabeth Re	stakowsha
AGAT Certificate of A AGAT Laboratories is co-operation with the (CAEAL). for specific	vnalysis accredited by the Canadian Associati tests listed in the so	Standards Council ion for Environmer cope of accreditati	of Canada (SC Ital Analytical L on approved by	C),in aboratories the SCC.		AGAT L Industri	aboratories Calgary is accredited al Hygiene Association (AIHA) for	Page 2 by the American specific tests.



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Certificate of Analysis - Sample Comments

 korder 05T119054 Metals Scan [liquid] Guideline None
--

Ð	Comments
ŝ	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
4	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
5	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
36	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
37	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
88	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
68	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
06	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
91	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

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Page 3

Elijabeth Pololowska

Certified By:



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Certificate of Analysis - Sample Comments

Guideline None

Liquid samples were diluted prior to Metals scan; the reported MDL has been modified. M.D.L. - Method Detection Limit Comments Sample 436592

Elijabeth Pololiouslia Certified By:

AGAT Certificate of Analysis

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Page 4



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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	[Dupl	icate		R	leference M	aterial		Method	Blank S	pike	Matr	ix Spike	8
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
Metals Sca	n [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

1

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Method Summary

Client Name: GOLDER ASSOCIATES LTD.

AGAT Work Order:

05T119054

1

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

5623 McAdam Road Mississauga, Ontario L4Z 1N9 Tel:(905) 501-9998 Fax:(905) 501-0589 Date: 28/Apr/05		tustomer P.O. Division ID AFE Acct Code District Product	roduct Description Cuantity Unit Price Extended Price		10.00 \$300.00	mation regarding this analysis, please contact a *	Service Rep @ (905) 501-9998 * * 0.0% PST: \$0.00	7.0% GST: \$21.00	Total: \$321.00 Total: Total: \$321.00	GOLDER ASSOCIATES LTD.	CHECKED: APPROVED;	PROJECT FASK DEPT GA. A/C ALCOMPT	GST 0000 2600-60	VENDOR TOTAL	
AGAT®	GST #: R100073238	Customer No WorkOrder No Branch Custome 4021511 05T119054 T	Product ID Product	RE: Project 04-1112-069	94-101 O. Reg. 153 - Metals (Co, Cu, Pb, As, Se, Ni)	* Should you require any information	* Technical Service	TERMS: NET 30 DAYS INTEREST CHARGED ON OVERDIJE AC							Cornorate Office:

2390 ARGENTIA ROAD MISSISSAUGA ON L5N5Z7 Attn To: Rui Oliveira (04-1112-069)

1000, 940 - 6TH AVE SW CALGARY AB T2P3T1



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: 05T118825

WATER ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, Analyst

DATE REPORTED: April 15, 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.

AGAT Laboratories

5623 McADAM ROAD

CANADA L4Z 1N9

MISSISSAUGA, ONTARIO

Member of: Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) Western Enviro-Agricultural Laboratory Association (WEALA)

Environmental Services Association of Alberta (ESAA)

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.

	9998)589 om			
5T118825	TEL: (905) 501-5 FAX: (905) 501-6 www.agatlabs.c			
ORDER 0		69)		Soil
SAT WORK		(04-1112-0		e Type:
AG	JAM ROAD JGA, ONTARIO 4Z 1N9	ui Oliveira		Sampl
	5623 McAE MISSISSAI CANADA L	TENTION: R		r 15, 2005
	alysis	АТА	in Soil	rted: Api
	te of An		3 Metals	Date Repo
	Certifica		Reg. 15	2005
	Canton Canton		Ö.	: Apr 7,
A CANADA A LEGAL DATA A CANADA A LEGAL DATA A CANADA A C	pries 💐	VTES LTD.		te Received.
	Laborat	LDER ASSOCI		pr 7, 2005 D i
		T NAME: GOI		mpled: A _l
		CLIEN'		Date Sa

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

Certified By: Chapter Relevation

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AGAT Certificate of Analysis

NAMA NAMA NA MANANA	NAME AND ADDRESS OF ADDRESS OF ADDRESS OF ADDRESS OF ADDRESS ADDRESS ADDRESS ADDRESS OF ADDRESS A			_				AG/	AT WORK (ORDER 0	5T118825
	Labor	atories	RGAT	Certifica	ate of Ar	ıalysis	5623 McAE MISSISSAI CANADA L	AM ROAD JGA, ONTARIO 4Z 1N9			EL: (905) 501-9998 AX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				A	TTENTION: R	ui Oliveira (04-1112-06	(6)	
			0	. Reg. 1	53 Metal	s in Soi					
Date Sampled:	Apr 7, 2005	Date Received	: Apr 7,	, 2005	Date Repo	orted: A	vpr 15, 2005	Sample	Type:	Soil	
	Unit	MDL	Guideline	436281 05-357 S	436282 05-361 S	436283 05-36 [,] S	4 436284 05-374 S	436285 05-376 S	436286 05-377 S	436287 05-3 S	79 436288 05-380 S
Arsenic	6/6rl	0.6		4.0	10.3	16.1	18.6	4.1	3.3	2.4	12.3
Cobalt	6/6rl	0.3		6.0	14.1	24.7	14.6	4.5	6.1	3.8	17.5
Copper	6/6rt	0.3		61.0	540	1190	424	46.5	46.4	26.9	545
Lead	b/brl	0.5		14.5	40.2	68.8	40.1	23.2	11.3	7.9	41.3
Nickel	6/6rl	0.6		85.6	429	656	520	49.8	51.5	31.6	377
Selenium	6/6rt	0.8		<0.8	5.1	5.8	1.5	<0.8	<0.8	<0.8	3.2

Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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AGAT Certificate of Analysis

Certified By: Sijabeth Relationstia

	e	Real-MAN AND AND AND AND AND AND AND AND AND A						AG/	AT WORK C	ORDER 05	T118825
	Labor	atories 💐	10.4T	Certific	ate of Ar	alysis	5623 McAL MISSISSAI CANADA L	JAM ROAD JGA, ONTARIO 4Z 1N9		TE FA W	L: (905) 501-9998 X: (905) 501-0589 ww.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				٩	TTENTION: R	ui Oliveira (04-1112-06	6)	
			0	. Reg. 1£	53 Metal	s in Soi					
Date Sampled:	Apr 7, 2005	Date Received:	: Apr 7,	, 2005	Date Repo	orted: /	vpr 15, 2005	Sample	Type:	Soil	
	Unit	MDL	Guideline	436289 05-381 S	436290 05-382 S	436291 05-38 S	3 436292 05-388 S	436293 05-389 S	436294 05-390 S	436295 05-391 S	436296 05-392 S
Arsenic	6/6rl	0.6		4.7	5.1	4.9	55.2	2.8	31.7	3.6	20.9
Cobalt	6/6rl	0.3		7.5	11.1	10.8	48.5	3.7	21.3	6.2	41.8
Copper	6/6rl	0.3		76.1	209	207	768	29.8	305	37.0	687
Lead	6/6rl	0.5		21.7	35.8	24.0	66.6	7.9	31.2	17.6	37.8
Nickel	6/6rl	0.6		93.1	148	239	1090	35.4	399	46.1	910
Selenium	6/6rl	0.8		<0.8	1.5	1.0	2.2	<0.8	1.6	<0.8	1.8

Certified By: Dijoteth Rolokowshie Page 3 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

> AGAT Certificate of Analysis AGAT Laboratories is accredited by the Standards Council of Canada (SCC),in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC.

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	Labor	atories	RGRT	Certific	cate of A	nalvsis	5623 Mc/ MISSISS/ CANADA	ADAM ROAD AUGA, ONTARI L4Z 1N9	0	FAX: 0	905) 501-9998 905) 501-0589 agatlabs.com
CLIENT NAME:	GOLDER ASSI	OCIATES LTD.					ATTENTION:	Rui Oliveir	a (04-1112-069	(6	
				O. Reg.	153 Meta	lls in So	oil				
Date Sampled:	Apr 7, 2005	Date Receive	id: Apr	7, 2005	Date Reg	ported:	Apr 15, 2005	Sam	ole Type:	Soil	
	Cuit	WDL	Guideline	436297 05-30 6)6 436298 05-39	8 436299 05-	402 436300 05-403	3 436301 05-40	06 436302 05-411		
Arsenic	6/6rl	0.6		2.7	17.8	2.5	4.0	1.9	о 2.6		
Cobalt	6/6rl	0.3		7.7	17.6	5.4	6.2	3.6	3.8		
Copper	6/6rt	0.3		42.0	490	45.8	47.0	25.9	23.2		
Lead	6/6rl	0.5		7.4	112	5.7	9.3	13.2	6.1		
Nickel	6/6rt	0.6		55.0	406	47.2	54.5	29.1	28.7		
Selenium	6/6rl	0.8		<0.8	3.4	<0.8	0.9	<0.8	<0.8		
M.D.L Method De	stection Limit										
						Ŭ	ertifiec	d By:	Elizabet	h Robews	ha
AGAT Certificate of Ar AGAT Laboratories is a co-operation with the C (CAEAL), for specific to	alysis accredited by the S canadian Associations sts listed in the sc	Standards Council void to for the connection of	of Canada (S tal Analytical n approved b	CC),in Laboratories y the SCC.			AG	AT Laboratori Istrial Hygien	es Calgary is accr Association (AIH	edited by the Ar HA) for specific t	Page 4 nerican ests.

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	Labor	atories 🕷	AGAT	Certific	ate of A	nalysis	5623 McAL MISSISSA CANADA L	DAM ROAD UGA, ONTARIO -4Z 1N9			L: (905) 501-9998 X: (905) 501-0589 ww.agatlabs.com
CLIENT NAME:	GOLDER ASS(DCIATES LTD.				-	ATTENTION: R	tui Oliveira (04-1112-06	6)	
				Metals	Scan [li	iquid]					
Date Sampled:	Apr 7, 2005	Date Received	l: Apr 7	, 2005	Date Rep	orted:	Apr 15, 2005	Sample	: Type:	Water	
	Unit	MDL	Guideline	436303 05-376	436304 05-377	436305 05-37	⁷ 9 436306 05-380	436307 05-382	436308 05-383	436309 05-388	436310 05-391
Arsenic	ng/L	1.0		14.4	13.1	8.9	38.4	21.8	27.9	200	10.6
Cobalt	ng/L	0.5		15.1	13.7	8.5	52.0	38.3	21.6	158	13.8
Copper	ng/L	1.0		368	343	239	4530	1500	1320	4420	333
Lead	ng/L	2.0		80.0	20.1	12.8	81.3	96.7	70.1	157	31.6
Nickel	ng/L	1.0		354	329	224	2340	704	617	5240	369
Selenium	ng/L	2.0		3.8	<2.0	<2.0	6.4	5.2	2.6	9.2	<2.0
			NAME AND ADDRESS OF TAXABLE PARTY OF TAXABLE PARTY.								

Page 5 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Certified By:

Elijabeth Polokowskia

AGAT Certificate of Analysis

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	Labor.	atories	AGRI	Contific	sionica f Analysis	5623 McADAN MISSISSAUG	AGAI WUKNU ROAD A, ONTARIO	TEL: (905) 501-9988 TEL: (905) 501-9998 FAX: (905) 501-0589 www.aratlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.	-		ale ul Allalysis	ATTENTION: Rui	Oliveira (04-1112-069	
				Metals	s Scan [liquid]			
Date Sampled:	Apr 7, 2005	Date Receive	ed: Apr 7	', 2005	Date Reported:	Apr 15, 2005	Sample Type:	Water
	Unit	MDL	Guideline	436311 MONTANA				
Arsenic	ng/L	1.0		428				
Cobalt	ng/L	0.5		31.3				
Copper	ng/L	1.0		558				
Lead	ng/L	2.0		1960				
Nickel	ng/L	1.0		248				
Selenium	ng/L	2.0		<5.0				
M.D.L Method E	Detection Limit							
					ŭ	ertified	By: Elijatet	h Rotakowsha
AGAT Certificate of <i>I</i> AGAT Laboratories is co-operation with the (CAEAL), for specific	Analysis s accredited by the S Canadian Associativ tests listed in the sc	standards Council on for Environmen	of Canada (SC) ital Analytical Lo on approved by	C),in aboratories the SCC.		AGATL	aboratories Calgary is accr I Hygiene Association (AIF	Page 6 edited by the American IA) for specific tests.



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Certificate of Analysis - Sample Comments

	כ	ימוכוור
Workorder	05T118825	
	Metals Scan [liquid]	
	Guideline None	
	Sample Comment	S

° ≥ _	omments 1.D.L Method Detection Limit iouid samples were diluted prior to Metals scan: the reported MDL has been modified.
2 -	A.D.L Method Detection Limit . .iquid samples were diluted prior to Metals scan; the reported MDL has been modified.
	A.D.L Method Detection Limit iquid samples were diluted prior to Metals scan; the reported MDL has been modified.
	M.D.L Method Detection Limit -iquid samples were diluted prior to Metals scan; the reported MDL has been modified.
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	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.
	M.D.L Method Detection Limit Liquid samples were diluted prior to Metals scan; the reported MDL has been modified.

