



EDI ENVIRONMENTAL DYNAMICS INC.
Natural Resource Consultants

**ELSA TAILINGS
TERRESTRIAL EFFECTS
ASSESSMENT — PHASE 2**

FINAL

PREPARED FOR:

ACCESS CONSULTING GROUP

3-151 INDUSTRIAL ROAD

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EDI PROJECT NO.: 08-YC-0036

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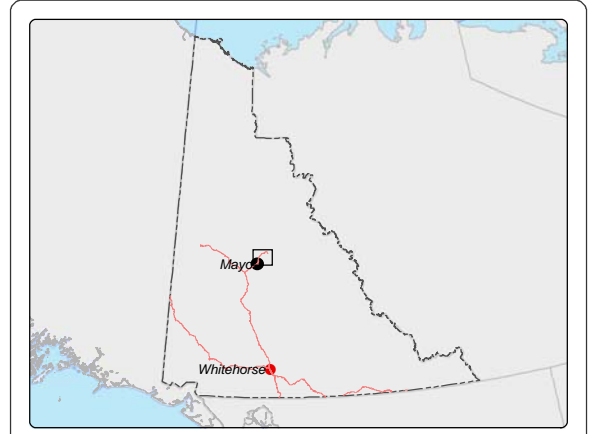
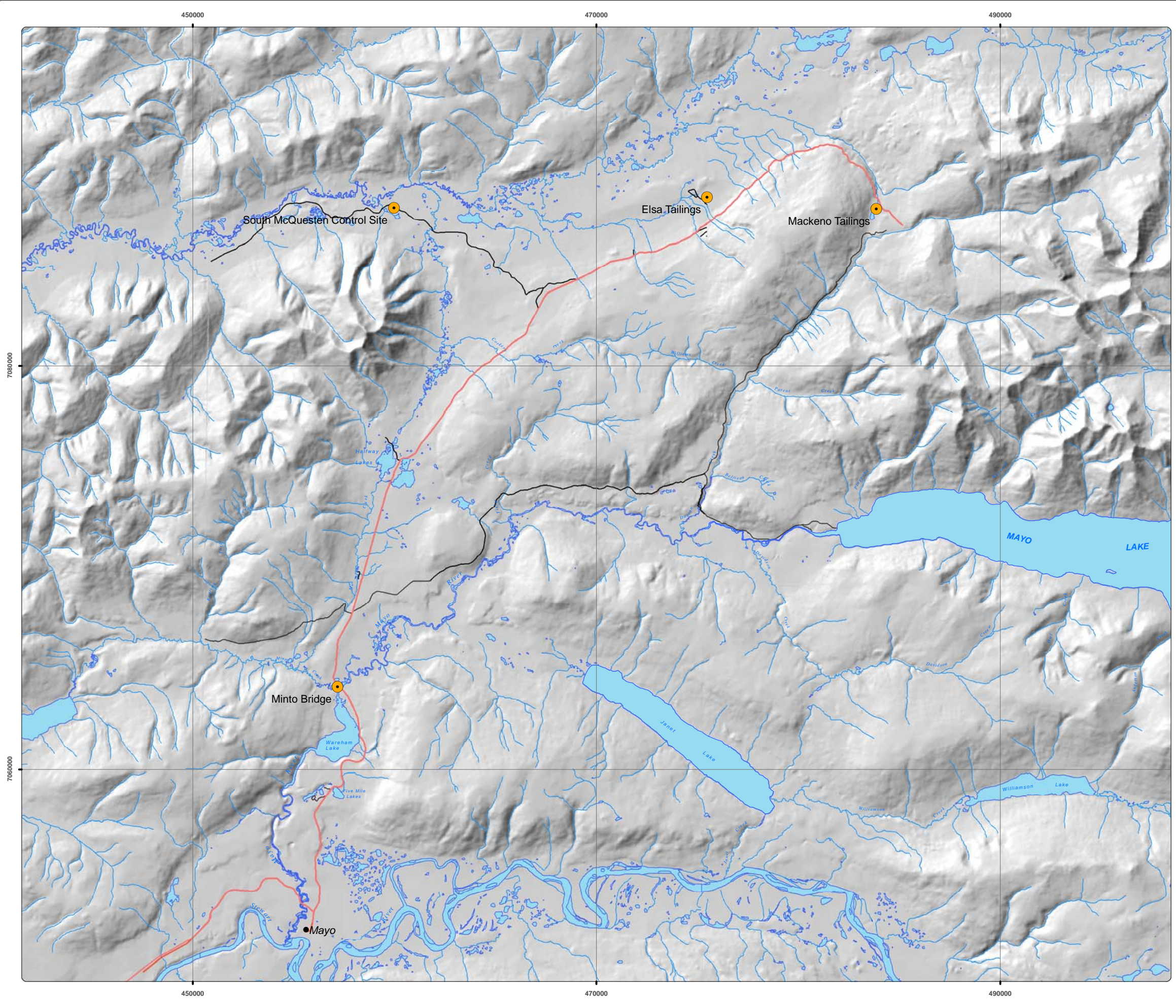
1 INTRODUCTION

The Keno Hill/Elsa property is located approximately 460 km north of Whitehorse, Yukon (Figure 1) within the Traditional Territory of the First Nation of the Nacho Nyak Dun (NND). This property was mined for silver from 1914–1989 and mine tailings cover an area approximately 118 ha within the Flat Creek valley bottom (EDI 2008). Mine tailings are composed of materials leftover from the process of separating silver, lead and zinc fractions from the ore and, as such, may contain a number of heavy metals as a byproduct of the mining/milling process. The Elsa tailings are composed of two discrete depositions, one new and one older deposit. The older deposit is characterized by high levels of Zn, Pb, and Cu. As a result of improved mining techniques and a different ore body, the second deposit has a different heavy metal composition and finer particle size. Sediments in these tailings may be transported by water or air causing accumulations of heavy metals in the surrounding environment, increasing the risk of bioaccumulation in the local food web. EDI Environmental Dynamics Inc. (EDI) was retained in 2007 by the Access Consulting Group to complete a Terrestrial Effects Study in the vicinity of the Elsa mine tailings.

The objective of the study was to determine the extent of dispersion of metals into the natural terrestrial ecosystem surrounding the mine tailings. Phase 1 used lichens as indicators of airborne contamination to investigate the aerial dispersion of metals (EDI 2008). Lichens were sampled at sites along transects radiating outwards in each cardinal direction from a central location within the tailings area. EDI (2008) concluded that there were elevated metal levels in lichens around the eastern ‘dry’ portion of the Elsa tailings. The most notable aerial dispersion of metals appeared to be limited to within 200 m from the tailings. Beyond this area, moderate levels of metals were generally found from 200 – 350 m (EDI 2008). Full results of the study are described in the Elsa Tailings Terrestrial Effects Assessment — Phase 1 by EDI Environmental Dynamics Inc. (2008).

A second phase was initiated in 2008 based on recommendations in the 2007 project report (EDI 2008) and a community-based request to provide information on metals in plants traditionally harvested and consumed for medicinal purposes by NND. The objective of this study was to determine if, and to what extent these plants have been impacted by metals in and around the study area. EDI added two additional sites to the 2007 study design to include; one mine tailings (Mackeno) and one site used by the NND for traditional harvesting of medicinal plants. These were added to further understand natural properties of plants in and around the Mayo/Keno area. The following list describes locations selected for the 2008 study and are shown in Figure 1:

1. Elsa Tailings — plots established in 2007;
2. South McQuesten River Control Sites — plots established in 2007;
3. Mackeno Tailings — plots established in 2008; and
4. Minto Bridge — area selected by NND elders in 2008.



Legend

- Project Specific Features**
- Study Sites
- Topographic Features**
- Silver Trail
 - Secondary Road
 - Watercourse
 - Community
 - Waterbody



Drawn By: M. Power
 Checked By: S. Stotyn/M. Setterington
 Date: 19 February 2009

Projection: NAD 1983 UTM Zone 8
 EDI Project #: 08-YC-0036



Digital Data Sources:

1:50,000 Topographic Spatial Data: Canvec and National Topographic Database (NTDB) Her Majesty the Queen in Right of Canada, Department of Natural Resources. All Rights Reserved. Data obtained October 2008.

Digital Elevation Model and Orthophoto of Keno region provided by Geomatics - Yukon Government; Summer 2007

Project data displayed is site specific. All data collected by EDI Environmental Dynamics Inc. (2008) was obtained using Garmin GPS technology (GPSMap 76 CSx).

This map is a geographical representation of known geographic features. Although the data collected and presented herein has been obtained with the utmost attention to quality, this document is not an official land survey and should not be considered for spatial calculation. EDI Environmental Dynamics Inc. does not accept any liability for errors, omissions or inaccuracies in the data.

**Figure 1:
 Overview Map of Study Area**

Prepared for



Prepared by



2 METHODS

2.1 COMMUNITY CONSULTATION

A workshop was held on June 19, 2008 in which Nacho Nyak Dun elders were invited to share traditional knowledge regarding harvest and consumption of plants for medicinal purposes. This workshop was a forum where attendees were encouraged to speak as a group or individually about their experiences with traditionally used medicinal plants. Information gathered focused on the following criteria:

1. Local plant name (books/photos used to verify scientific taxonomy);
2. Preparation methods (consumable product, i.e., boiled tea);
3. Plant part harvested and consumed for medicinal purposes;
4. Frequency of use (daily/monthly/yearly); and
5. Location and timing of harvest.

A second consultation was conducted to broaden the scope of the field program and ensure further understanding of medicinal plant species and parts used for medicinal consumption. NND Mining Liaison Coordinator, Josée Tremblay and NND youth assistant, Martha Phillips, conducted these interviews July 15 and 16, 2008 in Mayo, YT. Interviews were coordinated with elders in a one-on-one format because it was felt that the group setting initially used in June may not have given some elders an opportunity to share valuable information.

2.2 FIELD METHODS

Plot selection

Elsa Mine Tailings — Forty-eight plots were originally sampled in 2007 (EDI 2008). Plots with elevated lead (Pb) concentrations in lichens in 2007 (EDI 2008) were selected and sampled for metal concentrations in medicinal plants (24 plots; Figure 2).

South McQuesten River Control Site — Three sample plots were originally established in 2007 (EDI 2008). Efforts were made to collect plants at the 2007 control sites; however, due to limited availability of targeted plants, the project team deviated <30 metres from sites to collect as many samples as possible of selected species.

Mackeno Mine Tailings — Eight plots were established in the vegetation within five metres from the perimeter of the tailings (Figure 2). Along with available medicinal plant species, caribou moss (*Cladina mitis*) was also collected from each plot to determine local dispersion of metals. To replicate site selection methods used for the Elsa tailings, lichen samples from all plots at the Mackeno tailings were analyzed for heavy metal

content. Based on these results (Table 1), 10 plant samples within four plots with the highest Pb concentration were analyzed for metal content. These plots were MT02, MT04, MT05 and MT06 (Figure 2).

Minto Bridge — Two plots were established in close proximity to the bridge (within 50 m) along Mayo River. Each plot was set up on opposing sides of the Mayo River (Figure 2). These sites were identified as areas used for plant harvesting by the NND.

Table 1. Metal concentrations in caribou lichen (*Cladina mitis*) tissue collected at the Mackeno tailings site in 2008.

Metals in lichens	Metal concentrations detected in plots n=8 (µg/g)							
	CLMI_MT01-1	CLMI-MT02-1	CLMI-MT03-1	CLMI-MT04-1	CLMI-MT05-1	CLMI-MT06-1	CLMI-MT07-1	CLMI-MT08-1
Antimony (Sb)	0.3	1.4	0.4	1.7	1.8	2.4	0.7	0.2
Arsenic (As)	2.3	11.2	4.7	11	11.9	18.5	6.9	2.7
Cadmium (Cd)	1.08	2.38	1.08	2.51	2.48	2.95	0.85	0.59
Copper (Cu)	1	1.6	1.2	1.6	1.5	2	1	0.9
Iron (Fe)	124	334	164	329	314	439	250	184
Lead (Pb)	7.9	48.9	13.4	59.7	48.7	89.7	23.8	8.9
Silver (Ag)	0.23	1.04	0.31	1.4	1.19	2.05	0.48	0.22
Zinc (Zn)	56	152	64.2	153	151	211	58.2	37.2

Collection Methods

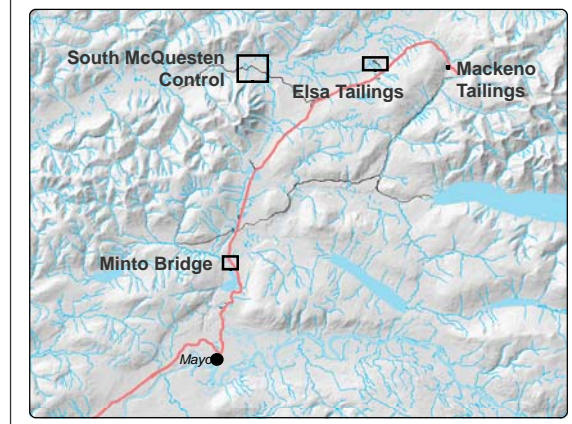
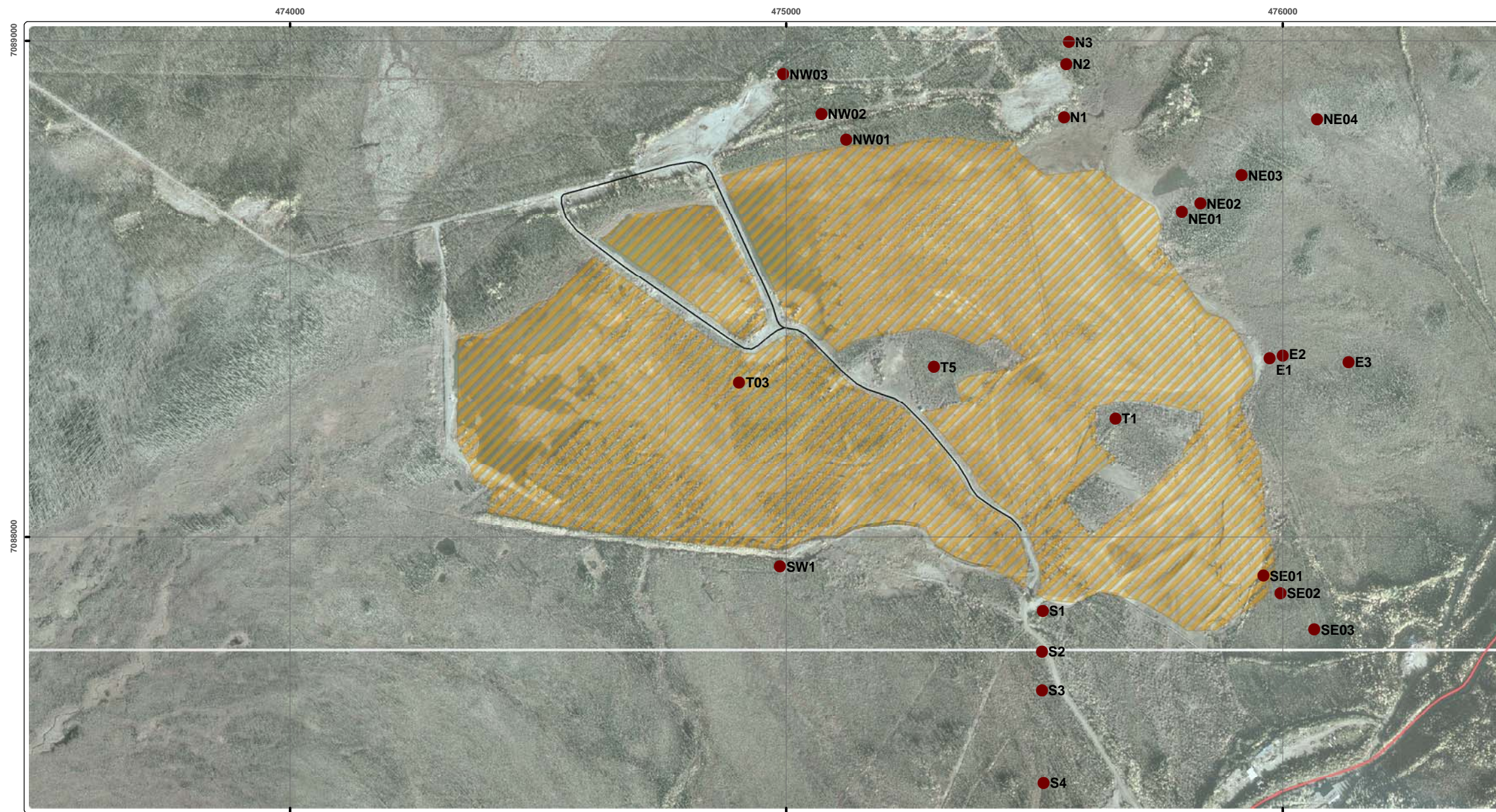
To facilitate comparisons between sites, plant species were selected that were prevalent throughout all study sites within the study area. At each plot, several samples of the same species were collected making up one complete sample for composite analysis. All plant samples were collected using unpowdered nitrile gloves, which were replaced with new uncontaminated gloves for each sample collected. Foreign material (mostly organic) was removed from samples to ensure that the desired plant part was analyzed. Samples were stored in new Ziploc[®] freezer bags, labeled, and frozen until shipped for analysis. Plant samples were collected from 37 plots resulting in a total of 243 samples available for analysis.

Replicate samples

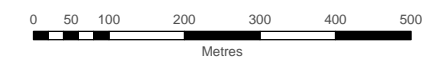
Replicate samples were collected for quality assurance /quality control (QA/QC). Three sets of replicates (two field samples collected from the same site) were analyzed.

