MOUNT NANSEN SITE

2012 - 2014 TERRESTRIAL EXISTING CONDITIONS REPORT

PREPARED FOR:

GOVERNMENT OF YUKON
ASSESSMENT AND ABANDONED MINES
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PROJECT NO. 16-249
SEPTEMBER 2017

EXECUTIVE SUMMARY

Government of Yukon, Assessment and Abandoned Mines (AAM) is preparing for an assessment of proposed care and maintenance activities at the Mount Nansen Site, an abandoned gold and silver mine located approximately 45 km west of Carmacks, YT. Ecological Logistics & Research Ltd. was retained by AAM to conduct terrestrial studies at the Mount Nansen Site in support of care and maintenance. AAM is anticipating this assessment by the Yukon Environmental and Socio-economic Assessment Board to be at the Designated Office level, although the studies program had originally anticipated an assessment at the Executive Committee Level for the overall remediation of the site.

Two key areas were delineated for the field studies: a local study area (LSA) encompassing 31 km^2 was established to determine existing conditions information on wildlife and vegetation occurring at a local level; and a regional study area (RSA) encompassing 1,573 km^2 was established to gather existing conditions information on the abundance and distribution of large mammals. The study program scope included both vegetation and wildlife components.

Vegetation components included a rare plant survey conducted to determine if any rare plants or plant species of conservation concern occur within or near potential activity areas, and a vegetation tissue metals study to determine current levels of metals within vegetation in the LSA. Rare plant survey efforts were conducted in July of 2012 and 2013, and no rare plants or plant species of conservation concern were observed.

The vegetation tissue metals study was conducted in August of 2013 across 44 sample locations distributed through the LSA. Tissue of lichen, willow, and berries were studied, in addition to soil samples. This study found evidence that concentrations of antimony, arsenic, copper, lead, and silver were elevated in relation to existing Site infrastructure, however at only two of 44 sites did tissue metals exceed maximum tolerance levels (MTL) for these metals (cadmium in willow, and arsenic and lead in lichen; both near existing infrastructure areas). Additionally, numerous exceedances of the MTL for aluminum (28) and iron (14) were observed. Only antimony, arsenic, and thallium concentrations in soil were found to exceed Canadian Council of Ministers of the Environment (CCME) *Soil Quality Guidelines for the Protection of Environmental and Human Health*. Most metals were found to be similar or lower in concentration to results observed in an earlier (2006) effects assessment.

Wildlife components included surveys of ungulates (moose and caribou), carnivores (bear, canid and mustelid species) and birds (passerine and waterfowl).

Bird studies were conducted in June of 2012, with additional observations made through both summers of 2012 and 2013. The studies included point counts, encounter surveys, and the collection of incidental observations on species occurrences. A total of 37 species of birds were observed during the studies, including two species of conservation concern; olive-sided flycatcher (*Contopus cooperi*) and common nighthawk (*Chordeiles minor*).

An aerial post-calving caribou survey was conducted in July of 2012, where only two caribou were observed at the northern extent of the RSA. An aerial late-winter moose survey of the RSA was conducted in March of 2013, indicating a relatively low density of moose but high proportion of moose calves within the RSA, and that moose did not appear to be restricted to key late winter habitats in 2013.

A wildlife pellet group study was conducted in June and July of 2012 to collect information on recent and prior wildlife use within the LSA. The study indicated a low overall level of wildlife used based on pellet density, but identified habitat use areas for moose, caribou, and carnivore species.

Finally, a remote wildlife camera study was conducted at the site for a 24-month period from June 2012 to June of 2014 using 14 unbaited cameras. This study has been successful at identifying and characterizing the seasonal activities of various species on site, including moose, caribou, bears (black and grizzly), wolverine, wolf, and others. Caribou and moose were the most frequently observed species during the sampling period. The activity of caribou (based on number of detections) peaked in January/February and July/August of each year, while that of moose peaked in February and July.

CONTRIBUTING STAFF

The 2012 and 2013 Mount Nansen Existing Conditions Study Program was conducted by Ecological Logistics & Research Ltd. (ELR). The following staff contributed to the success of this program:

Project Management	Chris Jastrebski
Field Programs	Chris Jastrebski, Heidi Schindler, Dave Desmarais, Jonathan Lowey, Alexandra de Jong Westman, Jesse Vigliotti, Lee Mennell (Independent)
Data Entry	Alexandra de Jong Westman, Jonathan Lowey and Jesse Vigliotti
Data QA/QC and Analysis	Heidi Schindler, Chris Jastrebski, Alexandra de Jong Westman
GIS and Mapping	Heidi Schindler
Authorship	Heidi Schindler, Chris Jastrebski, and Alexandra de Jong Westman
Senior Review	Chris Jastrebski, Glenn Wagner, Glenn Rudman

ACKNOWLEDGMENTS

Ecological Logistics & Research Ltd. (ELR) would like to extend thanks to all who helped with the success of the 2012 - 2014 Mount Nansen terrestrial existing conditions studies program. In particular, we would like to thank the staff of the Government of Yukon, Assessment and Abandoned Mines Branch for their assistance in the program, review of field plans and draft documents. We would also like to thank the staff of Denison Environmental Services for logistical support on site.

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MOUNT NANSEN SITE: 2012 - 2014 TERRESTRIAL EXISTING CONDITIONS REPORT

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1. INTRODUCTION

Government of Yukon, Assessment and Abandoned Mines (AAM), is preparing for an assessment of proposed care and maintenance activities at the Mount Nansen Site (the Site), an abandoned gold and silver mine located approximately 45 km west (70 km by road) of Carmacks, Yukon. The mine operated from 1997 to 1999, after which time it went into voluntary receivership and was later declared an abandoned site. The mine Site is located within Little Salmon/Carmacks First Nation (LSCFN) Traditional Territory.

As part of the Site planning process, Ecological Logistics & Research Ltd. (ELR) was retained by AAM to conduct environmental studies to build upon previous existing conditions works conducted at the Mount Nansen Site and fill gaps in existing conditions data.

This report details terrestrial environment studies conducted at the Site between 2012 and 2014. ELR reviewed existing information and available literature related to vegetation and wildlife resources prior to developing a field program. This review included referring to federal and territorial legislation (e.g. *Species at Risk Act*, [*SARA*] *Migratory Birds Convention Act*, and Yukon *Wildlife Act*), the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), as well as contacting the Yukon Conservation Data Centre to determine potential occurrence of species of conservation concern.

2. OBJECTIVES

The primary objective of the Mount Nansen existing conditions study program was to collect information on existing vegetation and wildlife resources in the Mount Nansen Site area (herein referred to as the Site) that could adequately describe existing conditions for the purposes of project assessments by the Yukon Environmental and Socio-economic Assessment Board (YESAB). The existing conditions studies program was initiated and completed for the anticipated remediation of the Mount Nansen Site (the site), and therefore an assessment by YESAB at the Executive Committee Level. Accordingly, the existing conditions study objectives were based on YESAB's *Proponent's Guide to Information Requirements for Executive Committee Project Proposal Submissions* (2005), including:

- Identifying the occurrence of species at risk in the Project area.
- Identifying movement corridors and critical, key, and sensitive habitats.
- Describing the abundance and distribution of major wildlife species.
- Describing vegetation and vegetation assemblages including any identified rare, sensitive, and/or endangered species in the Project area.

3. GEOGRAPHIC SCOPE

3.1 MOUNT NANSEN SITE

The Mount Nansen Site is located 60 km west of Carmacks, Yukon and is within the LSCFN Traditional Territory. It occurs in the Boreal Cordillera Ecozone and Yukon-Plateau (Central) Ecoregion (YEWG 2004). The area is characterized by rolling mountains with boreal spruce forest in lower to mid-elevations, scrub birch and willow shrub in the subalpine and rock rubble, dwarf shrubs and herbs in alpine areas. The Site falls within the Victoria Creek Watershed, a tributary to the Nisling River located south of the Site.

In 2006, a Yukon government Order in Council (OIC) delineated a boundary around the Site, thereby defining the Site property. The OIC has a total area of 11 km^2 and includes all the existing mine infrastructure (e.g. Brown McDade pit, tailings pond, mill buildings, mine adits, bunkhouse, access roads, exploration trenches, and associated infrastructure; Figure 3.1). Central to the OIC is the Dome Creek valley, where mine infrastructure sits in the headwater basin, from where the creek flows east into Victoria Creek at the eastern edge of the OIC.

3.2 STUDY AREAS

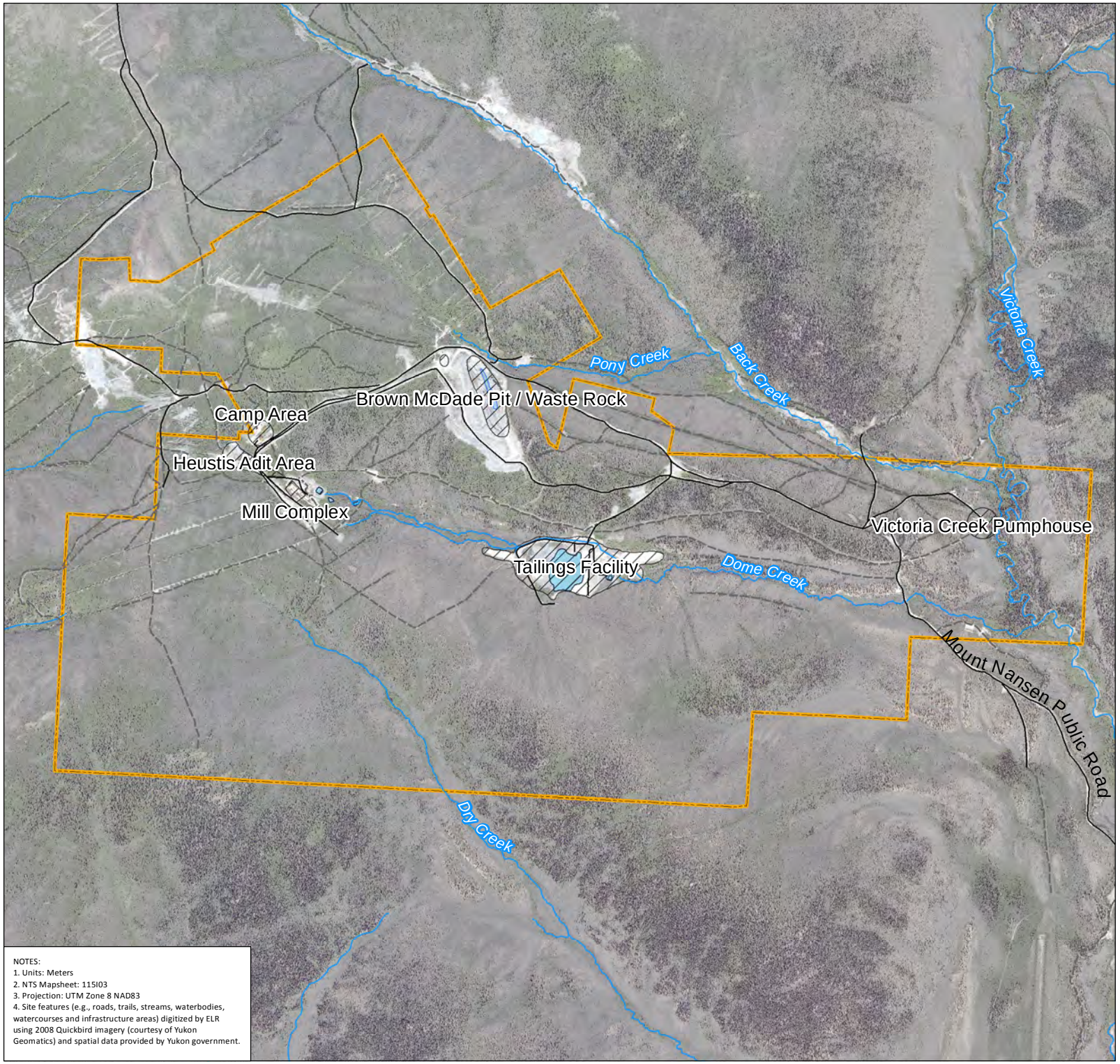
Two study areas were delineated around the Mount Nansen Site, in which the existing conditions study programs were based (Figure 3.2). These study areas are described below.

3.2.1 Local Study Area

A local study area (LSA) boundary was defined by ELR to meet spatial requirements for existing conditions investigations at a local level, where local effects may reach beyond the proposed remediation footprint. The LSA includes the OIC area, with the addition of a 1 km buffer, for a total area of 31 km^2 (Figure 3.2). The 1 km buffer takes into account potential local-scale effects of the proposed Project on wildlife and vegetation, including the distance within which local disturbance effects on wildlife (e.g. from noise or visual disturbance) could occur. This buffer extends from the OIC to include Pony Creek, as well as portions of Back and Victoria Creeks. The geographical scopes of most of the studies in this program were defined by this boundary.

3.2.2 Regional Study Area

A regional study area (RSA) was delineated by ELR to allow for adequate geographical coverage to capture the occurrence and distribution of wide-ranging ungulates and to assess effects at a broad geographical scale. Two RSA boundaries were used for studies, one extending 15 km from the OIC boundary (used for caribou; area of 950 km^2) and a second extending 20 km from the OIC boundary (used for moose; area of 1,573 km^2) (Figure 3.2). The RSA area encompasses Mount Nansen, Victoria Mountain and Mount McDade in the north and the Nisling River valley in the south.



NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.

Document Path: M:\Projects\16-249 MN CMP\PMap_Files\Baseline Report Updates\Terrestrial Baseline Report\2018 03 01 Figure 3.1 MNRP Infrastructure.mxd

Mount Nansen Site

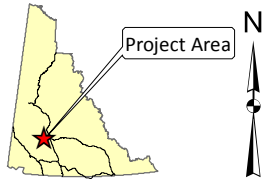
Terrestrial Existing Conditions

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Legend

Base Layers
- Roads
- Trail
- Watercourses
- Site Infrastructure Areas

Local Boundaries
- Order In Council Area
- Waterbodies



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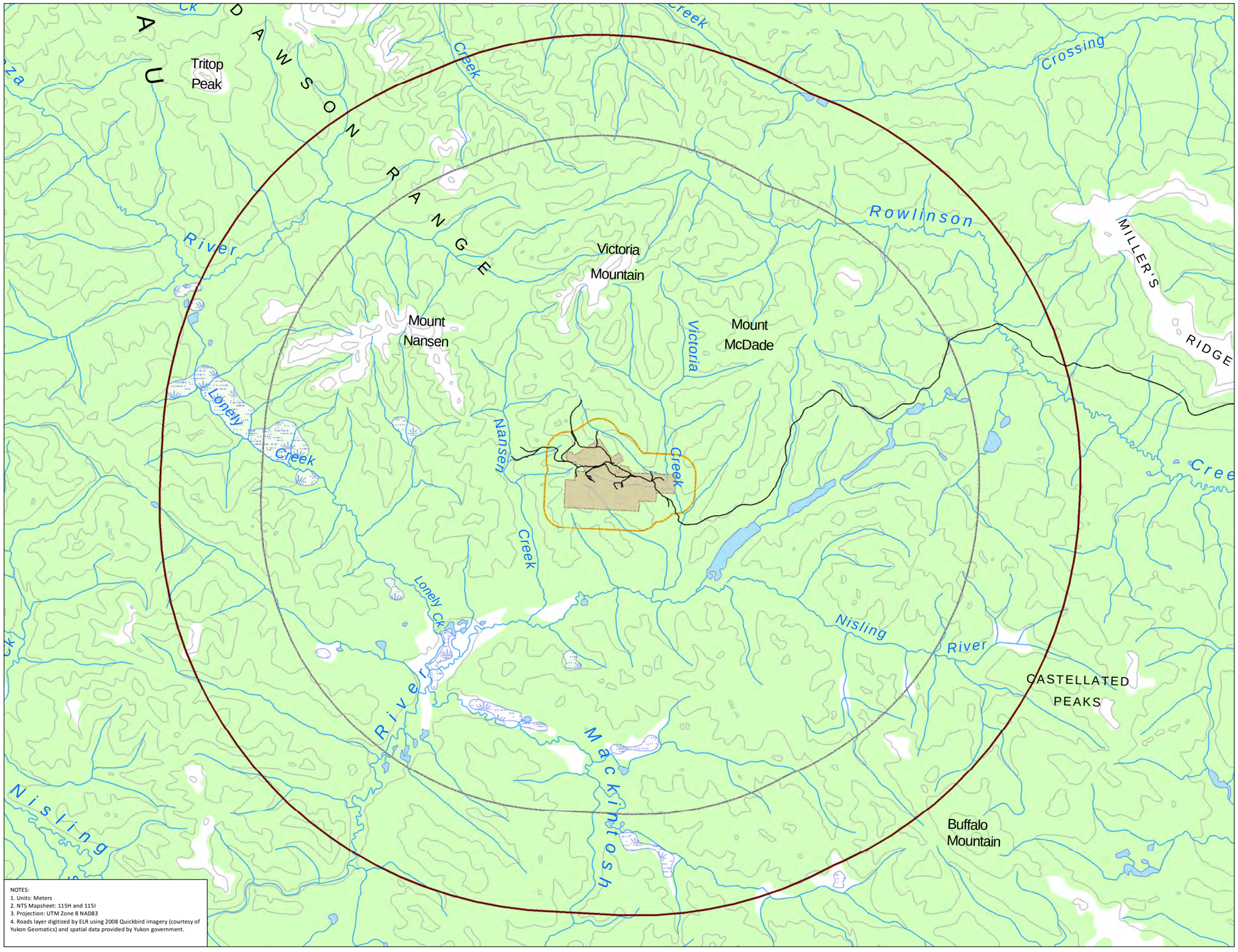
Meters

September 18, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 3.1

Mount Nansen Site Infrastructure



NOTES:
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2. NTS Mapsheet: 115H and 115I
3. Projection: UTM Zone 8 NAD83
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Document Path: M:\Projects\16-249 MN CMPPM\Mp_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 3.2 Wildlife Study Areas.mxd

Mount Nansen Site

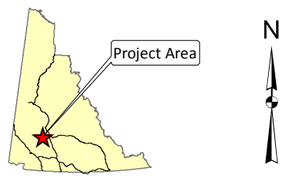
Terrestrial Existing Conditions

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Legend

Base Layers
- Roads

Local Boundaries
- Order in Council Area
- Wildlife Local Study Area
- Post-Calving Caribou Aerial Survey Area
- Late-Winter Moose Aerial Survey Area
- Watercourse
- Wetland
- Waterbody
- Topographic Contour (150 m Interval)
- Vegetation



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5 2.5 0 5

Kilometers

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FIGURE 3.2

Wildlife Study Areas

4. TERRESTRIAL EXISTING CONDITIONS STUDIES PROGRAM SCOPE

4.1 VEGETATION AND WILDLIFE RESOURCES

4.1.1 Vegetation Resources

The key vegetation resources included in the scope of the existing conditions program were potentially occurring rare plant species. Potentially occurring rare plant species were targeted in the existing conditions studies program to ensure any occurrences or key habitats could be managed or protected during the remediation planning and implementation process, as a measure to encourage long term ecosystem diversity at the local and regional level. Vegetation metals concentrations (and corresponding soil metal concentrations) were studied because past mining activities have been shown to have resulted in elevated metals in some areas. The study performed provided a current overview of vegetation tissue metals concentrations within the LSA.

4.1.2 Wildlife Resources

Several key wildlife resources were targeted during studies, for which information about the distribution and abundance is very limited. These species included moose (*Alces alces*) and mountain caribou (*Rangifer tarandus caribou*), carnivores (bears, canids and mustelids) and bird species (passerines and waterfowl).

Moose are known to use the Mount Nansen area, however relatively little data exists on moose abundance and distribution within the immediate Project area. A late winter Wildlife Key Area (WKA) for moose overlaps the wildlife LSA; a WKA is a geographical location in the Yukon that is used by a wildlife species for a critical life function and is defined by Environment Yukon (EY) based on survey and harvest data, local knowledge and available literature (EY 2014a). Two mountain caribou herds (Aishihik and Klaza) occur near the Site; mountain caribou are listed by COSEWIC as a species of special concern. A winter range WKA for the Klaza herd overlaps the western portion of the wildlife regional study area (RSA) and the southwest corner of the LSA. There are also small Klaza herd winter range WKAs northwest and southeast of the LSA. A Klaza herd fall rut WKA overlaps the northern and western portions of the RSA, and overlaps the northern boundary of the LSA. There are several small, scattered winter range WKAs for the Aishihik caribou herd in the southern RSA.

Large carnivores, particularly grizzly bears (*Ursus arctos horribilis*), are often termed keystone predators because they are critical to ecosystem diversity and integrity. Observations of bears and other carnivores have been made locally by maintenance staff over the years, although there was little data describing the abundance or distribution of this mammal group in the area during the snow-free season. Evidence of summer use of the Site area by furbearer species (including fisher (*Pekania pennanti*), marten (*Martes americana*) and wolverine (*Gulo gulo*) is also minimal due to the elusive nature of these species limiting the potential for detection without using targeted surveys and techniques; however, their occurrence has been shown by successful trap lines in the area and a winter track study conducted at the Site in 2012 (ELR 2012).

Bird species, particularly passerines, were surveyed because the Site area has high breeding habitat potential for these species which tend to have small enough home ranges to be directly affected by remediation activities. Also, several bird species of conservation concern have the potential to occur in the Site area.

4.2 FIELD STUDIES

In order to meet the study objectives (Section 2), ELR developed a terrestrial existing conditions study program targeting key vegetation and wildlife resources. The program consisted of the following study components that are detailed in Sections 5 to 8 of this report:

- Rare plant surveys
- Bird surveys
- A post-calving caribou survey
- A late winter aerial moose survey
- A wildlife pellet group survey
- A wildlife camera survey
- A vegetation tissue metals survey

In order to further describe vegetation and vegetation assemblages, an ecological land classification (ELC) study was completed. This classification is provided in a separate report (ELR, 2016).

5. RARE PLANT SURVEYS

ELR conducted rare plant surveys in 2012 and 2013 to collect information on vegetation identified as being of conservation concern in the LSA. Species included those identified by the Committee on the Status of Wildlife in Canada (COSEWIC) and the Yukon Conservation Data Centre (YCDC) site. The surveys targeted specific infrastructure areas within the LSA that were within or proximal to the proposed remediation footprint at the time of the study. Three rare plant species identified by the Canadian Wildlife Service that had recently been observed in mountainous terrain within the Mount Nansen area were of particular interest in the rare plant surveys (Sydney Cannings, pers. comm.): Yukon podistera (*Podistera yukonensis*); Ogilvie Mountain spring beauty (*Claytonia ogilviensis*); and Porsild's smelowskia (*Smelowskia porsildii*).

The rare plant surveys also assessed the occurrence of several other rare plant species or species of conservation concern that could potentially occur in the LSA (Table 5.1). Prior to the surveys, ELR requested a list of a rare plant species that could potentially occur in the LSA from the YCDC. The YCDC operates a data warehouse and is the primary authority for species of concern in the Yukon. Bruce Bennett, YCDC manager, provided ELR with a set of rare plant species information sheets as a field resource during the surveys. The sheets consisted of a species description and photos, habitat occurrence notes and conservation status (YCDC 2012).

5.1 METHODS

Rare plant surveys were conducted over a three day period from July 25-27, 2012 and a two day period from July 22-23, 2013 over an area of approximately 229 Ha (Figure 5.1). The survey targeted areas of vegetation most likely to be disturbed during remediation work, according to the most current Project description available at the time of the survey. Thus focal searches were conducted around mine infrastructure within the LSA. Microhabitats, ephemeral habitats, unusual landscape features and transition zones between habitats within these areas were the primary focus. Habitats included wet seepage areas, rocky outcrops and exploration trenches within the LSA. The 2013 survey effort targeted undeveloped areas adjacent to roads within the LSA that may be widened or otherwise upgraded to accommodate large vehicles and machinery during the remediation works.

The targeted rare plant surveys were conducted by searching areas of potential disturbance using a combination of random and patterned searches (Alberta Native Plant Council [ANPC] 2000). Both rare plant species and the assemblages or habitats that could support those species were targeted. Observed plant species were recorded and evaluated to determine if occurrences were rare or identified on the YCDC Vascular Plant Track List (YCDC 2012). Search efforts were tracked using a handheld GPS for future reference, and locations of any observations of interest were recorded. Specimens requiring positive identification were confirmed with the aid of a Yukon floristic key (Cody 2000); and one specimen was submitted to Bruce Bennett for identification confirmation.

5.2 RESULTS AND DISCUSSION

A total of 47 km was covered on foot by searching 19 infrastructure areas and areas previously disturbed during mine exploration, such as exploration trenches. Search area elevations ranged from 1,013 m to 1,366 m above sea level (asl) and habitat types surveyed ranged from moist valley bottoms and variable aspects on mid-elevation slopes to subalpine ridges densely covered with scrub birch and willow shrubs.

A total of 144 species were observed, including: five tree, 30 shrub, 72 wildflower, 21 graminoid, five horsetail and club moss, five moss and six lichen species. Plants were observed in a range of reproductive states and the majority had sufficient physical characteristics to enable positive identification. The field crew did not find any species currently identified as rare plants or species of concern by COSEWIC or the YCDC (Table 5.1, below). Very few areas within the LSA were characterized as habitats suitable for these three key rare plant species (i.e. alpine areas, rocky outcrops or talus slopes), although considerable time was spent searching potentially suitable habitats. A table summarizing all observed plant species is included in Appendix 1.

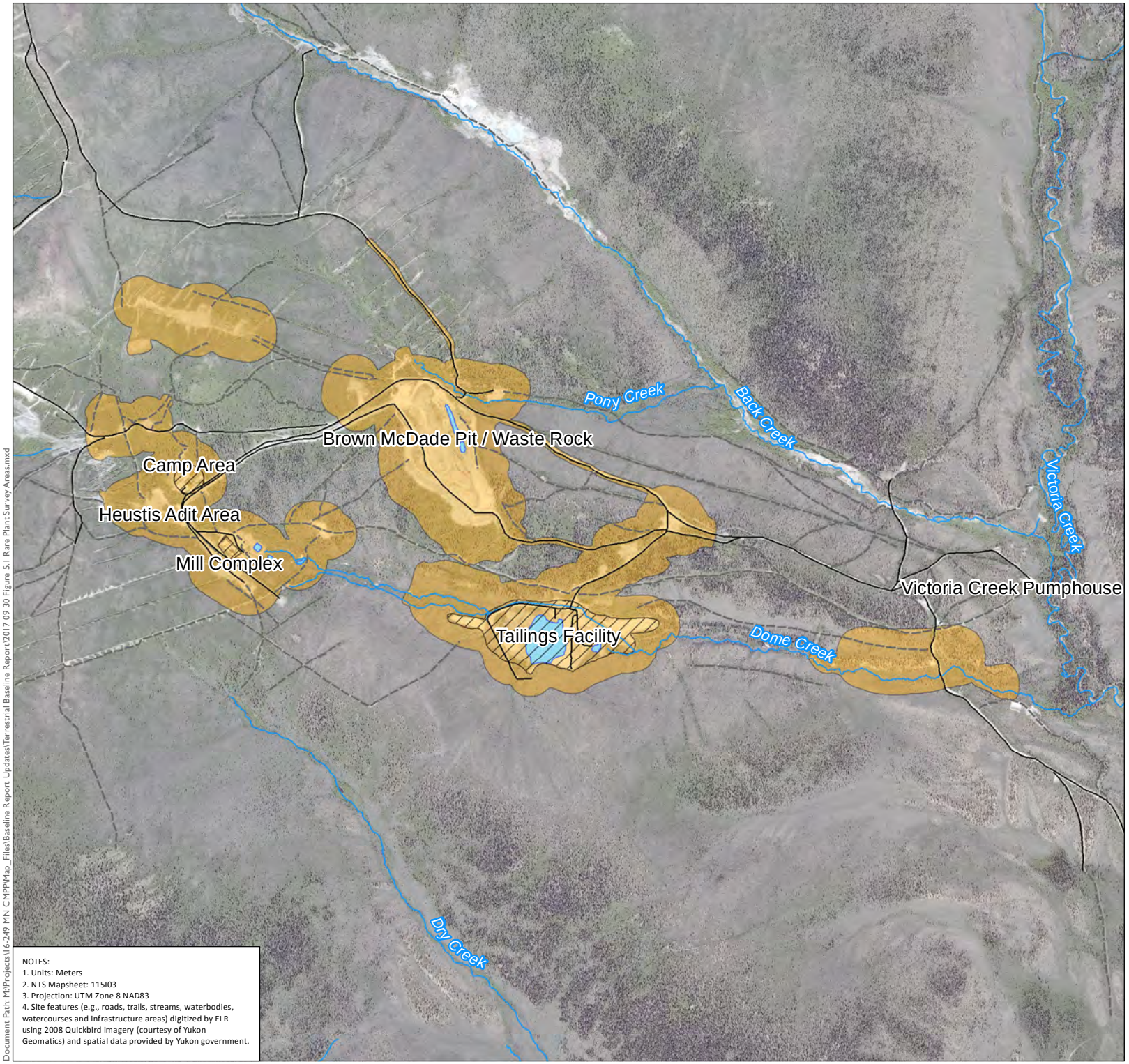
Table 5.1: List of Plant Species Potentially Occurring in the Mount Nansen Area as Described in the Rare Plant Information Sheets, Yukon Conservation Data Centre, Environment Yukon.

Common Name	Scientific Name	Habitat Requirements	Yukon Conservation Data Centre Ranking*	COSEWIC Status†
Aleutian cress	*Aphragmus eschscholtzianus*	Alpine tundra, heath and solifluction areas by rivulets.	S2S3	Candidate
Arctic thrift; Sea-pink	*Armeria maritime ssp. sibirica*	Wet areas on tundra (and coastal sand dunes).	S2	
Alaska moonwort	*Botrychium alaskense*	Gravel.	S2S3	
Alpine springbeauty	*Claytonia megarhiza*	Alpine tundra, base of scree slope near streams.	S1	
Ogilvie Mountain springbeauty	*Claytonia ogilviensis*	Alpine slopes and talus.	S2S3	Candidate
Scamman's springbeauty	*Claytonia scammaniana*	Alpine tundra, talus and scree slopes on serpentine rivers.	S3	
Arctic larkspur	*Delphinium brachycentrum*	Alpine meadows and valleys.	S1S3	
Star-flowered draba	*Draba stenopetala*	Alpine scree and turfy slopes.	S2	Candidate
Umbrella plant; Yellow buckwheat	*Eriogonum flavum var. aquilinum*	Sandy and gravelly slopes.	S1S2	Candidate
Bristle-like quillwort	*Isoetes echinospora*	Silty lake or pond margins; often submerged.	S1	
Spiked saxifrage	*Micranthes spicata*	Shady cool creek sides usually under birch and alder. Often associated with late season overflow ice.	S1S2	Threatened
Merten's locoweed	*Oxytropis mertensiana*	Moist alpine slopes and gravel bars.	S1S2	Candidate
MacBrides' phacelia	*Phacelia mollis*	Dry sandy or rocky slopes and turfy tundra.	S2S3	
Macoun's podistera	*Podistera macounii*	Dry alpine heath and stony slopes.	S2S3	
Yukon podistera	*Podistera yukonensis*	Talus slopes and cliff crevices.	S2	Candidate
Arctic primrose	*Primula eximia*	Wet meadows and stream banks.	S2S3	
Arctic glasswort	*Salicornia borealis*	Alkaline flats.	SNR	Candidate
Porsild's smelowskia	*Smelowskia porsildii*	Alpine ridges and scree slopes.	S1S2	
Matted starwort	*Stellaria dicranoides*	Calcareous scree slopes at high altitudes.	S1S2	Candidate
Twin-flowered violet	*Viola biflora ssp. biflora*	Alpine meadows.	S3	
Horned pondweed	*Zannichellia palustris*	Shallow water along edge of pond.	S1S3	

Notes

**S1 – Critically Imperiled; S2 – Imperiled; S3 – Vulnerable; SNR – Unranked (not yet assessed)*

†Threatened – A species likely to become endangered if nothing is done to reverse the factors; Candidate – under review for listing



NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.

Document Path: M:\Projects\16-249 MN CMPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 5.1 Rare Plant Survey Areas.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Client:

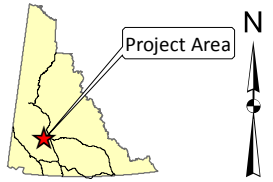
Ecological Logistics & Research Ltd.

Yukon Energy, Mines and Resources Assessment and Abandoned Mines

Legend

Base Layers

- Roads
- Trail
- Watercourses
- Site Infrastructure
- Waterbodies
- Rare Plant Survey Areas



Scale: 1:24,000

500 250 0 500

Meters

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 5.1

Rare Plant Survey Areas

6. BIRD STUDIES

Data describing the occurrence or distribution of bird species in the LSA was limited, and a 2011 bird existing conditions study conducted in and adjacent to the LSA did not include all riparian or infrastructure areas within the LSA (EDI 2012). The 2012 and 2013 bird studies were conducted to collect information on the presence and habitat use by passerines, waterfowl, and other bird species within key areas of the LSA. A list of bird species that may occur in the Project area was assembled, and has been included as Appendix 2.

Waterfowl (i.e. ducks, geese, and swans) and other riparian-oriented or water-bird species (i.e. raptors, passerines, and shorebirds) have the potential to inhabit wetlands, ponds, riparian areas, and infrastructure areas within the LSA. Several species of conservation concern (i.e. identified under the Yukon *Wildlife Act*, COSEWIC, or SARA) may occur in the LSA, including the olive-sided flycatcher (*Contopus cooperi*), rusty blackbird (*Euphagus carolinus*) and common nighthawk (*Chordeiles minor*) (YCDC 2012).

6.1 METHODS

Bird studies were based within the LSA, but focused primarily on infrastructure areas (i.e. areas of existing disturbance) and riparian areas of Dome Creek and Victoria Creek. Specific sampling locations were close to, or overlapped with, the site footprint, or were areas not sampled previously, including the 2011 existing conditions bird survey. The surveys were led by registered professional biologist experienced in conducting bird studies in the Yukon, with assistance from an environmental technician experienced in bird studies.

6.1.1 Point Counts

6.1.1.1 Pre-field Preparation

A 300-metre point count sampling grid was established using GIS software prior to conducting field work to ensure no bias in point selection. This 300-metre grid was an expansion of a similar grid established by EDI in 2011; this similar technique was used to help ensure the consistency and comparability of bird data collected between the two years (Figure 6.1). For the 2012 study, the grid was extrapolated to 41 selected point count locations that provided coverage of key focal areas along Dome Creek, Victoria Creek, Back Creek, as well as around the mill site and bunkhouse site.

6.1.1.2 Field Study

Field methods were based on those described in the British Columbia Resource Inventory Committee's *Inventory Methods for Forest and Grassland Songbirds* (MELP 1999a). The study employed fixed-radius point counts that were modified to be consistent with the methods used by EDI (2012). In the field, point counts were conducted starting at dawn, according to the established sampling grid. The target time window for point counts was from 03:00 to 09:30. Navigation between sample points on the grid was conducted using a handheld GPS and compass. After arriving at a plot and preparing equipment, the surveyors waited for five minutes to allow bird activity and singing to resume. Observations were recorded for 10 minutes, during which time all songs heard or sightings observed within a 100 meter radius were identified and recorded. Point count detections were classified as visual or auditory observations.

As site and environmental conditions can influence the success and the effectiveness of point counts, ELR collected detailed information on both site attributes and bird observations during the course of point counts. This information is standard for point count surveys and can provide a context to the data during

analysis and can also indicate how conditions or habitat types may influence the observations (e.g. abundance or diversity of birds). Further, the point count survey was completed prior to the completion of vegetation classification and mapping; therefore, site attribute data can inform the analyses of site usage for future assessments of Project-related effects.

Numerous bird observations were recorded during the course of the point count survey that could not be recorded as part of the point count data set. These data included observations from outside of the 100 m point count radii during point counts, before or after the 10-minute point count temporal window, or observations recorded while the crew was walking between plots. As these observations are still valuable for describing the species occurring within the LSA, they were recorded as incidental observations. These data are described as part of a larger set of incidental observations below.

6.1.2 Encounter Surveys

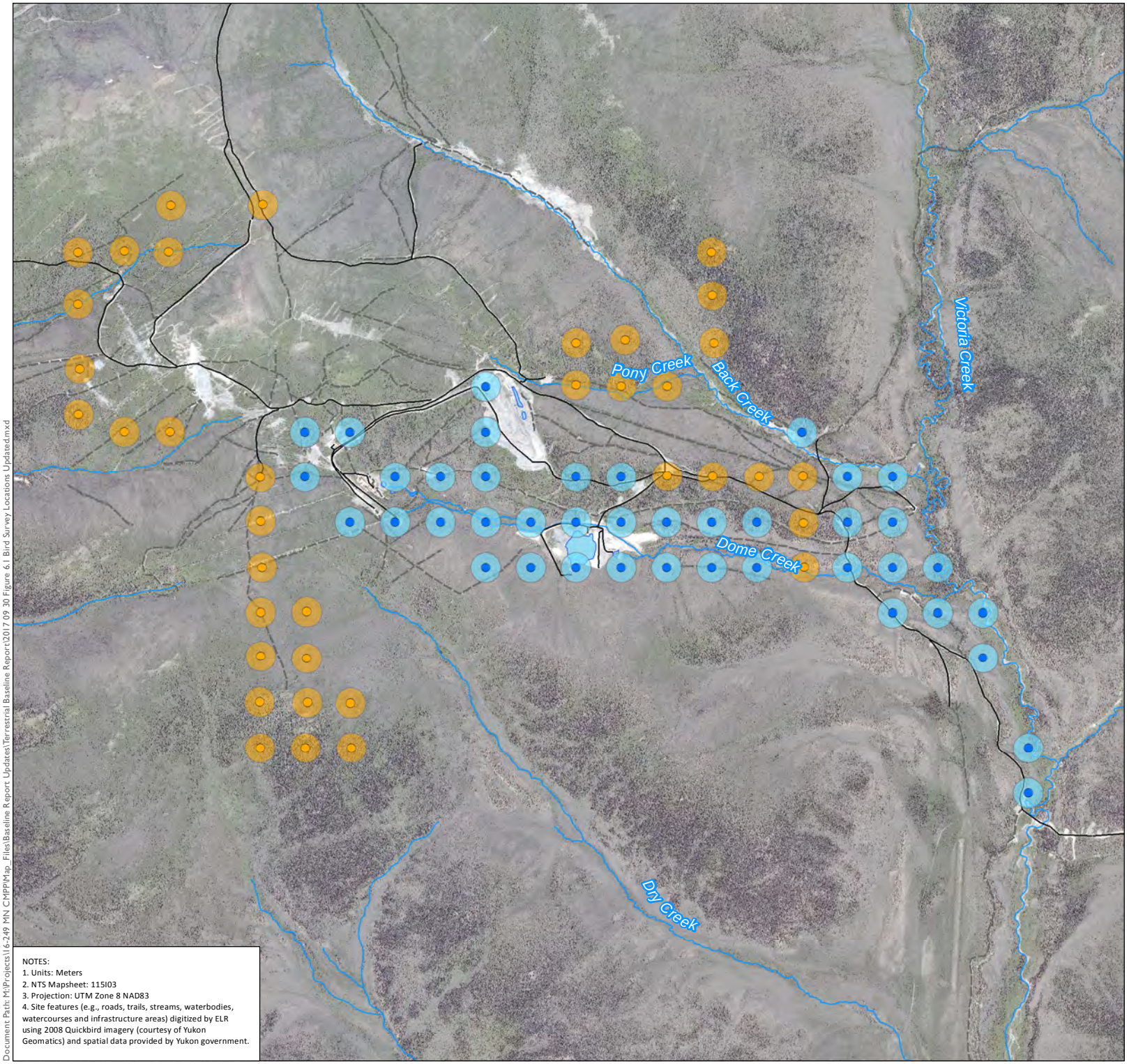
Encounter surveys were completed at targeted locations within the LSA with the goal of helping to describe the species present within the LSA, and whether there was evidence of any species of conservation concern present or breeding. The location of these surveys was determined during the planning stage of the field studies and were established near water (e.g. standing water, riparian areas, and wetlands), as well as primary site components (e.g. mill area, tailings pond, Brown McDade Pit).

As with point counts, encounter surveys were conducted in the early morning (i.e. 03:00 to 09:30). Surveyors worked in pairs, walking around the perimeter of the area of interest, and across numerous transects placed randomly within each area. Habitats of interest (e.g. pockets of habitat with greater bird activity) were targeted within the survey area for more detailed observation.

Bird species were identified by song/call (i.e. auditory) as well as visually using binoculars or a spotting scope as needed. Species, habitat uses and/or behaviors were noted for each observation. Search patterns were tracked using handheld GPS.

6.1.3 Incidental Observations

Incidental bird observations were recorded during the course of bird and other studies in the LSA, including during point count surveys (as described in Section 4.1.1 above), and during other site studies within the LSA. Incidentals were not observed during encounter surveys. Incidental observations were also recorded during the course of other studies on-site by ELR. These incidental observations do not provide quantitative data of bird abundance or diversity, but do add to the overall data describing the species present within the LSA and some habitat information for those species.



NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.

Document Path: M:\Projects\16-249 MN CMPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 6.1 Bird Survey Locations Updated.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Client:

Ecological Logistics & Research Ltd.

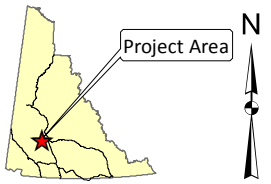
Yukon Energy, Mines and Resources
Assessment and Abandoned Mines

Legend

- 2011 Point Count Locations (EDI)
- 2012 Point Count Locations (ELR)
- 2011 Point Count Radius (100 m)
- 2012 Point Count Radius (100 m)

Base Layers

- Roads
- Trail
- Watercourses
- Waterbodies



Scale: 1:35,000

500 250 0 500
Meters

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 6.1

Bird Survey Locations

6.1.4 Data Analysis

6.1.4.1 Point Counts

Point count plot data were pooled across all point counts surveyed to evaluate the abundance and diversity of birds. Species richness and individual bird and species densities were calculated at the individual point level, then were estimated for the LSA level by pooling data from all points. Definitions and formulas used in the analysis of point count data area summarized in Table 6.1, below.

Table 6.1: Species Diversity and Abundance Measures Used to Analyze Point Count Data Collected During Existing Conditions Bird Surveys in June 2012 at the Mount Nansen Site.