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Page 7

Elijabeth Rotakowskia

Certified By:

विता **AGAT**[®] D. 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

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Certified By: Chipabeth Polohowshia

Page 8

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5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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

Elijabeth Relationstia Certified By:

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Page 9



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

Soil

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T118825

ATTENTION TO: Rui Oliveira (04-1112-069)

							301									
DATE	Apr 15,	2005	[]	Dup	licate		F	leference M	aterial		Method	Blank S	Spike	Matr	ix Spike	Э
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									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 Rolakowska

1

AGAT QUALITY ASSURANCE REPORT

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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	5	Dup	licate		F	Reference M	aterial		Method	Blank S	Spike	Mati	ix Spike	8
Parameter	Batch	ן Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits
								Lower	Upper		Lower	Upper		Lower	Upper
Metals Sca	n [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

AGAT QUALITY ASSURANCE REPORT

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2



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Method Summary

Client Name: GOLDER ASSOCIATES LTD.

AGAT Work Order:

05T118825

1

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters	L	I	_
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

Mississauga, Ontario 5623 McAdam Road L4Z 1N9

Fax:(905) 501-0589 Tel:(905) 501-9998

Page 1 of 1

INVOICE NO.05K76287

Date: 20/Apr/05

GST #: R100073238

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Circtomer No	WorkOrder No	Branch	Customer P.O.	Division ID	Are	Acci coue	Notificial	
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4021511	05T118825	F		2				
Product ID			Product Description	uc		ğ	antity Unit Price	e Extended Frice
Ľ.	3E: Project 04-1112-069			ita.				
		i	(30.00 \$30	00.00\$
93-103 C	 Reg. 153 - Metals (Tat 	ble 1) - Co,Cu,Pb,As	, Se So				9.00 \$30	.00 \$270.00
94-102 C	 Reg. 153 - Metals (1at 	DIE 1) - CO,CU,FU,AS	,0e					

***************************************	00.0	\$30.00 Subtotal:	\$270.00 \$1,170.00
require any information regarding this analysis, please contact a * تحصفتما Service Ren @ (905) 501-9998	ö	0% PST:	\$0.0 \$0.0
	7.(0% GST:	\$81.90
D ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).		Total:	\$1,251.90

TERMS: NET 30 DAYS . INTEREST CHARGED ON OVERDUE ACCOUNTS AT THE RATE OF 2% PER MONTH (24% PER ANNUM).

T2P3T1 GOLDER ASSOCIATES LTD. 1000, 940 - 6TH AVE SW CALGARY AB T Corporate Office:

ON L5N5Z7 Attn To: Rui Oliveira (04-1112-069) GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA ON L

Invoice To:



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.

AGAT Laboratories

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	®							AG/	AT WORK C	RDER 05	T118666
エフェ	Labor	atories	AGAT	Certifica	ate of Ar	alysis	5623 McAL MISSISSAI CANADA L	JGA, ONTARIO JGA, ONTARIO 4Z 1N9		Ξ Η Η Α	L: (905) 501-9996 X: (905) 501-0589 ww.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				A	TTENTION: R	ui Oliveira (04-1112-06	(6	
				Metals	Scan [li	quid]					
Date Sampled:	Apr 5, 2005	Date Received	l: Apr 6	, 2005	Date Rep	orted: A	pr 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	ng/L	5.0		142	31.5	56.0	18.1	183	38.3	119	53.1
Cobalt	ng/L	5.0		186	37.5	54.7	18.9	198	87.3	75.3	50.2
Copper	ng/L	10		5430	3030	5700	1350	6830	3730	2430	1740
Lead	ng/L	5.0		124	30.4	51.9	41.6	134	239	46.9	65.4
Nickel	ng/L	10		4620	1860	2680	545	6820	4120	2040	1760
Selenium	ng/L	5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
A second second second second second second second second second second second second second second second second											

Certified By: Dijateth Relationsha

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	A SALADA MALA SALADA MANA DA MALA MALA MALA MALA MALA MALA MALA							AG/	AT WORK C	RDER 0	T118666
	Labor	atories *	AGAT	Certifica	ite of Ar	alysis	5623 McAE MISSISSAU CANADA L	JAM ROAD JGA, ONTARIO 4Z 1N9		μ	EL: (905) 501-9998 AX: (905) 501-0589 ww.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				AT	TENTION: R	ui Oliveira (04-1112-06	9)	
				Metals	Scan [li	quid]					
Date Sampled:	Apr 5, 2005	Date Received	l: Apr 6	, 2005	Date Rep	orted: A _f	or 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 05-36	436112 05-362
Arsenic	ng/L	5.0		31.8	39.8	30.2	12.9	138	36.3	49.4	28.2
Cobait	ng/L	5.0		27.1	46.7	29.7	16.7	167	26.7	48.5	18.3
Copper	ng/L	10		1560	1750	1160	436	5380	596	4310	821
Lead	ng/L	5.0		108	76.1	50.0	38.6	139	42.8	98.7	31.5
Nickel	ng/L	10		892	1380	703	405	3510	649	2700	434
Selenium	ng/L	5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Certified By: Digodeth Rolokowshar Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

> AGAT Certificate of Analysis AGAT Laboratories is accredited by the Standards Council of Canada (SCC) in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC.

		NATE AND A TAXABLE AND A DATABASE AND A DATAB					1	AGA	AT WORK C	RDER 051	118666
	Labora	atories *	AGAT	Certifica	ate of An	alysis	5623 McAE MISSISSAI CANADA L	AM ROAD JGA, ONTARIO 4Z 1N9		TEL FAX ww	: (905) 501-9998 : (905) 501-0589 w.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				A.	TTENTION: R	ui Oliveira (04-1112-06	9)	
				Metals	Scan [li	quid]					
Date Sampled:	Apr 5, 2005	Date Received	l: Apr 6	3, 2005	Date Repc	orted: A	pr 14, 2005	Sample	Type:	Water	
	Unit	MDL	Guideline	436113 05-363	436114 05-364	436115 05-374	1 436116 05-381	436117 05-389	436118 05-390	436119 05-392	436120 05-396
Areanic	1/011	5.0		935	47.6	89.3	19.2	12.4	86.6	67.9	13.2
	ng/L	5.0		320	56.1	61.5	28.4	8.3	84.8	127	12.9
Conner	- 8-	10		9680	8510	4170	571	232	1780	3460	258
L ead	-8- 1/011	5.0		425	125	119	52.2	16.4	69.5	74.0	7.7
Nickal	-92- 110/1-	10		7890	2380	3690	469	172	2340	4280	218
Selenium	ng/L	5.0		11.2	<5.0	<5.0	<5.0	6.9	<5.0	7.1	<5.0
				Annual of the Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual							

M.D.L. - Method Detection Limit

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AGAT Certificate of Analysis

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	Labor	atories	AGAT	Certifi	cate of A	Analvsis	5623 Mc ^A MISSISS/ CANADA	NDAM ROAD AUGA, ONTAR L4Z 1N9	Q	TEL: (905) 501-99 FAX: (905) 501-05 www.agatlabs.co
CLIENT NAME:	GOLDER ASS(OCIATES LTD.					ATTENTION:	Rui Oliveir	a (04-1112-06)	6)
				Metal	s Scan [[liquid]				
Date Sampled:	Apr 5, 2005	Date Receive	id: Apr 6	3, 2005	Date Re	ported:	Apr 14, 2005	Sam	ple Type:	Water
	Cunit Unit	WDL	Guideline	436121 05-3	138 436122 05-40	02 436123 05-	403 436124 05-406	3 436125 05-4	436126 11 MONTANA	
Arsenic	ng/L	5.0		72.5	17.4	22.1	21.6	13.8	408	
Cobalt	ng/L	5.0		54.6	11.7	14.4	9.4	7.7	31.9	
Copper	ng/L	10		3520	320	262	248	210	574	
Lead	ng/L	5.0		352	14.4	18.9	52.2	12.9	1770	
Nickel	ng/L	10		1900	251	272	189	159	145	
Selenium	ng/L	5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
M.D.L Method D	etection Limit									
						Ŭ	ertified	d By:	Elijake	th Rotokowstra
AGAT Certificate of A	nalysis								-	Page
AGAT Laboratories is co-operation with the (CAEAL), for specific	accredited by the Canadian Associati tests listed in the so	Standards Council ion for Environmer cope of accreditatic	of Canada (SC ntal Analytical L on approved by	C),in aboratories the SCC.			AG	AT Laborator ıstrial Hygien	ies Calgary is acc e Association (Al	redited by the American HA) for specific tests.

तिता **AGAT Caboratories**

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Certificate of Analysis - Sample Comments

Workorder 05T118666

Metals Scan	[liquid]
Guideline No	ne
Sample 436097	Comments 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
	Certified By: Sijabeth Relevance

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Certificate of Analysis - Sample Comments

Workorder	05T118666	
	Metals Scan [iquid]
	Guideline Nor	Ð
	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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Page 6

Elijabeth Rolohowska

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Certificate of Analysis - Sample Comments

Workorder	05T118666 Metals Scan [Guideline Nor	liquid] le
	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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Page 7 Certified By: Chapter Relationstia

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Certificate of Analysis - Sample Comments

Workorder	05T118666	
	Metals Scan [[iquid]
	Guideline Noi	
	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
		Certified By: Slipted Rolehowsha

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Certificate of Analysis - Sample Comments

Workorder	05T118666	
	Metals Scan [liquid]
	Guideline No	ē
	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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Page 9



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Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T118666

Rui Oliveira (04-1112-069) **ATTENTION TO:**

							Water									
		0005	r													
DATE	Apr 14,	2005		Dupi	icate		۲ 	eterence M	aterial		Method	Blank S	spike	Matr	ix Spike	9
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									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 Rolakowska

AGAT QUALITY ASSURANCE REPORT

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1



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Method Summary

Client Name: GOLDER ASSOCIATES LTD.

AGAT Work Order:

05T118666

1

Attention To: Rui Oliveira (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Water Parameters	1		
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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AGA	Labor	atories *	AGAT	Certific	ate of A	nalysis	5623 McAf MISSISSA CANADA L	AGAT WORK JAM ROAD UGA, ONTARIO :42 1N9	(ORDER	05T115662 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				∢	TTENTION: F	tui Oliveira (04-1112-0	(69)	
				D. Reg. 1	53 Metal	s in Soi				
Date Sampled:	Mar 11, 2005	Date Received	I: Mar	14, 2005	Date Rep	orted: N	Aar 15, 2005	Sample Type:	Soil	
	Unit	MDL	Guideline	433052 05-34	13 433053 05-353	433054 05-35	4 433055 05-378	433056 05-397		
Arsenic	6/6rl	9.0		27.7	285	255	14.5	40.5		•
Cobalt	6/6rl	0.3		38.4	135	163	18.2	31.3		
Copper	6/6rl	0.3		1620	2680	3060	305	1380		
Lead	6/6rl	0.5		195	201	206	155	315		
Nickel	6/6rt	0.6		1320	2890	4080	362	874		
Selenium	6/61	0.8		6.4	8.0	6.9	1.5	7.4		
M.D.L Method D	etection Limit									
						Ce	rtifiea	By: Zin	beth Rots	skows ha
AGAT Certificate of A AGAT Laboratories is co-operation with the (CAEAL), for specific	malysis accredited by the S Canadian Association tests listed in the soci	standards Council of on for Environments	f Canada (S al Analytical a approved b	CC),in Laboratories y the SCC.			AGA	T Laboratories Calgary is a strial Hygiene Association (accredited by (AIHA) for sp	Page 1 / the American becific tests.



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Certificate of Analysis - Sample Comments

Workorder 05T115662 O. Reg. 153 Metals in Soil Guideline None	
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

Elijabeth Rolakowskia Certified By:

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Quality Assurance

CLIENT NAME: GOL

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T115662

ATTENTION TO: Rui Oliveira (04-1112-069)

							Soil									
DATE	Mar 15,	2005		Dupl	licate		R	Reference M	aterial		Method	Blank S	Spike	Mati	ix Spike	e
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 M	letals 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 Rotskowska

AGAT QUALITY ASSURANCE REPORT

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AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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		I	
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.

AGAT Laboratories

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Western Enviro-Agricultural Laboratory Association (WEALA) Environmental Services Association of Alberta (ESAA) AGAT Laboratories (Calgary, Mississauga) is accredited by the Standards Council of Canada (SCC), in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific environmental tests listed in the scope of accreditation approved by the SCC. The tests in this report may not necessarily be included in the scope of this accreditation. A current listing of tests approved by the SCC is available from http://www.scc.ca/scopes/reg170-eng-e.pdf (Calgary) and http://www.scc.ca/scopes/reg427-eng-e.pdf (Mississauga).