Analysis

Samples sent for analysis were selected based on a number of considerations: 1) to ensure adequate sample size for common species; 2) to collect at least one representative sample of each species and 3) to sample from those areas with known high metal levels in lichen (based on Phase 1 results) that could potentially be reflected in the plant species at the same location. One hundred samples were shipped to an accredited lab (CANTEST) for analysis (Inductively Coupled Plasma Mass Spectrometry; ICP-MS). ICP-MS is a highly sensitive procedure that measures a range of metals that may be present at very low concentrations.



- Legend**
- Project Specific Features**
-Plots - Mackeno Tailings
 -Plots - Elsa Tailings
 -Plots - Controls
 - ▨Tailings Site
- Topographic Features**
-Silver Trail
 -Secondary Road
 -Watercourse
 -Community
 -Waterbody



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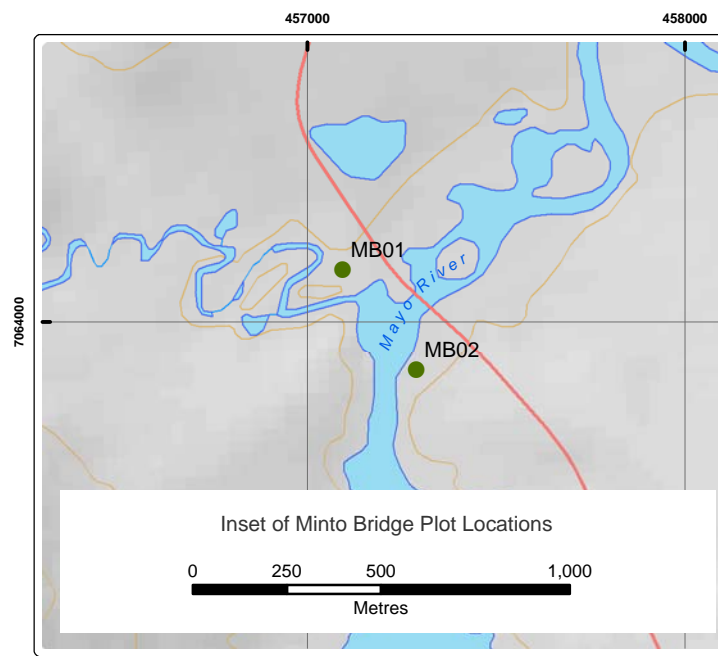
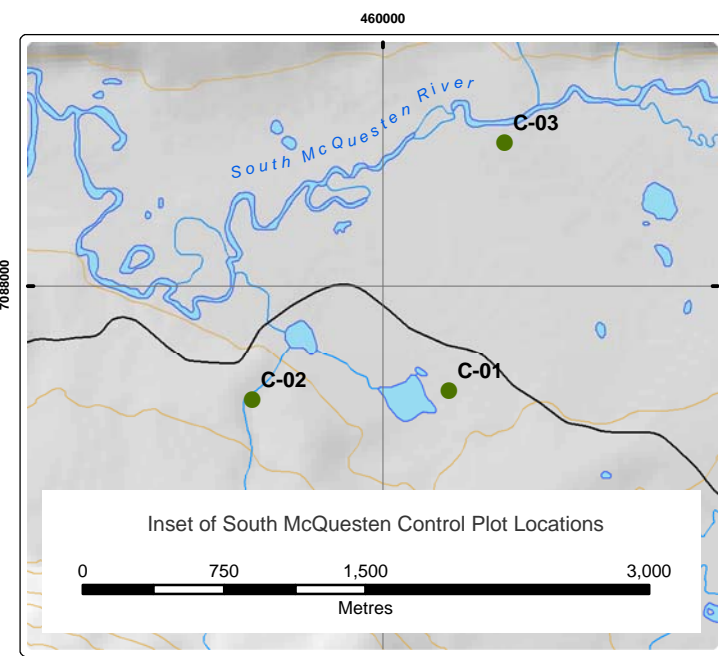
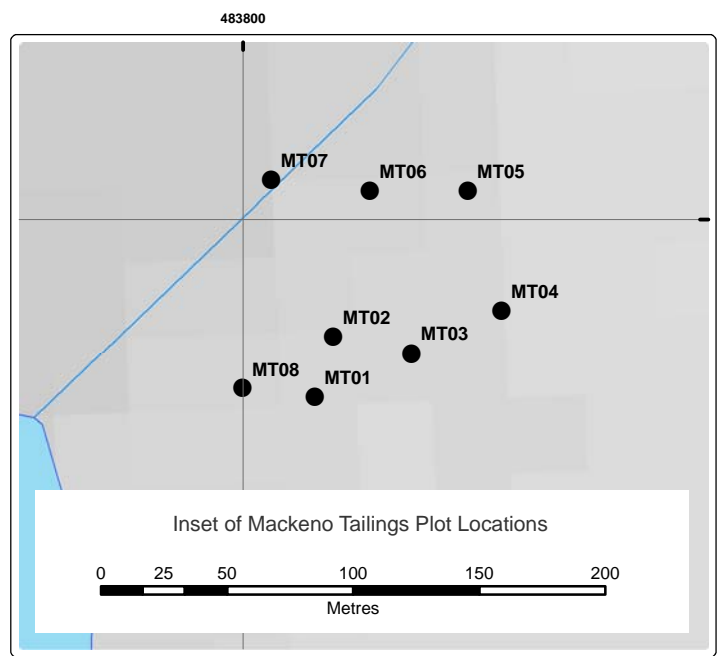
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Figure 2: Plot locations at the four project sites.



2.3 DATA ANALYSIS

Heavy metal concentrations in plants were compared between sites to determine if levels near tailings were elevated compared to control sites (Minto Bridge and South McQuesten River) and Yukon Background Data (YBD; Gamberg 2006). Minto Bridge (two plots) and South McQuesten Control (three plots) metal concentrations were similar enough to allow sites to be pooled to increase sample size and improved the overall ability to compare disturbed areas with natural background levels. To see how values found in the Elsa/Keno area compared to levels in plants collected from other undisturbed areas, we used background data collected from across the Yukon (Gamberg 2006).

An array of plant species were collected at a variety of sites that captured the breadth of medicinal plants used by the NND. However, this resulted in a sample size that was not sufficient to make valid statistical comparisons between sites. Due to small sample sizes we also represented the mid-point of the data using medians instead of means. Medians are better for describing non-normal data resulting from small sample sizes and these values are not affected by extreme high and low values. The mean was used in cases where only two samples were available from a site.

3 RESULTS

3.1 COMMUNITY CONSULTATION

A comprehensive plant list was compiled from the community consultation and is provided below (Table 2). NNDFN members used medicinal plants for tea (leaves, roots, petals), ointments (pitch), compresses (whole plants) and eaten whole (berries, leaves, buds, bark, and pitch). This list of medicinal plants was used to focus plant sampling efforts from the four study sites. Labrador tea (*Ledum groenlandicum*), willow (*Salix* spp.), scrub birch (*Betula glandulosa*) and bog blueberry (*Vaccinium uliginosum*) were selected as species of interest because they had sufficient sample sizes and representation within each site.

Table 2. Plant species and portions harvested by the Nacho Nyak Dun for medicinal purposes. Information was gathered through community consultation on June 19, and July 15-16, 2008 in Mayo, Yukon.

Medicinal plant name	Common/local name	Plant part consumed ¹
<i>Vaccinium uliginosum</i>	Bog blueberry	Berry/leaf
<i>Rosa acicularis</i>	Prickly rose	Berry/petal/root
<i>Viburnum</i> spp.	Lowbush/highbush cranberry	Berry/root
<i>Ledum groenlandicum</i>	Labrador tea	Leaf
<i>Cladonia rangiferina</i>	Caribou lichen	Whole
<i>Artemisia frigida</i>	Sage	Leaf/stem/bud
<i>Abies lasiocarpa</i>	Subalpine fir/balsam	Sap/bark
<i>Juniperus communis</i>	Juniper	Berry/stem
<i>Masonbalea richardsonii</i>	Caribou horn	Whole
<i>Bovista plumbea</i>	Puffball	Whole
<i>Picea glauca</i>	White spruce	Sap
<i>Picea mariana</i>	Black spruce	Sap
<i>Betula papyrifera</i>	Paper birch	Sap
<i>Betula glandulosa</i>	Scrub birch	Leaf
<i>Salix</i> spp.	Willow	Leaf/bark
<i>Pinus contorta</i>	Lodgepole pine	Sap
<i>Populus tremuloides</i>	Trembling aspen	Leaf
<i>Fragaria</i> spp.	Strawberry	Berry/root/stem/leaf
<i>Alnus</i> spp.	Alder	Inner bark
<i>Tomenthypnum nitens</i> / <i>Pleurozium schreberi</i>	Golden fuzzy fen moss/step moss/moss	Whole
<i>Matricaria matricarioides</i>	Chamomile	Head/leaf/flower
<i>Populus balsamifera</i>	Black cottonwood	Bud
<i>Achillea millefolium</i>	Yarrow/Indian rhubarb	Leaf
<i>Rubus idaeus</i>	Raspberry	Berry/leaf
<i>Shepherdia canadensis</i>	Soapberry/soopalallie	Berry/root/stem

¹ Information released with permission of the NND (Josée Tremblay, NND Lands Department)

3.2 METAL LEVELS IN LABRADOR TEA

Labrador tea was found throughout the study area and present in 95% of plots. NND consume only Labrador tea leaves therefore collection was limited to leaves. Twenty-one samples were analyzed.

In general, metal concentrations from samples collected at the Elsa tailings site showed higher median values in antimony (Sb), iron (Fe), lead (Pb) and silver (Ag) when compared to other sites and Yukon background data (YBG; Figure 3 and Figure 4). Other metals, such as arsenic (As), cadmium (Cd), copper (Cu) and zinc (Zn) were higher at the Mackeno tailings site (Figure 3 and Figure 4). Samples collected from both tailing areas contained higher levels of Sb, As, Cu, Ag, and Pb than control and background levels (Gamberg 2006). Cu and Zn levels were elevated and consistent across all sample areas (Figure 4). Fe concentrations at the Elsa site were 4.7 times higher than control sites but approximately equal to YBD data (Gamberg 2006; Figure 3).

One sample of Labrador tea was collected from the Minto Bridge to evaluate this traditionally harvested plant with the same species from other sites. Metal concentrations were generally similar to those found at the South McQuesten Control plots and, in some cases, lower. Values were substantially lower compared to the Elsa and Mackeno tailings.

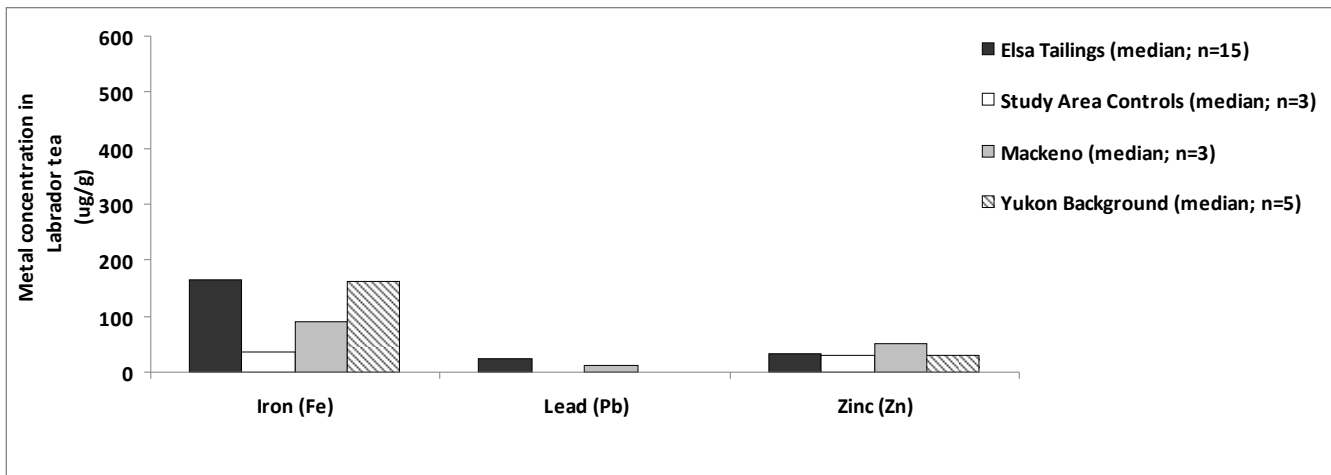


Figure 3. Median iron, lead and zinc concentrations in Labrador tea collected from August 12–14, 2008 from four areas in the Yukon.

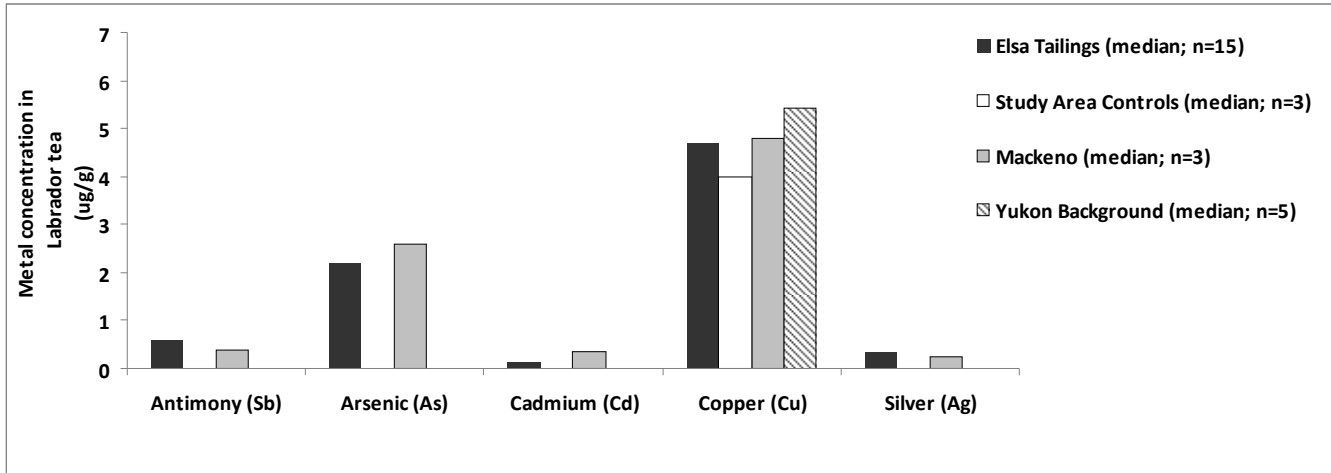


Figure 4. Median antimony, arsenic, copper, cadmium and silver concentrations in Labrador tea collected from August 12–14, 2008 from four areas in the Yukon.

3.3 METAL LEVELS IN WILLOW

Willow was abundant throughout the study area and collected in 86% of sample plots. Plant parts harvested included leaves and stems; from the terminal portions of the branch/stem. Nineteen samples were analyzed.

The Elsa tailings site had the highest concentrations of Fe, Pb, Sb, As, Cu and Ag compared to control, background and Mackeno sites (Figure 5 and Figure 6). The most elevated metal concentration occurred in Fe where levels were 7.7 times higher in the Elsa tailings compared to the control and YBD sites (Figure 5). The Mackeno tailings site had the highest concentrations of Zn and Cd compared to the other sites (Figure 5 and Figure 6). The Cd level in the Mackeno site was approximately 83% higher than all other sites (Figure 6). Cu levels were consistent across all sites and at similar levels to Labrador tea (Figure 6).

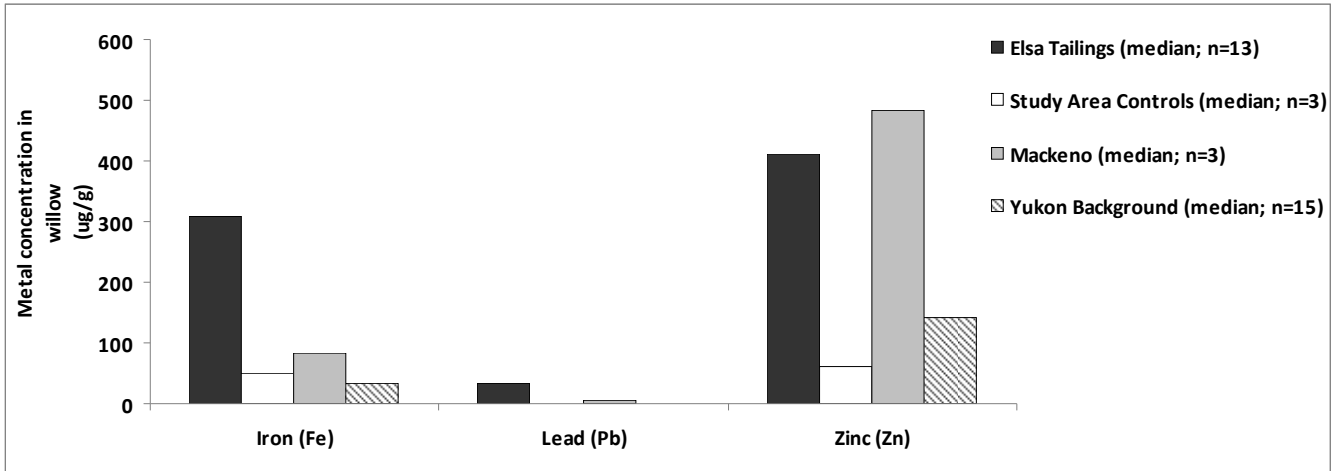


Figure 5. Median iron, lead and zinc concentrations in willow collected from August 12–14, 2008 from four areas in the Yukon.