Metric	Description	Formula
Bird abundance (# Ind/Plot)	Absolute count of birds per point count.	*= Number of Individuals per plot (a descriptive characterization only)*
Bird density (# Ind/Ha)	Number of individuals per hectare.	$= \frac{Number\ of\ Individuals}{Area\ (Ha)}$
Species richness	Absolute number of species, described at the point count or LSA level.	*= Number of distinct species in a described area.*
Species evenness (R)	Ratio of the number of species observed to the number of individuals observed.	$= \frac{Number\ Species}{Number\ of\ Individuals}$
Species density (# Spp/Ha)	Number of species per hectare calculated to provide a description of how many species an area supports.	$= \frac{Number\ of\ Species}{Area\ (Ha)}$

6.1.4.2 Encounter Surveys and Incidental Observations

Data collected during encounter surveys and incidentally during all bird studies were summarized by species observed and by numbers of observations (total number of birds). Encounter surveys were distinct from the point counts because they did not follow the GIS-developed grid. Due to the proximity or overlap of encounter survey areas with point count plots, repeat counting of some birds was possible. For this reason, encounter surveys were not intended to provide information on overall bird density or species density. Similarly, the incidental observations recorded in the LSA were summarized in terms of the species observed and frequency of observation.

6.2 RESULTS

6.2.1 Point Counts

The point count surveys were conducted during the four-day period of June 20-23, 2012. Weather conditions were excellent on all field days, with calm winds and no rain, providing high confidence on the survey results. Selected point counts were distributed primarily in the Dome Creek valley (in riparian areas and adjacent upland areas), in riparian areas of Back Creek near the confluence of Victoria Creek, and forested and shrubby riparian areas adjacent to Victoria Creek.

Forty one point counts were conducted, providing a total effective survey area of 128.74 hectares (ha), where each 100 m-radius plot area covered 3.14 ha. Thirty-five chosen locations fell within the OIC area, six fell outside of the OIC area but within the LSA, and a single point fell outside of the LSA area along Victoria Creek (this location was included to help characterize riparian conifer habitat in that area). The location of point count stations is shown in Figure 6.1.

6.2.1.1 Abundance and Density

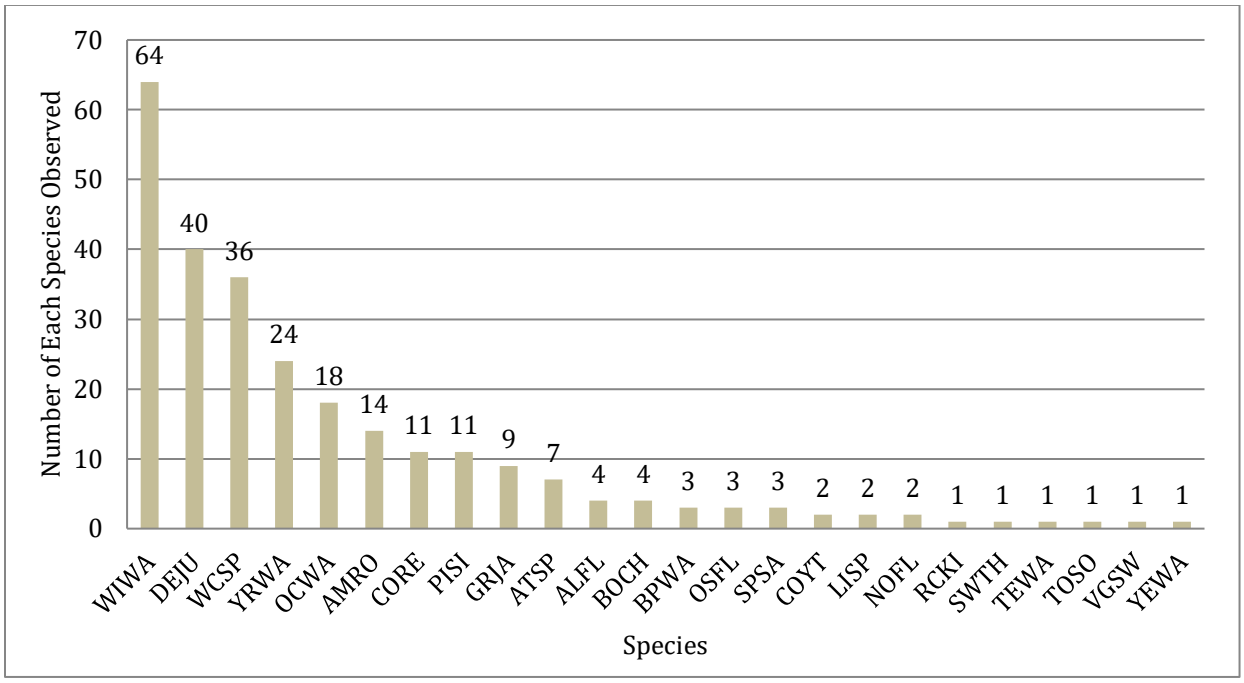
263 individual bird observations were recorded during the point count surveys (from within the 10-min survey period and within the 100 m-radius plot area), with an additional 87 observations made as incidentals (Table 6.2). The number of birds recorded in individual plots ranged from one to 12, with a mean value of 6.41 birds per plot. The calculated bird density for the total survey area was 2.04 birds/Ha (with results pooled across all points).

6.2.1.2 Species and Species Density

24 distinct species were detected during point counts, with an average species density of 4.19 species/plot (1.33 species/ha). The calculated species density for the total area surveyed was 0.19 species/Ha (with results pooled across all points; 24 species across 128.75 Ha). Species evenness ranged from 0.25 to 1.0 across plots, with an average 0.71 across all 41 points.

6.2.1.3 Community

The species most commonly detected during point counts (within plots) was Wilson's warbler (*Wilsonia pusilla;* 64 detections), followed by dark-eyed junco (*Junco hyemalis;* 40 detections), white-crowned sparrow (*Zonotrichia leucophrys;* 36 detections) and yellow-rumped warbler (*Dendroica coronata;* 24 detections). A summary of the species detected during point counts ranked according to observation frequency is shown below in Figure 6.2. Table 6.2, provides a complete summary list of bird observations from point counts.



Note: Species codes are described in Table 6.2

Figure 6.2: Number of Each Species Observed over all Point Count Stations.

Table 6.2: Summary of Bird Species Detections Recorded During 2012 and 2013 Existing Conditions Studies. Species are Listed in Descending Order According to the Total Number of Detections.

Common Name	Latin Name	Species Code	Survey Type			Total
			Point Counts	Encounter Survey	Incidental Observation	
Wilson's warbler	*Wilsonia pusilla*	WIWA	64	11	4	**79**
White-crowned sparrow	*Zonotrichia leucophrys*	WCSP	36	16	20	**72**
Dark-eyed junco	*Junco hyemalis*	DEJU	40	15	14	**69**
Cliff Swallow	*Petrochelidon pyrrhonota*	CLSW		40		**40**
Orange-crowned warbler	*Vermivora celata*	OCWA	18	10	6	**34**
American robin	*Turdus migratorius*	AMRO	14	6	11	**31**
Yellow-rumped warbler	*Dendroica coronata*	YRWA	24	2	3	**29**
Gray jay	*Perisoreus canadensis*	GRJA	9	3	7	**19**
Alder flycatcher	*Empidonax alnorum*	ALFL	4	3	5	**12**
Common redpoll	*Carduelis flammea*	CORE	11	1		**12**
Pine siskin	*Carduelis pinus*	PISI	11	1		**12**
American tree sparrow	*Spizella arborea*	ATSP	7	2	2	**11**
Spruce grouse	*Falcipennis canadensis*	SPGR			10	**10**
Lincoln's sparrow	*Melospiza lincolnii*	LISP	2	2	4	**8**
Spotted sandpiper	*Actitis macularia*	SPSA	3	3	2	**8**
Swainson's thrush	*Catharus ustulatus*	SWTH	1	2	4	**7**
Olive-sided flycatcher	*Contopus cooperi*	OSFL	3	1	2	**6**
Willow ptarmigan	*Lagopus lagopus*	WIPT			5	**5**
American kestrel	*Falco sparverius*	MAKE		2	3	**5**
Blackpoll warbler	*Dendroica striata*	BLWA	3		2	**5**
Boreal chickadee	*Poecile hudsonica*	BOCH	4		1	**5**
Say's phoebe	*Sayornis saya*	SAPH		2	2	**4**
Common yellowthroat	*Geothlypis trichas*	COYE	2	1	1	**4**
Townsend's solitaire	*Myadestes townsendi*	TOSO	1	1	2	**4**
Northern flicker	*Colaptes auratus*	NOFL	2		1	**3**
Common raven	*Corax corax*	CORA			1	**1**
Tundra Swan	*Cygnus columbianus*	TUSW			2	**2**
Golden eagle	*Aquila chrysaetos*	GOEA			3	**3**
Northern harrier	*Circus cyaneus*	NOHA			1	**1**
Red-tailed hawk	*Buteo jamaicensis*	RTHA			1	**1**
Black-billed magpie	*Pica hudsonia*	BBMA		1		**1**
Common nighthawk	*Chordeiles minor*	CONI		1		**1**
Ruby-crowned kinglet	*Regulus calendula*	RCKI	1			**1**
Tennessee warbler	*Vermivora peregrina*	TEWA	1			**1**
Upland sandpiper	*Bartramia longicauda*	UPSA			1	**1**
Violet-green swallow	*Tachycineta thalassina*	VGSW	1			**1**
Yellow warbler	*Dendroica petechia*	YEWA	1			**1**
	Total # Observations		**263**	**126**	**120**	**505**
	Total # Species		**24**	**22**	**27**	**37**

One species of conservation concern, the olive-sided flycatcher, was detected in three plots during the point counts (Figure 6.1). The olive-sided flycatcher is designated as threatened under Schedule 1 of SARA (discussed in Section 6.3.4. below).

Of the 87 incidental observations recorded during point count surveys, 17 species were observed, with the most common being the white-crowned sparrow and the dark-eyed junco. The Upland sandpiper (*Bartramia longicauda)* was the only species observed as an incidental that was not also detected as a within-plot point count observation. A list of all species observed is included in Table 6.3.

6.2.1.4 Comparison with 2011 Survey

Point count surveys conducted by EDI Environmental Dynamics Inc. at the Mount Nansen Site in 2011 (EDI 2012) focused primarily on higher elevation areas around the Site, with a small proportion of sites located at lower elevations or near the mine infrastructure (Figure 6.1). At that time, total of 37 point counts were conducted during which a total of 421 individual bird observations (319 within-plot and 102 incidental) were recorded. In total, 23 bird species were detected (17 from within plot and 6 incidental), compared with 25 in the current study (24 from within plot and 1 incidental). These values correspond to an overall bird density of 2.74 Ind/Ha (although densities were not reported in that report), compared to 2.04 in the current study. The olive-sided flycatcher was also observed during these surveys.

6.2.2 Encounter Surveys

Encounter surveys were conducted within target areas of the LSA on June 19 and 23, 2012, including the pit, tailings pond area, and mill buildings, as well as areas within the riparian zone of Dome Creek. Further encounter surveys were conducted at the tailings pond area of the LSA on August 27 and 29 and September 26, 2013.

A total of 22 species were observed in 128 individual bird observations during the encounter surveys, with relatively similar numbers of observations distributed across focal areas, but with the exception of the pit area where comparatively fewer observations were recorded (Figure 6.3 below).

In summary, 28 individual birds of 13 species were observed around the tailings pond, including the riparian vegetation surrounding the disturbed area. A total of 60 birds representing 10 species were observed around the mill area, including a colony of cliff swallows (*Petrochelidon pyrrhonota*). 16 birds (10 species) were observed in surveys around the bunkhouse, and 16 birds (6 species) were observed and in the Dome Creek valley between the tailings pond and the access road. Eight birds representing four species were observed in surveys around the Brown McDade Pit. A summary of all species observed during focal surveys is provided in Table 6.2.

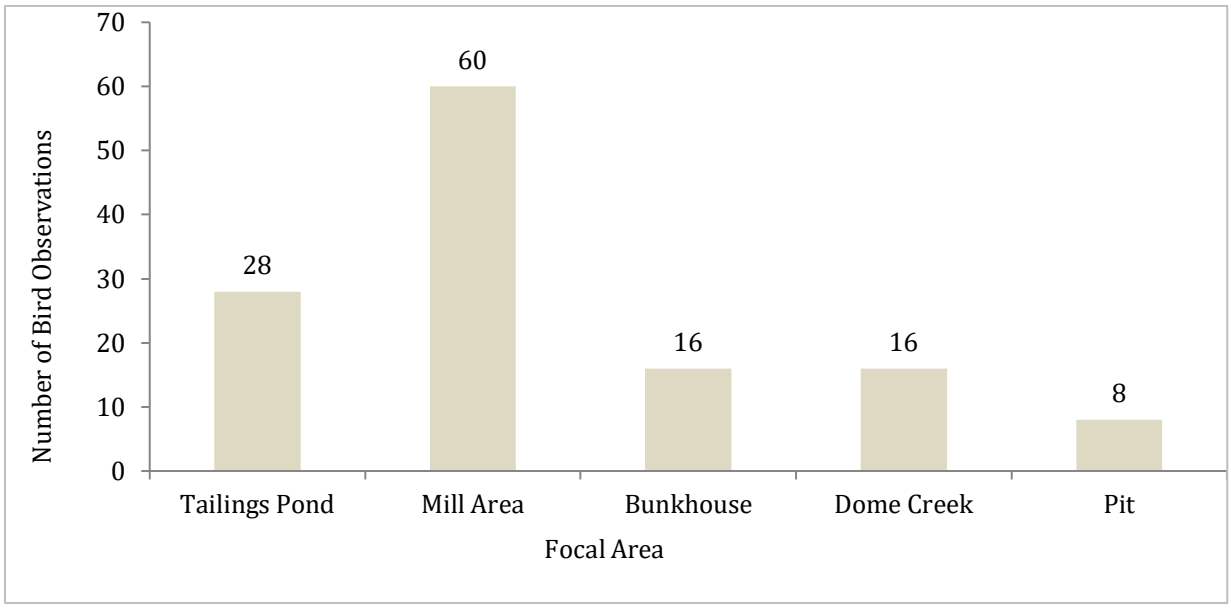
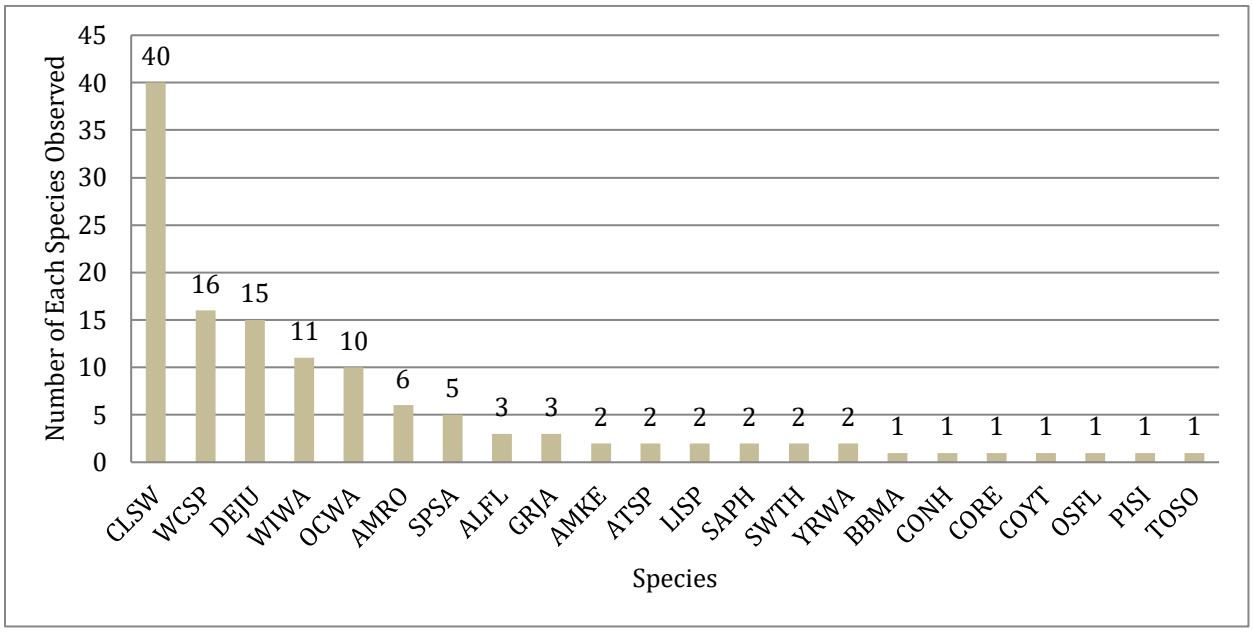


Figure 6.3: Distribution of Bird Observations among 2012 and 2013 Encounter Survey Areas.

Density figures could not be calculated for encounter surveys as this method of survey allows for potential re-counting of bird species from surrounding point counts and surrounding focal areas. Rather, encounter surveys are conducted to provide an indication of species present, and their relative abundance. Within each of the sites surveyed, it appeared species present were abundant and were observed nesting within the footprint areas.

Five species not recorded during point counts were recorded during the encounter surveys. These species were American kestrel (*Falco sparverius*), Say's phoebe (*Sayornis saya*), black-billed magpie (*Pica hudsonia*), cliff swallow and common nighthawk (*Chordeiles minor*).

Cliff swallows were the most numerous species observed during encounter surveys, but the 40 individuals were recorded as a single observation at the mill area. The next most frequently observed bird was the white-crowned sparrow (16 recorded observations) followed by the Dark-eyed junco (15 recorded observations). Wilson's warbler and orange crowned warbler were also commonly observed, having been recorded 11 and 10 times, respectively. Seventeen other species were recorded between one to six times each (Figure 6.4).

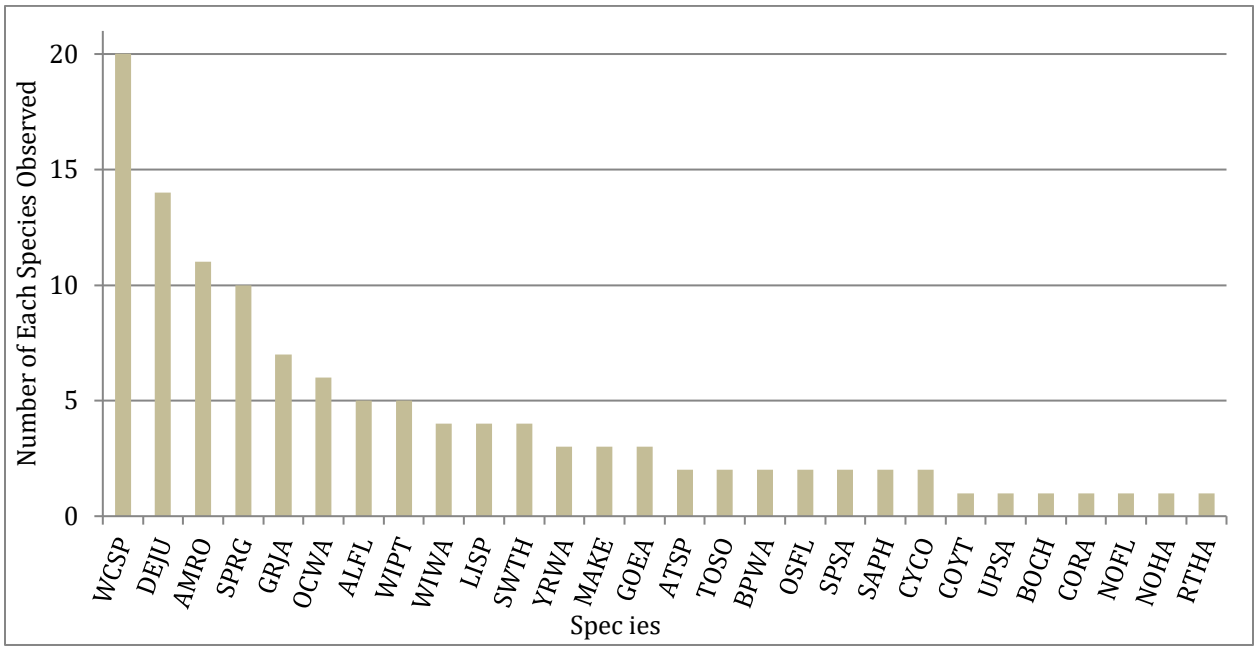


Note: Species codes are described in Table 6.2

Figure 6.4: Species and Numbers Observed During Encounter Surveys.

6.2.3 Incidental Sightings

ELR also recorded incidental bird detections while travelling between point count plots and encounter survey areas, as well as during other field studies on the Site. In total, 27 species were recorded in 120 incidental observations, including eight species that were not detected during either the point count or encounter surveys (Figure 6.5, Table 6.2). These eight species consisted of raptors, upland gamebirds, waterbirds, and a corvid, all species not typically observed during targeted breeding bird surveys.



Note: Species codes are described in Table 6.2

Figure 6.5: Frequency of Incidental Bird Species Observations.

Of all incidental observations, the white-crowned sparrow and the dark-eyed junco were the most frequently observed, having been observed 20 and 14 times, respectively. Targeted raptor surveys were not included in the 2012 bird studies as no raptor WKAs overlap with the project area and no project activities are anticipated to occur in close proximity to suitable raptor nesting habitat on Site. However, four raptor species were observed as incidentals in the LSA while conducting surveys (American kestrel, northern harrier, red-tailed hawk, and golden eagle). One golden eagle was observed within the LSA, and two were observed in the RSA near Victoria Mountain and Mount Nansen. Golden eagle observations were also made during the post-calving caribou survey and are discussed in more detail in Section 7.

6.2.4 Bird Species of Conservation Concern

Two bird species present in the LSA are listed by *SARA* as threatened species; the olive-sided flycatcher (COSEWIC 2007a) and the common nighthawk (COSEWIC 2007b). Olive-sided flycatchers were detected on six occasions during the point count surveys (including in-plot and as incidental observations) and during encounter surveys. All observations of the olive-sided flycatcher were located in the vicinity of the Dome Creek valley. One common nighthawk was observed once flying over a riparian/pond area during the tailings pond area encounter survey. The locations of these observations are illustrated in Figure 6.6.

NOTES:
1.Units: Meters
2.NTS Mapsheet: 115I03
3.Projection: UTM Zone 8 NAD83
4.Pleiades imagery captured June 24, 2013; Provided by YG-AAM.
5.Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.

Document Path: M:\Projects\16-249 MN CMPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 6.6 Bird SAR Locations.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Client:

Ecological Logistics & Research Ltd.

Yukon Energy, Mines and Resources Assessment and Abandoned Mines

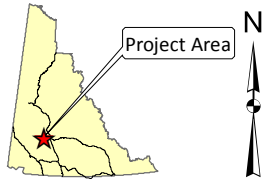
Legend

Species of Conservation Concern

- Common Nighthawk
- Olive-Sided Flycatcher

Base Layers

- Roads
- Trail
- Watercourses
- Site Infrastructure
- Waterbodies



Scale: 1:12,000

200 100 0 200

Meters

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 6.6

Observation Locations of

Bird Species of Conservation Concern

7. WILDLIFE STUDIES

7.1 2012 POST-CALVING CARIBOU SURVEY

The ranges of two woodland caribou herds (Northern Mountain population; *Rangifer tarandus caribou)* overlap with the RSA: the Klaza and Aishihik herds (EY, 2014a). The Nisling River (approximately 5 km south of the OIC) marks the approximate boundary between these two herds (Troy Hegel, EY, pers. comm.). The Klaza herd range extends from the Dawson Range Mountains south to the Nisling River and overlaps the Mount Nansen OIC and LSA. The Aishihik herd range extends from Kluane and Aishihik Lakes north to the Nisling River and overlaps the southern portion of the RSA. Mountain caribou are federally listed as a species of Special Concern by COSEWIC. Additionally, caribou are traditionally hunted for food and have a high local value. The purpose of the post-calving caribou survey was to collect information on the presence, relative abundance, and habitat use by mountain caribou during the sensitive period of rearing young with a focus on cow/calf pairs within the RSA. Other wide ranging mammal species observed during this study were noted as well.

7.1.1 Methods

A regional aerial survey was conducted to target post-calving habitat expected of caribou in late July. An encounter transect method (Resource Inventory Committee [RIC] 2002) was used, that employed a contour-based flight path around mountain blocks in upper subalpine and alpine elevations (i.e. 1,400 m to 1,800 m asl) in the northern part of the RSA. The southern portion of the RSA has gentler topography, limiting the application of a contour-based survey pattern. Accordingly, a linear transect method was employed in this portion of the study area, using east-west transects spaced approximately 2-km apart. The survey was conducted by two ELR biologists using a Robinson R44 helicopter, with a navigator/observer seated at the front left, and observer at the rear right. The survey was flown at a speed of 80 to 110 km/h, and ranging 80 to 120 m above ground level. All areas were searched visually for caribou as well as other large mammals (e.g. moose, bears). Observed caribou were counted, identified to species and classified to sex and age class (to the extent possible) using RIC (2002) classification standards. Observation locations and survey tracks were recorded using handheld GPS for the duration of the aerial survey.

7.1.2 Results and Discussion

The post-calving caribou aerial survey was conducted on July 27, 2012. Weather conditions were excellent (i.e. sunny with few clouds and no- to light-winds), providing good visibility during the survey. The total flight track length during the single-day survey was 760 km, providing good coverage of the 950 km^2 RSA (Figure 7.1).

In total, only two caribou were observed during the survey (Figure 7.1); the pair were observed on a remnant alpine snow patch, approximately 11 km north of the OIC area. Both animals were observed to have single tine antlers characteristic of both cows and young bulls, and were similar to each other in size and colour. Caribou are expected to be segregated in summer into cow/calf and bull groups in alpine and valley areas, respectively. Based on their location and size, the individuals were believed to be cows. Relative abundance for the observed caribou was calculated to be 0.0026 caribou/km.

Additional passes to confirm sex were not completed out of consideration of limiting harassment, as per conditions of the study Wildlife Research Permit (No. 100; attached as Appendix 3). It was unnecessary to pursue low-level flight classification given that the survey was intended to document caribou locations

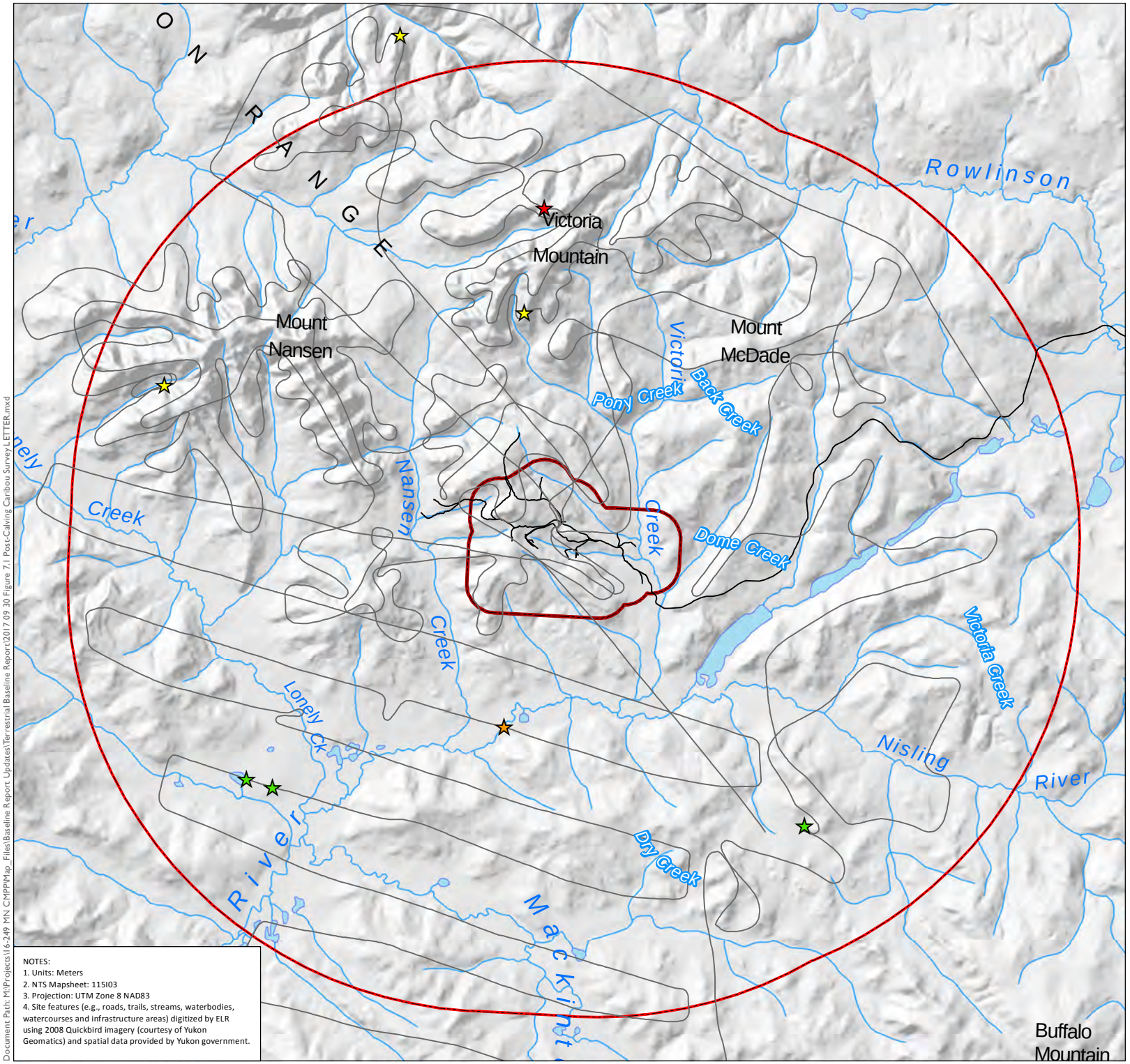
and numbers rather than group composition. Due to the low number of caribou observed, conducting common analyses such as mean group size that are used to describe caribou abundance was not possible.

Alpine areas that were the target of the survey are limited to primarily the northern and northwestern portions of the RSA, which is where the survey effort was most effective. Away from these areas, the ability to observed caribou is reduced (in subalpine or boreal habitats), therefore ELR focused on alpine and open (e.g. shrub) subalpine habitats for the survey in this part of the RSA. The southern portion of the RSA has more broad and low valleys, and the survey was adjusted to a transect-based survey in this area (as opposed to contour-based) to get the best possible coverage of the southern RSA.

Additional wildlife observations included golden eagles, moose, and swans, details of which are illustrated in Figure 7.1 and summarized in Table 7.1 below. The observations of golden eagles and swans were included as incidental bird observations in Section 6, above, but are included here for spatial reference.

Table 7.1: Summary of Wildlife Observations Recorded During a Post-Calving Caribou Aerial Survey in the Mount Nansen Area on July 27, 2012.

Species	Count & Classification	Habitat Notes	UTM Coordinates
Mountain Caribou	2 cows	Snow patch, north aspect	8N 388347 6892762
Moose	1 cow & 2 calves	Burn/wetland	8N 397482 6871098
Moose	1 bull	Wetland	8V 377901 6872726
Moose	1 bull	Wetland	8V 378808 6872431
Golden eagle	1 unknown age & sex	Subalpine slope, north aspect	8V 375022 6886553
Golden eagle	1 unknown age & sex	Alpine ridge, north aspect.	8V 383285 6898833
Golden eagle	1 unknown age & sex	Ridge, south aspect	8V 387643 6889092
Swan	1 pair	Wetland	8V 386937 6874545



NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.

Document Path: M:\Projects\16-249 MN CMP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 7.1 Post-Calving Caribou Survey LETTER.mxd

Mount Nansen
Site
Terrestrial Existing Conditions

Client:

Ecological Logistics & Research Ltd.

Yukon Energy, Mines and Resources
Assessment and Abandoned Mines

Legend

Caribou Survey Flight Track

Survey Observations

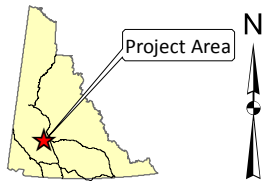
- Mountain Caribou
- Moose
- Golden Eagle
- Swans

Local Boundaries

- Wildlife Local Study Area
- Caribou Survey Study Area

Base Layers

- Roads
- Watercourse
- Waterbody



Scale: 1:185,000

3 1.5 0 3
Kilometers

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 7.1
Post-Calving Caribou Survey

7.2 2013 LATE-WINTER AERIAL MOOSE SURVEY

ELR conducted a late-winter moose survey in March 2013 to collect existing conditions data on the abundance and distribution of moose in winter habitats in the RSA. Late winter is the most limiting time of year for moose and two major factors, snow depth and food availability, affect moose habitat selection at this time of year (Dussault et. al, 2005). Additional factors (e.g. predation, parasites and disease) limit moose populations but are not major factors contributing to habitat use in late winter. Moose must travel to access forage habitats and their movements can be hampered by deep snow. The energetic cost of travel can outweigh the quality and abundance of browse (woody vegetation) that is available. By late winter, new shrub growth from the previous summer has been depleted from continued browsing and the remaining woody stems have low nutritional value (e.g. new shrub growth with high crude protein and digestibility; Spaeth et. al, 2002). Areas that provide abundant forage and relatively easy travel are valued as key winter range habitats and late winter survey data can help to identify these areas. Paired with relative abundance data this information can indicate trends in habitat use over time.

ELR used an intensive stratification method (Section 7.2.1.1) to conduct the late winter survey. Although the intensive stratification method is often used as a precursor step to conducting a census survey (O'Donoghue *et al.* 2009), it can also be used independently for late-winter surveys. Generally after the stratification step in a census, biologists randomly select a proportion of stratified blocks to include in the census survey. When used in late-winter surveys, the stratification results can be used in future census surveys and can also be used to help describe the distribution and abundance of areas with expected high and low moose density habitats. The objectives during the late-winter surveys are often prioritized to identify winter range habitats and to estimate relative moose numbers in an area rather than estimate total population size as a census would (O'Donoghue and Bellmore 2009, O'Donoghue and Bellmore 2011, O'Donoghue 2013). This is partially due to the difficulty differentiating between bulls, cows (that are lone or in a group) and yearlings in winter because bulls lack antlers at that time. Confirmation of these sex and age classes, therefore, requires prolonged aircraft disturbance (e.g. hovering and repeated circling) to moose. Accordingly, the priority of this survey was to estimate moose abundance and to describe winter habitats used by moose in the area.

7.2.1 Methods

7.2.1.1 Survey Methods

Pre-Survey

The intensive stratification method was selected to be consistent with and comparable to recent regional moose surveys conducted by EY (O'Donoghue and Bellmore 2009, O'Donoghue and Bellmore 2011). The method is composed of three main steps. The first step involved applying a survey grid of 16 km^2 square blocks to the RSA using GIS. For this survey, the RSA was delineated as a 20-km buffer area around the OIC. The same grid used by EY in recent surveys was applied to the RSA for consistency (those blocks falling within the RSA were selected). The second step of this method involved stratifying (i.e. classifying) each survey block into stratum (e.g. high or low) according to the expected moose density in that block. This method is based on observations of moose, moose tracks and habitat characteristics, as well as local knowledge, and can be performed as part of the aerial survey or as a desktop exercise (Kellie and Delong 2009). For this survey, block stratification results from recent EY moose surveys were adopted to ensure consistency for comparison among datasets.

Field Survey

The aerial survey was conducted by systematically flying over the study area in a grid pattern using a fixed-wing aircraft (Cessna 180) to count and classify moose. The survey grid was uploaded into field and aircraft GPS units to direct navigation during the survey flights. Two observers in the aircraft counted and classified moose. Adult moose observed with a calf were assumed to be a cow and calf pair and all other individuals were counted as unclassified moose. Further differentiation of moose beyond these sex and age classes was not pursued to limit disturbance to moose. The survey crew collected a waypoint for all observed moose and recorded a flight track using a GPS. Incidental observations of other species were also recorded using the same method.

Blocks were surveyed according to terrain and visibility to optimize search efficiency and to ensure all potential habitats were surveyed. A contour-based search pattern was necessary in mountainous terrain, while a linear transect approach was used in gentle terrain, making four passes through each block and spacing transects by approximately 800 m. The minimum target survey effort was 0.5 minutes per km^2 (eight minutes per block) to remain consistent with previous EY intensive stratification surveys.

Track locations were recorded for moose, caribou and other wildlife species where it could be determined that tracks had been created since the last snowfall event. It was difficult for the field crews to conclusively determine track age in many cases, as there had been no recent significant snowfall events, and winds had inconsistently covered many tracks (e.g. on plateaus and ridges, but not in valleys).

7.2.1.2 Data Analysis

Flight data for the aerial survey was compiled to describe survey characteristics, including: total survey effort (i.e. survey time and linear flight distance), total survey area and average search intensity (i.e. time spent searching for moose per block). The block strata that were defined *a priori* (i.e. defined using EY data prior to the survey) were used to calculate the number of high and low strata blocks within the RSA. This was spatially calculated by combining the RSA survey grid and EY block stratification results (O'Donoghue and Bellmore 2009, O'Donoghue and Bellmore 2011).

Moose count data was analyzed to calculate the total number of moose, and the total number of unclassified, cow and calf moose. A calf composition index (i.e. percent of calves in the observed population) and the number of moose observed in high and low strata blocks were also calculated.

Moose location data was spatially analyzed using GIS to describe moose distribution in the study area and to describe general ecological and habitat characteristics for moose locations. The data were qualitatively assessed using Yukon forest vegetation inventory data (Forest Management Branch [FMB], 2006) and satellite imagery interpretation techniques.

Incidental species observation data was summarized to describe the number of individuals observed, the distribution of observations in the study area, and the general ecology and habitat characteristics of each location.

7.2.2 Results and Discussion

7.2.2.1 Survey Summary

The late-winter moose survey was conducted over a four-day period from March 21 to 24, 2013. The survey crew, a lead biologist and one observer spent a total of 17.2 hours surveying the 1,760 km^2 study area (Figure 7.2). The crew flew a total distance of 2,654 km to ensure complete coverage of all survey blocks and resulted in an average search intensity of 0.58 min/km^2.

The weather conditions were excellent (i.e. sunny with light winds and few clouds) throughout the survey. Higher winds and flurries created unsafe flight conditions on March 23 and 24 while flying around high mountain blocks, and these high elevation areas were omitted for safety reasons. Aside from these omitted blocks, all areas within the grid were successfully surveyed.

7.2.2.2 Block Stratification

Pairing the EY block stratification results with the RSA survey grid produced a total of 33 high and 77 low abundance blocks. Most high abundance blocks (n = 32) were clumped in the southwestern corner of the survey area but one was identified in the northeast corner (Figure 7.3). One third of the LSA falls within low density areas, but the west and southern boundaries are overlapped by high abundance blocks.

The southern portion of the RSA includes the Nisling River and the Mackintosh Creek watersheds and is characterized by broad valleys, rolling topography and regenerating burns. A portion (n = 25) of the low abundance blocks occur in the west central and southeast corner of the RSA; these areas have similar characteristics, but have not been recently burned. The low density blocks in the northern portion of the RSA are characterized by steeper alpine-topped mountains of the southeastern extent of the Dawson Range, and include Victoria Mountain, Mount Nansen, and Mount McDade. These areas are characterized by shrubby subalpine creek draws that drain into mid-elevation creeks and rivers (e.g. Rowlinson Creek and Klaza River) in boreal coniferous forests below.

7.2.2.3 Moose Observations

During the four-day survey, 34 individual moose, including 24 unclassified moose, 5 cows and 5 calves, were observed (Table 7.2; Figure 7.3). Ten groups of moose were observed and group size ranged from two to four individuals. Pairs were the most common (n = 8) and included five cow-calf pairs. During the survey, 22 and 12 moose were observed in low strata and high strata blocks, respectively. A total of 301 moose tracks were observed throughout the survey area; 11 sets of tracks were observed within the LSA. The observed calf composition index was 14.7%. Based on the total time spent on survey in 2013, the crew observed an average of 0.03 moose per minute of survey time.

Table 7.2: Summary of Moose Observations Recorded During Late-Winter Aerial Survey in the Mount Nansen Area in March 2013.

Block Strata	Adult Cows	Calves	Unclassified Moose	Total Moose
High	1	1	10	12
Low	4	4	14	22
Total	5	5	24	34

Compared to the calf composition index calculated for the 2009 (5%; O'Donoghue and Bellmore 2009) and 2011 (4%; O'Donoghue and Bellmore 2011) moose aerial surveys, the RSA calf composition index (14.7%) indicates that calf survival to 10 months of age in 2013 was above average. This value was also

Mount Nansen Site

Terrestrial Existing Conditions

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Ecological Logistics & Research Ltd.

Legend

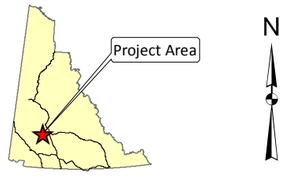
- Survey Grid

Local Boundaries

- Order in Council Area
- Wildlife Local Study Area
- Wildlife Regional Study Area

Base Layers

- Road
- Watercourse
- Wetland
- Waterbody



Scale: 1:220,000

5.5 2.75 0 5.5

Kilometers

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 7.2

Late-Winter Moose Survey Area Grid

NOTES:
1. Units: Meters
2. NTS Mapsheet: 115H and 115I
3. Projection: UTM Zone 8 NAD83
4. Roads layer digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.
5. National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:250,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.
6. Hillshade DEM from Geomatics Yukon.

Document Path: M:\Projects\16-249 MN CMPP\MXD\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 7.2 LWMS Study Area.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Legend

Moose Survey Observations

- Calf in Group
- Single Individual
- Group of 2
- Group of 3
- Group of 4
- Moose Tracks

Survey Grid Block Stratification

- Low Density
- HIgh Density

Base Layers

- Road
- Watercourse
- Wetland
- Waterbody

Project Area

N

Scale: 1:220,000

6 3 0 6

Kilometers

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 7.3

Late-Winter Moose Survey Observations

NOTES:
1. Units: Meters
2. NTS Mapsheet: 115H and 115I
3. Projection: UTM Zone 8 NAD83
4. Roads layer digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.
5. National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:250,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.
6. Hillshade DEM from Geomatics Yukon.

Document Path: M:\Projects\16-249 MN CMPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 7.3 LWMS Observations.mxd

higher than the 2013 Yukon average of 11% (O'Donoghue *et al.*, 2013). The average number of moose observed per minute of survey time was comparable to the rate calculated for the 2009 (0.04 moose/minute; O'Donoghue and Bellmore 2009) Nordenskiold area late-winter survey but was lower than the 2011 rate (0.07 moose/minute; O'Donoghue and Bellmore 2011) calculated for the Carmacks West area late-winter moose survey.