BDB	Labora	atories 📲	AGAT	Certific	ate of Aı	Jalysis	5623 McAE MISSISSAI CANADA L	AG/ AM ROAD JGA, ONTARIO 4Z 1N9	AT WORK	ORDER	05T114983 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.					ATTENTION: R	ui Oliveira (04-1112-06	(65	
			0	. Reg. 1:	53 Metal	s [liqui	d]				
Date Sampled:	Mar 5, 2005	Date Received	l: Mar ε	3, 2005	Date Rep	orted:	Mar 15, 2005	Sample	Type:	Water	
	Unit	MDL	Guideline	432315 05-34	3 432320 05-353	432321 05-34	54 432322 05-378	432324 05-397	432328 05-343	F 432329 05-	353F 432330 05-354F
Arsenic	ng/L	1.0		69.0	563	562	44.0	107	96.8	392	429
Cobalt	ng/L	0.5		137	373	417	92.8	95.0	132	263	308
Copper	ng/L	10		10300	12300	11400	2130	8500	10500	13700	12200
Lead	ng/L	2.0		1260	743	895	1260	2300	512	129	213
Nickel	ng/L	10		5240	11700	10100	1360	3130	5040	0966	10100
Selenium	ng/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

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Certified By: Chiabeth Polohowshia AGAT Laboratories is accredited by the Standards Council of Canada (SCC),in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC. AGAT Certificate of Analysis

	Labore	atories 📲	нант	Certifi	cate of Analysis	5623 McADAN MISSISSAUG CANADA L42	AGAT WORK A ROAD A, ONTARIO 119	ORDER 05T114 TEL: (905 FAX: (905 Www.aga	4983 5) 501-9998 5) 501-0589 atlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				ATTENTION: Rui	i Oliveira (04-1112-0	(69)	
			U). Reg. `	153 Metals [liqu	id]			
Date Sampled:	Mar 5, 2005	Date Received	l: Mar	8, 2005	Date Reported:	Mar 15, 2005	Sample Type:	Water	
	Unit	MDL	Guideline	432331 05-3	178F 432332 05-397F				
Arsenic	ng/L	1.0		39.8	168				
Cobalt	ng/L	0.5		73.3	85.3				
Copper	ng/L	10		2100	8240				
Lead	ng/L	2.0		377	847				
Nickel	ng/L	10		1270	3220				
Selenium	J/gu	2.0		<2.0	11.9				
M.D.L Method E	Jetection Limit					ertified	By:	beth Robenste	
AGAT Certificate of A	halveie								C Doce 7
AGAT Laboratories is AGAT Laboratories is co-operation with the (CAEAL), for specific	s accredited by the S Canadian Association tests listed in the sociation	tandards Council of on for Environmenta ope of accreditation	f Canada (SC Il Analytical L approved by	CC),in .aboratories / the SCC.		AGAT L Industri	aboratories Calgary is a al Hygiene Association (/	ccredited by the Ame AIHA) for specific test	raye z erican sts.



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Certificate of Analysis - Sample Comments

Workorder	05T114983	
	O. Reg. 15	3 Metals [liquid]
	Guideline	None
	Sample	Comments

Sample 432315	Comments 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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Page 3

Elijabeth Rolakowskia

Certified By:

AGAT[®] Laboratories

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L42 1N9

TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Certificate of Analysis - Sample Comments

Workorder 05T114983 O. Reg. 153 Metals [liquid] Guideline None

All samples were diluted prior to metal scan; the reported MDL has been icreased due to dilution. M.D.L. - Method Detection Limit Comments Sample 432332

Elijateth Rolokowska **Certified By:**

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Page 4



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T114983

ATTENTION TO: Rui Oliveira (04-1112-069)

							Water									
DATE	Mar 15,	2005		Dupl	icate		R	Reference M	aterial		Method	Blank S	pike	Matr	rix Spike	9
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153	Metals [li	quid]														
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 Robekowska

AGAT QUALITY ASSURANCE REPORT

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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

	IGAT	aboratories		Mississauga, Ontario L4Z 1N9 Tel:(905) 501-9998 Fax:(905) 501-0589	INV	DICE NO. Date:	17/Mar/05
GST #: R1(00073238						
Customer N	o WorkOrder No	Branch C	ustomer P.O.	Division ID AFE	Acct Code		0
4021511	05T115662	7			Oua	ntity Unit Price	Extended Price
Product ID		2	roduct Description				
	O Ben 153 - Metals (C	o, Cu, Pb, As, Se)				5.00 \$30.00	\$150.00 \$150.00
93-899	Rush Surcharge on Met	als (Co, Cu. Pb, As, Se) -10	0%	****************		Subtotal:	\$300.00
	۲۵ *	hould you require any info	rmation regarding	this analysis, please contact a	* * *	0.0% PST:	\$0.00
	* *	Technica	Service Kep @ (a		:	7.0% GST:	\$21.00
	TERMS: NET 30 DAYS . II	NTEREST CHARGED ON OVE	RDUE ACCOUNTS A	AT THE RATE OF 2% PER MONTH (24%	PER ANNUM).	Total:	: \$321.00
	Corporate Office: GOLDER ASSOCI 1000, 940 - 6TH A' CALGARY	ATES LTD. /E SW AB T2P3T1		Invoice To: GOLDER ASSOCIATES 2390 ARGENTIA ROAD MISSISSAUGA Attn To: Rui Oliveira (04	S LTD.)))))))))))))))))))		

Page 1 of 1

5623 McAdam Road Mississauga, Ontario L4Z 1N9

INVOICE NO.05K73572



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

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

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		atorioc	AGAT				5623 McADAN MISSISSALIGA	AGAT WORK I ROAD A ONTARIO	ORDER 05T	'113564 : (905) 501-9998 : (905) 501-0589
	ΓαΩΩΙ	aru1163		Certific	ate of AI	nalysis	CANADA L4Z	1N9	MMM	w.agatlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.				AT	TENTION: MIK	e Dutton (04-1112-0)69)	
			•	D. Reg. 1	53 Metal	s in Soil				
Date Sampled:		Date Receiv	ed: Feb	24, 2005	Date Rep	orted: Fe	sb 28, 2005	Sample Type:	Soil	
	Curit	WDL	Guideline	430802 CWA	430803 CWA	430804 CWA soli 03				
Arsenic	6/6rl	0.6		12.3	12.4	12.7		An international sector and the state of the		
Cobalt	6/61	0.3		11.4	11.4	11.6				
Copper	6/6rt	0.3		28.2	28.5	29.6				
Lead	6/6rl	0.5		12.1	12.2	12.8				
Nickel	6/6r1	0.6		71.1	71.7	74.3				
Selenium	6/61	0.8		0.9	1.0	1.0				
M.D.L Method D	etection Limit									
						Cel	rtified	By: Cline	beth Rolokow	isha
AGAT Certificate of A AGAT Laboratories is co-operation with the ((CAEAL). for specific t	nalysis accredited by the Canadian Associat tests listed in the so	Standards Council ion for Environmer cope of accreditati	l of Canada (S ntal Analytical on approved b	CC),in Laboratories y the SCC.			AGAT L Industrie	aboratories Calgary is a al Hygiene Association (ccredited by the / AIHA) for specific	Page 1 American c tests.



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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 Limi
430803	M.D.L Method Detection Limi
430804	M.D.L Method Detection Limi

Elijateth Rolokowskia Certified By:

AGAT Certificate of Analysis

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Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T113564

ATTENTION TO: Mike Dutton (04-1112-069)

DATE	Feb 28,	2005		Dup	icate		R	Reference M	laterial		Method	Blank S	pike	Matr	ix Spike	е
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153	B 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 Roboliowska

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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



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

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

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	Labor	atories 💐	GAT	Certific	ate of Aı	Jalysis	5623 McAi MISSISSA CANADA I	DAM ROAD UGA, ONTARIO -4Z 1N9			TEL: (905) 501-9998 =AX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.	A second and as			A	TTENTION: N	Nike Dutton	(04-1112-06	(6)	
			0	. Reg. 1!	53 Metal	s in Soi					
Date Sampled:		Date Received:	Feb 7	, 2005	Date Rep	orted: F	⁻ eb 10, 2005	Sample	Type:	Soil	
	Unit	MDL	Guideline	428666 05-379	428667 05-380	428668 05-386	3 428669 05-387	428670 05-388	428671 05-389	428672 05-3	92 428673 05-397
Arsenic	6/6rl	0.6		2.8	36.3	12.9	16.0	66.0	2.5	20.2	36.6
Cobalt	6/6r1	0.3		4.3	16.5	24.2	17.2	60.2	3.8	49.1	32.8
Copper	6/6rl	0.3		34.0	553	355	428	921	27.3	870	1370
Lead	6/6r1	0.5		8.7	35.8	67.7	42.1	91.6	7.7	46.2	291
Nickel	6/6rl	0.6		36.5	365	545	407	1320	36.3	1090	927
Selenium	6/6r1	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: Dijoleth Rololic With Page 1 Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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	Laborat	ories	Lug	Certific:	ate of Ar	sisvler	5623 McA MISSISSA CANADA I	AG DAM ROAD UGA, ONTARIO 14Z 1N9	AT WORK (ORDER)5T111302 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME: (GOLDER ASSOCI	IATES LTD.					VTTENTION:	Mike Dutton	(04-1112-0(29)	
			0	. Reg. 1!	53 Metal	s in So					
Date Sampled:		ate Received:	Feb 7	, 2005	Date Rep	orted: F	Feb 10, 2005	Sample	∍ Type:	Soil	
	Unit	WDL	Suideline	428674 05-402	428675 05-403	428676 05-40	4 428677 05-405	428678 05-406	428679 05-407	428680 05-4	.16 428681 05-417
Arsenic	6/6rl	0.6		2.8	4.1	4.0	2.7	2.2	6.5	5.7	2.3
Cobalt	6/6rl	0.3		6.7	6.7	7.5	7.9	4.6	12.5	9.1	7.5
Copper	6/6rl	0.3		42.7	50.0	93.6	25.3	28.2	244	406	39.8
Lead	6/6r1	0.5		6.9	10.0	17.2	5.7	15.7	32.2	15.0	6.3
Nickel	6/6rl	0.6		57.2	59.9	94.7	35.1	35.2	190	229	52.9
Selenium	6/61	0.8		<0.8	1.2	1.1	<0.8	<0.8	2.0	2.9	<0.8

M.D.L. - Method Detection Limit

Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

Certified By: Elijabeth Relationstia

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								AGAT WOR	K ORDFR	05T111302
	Labor	atories	RGAT	Certifi	cate of Ana	alvsis	5623 McADAM MISSISSAUG/ CANADA L4Z	ROAD , ONTARIO 1N9		TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.				АТТІ	ENTION: Mik	e Dutton (04-1112	-069)	
			U	. Reg.	153 Metals	in Soil				
Date Sampled:		Date Receiv	ed: Feb	7, 2005	Date Repor	ted: Feb	10, 2005	Sample Type:	Soil	
	Cunit	MDL	Guideline	л 30 сазас м	18 A3863 05.410 A	DARRA DE-471				
Arsenic	6/61	0.6		4.3	4.4	8.9				
Cobalt	6/6rl	0.3		4.9	4.2	5.1				
Copper	6/6r1	0.3		28.1	37.7 2	279				
Lead	6/61	0.5		7.2	10.3 2	27.6				
Nickel	6/61	0.6		53.4	48.5 4	129				-1
Selenium	6/61	0.8		<0.8	<0.8	.5				
M.D.L Method D	etection Limit									
						Cen	tified	By: Eljo	beth Ru	okowstea
AGAT Certificate of A AGAT Laboratories is co-operation with the (CAEAL), for specific t	nalysis accredited by the Canadian Associat tests listed in the so	Standards Council tion for Environme cope of accreditati	of Canada (SC ntal Analytical L on approved b)	C),in aboratories / the SCC.			AGAT L Industria	aboratories Calgary is Il Hygiene Association	accredited by (AIHA) for sp	Page 3 y the American pecific tests.



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Certificate of Analysis - Sample Comments

Workorder 05T111302 O. Reg. 153 Metals in Soil Guideline None

M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit M.D.L. - Method Detection Limit Comments 428674 428675 428676 428678 Sample 428669 428673 428680 428666 428668 428670 428672 428677 428667 428671 428679

Elizabeth Relationstia **Certified By:**

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Page 4



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Certificate of Analysis - Sample Comments

Workorder 05T111302 O. Reg. 153 Metals in Soil Guideline None

ample	Comments
28681	M.D.L Method Detection Limit
28682	M.D.L Method Detection Limit
28683	M.D.L Method Detection Limit
28683	M.D.L Method Detection Limit

Elijabeth Relationstia Certified By:

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Quality Assurance

CLIENT NAME:

GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T111302

ATTENTION TO: Mike

Mike Dutton (04-1112-069)

							2011									
DATE	Feb 10,	2005		Dup	icate		F	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike	9
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 M	etals 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 Rolakowska

AGAT QUALITY ASSURANCE REPORT

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AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

Method Summary

Client Name: GOLDER ASSOCIATES LTD.