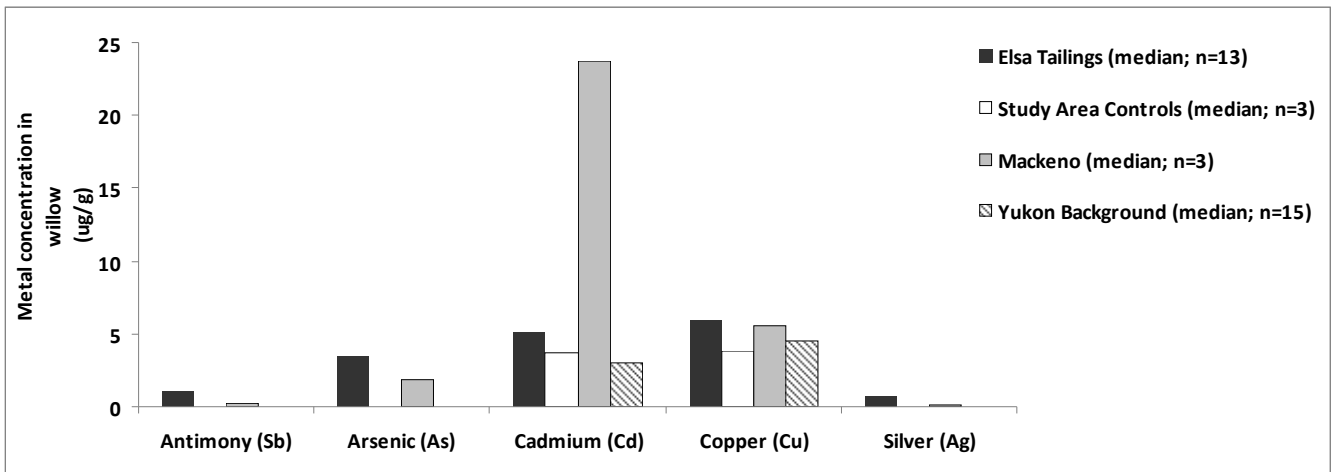


Figure 6. Median antimony, arsenic, cadmium, copper and silver concentrations in willow collected from August 12–14, 2008 from four areas in the Yukon.

3.4 METAL LEVELS IN SCRUB BIRCH

Scrub birch was widely distributed across the study area and found in 54% of sample plots. Eight leaf samples were collected and analyzed.

The Elsa tailings site had the highest metal concentrations in all metals with the exception of Zn, and Cd (Figure 7 and Figure 8). Fe levels were 7.7 times higher in the Elsa tailings than the control site; a similar result to that of willow. In the Mackeno site, Zn and Cd concentrations were 59% and 85% higher than the control (Figure 7 and Figure 8). Cu concentrations were elevated in all sites, similar to levels found in willow and Labrador tea. There were no YBD data for scrub birch.

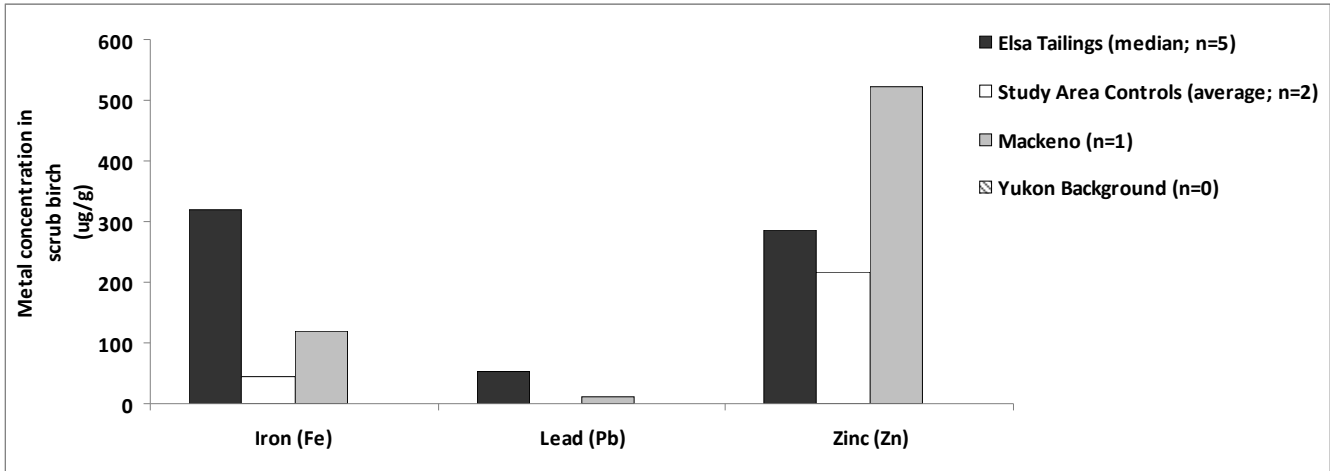


Figure 7. Median iron, lead and zinc concentrations in scrub birch collected from August 12–14, 2008 from four areas in the Yukon.

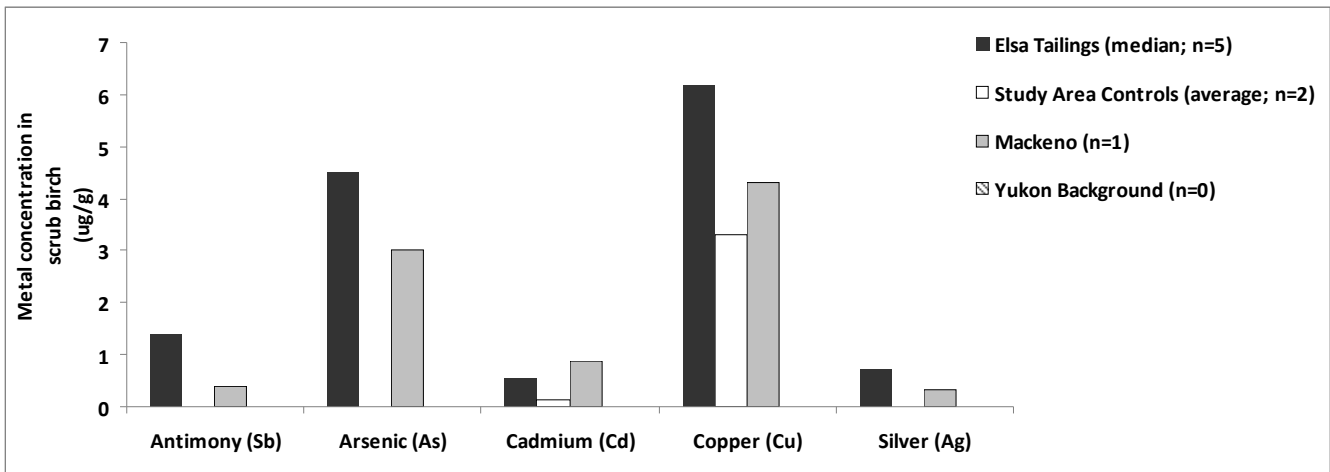


Figure 8. Median antimony, arsenic, cadmium, copper and silver concentrations in scrub birch collected from August 12–14, 2008 from four areas in the Yukon.

3.5 METAL LEVELS IN BOG BLUEBERRY FRUIT

Bog blueberry was the most abundant berry species in the study area and present in 76% of plots. Twelve berry samples were analyzed.

Metal concentrations were low compared to other plant species and varied little between sites with the exception of Cu (Figure 9 and Figure 10). Elevated Cu concentrations appeared in all sites and at approximately similar levels (Figure 10).

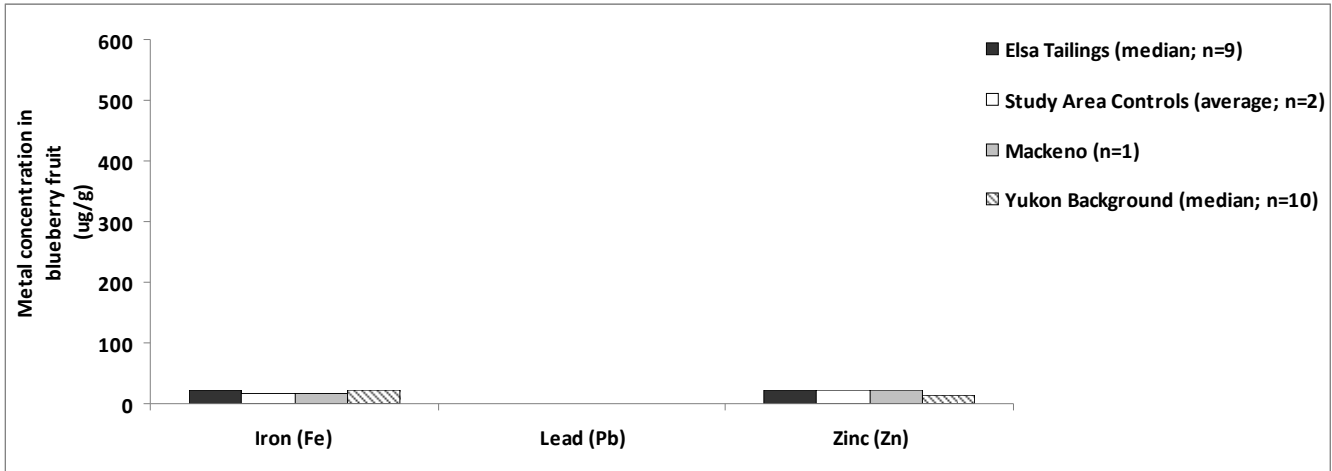


Figure 9. Median iron, lead and zinc concentrations in blueberry fruit collected in from August 12–14, 2008 from four areas in the Yukon.

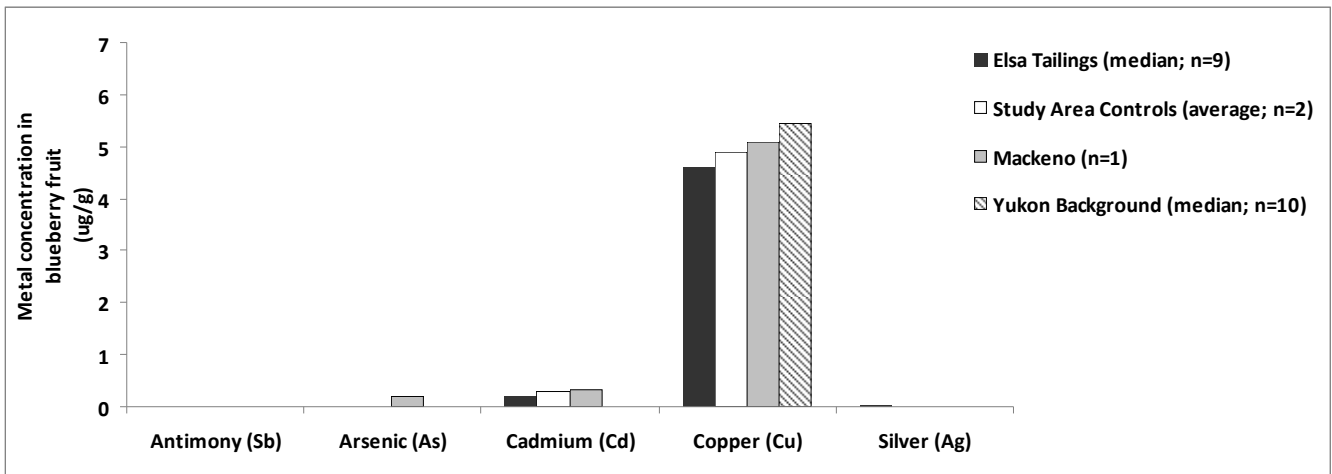


Figure 10. Median antimony, arsenic, cadmium, copper and silver concentrations in bog blueberry fruit collected in from August 12–14, 2008 from four areas in the Yukon.

3.6 QUALITY CONTROL

As a test of the collection methods, replicate samples of willow, bog blueberry and scrub/dwarf birch were analyzed. The willow replicate sample was obtained at plot T1 in the Elsa tailings. Bog blueberry and scrub birch replicate samples were collected from plot NE02, located along the northeast transect adjacent to the Elsa tailings. In general, most metal differences between replicate samples were within typical lab accepted levels for duplicate samples (RPD = 20%). Several metals of interest were in the range of 23.8–58.3%. However, differences were not drastic for replicate samples, and can be likely attributed to natural variability of plants within each plot. Laboratory results including QA/QC are presented in Appendix B.

4 DISCUSSION

Using a number of traditionally significant plant species identified by NND elders, we collected plant tissues from two tailings facilities and two control sites to determine if, and to what extent, these plants have been impacted by metals in and around the study area.

Evidence of elevated heavy metal concentrations were found at sample sites in the immediate areas around the Elsa (200 – 900 m) and Mackeno tailings sites (<15 m) when compared with control and Yukon background levels (Figure 2). In general, metal concentrations reflected results obtained in 2007 when lichen samples were used to determine the distribution of heavy metals in the vicinity of the Elsa tailings site (EDI 2008). Accumulation of heavy metals by plants has been reported extensively in the literature (Wilson et al. 2005; Clark and Tomlin 1999; West et al. 1997). Deposition of heavy metals around mine sites is influenced by prevailing wind direction and distance from the source. For example, Wilson and Pyatt (2007) found that Cu, Zn and Pb concentrations in heather (*Calluna vulgaris*) decreased exponentially with distance from an abandoned copper mine. Another study found that the highest heavy metal concentrations in medicinal plants were within 0.5 to 1 km from the centre of dust and gas emissions of a copper mine in Poland (Zbierska et al. 1987).

Of particular interest are the high concentrations of Fe and Zn in the immediate areas around the Elsa tailings apparent in willow and scrub birch. Mackeno tailings also showed elevated concentrations of Zn in willow and scrub birch. The control and background levels show that Fe and Zn occur naturally in the soils throughout the area; however, when compared to controls, these metals are elevated in the tailings areas and may be byproducts of silver mining operations. Cu concentrations appeared uniform across all plant species and sites. These levels may be indicative of baseline Cu concentrations in the area (F. Patch, pers. comm.). Alternatively, they may represent the upper tolerance levels of plants to successfully uptake Cu, however, this area is known to have lower Cu levels than other mineralized areas in the Yukon due to its surrounding geology (F. Patch, pers. comm.). Ag levels were low in all plant samples because deposits were extracted during mining.

Heavy metal concentrations in plants sampled also showed variation based on species and portion of plant sampled. Plants differ in their ability to uptake heavy metals based on chemical properties of the metal, physical and chemical properties of the soil and morphological and physiological characteristics of the plant (Cataldo and Wildung 1978). For example, plants with extensive root systems, high growth rates and tolerance to metals may show higher concentrations of metals in their tissues (Peculyte et al. 2006). The difference in solubility rates of metals may explain the low concentrations of Pb documented across sites. Pb has a low solubility rate and makes it less available for uptake by plants. This variability of metal accumulation between species and plant parts has been observed in other heavy metal and plant studies (e.g. Cu and Pb, Zbierska et al. 1987; Cd and Pb, Dwivedi and Dey 2002; Mathe-Gaspar and Anton 2005). For example, Dwivedi and Dey (2002) found that Cd and Pb concentrations were highest in leaf tissue compared to stem, bark or roots with lowest metal concentrations in seeds. This may explain the overall low levels of heavy metals in the bog blueberry fruit samples. Although results cannot be linked directly to uptake of metals or the potential effects of aerial contamination, heavy metal concentrations were higher in

bog blueberry leaf samples. Due to low sample sizes these tissues were not discussed in the main analysis (refer to Appendix A). Zbierska et al. (1987) also found that overground portions of plants were more contaminated by heavy metals than underground portions when dust and gas emissions were the primary source. Wilson and Pyatt (2007) documented that woody sections accumulate higher concentrations of target metals. Overall, Zheljazkov (2008) found that metal concentration in plant parts was in the order: roots > leaves > flowers > stems for Cd, Pb and Cu, leaves > roots > flowers > stems for Zn. Since different parts of medicinal plants are used (e.g., roots, leaves) in the preparation of foods and medicine by the NND then this variability may be of importance where heavy metal content is of concern. The different characteristics of the Elsa mine tailings (new and older deposits) may also contribute to the variability in heavy metal concentrations documented in plant samples.

The preparation techniques used by NND members may also affect the concentration of heavy metals. For example, previous research found that the metal content in teas prepared from the contaminated species was negligible (Zheljazkov 2008; EDI 2007) and essential oils were free of metals (Zheljazkov 2008).

5 CONCLUSIONS / RECOMMENDATIONS

Elevated heavy metal concentrations were found in some medicinal plants used by the NND, especially in the vicinity of the Elsa and Mackeno tailings when compared to control sites. The impact of these heavy metal accumulations on the health of local residents harvesting plants in these areas can be investigated further.

We expect that these data will serve as a baseline and contribute to the study design of a future human health risk assessment of medicinal plants in the area. For future studies, we recommend:

- collect soil samples and pair with plant samples from the same plot to determine if metals present in the soil are taken up by plants;
- limit the number of plant species investigated, perhaps focusing on plants consumed in the greatest quantity by the NND;
- recognize that there are differences in heavy metal concentrations between the raw (e.g., leaves) and final prepared product (e.g., tea) that may warrant further investigation;
- increase the number of control plots and distribute plots throughout the study area away from the influence of mining, dust or any other types of anthropogenic disturbance; and
- As part of an upcoming human health and risk assessment, it is recommended that the First Nation of the Nacho Nyak Dun be instrumental in gathering and sharing traditional knowledge to further understand the effects of consumption and tolerable intake levels.

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7 ACKNOWLEDGEMENTS

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The authors would also like to thank Mike Setterington (EDI) and Dan Cornett (Access Consulting Group) for providing valuable insight and advice.

Appendix A.
Summary Tables

Appendix A. Summary tables of metal concentrations (µg/g) from ten plant species collected from areas in the Yukon between August 12–14, 2008.