7.2.2.4 Moose Distribution

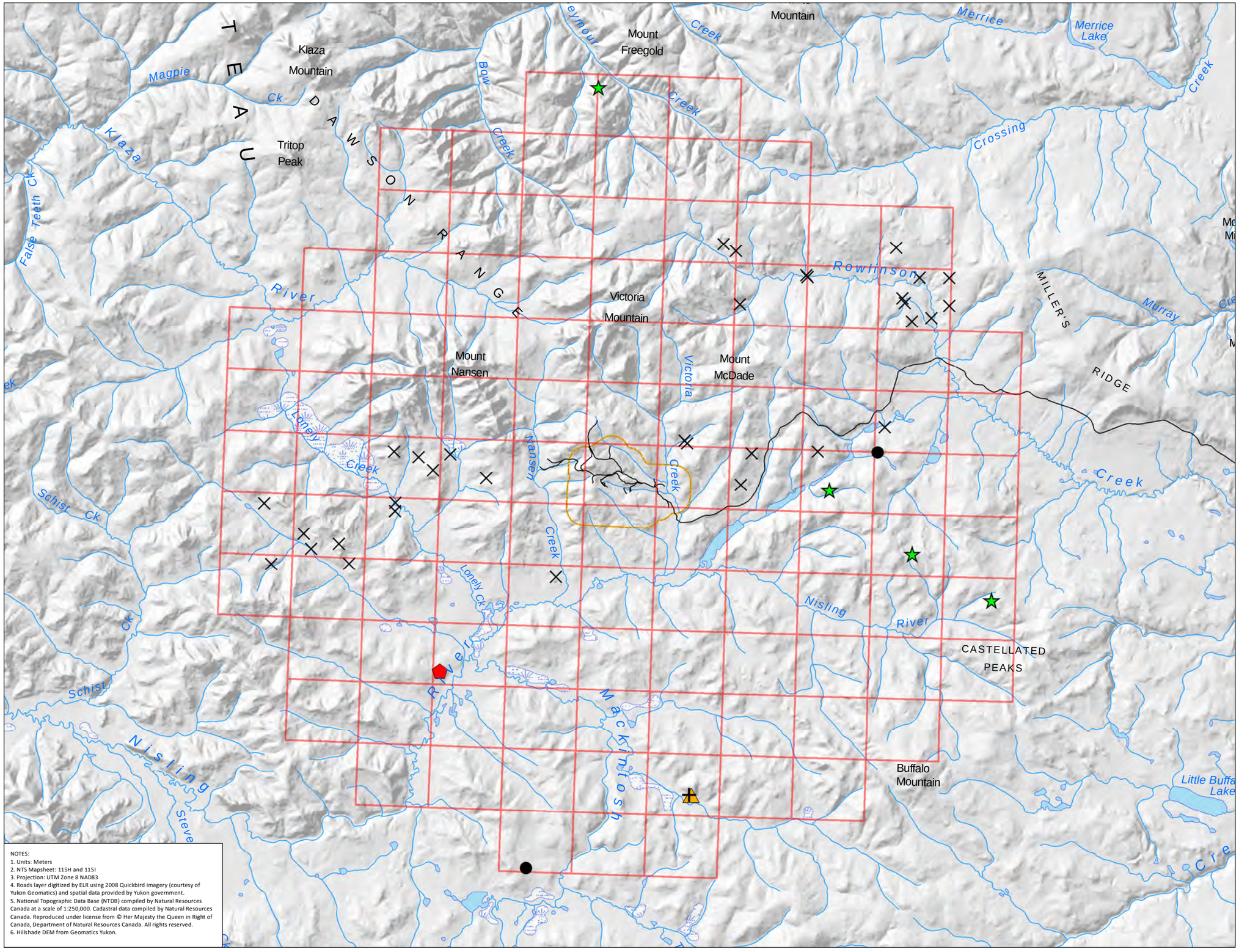
Moose tracks and individuals were observed throughout the aerial survey area in mid-elevation riparian, open conifer, and previously burned (and regenerating) habitats. Most were observed in one of two general habitat types: shrub habitats in close proximity to a major watercourse (n = 10) or in forested areas within 1.4 km of a watercourse tributary creek or creek draw (n = 24). Of the 34 moose observations, 24 occurred south of Mount Nansen and west of the Mount Nansen Site (i.e. southwestern portion of the survey area). Nine moose were scattered north of the Mount Nansen Site in riparian shrub habitat along Rowlinson Creek (n = 1) and in open spruce habitats upland of a major watercourse (Rowlinson Creek, n = 3; Klaza River, n = 2; and Victoria Creek, n = 4). Others were observed near unnamed creeks or tributary creek draws. Moose were observed at between 914 m and 1,310 m asl, occurring from the Nisling River valley up to the southern slopes of Mount Nansen, respectively. Nine of these individuals were observed in riparian shrub habitat along a major water body (i.e. Lonely Creek, Nansen Creek and Nisling River) while the remaining 15 individuals were observed in forested areas within 1.4 km of a tributary creek draw. Of the total number of moose observed, nine were observed in burned areas.

Four of the five cow and calf pairs were observed in a narrow elevation range (1150 to 1225 m asl) in similar habitats of open white spruce (*Picea glauca*) forest that occurred on slopes above a creek draw. One of these pairs was observed on a south-aspect slope above Back Creek in the LSA. The fifth cow and calf pair was observed in tall riparian shrub habitat near the confluence of Lonely Creek and the Nisling River.

Although the age of moose tracks could not be determined during the study, moose tracks still provided valuable data on moose habitat used within the RSA. Moose tracks were observed throughout the study area but most (95%) were observed in upland areas or in smaller drainages away from the Nisling River (the largest river valley in the area). Approximately 70% of moose tracks were observed within 500 m of a watercourse. Tracks were observed in riparian areas along creeks or in creek draws, which may indicate that snow depths in 2013 did not restrict moose movements or foraging abilities. Of the 11 sets of tracks observed in the LSA, three sets were observed along Victoria and Back Creeks and the remaining tracks were observed in open spruce forest and shrubby scrub birch (*Betula* spp.) habitats in both boreal high and subalpine zones.

7.2.2.5 Other Species Observations

There were 46 incidental observations of three species within the survey area, including bison, wolf and wolverine, although none occurred within the LSA (Figure 7.4). No caribou individuals were observed within the study area, however a cow and calf pair were observed approximately 350 m outside of the survey grid in a black spruce stand near Rowlinson Creek. Thirty-two sets of caribou tracks were observed in the study area, including two sets northeast of the LSA boundary near a Victoria Creek tributary. Caribou tracks were also observed in drainages west (e.g. Lonely Creek area) and east or northeast (e.g. Rowlinson Creek area) of the LSA. These tracks indicate that caribou use winter habitats near the LSA.



Document Path: M:\Projects\16-249 MN CMP\PrMap_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 7.4 LWMS Incidentals.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Ecological Logistics & Research Ltd.

Legend

Incidental Species Observations

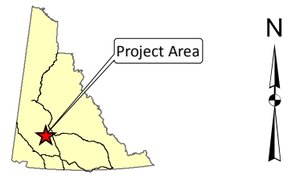
- Caribou - Tracks
- Bison - Group of 5
- Wolf - Group of 3
- Wolf - Tracks
- Wolf Kill Site
- Wolverine - Tracks

Local Boundaries

- Wildlife Local Study Area
- Survey Grid

Base Layers

- Road
- Watercourse
- Wetland
- Waterbody



Scale: 1:220,000

6 3 0 6

Kilometers

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 7.4

Late-Winter Moose Survey

Incidental Species Observations

A group of five bison were observed in the Nisling River area burn. Three wolves were observed dispersing from a kill site in the Macintosh Creek area burn within one kilometer of a wetland. Wolf tracks were observed on two other occasions in addition to this. Four sets of wolverine tracks were observed in the Mount Freegold area, above Seymour Creek (n = 1) and south of the Mount Nansen access road near the Castellated Peaks (n = 3) in upland or alpine areas.

7.2.3 Discussion

The relative abundance of moose observed during the study suggests that moose occur in low density relative to other Yukon moose management areas. The distribution of moose and moose tracks at the time of the survey suggests that moose used a range of late-winter habitats in the RSA, and that their distribution may not be a function of winter conditions. Moose distribution is generally associated with the availability of browse species (O'Donoghue 2005), but snow depth can be a significant influence. The location of moose observations during the 2013 survey suggests that snow depth in 2013 may not have limited moose access to browse. Two key findings support this suggestion:

- First, snow depth in 2013 was recorded as 58.7 cm at the Mount Nansen snow survey station in early April (EY 2013). Although reported as higher than normal, this depth did not exceed the snow depth thresholds of 65 cm (Thompson and Vukelich 1981 in Ungulate Range Technical Advisory Team [URTAT] 2004) and 70 cm (Simpson *et al.* 1988 in URTAT 2004; EY 2014a) that are reported to limit cow-calf and adult moose movements, respectively.

- Second, 70% of moose observations occurred in areas away from the major watercourse (Nisling River) and river valley in the study area. Lower elevations often accumulate less snow, and moose tend to concentrate in these areas during winters with heavy snow fall to take refuge from the deep snow at higher elevations that restricts their movements and their ability to access browse (O'Donoghue 2005). During the survey in 2013, moose were found in subalpine areas, particularly creek draws, suggesting that snowfall was not a factor restricting movements to access forage habitats. These habitats also provide thermal and security cover for moose, and may be particularly important for the cows with calves that were observed in those habitats.

Environment Yukon recently identified the Victoria and Nansen Creek drainages as part of a late-winter range WKA for moose (EY 2014b). The WKA encompasses the LSA and extends south into the Nisling River valley, including areas that burned in forest fires in 1996 and 2009. During the survey, 47% of all moose were observed within these WKAs.

Winter range areas for moose are identified for use as critical habitats in years of significantly high snowfall (e.g. greater than 70 cm; EY 2014a). Forage abundance is often high in riparian areas and also in burned areas several years post-fire. Moose are attracted to the regenerating shrub layer particularly in winter months because mature shrubs can grow to heights that exceed snowpack depth (Maier *et al.* 2005) and can be expected to aggregate in these areas in severe winters. Although snow depths did not exceed this threshold, the moose observations in these areas suggest that they still provide important late-winter forage habitat.

7.3 WILDLIFE FAECAL PELLET GROUP SURVEY

Faecal pellet group surveys can be used to study relative abundance and distribution of ungulates (RIC 1998), and can provide information on the relative habitat use of other wildlife species. The advantage of pellet surveys over point-in-time surveys such as winter tracking and aerial surveys is they provide an indication of habitat use over time rather than just a snapshot. A pellet survey was included in the existing conditions program because of limited information describing the general distribution or abundance of ungulates and other wildlife species in the Project area. Thus, the purpose of the pellet group survey was to collect information on the presence, relative habitat use, and species diversity of ungulates and other wildlife species within the LSA.

7.3.1 Methods

Faecal pellet group counts were conducted along a series of transects distributed across habitats and elevations found in the LSA. Each transect consisted of two parallel 300 m lines spaced 50 m apart, with plots located at 50 m intervals along the transect (a total of 14 per transect). At each plot point, a plot centre was established randomly and recorded using a handheld GPS, then a search for pellets and sign was conducted within a 10 m² area (i.e. 1.78 m radius from the established plot centre). All new wildlife faecal pellet groups and other sign were identified and recorded, as were old pellet groups. Pellets were removed from plot areas to avoid recounting in subsequent surveys, and tracks or other signs were flagged to avoid recounting. Time, weather and characteristic habitat features were recorded for each plot, and a digital photograph was taken to document the plot characteristics. Incidental wildlife observations were also recorded while travelling the transect line between plots.

During the survey, a single ungulate or grouse pellet group was defined as a minimum of five pellets, within a pellet's-length of one another, where more than half of the pellets in the group had to be within the sample plot to be counted. Hare pellets and carnivore scats were counted individually. Shiny and not weathered pellets were identified as being new (i.e. having been deposited since the last fall) while dry and weathered pellets were identified as being old (i.e. deposited prior to last fall).

7.3.1.1 Data Analysis

Faecal pellet group data from plots were pooled for each transect then converted from absolute counts to densities (# groups/Ha). Densities for both transects and for species across transects were calculated based on new pellets only. Pellet data can provide a general indication of habitat use by detected species. Thus, a relative habitat use ranking among species was determined using pellet densities within an area.

Densities were also calculated for old pellets, but were not compared to new pellet densities as these figures likely represent an overestimate of recent wildlife use of habitat (i.e. multiple seasons of accumulation). However, old pellets provide an indicator of wildlife species present in the area, but not captured in the new pellet data. Incidental data was reviewed and summarized according to species detected.

7.3.2 Results and Discussion

7.3.2.1 Faecal pellet group plots

Faecal pellet group surveys were conducted by an ELR biologist and environmental technician during the periods of June 18 to 23, June 25 to 27, and July 5 to 6. During this period, 280 individual 10 m^2 plots were sampled across 20 transects (Figure 7.5), totaling 2,800 m^2 or 0.28 Ha of area sampled. Transects were concentrated in the northern OIC and LSA areas (i.e. nearest to mine infrastructure). The focus of the surveys was on assessing wildlife presence and abundance in the vicinity of the Site.

Overview

Across 20 transects, faecal pellet groups were observed from five mammal and two bird species (Table 7.3). The mean overall pellet density was 188 groups/ha, with snowshoe hare having the highest density (854 groups/ha) compared to the other species. Relative habitat use among species is ranked according to pellet densities among transects and is shown in Figure 7.5.

Ungulates

Both moose and caribou were detected during the pellet survey, however only moose were detected with new pellets and had the lowest density among species (four groups/ha); the moose old pellet density was higher (71 groups/Ha). The transect with the most (old) pellet groups was located along Back Creek (starting in the riparian area and working uphill) and the second most abundant transect was located in the riparian area of upper Dome Creek extended into the adjacent open White spruce/shrub hillside. Only old caribou pellets were found, with a density of seven groups/Ha; these were also found in the Dome Creek riparian area.

Upland Game Birds

New ptarmigan and grouse pellet groups were observed in relatively similar densities of 54 and 29 groups/ha, respectively, and were found throughout the survey area.

Carnivores

Coyote was the only carnivore species detected in the pellet plots, and was detected on two occasions with old pellets resulting in a density of seven groups/Ha in the woods between the old power line and Dome Creek. The low density in these surveys is not unexpected, as pellet surveys are not designed to detect carnivore species. More often, canid species often use game trails and human transportation corridors (e.g. roads) for travelling, as illustrated in the incidental data.

7.3.2.2 Incidentals

A total of 12 mammalian species and three bird species were recorded as incidentals (112 observations) during the pellet group surveys (Table 7.3). These observations were located either outside of the 10 m^2 plot or while traveling between plots, and included those identified only to genus or to species group (e.g. canid, bear, rodent) due to insufficient sign or characteristics to enable identification to species with certainty. Incidental observations included scats, burrows, girdled spruce trees (e.g. porcupine), skulls or skeletons, middens, tracks and auditory or visual observations.

Incidental observations often are beneficial as they provide an indication of species occurring in the area that would not otherwise be detected during the pellet group surveys. In this case, recording incidental

observations at the Site proved to be useful because six mammalian and one bird species were detected in addition to those detected in the pellet plots. As well, a larger effective sampling area is covered by collecting incidental data, thereby increasing greater diversity of sampled habitats. Areas not typically targeted for pellet surveys include roads and cleared or disturbed areas. These locations were particularly important for detecting carnivore species. Canid (which includes coyote, wolf and fox) signs were often found along old and/or existing roads at the Site. Bison signs were also found on older roads. Bear signs were not usually found on roads, but were scattered throughout the study area and were often located just outside plots.

Table 7.3: Summary of Wildlife Species Observed Incidentally and During Pellet Group Surveys Conducted at the Mount Nansen Site in June and July 2012.

Group	Common Name	Scientific Name	Detected in Plot	Incidental
Upland game birds	Spruce grouse	*Dendragapus canadensis*	X	X
	Willow ptarmigan	*Lagopus lagopus*	X	X
Raptors	Owl sp.	*Unknown genus or species*		X
Rodents	Arctic ground squirrel	*Spermophilus parryii*	X	
	Red squirrel	*Tamiasciurus hudsonicus*		X
	Porcupine	*Erethizon dorsatum*		X
Lagomorphs	Snowshoe hare	*Lepus americanus*	X	X
Mustelids	Marten	*Martes Americana*		X
Ursids	Black bear	*Ursus americanus*		X
	Bear sp.	*Ursus sp.*		*
Canids	Red fox	*Vulpes vulpes*		X
	Coyote	*Canis latrans*	X	X
	Wolf	*Canis lupus*		X
Ungulates	Moose	*Alces alces*	X	X
	Northern mountain caribou	*Rangifer tarandus caribou*	X	X
	Bison	*Bos bison athabascae*		X

**Note: The only sign that enabled bear identification to species was a track of a black bear. It was not possible to identify bear species with certainty using scat or other signs alone.*

Pony Creek

Back Creek

Dome Creek

Victoria Creek

NOTES:
1. Units: Meters
2. NTS Mapsheet: 115H and 115I
3. Projection: UTM Zone 8 NAD83
4. Site features (e.g., roads, trails, streams, waterbodies) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.
5. Pleiades imagery captured June 24, 2013; Provided by YG - AAM.

Document Path: M:\Projects\16-249 MN CMPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 7.5 Pellet Survey.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Client:

Ecological Logistics & Research Ltd.

Yukon Energy, Mines and Resources
Assessment and Abandoned Mines

Legend

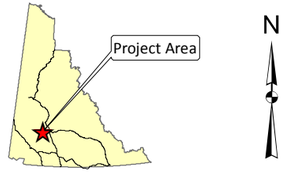
- Moose Pellet Locations
- Caribou Pellet Locations
- Bison Scat and Track Locations
- Pellet Group Transects

Local Boundaries

- Wildlife Local Study Area

Base Layers

- Road
- Trail
- Watercourses
- Waterbodies



Scale: 1:16,000

0.5 0.25 0 0.5

Kilometers

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 7.5

Faecal Pellet Survey

Incidental Species Observations

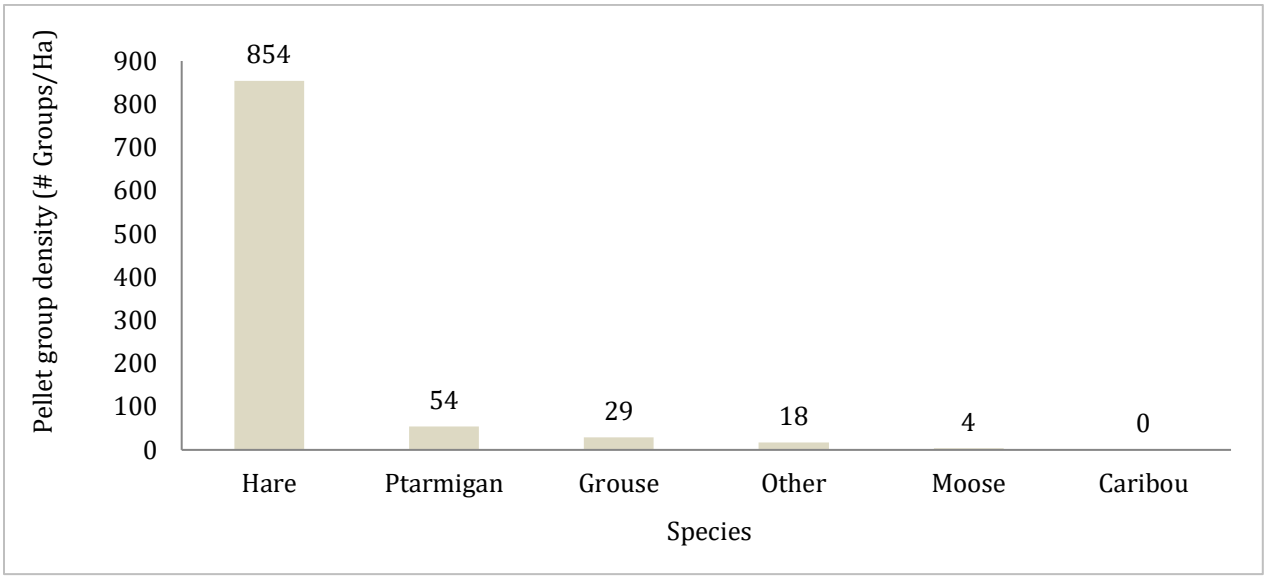


Figure 7.6: Density of New Faecal Pellet Groups (and Relative Habitat Use Ranking) Detected during Pellet Group Surveys Conducted in June and July 2012 at the Mount Nansen Site (Grouped According to Species).

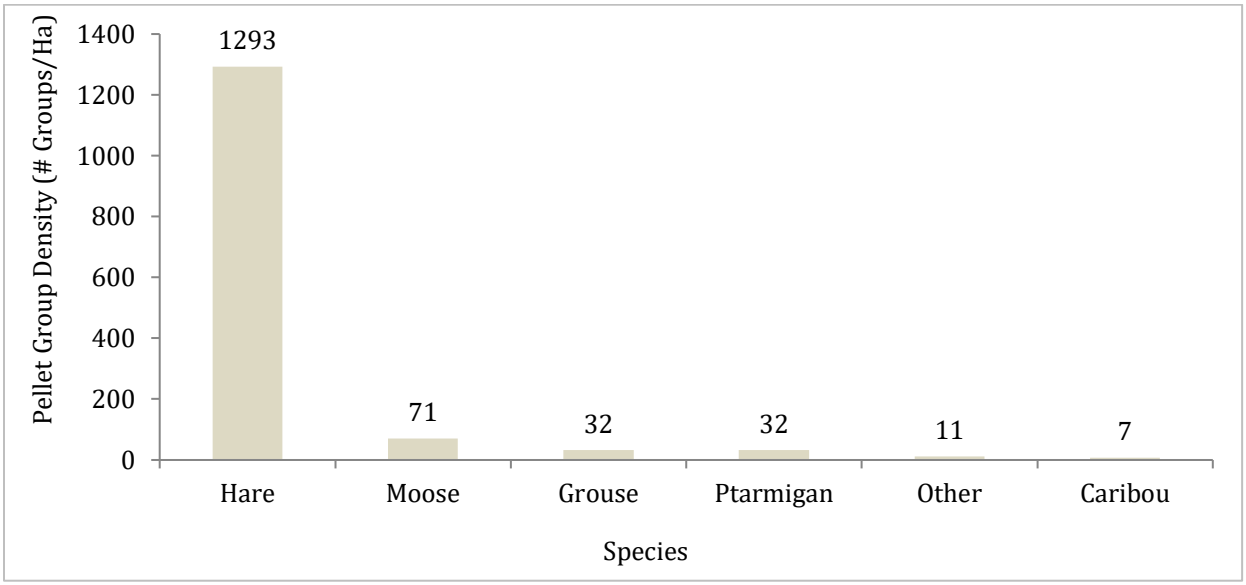


Figure 7.7: Density of Old Faecal Pellet Groups Detected during Pellet Group Surveys Conducted in June and July 2012 at the Mount Nansen Site (Grouped According to Species).

7.4 REMOTE CAMERA STUDY

Remotely triggered cameras provide a non-invasive and relatively inexpensive method for detecting wildlife species, particularly those with large home ranges or that are migratory and difficult to observe in short time frames. ELR conducted a remote camera study at the Mount Nansen Site to describe the presence and relative abundance of large wildlife species that use the area. Target species included ungulate, bear and furbearer (a species whose fur is valued commercially, including mustelids, canids and felids) species. The study was conducted over a 24-month period to capture the seasonal variation of wildlife use in the area. In addition to contributing to existing conditions knowledge of wildlife in the LSA, the remote camera data will help to assess potential Project effects on wildlife and help to develop reclamation strategies as part of the remediation works.

7.4.1 Methods

ELR used Reconyx HC600 Hyperfire™ motion sensing cameras that use a passive infrared sensor (PIR) to trigger the camera shutter by sensing the heat differential between a mammal and the ambient air temperature (Rovero *et al.* 2013). The PIR sensor can detect motion within a zone that extends 30.5 m from the camera body and 40° laterally across the camera frame of view (Reconyx 2012). Reconyx cameras are rugged, can be camouflaged, can produce quality pictures day or night, and require minimal maintenance. They also have a very fast trigger speed (0.2 seconds) which helps to capture images of passing wildlife in the absence of bait. Although baiting camera stations is a common technique to attract wildlife (Kelly and Holub 2008), the presence of bait may habituate wildlife to camera stations and create wildlife-human conflicts. Accordingly, ELR used unbaited stations to ensure wildlife and human safety and to ensure the resulting data represented unbiased and unmodified wildlife behaviour (Featherstone *et al.* 2013).

7.4.1.1 Site Selection

Prior to field deployment, ELR identified candidate camera locations within the LSA using satellite imagery of the LSA. Candidate areas were located in proximity to the footprint area and related Project activities and included potential movement corridors used by wildlife. These corridors were defined as having natural (e.g. ridges, creek valleys) or linear (e.g. road, trail or exploration trench) features that helped to concentrate or funnel wildlife movements through a specific area and were therefore anticipated to receive wildlife traffic. ELR refined the selected camera sites in the field according to local indicators of wildlife use, including game trails, scats or tracks.

7.4.1.2 Camera Deployment and Maintenance

At each camera site, ELR selected a tree on which to mount the camera that would optimize the field of view and distance from the trigger zone (e.g. game trail, meadow opening). Where required, branches and vegetation were trimmed to reduce the chance of false triggering. Cameras were secured by using a length of steel aircraft cable wrapped around the tree and secured with a clamp. All cameras were equipped with 12 AA lithium batteries and a 32 GB SD memory card. The cameras were programmed, according to manufacturers' specifications best suited for trail monitoring, to take three consecutive photos (one image/second), with no 'quiet' period in between trigger events. Once programmed, the field of view and trigger zone were tested and the camera was adjusted accordingly. When the station set up was complete, the cameras were armed and were latched shut by closing the door mechanism to the camera body. The field crew triggered each camera at a known distance prior to leaving the site to create control images.

After initial deployment cameras were left to capture images for a three to four month period (i.e. a camera session). ELR conducted a maintenance visit at the end of each camera session. During these visits the crew first approached each camera to trigger the camera as evidence the camera was still functioning at the end of the session. Existing batteries were replaced and each memory card was exchanged with a blank card. A desiccant capsule was also inserted into the camera body to prevent moisture accumulation. Once maintenance activities were complete, cameras were tested again to ensure proper function and re-armed. Images were retrieved from each memory card and catalogued for data analysis.

7.4.1.3 Data Analysis

Remotely captured images were first reviewed to ensure cameras were functional for the session in which they were active by using the control images triggered by the crew. Following this initial trigger, a spreadsheet was created to catalogue wildlife detections and detection attributes including date, species, sex, and if possible, age and movement direction. Movement direction was categorized generally as up valley (i.e. wildlife photos indicating travel direction towards higher elevation in the valley), down valley (i.e. wildlife photos indicating travel direction towards lower elevation) or variable. The wildlife images had to be evaluated to determine if they represented individual detection events. This analysis was performed by comparing sequential images, elapsed time between them and characteristics of the animal(s) in the images. Wildlife images were defined as detection events if:

1) Sequential wildlife images could be differentiated by species (e.g. a set of moose images followed by a set of caribou images);

2) Sequential images of the same species could be differentiated using physical characteristics such as antler formation, body size, sex and coat pattern (e.g. if multiple images of caribou were captured within a 15-minute period, the number of detections would depend on how many unique individuals could be identified);

3) Sequential images of the same species that could not be physically differentiated were temporally separated by ≥ 30 minutes camera photo time lapse; or

4) Multiple individuals were observed in a single image (e.g. four caribou captured in a single image were catalogued as four detected caribou).

Several metrics were calculated to describe wildlife activity at the camera sites. The total number of detections and trap nights (TN) were calculated for each camera and for each month of the calendar year. As a measure of effort, a trap night was defined as the 24-hour period that a camera was set and active. Using TN and detection numbers, a detection rate (standardized to 100 TN for comparability) was calculated using the following formula (Kelly and Holub 2008):

$$Detection\ Rate = \left(\frac{\#\ Wildlife\ Detections}{\#\ Trap\ Nights}\right) * 100$$

As effort was variable among cameras, detection rate (rather than total number of observations) provided a comparable measure of activity.

Camera data were pooled to determine several characteristics:

1. Total number of trap nights, wildlife detections and overall detection rates;

2. By camera and by month in order to calculate detection rates to conduct a site analysis and a seasonal analysis, respectively;

3. Detection rates of species and species groups at the Site overall, at each camera and in each calendar month; and,

4. Total number of species detected at each camera station.

Caribou and moose sample sizes were large enough to conduct individual species analyses, while bear (grizzly and black bears) and furbearer sample sizes were small and required analysis at a species group level. Movement attributes for species and species groups were also analyzed to assess potential movement patterns in the LSA.

7.4.2 Results

7.4.2.1 Camera Study Overview

ELR installed and monitored a total of fourteen remote cameras at the Mount Nansen Site (Figure 7.8) during the 24-month study period from June 2012 to June 2014. Eight cameras were deployed in June and July 2012 and six additional cameras were deployed in June 2013. During the study, one camera (Camera 8) was moved from its upland spruce forest location near Back Creek and was relocated to a riparian area adjacent to Victoria Creek and renamed Camera 9. This new location better met the site selection criteria than the original location did, as the new location occurred within a narrow creek valley and was anticipated to funnel wildlife through the area. The resulting data from the new location was expected to provide better information on wildlife movements through the area.

Camera locations were established in a variety of habitats and ranged from riparian, shrub and forested sites in the boreal high bioclimate zone to sparsely treed shrub sites at higher elevations in the subalpine bioclimate zone (Table 7.4). Six cameras were installed along Dome Creek: three upstream of the tailings and settling ponds (in proximity to where much of the remediation works will take place), and three upstream of the Mount Nansen road crossing of Dome Creek. One camera was installed along Pony Creek, and four were installed in the Victoria Creek valley. Three cameras were installed at or near the height of land surrounding Dome Creek to the north, south and southwest of the Mount Nansen Site.

The effective number of trap nights TN ranged from 107 (Camera 8, discussed above) to 719 (Camera 1, installed first and operated for the duration of the study) with an average of 514 TN overall. Variation in trap night effort was due in part to staggered deployment dates during the 24-month period (Table 7.4). Instances of drained batteries, camera or memory card malfunction, and a wind fallen camera tree resulted in lost trap nights for short periods and contributed to the variation in effort for affected cameras.

During the 24-month study, cameras at 15 distinct camera locations captured a total of 414 animal events in 7,719 trap nights, and resulted in an overall detection rate of 5.4 animals/100 TN. The total number of trap nights ranged from 109 at Camera 8 (active for four months and then moved to become Camera 9) to 719 at Camera 1 (active for the entire study period) (Table 7.4). Detection rates ranged from 0.9 animals/100 TN at Camera 8 to 12.1 animals/100 TN at Camera 3. Camera 15 had the second highest number of detections with 9.2 animals/100 TN.

Table 7.4: Summary of Effort, Detections and Habitat at Mount Nansen Wildlife Camera Stations.

Camera ID	Station Name (Deployment Period)	Trap Nights	Animal Detections	Detection Rate (animals/100 TN)	Habitat Descriptions
1	**Dome Creek Ridge** (June 20, 2012-June 9, 2014)	719	29	4.0	On crest of ridge that runs parallel to and north of Dome Creek. Characterized by open white spruce forest and scrub birch (*Betula nana*), kinnikinnick (*Arctostaphylos uva-ursi*) and reindeer lichen species (*Cladina* spp.) in the understory. Approximately 30 m north of Camera 6.
2	**Pony Creek Riparian** (June 21, 2012- June 9, 2014)	718	17	2.4	In riparian area near the confluence with Back Creek that is sparsely treed with white spruce with willow (*Salix* spp.), *Sphagnum* mosses, Labrador tea (*Ledum groenlandicum*) in understory.
3	**Victoria Creek Ridge** (June 21, 2012-June 10, 2014)	719	87	12.1	On the edge of dry terraced ridge overlooking Victoria Creek with moderately open white spruce canopy with scrub birch, Labrador tea, and *Cladina* species in understory.
4	**Upper Dome Creek – South Slope** (June 21, 2012- June 10, 2014)	719	10	1.4	On the toe of a north-facing slope in riparian area adjacent to upper Dome Creek, dominated by willow species, scrub birch sphagnum mosses and sparse white spruce trees. Approximately 185 m southeast of Camera 5.
5[1]	**Upper Dome Creek – North Slope** (June 22, 2012-June 9, 2014)	664	27	4.1	On south aspect of dry knoll above upper Dome Creek, dominated by open white spruce and scrub birch in understory. Approximately 185 m northwest of Camera 4.
6[2]	**Lower Dome Creek Valley** (June 22, 2012-June 9, 2014)	564	48	8.5	At the base of low ridge that parallels Dome Creek. At the transition zone between a south-aspect open white spruce forest and riparian area rich with willow species and graminoids. Approximately 30 m south of Camera 1.
7	**Subalpine Crossroad** (July 6, 2012-June 9, 2014)	703	34	4.8	At intersection of exploration road (running north and west) or trench (running east). Named for its subalpine location, medium to tall scrub birch thickets dominate the area with sporadic white spruce.
8[3]	**Back Creek Forest** (July 6, 2012- Oct 23, 2012)	109	1	0.9	In forested area 150 m uphill from Back Creek adjacent to an old landing. Mature spruce with Aspen and Balsam poplar in canopy and feather mosses and lichens in understory.
9	**Victoria Creek Valley** (Oct 23, 2012- June 10, 2014)	595	25	4.2	Along the edge of riparian forest adjacent to Victoria Creek; camera faces a shrub meadow and is located along a wildlife trail.
10	**South Ridge Exploration Trench** (June 6, 2013-June 9, 2014)	368	30	8.2	Along an exploration trench on a low ridge south of mine infrastructure.

Camera ID	Station Name (Deployment Period)	Trap Nights	Animal Detections	Detection Rate (animals/100 TN)	Habitat Descriptions
11	**Pony Creek Road** (June 6, 2013-June 9, 2014)	368	11	3.0	Along edge of and facing the road before it climbs out of the treeline. In subalpine with sparsely treed area with thick scrub birch shrub in understory.
12	**Power Line West** (June 6, 2013-June 9, 2014)	368	17	4.6	Along power line that parallels Dome Creek and occurs mid-way between the mill and tailings areas. Camera faces south and overlooks the power line road.
13	**Lower Victoria Creek Ridge** (June 6, 2013-June 10, 2014)	369	14	3.8	On edge of terraced ridge overlooking Victoria Creek. Similar habitat to Camera 3 with moderately open white spruce canopy and scrub birch, Labrador tea, *Cladina* species in understory.
14	**Lower Victoria Creek Valley** (June 6, 2013-June 9, 2014)	368	30	8.2	Along the edge of riparian forest adjacent to Victoria Creek facing a clearing and a low bush meadow.
15	**Power Line East** (June 6, 2013-June 9, 2014)	368	34	9.2	Along power line that parallels Dome Creek where it intersects with an old road. Camera faces north and overlooks the intersection.

Notes:

1 – Camera 5 malfunctioned during the November 2012 – February 2013 session and was replaced by a new camera.

2 – The memory card malfunctioned at Camera 6 during the February – June 2013 session. The Camera 6 tree was blown over during a wind event during the August – November 2013 session; the camera station was re-established ~50 m from the original location.

3 - Camera 8 was relocated to the Camera 9 location on October 23, 2012.

Mount Nansen Site

Terrestrial Existing Conditions

Client:

Ecological Logistics & Research Ltd.

Yukon Energy, Mines and Resources
Assessment and Abandoned Mines

Legend

Camera Station Locations

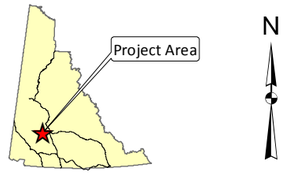
- Camera Station
- Camera 8 (Relocated to Camera Station 9)

Local Boundaries

- Wildlife Local Study Area

Base Layers

- Road
- Trail
- Watercourses
- Waterbodies



Scale: 1:18,000

0.5 0.25 0 0.5

Kilometers

September 30, 2017	Drawn by: HS
ELR Project: 16-249	Checked by: CJ

FIGURE 7.8

Camera Site Locations

NOTES:
1. Units: Meters
2. NTS Mapsheet: 115H and 115I
3. Projection: UTM Zone 8 NAD83
4. Base layers digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.
5. Pleiades imagery provided by YG - Assessement and Abandoned Mines Branch.

Document Path: M:\Projects\16-249 MN CMPR\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 30 Figure 7.8 Cameras.mxd

7.4.2.2 Seasonal Variation

One notable peak period of wildlife detections was observed in May (12.7 detected/100 TN), with a generally higher detection rate during the spring and summer months (i.e. April to August) (Figure 7.9). A smaller peak in detections was observed in January and February (6.3 and 5.0 animal detections/100 TN, respectively). The lowest detection rates were recorded in November and December (1.3 and 1.5 animal detections/100 TN, respectively).

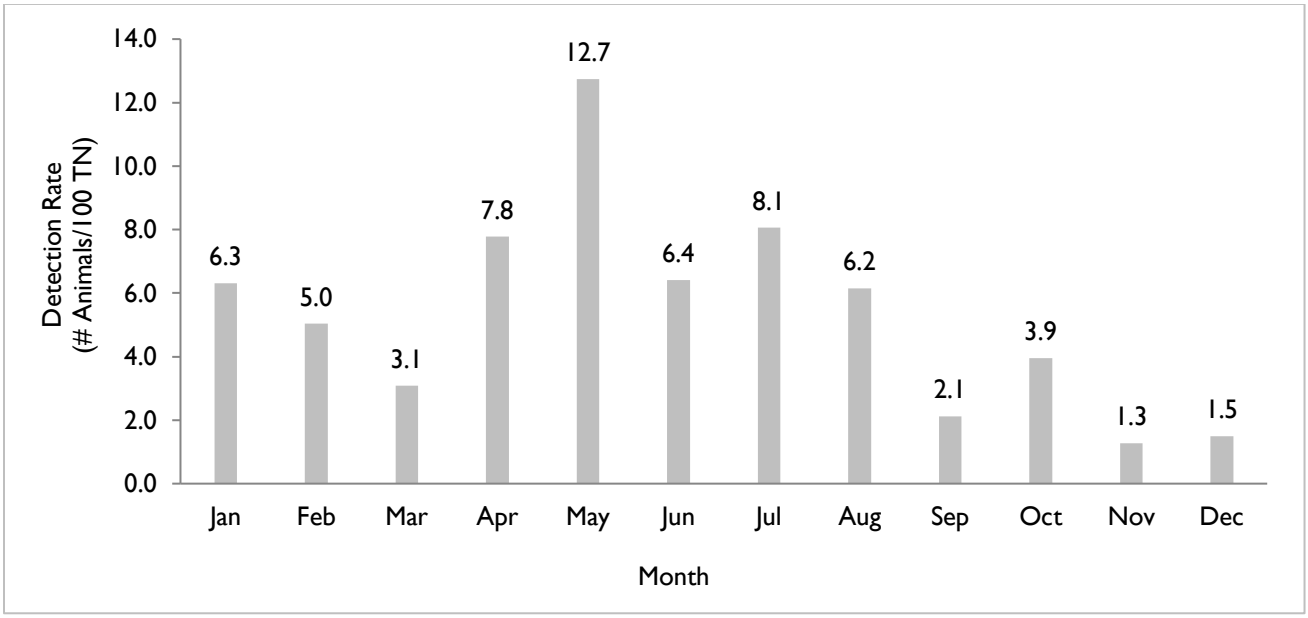


Figure 7.9: Seasonal Variation in Detection Rates for Wildlife at Remote Camera Stations at the Mount Nansen Site during the 24-Month Period from June 2012 to June 2014.

7.4.2.3 Species Summaries

During the 24-month remote camera study, 16 species were detected and included caribou, moose, grizzly bear, black bear, grey wolf, red fox, wolverine and Canada lynx (Figure 7.10). Several small mammal and bird species that were not the target of the study were also detected, including red squirrel, porcupine, snowshoe hare, grey jay, spruce grouse and ptarmigan. Species richness was highest (9 species) at Cameras 3 and 14. Moose, caribou, grizzly bear, Canada lynx, grey wolf and snowshoe hare were detected at each of these cameras. Additionally, wolverine, grey jay and an unidentified passerine were also detected at Camera 14, while red squirrel, porcupine and spruce grouse were also detected at Camera 3. Species richness was lowest at Cameras 2 (2 species) and 8 (1 species), which included moose and red squirrel detections, respectively.

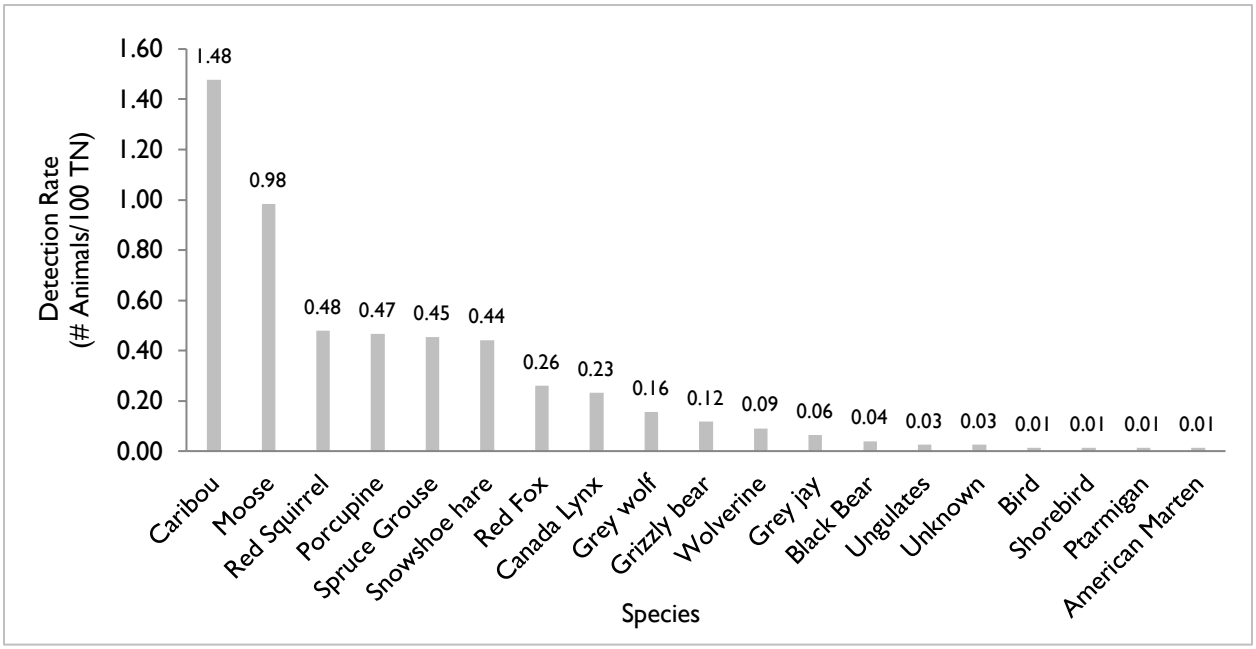


Figure 7.10: Summary of All Species Detected During the Remote Camera Study at the Mount Nansen Site from June 2012 to June 2014.