AGAT Work Order:

05T111302

1

Attention To: Mike Dutton (04-1112-069)

Parameter	AGAT S.O.P.	Literature Reference	Analytical Technique
Soil Parameters			L
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



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

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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	e					r	5623 MCAF	AG/ AG/	AT WORK O	RDER 051	[111299 .: (905) 501-9998
にクレ	Labori	atories 🍕	1991	Certifica	ate of Ar	alysis	MISSISSAI CANADA L	JGA, ONTARIO 4Z 1N9		FA	(; (905) 501-0589 (w.agatlabs.com
CLIENT NAME: GO	ILDER ASSC	DCIATES LTD.				A	TTENTION: N	like Dutton ((04-1112-06	9)	
			Ο). Reg. 1{	53 Metal	s in Soi	_				
Date Sampled:		Date Received:	Feb	7, 2005	Date Rep	orted: F	⁻ eb 10, 2005	Sample	Type:	Soil	
	Unit	MDL	Guideline	428643 05-334	428644 05-335	428645 05-33	7 428646 05-339	428647 05-340	428648 05-348	428650 05-349	428651 05-355
Arsenic	6/6rl	0.6		93.0	164	15.0	66.8	5.0	53.5	14.1	9.8
Cobalt	6/61	0.3		65.5	37.4	26.2	78.1	10.9	33.1	16.8	14.8
Copper	6/61	0.3		1180	1130	1400	1160	377	412	285	249
Lead	6/6rl	0.5		76.3	118	145	84.3	11.9	121	29.9	30.8
Nickel	6/61	0.6		1050	682	753	1310	332	499	397	323
Selenium	6/6rl	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: Mijoteth Rolokowsha Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

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AGAT Certificate of Analysis

	NAME AND DESCRIPTION OF A							AG/	AT WORK C	RDER (5T111299
	Laborat	ories	TH	Certifica	ate of An	alysis	5623 McAD MISSISSAL CANADA L	AM ROAD JGA, ONTARIO 4Z 1N9			FEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSOCI	ATES LTD.				A	TTENTION: N	like Dutton (04-1112-06	(6)	
			0	. Reg. 15	53 Metals	s in Soi					
Date Sampled:	Ŏ	ate Received:	Feb 7	, 2005	Date Repo	orted: F	eb 10, 2005	Sample	Type:	Soil	
	Unit	MDL	Suideline	428652 05-356	428653 05-358	428654 05-362	2 428655 05-367	428656 05-370	428657 05-373	428658 05-	74 428659 05-375
Arenic	na/a	0.6		8.2	37.5	3.6	2.5	3.4	5.8	18.5	4.9
Cohalt	na/a	0.3		10.3	55.1	6.3	2.7	7.3	10.2	17.2	13.6
Conner	o o la la	0.3		163	808	98.7	37.1	54.8	135	535	96.3
l ead	0/UTI	0.5		23.0	57.9	13.2	6.4	8.3	17.6	42.9	12.9
Nickel	6/6-4 10/0	0.6		204	754	78.7	30.3	62.2	175	586	138
Selenium	6/6rl	0.8		<0.8	2.4	<0.8	<0.8	<0.8	<0.8	1.6	≤0.8

M.D.L. - Method Detection Limit

Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

Certified By: Elijabeth Relationstia

AGAT Certificate of Analysis AGAT Laboratories is accredited by the Standards Council of Canada (SCC),in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC.

UDU	Labor	atories	Line and the second sec	Certifi	cate of Analvsis	5623 McADAM F MISSISSAUGA, CANADA L4Z 11	AGAT WORK ORDE ACAD ONTARIO V9	R 05T111299 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD.				ATTENTION: Mike	Dutton (04-1112-069)	
). Reg.	153 Metals in So	li		
Date Sampled:		Date Receive	ed: Feb	7, 2005	Date Reported:	Feb 10, 2005	Sample Type: Soil	
	C	WDL	Guideline	428660 05-3	77 428661 05-378			
Arsenic	6/6rl	0.6		3.1	11.4			
Cobalt	6/61	0.3		6.7	19.5			
Copper	6/6rl	0.3		47.5	261			
Lead	6/61	0.5		11.0	185			
Nickel	6/61	0.6		52.8	326			
Selenium	6/6rl	0.8		<0.8	1.0			
M.U.L Method L								
					Ŭ	ertified l	3y: Elisate A	clakowska
AGAT Certificate of <i>A</i> AGAT Laboratories is co-operation with the (CAEAL) for specific	Analysis s accredited by the Canadian Associal tests listed in the s	Standards Council tion for Environmer scope of accreditati	of Canada (SC Ital Analytical L on approved by	C),in aboratories / the SCC.		AGAT La Industrial	boratories Calgary is accredite Hygiene Association (AIHA) fo	Page 3 d by the American r specific tests.



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Certificate of Analysis - Sample Comments

Workorder 05T111299 O. Reg. 153 Metals in Soil

O. Reg. 133 metals III 3 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

Elijabeth Rolakowskia Certified By:

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Page 4



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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 Limi
428660	M.D.L Method Detection Limi
428661	M.D.L Method Detection Limi

Elizabeth Relationistica Certified By:

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Page 5



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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T111299

ATTENTION TO: Mike Dutton (04-1112-069)

						501									
DATE	Feb 10, 2005		Dup	licate		F	Reference M	aterial		Method	Blank S	Spike	Matr	ix Spik	e
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 M	etals 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%

Elizabeth Rolakowska **Certified By:**

AGAT QUALITY ASSURANCE REPORT

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1



TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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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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

CANADA L4Z 1N9

MISSISSAUGA, ONTARIO

Member of: Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) Western Enviro-Agricultural Laboratory Association (WEALA)

Environmental Services Association of Alberta (ESAA)

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Laboratories Certificate of Analvsis Canada L2 109 Certificate of Analvsis	ME: GOLDER ASSOCIATES LTD. ATTENTION: Mike Dutton (04-1112-069)	O. Reg. 153 Metals in Soil	ed: 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	рg/g 0.6 17 4.8 9.4 11.2 15.8 12.4 2.6 7.7 20.4	рg/g 0.3 21 9.8 15.8 21.5 16.1 17.9 4.3 9.3 25.3	µg/g 0.3 85 224 858 1100 507 913 37.1 204 1370	рg/g 0.5 120 50.7 47.9 71.4 134 52.9 7.4 59.5 79.4	рg/g 0.6 43 131 437 495 360 522 44.9 156 794	μg/g 0.8 1.9 1.6 6.0 4.6 3.7 5.0 <0.8 1.5 8.9
GGGT ®	CLIENT NAME: GOLDEF		Date Sampled:		Arsenic	Cobalt	Copper	Lead	Nickel	Selenium

M.D.L. - Method Detection Limit

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

Certified By: Dijated Relation

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AGAT Certificate of Analysis

86 88 80				÷						
,T111274 :L. (905) 501-99 .X. (905) 501-05 ww.agatlabs.col				428605 05-3-	13.7	15.7	674	27.7	490	3.6
	()		Soil	428604 05-396	2.7	8.4	38.1	8.1	58.6	<0.8
r work oi	4-1112-069		Type:	28603 05-376	3		1.3	9.2	3.8	0.8
M ROAD A, ONTARIO 1109	ke Dutton (0		Sample 1	28602 05-372 4	0.6 4	6.8 5	26 5	9.7 2	04 5	8.
5623 McADAI MISSISSAUG CANADA L42	ENTION: MI		8, 2005	28601 05-365 4	45 1	4.2 1	240 2	42 2	240 3	0 0
lvsis		in Soil	ted: Feb	28600 05-364 4	7.1	6.7 6	540	07 1	11 1	5.
te of An:		3 Metals	Date Repor	428599 05-359 4	9.5	3.2	31.9	19.0	111 7	≤0.8 7
Certificat		Reg. 15:	2005	428598 05-354 4	231 2	159 8	2830 8	207	. 0622	6.5
THE		Ö	Feb 7, :	Suideline		2	35	120	5	6.1
ies	ES LTD.		Received:	MDL	0.6 1	0.3	0.3 ٤	0.5 1	0.6	0.8
orator	ASSOCIAT		Date	Unit	6/6r1	6/6rt	6/6r1	6/6rt	6/6rl	6/6r1
Lat Lat	GOLDER									
E	IENT NAME:		Sampled:							L
G	С		Date		Arsenic	Cobalt	Copper	Lead	Nickel	Seleniu

M.D.L. - Method Detection Limit Guideline refers to T1(All)

Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Certified By: Dijateth Relationshia AGAT Laboratories is accredited by the Standards Council of Canada (SCC),in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC.

AGAT Certificate of Analysis

ADA	Labor	atories	AGAT	Certif	icata of A	nalveid	5623 McA MISSISS, CANADA	A ADAM ROAD AUGA, ONTARIC L4Z 1N9	GAT WORK ORE	JER 05T111274 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agattabs.com
CLIENT NAME:	GOLDER ASS	OCIATES LTD					ATTENTION:	Mike Dutto	ו (04-1112-069)	
				O. Reg.	153 Meta	lls in Sc	oil			
Date Sampled:		Date Receiv	ed: F	eb 7, 2005	Date Re	ported:	Feb 8, 2005	Samp	le Type: So	
	Curit	MDL	Guideli	Je voore of						
Arsenic	6/6rl	0.6	17	4.0	3.5	0 42000 UD-	34.3 428609 05-368 3.6	3.9 3.9	9 428611 05-391 3.4	
Cobalt	6/6rl	0.3	21	9.6	6.7	38.3	4.1	7.1	6.3	
Copper	6/61	0.3	85	62.0	56.7	1850	37.0	55.9	35.3	
Lead	6/61	0.5	120	88.8	17.7	235	12.8	15.9	21.5	
Nickel	6/6rl	0.6	43	60.6	54.3	1320	39.8	69.2	48.0	
Selenium	6/6rl	0.8	1.9	<0.8	<0.8	7.6	≤0.8	<0.8	<0.8	
M.D.L Method De Guideline refers to	stection Limit T1(AII)									
						ర	ertifiea	l By:	Elijabeth	Polokowska
AGAT Certificate of Ani	alysis									Pare 3
AGAT Laboratories is a co-operation with the C (CAEAL), for specific te	accredited by the S anadian Association ists listed in the so	tandards Council on for Environmen ope of accreditatic	of Canada (tal Analytica in approved	SCC),in al Laboratories I by the SCC.			AGA	T Laboratories strial Hygiene	calgary is accredite Association (AIHA) f	d by the American or specific tests.



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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

Elijabeth Relationsha Certified By:

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Page 4


5623 Mcadam Road Mississauga, ontario Canada L42 1N9

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Certificate of Analysis - Sample Comments

05T111274	O. Red. 153 Me
Workorder	

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

Elizabeth Rolokowska Certified By:

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Quality Assurance

Sall

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER:

05T111274

ATTENTION TO: Mike Dutton (04-1112-069)

						501									
DATE	Feb 8, 2005		Dup	licate		R	Reference M	aterial		Method	Blank S	pike	Matr	ix Spike)
Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits
		[[Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 M	letals 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 Rolakowska

AGAT QUALITY ASSURANCE REPORT

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AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

1



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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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5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9

GOLDER ASSOCIATES LTD. 2390 ARGENTIA ROAD MISSISSAUGA, ON L5N5Z7
Mike Dutton (04-1112-069)
04-1112-069
05T111277
Elizabeth Polakowska, Analyst
February 08, 2005
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

Member of: Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) Western Enviro-Agricultural Laboratory Association (WEALA)

Environmental Services Association of Alberta (ESAA)

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	Labori	atories 💐	agat		4		5623 McAl MISSISSA CANADA I	DAM ROAD AG/ UGA, ONTARIO 4Z 1N9	AT WORK C	RDER 05 77 ≥	1111277 -9998 EL: (905) 501-0589 XX: (905) 501-0589 www.agatlabs.com
				Certific	ate of Ar	nalvsis					
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				Ā	TTENTION: N	Aike Dutton (04-1112-06	6)	
				D. Reg. 1	53 Metal	s in Soi					
Date Sampled:	Feb 4, 2005	Date Received:	: Feb	4, 2005	Date Repo	orted: F	eb 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	7 428619 05-390
Arsenic	6/6rl	0.6		105	66.6	3.7	5.4	4.8	3.5	18.7	29.4
Cobalt	6/6rl	0.3		31.1	66.1	7.0	11.9	7.7	6.0	23.4	24.6
Copper	6/6r1	0.3		493	1160	80.2	266	80.7	70.5	555	287
Lead	6/6rl	0.5		50.1	112	15.8	29.7	23.7	11.0	150	36.2
Nickel	6/6rl	0.6		584	1260	82.2	273	0.06	68.7	772	396
Selenium	6/6rl	0.8		2.4	3.0	<0.8	1.2	<0.8	<0.8	1.9	1.8

M.D.L. - Method Detection Limit

Page 1 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests. Certified By: Elijabeth Relationship AGAT Laboratories is accredited by the Standards Council of Canada (SCC),in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC. AGAT Certificate of Analysis

	œ					-	5623 McAD	AM ROAD AGA	LT WORK O	ORDER	05111277 1EL: (905) 501-9998
	Labore	atories	GAT	Certifici	ate of An	alysis	MISSISSAL CANADA L	JGA, ONTARIO 4Z 1N9			FAX: (905) 501-0589 www.agatlabs.com
CI IENT NAME:	GOI DER ASSO	CIATES LTD.					TTENTION: M	like Dutton (04-1112-06	(6 5	
			Ö	Reg. 1	53 Metal	s in So					
Date Sampled:	Feb 4, 2005	Date Received:	Feb 4,	, 2005	Date Rep(orted:	⁻ eb 8, 2005	Sample	Type:	Soil	
	Unit	MDL (Guideline	428620.05-342	428621 05-345	428622 05-37	1 428623 05-363	428624 05-361	428625 05-357	428626 05	353 428627 05-420
	v)011	0.6		5.1	83.6	2.2	250	10.1	4.1	262	214
Arsenic	6/6rt	0.0		81	112	4.9	79.6	150	6.7	135	55.0
Cobalt	6/6rt	0.0 8 C		168	1560	28.0	1550	553	62.0	2440	1060
Copper	6/6rl	0.0 X		24.7	105	16.8	139	45.1	15.1	179	119
Lead	6/6d	0.0 U.S.		121	1810	35.6	1300	421	85.2	2460	1070
Nickel	6/6rt	0.0		1.6	4.3	<0.8	0.0	4.7	<0.8	8.2	3.8

M.D.L. - Method Detection Limit

Certified By: Shake Relation Strate By: Chinakethe Relation Page 2 AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

> AGAT Certificate of Analysis AGAT Laboratories is accredited by the Standards Council of Canada (SCC),in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC.