Metals Labrador tea	Elsa Tailings n=15		Study Area Controls n=3		Mackeno n=3		Yukon Background n=5	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	0.1 – 1.9	0.6	< 0.1	n/a	0.2 - 0.6	0.4	<0.4 – <2.3	n/a
Arsenic	0.4 – 7.6	2.2	< 0.1	n/a	1.5 - 2.7	2.6	<0.8 - <5.0	n/a
Cadmium	0.03 – 0.48	0.14	< 0.02	n/a	0.15 - 0.35	0.34	<0.08 – <0.5	n/a
Copper	2.9 – 7.9	4.7	3.2 - 4.4	4	4.4 - 5.5	4.8	4.9 – 6.3	5.41
Iron	52.0 – 473.0	164	29 - 35	35	57 - 95	90	64.0 – 362.0	162
Lead	3.4 – 88.6	24.2	0.1 - 0.2	0.2	5.1 - 13	11.8	<0.4 – <2.3	n/a
Silver	0.05 – 1.2	0.36	< 0.01	n/a	0.13 - 0.35	0.23	n/a	n/a
Zinc	23.6 – 136.0	34.4	22.8 - 42.3	29.5	44.6 - 56.8	51.3	21.0 – 35.0	30

Metals Scrub birch	Elsa Tailings n=5		Study Area Controls n=2		Mackeno n=1		Yukon Background n=0	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	0.9 – 3.1	1.4	<0.1	n/a	0.4	n/a	n/a	n/a
Arsenic	3.0 – 10.3	4.5	<0.1	n/a	3			
Cadmium	0.21 – 0.68	0.54	0.09 - 0.17	0.13	0.88			
Copper	4.8 – 7.9	6.2	3.0 - 3.6	3.3	4.3			
Iron	222.0 – 692.0	319	30 - 59	44.5	119			
Lead	39.0 – 125.0	54.1	0.2	0.2	10.9			
Silver	0.5 – 1.53	0.72	<0.01	n/a	0.32			
Zinc	192 - 770	286	134 - 301	217.5	522			

Metals Willow	Elsa Tailings n=13		Study Area Controls n=3		Mackeno n=3		Yukon Background n=15	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	0.1 – 2.8	1	<0.1	n/a	0.2 - 0.9	0.2	<0.01 – <0.5	n/a
Arsenic	0.4 – 8.6	3.5	<0.1	n/a	1.3 - 6.2	1.8	<0.01 – 1.02	n/a
Cadmium	0.64 – 24.3	5.07	1.86 - 3.99	3.67	15.5 - 43.0	23.7	<0.1 – 21.6	3.02
Copper	3.0 – 8.0	5.9	3.7 - 3.9	3.8	4.8 - 5.9	5.6	1.06 – 11.40	4.5
Iron	68.0 – 619.0	307	48 - 60	49	71 - 176	84	17.0 – 173.0	32
Lead	2.8 – 68.2	33.4	<0.1 - 0.5	0.3	5.2 - 17.5	5.3	<0.01 – 0.294	n/a
Silver	0.06 – 1.19	0.66	<0.01 - 0.01	0.01	0.17 - 0.58	0.17	<0.005 – 0.203	0.012
Zinc	103.0 – 1370.0	410	43.8 - 170	60.55	292 - 748	482	30.4 - 892	141

Metals blueberry fruit	Elsa Tailings n=9		Study Area Controls n=2		Mackeno n=1		Yukon Background n=10	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	<0.1 – 0.1	n/a	<0.1	n/a	<0.1	n/a	<0.01 – <2.21	n/a
Arsenic	<0.1 – 0.3	n/a	<0.1	n/a	0.2		<0.01 – <4.42	n/a
Cadmium	0.11 – 0.55	0.18	0.17 - 0.41	0.29	0.32		<0.01 – <0.442	n/a
Copper	3.8 – 5.6	4.6	4.3 - 5.5	4.9	5.1		2.27 – 23.98	5.43
Iron	14.0 – 36.0	23	16.0 - 17.0	16.5	18		10.0 – 678.0	23
Lead	0.3 – 3.9	0.7	<0.1	n/a	0.2		<0.01 – <2.21	n/a
Silver	<0.01 – 0.05	0.025	<0.01	n/a	<0.01		<0.005 – 0.02	n/a
Zinc	16.6 – 31.9	22.2	20.9 - 22.6	21.75	22.7		8.8 – 44.3	14.1

Metals blueberry leaf	Elsa Tailings n=6		Study Area Controls n=1		Mackeno n=1		Yukon Background n=0	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	<0.1 – 0.7	0.35	<0.1	n/a	0.1	n/a	n/a	n/a
Arsenic	0.3 – 1.9	1.1	<0.1		1.2			
Cadmium	0.52 – 2.49	1.08	0.72		1.64			
Copper	3.7 – 6.2	5.1	4.8		4.9			
Iron	40.0 -151.0	79	47		32			
Lead	1.3 – 21.9	10.2	<0.1		2			
Silver	0.02 – 0.29	0.14	<0.01		0.07			
Zinc	35.3 – 143.0	63.6	30.6		61.2			

Metals crowberry	Elsa Tailings n=2		Study Area Controls n=0		Mackeno n=1		Yukon Background n=12	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	<0.1 – 1	1	n/a	n/a	<0.1	n/a	<0.01 – 2.69	0.13
Arsenic	0.2 – 3.2	1.7			0.4		<0.01 – 5.38	0.05
Cadmium	0.05 – 0.28	0.165			<0.02		<0.01 – 3.27	0.06
Copper	4.6 – 9.4	7			4.4		3.81 – 7.50	4.695
Iron	30.0 – 253.0	141.5			16		<0.2 – 157.0	28
Lead	3.1 – 56.7	29.9			1		0.03 – 2.69	0.17
Silver	0.03 – 0.75	0.39			<0.01		<0.005	n/a
Zinc	8.4 – 22.4	15.4			8.7		2.9 – 13.9	4.7

Metals moss	Elsa Tailings n=4		Study Area Controls n=3		Mackeno n=0		Yukon Background n=0	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	12.4 – 32.6	15.85	<0.1	<0.1	n/a	n/a	n/a	n/a
Arsenic	41.3 – 114	53.6	0.1 - 0.5	0.2				
Cadmium	5.28 – 11.2	7.4	0.13 - 0.17	0.13				
Copper	22.9 – 64.2	30.2	1.9 - 4.2	2.4				
Iron	4720.0 - 9840.0	4850	174 - 264	181				
Lead	598.0 – 1800.0	888.5	0.7 - 2.1	0.9				
Silver	8.56 – 17.00	10.82	0.02 - 0.07	0.05				
Zinc	359.0 – 907.0	518.5	25.2 - 39.1	33.2				

Metals black spruce	Elsa Tailings n=2		Study Area Controls n=3		Mackeno n=0		Yukon Background n=3	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	1.1 – 1.3	1.2	<0.1	n/a	n/a	n/a	<0.01 - <0.03	n/a
Arsenic	4.5 – 4.7	4.6	<0.1				<0.01 – 0.06	
Cadmium	0.28 – 0.29	0.285	<0.02				<0.01 – <0.06	
Copper	2.3 – 2.8	2.55	<0.1 - 0.3				2.24 – 5.50	3.2
Iron	346.0 – 358.0	352	<5.0 - 12.0				11 – 193	64
Lead	50.4 – 52.5	51.45	<0.1 - 0.2				0.120 - <0.332	n/a
Silver	0.64	0.64	<0.01				<0.005 – 0.01	n/a
Zinc	22.1 – 25.6	23.85	2.8 - 4.5				3.4	11.6 – 493.0

Metals white spruce	Elsa Tailings n=2		Study Area Controls n=1		Mackeno n=0		Yukon Background n=0	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	<0.1 – 0.3	n/a	<0.1	n/a	n/a	n/a	n/a	n/a
Arsenic	0.3 – 1.2	0.75	0.1					
Cadmium	0.03 – 0.17	0.1	<0.02					
Copper	0.3 – 0.6	0.45	0.8					
Iron	41 – 137	89	130					
Lead	3.6 – 27.4	15.5	0.7					
Silver	0.09 – 0.38	0.235	<0.01					
Zinc	3.1 – 12.4	7.75	7.7					

Metals prickly rose	Elsa Tailings n=0		Study Area Controls n=1		Mackeno n=0		Yukon Background n=11	
	Range	Median	Range	Median	Range	Median	Range	Median
Antimony	n/a	n/a	<0.1	n/a	n/a	n/a	<0.01 - <0.87	n/a
Arsenic			<0.1				<0.01 - <1.75	
Cadmium			0.03				<0.01 - <0.17	
Copper			2.9				1.5 – 5.3	3.99
Iron			2.4				11.0 – 41.0	21
Lead			<0.1				<0.01 - <1.81	n/a
Silver			<0.01				<0.005 – 0.006	n/a
Zinc			12.4				4.4 – 16.1	9.5

Appendix B.

Comparisons of metal concentrations ($\mu\text{g/g}$) from replicate samples of *Salix* spp., *Betula glandulosa*, and *Vaccinium uliginosum* from three plots, Elsa tailings terrestrial effects assessment.

Appendix B. Comparisons of metal concentrations ($\mu\text{g/g}$) from replicate samples of *Salix* spp., *Betula glandulosa*, and *Vaccinium uliginosum* from three plots, Elsa tailing terrestrial effects assessment.

Metal	Plot NEO2			Plot T1			Plot NEO2		
	BEGL - 1	BEGL - 2	RPD	SASP - 1	SASP - 2	RPD	VAUL - 1	VAUL - 2	RPD
Aluminum Al	10.8	13.9	25.1	25.1	25.2	0.4	1.7	2.8	48.9
Antimony Sb	0.9	1.4	PASS	2.8	2.7	-3.6	< 0.1	< 0.1	NC
Arsenic As	3	4.5	40.0	8.5	8.6	1.2	0.2	0.3	PASS
Barium Ba	79.2	33.5	-81.1	11.2	9.7	-14.4	9.5	7.2	-27.5
Beryllium Be	< 0.02	< 0.02	NC	< 0.02	< 0.02	NC	< 0.02	< 0.02	NC
Boron B	18	13	-32.3	21	14	-40.0	16	15	-6.5
Cadmium Cd	0.21	0.34	47.3	10.8	6.46	-50.3	0.18	0.15	-18.2
Calcium Ca	9460	7810	-19.1	16700	14600	-13.4	1430	1050	-30.6
Chromium Cr	0.2	0.4	PASS	2.4	1.8	-28.6	< 0.1	0.2	NC
Cobalt Co	< 0.1	0.1	NC	0.4	0.6	40.0	< 0.1	< 0.1	NC
Copper Cu	6.2	6.2	0.0	7.3	8	9.2	4.9	4.3	-13.0
Iron Fe	222	319	35.9	613	619	1.0	27	27	0.0
Lead Pb	39	59	40.8	60.8	68.2	11.5	1.7	3.1	58.3
Magnesium Mg	4140	3640	-12.9	6370	5570	-13.4	767	759	-1.0
Manganese Mn	191	532	94.3	265	261	-1.5	81.7	35.2	-79.6
Mercury Hg	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC
Molybdenum Mo	0.1	< 0.1	NC	0.4	0.4	PASS	< 0.1	< 0.1	NC
Nickel Ni	1.4	0.7	-66.7	2.9	3.8	26.9	0.2	0.3	PASS
Phosphorus P	1160	1330	13.7	952	1120	16.2	655	801	20.1
Potassium K	5160	5950	14.2	6980	7160	2.5	5950	6470	8.4
Selenium Se	0.2	< 0.2	NC	< 0.2	< 0.2	NC	< 0.2	< 0.2	NC
Silicon Si	172	96	-56.7	113	120	6.0	139	125	-10.6
Silver Ag	0.5	0.7	33.3	1.14	1.19	4.3	0.02	0.03	40.0
Sodium Na	2	3	PASS	2	2	PASS	< 1	2	NC
Strontium Sr	18.2	9.25	-65.2	25.8	23.4	-9.8	2.48	1.85	-29.1
Tellurium Te	< 0.1	< 0.1	NC	< 0.1	< 0.1	NC	< 0.1	< 0.1	NC
Thallium Tl	< 0.02	< 0.02	NC	0.04	0.02	PASS	< 0.02	< 0.02	NC
Tin Sn	0.3	0.3	PASS	0.7	0.7	0.0	< 0.1	< 0.1	NC
Titanium Ti	1.1	0.9	PASS	1	1.2	PASS	0.5	0.4	PASS
Uranium U	< 0.04	< 0.04	NC	< 0.04	< 0.04	NC	< 0.04	< 0.04	NC
Vanadium V	< 0.5	< 0.5	NC	< 0.5	< 0.5	NC	< 0.5	< 0.5	NC
Zinc Zn	278	192	-36.6	701	552	-23.8	19.9	16.6	-18.1
Zirconium Zr	< 3	< 3	NC	< 3	< 3	NC	< 3	< 3	NC

R.P.D.: Relative Percent Difference

NC: Not calculated. Replicate sample results were less than detection limit.

PASS: Replicate sample results were in the range of 1 to 5 times the detection limit. Acceptance criteria are a maximum difference between the replicate equivalent to the detection limit.

Appendix C.

**Complete metal concentrations ($\mu\text{g/g}$)
laboratory results from CANTEST.**

Analysis Report



REPORT ON: Analysis of Tissue Samples

REPORTED TO: Environmental Dynamics
402 Hawkings St
Whitehorse, YK
Y1A 1X8

Att'n: Matt Power / Pat Tobler

CHAIN OF CUSTODY: 2051966, 2051967, 2051968, 2051969, 2051970, 2051972, 2051973, 2051974, 2051971
PROJECT NUMBER: 08-YC-0036

NUMBER OF SAMPLES: 90

REPORT DATE: October 16, 2008

DATE SUBMITTED: September 22, 2008 - September 26, 2008 **GROUP NUMBER:** 90922009

SAMPLE TYPE: Tissue

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

SAMPLE IDENTIFICATION:

CANTEST	CLIENT
809220046	2051968

TEST METHODS:

Moisture Content of Plant Tissue - analysis was performed gravimetrically by heating a pre-weighed portion of sample at 105C and measuring the weight loss.

Mercury in Tissue - samples were digested using a nitric acid-hydrogen peroxide digestion procedure based on EPA Method 200.3. Analysis was performed using Cold Vapour Atomic Absorption Spectrophotometry or Cold Vapour Atomic Fluorescence Spectrophotometry.

Metals in Tissue - samples were digested using a nitric acid-hydrogen peroxide digestion procedure based on EPA Method 200.3. Analysis was performed using Inductively Coupled Argon Plasma Spectroscopy (ICP), or ICP Mass Spectrometry (ICP/MS).

TEST RESULTS:

(See following pages)

CANTEST LTD.

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Conventional Parameters in Tissue

CLIENT SAMPLE IDENTIFICATION:	CANTEST ID	Moisture
LEGR-LE-E1-1	809220017	47.3
SASP-E1-1	809220019	55.5
VAUL-BE-E1-1	809220020	87.0
VAUL-LE-E1-1	809220023	54.6
B EGL-LE-E1-1	809220024	56.8
VAUL-BE-E2-1	809220025	85.6
LEGR-LE-E3-1	809220026	48.6
SASP-E3-1	809220027	56.2
LEGR-LE-SE1-1	809220028	50.3
LEGR-LE-SE2-1	809220029	47.1
VAUL-LE-SE2-1	809220030	55.4
SASP-S1-1	809220031	56.2
SPSP-WH-S1-1	809220032	67.9
LEGR-LE-S2-1	809220033	49.8
SASP-S2-1	809220034	60.1
SPSP-WH-S2-1	809220035	66.7
BOPL-WH-52-1	809220036	88.3
B EPA-SA-S2-1	809220037	44.1
PIGL-SA-S2-1	809220038	12.8
LEGR-LE-S3-1	809220039	46.6
SASP-S4-1	809220040	56.4
VAUL-BE-S4-1	809220041	86.7
LEGR-LE-T1-1	809220042	49.6
SASP-T1-1	809220043	56.7
VAUL-BE-T1-1	809220044	84.2
VAUL-LE-T1-1	809220045	57.6
LEGR-LE-T03-1	809220046	48.8
B EGL-LE-T1-1	809220047	56.9
SASP-T1-2	809220048	57.0
LEGR-LE-T5-1	809220049	46.7
IMNE-BE-T5-1	809220050	86.6
LEGR-LE-NE01-1	809220051	58.4
SASP-NE01-1	809220052	62.5
SPSP-WH-NE01-1	809220053	82.0
VAUL-BE-NE01-1	809220054	85.1
VAUL-LE-NE01-1	809220055	59.8
PIMA-SA-NE01-1	809220056	10.0
B EGL-LE-NE01-1	809220057	64.7

(Continued on next page)

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Conventional Parameters in Tissue

CLIENT SAMPLE IDENTIFICATION:	CANTEST ID	Moisture
LEGR-LE-NE02-1	809220058	58.3
SASP-NE02-1	809220059	61.2
SPSP-WH-NE02-1	809220060	85.5
VAUL-BE-NE02-1	809220061	85.2
VAUL-LE-NE02-1	809220062	58.3
IMNE-BE-NE02-1	809220063	87.3
PIMA-SA-NE02-1	809220064	14.0
B EGL-LE-NE02-1	809220065	67.5
LEGR-LE-NE03-1	809220066	60.1
SASP-NE03-1	809220067	67.2
VAUL-BE-NE04-1	809220068	85.4
LEGR-LE-N1-1	809220069	61.4
VAUL-LE-N1-1	809220070	64.3
LEGR-LE-N2-1	809220071	65.5
SASP-N3-1	809220072	65.1
VAUL-BE-N3-1	809220073	86.2
LEGR-LE-NW01-1	809220074	54.9
PIGL-SA-NW01-1	809220075	6.5
SASP-NW2-1	809220076	65.0
LEGR-LE-C1-1	809220077	49.9
SPSP-WH-C1-1	809220078	86.8
VAUL-BE-C1-1	809220079	85.4
B EGL-LE-C1-1	809220080	62.0
SASP-C3-1	809220081	61.5
SPSP-WH-C3-1	809220082	87.5
VAUL-BE-C3-1	809220083	86.6
PIMA-SA-C3-1	809220084	11.4
LEGR-LE-C05-1	809220085	60.6
SASP-C05-1	809220086	61.6
PIMA-SA-C05-1	809220087	13.3
B EGL-LE-C05-1	809220088	63.4
SASP-SW01-1	809220089	62.8
LEGR-LE-MB01-1	809220090	52.8
SPSP-WH-MB01-1	809220091	85.3
BEPA-MB01-1	809220092	45.7
CLMI-MB01-1	809220093	67.9
PIGL-SA-MB01-1	809220094	16.0
SASP-MB02-1	809220095	60.7
VAUL-LE-MB02-1	809220096	60.2