7.4.2.4 Caribou

Caribou had the highest number of detections (n = 114) and the highest detection rate (1.9 animals/100 TN). Caribou detections included cow and calf pairs, bull pairs and mixed groups with up to 11 individuals. Camera 6 had the highest caribou detection rate of 5.7 animals/100 TN. Cameras 10, 7 and 1 had detection rates of 4.3, 3.3 and 1.7 animals/100 TN, respectively, while there were no caribou detected at Cameras 2, 5, 8 and 15.

Caribou detections were clustered into winter and summer peaks (Figure 7.11). Detection rates were highest in the summer months of July and August (3.9 and 3.8 caribou detections/100 TN, respectively), and were highest in the winter months of January and February (3.5 and 1.8 caribou detections/100 TN, respectively). No caribou detections occurred during the months of March, April and December. Summer peak caribou movements were identified nearly equally as moving in an 'up valley' direction (n = 21) as they were in a 'down valley' direction (n = 23). During the winter peak months of January and February caribou demonstrated a higher number of movements up valley compared to down valley (n = 21 and n = 9, respectively).

Caribou beds were observed on the south-aspect slope above Camera 6 in the Dome Creek valley during a maintenance visit to cameras in February 2013. Images from Camera 1 (located approximately 60 m uphill from Camera 6 on a small ridge paralleling Dome Creek) show several caribou foraging in the snow around this time. The beds and foraging activity indicates that caribou use this area in winter; the area is characterized by dry and open white spruce forest with terrestrial lichen growing on the forest floor, and provides safety, thermal cover and food for caribou in winter months.

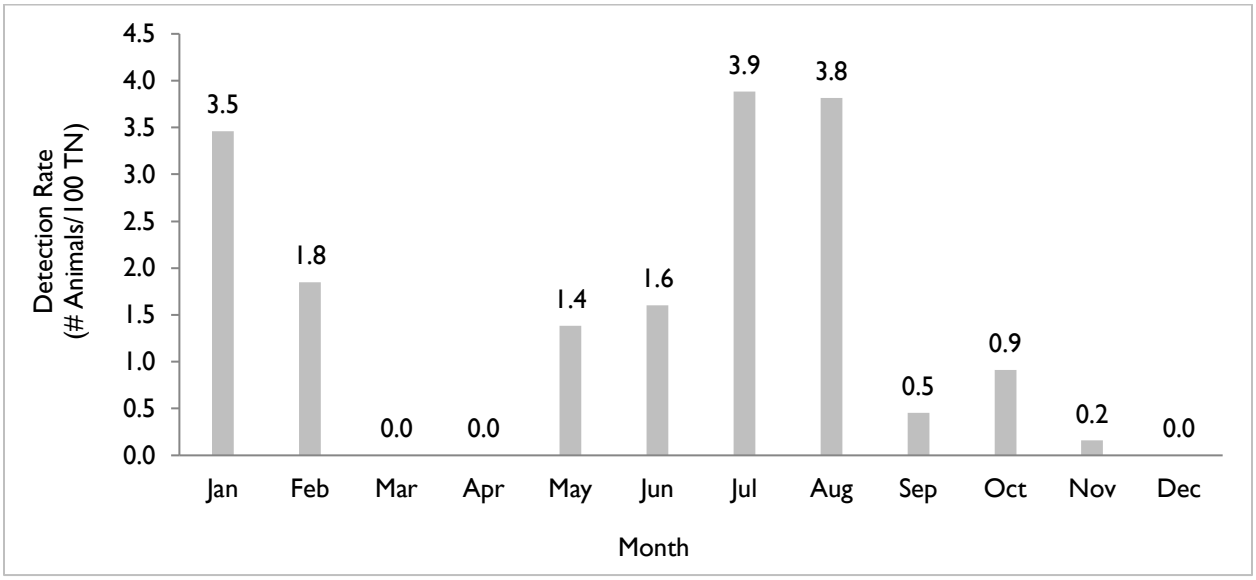


Figure 7.11: Seasonal Variation in Detection Rate of Caribou at Remote Camera Stations at the Mount Nansen Site during the 24-Month Period from June 2012 to June 2014.

7.4.2.5 Moose

Moose had the second highest number of detections (n = 76) including bulls, cow and calf pairs, two solo calves, and several unclassified individuals. Moose were detected at an overall rate of 1.0 animals/100 TN. Cameras 2, 9 and 1 had the highest moose detections rates (2.2, 2.0 and 1.3 moose/100 TN, respectively) while there were no moose detected at Cameras 8 and 13. The remaining cameras had less than 1.1 detections/100 TN.

Moose were detected in all months but detection rates were variable with higher observation rates in the winter months of February and March (2.2 and 1.5 detections/100 TN, respectively), and the highest rate in July (2.4 detections/100 TN) (Figure 7.12). Detection rates were less than 1.0/100 TN in April and May, and in August through November. Overall, the majority of moose movements were 'down valley' to lower elevations (n = 40), although some were 'up valley' (n = 20) and others were variable or did not gain or lose elevation (n = 14). There was no observable trend in movement direction among seasons.

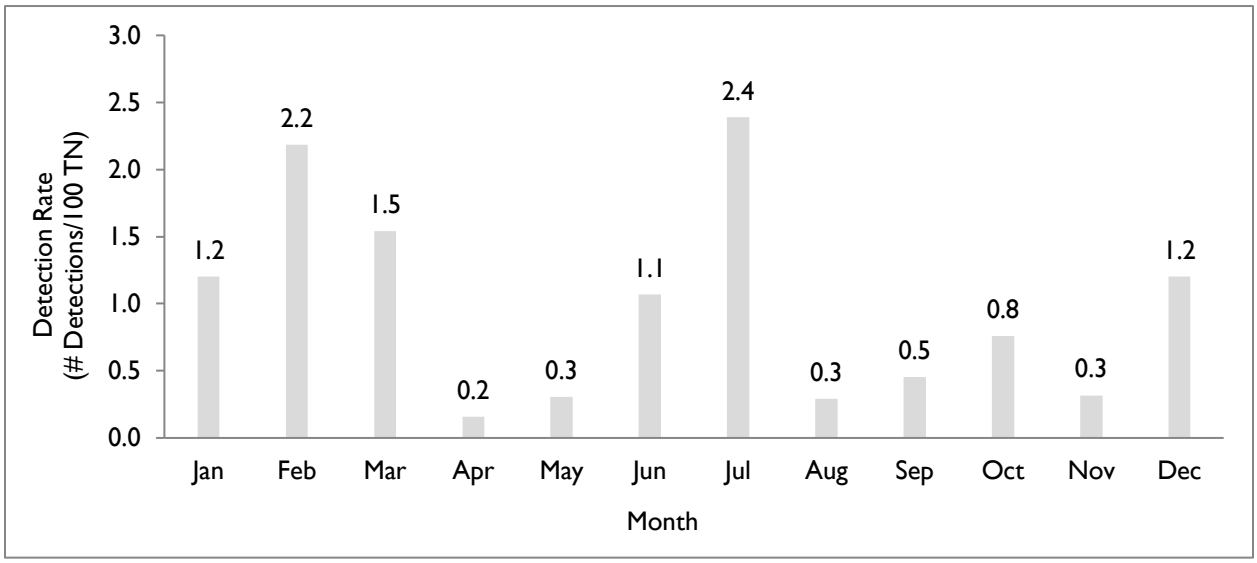


Figure 7.12: Seasonal Variation in Detection Rate of Moose at Remote Camera Stations at the Mount Nansen Site during the 24-Month Period from June 2012 to June 2014.

7.4.2.6 Bears

Bear species were detected twelve times (n = 9 grizzly bear; n = 3 black bears) during the study with an overall detection rate of 0.2 bears/100 TN. Grizzly bears were only detected at Cameras 3 and 14 in the Victoria Creek valley (1.0 and 0.5 bears/100 TN, respectively). Black bears were detected at Cameras 7 and 10, located on subalpine ridges uphill of the Site (0.1 and 0.3 bears/100 TN, respectively), as well as one black bear detection at Camera 12 (0.3 detections/100 TN), along the powerline north of Dome Creek.

As expected, bear detections did not occur during winter months of the study (Figure 7.13). Bears were detected in May, June, July and August with the greatest number of detections in May (0.61 detections/100 TN). Bear movements that were characterized as 'up valley' were equal in number (n = 6) to movements characterized as 'down valley' (n = 6).

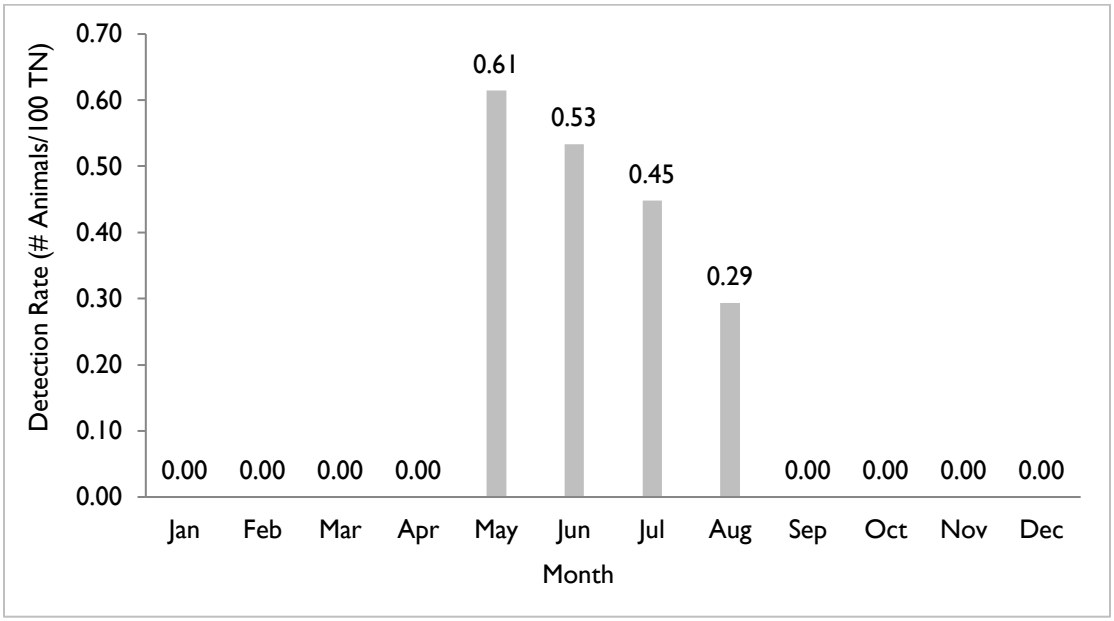


Figure 7.13: Seasonal Variation in Detection Rate of Bears at Remote Camera Stations at the Mount Nansen Site during the 24-Month Period from June 2012 to June 2014.

7.4.2.7 Furbearers

Five furbearer species were detected in 58 detections during the camera study: red fox (n = 20), Canada lynx (n = 18), grey wolf (n = 12), wolverine (n = 7), and American marten (n = 1). The overall furbearer detection rate was 0.8/100 TN, and ranged from 0.01 detections/100 TN for American marten, to 0.3 detections/100 TN for red fox. Furbearer detections occurred in all months except for February when none were observed. A notable spike occurred in April (2.3 detections/100 TN; Figure 7.14), in which all five species were detected at the Site.

Canada lynx were detected at Cameras 3, 6, 9, 13, 14 and 15 with an overall detection rate of 0.2/100 TN; these cameras were located in the Dome and Victoria Creek valleys. Grey wolf were detected at nine cameras located in the Dome and Victoria Creek valleys and the ridges surrounding the Site and had an overall detection rate of 0.2/100 TN. Red fox were detected at a rate of 0.3 detections/100 TN at

seven cameras located either on the subalpine ridge surrounding the Site or in the Dome Creek Valley. The cameras captured images of lynx, wolf and red fox walking past the camera stations. Only some red fox individuals appeared to be foraging or hunting.

Wolverine were detected at a rate of 0.1/100 TN and detections occurred at Camera 1, 9, 13 and 14. The Camera 1 detections occurred in October 2012. Based on pelage (fur or coat on an animal) characteristics, it was possible to determine that of the four detections, a minimum of two unique individuals had been photographed (within one day of each other). It was not possible to determine whether there were additional individuals, as the orientation of other wolverines to the camera did not allow for comparison between them. Camera 1 captured images of individuals investigating scents on the snow and moving in an indeterminate direction, while the other cameras captured images of a wolverine walking past the field of view. During the October 2013 camera maintenance visit, the field crew observed wolverine tracks approximately 1 km away near Camera 3; the last of the October wolverine images at Camera 1 were captured the day prior to the field crew visit. The remaining wolverine detections occurred at cameras in the Victoria Creek valley.

Furbearer detections were limited primarily to wider ranging species that are more likely to use game trails and make use of movement corridors (including wolf, red fox and lynx), although the camera data suggest that wolverines may periodically also use game trails. One American marten was detected at Camera 10, located on the ridge south of the Site, however most small mustelid species are less likely to use (and therefore less likely to be detected on) trails without the use of meat or scent baited stations. Furbearer detections therefore are likely biased toward conspicuous (e.g. canid and felid) species and the seasons in which they use the area.

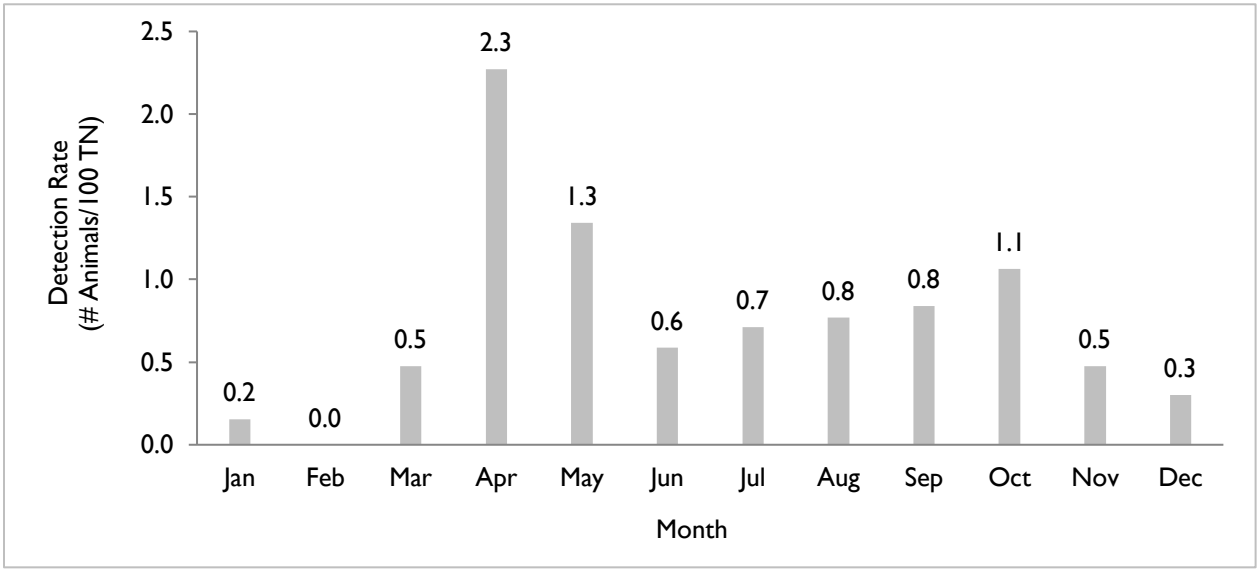


Figure 7.14: Seasonal Variation in Detection Rate of Furbearers at Remote Camera Stations at the Mount Nansen Site during the 24-Month Period from June 2012 to June 2014.

7.4.2.8 Other species

There were 148 detections of small mammal and bird species during the camera study, with an overall detection rate of 1.92/100 TN. Porcupine were detected at a rate of 0.47 animals/100 TN and included individual detections, pairs and sow and cub pairs; porcupine detections occurred at six cameras (1, 3, 5, 10, 13 and 15). Red squirrel (0.48 detections/100 TN), snowshoe hare (0.44 detections/100 TN), spruce grouse (0.45 detections/100 TN) and passerine bird species (0.08/100 TN) were also detected during the study. These detections were distributed among most cameras, although Cameras 2 and 7 did not have any small mammal or bird detections. As these species have small home ranges and are expected to use the LSA throughout the year, seasonality and direction of movements were not analyzed.

7.4.3 Discussion

The remote camera study provided information regarding wildlife species present in the LSA that had not been detected in other surveys in the area (e.g. grizzly bear, lynx and wolverine). Although other studies including the winter tracking surveys (ELR 2012), pellet count and aerial ungulate surveys provide evidence of species presence and distribution at a point in time, the data collected from remote cameras provide insight into the relative abundance and the seasonal use of the area by different wildlife species. This information is particularly important in the case of caribou, for which a low number of detections had been recorded during all other existing conditions studies (including two regional aerial surveys). The remote camera study showed caribou actually are abundant in the area, providing information on relative abundance, seasonal occurrence, and movement through the LSA.

The LSA was most frequently used by wildlife during spring and summer months, and to a lesser extent in mid-winter, with low periods of habitat use during fall, early winter and late winter. A higher volume of wildlife traffic was expected during summer months for all species due to ease of travel and food availability during the snow free season. Spring and summer is also the active season for bears.

The high number of caribou detections overall (n = 114) was likely due in part to the herding nature of the species in that they tend to occur in groups. The annual home ranges of both the Klaza and Aishihik caribou herds overlap with the RSA. The Nisling River (approximately 5 km south of the LSA) marks the approximate boundary between these two herds (Troy Hegel, EY, pers. comm.). A large Klaza herd winter range WKA overlaps the LSA, and the high number of caribou detections (30 % of caribou detections) during winter suggest caribou are both using LSA habitat and migrating through the area. Caribou winter range includes mid-elevation forested and subalpine shrub habitats where terrestrial lichens are available (EY 2014a). Based on on-site observations by ELR, such winter range habitats in the LSA most likely occur in the Dome Creek valley, but other areas of the LSA may also be used as travel corridors for caribou moving to or from drainages to the west and north of the LSA (e.g. Nansen Creek or Klaza River valley) in search of food and cover. There are several fall rut WKAs that overlap the western portion of the RSA, with one overlapping the northern boundary of the LSA. Only 8 % of all caribou detections occurred during the rutting period (September and October) suggesting that, for the duration of the camera study, few caribou moved through the Site at this time.

Moose were frequently detected during the study in low numbers throughout most of the year, likely due in part to the limited periods when moose are known to aggregate. Thirty per cent of all moose detections occurred during the late-winter months of February and March, when food sources are scarce. During the other 10 months of the year, moose most often were observed alone or in pairs. A moose late-winter range WKA overlaps with the LSA from the south. The majority of all moose detections occurred in the Dome Creek, Victoria Creek and Pony Creek valleys, with few moose detected at higher, more exposed elevations. Moose typically stayed within riparian areas of these creeks with some movement along the

terraced ridge trails running parallel to Victoria Creek and the power line trail running parallel to Dome Creek. These observations suggest moose use the riparian habitats more frequently than road or ridge habitats in the LSA, likely due to the availability of both forage (e.g. riparian vegetation) and thermal and safety cover (e.g. spruce forest) found in these areas. Furthermore, the Victoria Creek valley is likely one conduit in the area for moose moving in and out of the Nisling River valley. The valley offers high quality moose habitat during summer and winter months.

Bear photo detections were limited to the Victoria Creek valley (grizzly bears) and the higher elevation and Dome Creek power line sites (black bears). However, bear scats and tracks have been observed throughout the LSA, showing bears do travel throughout the LSA. The low detection rate for bears is likely due to their large home range requirements that results in a low population density as well as the ubiquitous availability of forage species (riparian forbs, berry-producing shrubs) throughout the area.

The relatively infrequent nature of grey wolf, red fox, lynx and wolverine detections suggest these individuals travelled through the LSA rather than occurring as residents. These species tend to occur in low density, relative to prey species, with distribution dependent on the availability and distribution of prey. In Yukon, wolves prey predominantly on moose, thus occurring in areas where moose are present. As the area is considered to have a low moose density relative to other areas in the Yukon, the wolf density also is relatively low. Lynx were not detected frequently in the LSA, and their presence is likely linked to the presence of snowshoe hare. Although not detected frequently on the cameras, the pellet survey conducted in the LSA suggests an abundance of hare in the area. Red fox prey on small mammal species such as voles and mice and were detected on cameras in areas such as the riparian zone of Dome Creek valley that provide an abundant source of rodent prey species. Wolverine can travel long distances in search of food and prey on small mammals (including porcupine) and young or weak ungulate species, as well as scavenging carrion. The low detection rate of wolverine suggests they are an uncommon visitor to the LSA.

8. VEGETATION TISSUE METALS STUDY

ELR completed a vegetation tissue metals study in 2013 to characterize concentrations of vegetation metals in the LSA area. The main purpose of this study was to determine current levels of metals in vegetation and soils to assess potential effects of the Project on local wildlife via uptake from vegetation.

8.1 METHODS

ELR collected samples at a series of sample sites that were established according to a grid prior to the field program. A series of 44 sites placed at 750 m intervals were established in the LSA using GIS software (Figure 8.1). Four reference sites were also established outside of the LSA area, consisting of two paired riparian and upland sites, located to the west and southeast of the LSA in areas considered to be outside of the zone of influence from the Site and representative of areas within the LSA (Figure 8.1). Section 8.1.4, below, provides a more detailed description of the parameters for selecting these reference sites.

In the field, samplers traversed the grid using compass and handheld GPS to travel between sample points and navigate to each site. Each of the grid points was verified for suitability of soil and vegetation sampling. Four of the original grid points were shifted from their original locations as they occurred on infrastructure areas where soil and vegetation did not exist. Minor variations of points also had to be made to accommodate shallow bedrock where no sampling was possible. These adjustments were within 5 m of the original location to ensure consistency in spacing and coverage.

8.1.1 Vegetation Collection

At each sample site, field personnel collected approximately 5 g (wet-weight) of available lichen, berry and willow tissue. Each vegetation tissue samples was collected as a composite sample from several individual plants within an approximate 1.25 m radius at each point in order to minimize the influence that variation among individual plants may have on the average conditions at a particular site.

Samplers used new nitrile gloves for sampling of each tissue type, tearing lichen samples from the ground, clipping willow branches using stainless steel shears and picking berries by hand. Samples were then placed in pre-labeled plastic bags provided by the analytical laboratory. All samples were then stored kept cool in preparation for analysis. Section 8.1.3, below, describes the shipping and handling of all samples.

Vegetation tissue samples were each comprised of one or more species of vegetation because not all target species occurred in each sampling location. A summary of the species that were collected as part of each tissue type is shown in Table 8.1, below. These three types of tissue and the rationale for their selection are described further in the following sections.

Table 8.1: Species Composition of Vegetation Tissue Samples

Tissue Type	Scientific Name	Common Name	Portion of Plant Sampled	Ecological Significance and Use (Why Selected)
Berry	*Vaccinium vitis-idaea*	Lingonberry (lowbush cranberry)	Berry	Food source for bears, passerines, small mammals
	Vaccinium oxycoccos	Bog cranberry	Berry	Food source for bears, passerines, small mammals
	Vaccinium uliginosum	Bog bilberry	Berry	Food source for bears, passerines, small mammals
Willow	*Salix bebbiana* *Salix glauca* *Salix myrtillifolia* *Salix scouleriana*	Willow (various species)	Stem Leaves Catkins	Browse source for moose, food source for other wildlife.
Lichen	*Cladonia rangiferina*	Grey reindeer lichen	Whole plant	Food source for caribou, small mammals
	Cladonia stellaris	Star-tipped reindeer lichen	Whole plant	Food source for caribou, small mammals

8.1.1.1 Lichens

Lichen tissue was sampled at each of the sites because lichens are heavily influenced by atmospheric conditions and deposition (Steinbörn and Breen, 1999). Lichens are of particular interest because they are an essential food source for caribou. The morphology of lichens facilitates inorganic cation uptake (Brown and Slingsby, 1972), which can result in the accumulation, sequestration and tolerance to metals at concentrations in excess of their nutritional needs. Such concentrations can at times result in the transfer of metals to wildlife consuming the lichens (Glavich and Geiser 2008, Steinbörn and Breen 1999, Wilkie and La Farge 2011).

At all sites where lichens were present, whole thalli were sampled and cleaned of any surface soil using distilled water. Lichens were not present at one of the riparian reference sites, and samplers did not collect a substitute species.

8.1.1.2 Willows

Willows were selected for inclusion in the vegetation metals study as they are known to accumulate metals, they occur in the LSA, and they are a key winter source of browse for moose. Metals accumulate in willow tissue because neither soil chemical nor microbial processes remove or degrade heavy metals; therefore, large concentrations of these metals may accumulate in the roots, shoots and leaves of willows (Lepp and Dollard 1974, Punshon and Dickinson 1997). Browsing wildlife can then be exposed to those metals in willow stem tissues (Lepp and Dollard 1974).

There are many distinct species of willow in the Yukon, ranging from prostrate ground covers to tall shrubs. The species sampled during the vegetation metals study were:

- Bebb's willow (*Salix bebbiana*)
- Grey-leaved willow (*Salix glauca*)
- Myrtle willow (*Salix myrtillifolia*)
- Scouler's willow (*Salix scouleriana*)

Willow samples included stems, leaves, and catkins.

8.1.1.3 Berry-producing Plants

Berries were selected for inclusion in the vegetation metals study because metals are taken up by berry-producing plants, and berries are consumed by a wide variety of wildlife and are plentiful within the LSA. Within the LSA, the three most prevalent species were sampled, including:

- Lingonberry
- Bog cranberry
- Bog bilberry

These species are tolerant of heavy metals, and can accumulate metal concentrations at potentially high levels (DiLabio and Rencz 1980, Perkiömäki *et al.* 2003, Salemaa *et al.* 1999). Data derived from berry samples is useful in identifying the potential for metal cycling in the food chain.

No leaves or branches were collected with berry tissue to ensure that results reflected metals in the fruiting body only, the component of the plant most likely ingested by wildlife. For consistency, lingonberry was the primary berry species targeted at each site. Where lingonberry were not present at sample sites, either bog cranberry or bog bilberry were collected.

8.1.2 Soils Collection

Soil sampling was conducted in conjunction with vegetation sampling to provide information on the variability of metals concentrations in LSA soils. Both natural soil processes and deposition from atmospheric sources (such as from prior mining activity in the LSA), can influence metal concentrations in soils.

At each sample site, ELR excavated a soil pit using a stainless steel shovel, then used a stainless steel trowel to prepare a soil profile, ensuring it was clean of debris and vegetative matter. ELR then collected a 5 g sample of mineral soil. Field staff wore a fresh pair of nitrile gloves for each sample, and all equipment was washed with a 10% solution of bleach and rinsed with distilled water between sites. At each site, soil was collected from the B horizon, which is the underlying mineral soil layer formed by alteration of the underlying parent material, but influenced by organic matter from above. When the B horizon could not be reached or was not present due to ice, permafrost, or rock, the sample was collected from the soil horizon occurring immediately above it. Generally in such cases the Ae layer was sampled, which is an upper mineral soil horizon characterized by the removal of clays.

8.1.3 Sample Care, Shipment and Laboratory Analysis

After collection, all samples were placed in lab-supplied coolers with ice packs and shipped to Maxxam Analytics in Burnaby, BC via Air North. A chain of custody form accompanied each cooler shipped to clearly indicate the sample type, special handling procedures and analysis requirements.

Maxxam Analytics analyzed metal concentrations in vegetation tissues and soil collected during the study. All soil and vegetation samples were analyzed using inductively coupled plasma-mass spectrometry (ICP-MS) for trace metals analysis. Soil pH and metals levels were both analyzed for soil samples. Soil pH can have a significant influence on the availability and therefore toxicity of heavy metals in a given environment (Gadd and Griffiths 1977).

8.1.4 Quality Assurance and Quality Control

8.1.4.1 Selection of Reference Sites

Two sets of paired reference sites were established outside of the LSA and sampled during the field program. These sites were selected as being local to the LSA, outside of the existing descriptions of the zone of influence of mine infrastructure based on prevailing winds in the area and previous study (EDI 2007), and being similar in characteristic to the LSA study area. Upland and riparian reference Site number one (Sites CU1 and CR1, respectively) were located 1.5 km west of the LSA on Webber Creek located to the west of the LSA and upwind of the prevailing winds in the Mount Nansen area (EDI 2007). Upland and riparian reference Site number two (CU2 and CR2, respectively) were located 1 km southeast of the LSA along Victoria Creek (Figure 8.1).

8.1.4.2 Sampling QA/QC Protocols

ELR staffed employed the following sampling methods to help ensure the integrity of samples collected:

- The use of new nitrile gloves at each sampling location.
- The consistent sampling by staff: one designated soil sampler and one designated vegetation sampler, to reduce the potential for cross-contamination in samples.
- The decontamination of all sampling equipment with 10% bleach solution and distilled water between sites. This included shears, trowels and shovels.
- The use of stainless steel pruning shears and shovel to sample vegetation and soil, respectively.
- The use of pre-labeled laboratory sample bags for each site.
- The use of detailed field data sheets and checklists to track sample collection at each site.
- The use of handheld GPS units to record all sample site locations and access routes to help document the order of samples collected and time of collection.
- The consistent care of field samples. All samples were kept cool and packed into coolers immediately following collection and during transport to the laboratory.

8.1.4.3 Field Duplicate Sampling

Duplicate soil and vegetation samples were collected during the field survey to assess the quality control of the sampling and laboratory analysis processes (e.g. potential contamination, sampling error, or laboratory analytical error), and to assess microsite variation in metals concentrations. Duplicate samples of soil and vegetation were collected from five sample sites (Sites 1, 4, 23, 24 and 35) and results of duplicates were compared with corresponding sample results.

8.1.5 Data Analysis

8.1.5.1 Analysis of Metal Concentrations

Data Summaries

Summary statistics were calculated for vegetation tissue metal results to provide a broad level comparison of trends and variation between sample and control sites. For each vegetation tissue type and metal arithmetic mean (and standard deviation), median, minimum, and maximum values were calculated. For metals results where concentrations were below the reportable detection limit (RDL), values were replaced with one-half the RDL for the purpose of statistical analysis (United States Environmental Protection Agency [USEPA] 2014). Where more than half the results of any one analyte were below the RDL these were flagged as being potentially less reliable (due to the proportion of corrected data) (USEPA 2014).

Comparison with Established Standards

Soil metal concentrations were compared to CCME *Soil Quality Guidelines for the Protection of Environmental and Human Health (SQG)* for both parkland and industrial sites (SQG-PL and SQG-I, respectively; CCME 1999). Parkland areas are generally natural areas that lie between residential and recreational areas where human activity and land use is likely to be frequent and direct exposure to soils is likely. Industrial sites are those that involve production, manufacturing or construction activities, and public access is restricted. Those soil metals concentrations exceeding the SQG-I and SQG-PL are discussed further below.

Unlike soils and water, there are no regulatory guidelines for vegetation tissue metals. Therefore, agricultural standards were used as a surrogate means through which to characterize potential ingestion effects for wildlife. Metals results from all vegetation tissue types were compared to maximum tolerable levels (MTL) for cattle and rodents (NRC 2005). These MTLs are defined as the maximum dietary level that will not impair the animal's health or performance over time.

Vegetation Metals of Interest

In addition to using MTL to screen trace metals concentrations in vegetation tissue, several metals were chosen for a more detailed screening in the study due to their known potential to result in negative effects on the environment when they are above their guideline concentrations in other mediums or tissues (e.g., in water or in soils). Seven of these metals were chosen based on their potential to have a significant effect on either plant physiology (Cataldo and Wildung 1978, Gadd and Griffiths 1978, Simon 1978) or animal health (Lepp and Dollard 1974, NRC 2005). These are termed as metals of interest within this report, and include antimony, arsenic, cadmium, copper, lead, silver, and zinc. The concentrations of five of these metals (antimony, arsenic, copper, lead, and silver) have also previously been shown to be positively correlated with proximity to mine infrastructure (i.e., higher concentrations in close proximity; EDI 2007). These metals of interest are described in more detail for each of the vegetation types.

8.1.5.2 Analysis of Soil pH

Summary statistics were calculated for soil pH to provide a broad level comparison of trends and variation between sample and control sites. Arithmetic mean (and standard deviation), median, minimum, and maximum values were calculated.

Soil pH results were compared to CCME *Soil Quality Guidelines for the Protection of Environmental and Human Health (SQG)* for both parkland and industrial sites (SQG-PL and SQG-I, respectively; CCME 1999).

8.1.5.3 Analysis of Sample QA/QC as Measured Through Duplicate Samples

The results of duplicate samples and corresponding sample sites were compared using Relative Percent Difference (RPD) to determine whether significant variation was present that may have indicated some type of sampling error or contamination. RPD provides a measure of the relative difference between two values in comparison to their mean value, and is calculated as the difference between a sample and its field duplicate over the average of two values. RPD values greater than 20% indicate a potential error that has affected the precision of sampling or analysis. RPD was calculated according to the following formula:

$$\%RPD = \left(\frac{\left(\frac{x_1 - x_2}{x_1 + x_2} \right)}{2} \right) x\ 100$$

RPD is not calculated if either the sample or the field duplicate concentration is less than five times the detection limit.

8.2 RESULTS

8.2.1 Overview

Fifty three vegetation and soil samples were collected during the 2013 study, with the exception of one site where lichens were not sampled (Table 8.2). The results of the metals analysis analyses and relevant discussions are provided in the following sections, with raw laboratory data provided in Appendix 6.

Table 8.2: The Number of Soil and Vegetation Tissue Samples Collected During the 2013 Program.

Sample Type	Number of LSA Samples	Number of Control Samples	Duplicate	Total Samples
Mineral soil	44	4	5	53
Lichen	43	4	5	52
Willow	44	4	5	53
Berry	44	4	5	53

8.2.2 Vegetation Tissue Metals

The following sections describe the levels of metals in vegetation tissue organized according to vegetation tissue type and metal.

8.2.2.1 Lichen Tissue Metals

A summary of lichen tissue metals concentrations is provided in Table 8.3, while detailed lichen tissue metal results in the context of MTL levels is provided in Appendix 4.

Antimony

The concentration of antimony in lichen tissue ranged from 0.0157 to 4.72 mg/kg in study sites and from 0.0119 to 0.134 mg/kg in control sites. The highest observed concentration of 4.72 mg/kg was observed at Site 25, immediately east of the TSF (Figure 8.1). No MTL exists for antimony.

Arsenic

The concentration of arsenic in lichen tissue ranged from 0.156 to 39.8 mg/kg in study sites and from 0.153 to 1.91 mg/kg in control sites. The highest observed concentration of 39.8 mg/kg was observed at Site 25, immediately east of the TSF (Figure 8.1), and also exceeded the MTL for both cattle and rodents (30 mg/kg).

Cadmium

The concentration of cadmium in lichen tissue ranged from 0.048 to 1.27 mg/kg in study sites and from 0.03 to 0.444 mg/kg in control sites. The highest observed concentration of 1.27 mg/kg was observed at Site 25, immediately east of the TSF (Figure 8.1). Cadmium concentrations in lichen tissue did not exceed the MTL of 10 mg/kg for either cattle or rodents at any sites.

Copper

The concentration of copper in lichen tissue ranged from 1.38 to 12.5 mg/kg in study sites and from 2.19 to 4.01 in control sites. The highest observed concentration of 12.5 mg/kg was observed at Site 25, immediately east of the TSF (Figure 8.1). Copper concentrations did not exceed the MTL for either cattle or rodents at any of the sites.

Lead

The concentration of lead in lichen tissue ranged from 0.276 to 22.6 mg/kg in study sites and from 0.235 to 1.16 in control sites. The highest observed concentration of 22.6 mg/kg was observed at Site 25, immediately east of the TSF (Figure 8.1), and exceeded the lead MTL for rodents (10 mg/kg).

Silver

The concentration of silver in lichen tissue ranged from 0.01 to 0.8 mg/kg in study sites and from 0.01 to 0.046 in control sites. The highest observed concentration of 0.8 mg/kg was observed at Site 1, south of the TSF (Figure 8.1). No MTL exists for silver.

Zinc

The concentration of zinc in lichen tissue ranged from 12.3 to 93.4 mg/kg in study sites and from 12.1 to 41.3 mg/kg in control sites. The highest observed concentration of 93.4 mg/kg was observed at Site 3,

southeast of the TSF. Zinc concentrations did not exceed the MTL for either cattle or rodents at any of the sites.

Additional Metals

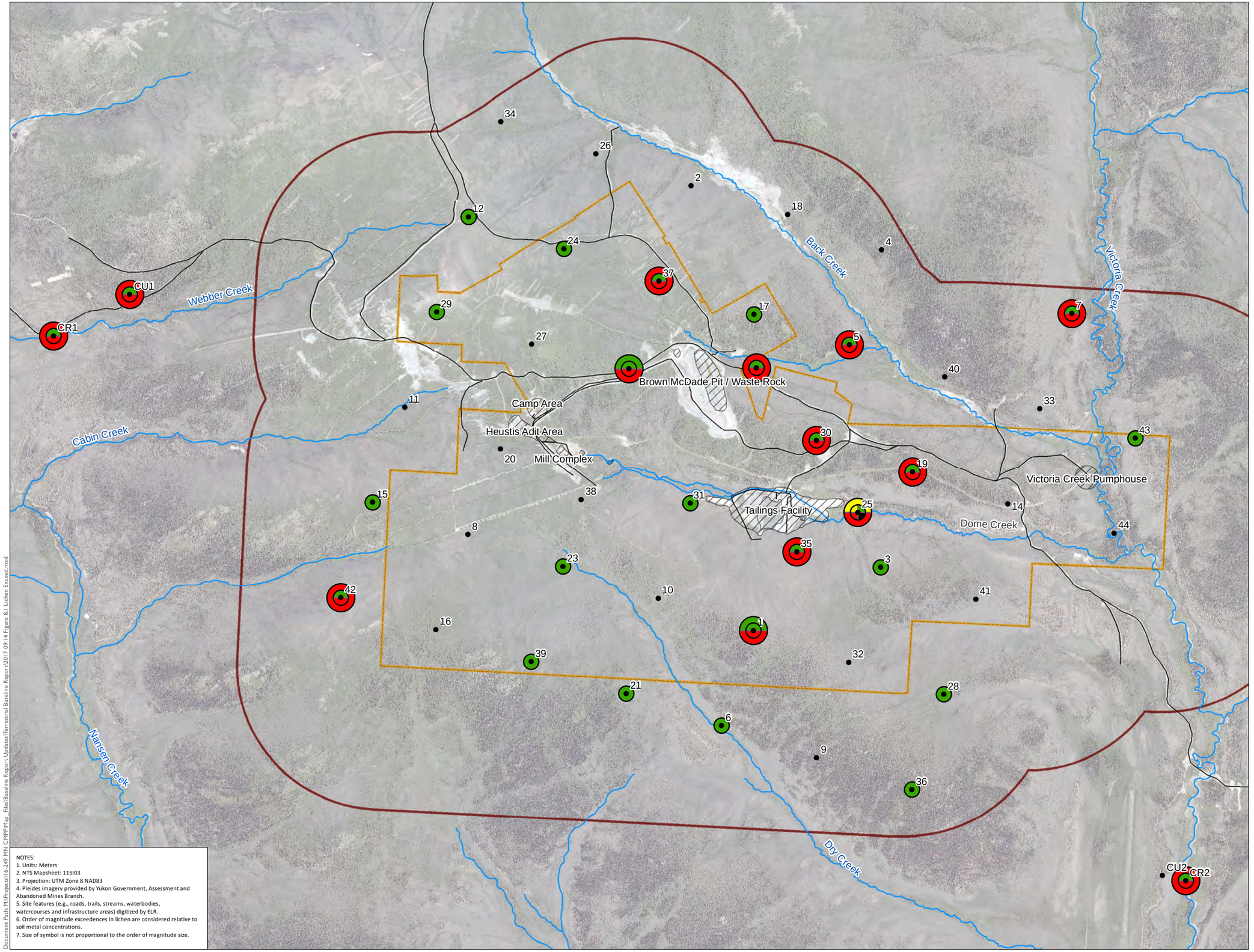
28 exceedances of the aluminum MTL for rodents, and two exceedances of the aluminum MTL for cattle were observed (Figure 8.1), including at three of four control sites for rodents. The highest observed concentration of aluminum (1,220 mg/kg) was observed at Site 13, west of the Brown McDade Pit (Figure 8.1).

14 exceedances of the iron MTL for rodents and cattle were observed (Figure 8.1), including at three of four control sites for rodents and cattle. The highest observed concentration of iron (3,060 mg/kg) was observed at Site 13, west of the Brown McDade Pit (Figure 8.1).