	Labor	atories ¹	AGAT	Certific	ate of Ana	lvsis	5623 McAD/ MISSISSAU CANADA L4	M ROAD AG 3A, ONTARIO Z 1N9	AT WORK	ORDER	051111277 -9998 PEL: (905) 501-0589 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				ATTEN	ITION: MI	ke Dutton	(04-1112-0	(69)	
			0). Reg. 1!	53 Metals	in Soil					
Date Sampled:	Feb 4, 2005	Date Received	I: Feb 4	4, 2005	Date Report	t ed: Feb 8	, 2005	Sample	e Type:	Soil	
	* - -	Ē	Guideline								2
Arsenic	na/a	0.6		41.5-00 03-414	2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9	.7 5.4 11 420	01 100 100	13.9	22.7	4.5	
Cobalt	6/6rl	0.3		4.6	4.0 4	.3 9.3		56.2	29.8	10.2	
Copper	6/6rl	0.3		15.4	30.4 2	0.2 110		1550	1940	124	
Lead	6/6rl	0.5		3.3	8.7 6	.7 25.		129	81.2	46.5	
Nickel	6/6rl	0.6		21.8	36.2 2	9.7 110		1290	847	125	
Selenium	6/6rl	0.8		<0.8	<0.8 <	0.8 <0.1	8	t.2	8.9	0.9	
M.D.L Method L	Detection Limit										
						Certi	ified	By:	Elijad	ieth Roto	howstea
AGAT Certificate of <i>i</i> AGAT Laboratories i co-operation with the (CAEAL). for specific	Analysis s accredited by the S canadian Association tests listed in the sc	standards Council o on for Environments ope of accreditation	f Canada (SC al Analytical L approved by	:C),in aboratories • the SCC.			AGAT Indust	Laboratories ial Hygiene ,	Calgary is a	ccredited by AIHA) for sp	Page 3 the American ecific tests.



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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

Elijabeth Relakowska Certified By:

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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

Elijabeth Polokowskia Certified By:

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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, 2	2005		Dupl	icate		F	Reference M	aterial		Method	Blank S	Spike	Matr	ix Spike	;
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce _l Lin	otable nits
									Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153 M	/letals 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%

Certified By:

Elizabeth Robskowska

AGAT QUALITY ASSURANCE REPORT

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AGAT Laboratories Calgary is accredited by the American Industrial Hygiene Association (AIHA) for specific tests.

1



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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

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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.

AGAT Laboratories

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Member of: Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA)



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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

1

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		Dup	olicate		F	Reference M	laterial		Method	Blank S	Spike	Matr	ix Spike	e
Parameter	Batch	Sample	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lin	ptable nits
					- 			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

AGAT QUALITY ASSURANCE REPORT

AGAT Laboratories is accredited by the Standards Council of Canada (SCC), in co-operation with the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific tests listed in the scope of accreditation approved by the SCC.

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2



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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, 2	2005		Dup	licate		F	Reference N	laterial		Method	Blank S	Spike	Matr	ix Spike	e
Parameter		Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acce Lin	ptable nits	Recovery	Acce Lin	ptable nits	Recovery	Acce Lir	ptable nits
									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%

Certified By:

AGAT QUALITY ASSURANCE REPORT

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Elizabeth Rolakowska

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TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com

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	

Elijabeth Relationstia Certified By:

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Certificate of Analysis - Sample Comments

Workorder	05T110637		
	Metals Scan	iquid]	
	Guideline No	ē	
	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 I Guideline No	letals in Soil ne	
	Sample	Comments	
		Certified By: Slipateth Relationsha	

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Page 5

	Labore	atories	AGAT	Certifica	ate of Analvsis	5623 McADAM RO MISSISSAUGA, ON CANADA L4Z 1N9	AGAT WORK ORDEI AD VTARIO	R 05T110637 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	CIATES LTD.				ATTENTION: Mike D	utton (04-1112-069)	
				Metals	Scan [liquid]			
Date Sampled:	Dec 13, 2004	Date Receive	∋d: Feb 1	, 2005	Date Reported:	Feb 2, 2005 S	iample Type: liquid	
	Unit	MDL	Guideline	428291 05-366	428292 05-409			
Arsenic	ng/L	1.0		5.3	222			
Cobalt	ng/L	0.5		16.5	278			
Copper	ng/L	1.0		461	4610			
Lead	ng/L	2.0		57.4	382			
Nickel	ng/L	1.0		204	6620			****
Selenium	ng/L	2.0		4.3	7.3			
-	:							
M.D.L Method L	Detection Limit							
					Ŭ	ertified B	Y: Elijateth R	olokowska-
AGAT Certificate of <i>I</i> AGAT Laboratories it co-operation with the (CAEAL). for specific	Analysis s accredited by the S canadian Association tests listed in the soci	standards Council on for Environmer ope of accreditati	of Canada (SC ntal Analytical L on approved by	C),in aboratories the SCC.		AGAT Labo Industrial Hy	ratories Calgary is accreditec giene Association (AIHA) for	Page 4 1 by the American r specific tests.

	(i)	A second se						AGA	VT WORK C	RDER 051	110637 (005) 501-9998
シリリ	Labora	ntories 📲	RGAT	Certifica	ite of An	alysis	5623 MCAL MISSISSAI CANADA L	JAM HUAU UGA, ONTARIO 4Z 1N9		FAX FAX	. (905) 501-0589 w.agatlabs.com
CLIENT NAME:	GOLDER ASSO	CIATES LTD.					ATTENTION: N	like Dutton (04-1112-06	(6)	
				Metals	Scan [lid	[biup]					
Date Sampled:	Dec 13, 2004	Date Received	I: Feb 1	, 2005	Date Repo	rted:	Feb 2, 2005	Sample	Type:	liquid	
	Unit	MDL	Guideline	428278 05-336 FULL	428280 05-338 FULL	428281 05-3 FULL	50 428283 05-366 FULL	428284 05-409 FULL	428285 05-336	428288 05-338	428289 05-350
Areanic	na/L	1.0		40.6	105	97.5	10.7	184	45.6	71.2	125
Cohait	-9 na/L	0.5		56.0	167	80.7	15.4	221	67.0	190	94.9
Conner		1.0		5530	22300	2250	462	5360	5030	21700	1830
l ead	- 8- /UII	2.0		160	220	24.6	22.4	126	750	604	175
Nickel	na/L	1.0		1840	6960	1420	333	6150	1860	7170	1260
Selenium	-1/Bn	2.0		15.7	42.0	14.2	<2.0	16.7	8.7	21.6	5.0
	and a design of the second second second second second second second second second second second second second										

M.D.L. - Method Detection Limit

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Elijateth Rolokowska

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	Labor	atories ¹	AGAT	Certific	ate of Analvsi	5623 McADAM MISSISSAUGA CANADA L4Z 1	ROAD ONTARIO N9	057110637 TEL: (905) 501-9998 FAX: (905) 501-0589 www.agatlabs.com
CLIENT NAME:	GOLDER ASSC	DCIATES LTD.				ATTENTION: MIKE	e Dutton (04-1112-069)	
			0	. Reg. 1	53 Metals in S	oil		
Date Sampled:	Dec 13, 2004	Date Receive	d: Feb	, 2005	Date Reported:	Feb 2, 2005	Sample Type: Soil	
				428276.05.400	007-30 77C8CA (
	Unit	MDL	Guideline	#60 #60	TOTAL			
Arsenic	6/6rl	0.6		53.0	56.5			
Cobalt	6/6r1	0.3		68.8	72.1			
Copper	6/6rt	0.3		1010	1050			
Lead	6/6r1	0.5		57.3	64.7			
Nickel	6/6rt	0.6		1340	1380			
Selenium	6/61	0.8		2.5	2.7			
M.D.L Method C	Detection Limit							
					S	ertified I	3y: Elijateth R	tokows ha
AGAT Certificate of A AGAT Laboratories is co-operation with the (CAEAL). for specific	vnalysis s accredited by the S Canadian Associatic tests listed in the sco	tandards Council o to Environments	f Canada (SC) al Analytical Lé a approved bv	C), in thoratories the SCC.		AGAT La Industrial	boratories Calgary is accredited Hygiene Association (AIHA) for	Page 2 by the American specific tests.

AGAT WORK ORDER 051110637 5623 McADAM ROAD MISSISSAUGA, ONTARIO MISSISSAUGA, ONTARIO CANADA L4Z 1N9 Www.agatlabs.com	ATTENTION: Mike Dutton (04-1112-069)	eg. 153 Metals in Soil	05 Date Reported: Feb 2, 2005 Sample Type: Soil	268 05-336 428269 05-338 428270 05-350 428271 05-366 428272 05-336 428273 05-338 428274 05-350 428275 05-366 TAL TOTAL TOTAL TOTAL	5 25.8 39.5 2.8 15.5 25.7 37.6 3.0	5 46.3 26.9 6.3 18.5 47.8 25.9 6.1	9 2750 301 50.9 754 2670 330 58.9	2 84.8 31.2 9.0 105 83.9 29.6 9.2	5 1470 343 55.4 481 1500 370 59.1	13.2 1.2 <0.8 4.3 13.2 1.2 <0.8
Ŭ		0. F	Feb 1, 2(uideline 42 TC	13	19	81	10	48	4.9
ries 📲	TES LTD.		te Received:	MDL G	0.6	0.3	0.3	0.5	0.6	0.8
Laborato	30LDER ASSOCIA		Nov 30, 2004 Dat	Unit	6/61	6/6rl	6/6r1	6/6rl	6/61	6/6rl
LAGA	CLIENT NAME: G		Date Sampled:		Arsenic	Cobalt	Copper	Lead	Nickel	Seleníum

M.D.L. - Method Detection Limit

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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 metalcontaminated 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-tomouth 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 $\leq 250 \mu m$ 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;

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June 2006

- 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

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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 Extractantto-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.



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

TABLE D1 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 05-355 05-355 05-355 05-356 05-357 05-358 05-359 05-351

		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	hð/ð	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	hð/ð	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	hð/ð	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	hð/ð	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 ex	traction 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
arameter	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 µgL 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 = na tapplicable. Data for sample 64-20 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.

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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
	n	n	r	F	n	·	n	r	r	F	r	T	.	Metal C	oncentrati	on in Extra	action Fluid	1	r	n					r	r	n	r	F	r	
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
														Matel Com																	
2.5	000	40.4	204		2	4.4	4.5	2.0	2.4	47	7.4	40.0	5.0	Metal Cond	centration	in <250 µn	1 Soll Frac	40.0	47	5.4	4.0	2.0	62.4	40.0	47.0	55.0	2.0	24.7	2.0	20.0	4.4
3.5	220	10.1	201	3	3	4.1	4.5	3.0	2.4	4.7	7.1	10.0	5.2	4.1	3.3	14.5	2.4	12.3	4.7	5.1	4.9	3.9	63.4	12.0	17.0	55.Z	2.0	31.7	3.0	20.9	4.1
5.9	00	24.7	60.5	0.1	2.4	4.1	7.5	7.5	4.9	13.0	11	14.0	13.1	4.5	0.1	16.2	3.0	17.5 EAE	7.5	11.1	10.0	0.0	00.3	21.1	19.1	46.5	3.7	21.3	0.2	41.0	0.2
09.0 15.2	1450	69.9	219	0.2	30.9	45.3	04.0	05.5	31.7	25.1	152	424	10.0	40.0	40.4	305	20.9	040 41.2	70.1	209	207	01.2	1050	520	502	700	29.0	305	37	27.9	12.1
15.2	1270	00.0	210	9.2	0.7	14.7	76.0	11.4 66.1	10.0	25.1	2/	40.1	10.0	23.2	F1 E	100	7.9	41.3	21.7	35.0	24	10.0	105	34.0	04.7 422	1000	7.9	31.2	17.0	37.0	13.1
01.3	13/0	600	1640	59.1	25.9	43.2	76.9	00.1	31.2	259	195	520	150	49.0	51.5	302	31.0	3//	93.1	140	239	04.2	1240	403	432	1090	35.4	399	40.1	910	0.4
0.9	J.2	5.8	5.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.9	1.5	0.4	0.4	0.4	1.0	0.4	3.2	0.4	1.0		0.4	3	1.4	3.3	2.2	0.4	1.0	0.4	1.0	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

04-1112-069

Prepared by: TPM Checked by: JK

Golder Associates

TABLE D2 Dust and Extraction Fluid Analytical Results and Bioaccessibility Estimates

	Go	older Sample ID	05 - 1290	05 - 1293	05 - 1295	05 - 1296	05 - 1299	05 - 1301	05 - 1307	05 - 1308	05 - 1309	05 - 1311				
	CAN	TOX Sample ID	504	515	522	523	534	550	582	584	600	602				
Parameter	Units	Detection														
		Limit				Metal C	oncentratio	n in Extracti	on 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	Cobalt µg/L		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	Arsenic µg/g		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				
Volum	ne of extrac	tion fluid (L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05				
	Mas	s 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	tection													
		Limit				D	ust Metal Bi	oaccessibili	ty							
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.

Prepared by: TPM Checked by: JK

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.

TABLE D3 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	Copper ug/L		4966.08	21636.08	1766.08	397.08	4546.08	10236.08	12236.08	11336.08	2066.08	8436.08			
Lead	Lead ug/L		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			Ν	Soil Fractio	n								
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 Volu	ume of Ext	raction 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				So	oil Metal Bio	oaccessibil	ity						
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:

Prepared by: TPM

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.