(Continued on next page)

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Conventional Parameters in Tissue

CLIENT SAMPLE IDENTIFICATION:	CANTEST ID	Moisture
PIMA-SA-MB02-1	809220097	6.7
CLMI-MB02-1	809220098	65.0
ROAC-BE-MB02-1	809220099	71.5
VAUL-BE-NE02-2	809220100	85.5
B EGL-LE-NE02-2	809220101	64.6
CLMI-MT01-1	809220102	66.3
CLMI-MT02-1	809220103	62.6
CLMI-MT03-1	809220104	55.0
CLMI-MT04-1	809220105	57.3
CLMI-MT05-1	809220106	60.6
CLMI-MT06-1	809220107	54.7
CLMI-MT07-1	809220108	50.4
CLMI-MT08-1	809220109	57.4
DETECTION LIMIT UNITS		0.1 %

% = percent

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		LEGR-LE-E1 -1	SASP-E1-1	VAUL-BE-E1 -1	VAUL-LE-E1 -1	DETECTION LIMIT
CANTEST ID:		809220017	809220019	809220020	809220023	
Aluminum	Al	14.9	17.3	1.5	5.7	0.5
Antimony	Sb	1.9	1.9	<	0.4	0.1
Arsenic	As	7	6	<	1.4	0.1
Barium	Ba	46.1	12.1	1.9	30.3	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	19	16	14	25	2
Cadmium	Cd	0.43	11.4	0.46	2.49	0.02
Calcium	Ca	7140	20400	1130	9180	1
Chromium	Cr	0.6	0.6	0.2	0.2	0.1
Cobalt	Co	<	0.2	<	<	0.1
Copper	Cu	6.4	6.7	4.4	6.1	0.1
Iron	Fe	417	412	22	97	5
Lead	Pb	88.6	62.6	0.6	15.3	0.1
Magnesium	Mg	1540	5410	651	2880	0.5
Manganese	Mn	166	120	31.2	73.9	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	0.1	<	<	0.1
Nickel	Ni	0.4	0.9	0.8	0.3	0.1
Phosphorus	P	868	771	1100	914	0.5
Potassium	K	3810	5260	7870	5580	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	126	122	171	197	10
Silver	Ag	1.2	1	0.01	0.26	0.01
Sodium	Na	4	8	7	2	1
Strontium	Sr	10.1	41	1.95	17.8	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.26	0.07	<	0.04	0.02
Tin	Sn	0.4	0.5	0.1	0.1	0.1
Titanium	Ti	1	0.9	0.8	0.8	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	72.8	1170	26.4	143	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

< = Less than detection limit

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		BEGL-LE-E1 -1	VAUL-BE-E2 -1	LEGR-LE-E3 -1	SASP-E3-1	DETECTION LIMIT
CANTEST ID:		809220024	809220025	809220026	809220027	
Aluminum	Al	13.1	2.3	9.6	11.4	0.5
Antimony	Sb	1.4	<	0.4	0.6	0.1
Arsenic	As	4.5	<	1.4	1.8	0.1
Barium	Ba	17.8	5.1	77.2	10.3	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	27	11	10	6	2
Cadmium	Cd	0.57	0.11	0.11	0.64	0.02
Calcium	Ca	9550	788	8240	16900	1
Chromium	Cr	0.3	<	0.3	0.3	0.1
Cobalt	Co	<	<	<	0.6	0.1
Copper	Cu	5.4	4.6	3.3	4.1	0.1
Iron	Fe	300	20	111	161	5
Lead	Pb	54.1	0.7	16.2	16.3	0.1
Magnesium	Mg	3270	580	3220	6800	0.5
Manganese	Mn	417	156	301	160	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	0.2	0.1
Nickel	Ni	3.5	0.5	0.2	0.7	0.1
Phosphorus	P	873	860	945	817	0.5
Potassium	K	4130	7210	3150	4430	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	132	153	141	114	10
Silver	Ag	0.75	<	0.2	0.3	0.01
Sodium	Na	2	2	1	2	1
Strontium	Sr	15.9	1.1	12.2	26.1	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.09	<	0.02	<	0.02
Tin	Sn	0.3	<	0.1	0.2	0.1
Titanium	Ti	0.9	0.6	0.9	1	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	770	21.3	31.9	191	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		LEGR-LE-SE 1-1	LEGR-LE-SE 2-1	VAUL-LE-SE 2-1	SASP-S1-1	DETECTION LIMIT
CANTEST ID:		809220028	809220029	809220030	809220031	
Aluminum	Al	19.4	9	16.5	35.7	0.5
Antimony	Sb	1.7	0.2	<	1.1	0.1
Arsenic	As	7.6	0.6	0.3	4.2	0.1
Barium	Ba	51.2	66.8	18.9	3.7	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	33	33	22	18	2
Cadmium	Cd	0.48	0.05	0.52	9.86	0.02
Calcium	Ca	6950	5200	7060	13900	1
Chromium	Cr	0.8	0.2	0.1	0.8	0.1
Cobalt	Co	<	<	<	0.4	0.1
Copper	Cu	7.9	3.7	3.7	7.3	0.1
Iron	Fe	473	61	40	349	5
Lead	Pb	70.2	6.1	1.3	37.4	0.1
Magnesium	Mg	1190	1260	2650	5930	0.5
Manganese	Mn	123	490	515	322	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	0.3	0.1
Nickel	Ni	0.7	0.2	0.2	5.7	0.1
Phosphorus	P	1050	893	837	1060	0.5
Potassium	K	3970	3410	5910	5180	1
Selenium	Se	<	<	<	0.2	0.2
Silicon	Si	139	148	138	117	10
Silver	Ag	0.97	0.12	0.02	0.66	0.01
Sodium	Na	3	4	1	6	1
Strontium	Sr	7.52	5.65	6.43	15.9	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.21	0.04	<	0.07	0.02
Tin	Sn	0.6	<	<	0.2	0.1
Titanium	Ti	1.1	0.9	0.6	1.4	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	136	31.4	35.3	410	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SPSP-WH-S1 -1	LEGR-LE-S2 -1	SASP-S2-1	SPSP-WH-S2 -1	DETECTION LIMIT
CANTEST ID:		809220032	809220033	809220034	809220035	
Aluminum	Al	528	70.3	34.8	735	0.5
Antimony	Sb	12.4	1.6	1	14	0.1
Arsenic	As	49.6	4.7	3.5	41.3	0.1
Barium	Ba	49.7	33.7	9.1	59.2	0.1
Beryllium	Be	0.04	<	<	0.04	0.02
Boron	B	11	31	29	9	2
Cadmium	Cd	11.2	0.45	24.3	5.28	0.02
Calcium	Ca	14300	5760	19400	11500	1
Chromium	Cr	3.1	1.1	1.1	8	0.1
Cobalt	Co	1.4	<	0.3	1	0.1
Copper	Cu	26.7	5.4	5.8	22.9	0.1
Iron	Fe	4740	433	307	4720	5
Lead	Pb	598	59	33.4	819	0.1
Magnesium	Mg	2250	1440	5650	1260	0.5
Manganese	Mn	2660	512	334	1820	0.1
Mercury	Hg	0.03	<	<	0.03	0.01
Molybdenum	Mo	0.3	<	<	0.2	0.1
Nickel	Ni	7.5	0.9	2.3	5.9	0.1
Phosphorus	P	1410	1290	1320	1160	0.5
Potassium	K	3500	5790	9300	3500	1
Selenium	Se	0.3	<	0.2	0.3	0.2
Silicon	Si	465	146	161	513	10
Silver	Ag	8.63	1.15	0.67	13	0.01
Sodium	Na	16	4	4	24	1
Strontium	Sr	22.7	6.93	24.3	22.4	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.17	<	0.04	0.18	0.02
Tin	Sn	1.5	0.2	0.1	0.7	0.1
Titanium	Ti	12	2.3	1.7	20	0.3
Uranium	U	0.14	<	<	0.14	0.04
Vanadium	V	1.6	<	<	2.3	0.5
Zinc	Zn	907	85.2	1300	429	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		BOPL-WH-52 -1	BEPA-SA-S2 -1	PIGL-SA-S2 -1	LEGR-LE-S3 -1	DETECTION LIMIT
CANTEST ID:		809220036	809220037	809220038	809220039	
Aluminum	Al	22.3	1.4	24	11	0.5
Antimony	Sb	0.2	<	0.3	0.2	0.1
Arsenic	As	17	<	1.2	0.8	0.1
Barium	Ba	1.1	37.5	4.8	12.1	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	<	15	<	24	2
Cadmium	Cd	5.31	1.88	0.17	0.09	0.02
Calcium	Ca	337	9930	333	6870	1
Chromium	Cr	0.1	0.1	0.3	0.3	0.1
Cobalt	Co	<	0.2	<	<	0.1
Copper	Cu	284	3.1	0.6	2.9	0.1
Iron	Fe	123	14	137	81	5
Lead	Pb	44.8	0.5	27.4	10	0.1
Magnesium	Mg	1530	489	26	1460	0.5
Manganese	Mn	46.4	280	32.8	173	0.1
Mercury	Hg	0.05	<	<	<	0.01
Molybdenum	Mo	0.2	<	<	<	0.1
Nickel	Ni	0.3	0.3	<	0.3	0.1
Phosphorus	P	8980	453	32.3	806	0.5
Potassium	K	27200	1120	265	3370	1
Selenium	Se	1.5	<	<	<	0.2
Silicon	Si	146	82	153	122	10
Silver	Ag	290	0.04	0.38	0.18	0.01
Sodium	Na	6	12	2	1	1
Strontium	Sr	0.67	16.5	0.81	6.85	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.02	<	<	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	5.3	0.4	0.5	0.9	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	0.7	<	0.5
Zinc	Zn	105	440	12.4	49.3	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SASP-S4-1	VAUL-BE-S4-1	LEGR-LE-T1-1	SASP-T1-1	DETECTION LIMIT
CANTEST ID:		809220040	809220041	809220042	809220043	
Aluminum	Al	11.1	1.2	19.4	25.1	0.5
Antimony	Sb	0.3	<	1.9	2.8	0.1
Arsenic	As	1.5	<	5.9	8.5	0.1
Barium	Ba	4.9	5.6	42.8	11.2	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	25	16	38	21	2
Cadmium	Cd	2.29	0.36	0.44	10.8	0.02
Calcium	Ca	17000	1960	5980	16700	1
Chromium	Cr	0.4	0.2	0.7	2.4	0.1
Cobalt	Co	0.2	<	<	0.4	0.1
Copper	Cu	4.6	4.6	7.2	7.3	0.1
Iron	Fe	124	23	419	613	5
Lead	Pb	11.5	0.3	67.1	60.8	0.1
Magnesium	Mg	4230	689	996	6370	0.5
Manganese	Mn	140	39.1	328	265	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.1	<	<	0.4	0.1
Nickel	Ni	0.9	0.6	0.9	2.9	0.1
Phosphorus	P	816	915	882	952	0.5
Potassium	K	6310	6140	4230	6980	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	122	170	137	113	10
Silver	Ag	0.23	0.02	0.86	1.14	0.01
Sodium	Na	3	1	1	2	1
Strontium	Sr	24.1	3.19	6.57	25.8	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	0.2	0.04	0.02
Tin	Sn	<	<	0.4	0.7	0.1
Titanium	Ti	1	0.7	1.1	1	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	426	30.5	89.5	701	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		VAUL-BE-T1 -1	VAUL-LE-T1 -1	LEGR-LE-T0 3-1	BEGL-LE-T1 -1	DETECTION LIMIT
CANTEST ID:		809220044	809220045	809220046	809220047	
Aluminum	Al	2.3	18.8	7.7	16.3	0.5
Antimony	Sb	0.1	0.7	0.2	1.7	0.1
Arsenic	As	0.3	1.9	1.2	4.8	0.1
Barium	Ba	5.4	17.8	58.7	9.7	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	19	39	19	27	2
Cadmium	Cd	0.48	1.16	0.06	0.68	0.02
Calcium	Ca	1120	6280	5970	6860	1
Chromium	Cr	0.1	0.2	0.3	0.3	0.1
Cobalt	Co	<	<	<	<	0.1
Copper	Cu	5.6	6.2	3.3	4.8	0.1
Iron	Fe	36	151	80	353	5
Lead	Pb	3.9	21.9	7.3	53.2	0.1
Magnesium	Mg	719	2330	1440	2790	0.5
Manganese	Mn	45.4	409	466	350	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	0.1	0.1
Nickel	Ni	0.6	0.6	0.1	1	0.1
Phosphorus	P	907	900	786	985	0.5
Potassium	K	7800	7060	3340	3810	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	129	177	103	132	10
Silver	Ag	0.05	0.29	0.12	0.72	0.01
Sodium	Na	<	<	2	<	1
Strontium	Sr	1.72	7.85	6.2	8.11	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	0.05	0.02	0.02
Tin	Sn	0.1	0.2	<	0.4	0.1
Titanium	Ti	0.6	0.7	0.6	1	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	31.9	111	26.4	651	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SASP-T1-2	LEGR-LE-T5 -1	IMNE-BE-T5 -1	LEGR-LE-NE 01-1	DETECTION LIMIT
CANTEST ID:		809220048	809220049	809220050	809220051	
Aluminum	Al	25.2	9.2	3.8	16.2	0.5
Antimony	Sb	2.7	0.3	<	1.8	0.1
Arsenic	As	8.6	1	0.2	6.1	0.1
Barium	Ba	9.7	80.7	6.1	48.3	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	14	18	8	28	2
Cadmium	Cd	6.46	0.08	0.05	0.4	0.02
Calcium	Ca	14600	6180	663	5450	1
Chromium	Cr	1.8	0.3	0.1	0.5	0.1
Cobalt	Co	0.6	<	<	<	0.1
Copper	Cu	8	3.4	4.6	5.5	0.1
Iron	Fe	619	79	30	409	5
Lead	Pb	68.2	9.2	3.1	84.7	0.1
Magnesium	Mg	5570	1480	410	1290	0.5
Manganese	Mn	261	589	61.9	404	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.4	<	<	<	0.1
Nickel	Ni	3.8	0.3	<	0.3	0.1
Phosphorus	P	1120	797	666	808	0.5
Potassium	K	7160	3990	7200	3220	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	120	133	179	137	10
Silver	Ag	1.19	0.13	0.03	1	0.01
Sodium	Na	2	1	15	5	1
Strontium	Sr	23.4	6.67	0.49	6.56	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.02	0.08	<	0.07	0.02
Tin	Sn	0.7	<	<	0.4	0.1
Titanium	Ti	1.2	0.8	0.6	0.9	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	552	33.5	8.4	47.3	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SASP-NE01-1	SPSP-WH-NE 01-1	VAUL-BE-NE 01-1	VAUL-LE-NE 01-1	DETECTION LIMIT
CANTEST ID:		809220052	809220053	809220054	809220055	
Aluminum	Al	22.5	358	1.5	4.1	0.5
Antimony	Sb	2.2	32.6	<	0.3	0.1
Arsenic	As	7.3	114	0.3	1.1	0.1
Barium	Ba	15.4	41.5	10.1	41.9	0.1
Beryllium	Be	<	0.03	<	<	0.02
Boron	B	10	6	23	23	2
Cadmium	Cd	1.97	9.02	0.55	1.33	0.02
Calcium	Ca	14400	5050	1170	8010	1
Chromium	Cr	8	2.7	0.1	0.3	0.1
Cobalt	Co	0.8	0.9	<	<	0.1
Copper	Cu	7	64.2	5.2	5	0.1
Iron	Fe	549	9840	29	78	5
Lead	Pb	58.7	1800	2.5	10.6	0.1
Magnesium	Mg	6560	1500	784	4050	0.5
Manganese	Mn	221	2990	42.6	104	0.1
Mercury	Hg	<	0.02	<	<	0.01
Molybdenum	Mo	0.2	0.2	<	<	0.1
Nickel	Ni	6.3	2.8	0.3	0.3	0.1
Phosphorus	P	1190	514	999	953	0.5
Potassium	K	6660	2260	7330	6110	1
Selenium	Se	0.7	0.3	<	<	0.2
Silicon	Si	134	365	157	210	10
Silver	Ag	0.96	17	0.03	0.14	0.01
Sodium	Na	3	17	4	1	1
Strontium	Sr	46.6	13.2	2.65	13.8	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.02	0.13	<	<	0.02
Tin	Sn	0.5	6.3	<	<	0.1
Titanium	Ti	1.2	7.1	0.7	0.7	0.3
Uranium	U	<	0.18	<	<	0.04
Vanadium	V	<	1.2	<	<	0.5
Zinc	Zn	153	608	23.8	65.9	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		PIMA-SA-NE 01-1	BEGL-LE-NE 01-1	LEGR-LE-NE 02-1	SASP-NE02-1	DETECTION LIMIT
CANTEST ID:		809220056	809220057	809220058	809220059	
Aluminum	Al	14	28.4	15.9	16.9	0.5
Antimony	Sb	1.1	3.1	1.3	1.7	0.1
Arsenic	As	4.5	10.3	4.3	5.4	0.1
Barium	Ba	2.7	29.7	55.4	31.9	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	<	14	25	21	2
Cadmium	Cd	0.29	0.54	0.28	5.07	0.02
Calcium	Ca	196	8060	5210	19400	1
Chromium	Cr	0.3	0.6	0.5	3.7	0.1
Cobalt	Co	<	<	<	0.8	0.1
Copper	Cu	2.3	7.9	4.7	6.7	0.1
Iron	Fe	346	692	276	380	5
Lead	Pb	50.4	125	56.3	52.2	0.1
Magnesium	Mg	18.9	3950	1740	5000	0.5
Manganese	Mn	72.4	378	564	177	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	0.1	<	0.3	0.1
Nickel	Ni	<	0.7	0.3	4	0.1
Phosphorus	P	10.7	1170	715	861	0.5
Potassium	K	45	4130	2960	7970	1
Selenium	Se	<	0.2	<	1.7	0.2
Silicon	Si	197	170	156	153	10
Silver	Ag	0.64	1.53	0.71	0.78	0.01
Sodium	Na	1	2	2	2	1
Strontium	Sr	0.68	13.1	5.36	137	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	0.05	<	0.02
Tin	Sn	0.3	0.7	0.3	0.4	0.1
Titanium	Ti	0.3	1.3	0.8	0.9	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	0.8	<	<	<	0.5
Zinc	Zn	22.1	286	41.9	240	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SPSP-WH-NE 02-1	VAUL-BE-NE 02-1	VAUL-LE-NE 02-1	IMNE-BE-NE 02-1	DETECTION LIMIT
CANTEST ID:		809220060	809220061	809220062	809220063	
Aluminum	Al	181	1.7	8	9.1	0.5
Antimony	Sb	17.7	<	0.3	1	0.1
Arsenic	As	57.6	0.2	1.1	3.2	0.1
Barium	Ba	49.4	9.5	46.3	7.6	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	6	16	19	10	2
Cadmium	Cd	5.79	0.18	0.61	0.28	0.02
Calcium	Ca	4950	1430	7910	744	1
Chromium	Cr	1.3	<	0.2	0.2	0.1
Cobalt	Co	0.5	<	<	<	0.1
Copper	Cu	33.7	4.9	5.2	9.4	0.1
Iron	Fe	4960	27	80	253	5
Lead	Pb	958	1.7	9.8	56.7	0.1
Magnesium	Mg	1530	767	3490	450	0.5
Manganese	Mn	1500	81.7	160	76.5	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.1	<	<	<	0.1
Nickel	Ni	1.7	0.2	0.3	0.2	0.1
Phosphorus	P	738	655	764	657	0.5
Potassium	K	2590	5950	3350	6750	1
Selenium	Se	0.3	<	<	<	0.2
Silicon	Si	398	139	180	211	10
Silver	Ag	8.56	0.02	0.14	0.75	0.01
Sodium	Na	17	<	2	24	1
Strontium	Sr	11.7	2.48	13.4	0.98	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.06	<	<	<	0.02
Tin	Sn	3.3	<	<	0.2	0.1
Titanium	Ti	4.3	0.5	0.6	0.6	0.3
Uranium	U	0.08	<	<	<	0.04
Vanadium	V	0.9	<	<	<	0.5
Zinc	Zn	359	19.9	59.3	22.4	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		PIMA-SA-NE 02-1	BEGL-LE-NE 02-1	LEGR-LE-NE 03-1	SASP-NE03-1	DETECTION LIMIT
CANTEST ID:		809220064	809220065	809220066	809220067	
Aluminum	Al	17	10.8	19.4	12	0.5
Antimony	Sb	1.3	0.9	0.7	0.7	0.1
Arsenic	As	4.7	3	2.4	2.4	0.1
Barium	Ba	8.6	79.2	82.7	24.8	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	2	18	16	11	2
Cadmium	Cd	0.28	0.21	0.18	2.14	0.02
Calcium	Ca	575	9460	5730	16100	1
Chromium	Cr	0.3	0.2	0.5	0.8	0.1
Cobalt	Co	<	<	<	0.9	0.1
Copper	Cu	2.8	6.2	5	5.4	0.1
Iron	Fe	358	222	185	203	5
Lead	Pb	52.5	39	29.4	23.6	0.1
Magnesium	Mg	43	4140	1610	5050	0.5
Manganese	Mn	73	191	158	164	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	0.1	<	0.4	0.1
Nickel	Ni	<	1.4	0.3	1.9	0.1
Phosphorus	P	34.8	1160	866	803	0.5
Potassium	K	81	5160	3270	8270	1
Selenium	Se	<	0.2	<	1.8	0.2
Silicon	Si	185	172	144	143	10
Silver	Ag	0.64	0.5	0.37	0.36	0.01
Sodium	Na	3	2	4	4	1
Strontium	Sr	1.46	18.2	6.92	24.5	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.02	<	0.03	<	0.02
Tin	Sn	0.4	0.3	0.2	0.2	0.1
Titanium	Ti	0.5	1.1	1.1	0.9	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	0.8	<	<	<	0.5
Zinc	Zn	25.6	278	34.4	197	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		VAUL-BE-NE 04-1	LEGR-LE-N1 -1	VAUL-LE-N1 -1	LEGR-LE-N2 -1	DETECTION LIMIT
CANTEST ID:		809220068	809220069	809220070	809220071	
Aluminum	Al	3.5	9.5	3.9	12.1	0.5
Antimony	Sb	<	0.6	<	0.6	0.1
Arsenic	As	<	2.2	0.4	2.2	0.1
Barium	Ba	7.1	36.6	30.9	85.4	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	33	29	28	17	2
Cadmium	Cd	0.13	0.13	0.99	0.14	0.02
Calcium	Ca	1220	7060	9660	6000	1
Chromium	Cr	0.1	0.3	0.2	0.4	0.1
Cobalt	Co	<	<	<	<	0.1
Copper	Cu	4.3	4	4.1	5.2	0.1
Iron	Fe	17	148	44	164	5
Lead	Pb	0.3	24.2	2.1	20.9	0.1
Magnesium	Mg	680	2420	3230	1650	0.5
Manganese	Mn	87.8	173	171	122	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.2	<	<	0.1	0.1
Nickel	Ni	0.7	0.4	0.9	0.4	0.1
Phosphorus	P	937	852	938	899	0.5
Potassium	K	8780	2880	4690	3680	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	93	97	146	126	10
Silver	Ag	<	0.36	0.05	0.3	0.01
Sodium	Na	2	3	6	3	1
Strontium	Sr	1.86	8.3	10.9	6.21	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	0.15	<	0.02	0.02
Tin	Sn	<	0.1	<	0.1	0.1
Titanium	Ti	0.4	0.7	0.4	0.8	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	22.2	33.4	61.3	28.5	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SASP-N3-1	VAUL-BE-N3-1	LEGR-LE-NW 01-1	PIGL-SA-NW 01-1	DETECTION LIMIT
CANTEST ID:		809220072	809220073	809220074	809220075	
Aluminum	Al	7.2	1.5	7.2	5.4	0.5
Antimony	Sb	0.3	<	0.1	<	0.1
Arsenic	As	1	<	0.4	0.3	0.1
Barium	Ba	18.9	7.1	55.2	1.6	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	7	10	12	<	2
Cadmium	Cd	1.11	0.18	0.03	0.03	0.02
Calcium	Ca	14400	1120	6100	67	1
Chromium	Cr	0.3	0.2	0.3	0.2	0.1
Cobalt	Co	0.3	<	<	<	0.1
Copper	Cu	3	3.8	4	0.3	0.1
Iron	Fe	102	14	52	41	5
Lead	Pb	8.1	0.3	3.4	3.6	0.1
Magnesium	Mg	3870	709	1880	10.8	0.5
Manganese	Mn	185	36.7	139	6.4	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.4	0.5	<	<	0.1
Nickel	Ni	0.9	0.2	0.2	<	0.1
Phosphorus	P	858	902	907	14.7	0.5
Potassium	K	6640	6590	3100	39	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	82	106	100	91	10
Silver	Ag	0.16	<	0.05	0.09	0.01
Sodium	Na	4	2	4	1	1
Strontium	Sr	21.6	1.95	7.19	0.24	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	<	0.03	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	0.7	0.4	0.7	<	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	180	18.9	23.6	3.1	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		SASP-NW2-1	LEGR-LE-C1 -1	SPSP-WH-C1 -1	VAUL-BE-C1 -1	DETECTION LIMIT
CANTEST ID:		809220076	809220077	809220078	809220079	
Aluminum	Al	10	6.6	101	4.1	0.5
Antimony	Sb	0.1	<	<	<	0.1
Arsenic	As	0.4	<	0.2	<	0.1
Barium	Ba	26.1	86.9	68.7	10.3	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	7	12	4	9	2
Cadmium	Cd	1.07	<	0.13	0.41	0.02
Calcium	Ca	15300	5160	10600	967	1
Chromium	Cr	0.3	0.3	0.5	0.2	0.1
Cobalt	Co	0.2	<	0.1	<	0.1
Copper	Cu	5.9	3.2	1.9	4.3	0.1
Iron	Fe	68	29	174	16	5
Lead	Pb	2.8	0.2	0.7	<	0.1
Magnesium	Mg	5200	1330	2420	567	0.5
Manganese	Mn	89.7	251	121	138	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.4	0.1	0.7	0.3	0.1
Nickel	Ni	2.2	0.2	0.7	0.4	0.1
Phosphorus	P	941	1080	610	1090	0.5
Potassium	K	7220	3340	2290	9540	1
Selenium	Se	1.8	<	<	<	0.2
Silicon	Si	122	112	416	132	10
Silver	Ag	0.06	<	0.02	<	0.01
Sodium	Na	5	1	19	4	1
Strontium	Sr	24.9	5.42	21.6	1.23	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.03	0.04	<	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	0.9	0.7	4.2	0.5	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	0.6	<	0.5
Zinc	Zn	103	42.3	33.2	20.9	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		BEGL-LE-C1 -1	SASP-C3-1	SPSP-WH-C3 -1	VAUL-BE-C3 -1	DETECTION LIMIT
CANTEST ID:		809220080	809220081	809220082	809220083	
Aluminum	Al	7.1	9.9	117	5.8	0.5
Antimony	Sb	<	<	<	<	0.1
Arsenic	As	<	<	0.1	<	0.1
Barium	Ba	41.1	77.4	45.7	11.2	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	8	10	<	3	2
Cadmium	Cd	0.09	3.67	0.13	0.17	0.02
Calcium	Ca	7290	24300	3320	907	1
Chromium	Cr	0.1	0.2	0.4	0.1	0.1
Cobalt	Co	<	1.1	0.1	<	0.1
Copper	Cu	3	3.7	2.4	5.5	0.1
Iron	Fe	30	48	181	17	5
Lead	Pb	<	<	0.9	<	0.1
Magnesium	Mg	3880	8460	684	614	0.5
Manganese	Mn	335	232	443	134	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.1	0.3	<	0.4	0.1
Nickel	Ni	0.2	4.7	0.8	1.6	0.1
Phosphorus	P	1760	1590	823	1280	0.5
Potassium	K	4050	5130	2760	6540	1
Selenium	Se	<	0.6	<	<	0.2
Silicon	Si	91	92	244	132	10
Silver	Ag	<	<	0.05	<	0.01
Sodium	Na	2	4	17	3	1
Strontium	Sr	10.6	47.1	6.01	1.01	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	0.02	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	1	1	4.7	0.5	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	0.6	<	0.5
Zinc	Zn	301	43.8	25.2	22.6	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		PIMA-SA-C3 -1	LEGR-LE-C0 5-1	SASP-C05-1	PIMA-SA-C0 5-1	DETECTION LIMIT
CANTEST ID:		809220084	809220085	809220086	809220087	
Aluminum	Al	3.8	22.8	7.9	5.3	0.5
Antimony	Sb	<	<	<	<	0.1
Arsenic	As	<	<	<	<	0.1
Barium	Ba	1.4	108	45.8	4.5	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	<	5	3	<	2
Cadmium	Cd	<	<	1.86	<	0.02
Calcium	Ca	146	5450	10200	371	1
Chromium	Cr	0.3	0.2	0.3	0.3	0.1
Cobalt	Co	<	<	1.3	<	0.1
Copper	Cu	<	4.4	3.8	0.1	0.1
Iron	Fe	<	35	49	8	5
Lead	Pb	<	0.1	0.5	<	0.1
Magnesium	Mg	5.1	1480	2570	13	0.5
Manganese	Mn	20.6	695	565	54.8	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	0.1	0.4	<	0.1
Nickel	Ni	<	0.6	1.8	<	0.1
Phosphorus	P	6.1	1280	3510	30.4	0.5
Potassium	K	25	4190	7040	60	1
Selenium	Se	<	<	0.2	<	0.2
Silicon	Si	125	103	88	144	10
Silver	Ag	<	<	0.01	<	0.01
Sodium	Na	1	4	20	3	1
Strontium	Sr	0.12	7.28	31.3	0.48	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	0.03	0.03	0.02	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	<	0.9	1.6	<	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	0.7	<	<	0.8	0.5
Zinc	Zn	2.8	22.8	77.3	4.5	0.5
Zirconium	Zr	<	<	<	<	3