Table 8.3: Lichen Tissue Metal Summary Statistics and Exceedances

Metal (mg/kg)	Maximum Tolerable Limit		Study Sites (N=43)				Control Sites (N=4)			
	Rodent	Cattle	mean	Median	Min	Max	mean	Median	Min	Max
Aluminum	**200**	**1,000**	288 (232)	242	84.5	**1220**	398 (169)	466	147	514
Antimony	**70 – 150**	-	0.309 (0.735)	0.113	0.0157	4.72	0.0826 (0.0609)	0.0923	0.0119	0.134
Arsenic	**30**	**30**	2.98 (6.8)	0.904	0.156	**39.8**	0.93 (0.776)	0.829	0.153	1.91
Barium	**250**	-	36.9 (24.9)	29.5	8.52	115	66 (34.6)	56.9	35.1	115
Beryllium	-	-	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Bismuth	**500**	-	*0.0553 (0.0351)*	*0.05*	*0.05*	*0.28*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Boron	**150**	-	*1.65 (2)*	*1*	*1*	*13.2*	*1.78 (1.55)*	*1*	*1*	*4.1*
Cadmium	**10**	**10**	0.276 (0.235)	0.205	0.048	1.27	0.22 (0.178)	0.203	0.03	0.444
Calcium	**2 (%)***	**1.5 (%)***	3030 (2030)	2420	693	10300	5260 (2870)	4950	2780	8340
Chromium	**100**	**100**	0.671 (0.394)	0.58	0.23	2.14	0.9 (0.447)	0.965	0.31	1.36
Cobalt	**25**	**25**	0.289 (0.411)	0.188	0.095	2.7	0.276 (0.123)	0.327	0.094	0.354
Copper	**500**	**40**	3.13 (1.83)	2.75	1.38	12.5	3.47 (0.861)	3.84	2.19	4.01
Iron	**500**	**500**	537 (558)	365	154	**3060**	597 (286)	706	180	797
Lead	**10**	**100**	2.06 (3.72)	0.834	0.276	**22.6**	0.799 (0.405)	0.9	0.235	1.16
Magnesium	**0.5 (%)***	**0.6 (%)***	573 (317)	466	243	1670	637 (279)	630	305	982
Manganese	**2,000**	**2,000**	312 (218)	243	25.4	980	260 (79.6)	271	159	339
Mercury	**0.2**	-	0.0293 (0.0239)	0.024	0.005	0.119	0.0293 (0.0175)	0.033	0.005	0.046
Molybdenum	**7**	**5**	0.131 (0.13)	0.092	0.025	0.597	0.204 (0.153)	0.209	0.025	0.374
Nickel	**50**	**100**	0.877 (0.48)	0.74	0.287	2.84	1.07 (0.456)	1.29	0.388	1.32
Phosphorus	**0.6 (%)***	**0.7 (%)***	604 (203)	588	295	1090	753 (228)	780	481	971
Potassium	**1 (%)***	**2 (%)***	1240 (434)	1150	362	2440	1290 (143)	1310	1100	1430
Selenium	**5**	**5**	*0.0284 (0.0163)*	*0.025*	*0.025*	*0.118*	*0.0328 (0.0155)*	*0.025*	*0.025*	*0.056*
Silver	-	-	0.0937 (0.151)	0.049	0.01	0.8	0.0273 (0.02)	0.0265	0.01	0.046
Sodium	-	-	17.3 (8.24)	16	5	41	24.5 (9.04)	28.5	11	30
Strontium	**1,000**	**2,000**	12.8 (8.96)	9.61	2.65	41.9	33.2 (19.8)	28.9	16.6	58.4
Thallium	-	-	0.00877 (0.0111)	0.0056	0.001	0.0512	0.0084 (0.00356)	0.0087	0.0047	0.0115
Tin	**100**	**100**	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Titanium	-	-	16.5 (20.8)	12.6	4.8	143	19.3 (9.42)	23.5	5.3	25
Uranium	**100**	-	0.0324 (0.118)	0.0128	0.0062	0.784	0.0501 (0.063)	0.0234	0.0095	0.144
Vanadium	-	**50**	0.896 (1.04)	0.64	0.23	6.87	1.08 (0.539)	1.29	0.28	1.44
Zinc	**500**	**500**	38.3 (22)	29.1	12.3	93.4	29.8 (13.6)	32.8	12.1	41.3

Notes: Bold text indicates exceedance of Rodent MTL, bold and shaded text indicates exceedance of cattle MTL. Grey italic text indicates those parameters for which more than 50% of values are below RDL.



NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Pleides imagery provided by Yukon Government, Assessment and Abandoned Mines Branch.
5. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR.
6. Order of magnitude exceedences in lichen are considered relative to soil metal concentrations.
7. Size of symbol is not proportional to the order of magnitude size.

Document Path: M:\Projects\16-249 MN CMPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 14 Figure 8.1 Lichen Exceed.mxd

Mount Nansen Site

Terrestrial Existing Conditions

Ecological Logistics & Research Ltd.

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Legend

Maximum Tolerance Level Exceedances for Rodents

- Aluminum
- Arsenic
- Iron
- Lead

Maximum Tolerance Level Exceedances for Cattle

- Aluminum
- Arsenic
- Iron

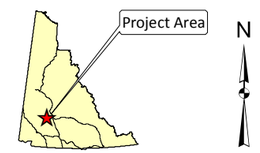
Mount Nansen Site Base Layers

- Roads
- Watercourses
- Order in Council Area
- Wildlife Local Study Area
- Existing Site Infrastructure

2013 Vegetation Sampling Program

- Sample Site

Note: The Maximum Tolernace Levels are exceeded in Aluminum and Arsenic for both the exposure and reference sites.



Scale: 1:25,000

0.5 0.25 0 0.5

Kilometers

Date: August 24, 2017	Drawn by: MM
ELR Project: 16-249	Checked by: CJ

FIGURE 8.1

Maximum Tolerance Level Exceedences for Metals in Lichen

8.2.2.2 Willow Tissue Metals

A summary of willow tissue metals concentrations is provided in Table 8.4, while detailed willow tissue metal results in the context of MTL levels is provided in Appendix 4.

Antimony

The concentration of antimony in willow tissue ranged from below detection (<0.0050) to 0.277 mg/kg in study sites and from below detection (<0.0050) to 0.0257 mg/kg in control sites. The highest observed concentration of 0.277 mg/kg was at Site 13, west of the Brown McDade Pit. Antimony concentrations in willow did not exceed the rodent MTL of 150 mg/kg, and no antimony MTL exists for cattle.

Arsenic

The concentration of arsenic in willow tissue ranged from below detection (<0.050) to 4.36 mg/kg in study sites and from below detection (<0.050) to 0.576 mg/kg in control sites. The highest observed concentration of 4.36 mg/kg was at Site 22, immediately west of the Brown McDade Pit (Figure 8.2). Arsenic concentrations in willow did not exceed the MTL of 30 mg/kg for cattle and rodents at any site.

Cadmium

The concentration of cadmium in willow tissue ranged from 0.567 to 19.6 mg/kg at study sites and from 0.643 to 4.56 mg/kg at control sites. The highest observed concentration of 19.6 mg/kg was at Site 30, north of the TSF (Figure 8.2). This highest observed concentration in willow at Site 30 was the only exceedance of the cadmium MTL of 10 mg/kg (for both cattle and rodents).

Copper

The concentration of copper in willow tissue ranged from 2.68 to 6.87 mg/kg at study sites and from 3.42 to 5.41 mg/kg at control Sites. The highest observed concentration of 6.87 mg/kg was at Site 28, located on the height of land between the Dome and Dry creek valleys (Figure 8.2). All copper concentrations in willow were below the MTL for copper of 40 mg/kg and 500 mg/kg for cattle and rodents, respectively.

Lead

The concentration of lead in willow tissue ranged from 0.027 to 1.62 mg/kg at study sites and from 0.04 to 0.109 mg/kg at control sites. The highest observed concentration of 1.62 mg/kg was at Site 13, immediately east of the Brown McDade Pit. (Figure 8.2) All lead concentrations in willow were below the MTL for lead of 250 mg/kg and 10 mg/kg for cattle and rodents, respectively

Silver

The concentration of silver in willow tissue ranged from below detection (<0.005) to 0.035 mg/kg at study sites while all results from control sites were below detection (<0.005). The highest observed concentration of 0.035 mg/kg was at Site 20, immediately west of the Mill Complex (Figure 8.2). No MTL exists for silver.

Zinc

The concentration of zinc in willow tissue ranged from 19.8 to 452 mg/kg at study sites and from 15.3 to 372 mg/kg in control sites. The highest observed concentration of 452 mg/kg was at Site 22, located

immediately east of the Brown McDade Pit (Figure 8.2). All zinc concentrations in willow were below the MTL for both cattle and rodents (500 mg/kg for both cattle and rodents).

Table 8.4: Willow Tissue Metal Summary Statistics and Exceedances

Metal (mg/kg)	Maximum Tolerable Limit		Study Sites (N=43)				Control Sites (N=4)			
	Rodent	Cattle	mean	Median	Min	Max	mean	Median	Min	Max
Aluminum	**200**	**1,000**	41.4 (36.6)	28.2	5.9	207	38.7 (24.6)	33.3	16.3	71.8
Antimony	**70 – 150**	-	0.0242 (0.0482)	0.00945	0.0025	0.277	0.0138 (0.00949)	0.0135	0.0025	0.0257
Arsenic	**30**	**30**	0.301 (0.778)	0.08	0.025	4.36	0.231 (0.239)	0.161	0.025	0.576
Barium	**250**	-	86 (68.1)	56.4	8.66	312	48.6 (22.9)	47.5	26.2	73
Beryllium	-	-	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Bismuth	**500**	-	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Boron	**150**	-	10.8 (6.38)	9.1	4.4	40.6	17.2 (9.32)	17.3	5.8	28.3
Cadmium	**10**	**10**	3.61 (3.14)	2.83	0.567	**19.6**	1.85 (1.83)	1.1	0.643	4.56
Calcium	**2 (%)***	**1.5 (%)***	12200 (3880)	12100	4740	22400	14300 (3610)	14100	10200	19000
Chromium	**100**	**100**	*0.121 (0.081)*	*0.1*	*0.1*	*0.59*	*0.1 (0)*	*0.1*	*0.1*	*0.1*
Cobalt	**25**	**25**	0.635 (0.562)	0.423	0.069	2.76	0.439 (0.227)	0.368	0.26	0.76
Copper	**500**	**40**	4.47 (0.934)	4.28	2.68	6.87	4.69 (0.874)	4.97	3.42	5.41
Iron	**500**	**500**	93.2 (87.7)	70.5	26	**584**	96.5 (62.9)	75	51	185
Lead	**10**	**100**	0.171 (0.329)	0.0625	0.027	1.62	0.0643 (0.0308)	0.054	0.04	0.109
Magnesium	**0.5 (%)***	**0.6 (%)***	3130 (1210)	2930	776	5720	3460 (827)	3450	2530	4420
Manganese	**2,000**	**2,000**	428 (307)	376	89	1780	257 (113)	250	127	403
Mercury	**0.2**	-	*0.00793 (0.00396)*	*0.005*	*0.005*	*0.016*	*0.00625 (0.0025)*	*0.005*	*0.005*	*0.01*
Molybdenum	**7**	**5**	0.199 (0.139)	0.145	0.025	0.597	0.238 (0.0653)	0.259	0.144	0.29
Nickel	**50**	**100**	1.7 (1.94)	0.984	0.086	8.97	0.924 (0.522)	0.947	0.264	1.54
Phosphorus	**0.6 (%)***	**0.7 (%)***	1970 (1260)	1470	579	4960	1920 (767)	2080	894	2630
Potassium	**1 (%)***	**2 (%)***	9650 (3070)	9770	3380	16500	10300 (4610)	9220	6090	16700
Selenium	**5**	**5**	*0.033 (0.0399)*	*0.025*	*0.025*	*0.284*	*0.025 (0)*	*0.025*	*0.025*	*0.025*
Silver	-	-	*0.0136 (0.00761)*	*0.01*	*0.01*	*0.035*	*0.01 (0)*	*0.01*	*0.01*	*0.01*
Sodium	-	-	*15.4 (26.6)*	*5*	*5*	*149*	*17 (18)*	*10*	*5*	*43*
Strontium	**1,000**	**2,000**	78.1 (39.7)	61.9	34.2	210	98.4 (11.4)	99.1	84.2	111
Thallium	-	-	0.00379 (0.00323)	0.003	0.001	0.0136	0.00403 (0.0025)	0.004	0.001	0.0071
Tin	**100**	**100**	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Titanium	-	-	1.48 (1.8)	1.15	0.5	12	0.875 (0.75)	0.5	0.5	2
Uranium	**100**	-	*0.00162 (0.00142)*	*0.001*	*0.001*	*0.0078*	*0.0065 (0.0078)*	*0.0035*	*0.001*	*0.018*
Vanadium	-	**50**	*0.136 (0.167)*	*0.1*	*0.1*	*1.15*	*0.1 (0)*	*0.1*	*0.1*	*0.1*
Zinc	**500**	**500**	189 (115)	161	19.8	452	183 (180)	173	15.3	372

Notes: Bold text indicates exceedance of Rodent MTL, bold and shaded text indicates exceedance of cattle MTL. Grey italic text indicates those parameters for which more than 50% of values are below RDL.

Mount Nansen Site

Terrestrial Existing Conditions

Ecological Logistics & Research Ltd.

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Legend

Maximum Tolerance Level Exceedence for Rodents

- Cadmium
- Iron

Maximum Tolerance Level Exceedence for Cattle

- Cadmium
- Iron

Mount Nansen Site Base Layers

- Roads
- Watercourses
- Order in Council Area
- Wildlife Local Study Area
- Existing Site Infrastructure

2013 Vegetation Sampling Program

- Sample Site

Project Area

N

Scale: 1:25,000

0.5 0.25 0 0.5

Kilometers

Date: August 24, 2017	Drawn by: MM
ELR Project: 16-249	Checked by: CJ

FIGURE 8.2

Maximum Tolerance Level Exceedences for Metals in Willow

NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Pleides imagery provided by Yukon Government, Assessment and Abandoned Mines Branch.
5. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR.
6. Order of magnitude exceedences in lichen are considered relative to soil metal concentrations.
7. Size of symbol is not proportional to the order of magnitude size.

Document Path: M:\Projects\16-249 MN CHPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 08 24 Figure 8.2 Willow Exceed.mxd

8.2.2.3 Berry Metals Concentrations

A summary of berry tissue metals concentrations is provided in Table 8.5, while detailed willow tissue metal results in the context of MTL levels is provided in Appendix 4.

Antimony

The concentration of antimony in berry tissue ranged from below detection (<0.0025) to 0.0487 mg/kg in study sites while all results from control sites were below detection (<0.0025). The highest observed concentration of 0.487 mg/kg was at Site 27, north of the camp area. Antimony concentrations in willow did not exceed the rodent MTL of 150 mg/kg, and no antimony MTL exists for cattle.

Arsenic

The concentration of arsenic in berry tissue ranged from below detection (<0.025) to 0.583 mg/kg in study sites while all results from control sites were below detection (<0.025). The highest observed concentration of 0.583 mg/kg was at Site 13, immediately west of the Brown McDade Pit. Arsenic concentrations in willow did not exceed the MTL of 30 mg/kg for cattle and rodents at any site.

Cadmium

The concentration of cadmium in berry tissue ranged from below detection (<0.0025) to 0.381 mg/kg at study sites and from below detection (<0.0025) to 0.015 mg/kg at control sites. The highest observed concentration of 0.381 mg/kg was at Site 5, located near the confluence of Back and Pony creeks. Cadmium concentrations in berry tissue did not exceed the MTL of 10 mg/kg for both cattle and rodents at any site.

Copper

The concentration of copper in berry tissue ranged from 3.98 to 9.21 mg/kg at study sites and from 4.57 to 7.06 mg/kg at control Sites. The highest observed concentration of 9.21 mg/kg was at Site 18, located along Back Creek. All copper concentrations in berry tissue were below the MTL for copper of 40 mg/kg and 500 mg/kg for cattle and rodents, respectively.

Lead

The concentration of lead in berry tissue ranged from below detection (<0.0025) to 0.161 mg/kg at study sites and from below detection (<0.0025) to 0.02 mg/kg at control sites. The highest observed concentration of 0.161 mg/kg was at Site 13, immediately east of the Brown McDade Pit. All lead concentrations in willow were below the MTL for lead of 250 mg/kg and 10 mg/kg for cattle and rodents, respectively

Silver

The concentration of silver in berry tissue was below detection (<0.005 mg/kg) in all study and control site samples. No MTL exists for silver.

Zinc

The concentration of zinc in berry tissue ranged from 8.26 to 24.9 mg/kg at study sites and from 8.22 to 18.7 mg/kg in control sites. The highest observed concentration of 24.9 mg/kg was at Site 24, located along the public road north of the camp area. All zinc concentrations in berry were below the MTL for both cattle and rodents (500 mg/kg for both cattle and rodents.

Table 8.5: Berry Tissue Metal Summary Statistics and Exceedances

Metal (mg/kg)	Maximum Tolerable Limit		Study Sites (N=43)				Control Sites (N=4)			
	Rodent	Cattle	mean	Median	Min	Max	mean	Median	Min	Max
Aluminum	**200**	**1,000**	25.8 (16)	23.4	2.9	76.1	22.8 (11.7)	22.2	10.1	36.8
Antimony	**70 – 150**	-	*0.00495 (0.00812)*	*0.0025*	*0.0025*	*0.0487*	*0.0025 (0)*	*0.0025*	*0.0025*	*0.0025*
Arsenic	**30**	**30**	*0.0653 (0.117)*	*0.025*	*0.025*	*0.583*	*0.025 (0)*	*0.025*	*0.025*	*0.025*
Barium	**250**	-	14.5 (5.87)	13	6.47	29.1	15.9 (3.27)	16.1	12	19.6
Beryllium	-	-	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Bismuth	**500**	-	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Boron	**150**	-	9.03 (3.59)	9.1	2.6	17.5	6.45 (6.01)	4.95	1	14.9
Cadmium	**10**	**10**	*0.0337 (0.078)*	*0.005*	*0.005*	*0.381*	*0.0075 (0.005)*	*0.005*	*0.005*	*0.015*
Calcium	**2 (%)***	**1.5 (%)***	1590 (341)	1570	935	2430	1440 (241)	1430	1160	1750
Chromium	**100**	**100**	*0.1 (0)*	*0.1*	*0.1*	*0.1*	*0.1 (0)*	*0.1*	*0.1*	*0.1*
Cobalt	**25**	**25**	*0.0119 (0.00642)*	*0.01*	*0.01*	*0.04*	*0.0153 (0.0105)*	*0.01*	*0.01*	*0.031*
Copper	**500**	**40**	5.9 (1.38)	5.58	3.98	9.21	5.65 (1.04)	5.48	4.57	7.06
Iron	**500**	**500**	27 (15.2)	23	15	105	26.8 (9.29)	24	19	40
Lead	**10**	**100**	*0.0179 (0.0291)*	*0.005*	*0.005*	*0.161*	*0.00875 (0.0075)*	*0.005*	*0.005*	*0.02*
Magnesium	**0.5 (%)***	**0.6 (%)***	884 (156)	846	597	1240	777 (71)	764	705	874
Manganese	**2,000**	**2,000**	431 (173)	435	63.5	903	285 (97.5)	305	155	375
Mercury	**0.2**	-	*0.00525 (0.00166)*	*0.005*	*0.005*	*0.016*	*0.005 (0)*	*0.005*	*0.005*	*0.005*
Molybdenum	**7**	**5**	0.214 (0.244)	0.124	0.025	1.29	0.413 (0.356)	0.295	0.143	0.92
Nickel	**50**	**100**	0.419 (0.227)	0.355	0.112	1.2	0.648 (0.31)	0.702	0.269	0.921
Phosphorus	**0.6 (%)***	**0.7 (%)***	1640 (362)	1590	1090	2590	1590 (229)	1530	1380	1910
Potassium	**1 (%)***	**2 (%)***	9640 (1490)	9500	7380	13200	8820 (780)	8760	7970	9800
Selenium	**5**	**5**	*0.025 (0)*	*0.025*	*0.025*	*0.025*	*0.025 (0)*	*0.025*	*0.025*	*0.025*
Silver	-	-	*0.01 (0)*	*0.01*	*0.01*	*0.01*	*0.01 (0)*	*0.01*	*0.01*	*0.01*
Sodium	-	-	*5.23 (1.51)*	*5*	*5*	*15*	*5 (0)*	*5*	*5*	*5*
Strontium	**1,000**	**2,000**	3.22 (1.99)	2.82	1.05	11.7	5.38 (0.984)	4.96	4.76	6.83
Thallium	-	-	*0.00125 (0.00101)*	*0.001*	*0.001*	*0.0066*	0.00238 (0.001)	0.00255	0.001	0.0034
Tin	**100**	**100**	*0.05 (0)*	*0.05*	*0.05*	*0.05*	*0.05 (0)*	*0.05*	*0.05*	*0.05*
Titanium	-	-	*0.623 (0.605)*	*0.5*	*0.5*	*4.4*	*0.5 (0)*	*0.5*	*0.5*	*0.5*
Uranium	**100**	-	*0.00124 (0.000919)*	*0.001*	*0.001*	*0.0056*	*0.001 (0)*	*0.001*	*0.001*	*0.001*
Vanadium	-	**50**	*0.1 (0)*	*0.1*	*0.1*	*0.1*	*0.1 (0)*	*0.1*	*0.1*	*0.1*
Zinc	**500**	**500**	14.6 (3.68)	13.7	8.26	24.9	12.4 (4.48)	11.3	8.22	18.7

Notes: Bold text indicates exceedance of Rodent MTL, bold and shaded text indicates exceedance of cattle MTL. Grey italic text indicates those parameters for which more than 50% of values are below RDL.

8.2.3 Soils Metal Concentrations

A summary of soil metals concentrations is provided in Table 8.6, while detailed soil results in the context of CCME guideline levels is provided in Appendix 4. Metal concentrations in 19 of the 44 sample sites exceeded the CCME guidelines for parkland (SQG-PL) and industrial (SQG-I) for at least one metal. Soils results are summarized below for those metals where CCME exceedances were observed, and for the highest observed concentrations of study key metals.

Antimony

Soil antimony concentrations exceeded both the SQG-I and SQG-PL (20 mg/kg and 40 mg/kg, respectively) at Site 20 (42.5 mg/kg) (Appendix 4). Soil antimony concentrations in upland reference sites (CU1 and CU2) were 0.31 mg/kg and 0.30 mg/kg, respectively, and did not exceed the SQG-PL or SQG-I. Soil antimony concentrations in riparian reference sites (CR1 and CR2) were 0.60 mg/kg and 0.61 mg/kg, respectively, and did not exceed the SQG-PL or SQG-I. The mean concentration of antimony for study sites was 1.9 mg/kg, compared with 0.46 mg/kg for reference sites (Table 8.6). The distribution of site CCME exceedances for Arsenic is shown in Figure 8.3.

Arsenic

Soil arsenic concentrations exceeded both the SQG-PL and SQG-I at 19 of the sites in the LSA (Appendix 4). Concentrations ranged from slightly above the guidelines at Site 30, where arsenic concentrations were 13.1 mg/kg, to greatly above at Site 20, where arsenic concentrations were 1,190 mg/kg. Soil arsenic concentrations in upland reference sites were 5.07 mg/kg and 4.78 mg/kg (CU1 and CU2, respectively, and did not exceed the SQG-PL or SGQ-I. Soil arsenic concentrations in riparian reference sites were 10.1 mg/kg and 7.58 mg/kg (CR1 and CR2, respectively), and did not exceed the SQG-PL or SGQ-I. The mean concentration of arsenic for study sites was 41 mg/kg, compared with 6.9 mg/kg for reference sites (Table 8.6). The distribution of site CCME exceedances for Arsenic is shown in Figure 8.3.

Cadmium

Soil cadmium concentrations at study sites ranged from below detection (more than 50% of sites) to 1.35 mg/kg, and from below detection to 0.199 mg/kg at reference sites. No SQG-PL or SQG-I exceedances for cadmium were observed.

Copper

Soil copper concentrations at study sites ranged from 1.04 mg/kg to 40.5 mg/kg, and from 5.96 mg/kg to 6.84 mg/kg at reference sites. No SQG-PL or SQG-I exceedances for copper were observed.

Lead

Soil lead concentrations at study sites ranged from 0.29 mg/kg to 75.7 mg/kg, and from 3.63 mg/kg to 6.27 mg/kg at reference sites.. No SQG-PL or SQG-I exceedances for lead were observed.

Silver

Soil silver concentrations at study sites ranged from below detection (<0.05 mg/kg) to 0.77 mg/kg, and from below detection (<0.05 mg/kg) to 0.059 mg/kg at reference sites. No SQG-PL or SQG-I exceedances for silver were observed.

Zinc

Soil zinc concentrations at study sites ranged from 6.6 mg/kg to 160 mg/kg, and from 20.8 mg/kg to 31.9 mg/kg at reference sites. No SQG-PL or SQG-I exceedances for zinc were observed.

Additional Metals

Soil thallium concentrations at study sites ranged from below detection (<0.05 mg/kg) to 2.43 mg/kg, and from below detection (<0.05 mg/kg) to 0.057 mg/kg at reference sites. Soil thallium concentrations exceeded both the SQG-PL and SGQ-I (1 mg/kg) at Site 20 (2.43 mg/kg). The distribution of site CCME exceedances for Thallium is shown in Figure 8.3.

Table 8.6: Soil Metal Summary Statistics and Exceedances

Metal (mg/kg)	CCME Guideline (mg/kg)		Study Sites (N=44)				Control Sites (N=4)			
	CCME-PL	CCME-I	Mean	Median	Min	Max	mean	Median	Min	Max
Aluminum			6600 (3510)	6260	1230	18300	7080 (1970)	6570	5310	9880
Antimony	20	40	1.94 (6.37)	0.52	0.05	**42.5**	0.455 (0.173)	0.455	0.3	0.61
Arsenic	12	12	41 (178)	6.34	0.25	**1190**	6.88 (2.49)	6.33	4.78	10.1
Barium	500	2,000	93.4 (51.9)	82	20.1	273	59 (8.27)	59	51.3	66.5
Beryllium	4	8	*0.209 (0.0573)*	*0.2*	*0.2*	*0.58*	*0.2 (0)*	*0.2*	*0.2*	*0.2*
Bismuth			*0.0775 (0.0734)*	*0.05*	*0.05*	*0.31*	*0.0775 (0.032)*	*0.075*	*0.05*	*0.11*
Cadmium	10	22	0.189 (0.225)	0.121	0.025	1.35	0.149 (0.0563)	0.149	0.099	0.199
Calcium			2250 (1090)	2100	586	6170	1840 (741)	1730	1080	2800
Chromium	64	87	8.78 (5.01)	7.95	0.5	23.2	10.8 (2.29)	10.4	8.4	13.9
Cobalt	50	300	4.2 (2.24)	3.86	1.02	13.7	3.46 (0.361)	3.35	3.15	3.98
Copper	63	91	10.6 (7.81)	9.02	1.04	40.5	6.44 (0.364)	6.47	5.96	6.84
Iron			14100 (7080)	13400	3510	46600	12900 (1460)	12400	11800	14900
Lead	140	600	9.17 (15)	3.91	0.29	75.7	4.86 (1.18)	4.78	3.63	6.27
Lithium			*3.67 (2.25)*	*2.5*	*2.5*	*11.8*	*4 (1.74)*	*3.9*	*2.5*	*5.7*
Magnesium			2030 (1480)	1900	357	8070	2150 (316)	2260	1680	2390
Manganese			264 (291)	185	26.9	1900	132 (29.7)	130	103	166
Mercury	6.6	50	*0.0304 (0.0156)*	*0.025*	*0.025*	*0.086*	*0.025 (0)*	*0.025*	*0.025*	*0.025*
Molybdenum	10	40	0.402 (0.224)	0.35	0.05	0.92	0.42 (0.0983)	0.415	0.31	0.54
Nickel	50	50	5.32 (2.99)	5.14	0.86	15.2	6.39 (1.37)	6	5.3	8.25
Phosphorus			403 (185)	414	85	1200	318 (103)	329	186	428
Potassium			578 (377)	502	168	1790	339 (59.6)	355	254	391
Selenium			*0.25 (0)*	*0.25*	*0.25*	*0.25*	*0.25 (0)*	*0.25*	*0.25*	*0.25*
Silver	1	2.9	0.186 (0.212)	0.112	0.025	0.77	0.0335 (0.017)	0.025	0.025	0.059
Sodium			252 (138)	246	50	625	84.3 (40.6)	78.5	50	130
Strontium			17.6 (7.33)	16.1	8.04	41.5	13.8 (6.69)	10.9	9.72	23.8
Thallium	1	1	0.15 (0.365)	0.068	0.025	**2.43**	*0.0398 (0.0172)*	*0.0385*	*0.025*	*0.057*
Tin	50	300	0.191 (0.102)	0.195	0.05	0.41	0.223 (0.0435)	0.225	0.18	0.26
Titanium			408 (177)	390	68.4	1130	274 (53.4)	265	220	347
Uranium	23	300	0.351 (0.249)	0.307	0.025	1.2	0.406 (0.163)	0.373	0.259	0.617
Vanadium			36.7 (16.7)	35.3	11.8	119	30.4 (4.97)	30	25.4	36.1
Zinc	200	360	36.8 (30.8)	28.9	6.6	160	26.6 (4.93)	26.8	20.8	31.9
Zirconium			*0.462 (0.43)*	*0.25*	*0.25*	*2.62*	0.778 (0.421)	0.8	0.25	1.26
Soil pH	6-8	6-8	**5.68 (0.477)**	**5.67**	**4.69**	6.57	**5.9 (0.898)**	**5.8**	**5.04**	6.97

Notes: Bold text indicates exceedance of CCME-PL guideline levels; shaded cells indicate exceedance of CCME-I guideline levels. Grey italic text indicates those parameters for which more than 50% of values are below RDL.

Mount Nansen Site

Terrestrial Existing Conditions

Ecological Logistics & Research Ltd.

Client: Yukon Energy, Mines and Resources, Assessment and Abandoned Mines

Legend

Mount Nansen Site Base Layers

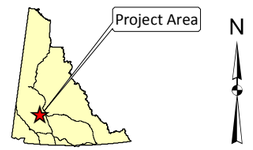
- Roads
- Watercourses
- Order in Council Area
- Wildlife Local Study Area
- Existing Site Infrastructure

2013 Sampling Program

- Sample Site
- Reference Site

Soil CCME Exceedences

- Soil Antimony
- Soil Arsenic
- Soil Thallium



Scale: 1:25,000

0.5 0.25 0 0.5

Kilometers

Date: September 14, 2017	Drawn by: CJ
ELR Project: 16-249	Checked by: CJ

FIGURE 8.3

Soil Metal Exceedences of CCME Guideline Levels

NOTES:
1. Units: Meters
2. NTS Mapsheet: 115I03
3. Projection: UTM Zone 8 NAD83
4. Pleides imagery provided by Yukon Government, Assessment and Abandoned Mines Branch.
5. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR.
6. Order of magnitude exceedences in lichen are considered relative to soil metal concentrations.
7. Size of symbol is not proportional to the order of magnitude size.

Document Path: M:\Projects\16-249 MN CHPP\Map_Files\Baseline Report Updates\Terrestrial Baseline Report\2017 09 14 Figure 8.3 Soil CCME Exceedences.mxd

8.2.4 Soil pH

Both the SQG-PL and SQG-I guidelines identify soil pH between 6 and 8 being the ideal conditions for the protection of soil biota and vegetation. Soil pH was below the guideline (more acidic) at 32 of the 44 monitoring sites and at two of the reference sites (Appendix 4). A summary of the soil pH data is provided in Table 8.6.

8.2.5 Vegetation Tissue Metals QA/QC Results

8.2.5.1 Lichen QA/QC Results

The full results of QA/QC sampling in lichen tissue, including calculated RPD values is provided in Appendix 5, while a summary of the results is provided here.

Site 24 and Duplicate 1

The RPD threshold of 20 percent was exceeded for 16 metals between Site 24 and Duplicate 1, as shown in Appendix 5. RPD values for these parameters ranged between 37.1 and 109.0 percent.

Site 4 and Duplicate 2

The RPD threshold of 20 percent was exceeded for 6 metals between Site 4 and Duplicate 2, as shown in Appendix 5. RPD values for these parameters ranged between 20.6 and 63 percent.

Site 1 and Duplicate 3

The RPD threshold of 20 percent was exceeded for 16 metals between Site 1 and Duplicate 3, as shown in Appendix 5. RPD values for these parameters ranged between 21.1 and 79.3 percent.

Site 23 and Duplicate 4

The RPD threshold of 20 percent was exceeded for 15 metals between Site 23 and Duplicate 4, as shown in Appendix 5. RPD values for these parameters ranged between 27.5 and 116.7 percent.

Site 35 and Duplicate 5

The RPD threshold of 20 percent was exceeded for 14 metals between Site 35 and Duplicate 5, as shown in Appendix 5. RPD values for these parameters ranged between 26.0 and 109.0 percent.

The high level of variability observed in lichens (frequency of RPD exceedances) is considered to be the result of variation in the metal content of lichens rather than a systematic sampling or laboratory analysis contamination issue. Lichen samples were a composite collected within a 1.25 m radius area, and because the deposition of metals from the atmosphere is non-uniform, this variability in concentrations likely reflects small variations in deposition. The overall mean RPD value for all lichen duplicate samples was 39.8 percent.

8.2.5.2 Willow QA/QC Review

The full results of QA/QC sampling in willow tissue, including calculated RPD values is provided in Appendix 5, while a summary of the results is provided here.

Site 24 and Duplicate 1

The RPD threshold of 20 percent was exceeded for 6 metals between Site 24 and Duplicate 1, as shown in Appendix 5. RPD values for these parameters ranged between 23.6 and 50.3 percent.

Site 4 and Duplicate 2

The RPD threshold of 20 percent was exceeded for 2 metals between Site 4 and Duplicate 2, as shown in Appendix 5. RPD values for these parameters ranged between 25.2 and 26.4 percent.

Site 1 and Duplicate 3

The RPD threshold of 20 percent was exceeded for 3 metals between Site 1 and Duplicate 3, as shown in Appendix 5. RPD values for these parameters ranged between 23.3 and 60.6 percent.

Site 23 and Duplicate 4

The RPD threshold of 20 percent was exceeded for 8 metals between Site 23 and Duplicate 4, as shown in Appendix 5. RPD values for these parameters ranged between 21.8 and 44.2 percent.

Site 35 and Duplicate 5

The RPD threshold of 20 percent was exceeded for 5 metals between Site 35 and Duplicate 5, as shown in Appendix 5. RPD values for these parameters ranged between 21.6 and 37.9 percent.

The moderate level of variability observed in willow tissue (frequency of RPD exceedances) is considered to be the result of variation between willow species, processes of uptake and metals process within the willow and natural site variation in soils rather than a systematic sampling or laboratory analysis contamination issue. The overall mean RPD value for all willow duplicate samples was 14.9 percent.

8.2.5.3 Berry QA/QC Review

The full results of QA/QC sampling in berry tissue, including calculated RPD values is provided in Appendix 5, while a summary of the results is provided here.

Site 24 and Duplicate 1

The RPD threshold of 20 percent was exceeded for 3 metals between Site 24 and Duplicate 1, as shown in Appendix 5. RPD values for these parameters ranged between 20.4 and 27.4 percent.

Site 4 and Duplicate 2

The RPD threshold of 20 percent was exceeded for 2 metals between Site 4 and Duplicate 2, as shown in Appendix 5. RPD values for these parameters ranged between 26.3 and 27.5 percent.

Site 1 and Duplicate 3

No RPD exceedances occurred between Site 1 and Duplicate 3 samples as shown in Appendix 5.

Site 23 and Duplicate 4

The RPD threshold of 20 percent was exceeded for 2 metals between Site 23 and Duplicate 4, as shown in Appendix 5. RPD values for these parameters ranged between 20.3 and 23.2 percent.

Site 35 and Duplicate 5

No RPD exceedances occurred between Site 35 and Duplicate 5 samples as shown in Appendix 5.

The low level of variability observed in berry tissue (frequency of RPD exceedances) is considered to be acceptable, and the result of slight variations between individual plants in the field, due to natural site variation in soils, rather than a systematic sampling or laboratory analysis contamination issue. The overall mean RPD value for all berry duplicate samples was 9.6 percent.

8.2.5.4 Soil QA/QC Review

The full results of soil QA/QC, including calculated RPD values is provided in Appendix 5, while a summary of the results is provided here.

Site 24 and Duplicate 1

The RPD threshold of 20 percent was exceeded for 2 metals between Site 24 and Duplicate 1, as shown in Appendix 5. RPD values for these parameters ranged between 25.9 and 36.4 percent.

Site 4 and Duplicate 2

The RPD threshold of 20 percent was exceeded for 2 metals between Site 4 and Duplicate 2, as shown in Appendix 5. RPD values for these parameters ranged between 30.3 and 37.2 percent.

Site 1 and Duplicate 3

The RPD threshold of 20 percent was exceeded for 11 metals between Site 1 and Duplicate 3, as shown in Appendix 5. RPD values for these parameters ranged between 21.7 and 50.9 percent.

Site 23 and Duplicate 4

No RPD exceedances occurred between Site 23 and Duplicate 4 samples as shown in Appendix 5.

Site 35 and Duplicate 5

The RPD threshold of 20 percent was exceeded for 7 metals between Site 35 and Duplicate 5, as shown in Appendix 5. RPD values for these parameters ranged between 20.8 and 29.6 percent.

The moderate level of variability observed in soil samples (frequency of RPD exceedances) is considered to represent variation in soils be the result of variation within the soils rather than a systematic sampling or laboratory analysis contamination issue. The overall mean RPD value for all soil duplicate samples was 12.9 percent.

8.3 VEGETATION AND SOILS METALS DISCUSSION

8.3.1 Antimony

A positive relationship was observed between proximity to mine infrastructure and antimony concentrations by EDI (2007). A general pattern of higher antimony concentrations in lichen and willow (and to a lesser extent berry tissue) in close proximity to the TSF, mill area and Brown McDade Pit was also observed in the current study. Despite this pattern, no exceedances of antimony MTL levels were observed in any vegetation tissue, and only one exceedance of the CCME-PL and CCME-I guidelines for antimony were observed in soil. Concentrations were similar to or slightly higher than those observed by

EDI (2007). The current study control site concentrations were below control site concentrations observed by EDI (2006), and similar to the known Yukon range presented in that study.

8.3.2 Arsenic

Despite observations of elevated arsenic concentrations in lichen in close proximity to the TSF, mill area, and Brown McDade Pit suggested by EDI (2007), only a single exceedance of the arsenic MTL levels (rodents and cattle) was observed during the current study (in lichen, immediately east of the TSF; Figure 8.1). Nineteen exceedances of the CCME-PL or CCME-I guidelines for arsenic were observed in soil. EDI (2007) noted a positive correlation between concentrations of arsenic in lichen and the proximity of lichen to infrastructure (e.g., TSF and Brown McDade Pit). These results appeared to be consistent with the current study, as some of the highest observed concentrations of arsenic in lichen, berry, and willow tissue were in closer proximity to existing infrastructure. Soil arsenic concentrations also appeared to show a positive relationship with proximity to the mill area, Brown McDade Pit and TSF. Arsenic was also detected in other areas of the Site including the Victoria Creek valley and at reference Site CR1, suggesting that other factors are also contributing to arsenic concentrations. The maximum concentrations of arsenic observed in the current study are similar to those observed by EDI (2006). The current study control point concentrations for arsenic are less than those observed in the EDI (2006) study, and within the known Yukon range as quoted in that study.

8.3.3 Cadmium

A single exceedance of MTL (rodents and cattle) was observed for cadmium in willow tissue (Site 30, east of Brown McDade Pit and north of TSF; Figure 8.2). No exceedances of the CCME-PL or CCME-I guidelines were observed in soil. Cadmium was not predicted by EDI (2007) to be elevated in close proximity to the TSF, mill Area, and Brown McDade Pit. Data from the current study suggest a limited positive relationship between proximity to past mine infrastructure and the concentration of cadmium. The maximum observed concentrations of cadmium in the current study were lower than those observed in both transect and control points by EDI (2007). The current study control point concentrations were similar to control concentrations observed in EDI (2007).

8.3.4 Copper

A positive relationship was observed between proximity to mine infrastructure and copper concentrations by EDI (2007). A pattern of higher copper concentrations in lichen in close proximity to the TSF, and to a lesser extent the mill area and Brown McDade Pit, was also observed in the current study. Despite this pattern, no exceedances of copper MTL levels were observed in any vegetation. Similarly, no exceedances of the CCME-PL or CCME-I copper guidelines were observed in soil. While the data collected from lichen suggest there may be some remnant or ongoing deposition of copper from the TSF, and to a lesser extent from the mill area, these concentrations were similar to or slightly reduced from those observed by EDI (2007). The current study control site concentrations were similar to control concentrations observed in the EDI (2007) study, and within the known Yukon range presented in that study.

8.3.5 Lead

Despite a pattern of elevated lead concentrations in lichen tissue in close proximity to the TSF, mill area, and Brown McDade Pit suggested by EDI (2007), only a single exceedance of the lead MTL (rodents) was observed during the current study (in lichen immediately east of the TSF). No exceedances of CCME-PL or CCME-I guidelines were observed in soil. Similar to EDI (2007), some of the highest observed concentrations of lead in lichen observed in the current study were in close proximity to infrastructure

(TSF and Brown McDade Pit; Appendix 4). The highest observed lead concentrations in soil all occurred north of the pit area, west of the mill area, and extended into the Back Creek valley. Soil lead concentrations did not appear to show a positive relationship with proximity to existing infrastructure. The maximum concentrations of lead found in lichen in the current study were lower than those observed in transect points established by EDI (2007). The current study reference point concentrations were in the lower range of control concentrations observed in the EDI (2007) study, and the lower range of the known Yukon range presented in that study.

8.3.6 Silver

A positive relationship was observed between proximity to mine infrastructure and silver concentrations by EDI (2007). A similar general pattern of higher silver concentrations in lichen and willow in close proximity to the TSF, mill area and Brown McDade Pit was also observed in the current study. Despite this pattern, no exceedances of the silver MTL were observed in any vegetation tissue, and no exceedances of CCME-PL and CCME-I guidelines for silver were observed in soil. Concentrations of silver at study and control sites were lower than those observed by EDI (2007), and below the known Yukon range presented in that study.

8.3.7 Zinc

No exceedances of the zinc MTL were observed in vegetation, and no exceedances of the CCME-PL or CCME-I guidelines were observed in soil. Through regression analysis, EDI (2007) demonstrated there was no statistically significant spatial patterns of zinc concentrations around the TSF, mill area, or Brown McDade Pit. Data from the current study also suggest no distinct relationship between the proximity of past mine infrastructure and the concentration of zinc in vegetation tissue. The results of the current study demonstrated concentrations of zinc similar to or slightly reduced from those observed by EDI (2007), and within the known Yukon range presented in that study.

8.3.8 Aluminum

Numerous exceedances of the MTL for aluminum were observed in lichen tissue (28 for rodent, two for cattle). These exceedances were distributed throughout many sites including some near previous infrastructure and in three of four control sites, however the two MTL exceedances for cattle were located closer to the Brown McDade Pit and TSF. Aluminum was not identified as having a positive relationship with mine infrastructure by EDI (2007). No CCME-PL or CCME-I guidelines exist for aluminum in soils. The moderate concentrations of aluminum observed in soil samples throughout the study area suggest that the aluminum is not related to previous site activities.

8.3.9 Iron

14 exceedances of the MTL for iron (cattle and rodent) were observed. These exceedances were distributed through many sites both near previous infrastructure and further away, including at three of four control sites. Iron was not identified as having a positive relationship with mine infrastructure by EDI (2007). No CCME-PL or CCME-I guidelines exist for iron in soils. While there may be a contribution of iron to vegetation at the Site from infrastructure areas, study data suggest that it also occurs naturally throughout the study area.