Checked by: JK

TABLE D4 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 Co	ncentratio	n in Extrac	tion 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 Volu	me of Ext	raction 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				So	il Metal Bi	oaccessibi	lity							
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:

Prepared by: TPM Checked by: JK

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.

APPENDIX E

PROUCL OUTPUTS FOR METALS IN SOIL AND DUST
Data File					Variable:	Arsenic (du	ust)		
					I				
R	aw Statistic	S			Normal D	Distribution T	est		
Number of	Valid Samp	les	10	Shapiro	-Wilk Test	Statisitic		0.933602	
Number of	Unique Sar	nples	10	Shapiro	-Wilk 5% C	Critical Value	1	0.842	
Minimum			0	Data ar	Data are normal at 5% significance level				
Maximum			5.421184		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
Mean			2.592316	95%	6 UCL (As	suming Norr	nal Distribut	ion)	
Median			2.610154		Student's-t	UCL		3.704403	
Standard Deviation 1.918447									
Variance			3.680438						
Coefficient	Coefficient of Variation 0.								
Skewness			0.156781						
Gamma Statistics Not Available			e						
Lognorr	nal Statistic	s Not Availa	able						
					95% Non-parametric UCLs				
				CLT UC	CLT UCL				
				Adj-CL1	UCL (Adj	usted for ske	wness)	3.622331	
				Mod-t U	CL (Adjust	ed for skew	ness)	3.709416	
				Jackkni	fe UCL			3.704403	
				Standar	d Bootstra	p UCL		3.550438	
				Bootstra	ap-t UCL			3.774433	
F	RECOMMEN	NDATION		Hall's B	ootstrap U	CL		3.494932	
Da	ta are norma	al (0.05)		Percent	ile Bootstra	ap UCL		3.540993	
				BCA Bo	otstrap UC	Ľ		3.547922	
Use Stu	Use Student's-t UCL		95% Ch	ebyshev (I	Mean, Sd) U	CL	5.236712		
			97.5% Chebyshev (Mean, Sd) UCL				6.380945		
				99% Ch	ebyshev (I	Mean, Sd) Ú	CL	8.628567	

Data File					Variable:	Cobalt (du	st)			
							·			
R	aw Statistic	S			Normal D	Distribution T	est			
Number of	Valid Samp	les	8	Shapiro	-Wilk Test	Statisitic		0.940743		
Number of	Unique Sar	nples	7	Shapiro	-Wilk 5% C	ritical Value		0.818		
Minimum			0	Data ar	Data are normal at 5% significance level					
Maximum			3.347498							
Mean			1.598173	959	% UCL (As	suming Norn	nal Distribut	ion)		
Median			1.598502	Student	's-t UCL			2.419118		
Standard Deviation 1.2			1.225594							
Variance 1.5			1.502081							
Coefficient of Variation			0.766872							
Skewness		-0.041574								
Gamma Statistics Not Available			е							
Lognorr	nal Statistic	s Not Availa	able							
					95% Non-parametric UCLs					
				CLT UC	CLT UCL					
				Adj-CL	Г UCL (Adj	usted for ske	wness)	2.304104		
				Mod-t L	ICL (Adjust	ed for skewi	ness)	2.418057		
				Jackkni	fe UCL			2.419118		
				Standar	rd Bootstra	p UCL		2.263631		
				Bootstra	ap-t UCL			2.493391		
F	RECOMMEN	NDATION	•	Hall's B	ootstrap U	CL		2.426477		
Dat	ta are norm	al (0.05)		Percent	ile Bootstra	ap UCL		2.294743		
				BCA Bo	otstrap UC	Ľ		2.244984		
Use Stude	ent's-t UCL		L	95% Ch	ebyshev (I	Mean, Sd) U	CL	3.486941		
				97.5% (Chebyshev	(Mean, Sd)	UCL	4.304212		
				99% Ch	nebyshev (I	Mean, Sd) Ú	CL	5.909583		

Data File					Variable:	Copper (du	ust)		
						1 2 2 2			
R	aw Statistic	S			Normal D	Distribution T	est		
Number of	Valid Samp	les	10	Shapiro	-Wilk Test	Statisitic		0.922086	
Number of	Unique Sar	nples	10	Shapiro	-Wilk 5% C	Critical Value	!	0.842	
Minimum			0	Data ar	Data are normal at 5% significance level				
Maximum			5.989418						
Mean			3.430176	95%	% UCL (As	suming Norr	nal Distribut	ion)	
Median 3.8			3.873649		Student's-f	UCL		4.558827	
Standard Deviation 1.9470			1.947019						
Variance			3.790884						
Coefficient	Coefficient of Variation								
Skewness			-0.737059						
Gamma Statistics Not Available			е						
Lognorr	nal Statistic	s Not Availa	able						
					95% Non-parametric UCLs				
				CLT UC	L			4.442915	
				Adj-CL1	「UCL (Adj	usted for ske	wness)	4.289576	
				Mod-t U	ICL (Adjust	ed for skew	ness)	4.534909	
				Jackkni	fe UCL			4.558827	
				Standar	d Bootstra	p UCL		4.400269	
				Bootstra	ap-t UCL	-		4.357112	
F	RECOMMEN	NDATION		Hall's B	ootstrap U	CL		4.301433	
Dat	ta are norma	al (0.05)		Percent	ile Bootstra	ap UCL		4.356078	
				BCA Bo	otstrap UC	, L		4.290281	
Use Stude	ent's-t UCL		1	95% Ch	ebyshev (I	Mean, Sd) U	CL	6.113957	
				97.5% (Chebyshev	(Mean, Sd)	UCL	7.275231	
				99% Ch	ebyshev (I	Mean, Sd) Ú	CL	9.55633	

Data File					Variable:	Lead (dust)			
R	aw Statistic	S			Normal D	istribution T	est			
Number of	Valid Samp	les	10	Shapiro	-Wilk Test	Statisitic		0.900078		
Number of	Unique Sar	nples	9	Shapiro	-Wilk 5% C	ritical Value		0.842		
Minimum			0	Data are	Data are normal at 5% significance level					
Maximum			6.841687							
Mean			2.227062	95%	95% UCL (Assuming Normal Distribu					
Median			1.706661	Stu	dent's-t UC	L		3.418933		
Standard D	Deviation		2.05608							
Variance 4.227466			4.227466							
Coefficient of Variation			0.923226							
Skewness			1.232609							
Gamma Statistics Not Available			e							
						-				
Lognorr	nal Statistic	s Not Availa	able							
					95% Non-parametric UCLs					
				CLT UC	Ľ			3.296528		
				Adj-CLT	UCL (Adju	usted for ske	wness)	3.567327		
				Mod-t U	CL (Adjust	ed for skewi	ness)	3.461172		
				Jackkni	fe UCL			3.418933		
				Standar	d Bootstra	o UCL		3.256445		
				Bootstra	ap-t UCL			3.870225		
F	RECOMMEN	NDATION		Hall's B	ootstrap UG	CL		4.304373		
Dat	ta are norma	al (0.05)		Percent	ile Bootstra	ap UCL		3.288228		
				BCA Bo	otstrap UC	L		3.485709		
Use Stud	Use Student's-t UCL			95% Ch	ebyshev (N	Mean, Sd) U	CL	5.061173		
			97.5% Chebyshev (Mean, Sd) UCL				6.287495			
				99% Ch	ebyshev (N	vlean, Sd) Ú	CL	8.696367		

		1 .	1					(
Data File					st)				
	01-11-11-1				NI	· · · · · · · · · · · · · · · · · · ·			
R	aw Statistic	S			Normal D	istribution I	est		
Number of	Valid Samp	les	10	Shapiro	-Wilk Test	Statisitic		0.688487	
Number of	Unique Sar	nples	8	Shapiro	-Wilk 5% C	ritical Value		0.842	
Minimum			0	Data no	Data not normal at 5% significance level				
Maximum			3.276097						
Mean			0.676648	95%	% UCL (Ass	suming Norn	nal Distribut	ion)	
Median			0.429413	Student	's-t UCL			1.245072	
Standard D	Standard Deviation 0.980579								
Variance	Variance 0.961536								
Coefficient of Variation			1.449172						
Skewness			2.422777						
Gamma	Gamma Statistics Not Available								
Lognorr	nal Statistic	s Not Availa	able						
					CLs				
				CLT UC	L			1.186695	
				Adj-CL1	^լ UCL (Adjւ	usted for ske	wness)	1.440545	
				Mod-t U	ICL (Adjust	ed for skewi	ness)	1.284667	
				Jackkni	fe UCL			1.245072	
				Standar	d Bootstrap	DUCL		1.155332	
				Bootstra	ap-t UCL			1.886933	
F	RECOMMEN	NDATION		Hall's B	ootstrap U0	CL		3.150894	
Data a	are Non-para	ametric (0.0)5)	Percent	ile Bootstra	ap UCL		1.233828	
				BCA Bo	otstrap UC	:L		1.584661	
5% Chebys	5% Chebyshev (Mean, Sd) UCL		95%	Chebyshe	v (Mean, Sd) UCL	2.028283		
			97.5% Chebyshev (Mean, Sd) UCL			UCL	2.613137		
				99% Ch	ebyshev (N	/lean, Sd) Ú	CL	3.761969	

Data File				Variable: Arsenic (soil)					
R	aw Statistic	S		Normal Distribution Test					
Number of	Valid Samp	oles	86	Lilliefors Test Statisitic	0.131736				
Number of	Unique Sar	nples	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 Distribut	ion)				
Median			32.46569	Student's-t UCL 36.80					
Standard D	Deviation		14.62034						
Variance			213.7543	Gamma Distribution Test	1				
Coefficient	of Variation	1	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 St	atistics		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 Distributio	on)				
nu hat			857.0699	Approximate Gamma UCL	37.13368				
nu star			828.5055	Adjusted Gamma UCL	37.18566				
Approx.Ch	Square Va	lue (.05)	762.6918						
Adjusted Level of Significance 0.04/209				Lognormal Distribution Test	0.440504				
Adjusted Chi Square Value 761.625					0.148581				
	of a way o d. Ci	atiatian		Lilletors 5% Critical Value	0.09554				
Log-tran	ISIOIMED SI	atistics	0.045050	Data not lognormal at 5% significance leve	31				
Maximum d	of log data		-0.215356	05% LICLs (Assuming Lagnarmal Distri	oution)				
Mean of lo	n data		4.000175		10 05663				
Standard F	y uala Deviation of	log data	0.540208	95% Chebyshey (MV/LIE) LICI	40.00000				
Variance o	f log data	iby uala	0.349290	93 % Chebyshev (MVUE) UC	40.85577				
	r iog uala		0.301720	99% Chebyshev (MVUE) UCI	58 21613				
					30.21013				
				95% Non-parametric LICLs					
					36 77711				
				Adi-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					
RECOMMENDATION			I	Hall's Bootstrap UCL	37.55146				
Data are Non-parametric (0.05))5)	Percentile Bootstrap UCL	36.8362				
			ĺ.	BCA Bootstrap UCL	36.98616				
Use 959	% Chebyshe	ev (Mean, S	d) UCL	95% Chebyshev (Mean, Sd) UCL	41.05594				
			, 	97.5% Chebyshev (Mean, Sd) UCL 44.029					
				99% Chebyshev (Mean, Sd) UCL	49.8704				

Data File					Variable:	Cobalt (soi	l)				
							-				
R	aw Statistic	s			Normal D	istribution T	est				
Number of	Valid Samp	oles	86	Lilliefors	Test Statis	sitic		0.05956			
Number of	Unique Sar	mples	85	Lilliefors	s 5% Critica	I Value		0.09554			
Minimum			1.510456	Data ar	e normal at	5% significa	ance level				
Maximum			49.99583								
Mean			24.72394	95%	6 UCL (Ass	uming Norn	nal Distributi	on)			
Median			25.93506	Stu	Student's-t UCL						
Standard D	Deviation		9.366839								
Variance			87.73767		Gamm	na Distributio	on Test				
Coefficient	of Variation	า	0.378857	A-D Tes	st Statistic			1.179865			
Skewness			0.138905	A-D 5%	Critical Va	lue		0.754462			
				K-S Tes	st Statistic			0.109295			
	Gamma St	atistics		K-S 5%	Critical Val	ue		0.096627			
k hat			5.28626	Data do	not follow	gamma disti	ribution				
k star (bias	corrected)		5.109608	at 5% s	gnificance	level					
Theta hat			4.67702								
Theta star			4.838717	95% U	CLs (Assur	ming Gamm	a Distributio	n)			
nu hat			909.2367	Approxi	mate Gamr	na UCL		26.79138			
nu star			878.8525	Adjuste	Adjusted Gamma UCL						
Approx.Ch	i Square Va	lue (.05)	811.0334								
Adjusted Level of Significance 0.0472			0.047209		Lognorm	nal Distributi	on Test				
Adjusted Chi Square Value 809			809.9336	Lilliefors	S Test Statis	sitic		0.124263			
				Lilliefors	s 5% Critica	I Value		0.09554			
Log-trar	nsformed St	atistics		Data no	t lognormal	at 5% signi	ficance leve	ł			
Minimum o	f log data		0.412411								
Maximum o	of log data		3.91194	95%	95% UCLs (Assuming Lognormal Distril						
Mean of log	g data		3.110216	95% H-	UCL			28.34499			
Standard D	Deviation of	log data	0.512857	95% Ch	ebyshev (N	IVUE) UCL		32.04128			
Variance o	f log data		0.263022	97.5% (Chebyshev	(MVUE) UC	L	34.85705			
				99% Ch	ebyshev (N	IVUE) UCL		40.3881			
					95% Non-p	arametric U	CLS				
				CLIUC				26.38533			
				Adj-CL I		isted for ske	wness)	26.4015			
				Mod-t U	CL (Adjust	ed for skewr	ness)	26.40616			
				Jackkni				26.40364			
Standard Bootstrap UCL 2						26.39724					
				Bootstra	ap-t UCL			26.33477			
RECOMMENDATION			Hall's B	ootstrap UC			26.4/196				
Data are normal (0.05)			Percent	IIE Bootstra			26.43111				
			BCA Bo	otstrap UC		0	26.36/18				
Use Student's-t UCL			95% Ch	ebyshev (N	(lean, Sd) U		29.12666				
				97.5% (nebyshev	(Ivlean, Sd)		31.031/2			
				99% Ch	ebyshev (N	/lean, Sd) U	UL	34.77384			