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		B EGL-LE-C0 5-1	SASP-SW01- 1	LEGR-LE-MB 01-1	SPSP-WH-MB 01-1	DETECTION LIMIT
CANTEST ID:		809220088	809220089	809220090	809220091	
Aluminum	Al	8.7	13.4	18.6	225	0.5
Antimony	Sb	<	0.3	<	<	0.1
Arsenic	As	<	1.2	<	0.5	0.1
Barium	Ba	55.4	6.5	75.7	25.9	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	4	18	13	<	2
Cadmium	Cd	0.17	11.8	<	0.17	0.02
Calcium	Ca	4590	16100	5250	4240	1
Chromium	Cr	0.2	0.7	0.3	0.7	0.1
Cobalt	Co	0.4	0.3	<	0.3	0.1
Copper	Cu	3.6	5.4	4	4.2	0.1
Iron	Fe	59	118	44	264	5
Lead	Pb	0.2	7.3	0.2	2.1	0.1
Magnesium	Mg	2010	3470	1290	1110	0.5
Manganese	Mn	1040	1610	896	382	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	<	0.1
Nickel	Ni	2.3	7	0.4	1.4	0.1
Phosphorus	P	2940	1270	1320	1100	0.5
Potassium	K	4960	6160	4770	4410	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	93	81	78	304	10
Silver	Ag	<	0.17	<	0.07	0.01
Sodium	Na	4	25	2	18	1
Strontium	Sr	8.12	29.4	8.66	14	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	0.03	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	1.5	0.8	1	4.5	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	0.7	0.5
Zinc	Zn	134	1370	29.5	39.1	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

< = Less than detection limit

REPORTED TO: Environmental Dynamics



REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009

Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		BEPA-MB01-1	CLMI-MB01-1	PIGL-SA-MB01-1	SASP-MB02-1	DETECTION LIMIT
CANTEST ID:		809220092	809220093	809220094	809220095	
Aluminum	Al	2.4	100	56.8	32.1	0.5
Antimony	Sb	<	<	<	<	0.1
Arsenic	As	<	0.4	0.1	<	0.1
Barium	Ba	104	11.7	10.8	200	0.1
Beryllium	Be	<	<	<	0.02	0.02
Boron	B	21	<	<	6	2
Cadmium	Cd	0.77	0.07	<	3.99	0.02
Calcium	Ca	7250	1340	820	17400	1
Chromium	Cr	0.2	0.5	0.4	0.2	0.1
Cobalt	Co	0.5	0.1	<	1.6	0.1
Copper	Cu	5.6	1.1	0.8	3.9	0.1
Iron	Fe	11	188	130	60	5
Lead	Pb	<	0.4	0.7	0.1	0.1
Magnesium	Mg	586	382	71.4	4550	0.5
Manganese	Mn	425	153	14.8	244	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	<	0.1
Nickel	Ni	0.5	0.5	0.2	10.1	0.1
Phosphorus	P	555	471	53.7	1840	0.5
Potassium	K	1700	1290	296	7630	1
Selenium	Se	<	<	<	0.5	0.2
Silicon	Si	90	110	137	113	10
Silver	Ag	0.02	0.02	<	<	0.01
Sodium	Na	9	9	6	2	1
Strontium	Sr	30.4	5.6	2.38	94.6	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	<	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	<	3.8	1.4	1.1	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	0.5	0.9	<	0.5
Zinc	Zn	470	16.8	7.7	170	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

< = Less than detection limit

REPORTED TO: Environmental Dynamics

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GROUP NUMBER: 90922009



Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		VAUL-LE-MB 02-1	PIMA-SA-MB 02-1	CLMI-MB02-1	ROAC-BE-MB 02-1	DETECTION LIMIT
CANTEST ID:		809220096	809220097	809220098	809220099	
Aluminum	Al	99.9	10.6	72.2	0.9	0.5
Antimony	Sb	<	<	<	<	0.1
Arsenic	As	<	<	0.1	<	0.1
Barium	Ba	28.5	3.6	5.6	34.5	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	4	<	<	6	2
Cadmium	Cd	0.72	<	0.1	0.03	0.02
Calcium	Ca	6680	284	375	4610	1
Chromium	Cr	0.4	0.2	0.3	0.1	0.1
Cobalt	Co	0.1	<	<	<	0.1
Copper	Cu	4.8	0.3	0.6	2.9	0.1
Iron	Fe	47	12	114	24	5
Lead	Pb	<	0.2	0.4	<	0.1
Magnesium	Mg	2430	10.3	142	2260	0.5
Manganese	Mn	1060	48.2	45.1	76.5	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	0.1	<	<	<	0.1
Nickel	Ni	2.3	<	0.3	1.9	0.1
Phosphorus	P	3080	11.1	261	1490	0.5
Potassium	K	8720	55	809	12500	1
Selenium	Se	0.6	<	<	<	0.2
Silicon	Si	192	97	108	76	10
Silver	Ag	<	<	0.07	<	0.01
Sodium	Na	3	1	8	1	1
Strontium	Sr	8	0.48	1.44	21.7	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	0.08	<	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	1.5	0.4	3.1	0.6	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	30.6	3.4	8.8	12.4	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