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APPENDIX 1: PLANT SPECIES OBSERVED DURING RARE PLANT SURVEYS

Scientific Name	Common Name	Family Name
Tree Species		
Picea glauca	White spruce	Pinaceae
Picea mariana	Black spruce	Pinaceae
Pinus contorta ssp. latifolia	Lodgepole pine	Pinaceae
Populus balsamifera ssp. balsamifera	Balsam poplar	Salicaceae
Populus tremuloides	Trembling aspen	Salicaceae
Shrubs and Dwarf Shrubs		
Alnus crispa ssp. sinuata	Green alder	Betulaceae
Andromeda polifolia	Bog rosemary	Ericaceae
Arctostaphylos rubra	Bearberry	Ericaceae
Arctostaphylos uva-ursi	Kinnikinnick	Ericaceae
Betula glandulosa	Dwarf birch	Betulaceae
Betula neoalaskana	Alaska birch	Betulaceae
Betula occidentalis	Water birch	Betulaceae
Cassiope tetragona ssp. saximontana	Arctic white-heather	Ericaceae
Dryas integrifolia	Mountain-avens	Rosaceae
Fragaria virginiana ssp. glauca	Wild strawberry	Rosaceae
Juniperus communis	Mountain juniper	Cupressaceae
Juniperus horizontalis	Creeping juniper	Cupressaceae
Ledum decumbens	Northern Labrador tea	Ericaceae
Ledum groenlandicum	Labrador tea	Ericaceae
Potentilla fruticosa ssp. floribunda	Shrubby cinquefoil	Rosaceae
Potentilla nivea	Snow cinquefoil	Rosaceae
Potentilla palustris	Marsh cinquefoil	Rosaceae
Potentilla uniflora	One-flowered cinquefoil	Rosaceae
Rosa acicularis	Prickly rose	Rosaceae
Rubus chamaemorus	Cloudberry	Rosaceae
Salix alaxensis ssp. alaxensis	Felt-leaved willow	Salicaceae
Salix bebbiana	Bebb's willow	Salicaceae
Scientific Name	**Common Name**	**Family Name**
Shrubs and Dwarf Shrubs - *continued*		
Salix glauca	Blue-green willow	Salicaceae
Salix myrtillifolia	Myrtle-leaf willow	Salicaceae
Salix planifolia	Tealeaf willow	Salicaceae
Salix reticulata ssp. reticulata	Net-veined willow	Salicaceae
Salix scouleriana	Scouler's willow	Salicaceae
Shepherdia canadensis	Soapberry	Elaeagnaceae
Vaccinium uliginosum	Bog blueberry	Ericaceae
Vaccinium vitis-idaea	Lingonberry	Ericaceae
Wild Flowers		
Achillea millefolium ssp. borealis	Common yarrow	Asteraceae
Aconitum delphinifolium	Monkshood	Ranunculaceae
Anemone multifida	Cut-leaf anemone	Ranunculaceae

Antennaria monocephala	Single-head pussytoes	Asteraceae
Antennaria rosea	Rosy pussytoes	Asteraceae
Arenaria capillaris	Fescue sandwort	Caryophyllaceae
Arnica lessingii	Lessing's arnica	Asteraceae
Arnica lonchophylla	Spear-leaved arnica	Asteraceae
Artemisia campestris	Pacific wormwood	Asteraceae
Artemisia norvegica ssp. saxatilis	Mountain sagewort	Asteraceae
Artemisia tilesii	Tilesius wormwood	Asteraceae
Aster borealis	Marsh Aster	Asteraceae
Aster sibiricus	Siberian Aster	Asteraceae
Astragalus alpinus	Alpine milk-vetch	Fabaceae
Astragalus americanus	Milk vetch	Fabaceae
Barbarea orthoceras	Winter cress	Brassicaceae
Botrychium lunaria	Moonwort	Ophioglossaceae
Bupleurum americanum	Thoroughwort	Apiaceae
Campanula lasiocarpa	Mountain harebell	Campanulaceae
Capsella bursa-pastoris	Shepherd's purse	Asteraceae
Cardamine pratensis	Cuckoo flower	Brassicaceae
Chamerion angustifolium	Fireweed	Onagraceae
Chamerion latifolium	Dwarf fireweed	Onagraceae
Crepis elegans	Hawk's beard	Asteraceae
Scientific Name	**Common Name**	**Family Name**
Wild Flowers - *continued*		
Delphinium glaucum	Tall larkspur	Ranunculaceae
Douglasia gormanii	Gorman's Douglasia	Primulaceae
Dryopteris fragrans	Fragrant cliff fern	Aspidiaceae
Empetrum nigrum ssp. hermaphroditum	Crowberry	Empetraceae
Erysimum coarctatum	Small-flower prairie wallflower	Brassicaceae
Euphrasia subarctica	Arctic eyebright	Scrophulariaceae
Galium boreale	Northern bedstraw	Rubiaceae
Gentianella propinqua	Four-part gentian	Gentianaceae
Hedysarum alpinum	Licorice-root	Fabaceae
Hippuris vulgaris	Common mare's-tail	Hippuridaceae
Linum lewisii	Wild blue flax	Linaceae
Linnaea borealis ssp. borealis	Twinflower	Caprifoliaceae
Lupinus arcticus	Arctic lupine	Fabaceae
Mertensia paniculata var. paniculata	Mountain bluebell	Boraginaceae
Minuartia obtusiloba	Alpine stitchwort	Caryophyllaceae
Moehringia lateriflora	Grove sandwort	Caryophyllaceae
Moneses uniflora	One-flowered pyrola	Pyrolaceae
Orthilia secunda	One-sided wintergreen	Pyrolaceae
Oxytropis campestris ssp. varians	Field locoweed	Fabaceae
Parnassia palustris var. neogaea	Grass of Parnassus	Saxifragaceae
Pedicularis labradorica	Labrador lousewort	Scrophulariaceae

Plantago major	Common plantain	Plantaginaceae
Platanthera hyperborea	Northern green orchid	Orchidaceae
Polemonium acutiflorum	Tall Jacob's-ladder	Polemoniaceae
Pulsatilla ludoviciana	Prairie crocus	Ranunculaceae
Pyrola grandiflora	Arctic wintergreen	Pyrolaceae
Ranunculus hyperboreus	Arctic buttercup	Ranunculaceae
Ranunculus lapponicus	Lapland buttercup	Ranunculaceae
Ribes glandulosum	Northern black currant	Saxifragaceae
Rumex arcticus	Arctic dock	Polygonaceae
Rumex crispus	Curled dock	Polygonaceae
Saussurea angustifolia ssp. yukonensis	Narrowleaf saw-wort	Asteraceae
Saxifraga hieracifolia	Stiff-stem saxifrage	Saxifragaceae
Scientific Name	**Common Name**	**Family Name**
Wild Flowers - *continued*		
Saxifraga hirculus	Yellow marsh saxifrage	Saxifragaceae
Saxifraga tricuspidata	Prickly saxifrage	Saxifragaceae
Senecio congestus	Marsh ragwort	Asteraceae
Senecio lugens	Black-tip groundsel	Asteraceae
Sisyrinchium montanum	Blue-eyed grass	Iridaceae
Solidago canadensis var. salebrosa	Canada goldenrod	Asteraceae
Solidago simplex	Spike-like goldenrod	Asteraceae
Sparganium multipedunculatum	Bur-reed	Sparganiaceae
Stellaria longipes	Chickweed	Caryophyllaceae
Taraxacum officinale	Dandelion	Asteraceae
Tofieldia pusilla	False asphodel	Liliaceae
Trifolium repens	White clover	Fabaceae
Valeriana capitata	Valerian	Valerianaceae
Viburnum edule	High-bush cranberry	Caprifoliaceae
Zygadenus elegans	Death camass	Liliaceae
Graminoids		
Beckmannia syzigachne	Sloughgrass	Poaceae
Bromus pumpellianus	Brome grass	Poaceae
Calamagrostis canadensis	Blue-joint grass	Poaceae
Calamagrostis purpurascens	Purple reedgrass	Poaceae
Carex aquatilis	Water sedge	Cyperaceae
Carex aurea	Golden sedge	Cyperaceae
Carex consimilis	Bigelow's sedge	Cyperaceae
Carex limosa	Shore sedge	Cyperaceae
Carex macloviana	Thick-headed sedge	Cyperaceae
Carex media	Scandinavian sedge	Cyperaceae
Carex stylosa	Long-styled sedge	Cyperaceae
Carex utriculata	Beaked sedge	Cyperaceae
Elymus trachycaulus	Slender wheat grass	Poaceae
Eriophorum spp.	Cotton grass species	Cyperaceae

Festuca altaica	Northern rough fescue	Poaceae
Hierochloe hirta ssp. arctica	Northern sweet grass	Poaceae
Hordeum jubatum	Foxtail barley	Poaceae
Scientific Name	**Common Name**	**Family Name**
Graminoids - *continued*		
Juncus balticus	Baltic rush	Juncaceae
Juncus biglumis	Two-flower rush	Juncaceae
Juncus castaneus ssp. castaneus	Chestnut rush	Juncaceae
Luzula parviflora ssp. parviflora	Small-flowered wood-rush	Juncaceae
Horsetails and Clubmosses		
Equisetum arvense	Field horsetail	Equisetaceae
Equisetum hyemale ssp. affine	Scouring rush	Equisetaceae
Equisetum pratense	Meadow horsetail	Equisetaceae
Equisetum sylvaticum	Wood horsetail	Equisetaceae
Lycopodium annotinum var annotinum	Stiff clubmoss	Lycopodiaceae
Mosses		
Hylocomium splendens	Step moss	Hylocomiaceae
Pleurozium schreberi	Red-stemmed feathermoss	Hylocomiaceae
Polytrichum juniperinum	Juniper haircap moss	Polytrichaceae
Ptilium crista-castrensis	Knight's plume	Hypanaceae
Sphagnum spp.	Sphagnum spp.	Sphagnaceae
Lichen		
Cetraria islandica	Iceland lichen	Parmeliaceae
Cladina mitis	Lesser green reindeer lichen	Cladoniaceae
Cladina rangiferina	Grey reindeer lichen	Cladoniaceae
Cladina stellaris	Star-tipped reindeer lichen	Cladoniaceae
Flavocetraria cucullata	Furled paperdoll	Parmeliaceae
Flavocetraria nivalis	Crinkled snow lichen	Parmeliaceae

APPENDIX 2: BIRD SPECIES POTENTIALLY OCCURRING AT THE MOUNT NANSEN SITE

Waterfowl and Grebes		
Horned grebe	American wigeon	Canvasback
Red-necked grebe	Northern shoveler	Redhead
Trumpeter swan	Green-winged teal	Ruddy duck
Canada goose	Blue-winged teal	Long-tailed tuck
Brant	Lesser scaup	Common golden-eye
Mallard duck	Greater scaup	Barrow's golden-eye
Northern pintail	Ring-necked duck	Bufflehead
Gadwall	Surf scoter	White-winged scoter
Riparian Species/Song Birds		
Alder Flycatcher	Gray Jay	Ruffed Grouse
American Coot	Great Gray Owl	Rusty Blackbird
American Dipper	Great Horned Owl	Savannah Sparrow
American Golden Plover	Gyrfalcon	Say's Phoebe
American Kestrel	Hairy Woodpecker	Semipalmated Plover
American Pipit	Hammond's Flycatcher	Semipalmated Sandpiper
American Robin	Hermit Thrush	Sharp-Shinned Hawk
American Tree Sparrow	Horned Lark	Sharp-Tailed Grouse
Arctic tern	Killdeer	Short-Eared Owl
Bald Eagle	Lapland longspur	Smith's Longspur
Bank Swallow	Least flycatcher	Snow bunting
Barn Swallow	Least Sandpiper	Solitary Sandpiper
Belted Kingfisher	Lesser Yellowlegs	Spotted Sandpiper
Black-Backed Woodpecker	Lincoln's Sparrow	Spruce Grouse
Black-Billed Magpie	Long-Billed Dowitcher	Surfbird
Black-Capped Chickadee	Merlin	Swainson's Thrush
Blackpoll Warbler	Mew Gull	Tennessee Warbler
Bonaparte's gull	Mountain Bluebird	Three-Toed Woodpecker
Bohemian Waxwing	Northern Flicker	Townsend's Solitaire
Boreal Chickadee	Northern Goshawk	Townsend's Warbler
Boreal Owl	Northern Harrier	Tree Swallow
Brown-Headed Cowbird	Northern Hawk Owl	Upland Sandpiper
Chipping Sparrow	Northern Shrike	Varied Thrush
Cliff Swallow	Northern Waterthrush	Violet-Green Swallow
Common Nighthawk	Northern Wheatear	Wandering Tattler
Common Raven	Olive-Sided Flycatcher	Western Wood-Peewee
Common Redpoll	Orange-Crowned Warbler	Whimbrel
Common Yellowthroat	Peregrine Falcon	White-Crowned Sparrow
Dark-Eyed Junco	Pine Grosbeak	White-Tailed Ptarmigan
Downy Woodpecker	Pine Siskin	White-Winged Crossbill
Dusky Grouse	Red-Breasted Nuthatch	Willow Ptarmigan
Fox Sparrow	Red-Necked Phalarope	Wilson's snipe
Golden-Crowned Sparrow	Red-Tailed Hawk	Wilson's Warbler
Golden Eagle	Red-Winged Blackbird	Yellow-bellied flycatcher
Gray-Cheeked Thrush	Rock Ptarmigan	Yellow-bellied sapsucker
Gray-crowned rosy finch	Ruby-crowned kinglet	Yellow Warbler
Yellow-Rumped Warbler		

APPENDIX 3: WILDLIFE RESEARCH PERMITS

Yukon
Environment
Environnement

WILDLIFE RESEARCH PERMIT

SUBJECT TO THE PROVISIONS OF THE *WILDLIFE ACT* AND REGULATIONS:

PERMIS DE RECHERCHE SUR LA FAUNE

SOUS RÉSERVE DES DISPOSITIONS DE LA LOI SUR LA FAUNE *ET DE SES RÉGLEMENTS D'APPLICATION*

0099

0	0	1

Vendor number
N° de distributeur/distributrice

Last name • *Nom de famille* / First name and initials • *Prénom usuel et autres prénoms*

Ecological Logistics and Research Ltd.

Mailing address • *Adresse postale*

204 - 105 Titanium Way

Town, city • *Ville, village* / Postal code • *Code postal*

Whitehorse, Yukon Y1A 0E7

Issue Date
Date de délivrance

1	3	0	3	0	8
Year • *Année*		Month • *Mois*		Day • *Jour*	

Phone/message number • *N° de téléphone*

867-335-1932

is hereby authorized to engage in wildlife research respecting
est par les présentes autorisé(e) à effectuer des recherches sur la faune répondant aux particularités suivantes :

conduct an aerial wildlife survey of ungulates in the Mt. Nansen area, subject to the attached conditions.

species • *espece*

in

location • *endroit*

from / *à partir du* 13 (Year / *Année*) / 03 (Month / *Mois*) / 08 (Day / *Jour*) to / *jusqu'au* (Expiry date / *Date d'expiration*) 13 (Year / *Année*) / 04 (Month / *Mois*) / 10 (Day / *Jour*)

CONDITIONS OF PERMIT
CONDITIONS ASSOCIÉES AU PERMIS see attached conditions

SIGNATURE OF PERMITTEE
SIGNATURE DU/DE LA TITULAIRE

ISSUING OFFICER
SIGNATURE DE LA PERSONNE CHARGÉE LA DÉLIVRANCE

Personal information contained on this form is collected under the *Wildlife Act* and associated Regulations and will be used by the Department of Environment for research, statistical and enforcement purposes. For further information, contact the Department of Environment at (867)667-5652 or 1-800-661-0408 within the Yukon.

Les renseignements personnels contenus dans le présent formulaire sont recueillis en vertu de la Loi sur la faune *et des règlements d'application, et ils seront utilisés par le ministère de l'Environnement à des fins de recherche, de compilation de statistiques et d'exécution de la Loi. Pour obtenir de plus amples renseignements, communiquez avec le ministère de l'Environnement, au (867) 667-5652 ou au 1-800-661-0408 (à l'intérieur du Yukon).*

YG(2405)NC3 02/2003

Distribution 1—Permittee • *Titulaire du permis* 2—Whitehorse Office • *Bureau de Whitehorse* 3—Leave in book • *À conserver dans le carnet*

Conditions for Wildlife Research Permit #0099 issued March 08, 2013

1. This permit authorizes wildlife research in the form of an aerial survey to be conducted using the methods described in the attached application for a Wildlife Research Permit provided by Ecological Logistics and Research Ltd, within the study area on map attached to application.
2. Permit holder must provide a report disclosing the results of the survey, including survey methods, observations and conclusions. Report must include raw data including shape files, for both the survey track and waypoints of locations of ungulates, GPS type and GPS datum, and survey area polygon, as well as information detail on each point, recorded in a spreadsheet (e.g.: wildlife numbers, composition, comments on habitat for each location that is included in the data)
3. Report must be provided to the Manager, Enforcement and Compliance, Environment Yukon before May 30, 2013
4. This permit does not authorize any harassment of wildlife and does not authorize the holder to do any act prohibited under the Wildlife Act or Regulation.
5. Failure to comply with the conditions of this permit, including failure to provide the required report constitutes an offence under the Wildlife Act.
6. This permit is not transferable.

APPENDIX 4: DETAILED SOIL, LICHEN, WILLOW, AND BERRY TISSUE METALS DATA

Metal Concentrations in Soil Samples

	CCME Guideline		SAMPLE NUMBER													
Parameter	SQG - PL	SQG - I	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Metals (mg/kg)																
Aluminum	-	-	6190	10800	2000	2120	18300	1280	2710	5760	6990	5460	8440	4860	5980	3910
Antimony	20	40	0.26	1.19	<0.10	<0.10	1.50	0.31	0.13	0.65	1.38	0.21	3.71	0.14	1.59	0.10
Arsenic	12	12	4.60	**17.8**	0.65	<0.50	**15.9**	0.99	3.72	6.07	11.4	5.63	**51.9**	2.72	**31.0**	1.57
Barium	500	2, 000	41.8	131	57.9	57.1	178	119	30.6	114	123	69.4	126	20.8	69.4	38.4
Beryllium	4	8	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bismuth	-	-	<0.10	0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.17	<0.10	<0.10	<0.10
Cadmium	10	22	0.109	0.302	0.052	<0.050	1.35	0.115	<0.050	<0.050	0.093	0.094	0.454	0.073	0.092	<0.050
Calcium	-	-	827	3040	2400	3130	6170	2200	1510	1920	1480	2140	1620	754	1310	1550
Chromium	64	87	7.8	13.9	8.9	<1.0	23.2	1.9	3.3	5.6	12.7	7.3	10.0	4.9	5.6	5.0
Cobalt	50	300	3.04	4.84	2.28	1.02	7.70	1.26	1.92	4.75	4.41	2.85	4.22	3.19	4.60	2.67
Copper	63	91	4.56	10.6	3.25	2.86	27.2	8.24	3.26	8.77	9.75	15.5	23.7	5.61	9.06	2.99
Iron	-	-	13000	19500	7270	3950	25400	3510	8250	15700	14600	13200	15400	13000	14700	10200
Lead	140	600	3.81	13.5	0.55	0.53	75.7	0.70	1.70	2.71	3.39	2.80	10.8	2.64	2.41	1.28
Lithium	-	-	<5.0	6.8	<5.0	<5.0	11.8	<5.0	<5.0	<5.0	5.50	<5.0	<5.0	<5.0	<5.0	<5.0
Magnesium	-	-	2100	3730	586	488	8070	587	850	974	1930	1860	1640	773	2280	946
Manganese	-	-	124	219	329	47.2	313	60.2	61.1	411	175	124	198	70.4	557	113
Mercury	6.6	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.081	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	10	40	0.35	0.64	0.13	0.12	0.92	<0.10	0.25	0.32	0.45	0.48	0.73	0.31	0.26	0.20
Nickel	50	50	3.56	7.35	1.87	0.96	9.06	1.76	2.20	4.20	9.47	4.97	7.06	3.04	3.39	3.14
Phosphorus	-	-	183	491	503	199	629	643	311	559	206	386	398	197	312	483
Potassium	-	-	774	536	256	253	1320	168	263	515	622	643	816	199	965	253
Selenium	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	1	2.9	<0.050	0.149	<0.050	0.067	0.419	<0.050	<0.050	0.155	0.053	0.078	0.613	<0.050	0.280	0.068
Sodium	-	-	126	199	522	625	417	307	187	278	140	376	247	198	264	268
Strontium	-	-	8.16	23.8	18.1	22.9	38.9	16.1	10.8	14.7	13.2	16.8	19.9	10.2	12.0	11.2
Thallium	1	1	0.082	0.077	<0.050	<0.050	0.142	0.064	<0.050	0.251	0.125	<0.050	0.250	<0.050	0.069	<0.050
Tin	50	300	0.32	0.31	<0.10	<0.10	0.41	<0.10	<0.10	0.14	0.30	0.15	0.27	0.12	0.15	0.10
Titanium	-	-	769	438	363	194	1130	433	307	480	325	415	277	554	607	385
Uranium	23	300	0.235	0.599	0.105	0.111	1.20	0.135	0.126	0.331	0.333	0.431	0.668	0.166	0.201	0.104
Vanadium	-	-	42.4	42.8	24.1	11.8	119	12.0	27.2	48.6	35.2	35.7	40.4	44.3	40.8	31.3
Zinc	200	360	32.9	65.7	11.4	7.8	160	10.6	12.5	22.5	34.1	22.8	47.3	23.3	27.6	15.1
Zirconium	-	-	0.93	<0.50	<0.50	<0.50	2.62	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
pH (pH Units)																
pH	>6, <8	>6, <8	**4.69**	**5.66**	6.03	6.57	6.53	6.29	6.41	**5.33**	**5.50**	**5.35**	**5.12**	**5.37**	**5.46**	**5.32**

Parameter	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Metals (mg/kg)																		
Aluminum	6320	5550	10600	6100	7160	5490	2420	2610	9680	10900	8810	4660	9800	12600	7490	5960	1230	3910
Antimony	2.07	0.12	0.39	1.07	0.31	**42.5**	<0.10	0.32	2.06	4.79	0.50	0.55	3.86	1.36	3.29	0.38	<0.10	1.03
Arsenic	**71.0**	2.20	5.84	**16.4**	4.64	**1190**	1.97	2.33	**20.3**	**74.1**	**17.0**	4.11	**35.0**	**16.2**	**28.8**	**13.1**	1.23	**27.6**
Barium	98.6	62.3	66.6	81.3	191	135	38.8	29.8	130	130	82.3	64.8	84.7	273	113	81.6	20.1	53.0
Beryllium	<0.40	<0.40	<0.40	<0.40	<0.40	0.58	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bismuth	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.17	<0.10	<0.10	0.31	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	0.093	<0.050	0.287	0.211	0.073	0.614	<0.050	0.213	0.132	0.292	0.127	0.350	0.126	0.353	0.261	0.227	<0.050	0.170
Calcium	2780	1780	2650	2770	2090	2960	1100	1300	3000	2510	4020	2150	2110	3930	2030	1600	1190	1140
Chromium	4.1	6.5	11.1	8.1	10.1	7.4	3.0	4.0	13.3	14.5	16.2	6.3	15.2	20.6	9.6	7.2	<1.0	9.9
Cobalt	3.61	3.48	4.51	5.94	3.86	13.7	3.69	2.83	4.36	3.78	4.42	6.31	7.40	9.36	4.96	2.72	1.58	4.34
Copper	8.84	9.29	11.0	7.74	6.33	28.5	2.93	5.29	12.9	19.6	6.48	5.25	17.8	40.5	10.9	6.10	1.04	9.90
Iron	12100	12300	16900	16700	13500	46600	7270	9240	17100	19600	16500	10200	18400	24000	13800	10500	4860	13300
Lead	2.62	1.72	22.0	31.4	5.77	30.7	0.98	4.87	4.73	60.1	4.68	3.97	15.7	5.80	17.7	5.66	0.29	3.73
Lithium	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	9.10	7.2	7.20	<5.0	5.5	7.70	<5.0	<5.0	<5.0	<5.0
Magnesium	763	2520	2210	1860	2200	1550	419	919	4440	3010	3990	1150	2370	4820	1850	1350	357	1160
Manganese	379	156	147	420	237	1900	165	332	186	174	224	358	533	487	631	152	49.9	199
Mercury	0.072	<0.050	<0.050	<0.050	<0.050	0.086	<0.050	<0.050	0.063	<0.050	<0.050	<0.050	<0.050	0.060	<0.050	<0.050	<0.050	<0.050
Molybdenum	0.61	0.18	0.67	0.32	0.32	0.68	0.13	0.20	0.39	0.51	0.34	0.35	0.76	0.54	0.49	0.39	<0.10	0.70
Nickel	3.33	3.51	5.89	4.01	5.30	9.88	1.93	2.64	6.49	9.47	8.82	2.95	7.52	15.2	5.96	5.51	0.86	7.88
Phosphorus	485	546	268	455	358	1200	289	202	503	431	554	507	437	502	453	395	336	158
Potassium	477	1170	377	399	673	1290	270	174	1790	498	727	286	560	1660	506	455	220	574
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	0.137	0.063	0.212	0.176	0.096	0.707	0.085	0.101	0.102	0.618	0.054	0.188	0.734	0.186	0.150	0.770	<0.050	<0.050
Sodium	521	197	237	133	206	<100	251	272	<100	144	191	429	266	196	186	245	425	161
Strontium	17.9	12.3	20.2	16.9	14.4	41.5	8.60	12.3	18.9	21.1	23.4	16.0	18.7	31.3	15.8	13.3	11.6	10.9
Thallium	0.346	<0.050	0.083	0.059	0.082	**2.43**	<0.050	<0.050	0.264	0.153	0.067	0.084	0.183	0.513	0.122	0.060	<0.050	0.121
Tin	0.11	0.19	0.26	0.17	0.20	0.25	<0.10	0.10	0.28	0.31	0.24	0.11	0.26	0.39	0.21	0.16	<0.10	0.24
Titanium	105	648	411	302	394	68.4	291	383	560	349	587	289	592	444	424	349	247	290
Uranium	0.360	0.183	0.201	0.347	0.277	0.801	0.132	0.100	0.409	0.436	0.452	0.277	0.671	0.748	0.486	0.203	<0.050	0.246
Vanadium	20.2	35.3	49.6	30.4	35.0	42.1	24.8	30.2	46.1	43.1	39.2	21.9	51.7	58.4	35.9	31.6	15.2	40.9
Zinc	26.8	23.6	48.0	55.7	27.3	147	10.9	34.3	40.9	80.2	40.2	23.6	47.2	63.5	38.6	35.8	6.6	30.1
Zirconium	0.55	<0.50	0.71	0.53	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	0.95	<0.50	0.73	0.72	0.87	<0.50	<0.50	<0.50
pH (pH Units)																		
pH	**5.86**	**5.87**	6.17	**5.84**	**5.45**	**5.38**	**5.23**	**5.77**	**5.73**	**5.39**	**5.67**	6.09	**5.47**	**5.82**	**5.72**	**5.44**	**5.18**	**4.73**

Parameter	33	34	35	36	37	38	39	40	41	42	43	44	CR1	CR2	CU1	CU2
Metals (mg/kg)																
Aluminum	9980	9410	1560	9840	9360	6690	4150	8210	2080	6890	9810	6470	6850	5310	9880	6290
Antimony	0.49	1.00	<0.10	0.76	1.33	0.54	0.13	0.42	3.47	<0.10	0.29	0.79	0.60	0.61	0.31	0.30
Arsenic	**14.6**	**18.4**	0.79	9.91	**31.8**	6.49	1.07	4.28	6.18	1.11	5.94	**15.3**	10.1	7.58	5.07	4.78
Barium	107	100	23.7	137	114	80.7	66.4	205	72.0	116	81.4	93.2	52.3	66.5	51.3	65.7
Beryllium	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bismuth	<0.10	<0.10	<0.10	<0.10	0.29	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.27	<0.10	0.11	<0.10	0.10
Cadmium	0.150	0.108	<0.050	0.163	0.400	0.100	0.113	0.149	<0.050	0.093	0.129	0.426	0.196	0.099	0.199	0.101
Calcium	2060	3990	586	1760	1570	2210	1810	4130	2740	2100	1210	3690	1980	2800	1480	1080
Chromium	13.6	10.3	3.8	15.0	12.7	6.9	4.8	10.7	2.8	7.2	10.2	10.2	10.2	8.4	13.9	10.6
Cobalt	3.55	6.16	1.19	5.26	3.48	3.86	4.47	3.44	2.38	4.35	3.07	4.13	3.36	3.34	3.98	3.15
Copper	9.22	6.79	2.27	9.43	8.97	16.7	16.4	7.33	5.67	16.0	10.4	11.8	6.42	5.96	6.84	6.52
Iron	19200	21300	4900	17100	16500	12900	10000	13500	7030	11200	12500	14200	11800	11800	14900	13000
Lead	4.99	5.29	0.79	5.08	14.3	2.37	1.42	6.24	0.70	1.62	3.85	12.0	5.34	6.27	4.21	3.63
Lithium	<5.0	5.60	<5.0	7.10	5.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.70	5.30	<5.0
Magnesium	2450	4590	664	2650	2730	2020	1090	2250	491	2030	1980	2560	2260	2250	2390	1680
Manganese	156	345	26.9	184	151	210	270	135	95.8	145	82.1	262	148	166	103	112
Mercury	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	0.80	0.55	0.13	0.49	0.56	0.21	0.22	0.29	0.22	0.24	0.35	0.79	0.31	0.54	0.38	0.45
Nickel	6.35	5.72	1.91	10.9	6.77	4.38	3.17	5.96	3.24	4.01	6.58	5.98	6.59	5.30	8.25	5.41
Phosphorus	381	456	85	343	150	329	430	237	479	487	240	542	297	428	361	186
Potassium	351	376	356	687	599	704	396	666	239	666	240	465	366	343	391	254
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	0.178	0.063	<0.050	0.061	0.280	0.148	0.146	0.560	<0.050	0.129	<0.050	0.121	<0.050	0.059	<0.050	<0.050
Sodium	<100	331	255	<100	117	270	293	420	496	284	<100	142	107	130	<100	<100
Strontium	15.7	23.9	8.04	16.2	15.6	14.5	14.7	26.0	17.6	19.9	10.3	29.3	11.6	23.8	10.2	9.72
Thallium	0.071	0.088	<0.050	0.130	0.091	0.067	<0.050	0.066	<0.050	0.063	<0.050	0.059	0.057	<0.050	0.052	<0.050
Tin	0.24	0.25	<0.10	0.31	0.40	0.16	0.11	0.20	<0.10	0.16	0.20	0.22	0.26	0.18	0.26	0.19
Titanium	368	475	240	346	546	422	394	424	326	428	237	337	274	256	347	220
Uranium	0.394	0.390	0.112	0.340	0.295	0.318	0.200	0.325	0.139	0.579	0.236	0.995	0.449	0.617	0.297	0.259
Vanadium	33.4	54.2	17.1	40.3	44.3	36.6	33.6	34.5	23.4	31.2	29.1	30.0	27.1	25.4	36.1	32.8
Zinc	23.1	40.0	9.8	35.2	47.6	22.6	14.7	39.7	12.6	19.5	22.6	56.6	24.4	31.9	29.1	20.8
Zirconium	0.58	0.52	<0.50	<0.50	0.77	<0.50	<0.50	<0.50	<0.50	<0.50	1.47	0.58	0.90	<0.50	0.70	1.26
pH (pH Units)																
pH	**5.87**	**5.92**	**5.18**	**5.41**	**4.98**	6.13	6.28	6.35	6.53	**5.13**	**5.59**	6.18	6.97	6.30	**5.29**	**5.04**

Notes: 1) Bold text represents values in exceedence of SQG-PL guidelines; shaded cells represent values in exceedence of SQG-I guidelines 2) The highest 5 values observed for arsenic, cadmium, copper, lead, and zinc are shown with cell borders.

Metal Concentrations in Lichen Tissue

	Maximum Tolerance Limit (mg/kg)		SAMPLE NUMBER													
Parameter	Rodents	Cattle	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Metals (mg/kg)																
Aluminum	200	1,000	**1170**	155	**254**	84.5	**260**	**278**	**403**	179	127	137	180	**229**	**1220**	160
Antimony	70 – 150	-	0.113	0.164	0.387	0.0258	0.18	0.0579	0.0546	0.0728	0.0157	0.0399	0.12	0.113	1.26	0.0904
Arsenic	30	30	0.983	1.21	3.72	0.245	1.7	0.493	0.594	0.517	0.156	0.315	0.904	1.96	13.8	1.2
Barium	250	-	83.7	17.7	22.7	12.5	53.2	37	60	12.7	39.9	32.8	17.4	22.5	62.2	32.1
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	<2.0	<2.0	2	<2.0	3.7	4.6	2.3	<2.0	<2.0	2.3	<2.0	<2.0	3.5	<2.0
Cadmium	10	10	0.257	0.871	0.676	0.142	0.464	0.227	0.076	0.073	0.268	0.144	0.137	0.158	0.339	0.064
Calcium	2 (%)*	1.5 (%)*	1650	1700	2550	2100	5030	2350	4220	1230	2610	3550	1840	1280	3450	2030
Chromium	100	100	1.67	0.44	0.6	0.23	0.82	0.67	1.23	0.59	0.24	0.5	0.5	0.45	2.14	0.46
Cobalt	25	25	0.738	0.149	0.178	0.095	0.246	0.201	0.303	0.162	0.123	0.229	0.156	0.202	1.01	0.145
Copper	500	40	5.5	2.19	2.61	1.38	4.19	2.66	3.18	1.64	2.03	3.39	2.99	2.64	5.95	3.02
Iron	500	500	**1160**	311	454	154	**515**	435	**648**	323	178	256	287	384	**3060**	318
Lead	10	100	1.68	1.1	2.31	0.306	1.59	0.58	0.824	0.563	0.282	0.304	0.834	1.24	7.93	0.67
Magnesium	0.5 (%)*	0.6 (%)*	459	387	409	446	874	449	561	302	389	768	403	305	1670	312
Manganese	2,000	2,000	136	254	275	120	269	268	199	109	261	980	357	164	814	197
Mercury	0.2	-	0.119	0.022	0.017	<0.010	0.036	0.028	0.026	<0.010	0.024	0.025	0.013	0.05	0.035	0.011
Molybdenum	7	5	0.575	0.058	0.084	<0.050	0.351	0.393	0.26	0.059	0.099	0.1	0.055	0.066	0.083	0.073
Nickel	50	100	1.97	0.457	0.616	0.287	0.821	1.11	1.37	0.674	0.526	0.869	0.681	0.638	1.42	0.631
Phosphorus	0.6 (%)*	0.7 (%)*	781	345	511	418	720	522	558	402	727	887	588	411	831	393
Potassium	1 (%)*	2 (%)*	962	814	1150	1080	1200	975	1040	747	1730	1460	1190	1060	2260	700
Selenium	5	5	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	-	-	0.8	0.021	0.054	<0.020	0.029	<0.020	<0.020	0.061	0.046	0.03	0.057	0.027	0.166	<0.020
Sodium	-	-	37	<10	25	<10	14	20	26	14	25	12	14	21	14	<10
Strontium	1,000	2,000	17.9	8.6	7.99	6.5	22	8.61	17.9	5.67	11.4	12	4.28	4.59	12.9	7.07
Thallium	-	-	0.0082	0.0042	0.0061	0.0024	0.0068	0.0061	0.0049	0.0038	0.0063	0.0027	0.005	0.0105	0.0509	0.0106
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	34.7	9.4	14.4	4.8	14.4	17	21.6	10.8	6.6	9.5	8.5	12.8	143	8.8
Uranium	100	-	0.0364	0.0097	0.0131	0.0062	0.0178	0.0137	0.0203	0.0099	0.0105	0.0087	0.0096	0.0169	0.0284	0.0087
Vanadium	-	50	1.91	0.45	0.78	0.23	0.83	0.89	1.17	0.53	0.26	0.45	0.46	0.7	6.87	0.52
Zinc	500	500	21.5	46.3	93.4	23.4	89.3	36.2	51	18.5	17	66.9	36.9	20.8	80.2	12.3

Parameter	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Metals (mg/kg)																		
Aluminum	**243**	139	**255**	183	**355**	190	**290**	**503**	**251**	**262**	**663**	148	184	**261**	**303**	**297**	**242**	163
Antimony	0.128	0.0325	0.283	0.0614	0.176	0.544	0.0589	0.994	0.18	0.156	4.72	0.0852	0.143	0.059	0.152	0.326	0.432	0.0534
Arsenic	0.689	0.283	2.44	0.768	1.7	3.68	0.562	20	1.31	1.18	**39.8**	0.68	1.12	0.447	1.19	3.62	3	0.48
Barium	22.6	14.3	35.3	16.5	87.7	13	68.8	22.1	23.6	52.3	48.8	19.8	21.1	115	38.1	68.9	8.52	14
Beryllium	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.28	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	13.2	<2.0	<2.0	3.3	<2.0	<2.0	<2.0	<2.0
Cadmium	0.199	0.052	0.595	0.212	0.268	0.164	0.288	0.201	0.15	0.574	1.27	0.338	0.205	0.164	0.393	0.437	0.048	0.168
Calcium	2590	1080	4150	2190	5270	1170	9650	1860	1540	2680	10300	1810	2440	5850	4390	3780	693	1470
Chromium	0.58	0.39	0.66	0.77	1.05	0.38	0.69	1.13	0.73	0.62	1.47	0.42	0.46	0.45	0.51	0.78	0.62	0.45
Cobalt	0.194	0.114	0.235	0.146	0.3	0.148	0.249	0.492	0.201	0.214	2.7	0.167	0.163	0.16	0.195	0.293	0.166	0.178
Copper	3.74	1.7	2.75	1.84	4.13	2.02	3.56	3.89	5.11	3.07	12.5	1.85	1.93	3.7	2.39	4.3	1.93	2.07
Iron	419	245	453	361	**641**	346	434	**1430**	476	413	**2500**	294	304	305	437	**634**	484	283
Lead	0.687	0.276	2.19	0.775	1.58	4.1	0.547	9.53	1.44	1.17	**22.6**	0.692	0.937	0.385	1.14	2.16	3.48	0.4
Magnesium	567	321	709	466	623	257	1190	466	348	478	1590	381	482	1040	441	809	243	451
Manganese	439	209	200	186	478	214	388	639	153	396	924	263	174	148	294	375	128	217
Mercury	0.014	0.013	0.034	<0.010	0.073	0.017	0.083	0.038	<0.010	0.014	0.065	0.016	0.01	0.026	0.041	0.049	0.015	0.032
Molybdenum	0.106	0.054	0.163	0.107	0.161	0.05	0.095	0.153	0.068	0.116	0.597	0.105	0.084	<0.050	0.082	0.098	0.092	<0.050
Nickel	0.708	0.516	0.733	0.604	1.21	0.495	1.22	1	0.822	0.958	2.84	0.451	0.577	1.54	0.775	1.4	0.74	0.965
Phosphorus	709	609	635	468	939	395	1090	506	419	610	594	410	666	701	935	944	295	517
Potassium	1330	1260	1230	1150	1710	906	2440	1770	844	1080	362	1060	1280	1580	1850	1980	761	980
Selenium	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.118	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	0.115	<0.020	0.087	<0.020	0.106	0.367	0.111	0.137	0.066	0.046	0.588	<0.020	0.096	0.093	0.062	0.108	0.118	<0.020
Sodium	18	11	15	13	17	11	17	20	11	20	29	<10	18	19	37	12	16	15
Strontium	7.85	3.9	17.1	8.54	16.9	4.45	41.9	4.49	7.21	16.8	35.5	6.55	9.56	33.2	17	19.4	2.75	5.18
Thallium	0.0044	0.0023	0.0095	0.0028	0.0077	0.0063	0.0065	0.0512	0.0044	0.0049	0.033	0.0034	0.0056	0.0118	<0.0020	0.0064	0.0083	0.0027
Tin	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	12.8	8.7	13.3	12.6	19.1	10	14.5	25.5	14.9	12.3	31.5	8.8	11.8	9.1	13.3	18.6	13.8	10
Uranium	0.0134	0.0094	0.0149	0.0152	0.0205	0.0113	0.0144	0.0258	0.0168	0.0122	0.784	0.0092	0.0099	0.0128	0.0197	0.0216	0.0131	0.0097
Vanadium	0.7	0.44	0.81	0.64	1.08	0.55	0.82	2.47	0.77	0.68	2.04	0.44	0.56	0.52	0.76	1.18	0.68	0.45
Zinc	55.6	18	28.2	27.6	39.8	26.3	88.9	32.4	34.5	71.2	54.5	25.6	26.4	36.3	33.6	64.8	14.1	39.3

Parameter	33	34	35	36	37	38	39	40	41	42	43	44	CR1	CR2	CU1	CU2
Metals (mg/kg)																
Aluminum	172	148	**300**	**202**	**284**	189	**230**	101	171	**536**	**263**	-	**467**	**465**	**514**	147
Antimony	0.0466	0.0426	0.619	0.0429	0.44	0.483	0.049	0.0629	0.1	0.0797	0.0308	-	0.0516	0.134	0.133	0.0119
Arsenic	0.522	0.447	6.72	0.333	3.56	3.15	0.42	0.488	0.856	0.687	0.341	-	0.497	1.91	1.16	0.153
Barium	28	26.2	31.3	92.6	52.3	10.1	29.5	23.9	18.4	44.5	32.4	-	62.5	51.2	115	35.1
Beryllium	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10
Bismuth	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10
Boron	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	4.1	<2.0	<2.0
Cadmium	0.312	0.18	0.241	0.098	0.407	0.074	0.256	0.234	0.204	0.06	0.165	-	0.266	0.444	0.14	0.03
Calcium	2230	3640	1970	5400	3210	1070	2420	2830	5030	1960	1830	-	2840	8340	7060	2780
Chromium	0.43	0.28	0.78	0.6	0.58	0.34	0.52	0.3	0.39	1.31	0.64	-	0.84	1.09	1.36	0.31
Cobalt	0.141	0.141	0.328	0.194	0.266	0.101	0.188	0.13	0.107	0.384	0.186	-	0.35	0.304	0.354	0.094
Copper	2.23	3.07	3.26	3.35	3.89	1.76	2.1	1.42	1.39	3.62	2.59	-	4.01	3.94	3.74	2.19
Iron	282	256	**557**	321	**536**	261	334	189	279	**780**	365	-	**641**	**797**	**770**	180
Lead	0.485	0.553	3.61	0.397	3.29	2.7	0.522	0.541	0.544	1.09	0.49	-	0.79	1.16	1.01	0.235
Magnesium	350	499	479	737	753	272	673	498	873	485	413	-	674	982	586	305
Manganese	167	151	385	503	745	243	232	151	25.4	392	212	-	237	305	339	159
Mercury	0.018	<0.010	0.024	0.022	0.035	0.011	0.038	0.015	<0.010	0.053	0.066	-	0.036	0.03	0.046	<0.010
Molybdenum	<0.050	<0.050	0.093	0.296	0.131	0.055	0.101	0.091	0.067	0.193	0.078	-	0.142	0.275	0.374	<0.050
Nickel	0.544	0.477	1.07	1.3	0.841	0.391	0.6	0.382	0.394	1.29	0.778	-	1.29	1.29	1.32	0.388
Phosphorus	382	361	568	806	957	431	718	467	321	686	747	-	971	651	909	481
Potassium	777	956	1270	1430	1620	999	1310	1130	640	1750	1480	-	1430	1260	1360	1100
Selenium	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	<0.050	<0.050	0.056	<0.050
Silver	<0.020	<0.020	0.079	0.049	0.121	0.146	0.026	<0.020	0.023	0.044	0.041	-	0.043	<0.020	0.046	<0.020
Sodium	11	10	19	10	19	15	18	11	21	41	26	-	30	29	28	11
Strontium	10.8	15.4	8.09	30.6	12.8	2.65	15.1	9.61	18.9	8.64	12.6	-	16.6	58.4	39.5	18.2
Thallium	0.0023	0.0028	0.0069	0.0065	0.0227	0.0038	0.004	<0.0020	0.0027	0.0187	0.0052	-	0.0047	0.0115	0.0114	0.006
Tin	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10
Titanium	8.4	7.9	16.2	12	12.6	6.6	12.3	5.3	9.2	30.1	13.1	-	22.2	24.7	25	5.3
Uranium	0.0102	0.0087	0.0155	0.0107	0.0141	0.0075	0.0113	0.0078	0.0094	0.0405	0.0126	-	0.022	0.144	0.0247	0.0095
Vanadium	0.45	0.36	0.87	0.56	0.82	0.38	0.62	0.28	0.45	1.45	0.64	-	1.21	1.44	1.37	0.28
Zinc	26.8	29.1	56.9	26.6	52	17.4	23.6	21.8	21.3	24.9	13.6	-	39.7	41.3	25.9	12.1

Notes: 1) Bold text represents values in exceedence of MTL value for Rodents; shaded cells represent values in exceedence of MTL values for cattle. 2) The highest 5 values observed for arsenic, cadmium, copper, lead, and zinc are shown with cell borders.