Data File					Variable:	Copper (so	il)				
R	aw Statistic	S			Normal D	istribution Te	est				
Number of	Valid Samp	les	86	Lilliefors	Test Statis	sitic		0.094186			
Number of	Unique Sar	nples	86	Lilliefors	5% Critica	I Value		0.09554			
Minimum			3.372981	Data ar	e normal at	5% significa	ance level				
Maximum			98.97202								
Mean			61.50498	95%	6 UCL (Ass	uming Norm	nal Distribut	ion)			
Median			63.44258	Stu	Student's-t UCL						
Standard D	Deviation		16.15935								
Variance			261.1247		Gamm	a Distributio	on Test				
Coefficient	of Variation	1	0.262732	A-D Tes	st Statistic			6.749031			
Skewness			-1.290938	A-D 5%	Critical Val	lue		0.75344			
				K-S Tes	t Statistic			0.182331			
	Gamma Sta	atistics	1	K-S 5%	Critical Val	ue		0.09653			
k hat			6.872284	Data do	not follow	gamma distr	ribution				
k star (bias	corrected)		6.640305	at 5% s	gnificance	level					
Theta hat			8.949715								
Theta star			9.262373	95% U	CLs (Assur	ming Gamm	a Distributic	on)			
nu hat			1182.033	Approxi	mate Gamr	na UCL		65.98082			
nu star			1142.132	Adjuste	Adjusted Gamma UCL 66						
Approx.Chi Square Value (.05) 1064.65											
Adjusted Level of Significance 0.04			0.047209		Lognorm	nal Distributi	on Test				
Adjusted Chi Square Value 1063			1063.393	Lilliefors	Test Statis	sitic		0.232505			
			[Lilliefors	5% Critica	I Value		0.09554			
Log-trar	stormed St	atistics		Data no	t lognormal	at 5% signi	ficance leve				
	f log data		1.215797	050	05% LICLA (Assuming Lagnarmal Distributi						
Maximum o	of log data		4.594837	95%		uming Logno	ormai Distric				
Niean of IO	y data	log data	4.044601	95% H-				/1.8044/			
Stanuaru L	flog doto	log dala	0.507215	95% UN			1	01.13437			
variance o	r iog uala		0.257267	97.5% C			L	102 0656			
				99 % CI				102.0050			
					95% Non-n	arametric I I	Cls				
				CLTUC			010	64 37115			
				Adi-CLT	UCL (Adiu	isted for ske	wness)	64.11196			
				Mod-t U	CL (Adjuste	ed for skewr	ness)	64.3623			
				Jackkni	e UCL			64.40273			
				Standar	d Bootstran	UCL		64.26168			
				Bootstra	ap-t UCL	· -		64.17027			
RECOMMENDATION				Hall's B	ootstrap UC	CL		64.08029			
Data are normal (0.05)			Percent	ile Bootstra	p UCL		64.2067				
			BCA Bo	otstrap UC	L.		64.0827				
Use Student's-t UCL			95% Ch	ebyshev (N	lean, Sd) U	CL	69.1004				
				97.5% Chebyshev (Mean, Sd) UCL 72.38				72.38694			
				99% Ch	ebyshev (N	lean, Sd) Ú	CL	78.84272			

Data File					Variable:	Lead (soil)				
	I						l			
R	aw Statistic	S			Normal D	istribution T	est			
Number of	Valid Samp	oles	86	Lilliefors	s Test Stati	sitic		0.06737		
Number of	Unique Sar	nples	79	Lilliefors	5% Critica	al Value		0.09554		
Minimum	•	•	0	Data ar	Data are normal at 5% significance level					
Maximum			35.1918		¥					
Mean			14.43141	95%	95% UCL (Assuming Normal Distribu					
Median			14.81637	Stu	dent's-t UC	L		16.02748		
Standard D	Standard Deviation 8.900502									
Variance			79.21893							
Coefficient	Coefficient of Variation 0.									
Skewness			0.085967							
Gamma Statistics Not Available			e							
Lognorr	nal Statistic	s Not Availa	able							
					CLs					
				CLT UC	CLT UCL					
				Adj-CLT	UCL (Adju	usted for ske	wness)	16.01959		
				Mod-t U	CL (Adjust	ed for skewr	ness)	16.02896		
				Jackkni	fe UCL			16.02748		
				Standar	d Bootstra	o UCL		15.98504		
				Bootstra	ap-t UCL			16.00956		
F	RECOMMEN	NDATION		Hall's B	ootstrap U0	CL		16.1044		
Da	Data are normal (0.05)				ile Bootstra	ap UCL		15.98024		
				BCA Bo	otstrap UC	L		16.03181		
Use Stu	Use Student's-t UCL			95% Ch	ebyshev (N	/lean, Sd) U	CL	18.61493		
			97.5% Chebyshev (Mean, Sd) UCL				20.42514			
				99% Ch	ebyshev (N	vlean, Sd) U	CL	23.98096		

Lata File Variable: Nickel (soil) Raw Statistics Normal Distribution Test Number of Valid Samples 86 Lilliefors Test Statisitic 0.10704 Number of Unique Samples 86 Lilliefors Test Statisitic 0.10704 Mumber of Unique Samples 86 Lilliefors Test Statisitic 0.10704 Maximum 69.25622 0.0000 0.0000 0.0000 Mean 34.88467 95% UCL (Assuming Normal Distribution) 0.0000 Median 35.2714 Student's-t UCL 37.6001 Standard Deviation 15.14293						M	NP.1.1/ 9	IN IN		
Raw Statistics Normal Distribution Test Number of Valid Samples 86 Lilliefors Test Statisitic 0.10704 Number of Unique Samples 86 Lilliefors 5% Critical Value 0.0955 Minimum 0 Data not normal at 5% significance level 0.0955 Maximum 69.25622	Data File)				
Number of Valid Samples 86 Lilliefors Test Statisitic 0.10704 Number of Unique Samples 86 Lilliefors Test Statisitic 0.0955 Minimum 0 Data not normal at 5% significance level 0.0955 Maximum 69.25622		Ctatiatia		1		Normal D	-tribuition T			
Number of Valid Samples 86 Lilliefors 1est Statistic 0.10704 Number of Unique Samples 86 Lilliefors 5% Critical Value 0.0955 Minimum 0 Data not normal at 5% significance level 0.0955 Maximum 69.25622	R	aw Statistic	s			Normal D	istribution I	est		
Number of Unique Samples 86 Lilliefors 5% Critical Value 0.0955 Minimum 0 Data not normal at 5% significance level 0 Maximum 69.25622 0 37.6001 Mean 34.88467 95% UCL (Assuming Normal Distribution) 37.6001 Median 35.2714 Student's-t UCL 37.6001 Standard Deviation 15.14293	Number of	Valid Samp	les	86	Lilliefors	s Test Statis	sitic		0.107049	
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 37.6001 Standard Deviation 15.14293 Variance 229.3083 Coefficient of Variation 0.434085 Skewness -0.316608 Gamma Statistics Not Available Lognormal Statistics Not Available Upper statistics Not Available <td>Number of</td> <td>Unique Sar</td> <td>nples</td> <td>86</td> <td>Lilliefors</td> <td>s 5% Critica</td> <td>al Value</td> <td></td> <td>0.09554</td>	Number of	Unique Sar	nples	86	Lilliefors	s 5% Critica	al Value		0.09554	
Maximum 69.25622 Mean 34.88467 95% UCL (Assuming Normal Distribution) Median 35.2714 Student's-t UCL 37.6001 Standard Deviation 15.14293 V V Variance 229.3083 Image: Coefficient of Variation 0.434085 Image: Coefficient of Variation 0.434085 Image: Coefficient of Variation Image: Coef	Minimum			0	Data no	Data not normal at 5% significance level				
Mean 34.88467 95% UCL (Assuming Normal Distribution) Median 35.2714 Student's-t UCL 37.6001 Standard Deviation 15.14293	Maximum			69.25622						
Median 35.2714 Student's-t UCL 37.6001 Standard Deviation 15.14293 <td< td=""><td>Mean</td><td></td><td></td><td>34.88467</td><td>95%</td><td>6 UCL (Ass</td><td>suming Norn</td><td>nal Distribut</td><td>ion)</td></td<>	Mean			34.88467	95%	6 UCL (Ass	suming Norn	nal Distribut	ion)	
Standard Deviation 15.14293 Variance 229.3083 Coefficient of Variation 0.434085 Skewness -0.316608 Gamma Statistics Not Available	Median			35.2714	Student	's-t UCL			37.60015	
Variance 229.3083 Coefficient of Variation 0.434085 Skewness -0.316608 Gamma Statistics Not Available	Standard D	Deviation		15.14293						
Coefficient of Variation 0.434085 Skewness -0.316608 Gamma Statistics Not Available	Variance	Variance 229.3083								
Skewness -0.316608	Coefficient	Coefficient of Variation 0.434								
Gamma Statistics Not Available	Skewness	Skewness -0.3166								
Gamma Statistics Not Available										
Lognormal Statistics Not Available 95% Non-parametric UCLs 0 95% Non-parametric UCLs 0 CLT UCL 37.5705 0 Adj-CLT UCL (Adjusted for skewness) 37.5109 0 Mod-t UCL (Adjusted for skewness) 37.5908 1 Jackknife UCL 37.6001 1 Standard Bootstrap UCL 37.5112 1 Bootstrap-t UCL 37.5390 1 Bootstrap UCL 37.5390 1 Bootstrap UCL 37.5137 1 Bootstrap UCL 37.5137 1 BCA Bootstrap UCL 37.4141 Use 95% Chebyshev (Mean, Sd) UCL 97.5% Chebyshev (Mean, Sd) UCL 42.0023 1 99% Chebyshev (Mean, Sd) UCL 51.1318	Gamma	Gamma Statistics Not Available								
Lognormal Statistics Not Available 95% Non-parametric UCLs 95% Non-parametric UCLs 37.5705 Adj-CLT UCL 37.5705 Adj-CLT UCL (Adjusted for skewness) 37.5109 Mod-t UCL (Adjusted for skewness) 37.5001 Jackknife UCL 37.6001 Jackknife UCL 37.6112 Bootstrap-t UCL 37.5112 Bootstrap-t UCL 37.5390 Data are Non-parametric (0.05) Percentile Bootstrap UCL 37.5137 BCA Bootstrap UCL 37.4141 Use 95% Chebyshev (Mean, Sd) UCL 97.5% Chebyshev (Mean, Sd) UCL 45.0821 99% Chebyshev (Mean, Sd) UCL 51.1318										
Lognormal Statistics Not Available 95% Non-parametric UCLs 95% Non-parametric UCLs 37.5705 Adj-CLT UCL 37.5705 Adj-CLT UCL (Adjusted for skewness) 37.5109 Mod-t UCL (Adjusted for skewness) 37.5908 Jackknife UCL 37.6001 Standard Bootstrap UCL 37.5112 Bootstrap-t UCL 37.4781 RECOMMENDATION Hall's Bootstrap UCL 37.5137 Data are Non-parametric (0.05) Percentile Bootstrap UCL 37.5137 BCA Bootstrap UCL 37.4141 Use 95% Chebyshev (Mean, Sd) UCL 95% Chebyshev (Mean, Sd) UCL 45.0821 99% Chebyshev (Mean, Sd) UCL 51.1318										
95% Non-parametric UCLs CLT UCL 37.5705 Adj-CLT UCL (Adjusted for skewness) 37.5109 Mod-t UCL (Adjusted for skewness) 37.5908 Jackknife UCL 37.6001 Jackknife UCL 37.5112 Bootstrap-t UCL 37.4781 RECOMMENDATION Hall's Bootstrap UCL 37.5137 Data are Non-parametric (0.05) Percentile Bootstrap UCL 37.5137 BCA Bootstrap UCL 37.4414 Use 95% Chebyshev (Mean, Sd) UCL 97.5% Chebyshev (Mean, Sd) UCL 42.0023 99% Chebyshev (Mean, Sd) UCL 51.1318	Lognorr	nal Statistic	s Not Availa	able						
95% Non-parametric UCLs CLT UCL 37.5705 Adj-CLT UCL (Adjusted for skewness) 37.5109 Mod-t UCL (Adjusted for skewness) 37.5908 Jackknife UCL 37.6001 Standard Bootstrap UCL 37.5112 Bootstrap-t UCL 37.4781 RECOMMENDATION Hall's Bootstrap UCL 37.5137 Data are Non-parametric (0.05) Percentile Bootstrap UCL 37.5137 BCA Bootstrap UCL 37.4414 Use 95% Chebyshev (Mean, Sd) UCL 95% Chebyshev (Mean, Sd) UCL 42.0023 97.5% Chebyshev (Mean, Sd) UCL 51.1318								1		
CLT UCL37.5705Adj-CLT UCL (Adjusted for skewness)37.5109Mod-t UCL (Adjusted for skewness)37.5908Jackknife UCL37.6001Jackknife UCL37.6001Standard Bootstrap UCL37.5112Bootstrap-t UCL37.4781RECOMMENDATIONHall's Bootstrap UCLData are Non-parametric (0.05)Percentile Bootstrap UCLBCA Bootstrap UCL37.5137BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL51.1318						95% Non-p	arametric U	CLs		
Adj-CLT UCL (Adjusted for skewness)37.5109Mod-t UCL (Adjusted for skewness)37.5908Jackknife UCL37.6001Jackknife UCL37.6112Standard Bootstrap UCL37.5112Bootstrap-t UCL37.4781RECOMMENDATIONHall's Bootstrap UCLData are Non-parametric (0.05)Percentile Bootstrap UCLBCA Bootstrap UCL37.5137Standard Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL51.1318					CLT UC	CLT UCL				
Mod-t UCL (Adjusted for skewness)37.5908Jackknife UCL37.6001Jackknife UCL37.6001Standard Bootstrap UCL37.5112Bootstrap-t UCL37.4781RECOMMENDATIONHall's Bootstrap UCLData are Non-parametric (0.05)Percentile Bootstrap UCLBCA Bootstrap UCL37.5137BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL51.131899% Chebyshev (Mean, Sd) UCL51.1318					Adj-CL1	UCL (Adju	usted for ske	wness)	37.51099	
Jackknife UCL 37.6001 Standard Bootstrap UCL 37.5112 Bootstrap-t UCL 37.4781 RECOMMENDATION Hall's Bootstrap UCL 37.5390 Data are Non-parametric (0.05) Percentile Bootstrap UCL 37.5137 BCA Bootstrap UCL 37.4414 Use 95% Chebyshev (Mean, Sd) UCL 95% Chebyshev (Mean, Sd) UCL 42.0023 97.5% Chebyshev (Mean, Sd) UCL 51.1318					Mod-t U	CL (Adjust	ed for skewi	ness)	37.59086	
Standard Bootstrap UCL37.5112Bootstrap-t UCL37.4781RECOMMENDATIONHall's Bootstrap UCL37.5390Data are Non-parametric (0.05)Percentile Bootstrap UCL37.5137BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL42.002397.5% Chebyshev (Mean, Sd) UCL99% Chebyshev (Mean, Sd) UCL51.1318					Jackkni	fe UCL			37.60015	
Bootstrap-t UCL37.4781RECOMMENDATIONHall's Bootstrap UCL37.5390Data are Non-parametric (0.05)Percentile Bootstrap UCL37.5137BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL42.002397.5% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL45.082199% Chebyshev (Mean, Sd) UCL51.1318					Standar	d Bootstrap	UCL		37.51125	
RECOMMENDATIONHall's Bootstrap UCL37.5390Data are Non-parametric (0.05)Percentile Bootstrap UCL37.5137BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL42.002397.5% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL45.082199% Chebyshev (Mean, Sd) UCL51.1318					Bootstra	ap-t UCL			37.47818	
Data are Non-parametric (0.05)Percentile Bootstrap UCL37.5137BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL42.002397.5% Chebyshev (Mean, Sd) UCL99% Chebyshev (Mean, Sd) UCL45.082199% Chebyshev (Mean, Sd) UCL51.1318	F	RECOMMEN	NDATION		Hall's B	ootstrap U0	CL		37.53906	
BCA Bootstrap UCL37.4414Use 95% Chebyshev (Mean, Sd) UCL95% Chebyshev (Mean, Sd) UCL42.002397.5% Chebyshev (Mean, Sd) UCL97.5% Chebyshev (Mean, Sd) UCL45.082199% Chebyshev (Mean, Sd) UCL51.1318	Data a	are Non-para	ametric (0.0)5)	Percent	ile Bootstra	ID UCL		37.51378	
Use 95% Chebyshev (Mean, Sd) UCL 95% Chebyshev (Mean, Sd) UCL 42.0023 97.5% Chebyshev (Mean, Sd) UCL 45.0821 99% Chebyshev (Mean, Sd) UCL 51.1318					BCA Bo	otstrap UC	Ĺ		37.44149	
97.5% Chebyshev (Mean, Sd) UCL 45.0821 99% Chebyshev (Mean, Sd) UCL 51.1318	Use 959	Use 95% Chebyshey (Mean, Sd) UCL		95%	Chebyshev	v (Mean, Sd) UCL	42.00233		
99% Chebyshev (Mean, Sd) UCL 51.1318				97.5% Chebyshev (Mean, Sd) UC			UCL	45.08215		
					99% Ch	ebyshev (N	Nean, Sd) U	CL	51.13186	
					_		, , -			