< = Less than detection limit

REPORTED TO: Environmental Dynamics

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		VAUL-BE-NE 02-2	BEGL-LE-NE 02-2	CLMI-MT01-1	CLMI-MT02-1	DETECTION LIMIT
CANTEST ID:		809220100	809220101	809220102	809220103	
Aluminum	Al	2.8	13.9	41.8	68.8	0.5
Antimony	Sb	<	1.4	0.3	1.4	0.1
Arsenic	As	0.3	4.5	2.3	11.2	0.1
Barium	Ba	7.2	33.5	1.9	4.7	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	15	13	<	<	2
Cadmium	Cd	0.15	0.34	1.08	2.38	0.02
Calcium	Ca	1050	7810	614	420	1
Chromium	Cr	0.2	0.4	0.2	0.3	0.1
Cobalt	Co	<	0.1	<	0.1	0.1
Copper	Cu	4.3	6.2	1	1.6	0.1
Iron	Fe	27	319	124	334	5
Lead	Pb	3.1	59	7.9	48.9	0.1
Magnesium	Mg	759	3640	210	187	0.5
Manganese	Mn	35.2	532	49	104	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	<	0.1
Nickel	Ni	0.3	0.7	0.2	0.5	0.1
Phosphorus	P	801	1330	446	360	0.5
Potassium	K	6470	5950	1360	1170	1
Selenium	Se	<	<	<	<	0.2
Silicon	Si	125	96	96	104	10
Silver	Ag	0.03	0.7	0.23	1.04	0.01
Sodium	Na	2	3	10	8	1
Strontium	Sr	1.85	9.25	1.12	1.12	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	<	<	0.02
Tin	Sn	<	0.3	<	<	0.1
Titanium	Ti	0.4	0.9	1.7	3	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	16.6	192	56	152	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

< = Less than detection limit

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		CLMI-MT03-1	CLMI-MT04-1	CLMI-MT05-1	CLMI-MT06-1	DETECTION LIMIT
CANTEST ID:		809220104	809220105	809220106	809220107	
Aluminum	Al	47.1	59.4	44.1	65	0.5
Antimony	Sb	0.4	1.7	1.8	2.4	0.1
Arsenic	As	4.7	11	11.9	18.5	0.1
Barium	Ba	3.4	3.3	4.3	3.9	0.1
Beryllium	Be	<	<	<	<	0.02
Boron	B	<	<	<	<	2
Cadmium	Cd	1.08	2.51	2.48	2.95	0.02
Calcium	Ca	454	491	1250	582	1
Chromium	Cr	0.3	0.4	0.3	0.4	0.1
Cobalt	Co	<	<	<	0.1	0.1
Copper	Cu	1.2	1.6	1.5	2	0.1
Iron	Fe	164	329	314	439	5
Lead	Pb	13.4	59.7	48.7	89.7	0.1
Magnesium	Mg	205	254	292	262	0.5
Manganese	Mn	103	91.4	97.3	104	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	<	<	0.1
Nickel	Ni	0.4	0.4	0.5	0.9	0.1
Phosphorus	P	540	444	568	419	0.5
Potassium	K	1700	1460	1410	1300	1
Selenium	Se	<	<	0.4	<	0.2
Silicon	Si	101	100	82	108	10
Silver	Ag	0.31	1.4	1.19	2.05	0.01
Sodium	Na	9	7	8	9	1
Strontium	Sr	1.04	1.18	2.96	1.64	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	<	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	2.1	2.3	1.9	2.7	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	64.2	153	151	211	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

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Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		CLMI-MT07-1	CLMI-MT08-1	DETECTION LIMIT
CANTEST ID:		809220108	809220109	
Aluminum	Al	76.1	91.9	0.5
Antimony	Sb	0.7	0.2	0.1
Arsenic	As	6.9	2.7	0.1
Barium	Ba	4.6	4.5	0.1
Beryllium	Be	<	<	0.02
Boron	B	<	<	2
Cadmium	Cd	0.85	0.59	0.02
Calcium	Ca	420	354	1
Chromium	Cr	0.4	0.3	0.1
Cobalt	Co	<	0.1	0.1
Copper	Cu	1	0.9	0.1
Iron	Fe	250	184	5
Lead	Pb	23.8	8.9	0.1
Magnesium	Mg	170	154	0.5
Manganese	Mn	99.5	39.1	0.1
Mercury	Hg	<	<	0.01
Molybdenum	Mo	<	<	0.1
Nickel	Ni	0.4	0.4	0.1
Phosphorus	P	301	298	0.5
Potassium	K	974	906	1
Selenium	Se	<	<	0.2
Silicon	Si	129	103	10
Silver	Ag	0.48	0.22	0.01
Sodium	Na	11	9	1
Strontium	Sr	1.04	1.19	0.05
Tellurium	Te	<	<	0.1
Thallium	Tl	<	<	0.02
Tin	Sn	<	<	0.1
Titanium	Ti	3	3.9	0.3
Uranium	U	<	<	0.04
Vanadium	V	<	<	0.5
Zinc	Zn	58.2	37.2	0.5
Zirconium	Zr	<	<	3

Results expressed as micrograms per gram, dry basis (µg/g)

< = Less than detection limit

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 113962)

Parameter		Blank (ug/g)	Blank Limits	Duplicate (R.P.D.) 809220017	Duplicate Limits	Duplicate (R.P.D.) 809220035	Duplicate Limits
Aluminum	Al	< 0.5	0.2	4	20	17.3	20
Antimony	Sb	< 0.1	0.001	0	20	2.9	20
Arsenic	As	< 0.1	0.002	5.7	20	4.8	20
Barium	Ba	< 0.1	0.001	3	20	14.5	20
Beryllium	Be	< 0.02	0.001	NC	20	PASS	20
Boron	B	< 2	0.02	5.4	20	PASS	20
Cadmium	Cd	< 0.02	0.0004	2.3	20	2.5	20
Calcium	Ca	< 1	0.3	1.4	20	7.8	20
Chromium	Cr	< 0.1	0.001	18.2	20	(*)	20
Cobalt	Co	< 0.1	0.001	NC	20	10.5	20
Copper	Cu	< 0.1	0.001	6.2	20	9.2	20
Iron	Fe	< 5	0.05	1.9	20	8.3	20
Lead	Pb	< 0.1	0.002	3.6	20	9.4	20
Magnesium	Mg	< 0.5	0.2	4.6	20	13.5	20
Manganese	Mn	< 0.1	0.01	1.2	20	5.5	20
Mercury	Hg	-	-	-	-	0	20
Molybdenum	Mo	< 0.1	0.002	NC	20	PASS	20
Nickel	Ni	< 0.1	0.003	PASS	20	10.2	20
Phosphorus	P	< 0.5	0.1	2.2	20	6.9	20
Potassium	K	< 1	0.3	0.5	20	5.1	20
Selenium	Se	< 0.2	0.004	NC	20	PASS	20
Silver	Ag	< 0.01	0.001	7.5	20	11.6	20
Sodium	Na	< 1	0.5	PASS	20	12.8	20
Strontium	Sr	< 0.05	0.002	4.7	20	5.8	20
Tellurium	Te	< 0.1	0.002	NC	20	NC	20
Thallium	Tl	< 0.02	0.002	3.9	20	11.1	20
Tin	Sn	< 0.1	0.01	PASS	20	(*)	20
Titanium	Ti	< 0.3	0.01	PASS	20	15.5	20
Uranium	U	< 0.04	0.002	NC	20	PASS	20
Vanadium	V	< 0.5	0.002	NC	20	PASS	20
Zinc	Zn	< 0.5	0.04	11.1	20	0.2	20
Zirconium	Zr	< 3	0.04	NC	20	NC	20

ug/g = micrograms per gram, dry basis

R.P.D. = Relative Percent Difference

PASS = Duplicate sample results were in the range of one to five times the detection limit. R.P.D. calculation is not applicable in this range. Acceptance criteria is a maximum difference between the duplicates equivalent to the value of the detection limit.

NC = Not Calculated. Duplicate sample results were less than the detection limit. Relative Percent Difference calculation is not defined for analyte levels of less than detection limit.

(*) = Quality Control results exceeded internally set limits; after review by Quality Assurance Unit, non-conformance overridden and batch sample analysis results released for reporting

REPORTED TO: Environmental Dynamics

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Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 113962)

Parameter		NIST1573a Tomato Leaves (% Recovery)	NIST1573a Tomato Leaves Limits	NRC TORT-2, "Lobster Tissue" (% Recovery)	NRC TORT-2, "Lobster Tissue" Limits
Aluminum	Al	28	7 - 91	-	-
Arsenic	As	179	80 - 283	93	66 - 113
Boron	B	93	62 - 142	-	-
Cadmium	Cd	79	30 - 124	88	63 - 118
Calcium	Ca	89	60 - 120	-	-
Chromium	Cr	43	28 - 97	70	60 - 120
Cobalt	Co	103	50 - 150	104	60 - 120
Copper	Cu	85	59 - 125	92	60 - 120
Iron	Fe	79	52 - 167	88	60 - 120
Lead	Pb	-	-	80	39 - 150
Manganese	Mn	89	62 - 131	88	60 - 120
Mercury	Hg	100	88.24 - 111.8	85	78 - 122
Molybdenum	Mo	-	-	101	60 - 120
Nickel	Ni	63	28 - 143	80	50 - 122
Phosphorus	P	95	60 - 120	-	-
Potassium	K	101	60 - 120	-	-
Selenium	Se	-	-	89	67 - 118
Sodium	Na	82	60 - 120	-	-
Strontium	Sr	-	-	88	60 - 120
Vanadium	V	64	50 - 150	81	60 - 120
Zinc	Zn	84	49 - 109	95	53 - 125

ug/g = micrograms per gram, dry basis

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Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 114087)

Parameter		Blank (ug/g)	Blank Limits	Duplicate (R.P.D.) 809220049	Duplicate Limits	Duplicate (R.P.D.) 809220054	Duplicate Limits
Aluminum	Al	< 0.5	0.2	4.3	20	PASS	20
Antimony	Sb	< 0.1	0.001	PASS	20	NC	20
Arsenic	As	< 0.1	0.002	9.5	20	PASS	20
Barium	Ba	< 0.1	0.001	6.3	20	3	20
Beryllium	Be	< 0.02	0.001	NC	20	NC	20
Boron	B	< 2	0.02	5.4	20	4.3	20
Cadmium	Cd	< 0.02	0.0004	PASS	20	1.8	20
Calcium	Ca	< 1	0.3	2.1	20	1.7	20
Chromium	Cr	< 0.1	0.001	PASS	20	PASS	20
Cobalt	Co	< 0.1	0.001	NC	20	NC	20
Copper	Cu	< 0.1	0.001	5.9	20	7.7	20
Iron	Fe	< 5	0.05	8.8	20	10.5	20
Lead	Pb	< 0.1	0.002	7.6	20	0	20
Magnesium	Mg	< 0.5	0.2	1.4	20	1.1	20
Manganese	Mn	< 0.1	0.01	8	20	7.5	20
Molybdenum	Mo	< 0.1	0.002	NC	20	NC	20
Nickel	Ni	< 0.1	0.003	PASS	20	PASS	20
Phosphorus	P	< 0.5	0.1	9.2	20	2.3	20
Potassium	K	< 1	0.3	1.5	20	4.8	20
Selenium	Se	< 0.2	0.004	NC	20	NC	20
Silver	Ag	< 0.01	0.001	8	20	PASS	20
Sodium	Na	< 1	0.5	PASS	20	PASS	20
Strontium	Sr	< 0.05	0.002	5.4	20	1.1	20
Tellurium	Te	< 0.1	0.002	NC	20	NC	20
Thallium	Tl	< 0.02	0.002	PASS	20	NC	20
Tin	Sn	< 0.1	0.01	NC	20	NC	20
Titanium	Ti	< 0.3	0.01	PASS	20	PASS	20
Uranium	U	< 0.04	0.002	NC	20	NC	20
Vanadium	V	< 0.5	0.002	NC	20	NC	20
Zinc	Zn	< 0.5	0.04	5.4	20	0.8	20
Zirconium	Zr	< 3	0.04	NC	20	NC	20

ug/g = micrograms per gram, dry basis

R.P.D. = Relative Percent Difference

PASS = Duplicate sample results were in the range of one to five times the detection limit. R.P.D. calculation is not applicable in this range. Acceptance criteria is a maximum difference between the duplicates equivalent to the value of the detection limit.

NC = Not Calculated. Duplicate sample results were less than the detection limit. Relative Percent Difference calculation is not defined for analyte levels of less than detection limit.

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REPORT DATE: October 16, 2008

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Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 114087)

Parameter		NIST1573a Tomato Leaves (% Recovery)	NIST1573a Tomato Leaves Limits	NRC TORT-2, "Lobster Tissue" (% Recovery)	NRC TORT-2, "Lobster Tissue" Limits
Aluminum	Al	30	7 - 91	-	-
Arsenic	As	214	80 - 283	93	66 - 113
Boron	B	102	62 - 142	-	-
Cadmium	Cd	79	30 - 124	88	63 - 118
Calcium	Ca	90	60 - 120	-	-
Chromium	Cr	43	28 - 97	67	60 - 120
Cobalt	Co	107	50 - 150	105	60 - 120
Copper	Cu	106	59 - 125	93	60 - 120
Iron	Fe	76	52 - 167	80	60 - 120
Lead	Pb	-	-	81	39 - 150
Manganese	Mn	87	62 - 131	88	60 - 120
Mercury	Hg	94	88.24 - 111.8	85	78 - 122
Molybdenum	Mo	-	-	99	60 - 120
Nickel	Ni	63	28 - 143	80	50 - 122
Phosphorus	P	97	60 - 120	-	-
Potassium	K	103	60 - 120	-	-
Selenium	Se	-	-	89	67 - 118
Sodium	Na	86	60 - 120	-	-
Strontium	Sr	-	-	91	60 - 120
Vanadium	V	72	50 - 150	78	60 - 120
Zinc	Zn	87	49 - 109	95	53 - 125

ug/g = micrograms per gram, dry basis

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Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 114326)

Parameter		Blank (ug/g)	Blank Limits	Duplicate (R.P.D.) 809220046	Duplicate Limits	Duplicate (R.P.D.) 809220076	Duplicate Limits
Aluminum	Al	< 0.5	0.2	5.2	20	4	20
Antimony	Sb	< 0.1	0.001	PASS	20	PASS	20
Arsenic	As	< 0.1	0.002	8.7	20	PASS	20
Barium	Ba	< 0.1	0.001	2.2	20	6.9	20
Beryllium	Be	< 0.02	0.001	NC	20	NC	20
Boron	B	< 2	0.02	0	20	PASS	20
Cadmium	Cd	< 0.02	0.0004	PASS	20	10.2	20
Calcium	Ca	< 1	0.3	4.4	20	3.3	20
Chromium	Cr	< 0.1	0.001	PASS	20	PASS	20
Cobalt	Co	< 0.1	0.001	NC	20	PASS	20
Copper	Cu	< 0.1	0.001	3.1	20	1.7	20
Iron	Fe	< 5	0.05	8.7	20	(*)	20
Lead	Pb	< 0.1	0.002	0	20	0	20
Magnesium	Mg	< 0.5	0.2	4.2	20	3.1	20
Manganese	Mn	< 0.1	0.01	8.8	20	6.5	20
Molybdenum	Mo	< 0.1	0.002	NC	20	PASS	20
Nickel	Ni	< 0.1	0.003	PASS	20	4.7	20
Phosphorus	P	< 0.5	0.1	6.7	20	4	20
Potassium	K	< 1	0.3	5.4	20	1.7	20
Selenium	Se	< 0.2	0.004	NC	20	0	20
Silver	Ag	< 0.01	0.001	8.7	20	18.2	20
Sodium	Na	< 1	0.5	PASS	20	PASS	20
Strontium	Sr	< 0.05	0.002	1.3	20	4.4	20
Tellurium	Te	< 0.1	0.002	NC	20	NC	20
Thallium	Tl	< 0.02	0.002	PASS	20	PASS	20
Tin	Sn	< 0.1	0.01	NC	20	NC	20
Titanium	Ti	< 0.3	0.01	PASS	20	PASS	20
Uranium	U	< 0.04	0.002	NC	20	NC	20
Vanadium	V	< 0.5	0.002	NC	20	NC	20
Zinc	Zn	< 0.5	0.04	1.9	20	9.4	20
Zirconium	Zr	< 3	0.04	NC	20	NC	20

ug/g = micrograms per gram, dry basis

R.P.D. = Relative Percent Difference

PASS = Duplicate sample results were in the range of one to five times the detection limit. R.P.D. calculation is not applicable in this range. Acceptance criteria is a maximum difference between the duplicates equivalent to the value of the detection limit.

NC = Not Calculated. Duplicate sample results were less than the detection limit. Relative Percent Difference calculation is not defined for analyte levels of less than detection limit.