Metal Concentrations in Willow Tissue

	Maximum Tolerance Limit (mg/kg)		SAMPLE NUMBER															
Metal (mg/kg)	Rodents	Cattle	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Metals (mg/kg)																		
Aluminum	200	1,000	66.600	28.2	22.0	13.4	6.2	20.6	13.0	32.3	19.5	34.3	71.7	97.9	207	24.8	94.1	20.5
Antimony	70 – 150	-	0.0058	0.0127	0.0101	<0.0050	<0.0050	0.0078	0.0055	0.0061	<0.0050	0.0052	0.0140	0.0346	0.277	0.0121	0.0107	0.0076
Arsenic	30	30	0.076	0.108	0.113	<0.050	0.053	<0.050	<0.050	<0.050	0.055	<0.050	0.149	0.640	3.03	0.227	<0.050	<0.050
Barium	250	-	208	42.0	54.6	18.3	8.66	55.8	56.9	68.5	207	61.6	47.7	52.9	55.6	51.7	30.2	102
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	9.2	6.8	12.9	13.8	13.7	12.1	15.4	9.7	12.7	7.6	13.3	5.7	6.6	4.9	17.2	6.2
Cadmium	10	10	6.61	5.74	2.39	3.77	0.908	7.23	1.08	1.56	0.986	2.76	2.90	3.14	1.75	1.25	3.82	1.40
Calcium	2 (%)*	1.5 (%)*	14900	7050	10700	10400	6840	11300	10900	7260	20400	10800	8680	13800	8860	13800	12100	12000
Chromium	100	100	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.59	<0.20	<0.20	<0.20
Cobalt	25	25	1.44	0.317	0.122	0.115	0.323	0.181	0.651	0.571	0.674	1.40	0.944	2.76	0.329	0.242	0.267	0.313
Copper	500	40	5.54	6.05	4.79	3.17	2.68	3.96	4.17	4.74	6.66	4.11	5.29	3.56	3.37	3.79	4.67	3.43
Iron	500	500	67	65	72	50	49	63	50	67	54	70	180	124	**584**	68	55	61
Lead	10	100	0.061	0.120	0.086	0.064	0.027	0.057	0.055	0.050	0.056	0.054	0.078	0.291	1.62	0.061	0.087	0.044
Magnesium	0.5 (%)*	0.6 (%)*	5170	1850	2210	2290	1950	2340	1800	1630	4130	1090	2410	4430	2930	2240	3870	4590
Manganese	2,000	2,000	549	264	400	128	303	307	151	1350	296	1780	396	182	226	89.0	715	423
Mercury	0.2	-	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	0.011	0.012	<0.010	<0.010	0.014	<0.010	<0.010	0.011	<0.010
Molybdenum	7	5	0.137	<0.050	0.101	0.070	0.180	0.220	0.319	0.098	0.268	0.375	0.121	0.252	0.095	0.113	0.093	0.180
Nickel	50	100	6.52	0.987	0.440	0.953	0.086	2.45	0.503	0.985	4.24	0.821	2.68	1.54	0.690	1.08	0.569	1.04
Phosphorus	0.6 (%)*	0.7 (%)*	3670	1060	942	867	931	749	822	1180	4020	2300	1480	1870	3330	1330	957	3420
Potassium	1 (%)*	2 (%)*	10600	9600	7360	8210	4780	7850	6910	9180	16500	12400	12000	6590	9220	6550	4790	11700
Selenium	5	5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	-	-	0.034	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020	0.028	<0.020	<0.020	<0.020
Sodium	-	-	<10	<10	31	<10	32	13	<10	24	<10	101	19	<10	<10	<10	149	40
Strontium	1,000	2,000	151	48.3	44.1	41.2	46.8	53.6	58.1	47.2	121	57.4	54.8	103	52.7	60.9	49.8	80.2
Thallium	-	-	0.0061	0.0021	0.0025	<0.0020	<0.0020	<0.0020	<0.0020	0.0085	0.0038	<0.0020	<0.0020	0.0049	0.0089	<0.0020	0.0127	0.0026
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	1.5	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	1.4	1.0	2.4	12.0	1.5	<1.0	1.3
Uranium	100	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0026	<0.0020	<0.0020	<0.0020	<0.0020	0.0078	0.0051	<0.0020	<0.0020	<0.0020
Vanadium	-	50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1.15	<0.20	<0.20	<0.20
Zinc	500	500	84.3	230	293	203	103	429	93.2	113	61.3	91.7	247	78.2	136	36.4	346	71.6

	Maximum Tolerance Limit (mg/kg)																	
Metal (mg/kg)	Rodents	Cattle	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Metals (mg/kg)																		
Aluminum	200	1,000	31.5	5.9	27.7	18.5	48.2	77.9	24.0	39.8	21.0	12.4	42.8	24.7	54.7	77.1	49.2	56.5
Antimony	70 – 150	-	0.0172	<0.0050	0.0149	0.0565	0.0085	0.182	0.0111	0.0281	0.0216	0.0073	0.0310	0.0069	0.0219	0.0534	0.0054	0.0101
Arsenic	30	30	0.207	0.065	0.102	0.385	0.051	4.36	0.074	0.192	0.438	0.063	0.278	<0.050	0.172	0.641	0.055	<0.050
Barium	250	-	41.5	24.3	141	47.3	169	28.0	119	81.3	9.80	48.4	61.9	131	205	199	24.4	52.2
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	17.0	10.8	17.5	9.9	8.7	7.6	7.9	5.7	40.6	5.4	6.1	17.4	9.0	9.2	7.1	10.4
Cadmium	10	10	2.53	8.60	2.50	3.70	1.51	5.58	2.19	4.59	5.63	4.73	4.48	3.15	4.91	**19.6**	1.85	1.40
Calcium	2 (%)*	1.5 (%)*	19900	5230	12100	13100	12800	12200	12600	12300	11500	9820	14800	12100	15200	18400	4740	9310
Chromium	100	100	<0.20	<0.20	<0.20	<0.20	<0.20	0.24	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.27	<0.20	<0.20
Cobalt	25	25	0.509	0.069	0.231	0.285	1.07	0.443	0.381	0.607	0.303	0.134	0.643	0.148	0.865	0.950	2.26	0.708
Copper	500	40	4.89	4.82	4.86	4.22	5.91	5.14	4.15	3.86	5.08	3.16	4.75	6.87	4.48	5.94	3.21	4.27
Iron	500	500	81	26	79	59	74	290	80	76	59	48	72	84	71	178	114	91
Lead	10	100	0.230	0.030	0.070	0.233	0.067	1.60	0.067	0.168	0.138	0.058	0.184	0.050	0.169	0.438	0.053	0.042
Magnesium	0.5 (%)*	0.6 (%)*	4120	776	2750	2170	4660	5040	3070	3960	1800	2570	4010	2980	4360	5720	1490	2870
Manganese	2,000	2,000	229	402	332	753	440	471	445	349	382	238	299	462	290	606	866	610
Mercury	0.2	-	0.012	<0.010	0.015	0.013	0.015	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	<0.010
Molybdenum	7	5	0.597	0.091	0.186	0.064	0.343	0.160	0.119	0.096	0.505	0.085	0.103	0.126	0.145	0.465	0.276	0.136
Nickel	50	100	0.983	0.210	0.778	0.673	4.25	0.730	0.591	2.61	1.11	0.563	1.28	0.885	1.73	8.97	2.26	1.52
Phosphorus	0.6 (%)*	0.7 (%)*	3260	579	2620	1400	4120	1170	839	1790	1500	705	4140	1320	4620	4540	707	1490
Potassium	1 (%)*	2 (%)*	12900	3380	14200	8070	15700	9310	9690	8910	9740	4510	10600	10400	13600	13500	6070	10800
Selenium	5	5	<0.050	<0.050	<0.050	<0.050	0.066	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.284	<0.050	<0.050
Silver	-	-	<0.020	<0.020	<0.020	0.035	<0.020	0.031	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.033	0.023	<0.020
Sodium	-	-	<10	32	<10	<10	<10	<10	<10	<10	19	12	<10	<10	<10	<10	34	<10
Strontium	1,000	2,000	78.8	34.7	50.3	74.3	99.0	68.7	81.0	94.7	34.2	54.5	83.4	71.6	147	146	35.5	56.0
Thallium	-	-	0.0038	<0.0020	0.0024	0.0111	0.0052	0.0136	0.0025	0.0033	0.0048	<0.0020	0.0035	0.0070	0.0048	0.0045	<0.0020	0.0075
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	1.9	<1.0	1.1	1.1	1.5	4.3	1.3	1.8	1.1	<1.0	1.6	1.5	1.5	3.8	<1.0	<1.0
Uranium	100	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0045	<0.0020	<0.0020	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	0.0045	0.0023	0.0032
Vanadium	-	50	<0.20	<0.20	<0.20	<0.20	<0.20	0.44	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.29	<0.20	<0.20
Zinc	500	500	134	234	165	380	156	452	251	267	412	337	147	361	71.7	151	172	170

	Maximum Tolerance Limit (mg/kg)																	
Metal (mg/kg)	Rodents	Cattle	33	34	35	36	37	38	39	40	41	42	43	44	CR1	CR2	CU1	CU2
Metals (mg/kg)																		
Aluminum	200	1,000	13.7	11.3	116	29.1	68.2	28.2	22.1	18.1	18.9	55.1	39.8	16.4	42.0	16.3	71.8	24.5
Antimony	70 – 150	-	0.0064	0.0071	0.0378	0.0215	0.0318	0.0220	0.0077	0.0069	0.0088	0.0054	0.0060	0.0067	0.0128	0.0141	0.0257	<0.0050
Arsenic	30	30	<0.050	0.081	0.300	0.143	0.330	0.175	0.099	0.079	<0.050	<0.050	<0.050	0.171	0.576	0.175	0.147	<0.050
Barium	250	-	50.4	57.3	77.9	312	199	35.7	160	57.1	35.8	96.4	146	53.6	32.0	26.2	63.0	73.0
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	5.2	7.6	7.5	9.9	7.3	4.4	8.0	11.2	20.6	6.0	7.5	22.9	15.3	28.3	5.8	19.2
Cadmium	10	10	2.63	2.91	1.38	2.34	6.81	1.68	2.18	2.92	4.88	0.567	1.10	5.17	1.41	4.56	0.798	0.643
Calcium	2 (%)*	1.5 (%)*	6940	16600	11900	22400	13400	8840	14800	13200	13300	7280	16700	13700	19000	10200	14200	13900
Chromium	100	100	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.21	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cobalt	25	25	0.358	0.122	1.43	1.17	0.663	0.334	0.730	0.403	0.270	1.13	0.853	0.237	0.300	0.260	0.435	0.760
Copper	500	40	3.87	3.95	4.29	5.42	4.19	4.25	4.10	3.02	4.43	4.40	4.27	4.70	5.01	5.41	3.42	4.93
Iron	500	500	55	46	126	68	114	89	87	72	60	96	59	66	185	51	52	98
Lead	10	100	0.036	0.057	0.220	0.112	0.267	0.125	0.052	0.058	0.058	0.046	0.039	0.056	0.059	0.049	0.109	0.040
Magnesium	0.5 (%)*	0.6 (%)*	2030	2930	3760	5020	3740	2330	3810	2710	2990	2520	4750	3940	4420	3080	2530	3810
Manganese	2,000	2,000	284	102	541	370	570	280	416	146	403	493	211	295	403	251	127	248
Mercury	0.2	-	<0.010	<0.010	<0.010	0.010	0.011	<0.010	0.012	<0.010	0.011	<0.010	0.016	0.010	<0.010	<0.010	0.010	<0.010
Molybdenum	7	5	0.084	0.057	0.144	0.373	0.111	0.078	0.245	0.259	0.350	0.189	0.186	0.539	0.290	0.244	0.144	0.273
Nickel	50	100	0.930	0.890	3.46	7.92	1.12	0.644	0.613	0.311	0.591	1.37	1.48	0.836	0.264	0.969	0.924	1.54
Phosphorus	0.6 (%)*	0.7 (%)*	1150	846	1920	4960	1360	1450	3190	1070	1020	1680	2210	2110	1800	894	2360	2630
Potassium	1 (%)*	2 (%)*	9800	5890	11300	12400	4420	9820	11800	11500	7930	10400	11400	12200	8030	6090	10400	16700
Selenium	5	5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.075	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	-	-	<0.020	<0.020	0.020	<0.020	0.024	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Sodium	-	-	<10	<10	12	<10	<10	<10	<10	<10	<10	11	<10	<10	43	<10	15	<10
Strontium	1,000	2,000	62.8	68.6	86.0	210	131	44.9	118	53.5	45.9	57.3	153	125	95.2	103	84.2	111
Thallium	-	-	<0.0020	<0.0020	0.0029	0.0063	0.0033	0.0039	0.0026	<0.0020	<0.0020	0.0031	<0.0020	0.0037	0.0043	0.0037	<0.0020	0.0071
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	1.0	<1.0	1.6	1.2	1.4	1.3	1.3	1.4	<1.0	1.1	1.2	1.1	2.0	<1.0	<1.0	<1.0
Uranium	100	-	<0.0020	<0.0020	0.0021	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0180	0.0025	0.0045	<0.0020
Vanadium	-	50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Zinc	500	500	105	267	178	57.3	153	101	105	78.4	316	168	19.8	311	301	372	15.3	45.4

Notes: 1) Bold text represents values in exceedence of MTL value for Rodents; shaded cells represent values in exceedence of MTL values for cattle. 2) The highest 5 values observed for arsenic, cadmium, copper, lead, and zinc are shown with cell borders.

Metal Concentrations in Berry Tissue

	Maximum Tolerance Limit (mg/kg)		SAMPLE NUMBER															
Metal (mg/kg)	Rodents	Cattle	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Aluminum	200	1,000	23.6	17.5	10.4	14.9	4.8	6.8	24	36.3	25.1	57.9	23.8	41.5	76.1	48	11.6	24.2
Antimony	70 – 150	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0073	<0.0050	0.0086	<0.0050	<0.0050	0.0299	<0.0050	<0.0050	<0.0050
Arsenic	30	30	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.583	<0.050	<0.050	<0.050
Barium	250	-	10.4	12.4	8.06	9.98	8.9	14.2	24.5	13.8	26.2	21.2	10.5	29.1	19.2	21.6	7.63	13
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	3.4	8.1	9.4	15.6	9.2	11.2	13.4	12	7.7	7.2	6	6.8	9.3	8.9	11.6	10.1
Cadmium	10	10	<0.010	<0.010	<0.010	<0.010	0.381	<0.010	<0.010	<0.010	<0.010	0.085	<0.010	<0.010	0.021	<0.010	<0.010	<0.010
Calcium	2 (%)*	1.5 (%)*	1450	1490	1090	1500	1560	1790	2400	1460	1620	2350	1500	2430	1950	1890	1240	1410
Chromium	100	100	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cobalt	25	25	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.04	<0.020	<0.020	0.033	<0.020	<0.020	<0.020
Copper	500	40	5.18	5.83	4.27	7.04	4.84	5.19	5.61	7.42	9.11	7.93	5.1	6.93	6.34	8.38	5.83	5.16
Iron	500	500	20	17	15	23	24	17	25	37	26	54	26	28	105	33	20	31
Lead	10	100	<0.010	<0.010	<0.010	0.016	0.016	<0.010	<0.010	<0.010	<0.010	0.041	<0.010	<0.010	0.161	<0.010	<0.010	<0.010
Magnesium	0.5 (%)*	0.6 (%)*	795	739	718	885	1130	725	1090	852	1010	1180	797	1070	1240	1040	760	783
Manganese	2,000	2,000	418	544	376	322	63.5	258	446	521	578	903	507	547	647	454	298	440
Mercury	0.2	-	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum	7	5	0.236	<0.050	<0.050	<0.050	0.316	1.29	0.257	<0.050	0.685	0.269	<0.050	0.123	0.137	0.548	<0.050	<0.050
Nickel	50	100	0.555	0.228	0.155	0.112	0.123	0.64	0.261	0.357	0.622	0.735	0.352	0.51	0.355	0.656	0.532	0.345
Phosphorus	0.6 (%)*	0.7 (%)*	1810	1310	1130	1630	1820	1180	1760	1500	2430	2590	1420	1930	2480	2110	1330	1400
Potassium	1 (%)*	2 (%)*	9550	8630	9710	9720	11500	8240	12400	9540	11700	12200	8590	8460	13200	10700	8960	8410
Selenium	5	5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Sodium	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Strontium	1,000	2,000	2.79	1.76	1.31	2.14	7.61	3.7	3.87	1.55	3.08	4.43	1.09	6.31	2.7	4.55	1.88	2.56
Thallium	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0066	<0.0020	<0.0020	<0.0020	0.0044	<0.0020
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	<1.0
Uranium	100	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0056	<0.0020	0.0043	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Vanadium	-	50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Zinc	500	500	12.8	9.72	13.3	14.6	19.9	20.8	16.9	14.2	17.4	24.4	12.2	16.7	18.5	14.8	14.3	12.1

	Maximum Tolerance Limit (mg/kg)																	
Metal (mg/kg)	Rodents	Cattle	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Aluminum	200	1,000	34.4	22	49.5	18	8.2	31.1	11.2	39.4	12.9	34.7	29.4	12.8	21.6	70	23.9	15.3
Antimony	70 – 150	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0098	<0.0050	0.0071	0.011	<0.0050	0.0487	<0.0050	0.0056	<0.0050	<0.0050	<0.0050
Arsenic	30	30	<0.050	<0.050	<0.050	0.067	<0.050	0.327	<0.050	0.111	0.485	<0.050	<0.050	<0.050	<0.050	0.116	<0.050	<0.050
Barium	250	-	28	13.1	22.5	8.53	14	12	13	18.4	12.8	8.54	13.4	11.4	15.4	23.1	11.6	7.48
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	8.4	10.8	6.6	9.8	6.4	12.5	9.5	10.8	15.8	9.1	4.7	10	7.5	5.1	9.1	8.7
Cadmium	10	10	<0.010	0.043	<0.010	<0.010	<0.010	0.02	<0.010	0.015	0.35	<0.010	0.027	<0.010	<0.010	0.065	0.118	<0.010
Calcium	2 (%)*	1.5 (%)*	1820	1790	1780	1330	1580	1760	1140	2030	1930	1420	1600	1170	1350	1820	1490	1140
Chromium	100	100	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cobalt	25	25	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.022	0.029	<0.020	<0.020
Copper	500	40	5.69	9.21	5.47	4.17	4.54	5.67	5.81	7.77	6.42	7	4.31	3.98	4.44	5.37	6.13	4.57
Iron	500	500	23	31	40	15	19	30	17	43	47	18	25	15	20	48	27	16
Lead	10	100	<0.010	0.066	0.014	<0.010	<0.010	0.068	<0.010	0.074	0.043	0.013	<0.010	<0.010	<0.010	0.037	0.014	<0.010
Magnesium	0.5 (%)*	0.6 (%)*	817	859	1020	615	794	876	701	1060	1040	871	878	755	764	1130	817	744
Manganese	2,000	2,000	232	327	469	436	353	617	357	770	197	568	296	399	122	585	540	349
Mercury	0.2	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum	7	5	0.512	0.113	0.477	<0.050	0.059	0.067	<0.050	<0.050	0.331	<0.050	0.22	0.127	0.257	0.326	0.317	<0.050
Nickel	50	100	0.555	0.261	0.418	0.201	0.201	0.165	0.281	0.453	0.584	0.313	0.801	0.355	0.633	0.675	1.2	0.273
Phosphorus	0.6 (%)*	0.7 (%)*	1590	1610	2070	1090	1460	1380	1140	1840	1270	1570	1970	1500	1560	2140	1580	1420
Potassium	1 (%)*	2 (%)*	8870	11500	11200	7420	8820	8410	9460	11600	9860	9200	11600	7990	9840	8630	8430	7660
Selenium	5	5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Sodium	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	15	<10	<10	<10	<10	<10
Strontium	1,000	2,000	4.15	4.4	2.37	1.41	3.25	2.84	1.98	3.09	4.27	1.23	4.07	2.03	4.85	5.43	2.09	1.43
Thallium	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0
Uranium	100	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Vanadium	-	50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Zinc	500	500	12.3	18.5	13.7	9.7	13.1	12.7	13.5	24.9	16	12.1	13.7	11.5	10.8	17.9	21	11

	Maximum Tolerance Limit (mg/kg)																	
Metal (mg/kg)	Rodents	Cattle	33	34	35	36	37	38	39	40	41	42	43	44	CR1	CR2	CU1	CU2
Aluminum	200	1,000	17.1	27.5	31.6	21.9	35.1	17.9	12.9	30.2	2.9	16.7	23.2	16.9	36.8	10.1	17	27.3
Antimony	70 – 150	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic	30	30	<0.050	<0.050	<0.050	<0.050	0.089	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.193	<0.050	<0.050	<0.050	<0.050
Barium	250	-	12.5	8.72	12.3	12.7	13.5	7.99	15.8	20.8	6.47	8.16	17.4	16.1	14.8	12	19.6	17.3
Beryllium	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	500	-	16.9	11.8	7.8	2.7	9.7	8	4.1	6.1	17.5	3.2	2.6	12.3	3.8	14.9	6.1	<2.0
Cadmium	10	10	0.021	<0.010	<0.010	<0.010	0.027	<0.010	0.015	<0.010	0.049	<0.010	<0.010	0.1	0.015	<0.010	<0.010	<0.010
Calcium	2 (%)*	1.5 (%)*	1570	1590	1750	935	1570	1300	1490	1970	1160	1230	1480	1820	1750	1440	1420	1160
Chromium	100	100	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cobalt	25	25	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.031	<0.020	<0.020	<0.020
Copper	500	40	9.11	5.43	5.54	4.3	7.2	4.91	5.39	5.14	5.82	4.58	6.13	5.52	5.44	7.06	4.57	5.51
Iron	500	500	24	21	20	17	24	18	22	23	18	17	22	29	40	26	22	19
Lead	10	100	<0.010	<0.010	<0.010	<0.010	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.019	0.02	<0.010	<0.010	<0.010
Magnesium	0.5 (%)*	0.6 (%)*	937	828	1170	597	893	805	771	839	772	821	1010	880	874	754	774	705
Manganese	2,000	2,000	593	501	687	251	575	440	373	429	239	404	434	85.2	155	268	375	342
Mercury	0.2	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum	7	5	<0.050	0.089	0.112	0.541	0.125	<0.050	0.098	0.507	0.135	0.107	0.362	0.307	0.189	0.143	0.92	0.4
Nickel	50	100	0.298	0.169	0.514	0.677	0.354	0.288	0.226	0.39	0.117	0.24	0.736	0.524	0.921	0.269	0.521	0.882
Phosphorus	0.6 (%)*	0.7 (%)*	1700	1610	1690	1360	2120	1290	1620	1420	1400	1280	1870	1820	1380	1570	1910	1490
Potassium	1 (%)*	2 (%)*	11200	9780	10500	7700	11700	9260	9890	7780	9570	8370	7380	8970	7970	9800	8500	9020
Selenium	5	5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Sodium	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Strontium	1,000	2,000	3.12	2.13	1.46	3.38	3.85	1.38	4.11	2.43	1.57	1.05	5.46	11.7	6.83	5.14	4.78	4.76
Thallium	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0034	0.0026	0.0025	<0.0020
Tin	100	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	100	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	<0.0020	<0.0020	<0.0020	<0.0020
Vanadium	-	50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Zinc	500	500	15	14.9	15	8.26	13.6	11.7	12.3	13.3	16.1	11.3	10.2	14.4	11.9	18.7	10.7	8.22

Notes: 1) Bold text represents values in exceedence of MTL value for Rodents; shaded cells represent values in exceedence of MTL values for cattle. 2) The highest 5 values observed for arsenic, cadmium, copper, lead, and zinc are shown with cell borders.

APPENDIX 5: RESULTS OF VEGETATION TISSUE AND SOIL QA/QC ANALYSES

Parameter	Units	Sample Location:	Lichen Data														
			Site 24			Site 4			Site 1			Site 23			Site 35		
		Sample ID:	Site 24	Dup 1	RPD (%)	Site 4	Dup 2	RPD (%)	Site 1	Dup 3	RPD (%)	Site 23	Dup 4	RPD (%)	Site 35	Dup 5	RPD (%)
		Detection Limit															
Tissue Metals																	
Aluminum	mg/L	1	262	121	**73.6**	84.5	134	**45.3**	1170	631	**59.9**	251	224	11.4	300	153	**64.9**
Antimony	mg/L	0.005	0.156	0.0782	**66.4**	0.0258	0.0251	2.8	0.113	0.0985	13.7	0.18	0.13	**32.3**	0.619	0.729	16.3
Arsenic	mg/L	0.05	1.18	0.679	**53.9**	0.245	0.297	19.2	0.983	0.844	15.2	1.31	0.901	**37.0**	6.72	4.85	**32.3**
Barium	mg/L	0.1	52.3	23.8	**74.9**	12.5	11.2	11.0	83.7	57.3	**37.4**	23.6	41.2	**54.3**	31.3	17.4	**57.1**
Boron	mg/L	2	<2.0	<2.0	nc	<2.0	<2.0	nc	<2.0	<2.0	nc	<2.0	<2.0	nc	<2.0	<2.0	nc
Cadmium	mg/L	0.01	0.574	0.169	**109.0**	0.142	0.074	**63.0**	0.257	0.111	**79.3**	0.15	0.57	**116.7**	0.241	0.071	**109.0**
Calcium	mg/L	10	2680	1340	**66.7**	2100	1750	18.2	1650	2000	19.2	1540	3010	**64.6**	1970	1210	**47.8**
Chromium	mg/L	0.2	0.62	0.28	nc	0.23	0.21	9.1	1.67	1	nc	0.73	0.52	nc	0.78	0.44	nc
Cobalt	mg/L	0.02	0.214	0.098	nc	0.095	0.089	6.5	0.738	0.432	**52.3**	0.201	0.231	13.9	0.328	0.137	**82.2**
Copper	mg/L	0.05	3.07	1.66	**59.6**	1.38	1.18	15.6	5.5	4.22	**26.3**	5.11	3.6	**34.7**	3.26	2.51	**26.0**
Iron	mg/L	10	413	207	**66.5**	154	154	0.0	1160	676	**52.7**	476	400	17.4	557	318	**54.6**
Lead	mg/L	0.01	1.17	0.605	**63.7**	0.306	0.28	8.9	1.68	1.36	**21.1**	1.44	1.03	**33.2**	3.61	2.47	**37.5**
Lithium	mg/L				nc			nc			nc			nc			nc
Magnesium	mg/L	10	478	316	**40.8**	446	345	**25.5**	459	434	5.6	348	630	**57.7**	479	318	**40.4**
Manganese	mg/L	0.1	396	229	**53.4**	120	88.7	**30.0**	136	226	**49.7**	153	398	**88.9**	385	397	3.1
Mercury	mg/L	0.01	0.014	<0.010	nc	<0.010	<0.010	nc	0.119	0.092	**25.6**	<0.010	0.016	nc	0.024	0.017	nc
Molybdenum	mg/L	0.05	0.116	<0.050	nc	<0.050	<0.050	nc	0.575	0.21	nc	0.068	0.109	nc	0.093	0.067	nc
Nickel	mg/L	0.05	0.958	0.542	**55.5**	0.287	0.291	1.4	1.97	1.33	**38.8**	0.822	0.757	8.2	1.07	0.521	**69.0**
Phosphorus	mg/L	10	610	419	**37.1**	418	369	12.5	781	829	6.0	419	567	**30.0**	568	484	16.0
Potassium	mg/L	10	1080	962	11.6	1080	878	**20.6**	962	1260	**26.8**	844	1250	**38.8**	1270	1250	1.6
Selenium	mg/L	0.05	<0.050	<0.050	nc	<0.050	<0.050	nc	0.08	0.071	11.9	<0.050	<0.050	nc	<0.050	<0.050	nc
Silver	mg/L	0.02	0.046	0.022	nc	<0.020	<0.020	nc	0.8	0.214	**115.6**	0.066	0.051	nc	0.079	0.141	nc
Sodium	mg/L	10	20	13	nc	<10	<10	nc	37	37	0.0	11	19	nc	19	14	nc
Strontium	mg/L	0.1	16.8	7.68	**74.5**	6.5	5.08	**24.5**	17.9	15.2	16.3	7.21	14.5	**67.2**	8.09	3.58	**77.3**
Thallium	mg/L	0.002	0.0049	0.0021	nc	0.0024	<0.0020	nc	0.0082	0.0074	10.3	0.0044	0.0052	16.7	0.0069	0.0088	nc
Tin	mg/L	0.1	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc
Titanium	mg/L	1	12.3	5.9	**70.3**	4.8	5.4	11.8	34.7	22.6	**42.2**	14.9	11.3	**27.5**	16.2	8.5	**62.3**
Uranium	mg/L	0.002	0.0122	0.0072	nc	0.0062	0.006	3.3	0.0364	0.0246	**38.7**	0.0168	0.0125	**29.4**	0.0155	0.0094	nc
Vanadium	mg/L	0.2	0.68	0.35	nc	0.23	0.28	19.6	1.91	1.18	**47.2**	0.77	0.58	nc	0.87	0.43	nc
Zinc	mg/L	0.2	71.2	32.4	**74.9**	23.4	19.7	17.2	21.5	34	**45.0**	34.5	69	**66.7**	56.9	17.7	**105.1**
Zirconium	mg/L																
pH	mg/L																

Notes: RPD = Relative Percent Difference. nc = not calculated where sample or duplicate value is less than five times detection limit.
Bold shaded values indicate RPD values of greater than the 20% threshold.

			Willow Data														
Parameter	**Units**	**Sample Location:**	Site 24			Site 4			Site 1			Site 23			Site 35		
		Sample ID:	Site 24	Dup 1	RPD (%)	Site 4	Dup 2	RPD (%)	Site 1	Dup 3	RPD (%)	Site 23	Dup 4	RPD (%)	Site 35	Dup 5	RPD (%)
		Detection Limit															
Tissue Metals																	
Aluminum	mg/L	1	39.8	31.4	**23.6**	13.4	10.4	**25.2**	66.6	67.9	1.9	24	27.3	12.9	116	83.9	**32.1**
Antimony	mg/L	0.005	0.0281	0.0204	nc	<0.0050	<0.0050	nc	0.0058	0.0059	1.7	0.0111	0.0071	nc	0.0378	0.0486	**25.0**
Arsenic	mg/L	0.05	0.192	0.179	7.0	<0.050	<0.050	nc	0.076	0.061	nc	0.074	0.057	nc	0.3	0.317	5.5
Barium	mg/L	0.1	81.3	75.7	7.1	18.3	18.6	1.6	208	236	12.6	119	75.9	**44.2**	77.9	85.1	8.8
Boron	mg/L	2	5.7	5.2	9.2	13.8	9.3	nc	9.2	8.9	3.3	7.9	6.6	17.9	7.5	9.8	nc
Cadmium	mg/L	0.01	4.59	4.89	6.3	3.77	3.44	9.2	6.61	5.47	18.9	2.19	1.76	**21.8**	1.38	1.58	13.5
Calcium	mg/L	10	12300	10500	15.8	10400	9400	10.1	14900	14800	0.7	12600	8320	**40.9**	11900	11300	5.2
Chromium	mg/L	0.2	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc
Cobalt	mg/L	0.02	0.607	0.515	16.4	0.115	0.138	18.2	1.44	0.949	nc	0.381	0.259	**38.1**	1.43	1.67	15.5
Copper	mg/L	0.05	3.86	2.96	**26.4**	3.17	3.15	0.6	5.54	6.67	18.5	4.15	3.84	7.8	4.29	4.57	6.3
Iron	mg/L	10	76	69	9.7	50	46	8.3	67	53	**23.3**	80	70	13.3	126	136	7.6
Lead	mg/L	0.01	0.168	0.149	12.0	0.064	0.047	nc	0.061	0.114	**60.6**	0.067	0.063	6.2	0.22	0.323	**37.9**
Lithium	mg/L				nc			nc			nc			nc			nc
Magnesium	mg/L	10	3960	2850	**32.6**	2290	2240	2.2	5170	4380	16.5	3070	2450	**22.5**	3760	3720	1.1
Manganese	mg/L	0.1	349	408	15.6	128	167	**26.4**	549	507	8.0	445	341	**26.5**	541	698	**25.3**
Mercury	mg/L	0.01	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	0.011	nc	<0.010	<0.010	nc	<0.010	0.011	nc
Molybdenum	mg/L	0.05	0.096	0.075	nc	0.07	0.08	13.3	0.137	0.106	nc	0.119	0.088	nc	0.144	0.173	18.3
Nickel	mg/L	0.05	2.61	1.58	**49.2**	0.953	0.137	nc	6.52	7.22	10.2	0.591	0.68	14.0	3.46	3.58	3.4
Phosphorus	mg/L	10	1790	1070	**50.3**	867	879	1.4	3670	3570	2.8	839	831	1.0	1920	1950	1.6
Potassium	mg/L	10	8910	6800	**26.9**	8210	8620	4.9	10600	10600	0.0	9690	7480	**25.7**	11300	10600	6.4
Selenium	mg/L	0.05	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	0.052	nc	<0.050	<0.050	nc	<0.050	<0.050	nc
Silver	mg/L	0.02	<0.020	<0.020	nc	<0.020	<0.020	nc	0.034	<0.020	nc	<0.020	<0.020	nc	0.02	<0.020	nc
Sodium	mg/L	10	<10	<10	nc	<10	<10	nc	<10	<10	nc	<10	<10	nc	12	18	nc
Strontium	mg/L	0.1	94.7	79.6	17.3	41.2	40.9	0.7	151	139	8.3	81	54.2	**39.6**	86	82.6	4.0
Thallium	mg/L	0.002	0.0033	0.0031	6.3	<0.0020	<0.0020	nc	0.0061	0.0055	10.3	0.0025	0.0029	14.8	0.0029	0.0041	nc
Tin	mg/L	0.1	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc
Titanium	mg/L	1	1.8	1.7	5.7	<1.0	<1.0	nc	1.5	1.2	nc	1.3	1.5	14.3	1.6	1.8	11.8
Uranium	mg/L	0.002	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	0.0021	0.0021	0.0
Vanadium	mg/L	0.2	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc
Zinc	mg/L	0.2	267	255	4.6	203	197	3.0	84.3	118	**33.3**	251	239	4.9	178	221	**21.6**
Zirconium	mg/L																
pH	mg/L																

Notes: RPD = Relative Percent Difference. nc = not calculated v
Bold shaded values indicate RPD values of greater than the 20%

Parameter	Units	Sample Location:	Berry Data														
			Site 24			Site 4			Site 1			Site 23			Site 35		
		Sample ID:	Site 24	Dup 1	RPD (%)	Site 4	Dup 2	RPD (%)	Site 1	Dup 3	RPD (%)	Site 23	Dup 4	RPD (%)	Site 35	Dup 5	RPD (%)
		Detection Limit															
Tissue Metals																	
Aluminum	mg/L	1	39.4	47.4	18.4	14.9	11.3	**27.5**	23.6	22.9	3.0	11.2	12.4	10.2	31.6	38.6	19.9
Antimony	mg/L	0.005	0.0071	0.0071	0.0	<0.0050	<0.0050	nc	<0.0050	<0.0050	nc	<0.0050	<0.0050	nc	<0.0050	0.007	nc
Arsenic	mg/L	0.05	0.111	0.14	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc
Barium	mg/L	0.1	18.4	15	**20.4**	9.98	11.5	14.2	10.4	9.89	5.0	13	15.6	18.2	12.3	13.3	7.8
Boron	mg/L	2	10.8	10.3	4.7	15.6	16.1	3.2	3.4	3	12.5	9.5	12.3	nc	7.8	7.9	1.3
Cadmium	mg/L	0.01	0.015	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc
Calcium	mg/L	10	2030	1710	17.1	1500	1520	1.3	1450	1520	4.7	1140	1310	13.9	1750	1870	6.6
Chromium	mg/L	0.2	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc
Cobalt	mg/L	0.02	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020	<0.020	nc
Copper	mg/L	0.05	7.77	7.95	2.3	7.04	5.41	**26.2**	5.18	5.38	3.8	5.81	7.12	**20.3**	5.54	6.39	14.2
Iron	mg/L	10	43	53	nc	23	22	4.4	20	22	9.5	17	19	11.1	20	20	0.0
Lead	mg/L	0.01			nc			nc			nc			nc			nc
Lithium	mg/L		0.074	0.081	9.0	0.016	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc
Magnesium	mg/L	10	1060	992	6.6	885	830	6.4	795	832	4.5	701	845	18.6	1170	1250	6.6
Manganese	mg/L	0.1	770	645	17.7	322	320	0.6	418	430	2.8	357	424	17.2	687	829	18.7
Mercury	mg/L	0.01	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010	<0.010	nc
Molybdenum	mg/L	0.05	<0.050	<0.050	nc	<0.050	<0.050	nc	0.236	0.213	10.2	<0.050	<0.050	nc	0.112	0.173	nc
Nickel	mg/L	0.05	0.453	0.496	9.1	0.112	0.113	0.9	0.555	0.557	0.4	0.281	0.211	nc	0.514	0.553	7.3
Phosphorus	mg/L	10	1840	1760	4.4	1630	1630	0.0	1810	2000	10.0	1140	1240	8.4	1690	1660	1.8
Potassium	mg/L	10	11600	10600	9.0	9720	8980	7.9	9550	10500	9.5	9460	10100	6.5	10500	10700	1.9
Selenium	mg/L	0.05	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc
Silver	mg/L	0.02	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020	<0.020	nc
Sodium	mg/L	10	<10	<10	nc	<10	<10	nc	<10	<10	nc	<10	<10	nc	<10	<10	nc
Strontium	mg/L	0.1	3.09	2.48	**21.9**	2.14	2.46	13.9	2.79	2.83	1.4	1.98	2.5	**23.2**	1.46	1.74	17.5
Thallium	mg/L	0.002	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	0.0029	<0.0020	nc	<0.0020	<0.0020	nc
Tin	mg/L	0.1	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10	<0.10	nc
Titanium	mg/L	1	1.1	1.5	nc	<1.0	<1.0	nc	<1.0	<1.0	nc	<1.0	<1.0	nc	<1.0	<1.0	nc
Uranium	mg/L	0.002	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc
Vanadium	mg/L	0.2	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20	<0.20	nc
Zinc	mg/L	0.2	24.9	18.9	**27.4**	14.6	14.5	0.7	12.8	13.4	4.6	13.5	15.2	11.8	15	15.4	2.6
Zirconium	mg/L																
pH	mg/L																

Notes: RPD = Relative Percent Difference. nc = not calculated v
Bold shaded values indicate RPD values of greater than the 20%

Parameter	Units	Sample Location:	Soil Data														
			Site 24			Site 4			Site 1			Site 23			Site 35		
		Sample ID:	Site 24	Dup 1	RPD (%)	Site 4	Dup 2	RPD (%)	Site 1	Dup 3	RPD (%)	Site 23	Dup 4	RPD (%)	Site 35	Dup 5	RPD (%)
		Detection Limit															
Soil Metals																	
Aluminum	mg/L	100	10900	11200	2.7	2120	2250	5.9	6190	7560	19.9	9680	8760	10.0	1560	1840	16.5
Antimony	mg/L	0.1	4.79	4.48	6.7	<0.10	<0.10	nc	0.26	0.35	nc	2.06	1.89	8.6	<0.10	<0.10	nc
Arsenic	mg/L	0.5	74.1	65.2	12.8	<0.50	<0.50	nc	4.6	7.74	**50.9**	20.3	18.6	8.7	0.79	1.55	nc
Barium	mg/L	0.1	130	135	3.8	57.1	62.3	8.7	41.8	56	**29.0**	130	110	16.7	23.7	27.3	14.1
Boron	mg/L				nc			nc			nc			nc			nc
Cadmium	mg/L	0.05	0.292	0.334	13.4	<0.050	<0.050	nc	0.109	0.13	17.6	0.132	0.1	nc	<0.050	0.076	nc
Calcium	mg/L	100	2510	2540	1.2	3130	3600	14.0	827	881	6.3	3000	2650	12.4	586	683	15.3
Chromium	mg/L	1	14.5	14.3	1.4	<1.0	<1.0	nc	7.8	9.7	**21.7**	13.3	12.3	7.8	3.8	4.6	19.0
Cobalt	mg/L	0.3	3.78	3.68	2.7	1.02	1.19	15.4	3.04	4.09	**29.5**	4.36	3.92	10.6	1.19	1.76	nc
Copper	mg/L	0.5	19.6	15.1	**25.9**	2.86	3.88	**30.3**	4.56	6.36	**33.0**	12.9	10.9	16.8	2.27	3.39	nc
Iron	mg/L	100	19600	19400	1.0	3950	3940	0.3	13000	16200	**21.9**	17100	15800	7.9	4900	6590	**29.4**
Lead	mg/L	0.1	60.1	41.6	**36.4**	0.53	0.54	1.9	3.81	4.43	15.0	4.73	4.47	5.7	0.79	0.95	18.4
Lithium	mg/L	5	7.2	6.7	7.2	<5.0	<5.0	nc	<5.0	5.9	nc	9.1	8.4	8.0	<5.0	<5.0	nc
Magnesium	mg/L	100	3010	3030	0.7	488	564	14.4	2100	2790	**28.2**	4440	4130	7.2	664	818	**20.8**
Manganese	mg/L	0.2	174	184	5.6	47.2	51.8	9.3	124	182	**37.9**	186	159	15.7	26.9	34.7	**25.3**
Mercury	mg/L	0.05	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	0.063	0.056	11.8	<0.050	<0.050	nc
Molybdenum	mg/L	0.1	0.51	0.54	5.7	0.12	<0.10	nc	0.35	0.55	**44.4**	0.39	0.28	nc	0.13	0.14	7.4
Nickel	mg/L	0.8	9.47	8.88	6.4	0.96	1.13	16.3	3.56	5.21	**37.6**	6.49	5.8	11.2	1.91	2.78	nc
Phosphorus	mg/L	10	431	399	7.7	199	290	**37.2**	183	266	**37.0**	503	462	8.5	85	106	**22.0**
Potassium	mg/L	100	498	546	9.2	253	245	3.2	774	888	13.7	1790	1580	12.5	356	388	8.6
Selenium	mg/L	0.5	<0.50	<0.50	nc	<0.50	<0.50	nc	<0.50	<0.50	nc	<0.50	<0.50	nc	<0.50	<0.50	nc
Silver	mg/L	0.05	0.618	0.569	8.3	0.067	0.088	nc	<0.050	<0.050	nc	0.102	0.093	9.2	<0.050	<0.050	nc
Sodium	mg/L	100	144	154	6.7	625	605	3.3	126	107	16.3	<100	115	nc	255	318	nc
Strontium	mg/L	0.1	21.1	21.9	3.7	22.9	25.2	9.6	8.16	7.93	2.9	18.9	17.6	7.1	8.04	9.24	13.9
Thallium	mg/L	0.05	0.153	0.179	15.7	<0.050	<0.050	nc	0.082	0.092	11.5	0.264	0.231	13.3	<0.050	<0.050	nc
Tin	mg/L	0.1	0.31	0.33	6.3	<0.10	<0.10	nc	0.32	0.31	3.2	0.28	0.26	7.4	<0.10	<0.10	nc
Titanium	mg/L	1	349	424	19.4	194	204	5.0	769	725	5.9	560	615	9.4	240	306	**24.2**
Uranium	mg/L	0.05	0.436	0.4	8.6	0.111	0.111	0.0	0.235	0.245	4.2	0.409	0.387	5.5	0.112	0.125	11.0
Vanadium	mg/L	2	43.1	43.8	1.6	11.8	11.6	1.7	42.4	47.2	10.7	46.1	45.4	1.5	17.1	22.5	**27.3**
Zinc	mg/L	1	80.2	77.8	3.0	7.8	8.6	9.8	32.9	39.4	18.0	40.9	38.4	6.3	9.8	13.2	**29.6**
Zirconium	mg/L	0.5	<0.50	<0.50	nc	<0.50	<0.50	nc	0.93	1.22	nc	0.56	0.5	11.3	<0.50	<0.50	nc
pH	mg/L	0.01	5.39	5.1	5.5	6.57	6.59	0.3	4.69	4.66	0.6	5.73	5.51	3.9	5.18	5.27	1.7

Notes: RPD = Relative Percent Difference. nc = not calculated where sample or duplicate value is less than five times detection limit.
Bold shaded values indicate RPD values of greater than the 20% threshold.