Data File					Variable:	Selenium (soil; all data	; n=86)	
	I		11			,	,	, ,	
R	aw Statistic	S			Normal D	istribution T	est		
Number of	Valid Samp	les	85	Lilliefors	s Test Stati	sitic		0.248064	
Number of	Unique Sar	nples	53	Lilliefors	s 5% Critica	al Value		0.0961	
Minimum			0	Data no	Data not normal at 5% significance level				
Maximum			144.102						
Mean			16.03896	959	% UCL (Ass	suming Norn	nal Distribut	ion)	
Median			7.936	Student	's-t UCL			20.29026	
Standard D	Deviation		23.56607						
Variance	ce 555.3598								
Coefficient	of Variation	1	1.469302						
Skewness	Skewness 3.0106								
Gamma Statistics Not Available			е						
Lognorr	nal Statistic	s Not Availa	able						
					95% Non-parametric UCLs				
				CLT UC	L			20.24337	
				Adj-CL	Г UCL (Adjı	usted for ske	wness)	21.13525	
				Mod-t L	JCL (Adjust	ed for skewi	ness)	20.42937	
				Jackkni	fe UCL			20.29026	
				Standar	rd Bootstra	o UCL		20.13311	
				Bootstra	ap-t UCL			21.49966	
F	RECOMMEN	NDATION		Hall's B	ootstrap U0	CL		22.56605	
Data a	are Non-para	ametric (0.0)5)	Percent	ile Bootstra	ap UCL		20.26062	
				BCA Bo	otstrap UC	L		21.25308	
Use 959	Use 95% Chebyshev (Mean, Sd) UCL		95%	Chebyshe	v (Mean, Sd) UCL	27.18074		
			97.5% Chebyshev (Mean, Sd) UCL				32.0018		
				99% Ch	nebyshev (N	Vean, Sd) U	CL	41.47183	

Data File				Variable: Selenium (soil; n=54; excluding					
						data where	e selenium ir	ו seived	
						soil at or be	elow the MD)L)	
R	aw Statistic	s			Normal D	Distribution T	est		
Number of	Valid Samp	oles	53	Lilliefors	Lilliefors Test Statisitic				
Number of	Unique Sar	nples	46	Lilliefors	Lilliefors 5% Critical Value				
Minimum			0	Data no	t normal at	5% significa	ance level		
Maximum			110.0978						
Mean			15.4223	95%	nal Distribut	ion)			
Median			12.6976	Student	's-t UCL			19.60174	
Standard D	eviation		18.16861	[
Variance			330.0985						
Coefficient	of Variation	1 I	1.178074						
Skewness			3.162061						
Gamma Statistics Not Available		е							
Lognorr	nal Statistic	s Not Availa	able						
				!	95% Non-p	arametric U	CLs		
				CLT UC	Ľ			19.52729	
				Adj-CLT	UCL (Adji	usted for ske	ewness)	20.68552	
				Mod-t U	CL (Adjust	ed for skew	ness)	19.7824	
				Jackkni	fe UCL			19.60174	
				Standar	d Bootstra	p UCL		19.63687	
				Bootstra	ap-t UCL	<u>I</u>		21.75816	
F	RECOMME	NDATION		Hall's B	ootstrap U	CL		29.02251	
Data a	Data are Non-parametric (0.05)			Percent	ile Bootstra	ap UCL		19.87655	
			BCA Bo	otstrap UC	L L		20.8607		
Use 959	Use 95% Chebyshey (Mean, Sd) UCL		95%	Chebyshe	v (Mean, Sd) UCL	26.30059		
		97.5% Chebyshev (Mean Sd) UCI			UCL	31.00764			
				99% Ch	ebvshev (ľ	Mean. Sd) U	CL	40.25372	
					, <u> </u>	,, .	1		

Data File					Variable:	Selenium (soil; n=24; e	excluding	
				data where selenium i		n seived			
						soil or extra	action fluid a	at or below	
						the MDL)			
		<u>.</u>				· · ·	I.		
Raw Statistics				Normal Distribution Test					
Number of Valid Samples			24	Shapiro	Shapiro-Wilk Test Statisitic			0.690489	
Number of Unique Samples			24	Shapiro	Shapiro-Wilk 5% Critical Value			0.916	
Minimum			6.382955	Data no	Data not normal at 5% significance level				
Maximum			110.0978						
Mean			26.38701	95% UCL (Assuming Normal Distributi				ion)	
Median			19.76791	Student	Student's-t UCL			33.94905	
Standard Deviation			21.61553						
Variance			467.2313		Gamma Distribution Test				
Coefficient of Variation			0.819173	A-D Tes	A-D Test Statistic			0.698931	
Skewness			2.852989	A-D 5%	A-D 5% Critical Value			0.753017	
				K-S Tes	K-S Test Statistic				
Gamma Statistics				K-S 5%	K-S 5% Critical Value				
k hat 2.517267				Data fol	Data follow gamma distribution				
k star (bias	corrected)		2.230387	at 5% s	at 5% significance level				
Theta hat			10.48241		¥				
Theta star			11.83069	95% U	95% UCLs (Assuming Gamma Distribution			on)	
nu hat			120.8288	Арр	Approximate Gamma UCL			33.56057	
nu star			107.0586	Adjuste	Adjusted Gamma UCL			34.1391	
Approx.Ch	i Square Va	lue (.05)	84.17483						
Adjusted Level of Significance 0.039					Lognormal Distribution Test				
Adjusted Chi Square Value			82.74839	Shapiro	Shapiro-Wilk Test Statisitic			0.963001	
				Shapiro	-Wilk 5% C	ritical Value		0.916	
Log-transformed Statistics				Data are	Data are lognormal at 5% significance level				
Minimum of log data			1.853631						
Maximum of log data			4.701369	95%	95% UCLs (Assuming Lognormal Distribution				
Mean of log data			3.061287	95% H-	95% H-UCL			34.31952	
Standard Deviation of log data			0.630973	95% Ch	95% Chebyshev (MVUE) UCL			41.18815	
Variance of log data			0.398126	97.5% (97.5% Chebyshev (MVUE) UCL			47.84379	
				99% Ch	99% Chebyshev (MVUE) UCL			60.91752	
					95% Non-parametric UCLs				
				CLT UC	CLT UCL			33.64452	
				Adj-CLT	Adj-CLT UCL (Adjusted for skewness)			36.39011	
				Mod-t U	ICL (Adjust	ed for skewr	ness)	34.3773	
				Jackkni	fe UCL			33.94905	
				Standar	Standard Bootstrap UCL			33.43439	
				Bootstrap-t UCL				39.9496	
RECOMMENDATION				Hall's Bootstrap UCL				70.74789	
Data follow gamma distribution (0.05)				Percentile Bootstrap UCL				34.16548	
				BCA Bootstrap UCL				36.6068	
Use Approximate Gamma UCL				95% Chebyshev (Mean, Sd) UCL				45.61958	
				97.5% (97.5% Chebyshev (Mean, Sd) UCL 53.94152				
				99% Ch	ebyshev (N	vlean, Sd) U	CL	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;

 $[metal]_{extract} = 4840 \ \mu g/L$ $[metal]_{blank} = 166.20 \ \mu g/L$ Volume of extract = 0.1025L $[metal]_{soil} = 1030 \ \mu g/g$ $Mass of soil = 1.0 \ g$

 $Bioaccessibility (\%) = \frac{mass \ metal \ in \ extract}{mass \ metal \ in \ soil} \times 100 = \frac{\left([metal]_{extract} \times volume \ of \ extract}{[metal]_{soil} \times mass \ of \ soil} \times 100$ $= \frac{\left(4840ug \ / \ L - 166.20ug \ / \ L\right) \times 0.1025L}{1030ug \ / \ g \times 1.0g} \times 100$ = 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;

 $[metal]_{extract} = 198 \ \mu g/L$ $[metal]_{blank} = 166.2 \ \mu g/L$ $Volume of extract = 0.05 \ (50 \ mL)$ $[metal]_{dust} = 406 \ \mu g/g$ Mass of dust = 0.5002 g

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

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$$=\frac{(198ug / L - 166.2ug / L) \times 0.05L}{406ug / g \times 0.5002g} \times 100$$

= 0.78%

Note that the metal concentrations in the extraction fluids were corrected by subtracting the metal concentrations in the bottle blank.