(*) = Quality Control results exceeded internally set limits; after review by Quality Assurance Unit, non-conformance overridden and batch sample analysis results released for reporting

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 114326)

Parameter		Duplicate (R.P.D.) 809220088	Duplicate Limits	Duplicate (R.P.D.) 809220100	Duplicate Limits	NIST 1547 Peach Leaves (% Recovery)	NIST 1547 Peach Leaves Limits
Aluminum	Al	0	20	PASS	20	52	51 - 71
Antimony	Sb	NC	20	NC	20	-	-
Arsenic	As	NC	20	PASS	20	-	-
Barium	Ba	1.8	20	5.6	20	92	45 - 105
Beryllium	Be	NC	20	NC	20	-	-
Boron	B	PASS	20	0	20	(*)	74 - 118
Cadmium	Cd	6.1	20	6.9	20	108	50 - 150
Calcium	Ca	2.8	20	7.6	20	95	80 - 120
Chromium	Cr	PASS	20	PASS	20	-	-
Cobalt	Co	PASS	20	NC	20	-	-
Copper	Cu	2.7	20	4.7	20	97	83 - 123
Iron	Fe	1.7	20	PASS	20	121	85 - 125
Lead	Pb	PASS	20	(*)	20	78	75 - 125
Magnesium	Mg	0.5	20	2	20	93	80 - 120
Manganese	Mn	0	20	1.4	20	91	82 - 110
Mercury	Hg	-	-	-	-	90	50 - 100
Molybdenum	Mo	NC	20	NC	20	-	-
Nickel	Ni	0	20	PASS	20	91	74 - 126
Phosphorus	P	1.7	20	2.5	20	104	80 - 120
Potassium	K	5.4	20	2	20	101	80 - 120
Selenium	Se	NC	20	NC	20	-	-
Silver	Ag	NC	20	PASS	20	-	-
Sodium	Na	PASS	20	PASS	20	(*)	80 - 120
Strontium	Sr	3.1	20	7.6	20	98	80 - 120
Tellurium	Te	NC	20	NC	20	-	-
Thallium	Tl	NC	20	NC	20	-	-
Tin	Sn	NC	20	NC	20	-	-
Titanium	Ti	PASS	20	PASS	20	-	-
Uranium	U	NC	20	NC	20	-	-
Vanadium	V	NC	20	NC	20	100	50 - 150
Zinc	Zn	4.5	20	0.6	20	(*)	67 - 91
Zirconium	Zr	NC	20	NC	20	-	-

ug/g = micrograms per gram, dry basis

R.P.D. = Relative Percent Difference

PASS = Duplicate sample results were in the range of one to five times the detection limit. R.P.D. calculation is not applicable in this range. Acceptance criteria is a maximum difference between the duplicates equivalent to the value of the detection limit.

NC = Not Calculated. Duplicate sample results were less than the detection limit. Relative Percent Difference calculation is not defined for analyte levels of less than detection limit.

(*) = Quality Control results exceeded internally set limits; after review by Quality Assurance Unit, non-conformance overridden and batch sample analysis results released for reporting

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 114326)

Parameter		NIST1573a Tomato Leaves (% Recovery)	NIST1573a Tomato Leaves Limits
Aluminum	Al	31	7 - 91
Arsenic	As	191	80 - 283
Boron	B	66	62 - 142
Cadmium	Cd	79	30 - 124
Calcium	Ca	100	60 - 120
Chromium	Cr	50	28 - 97
Cobalt	Co	108	50 - 150
Copper	Cu	85	59 - 125
Iron	Fe	88	52 - 167
Manganese	Mn	97	62 - 131
Mercury	Hg	103	88.24 - 111.8
Nickel	Ni	63	28 - 143
Phosphorus	P	108	60 - 120
Potassium	K	100	60 - 120
Sodium	Na	84	60 - 120
Vanadium	V	63	50 - 150
Zinc	Zn	87	49 - 109

ug/g = micrograms per gram, dry basis

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Instrument Quality Control for the Mercury Monitor (QC# 222586)

QC Type: Calibration Verification

Parameter		% Recovery	Limits
Mercury	Hg	92	90 - 110

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Instrument Quality Control for the Mercury Monitor (QC# 223008)

QC Type: Calibration Verification

Parameter	% Recovery	Limits
Mercury Hg	94	90 - 110

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Batch Quality Control Frequency Summary

Metals Plant Tissue Digestion (Batch# 113962)

QC Type	No. Samples
NIST1573a Tomato Leaves	1
NRC TORT-2, "Lobster Tissue"	1
Blank	2
Duplicate	2

Metals Plant Tissue Digestion (Batch# 114087)

QC Type	No. Samples
NIST1573a Tomato Leaves	1
NRC TORT-2, "Lobster Tissue"	1
Blank	2
Duplicate	2

Metals Plant Tissue Digestion (Batch# 114326)

QC Type	No. Samples
NIST 1547 Peach Leaves	1
NIST1573a Tomato Leaves	1
Blank	2
Duplicate	4

Metals Plant Tissue Digestion (Batch# 113962)

QC Type	No. Samples
Batch Size	29

(Continued on next page)

REPORTED TO: Environmental Dynamics

REPORT DATE: October 16, 2008

GROUP NUMBER: 90922009



Batch Quality Control Frequency Summary

Metals Plant Tissue Digestion (Batch# 114087)

QC Type	No. Samples
Batch Size	26

Metals Plant Tissue Digestion (Batch# 114326)

QC Type	No. Samples
Batch Size	43

Analysis Report



CANTEST LTD.

Professional
Analytical
Services

4606 Canada Way
Burnaby, B.C.
V5G 1K5

FAX: 604 731 2386

TEL: 604 734 7276

1 800 665 8566

REPORT ON: Analysis of Tissue Samples

REPORTED TO: Environmental Dynamics
402 Hawkings St
Whitehorse, YK
Y1A 1X8

Att'n: Matt Power

CHAIN OF CUSTODY: 2051976
PROJECT NAME: ELSA
PROJECT NUMBER: 08-YC-0036
P.O. NUMBER: 00010714

NUMBER OF SAMPLES: 10

REPORT DATE: November 5, 2008

DATE SUBMITTED: October 23, 2008

GROUP NUMBER: 91024054

SAMPLE TYPE: Tissue

NOTE: Results contained in this report refer only to the testing of samples as submitted. Other information is available on request.

TEST METHODS:

Moisture Content of Plant Tissue - analysis was performed gravimetrically by heating a pre-weighed portion of sample at 105C and measuring the weight loss.

Mercury in Tissue - samples were digested using a nitric acid-hydrogen peroxide digestion procedure based on EPA Method 200.3. Analysis was performed using Cold Vapour Atomic Absorption Spectrophotometry or Cold Vapour Atomic Fluorescence Spectrophotometry.

Metals in Tissue - samples were digested using a nitric acid-hydrogen peroxide digestion procedure based on EPA Method 200.3. Analysis was performed using Inductively Coupled Argon Plasma Spectroscopy (ICP), or ICP Mass Spectrometry (ICP/MS).

TEST RESULTS:

(See following pages)

CANTEST LTD.

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Conventional Parameters in Tissue

CLIENT SAMPLE IDENTIFICATION:	CANTEST ID	Moisture
LEGR-LE-MT02-1	810240181	56.3
SASP-MT02-1	810240184	56.5
VAUL-LE-MT02-1	810240185	57.6
LEGR-LE-MT04-1	810240186	50.1
VAUL-BE-MT04-1	810240188	87.3
IMNE-BE-MT04-1	810240191	87.3
SASP-MT05-1	810240192	65.1
B EGL-LE-MT05-1	810240193	65.2
LEGR-LE-MT06-1	810240194	49.4
SASP-MT06-1	810240195	61.4
DETECTION LIMIT UNITS		0.1 %

% = percent

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		LEGR-LE-MT 02-1	SASP-MT02-1	VAUL-LE-MT 02-1	LEGR-LE-MT 04-1	DETECTION LIMIT
CANTEST ID:		810240181	810240184	810240185	810240186	
Aluminum	Al	25.3	9.8	60	11.3	0.5
Antimony	Sb	0.4	0.2	0.1	0.6	0.1
Arsenic	As	2.7	1.3	1.2	2.6	0.1
Barium	Ba	37.8	48.2	43.8	41.6	0.1
Beryllium	Be	<	<	<	<	0.1
Boron	B	11	9	7	17	2
Cadmium	Cd	0.34	15.5	1.64	0.35	0.02
Calcium	Ca	5160	5810	5290	4750	1
Chromium	Cr	0.2	0.2	0.1	0.3	0.1
Cobalt	Co	<	8.1	0.3	<	0.1
Copper	Cu	4.4	4.8	4.9	5.5	0.1
Iron	Fe	90	71	32	95	5
Lead	Pb	13	5.3	2	11.8	0.1
Magnesium	Mg	1220	1540	1410	970	0.5
Manganese	Mn	1160	226	814	788	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	0.6	<	<	0.1
Nickel	Ni	0.5	24.1	2.3	0.3	0.1
Phosphorus	P	1070	1310	1230	1080	0.5
Potassium	K	4030	6480	5120	4470	1
Selenium	Se	<	2.3	0.2	<	0.2
Silicon	Si	97	65	75	85	10
Silver	Ag	0.23	0.17	0.07	0.35	0.01
Sodium	Na	4	4	3	2	1
Strontium	Sr	3.06	21.4	5.01	3.19	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	0.05	<	<	0.02	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	1.2	1.3	1	1.2	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	56.8	292	61.2	51.3	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis ($\mu\text{g/g}$)

< = Less than detection limit

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		VAUL-BE-MT 04-1	IMNE-BE-MT 04-1	SASP-MT05- 1	BEGL-LE-MT 05-1	DETECTION LIMIT
CANTEST ID:		810240188	810240191	810240192	810240193	
Aluminum	Al	0.7	1.1	8.5	7.7	0.5
Antimony	Sb	<	<	0.9	0.4	0.1
Arsenic	As	0.2	0.4	6.2	3	0.1
Barium	Ba	6.6	5.3	60	45.2	0.1
Beryllium	Be	<	<	<	<	0.1
Boron	B	5	<	16	15	2
Cadmium	Cd	0.32	<	23.7	0.88	0.02
Calcium	Ca	960	531	19400	9060	1
Chromium	Cr	0.1	<	0.3	0.2	0.1
Cobalt	Co	<	<	0.6	<	0.1
Copper	Cu	5.1	4.4	5.9	4.3	0.1
Iron	Fe	18	16	176	119	5
Lead	Pb	0.2	1	17.5	10.9	0.1
Magnesium	Mg	520	295	4800	2950	0.5
Manganese	Mn	47	60.5	175	694	0.1
Mercury	Hg	<	<	<	<	0.01
Molybdenum	Mo	<	<	0.2	0.1	0.1
Nickel	Ni	0.3	<	13	9.6	0.1
Phosphorus	P	924	545	1720	3490	0.5
Potassium	K	7420	5820	12300	6460	1
Selenium	Se	<	<	5.6	0.3	0.2
Silicon	Si	75	66	100	132	10
Silver	Ag	<	<	0.58	0.32	0.01
Sodium	Na	3	15	3	1	1
Strontium	Sr	1.59	0.36	39	12.8	0.05
Tellurium	Te	<	<	<	<	0.1
Thallium	Tl	<	<	<	<	0.02
Tin	Sn	<	<	<	<	0.1
Titanium	Ti	0.8	0.6	1.9	3	0.3
Uranium	U	<	<	<	<	0.04
Vanadium	V	<	<	<	<	0.5
Zinc	Zn	22.7	8.7	482	522	0.5
Zirconium	Zr	<	<	<	<	3

Results expressed as micrograms per gram, dry basis ($\mu\text{g/g}$)

< = Less than detection limit

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Metals Analysis in Tissue

CLIENT SAMPLE IDENTIFICATION:		LEGR-LE-MT 06-1	SASP-MT06- 1	DETECTION LIMIT
CANTEST ID:		810240194	810240195	
Aluminum	Al	17.6	14.3	0.5
Antimony	Sb	0.2	0.2	0.1
Arsenic	As	1.5	1.8	0.1
Barium	Ba	30.3	98.6	0.1
Beryllium	Be	<	<	0.1
Boron	B	8	10	2
Cadmium	Cd	0.15	43	0.02
Calcium	Ca	4380	17300	1
Chromium	Cr	0.2	0.2	0.1
Cobalt	Co	<	3.1	0.1
Copper	Cu	4.8	5.6	0.1
Iron	Fe	57	84	5
Lead	Pb	5.1	5.2	0.1
Magnesium	Mg	480	3960	0.5
Manganese	Mn	864	293	0.1
Mercury	Hg	<	<	0.01
Molybdenum	Mo	<	0.2	0.1
Nickel	Ni	0.9	42.8	0.1
Phosphorus	P	1020	1550	0.5
Potassium	K	5080	7470	1
Selenium	Se	<	2.3	0.2
Silicon	Si	98	105	10
Silver	Ag	0.13	0.17	0.01
Sodium	Na	<	2	1
Strontium	Sr	2.77	56.2	0.05
Tellurium	Te	<	<	0.1
Thallium	Tl	0.08	<	0.02
Tin	Sn	<	<	0.1
Titanium	Ti	1.1	1.8	0.3
Uranium	U	<	<	0.04
Vanadium	V	<	<	0.5
Zinc	Zn	44.6	748	0.5
Zirconium	Zr	<	<	3

Results expressed as micrograms per gram, dry basis ($\mu\text{g/g}$)

< = Less than detection limit

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 115455)

Parameter		Blank (ug/g)	Blank Limits	Duplicate (R.P.D.) 810240188	Duplicate Limits	NIST1570a Spinach Leaves (% Recovery)	NIST1570a Spinach Leaves Limits
Aluminum	Al	< 0.5	0.2	PASS	20	31	17 - 93
Antimony	Sb	< 0.1	0.001	NC	20	-	-
Arsenic	As	< 0.1	0.002	PASS	20	-	-
Barium	Ba	< 0.1	0.001	3	20	-	-
Beryllium	Be	< 0.02	0.001	NC	20	-	-
Boron	B	< 2	0.02	PASS	20	104	63 - 143
Cadmium	Cd	< 0.02	0.0004	6.3	20	76	39 - 114
Calcium	Ca	< 1	0.3	3.6	20	84	60 - 120
Chromium	Cr	< 0.1	0.001	PASS	20	-	-
Cobalt	Co	< 0.1	0.001	NC	20	92	50 - 150
Copper	Cu	< 0.1	0.001	7.8	20	98	62 - 124
Iron	Fe	< 5	0.05	PASS	20	-	-
Lead	Pb	< 0.1	0.002	PASS	20	-	-
Magnesium	Mg	< 0.5	0.2	13.1	20	-	-
Manganese	Mn	< 0.1	0.01	15.3	20	86	53 - 134
Mercury	Hg	-	-	-	-	107	59 - 119
Molybdenum	Mo	< 0.1	0.002	NC	20	-	-
Nickel	Ni	< 0.1	0.003	PASS	20	93	58 - 126
Phosphorus	P	< 0.5	0.1	13.2	20	89	60 - 120
Potassium	K	< 1	0.3	10.6	20	89	60 - 120
Selenium	Se	< 0.2	0.004	NC	20	-	-
Silver	Ag	< 0.01	0.001	NC	20	-	-
Sodium	Na	< 1	0.5	PASS	20	81	60 - 120
Strontium	Sr	< 0.05	0.002	2.5	20	86	60 - 120
Tellurium	Te	< 0.1	0.002	NC	20	-	-
Thallium	Tl	< 0.02	0.002	NC	20	-	-
Tin	Sn	< 0.1	0.01	NC	20	-	-
Titanium	Ti	< 0.3	0.01	PASS	20	-	-
Uranium	U	< 0.04	0.002	NC	20	-	-
Vanadium	V	< 0.5	0.002	NC	20	52	50 - 150
Zinc	Zn	< 0.5	0.04	7	20	88	48 - 110
Zirconium	Zr	< 3	0.04	NC	20	-	-

ug/g = micrograms per gram, dry basis

R.P.D. = Relative Percent Difference

PASS = Duplicate sample results were in the range of one to five times the detection limit. R.P.D. calculation is not applicable in this range. Acceptance criteria is a maximum difference between the duplicates equivalent to the value of the detection limit.

NC = Not Calculated. Duplicate sample results were less than the detection limit. Relative Percent Difference calculation is not defined for analyte levels of less than detection limit.

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Batch Quality Control for Dissolved Metals Analysis in Tissue (QC# 115455)

Parameter		NRC TORT-2, "Lobster Tissue" (% Recovery)	NRC TORT-2, "Lobster Tissue" Limits
Arsenic	As	93	66 - 113
Cadmium	Cd	85	63 - 118
Chromium	Cr	67	60 - 120
Cobalt	Co	105	60 - 120
Copper	Cu	98	60 - 120
Iron	Fe	89	60 - 120
Lead	Pb	75	39 - 150
Manganese	Mn	88	60 - 120
Mercury	Hg	107	78 - 122
Molybdenum	Mo	95	60 - 120
Nickel	Ni	80	50 - 122
Selenium	Se	89	67 - 118
Strontium	Sr	86	60 - 120
Vanadium	V	91	60 - 120
Zinc	Zn	102	53 - 125

ug/g = micrograms per gram, dry basis

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Instrument Quality Control for the Mercury Monitor (QC# 224442)

QC Type: Calibration Verification

Parameter		% Recovery	Limits
Mercury	Hg	98	90 - 110

REPORTED TO: Environmental Dynamics



REPORT DATE: November 5, 2008

GROUP NUMBER: 91024054

Batch Quality Control Frequency Summary

Metals Plant Tissue Digestion (Batch# 115455)

QC Type	No. Samples
Duplicate	1
NIST1570a Spinach Leaves	1
NRC TORT-2, "Lobster Tissue"	1
Blank	2
Batch Size	16