APPENDIX 6: LABORATORY ANALYTICAL REPORTS FOR SOIL AND VEGETATION TISSUE METAL ANALYSES

Your Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON

Attention: Chris Jastrebski
Ecological Logistics & Research Ltd
#204 - 105 Titanium Way
Whitehorse, YT
CANADA Y1A 0E7

Your C.O.C. #: 08377520, 08377521, 08377529, 08377522, 08377523, 08377524, 08377525, 08377526, 08377527

Report Date: 2013/10/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B378004
Received: 2013/08/30, 13:35

Sample Matrix: Soil
Samples Received: 23

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICPMS (total)	20	2013/09/01	2013/09/03	BBY7SOP-00004	BCMOE-SALM
Elements by ICPMS (total)	3	2013/09/01	2013/09/04	BBY7SOP-00004	BCMOE-SALM
pH (2:1 DI Water Extract)	3	2013/09/04	2013/09/04	BBY6SOP-00028	Carter, SSMA 16.2
pH (2:1 DI Water Extract)	20	2013/09/05	2013/09/05	BBY6SOP-00028	Carter, SSMA 16.2

Sample Matrix: TISSUE
Samples Received: 68

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by CRC ICPMS - Tissue Dry Wt	23	2013/09/23	2013/10/02	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total) - Plant	1	2013/09/18	2013/09/20	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total) - Plant	2	2013/09/25	2013/09/27	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total) - Plant	14	2013/09/25	2013/09/28	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total) - Plant	28	2013/09/25	2013/10/01	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS - Tissue Wet Wt	8	2013/09/27	2013/10/01	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS - Tissue Wet Wt	15	2013/09/27	2013/10/02	BBY7SOP-00002	EPA 6020A
Moisture	23	N/A	2013/09/28	BBY8SOP-00017	Ont MOE -E 3139

* Results relate only to the items tested.

Encryption Key

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

Ken Pomeroy, Project Manager
Email: KPomeroy@maxxam.ca
Phone# (604) 638-5020

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		HJ3519		HJ3523	HJ3561	HJ3565	HJ3569	HJ3610	HJ3614	HJ3618		
Sampling Date		2013/08/28 13:25		2013/08/28 10:15	2013/08/28 16:00	2013/08/28 14:30	2013/08/28 14:00	2013/08/28 15:50	2013/08/28 19:30	2013/08/28 17:45		
COC#		08377520		08377520	08377521	08377521	08377521	08377529	08377529	08377529		
	UNITS	**7-VC-D**	**QC Batch**	**31-VC-D**	**4-VC-D**	**40-VC-D**	**33-VC-D**	**DP2-VC-D**	**26-VC-D**	**18-VC-D**	**RDL**	**QC Batch**
Physical Properties												
Soluble (2:1) pH	pH Units	6.41	7134567	5.18	6.57	6.35	5.87	6.59	6.09	5.84	0.010	7134560

Maxxam ID		HJ3654	HJ3658	HJ3662	HJ3700	HJ3704	HJ3733		HJ3737		HJ3740		
Sampling Date		2013/08/28 18:30	2013/08/28 20:20	2013/08/28 17:10	2013/08/27 09:00	2013/08/27 15:25	2013/08/27 11:30		2013/08/27 16:20		2013/08/27 15:25		
COC#		08377522	08377522	08377522	08377523	08377523	08377524		08377524		08377524		
	UNITS	**2-VC-D**	**34-VC-D**	**DP1-VC-D**	**13-VC-D**	**5-VC-D**	**14-VC-D**	**QC Batch**	**12-VC-D**	**QC Batch**	**44-VC-D**	**RDL**	**QC Batch**
Physical Properties													
Soluble (2:1) pH	pH Units	5.66	5.92	5.10	5.46	6.53	5.32	7134560	5.37	7134567	6.18	0.010	7134560

Maxxam ID		HJ3775	HJ3779	HJ3783	HJ3798	HJ3798	HJ3802		HJ3806		HJ3817		
Sampling Date		2013/08/27 10:25	2013/08/27 14:00	2013/08/27 11:20	2013/08/27 17:45	2013/08/27 17:45	2013/08/27 10:04		2013/08/27 18:30		2013/08/27 17:20		
COC#		08377525	08377525	08377525	08377526	08377526	08377526		08377526		08377527		
	UNITS	**30-VC-D**	**43-VC-D**	**19-VC-D**	**37-VC-D**	**37-VC-D Lab-Dup**	**22-VC-D**	**QC Batch**	**17-VC-D**	**QC Batch**	**24-VC-D**	**RDL**	**QC Batch**
Physical Properties													
Soluble (2:1) pH	pH Units	5.44	5.59	5.45	4.98	4.96	5.77	7134560	6.17	7134567	5.39	0.010	7134560

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ3519		HJ3523	HJ3561	HJ3565	HJ3569	HJ3610	HJ3614	HJ3618	HJ3654		
Sampling Date		2013/08/28 13:25		2013/08/28 10:15	2013/08/28 16:00	2013/08/28 14:30	2013/08/28 14:00	2013/08/28 15:50	2013/08/28 19:30	2013/08/28 17:45	2013/08/28 18:30		
COC#		08377520		08377520	08377521	08377521	08377521	08377529	08377529	08377529	08377522		
	UNITS	**7-VC-D**	**QC Batch**	**31-VC-D**	**4-VC-D**	**40-VC-D**	**33-VC-D**	**DP2-VC-D**	**26-VC-D**	**18-VC-D**	**2-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg	2710	7134564	1230	2120	8210	9980	2250	4660	6100	10800	100	7134559
Total Antimony (Sb)	mg/kg	0.13	7134564	<0.10	<0.10	0.42	0.49	<0.10	0.55	1.07	1.19	0.10	7134559
Total Arsenic (As)	mg/kg	3.72	7134564	1.23	<0.50	4.28	14.6	<0.50	4.11	16.4	17.8	0.50	7134559
Total Barium (Ba)	mg/kg	30.6	7134564	20.1	57.1	205	107	62.3	64.8	81.3	131	0.10	7134559
Total Beryllium (Be)	mg/kg	<0.40	7134564	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7134559
Total Bismuth (Bi)	mg/kg	<0.10	7134564	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.30	0.10	7134559
Total Cadmium (Cd)	mg/kg	<0.050	7134564	<0.050	<0.050	0.149	0.150	<0.050	0.350	0.211	0.302	0.050	7134559
Total Calcium (Ca)	mg/kg	1510	7134564	1190	3130	4130	2060	3600	2150	2770	3040	100	7134559
Total Chromium (Cr)	mg/kg	3.3	7134564	<1.0	<1.0	10.7	13.6	<1.0	6.3	8.1	13.9	1.0	7134559
Total Cobalt (Co)	mg/kg	1.92	7134564	1.58	1.02	3.44	3.55	1.19	6.31	5.94	4.84	0.30	7134559
Total Copper (Cu)	mg/kg	3.26	7134564	1.04	2.86	7.33	9.22	3.88	5.25	7.74	10.6	0.50	7134559
Total Iron (Fe)	mg/kg	8250	7134564	4860	3950	13500	19200	3940	10200	16700	19500	100	7134559
Total Lead (Pb)	mg/kg	1.70	7134564	0.29	0.53	6.24	4.99	0.54	3.97	31.4	13.5	0.10	7134559
Total Lithium (Li)	mg/kg	<5.0	7134564	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.8	5.0	7134559
Total Magnesium (Mg)	mg/kg	850	7134564	357	488	2250	2450	564	1150	1860	3730	100	7134559
Total Manganese (Mn)	mg/kg	61.1	7134564	49.9	47.2	135	156	51.8	358	420	219	0.20	7134559
Total Mercury (Hg)	mg/kg	<0.050	7134564	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	7134559
Total Molybdenum (Mo)	mg/kg	0.25	7134564	<0.10	0.12	0.29	0.80	<0.10	0.35	0.32	0.64	0.10	7134559
Total Nickel (Ni)	mg/kg	2.20	7134564	0.86	0.96	5.96	6.35	1.13	2.95	4.01	7.35	0.80	7134559
Total Phosphorus (P)	mg/kg	311	7134564	336	199	237	381	290	507	455	491	10	7134559
Total Potassium (K)	mg/kg	263	7134564	220	253	666	351	245	286	399	536	100	7134559
Total Selenium (Se)	mg/kg	<0.50	7134564	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7134559
Total Silver (Ag)	mg/kg	<0.050	7134564	<0.050	0.067	0.560	0.178	0.088	0.188	0.176	0.149	0.050	7134559
Total Sodium (Na)	mg/kg	187	7134564	425	625	420	<100	605	429	133	199	100	7134559
Total Strontium (Sr)	mg/kg	10.8	7134564	11.6	22.9	26.0	15.7	25.2	16.0	16.9	23.8	0.10	7134559
Total Thallium (Tl)	mg/kg	<0.050	7134564	<0.050	<0.050	0.066	0.071	<0.050	0.084	0.059	0.077	0.050	7134559
Total Tin (Sn)	mg/kg	<0.10	7134564	<0.10	<0.10	0.20	0.24	<0.10	0.11	0.17	0.31	0.10	7134559
Total Titanium (Ti)	mg/kg	307	7134564	247	194	424	368	204	289	302	438	1.0	7134559
Total Uranium (U)	mg/kg	0.126	7134564	<0.050	0.111	0.325	0.394	0.111	0.277	0.347	0.599	0.050	7134559
Total Vanadium (V)	mg/kg	27.2	7134564	15.2	11.8	34.5	33.4	11.6	21.9	30.4	42.8	2.0	7134559
Total Zinc (Zn)	mg/kg	12.5	7134564	6.6	7.8	39.7	23.1	8.6	23.6	55.7	65.7	1.0	7134559
Total Zirconium (Zr)	mg/kg	<0.50	7134564	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	0.53	<0.50	0.50	7134559

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ3658	HJ3662	HJ3700	HJ3704	HJ3733		HJ3737		HJ3740	HJ3775		
Sampling Date		2013/08/28 20:20	2013/08/28 17:10	2013/08/27 09:00	2013/08/27 15:25	2013/08/27 11:30		2013/08/27 16:20		2013/08/27 15:25	2013/08/27 10:25		
COC#		08377522	08377522	08377523	08377523	08377524		08377524		08377524	08377525		
	UNITS	**34-VC-D**	**DP1-VC-D**	**13-VC-D**	**5-VC-D**	**14-VC-D**	**QC Batch**	**12-VC-D**	**QC Batch**	**44-VC-D**	**30-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg	9410	11200	5980	18300	3910	7134559	4860	7134564	6470	5960	100	7134559
Total Antimony (Sb)	mg/kg	1.00	4.48	1.59	1.50	0.10	7134559	0.14	7134564	0.79	0.38	0.10	7134559
Total Arsenic (As)	mg/kg	18.4	65.2	31.0	15.9	1.57	7134559	2.72	7134564	15.3	13.1	0.50	7134559
Total Barium (Ba)	mg/kg	100	135	69.4	178	38.4	7134559	20.8	7134564	93.2	81.6	0.10	7134559
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	7134559	<0.40	7134564	<0.40	<0.40	0.40	7134559
Total Bismuth (Bi)	mg/kg	<0.10	0.16	<0.10	<0.10	<0.10	7134559	<0.10	7134564	0.27	<0.10	0.10	7134559
Total Cadmium (Cd)	mg/kg	0.108	0.334	0.092	1.35	<0.050	7134559	0.073	7134564	0.426	0.227	0.050	7134559
Total Calcium (Ca)	mg/kg	3990	2540	1310	6170	1550	7134559	754	7134564	3690	1600	100	7134559
Total Chromium (Cr)	mg/kg	10.3	14.3	5.6	23.2	5.0	7134559	4.9	7134564	10.2	7.2	1.0	7134559
Total Cobalt (Co)	mg/kg	6.16	3.68	4.60	7.70	2.67	7134559	3.19	7134564	4.13	2.72	0.30	7134559
Total Copper (Cu)	mg/kg	6.79	15.1	9.06	27.2	2.99	7134559	5.61	7134564	11.8	6.10	0.50	7134559
Total Iron (Fe)	mg/kg	21300	19400	14700	25400	10200	7134559	13000	7134564	14200	10500	100	7134559
Total Lead (Pb)	mg/kg	5.29	41.6	2.41	75.7	1.28	7134559	2.64	7134564	12.0	5.66	0.10	7134559
Total Lithium (Li)	mg/kg	5.6	6.7	<5.0	11.8	<5.0	7134559	<5.0	7134564	<5.0	<5.0	5.0	7134559
Total Magnesium (Mg)	mg/kg	4590	3030	2280	8070	946	7134559	773	7134564	2560	1350	100	7134559
Total Manganese (Mn)	mg/kg	345	184	557	313	113	7134559	70.4	7134564	262	152	0.20	7134559
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7134559	<0.050	7134564	<0.050	<0.050	0.050	7134559
Total Molybdenum (Mo)	mg/kg	0.55	0.54	0.26	0.92	0.20	7134559	0.31	7134564	0.79	0.39	0.10	7134559
Total Nickel (Ni)	mg/kg	5.72	8.88	3.39	9.06	3.14	7134559	3.04	7134564	5.98	5.51	0.80	7134559
Total Phosphorus (P)	mg/kg	456	399	312	629	483	7134559	197	7134564	542	395	10	7134559
Total Potassium (K)	mg/kg	376	546	965	1320	253	7134559	199	7134564	465	455	100	7134559
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	7134559	<0.50	7134564	<0.50	<0.50	0.50	7134559
Total Silver (Ag)	mg/kg	0.063	0.569	0.280	0.419	0.068	7134559	<0.050	7134564	0.121	0.770	0.050	7134559
Total Sodium (Na)	mg/kg	331	154	264	417	268	7134559	198	7134564	142	245	100	7134559
Total Strontium (Sr)	mg/kg	23.9	21.9	12.0	38.9	11.2	7134559	10.2	7134564	29.3	13.3	0.10	7134559
Total Thallium (Tl)	mg/kg	0.088	0.179	0.069	0.142	<0.050	7134559	<0.050	7134564	0.059	0.060	0.050	7134559
Total Tin (Sn)	mg/kg	0.25	0.33	0.15	0.41	0.10	7134559	0.12	7134564	0.22	0.16	0.10	7134559
Total Titanium (Ti)	mg/kg	475	424	607	1130	385	7134559	554	7134564	337	349	1.0	7134559
Total Uranium (U)	mg/kg	0.390	0.400	0.201	1.20	0.104	7134559	0.166	7134564	0.995	0.203	0.050	7134559
Total Vanadium (V)	mg/kg	54.2	43.8	40.8	119	31.3	7134559	44.3	7134564	30.0	31.6	2.0	7134559
Total Zinc (Zn)	mg/kg	40.0	77.8	27.6	160	15.1	7134559	23.3	7134564	56.6	35.8	1.0	7134559
Total Zirconium (Zr)	mg/kg	0.52	<0.50	<0.50	2.62	<0.50	7134559	<0.50	7134564	0.58	<0.50	0.50	7134559

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ3779	HJ3783	HJ3798	HJ3798	HJ3802		HJ3806		HJ3817		
Sampling Date		2013/08/27 14:00	2013/08/27 11:20	2013/08/27 17:45	2013/08/27 17:45	2013/08/27 10:04		2013/08/27 18:30		2013/08/27 17:20		
COC#		08377525	08377525	08377526	08377526	08377526		08377526		08377527		
	UNITS	**43-VC-D**	**19-VC-D**	**37-VC-D**	**37-VC-D Lab-Dup**	**22-VC-D**	**QC Batch**	**17-VC-D**	**QC Batch**	**24-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	9810	7160	9360	9260	2610	7134559	10600	7134564	10900	100	7134559
Total Antimony (Sb)	mg/kg	0.29	0.31	1.33	1.36	0.32	7134559	0.39	7134564	4.79	0.10	7134559
Total Arsenic (As)	mg/kg	5.94	4.64	31.8	31.2	2.33	7134559	5.84	7134564	74.1	0.50	7134559
Total Barium (Ba)	mg/kg	81.4	191	114	113	29.8	7134559	66.6	7134564	130	0.10	7134559
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	7134559	<0.40	7134564	<0.40	0.40	7134559
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	0.29	0.29	<0.10	7134559	<0.10	7134564	0.17	0.10	7134559
Total Cadmium (Cd)	mg/kg	0.129	0.073	0.400	0.404	0.213	7134559	0.287	7134564	0.292	0.050	7134559
Total Calcium (Ca)	mg/kg	1210	2090	1570	1650	1300	7134559	2650	7134564	2510	100	7134559
Total Chromium (Cr)	mg/kg	10.2	10.1	12.7	12.7	4.0	7134559	11.1	7134564	14.5	1.0	7134559
Total Cobalt (Co)	mg/kg	3.07	3.86	3.48	3.43	2.83	7134559	4.51	7134564	3.78	0.30	7134559
Total Copper (Cu)	mg/kg	10.4	6.33	8.97	8.87	5.29	7134559	11.0	7134564	19.6	0.50	7134559
Total Iron (Fe)	mg/kg	12500	13500	16500	16300	9240	7134559	16900	7134564	19600	100	7134559
Total Lead (Pb)	mg/kg	3.85	5.77	14.3	14.7	4.87	7134559	22.0	7134564	60.1	0.10	7134559
Total Lithium (Li)	mg/kg	<5.0	<5.0	5.5	5.3	<5.0	7134559	<5.0	7134564	7.2	5.0	7134559
Total Magnesium (Mg)	mg/kg	1980	2200	2730	2720	919	7134559	2210	7134564	3010	100	7134559
Total Manganese (Mn)	mg/kg	82.1	237	151	148	332	7134559	147	7134564	174	0.20	7134559
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7134559	<0.050	7134564	<0.050	0.050	7134559
Total Molybdenum (Mo)	mg/kg	0.35	0.32	0.56	0.56	0.20	7134559	0.67	7134564	0.51	0.10	7134559
Total Nickel (Ni)	mg/kg	6.58	5.30	6.77	6.56	2.64	7134559	5.89	7134564	9.47	0.80	7134559
Total Phosphorus (P)	mg/kg	240	358	150	150	202	7134559	268	7134564	431	10	7134559
Total Potassium (K)	mg/kg	240	673	599	600	174	7134559	377	7134564	498	100	7134559
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	7134559	<0.50	7134564	<0.50	0.50	7134559
Total Silver (Ag)	mg/kg	<0.050	0.096	0.280	0.297	0.101	7134559	0.212	7134564	0.618	0.050	7134559
Total Sodium (Na)	mg/kg	<100	206	117	113	272	7134559	237	7134564	144	100	7134559
Total Strontium (Sr)	mg/kg	10.3	14.4	15.6	15.2	12.3	7134559	20.2	7134564	21.1	0.10	7134559
Total Thallium (Tl)	mg/kg	<0.050	0.082	0.091	0.092	<0.050	7134559	0.083	7134564	0.153	0.050	7134559
Total Tin (Sn)	mg/kg	0.20	0.20	0.40	0.41	0.10	7134559	0.26	7134564	0.31	0.10	7134559
Total Titanium (Ti)	mg/kg	237	394	546	542	383	7134559	411	7134564	349	1.0	7134559
Total Uranium (U)	mg/kg	0.236	0.277	0.295	0.304	0.100	7134559	0.201	7134564	0.436	0.050	7134559
Total Vanadium (V)	mg/kg	29.1	35.0	44.3	44.2	30.2	7134559	49.6	7134564	43.1	2.0	7134559
Total Zinc (Zn)	mg/kg	22.6	27.3	47.6	45.8	34.3	7134559	48.0	7134564	80.2	1.0	7134559
Total Zirconium (Zr)	mg/kg	1.47	<0.50	0.77	0.72	<0.50	7134559	0.71	7134564	<0.50	0.50	7134559

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3516	HJ3516		HJ3517	HJ3518	HJ3520	HJ3520	HJ3521	HJ3522	HJ3524		
Sampling Date		2013/08/28 13:25	2013/08/28 13:25		2013/08/28 13:25	2013/08/28 13:25	2013/08/28 10:15	2013/08/28 10:15	2013/08/28 10:15	2013/08/28 10:15	2013/08/28 16:00		
COC#		08377520	08377520		08377520	08377520	08377520	08377520	08377520	08377520	08377520		
	UNITS	**7-VC-A**	**7-VC-A Lab-Dup**	**QC Batch**	**7-VC-B**	**7-VC-C**	**31-VC-A**	**31-VC-A Lab-Dup**	**31-VC-B**	**31-VC-C**	**4-VC-A**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg					24.0				23.9		1.0	7185983
Total Aluminum (Al)	mg/kg	403	393	7176830	13.0		242	242	49.2		84.5	1.0	7191431
Total Antimony (Sb)	mg/kg					<0.0050				<0.0050		0.0050	7185983
Total Antimony (Sb)	mg/kg	0.0546	0.0612	7176830	0.0055		0.432	0.433	0.0054		0.0258	0.0050	7191431
Total Arsenic (As)	mg/kg					<0.050				<0.050		0.050	7185983
Total Arsenic (As)	mg/kg	0.594	0.590	7176830	<0.050		3.00	3.10	0.055		0.245	0.050	7191431
Total Barium (Ba)	mg/kg					24.5				11.6		0.10	7185983
Total Barium (Ba)	mg/kg	60.0	61.3	7176830	56.9		8.52	8.29	24.4		12.5	0.10	7191431
Total Beryllium (Be)	mg/kg					<0.10				<0.10		0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10	<0.10	7176830	<0.10		<0.10	<0.10	<0.10		<0.10	0.10	7191431
Total Bismuth (Bi)	mg/kg					<0.10				<0.10		0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	7176830	<0.10		<0.10	<0.10	<0.10		<0.10	0.10	7191431
Total Boron (B)	mg/kg					13.4				9.1		2.0	7185983
Total Boron (B)	mg/kg	2.3	2.4	7176830	15.4		<2.0	<2.0	7.1		<2.0	2.0	7191431
Total Cadmium (Cd)	mg/kg					<0.010				0.118		0.010	7185983
Total Cadmium (Cd)	mg/kg	0.076	0.080	7176830	1.08		0.048	0.046	1.85		0.142	0.010	7191431
Total Calcium (Ca)	mg/kg					2400				1490		10	7185983
Total Calcium (Ca)	mg/kg	4220	4140	7176830	10900		693	680	4740		2100	10	7191431
Total Chromium (Cr)	mg/kg					<0.20				<0.20		0.20	7185983
Total Chromium (Cr)	mg/kg	1.23	1.28	7176830	<0.20		0.62	0.61	<0.20		0.23	0.20	7191431
Total Cobalt (Co)	mg/kg					<0.020				<0.020		0.020	7185983
Total Cobalt (Co)	mg/kg	0.303	0.307	7176830	0.651		0.166	0.163	2.26		0.095	0.020	7191431
Total Copper (Cu)	mg/kg					5.61				6.13		0.050	7185983
Total Copper (Cu)	mg/kg	3.18	3.12	7176830	4.17		1.93	1.85	3.21		1.38	0.050	7191431
Total Iron (Fe)	mg/kg					25				27		10	7185983
Total Iron (Fe)	mg/kg	648	617	7176830	50		484	482	114		154	10	7191431
Total Lead (Pb)	mg/kg					<0.010				0.014		0.010	7185983
Total Lead (Pb)	mg/kg	0.824	0.810	7176830	0.055		3.48	3.58	0.053		0.306	0.010	7191431
Total Magnesium (Mg)	mg/kg					1090				817		10	7185983
Total Magnesium (Mg)	mg/kg	561	564	7176830	1800		243	241	1490		446	10	7191431
Total Manganese (Mn)	mg/kg					446				540		0.10	7185983
Total Manganese (Mn)	mg/kg	199	196	7176830	151		128	125	866		120	0.10	7191431
Total Mercury (Hg)	mg/kg					<0.010				<0.010		0.010	7185983
Total Mercury (Hg)	mg/kg	0.026	0.015	7176830	<0.010		0.015	0.011	<0.010		<0.010	0.010	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3516	HJ3516		HJ3517	HJ3518	HJ3520	HJ3520	HJ3521	HJ3522	HJ3524		
Sampling Date		2013/08/28 13:25	2013/08/28 13:25		2013/08/28 13:25	2013/08/28 13:25	2013/08/28 10:15	2013/08/28 10:15	2013/08/28 10:15	2013/08/28 10:15	2013/08/28 16:00		
COC#		08377520	08377520		08377520	08377520	08377520	08377520	08377520	08377520	08377520		
	UNITS	**7-VC-A**	**7-VC-A Lab-Dup**	**QC Batch**	**7-VC-B**	**7-VC-C**	**31-VC-A**	**31-VC-A Lab-Dup**	**31-VC-B**	**31-VC-C**	**4-VC-A**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg					0.257				0.317		0.050	7185983
Total Molybdenum (Mo)	mg/kg	0.260	0.239	7176830	0.319		0.092	0.089	0.276		<0.050	0.050	7191431
Total Nickel (Ni)	mg/kg					0.261				1.20		0.050	7185983
Total Nickel (Ni)	mg/kg	1.37	1.24	7176830	0.503		0.740	0.660	2.26		0.287	0.050	7191431
Total Phosphorus (P)	mg/kg					1760				1580		10	7185983
Total Phosphorus (P)	mg/kg	558	579	7176830	822		295	288	707		418	10	7191431
Total Potassium (K)	mg/kg					12400				8430		10	7185983
Total Potassium (K)	mg/kg	1040	1100	7176830	6910		761	759	6070		1080	10	7191431
Total Selenium (Se)	mg/kg					<0.050				<0.050		0.050	7185983
Total Selenium (Se)	mg/kg	<0.050	0.058	7176830	<0.050		<0.050	<0.050	<0.050		<0.050	0.050	7191431
Total Silver (Ag)	mg/kg					<0.020				<0.020		0.020	7185983
Total Silver (Ag)	mg/kg	<0.020	<0.020	7176830	<0.020		0.118	0.124	0.023		<0.020	0.020	7191431
Total Sodium (Na)	mg/kg					<10				<10		10	7185983
Total Sodium (Na)	mg/kg	26	26	7176830	<10		16	15	34		<10	10	7191431
Total Strontium (Sr)	mg/kg					3.87				2.09		0.10	7185983
Total Strontium (Sr)	mg/kg	17.9	17.5	7176830	58.1		2.75	2.69	35.5		6.50	0.10	7191431
Total Thallium (Tl)	mg/kg					<0.0020				<0.0020		0.0020	7185983
Total Thallium (Tl)	mg/kg	0.0049	0.0034	7176830	<0.0020		0.0083	0.0084	<0.0020		0.0024	0.0020	7191431
Total Tin (Sn)	mg/kg					<0.10				<0.10		0.10	7185983
Total Tin (Sn)	mg/kg	<0.10	<0.10	7176830	<0.10		<0.10	<0.10	<0.10		<0.10	0.10	7191431
Total Titanium (Ti)	mg/kg					<1.0				<1.0		1.0	7185983
Total Titanium (Ti)	mg/kg	21.6	20.2	7176830	<1.0		13.8	13.4	<1.0		4.8	1.0	7191431
Total Uranium (U)	mg/kg					0.0056				<0.0020		0.0020	7185983
Total Uranium (U)	mg/kg	0.0203	0.0273	7176830	0.0026		0.0131	0.0130	0.0023		0.0062	0.0020	7191431
Total Vanadium (V)	mg/kg					<0.20				<0.20		0.20	7185983
Total Vanadium (V)	mg/kg	1.17	1.14	7176830	<0.20		0.68	0.73	<0.20		0.23	0.20	7191431
Total Zinc (Zn)	mg/kg					16.9				21.0		0.20	7185983
Total Zinc (Zn)	mg/kg	51.0	52.3	7176830	93.2		14.1	14.2	172		23.4	0.20	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3525	HJ3526	HJ3562	HJ3563	HJ3564	HJ3566	HJ3567	HJ3568	HJ3570		
Sampling Date		2013/08/28 16:00	2013/08/28 16:00	2013/08/28 14:30	2013/08/28 14:30	2013/08/28 14:30	2013/08/28 14:00	2013/08/28 14:00	2013/08/28 14:00	2013/08/28 15:50		
COC#		08377520	08377520	08377521	08377521	08377521	08377521	08377521	08377521	08377521		
	UNITS	**4-VC-B**	**4-VC-C**	**40-VC-A**	**40-VC-B**	**40-VC-C**	**33-VC-A**	**33-VC-B**	**33-VC-C**	**DP2-VC-A**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg		14.9			30.2			17.1		1.0	7185983
Total Aluminum (Al)	mg/kg	13.4		101	18.1		172	13.7		134	1.0	7191431
Total Antimony (Sb)	mg/kg		<0.0050			<0.0050			<0.0050		0.0050	7185983
Total Antimony (Sb)	mg/kg	<0.0050		0.0629	0.0069		0.0466	0.0064		0.0251	0.0050	7191431
Total Arsenic (As)	mg/kg		<0.050			<0.050			<0.050		0.050	7185983
Total Arsenic (As)	mg/kg	<0.050		0.488	0.079		0.522	<0.050		0.297	0.050	7191431
Total Barium (Ba)	mg/kg		9.98			20.8			12.5		0.10	7185983
Total Barium (Ba)	mg/kg	18.3		23.9	57.1		28.0	50.4		11.2	0.10	7191431
Total Beryllium (Be)	mg/kg		<0.10			<0.10			<0.10		0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	0.10	7191431
Total Bismuth (Bi)	mg/kg		<0.10			<0.10			<0.10		0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	0.10	7191431
Total Boron (B)	mg/kg		15.6			6.1			16.9		2.0	7185983
Total Boron (B)	mg/kg	13.8		<2.0	11.2		<2.0	5.2		<2.0	2.0	7191431
Total Cadmium (Cd)	mg/kg		<0.010			<0.010			0.021		0.010	7185983
Total Cadmium (Cd)	mg/kg	3.77		0.234	2.92		0.312	2.63		0.074	0.010	7191431
Total Calcium (Ca)	mg/kg		1500			1970			1570		10	7185983
Total Calcium (Ca)	mg/kg	10400		2830	13200		2230	6940		1750	10	7191431
Total Chromium (Cr)	mg/kg		<0.20			<0.20			<0.20		0.20	7185983
Total Chromium (Cr)	mg/kg	<0.20		0.30	<0.20		0.43	<0.20		0.21	0.20	7191431
Total Cobalt (Co)	mg/kg		<0.020			<0.020			<0.020		0.020	7185983
Total Cobalt (Co)	mg/kg	0.115		0.130	0.403		0.141	0.358		0.089	0.020	7191431
Total Copper (Cu)	mg/kg		7.04			5.14			9.11		0.050	7185983
Total Copper (Cu)	mg/kg	3.17		1.42	3.02		2.23	3.87		1.18	0.050	7191431
Total Iron (Fe)	mg/kg		23			23			24		10	7185983
Total Iron (Fe)	mg/kg	50		189	72		282	55		154	10	7191431
Total Lead (Pb)	mg/kg		0.016			<0.010			<0.010		0.010	7185983
Total Lead (Pb)	mg/kg	0.064		0.541	0.058		0.485	0.036		0.280	0.010	7191431
Total Magnesium (Mg)	mg/kg		885			839			937		10	7185983
Total Magnesium (Mg)	mg/kg	2290		498	2710		350	2030		345	10	7191431
Total Manganese (Mn)	mg/kg		322			429			593		0.10	7185983
Total Manganese (Mn)	mg/kg	128		151	146		167	284		88.7	0.10	7191431
Total Mercury (Hg)	mg/kg		<0.010			<0.010			<0.010		0.010	7185983
Total Mercury (Hg)	mg/kg	<0.010		0.015	<0.010		0.018	<0.010		<0.010	0.010	7191431
Total Molybdenum (Mo)	mg/kg		<0.050			0.507			<0.050		0.050	7185983

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3525	HJ3526	HJ3562	HJ3563	HJ3564	HJ3566	HJ3567	HJ3568	HJ3570		
Sampling Date		2013/08/28 16:00	2013/08/28 16:00	2013/08/28 14:30	2013/08/28 14:30	2013/08/28 14:30	2013/08/28 14:00	2013/08/28 14:00	2013/08/28 14:00	2013/08/28 15:50		
COC#		08377520	08377520	08377521	08377521	08377521	08377521	08377521	08377521	08377521		
	UNITS	**4-VC-B**	**4-VC-C**	**40-VC-A**	**40-VC-B**	**40-VC-C**	**33-VC-A**	**33-VC-B**	**33-VC-C**	**DP2-VC-A**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.070		0.091	0.259		<0.050	0.084		<0.050	0.050	7191431
Total Nickel (Ni)	mg/kg		0.112			0.390			0.298		0.050	7185983
Total Nickel (Ni)	mg/kg	0.953		0.382	0.311		0.544	0.930		0.291	0.050	7191431
Total Phosphorus (P)	mg/kg		1630			1420			1700		10	7185983
Total Phosphorus (P)	mg/kg	867		467	1070		382	1150		369	10	7191431
Total Potassium (K)	mg/kg		9720			7780			11200		10	7185983
Total Potassium (K)	mg/kg	8210		1130	11500		777	9800		878	10	7191431
Total Selenium (Se)	mg/kg		<0.050			<0.050			<0.050		0.050	7185983
Total Selenium (Se)	mg/kg	<0.050		<0.050	<0.050		<0.050	<0.050		<0.050	0.050	7191431
Total Silver (Ag)	mg/kg		<0.020			<0.020			<0.020		0.020	7185983
Total Silver (Ag)	mg/kg	<0.020		<0.020	<0.020		<0.020	<0.020		<0.020	0.020	7191431
Total Sodium (Na)	mg/kg		<10			<10			<10		10	7185983
Total Sodium (Na)	mg/kg	<10		11	<10		11	<10		<10	10	7191431
Total Strontium (Sr)	mg/kg		2.14			2.43			3.12		0.10	7185983
Total Strontium (Sr)	mg/kg	41.2		9.61	53.5		10.8	62.8		5.08	0.10	7191431
Total Thallium (Tl)	mg/kg		<0.0020			<0.0020			<0.0020		0.0020	7185983
Total Thallium (Tl)	mg/kg	<0.0020		<0.0020	<0.0020		0.0023	<0.0020		<0.0020	0.0020	7191431
Total Tin (Sn)	mg/kg		<0.10			<0.10			<0.10		0.10	7185983
Total Tin (Sn)	mg/kg	<0.10		<0.10	<0.10		<0.10	<0.10		<0.10	0.10	7191431
Total Titanium (Ti)	mg/kg		<1.0			<1.0			<1.0		1.0	7185983
Total Titanium (Ti)	mg/kg	<1.0		5.3	1.4		8.4	1.0		5.4	1.0	7191431
Total Uranium (U)	mg/kg		<0.0020			<0.0020			<0.0020		0.0020	7185983
Total Uranium (U)	mg/kg	<0.0020		0.0078	<0.0020		0.0102	<0.0020		0.0060	0.0020	7191431
Total Vanadium (V)	mg/kg		<0.20			<0.20			<0.20		0.20	7185983
Total Vanadium (V)	mg/kg	<0.20		0.28	<0.20		0.45	<0.20		0.28	0.20	7191431
Total Zinc (Zn)	mg/kg		14.6			13.3			15.0		0.20	7185983
Total Zinc (Zn)	mg/kg	203		21.8	78.4		26.8	105		19.7	0.20	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3571	HJ3609	HJ3611	HJ3611	HJ3612	HJ3613	HJ3615	HJ3616	HJ3617		
Sampling Date		2013/08/28 15:50	2013/08/28 15:50	2013/08/28 19:30	2013/08/28 19:30	2013/08/28 19:30	2013/08/28 19:30	2013/08/28 17:45	2013/08/28 17:45	2013/08/28 17:45		
COC#		08377521	08377529	08377529	08377529	08377529	08377529	08377529	08377529	08377529		
	UNITS	**DP2-VC-B**	**DP2-VC-C**	**26-VC-A**	**26-VC-A Lab-Dup**	**26-VC-B**	**26-VC-C**	**18-VC-A**	**18-VC-B**	**18-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg		11.3				34.7			22.0	1.0	7185983
Total Aluminum (Al)	mg/kg	10.4		148	150	12.4		183	5.9		1.0	7191431
Total Antimony (Sb)	mg/kg		<0.0050				<0.0050			<0.0050	0.0050	7185983
Total Antimony (Sb)	mg/kg	<0.0050		0.0852	0.102	0.0073		0.0614	<0.0050		0.0050	7191431
Total Arsenic (As)	mg/kg		<0.050				<0.050			<0.050	0.050	7185983
Total Arsenic (As)	mg/kg	<0.050		0.680	0.809	0.063		0.768	0.065		0.050	7191431
Total Barium (Ba)	mg/kg		11.5				8.54			13.1	0.10	7185983
Total Barium (Ba)	mg/kg	18.6		19.8	20.0	48.4		16.5	24.3		0.10	7191431
Total Beryllium (Be)	mg/kg		<0.10				<0.10			<0.10	0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10		<0.10	<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Bismuth (Bi)	mg/kg		<0.10				<0.10			<0.10	0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10		<0.10	<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Boron (B)	mg/kg		16.1				9.1			10.8	2.0	7185983
Total Boron (B)	mg/kg	9.3		<2.0	<2.0	5.4		<2.0	10.8		2.0	7191431
Total Cadmium (Cd)	mg/kg		<0.010				<0.010			0.043	0.010	7185983
Total Cadmium (Cd)	mg/kg	3.44		0.338	0.313	4.73		0.212	8.60		0.010	7191431
Total Calcium (Ca)	mg/kg		1520				1420			1790	10	7185983
Total Calcium (Ca)	mg/kg	9400		1810	1850	9820		2190	5230		10	7191431
Total Chromium (Cr)	mg/kg		<0.20				<0.20			<0.20	0.20	7185983
Total Chromium (Cr)	mg/kg	<0.20		0.42	0.58	<0.20		0.77	<0.20		0.20	7191431
Total Cobalt (Co)	mg/kg		<0.020				<0.020			<0.020	0.020	7185983
Total Cobalt (Co)	mg/kg	0.138		0.167	0.187	0.134		0.146	0.069		0.020	7191431
Total Copper (Cu)	mg/kg		5.41				7.00			9.21	0.050	7185983
Total Copper (Cu)	mg/kg	3.15		1.85	1.82	3.16		1.84	4.82		0.050	7191431
Total Iron (Fe)	mg/kg		22				18			31	10	7185983
Total Iron (Fe)	mg/kg	46		294	299	48		361	26		10	7191431
Total Lead (Pb)	mg/kg		<0.010				0.013			0.066	0.010	7185983
Total Lead (Pb)	mg/kg	0.047		0.692	0.747	0.058		0.775	0.030		0.010	7191431
Total Magnesium (Mg)	mg/kg		830				871			859	10	7185983
Total Magnesium (Mg)	mg/kg	2240		381	390	2570		466	776		10	7191431
Total Manganese (Mn)	mg/kg		320				568			327	0.10	7185983
Total Manganese (Mn)	mg/kg	167		263	270	238		186	402		0.10	7191431
Total Mercury (Hg)	mg/kg		<0.010				<0.010			<0.010	0.010	7185983
Total Mercury (Hg)	mg/kg	<0.010		0.016	0.018	<0.010		<0.010	<0.010		0.010	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3571	HJ3609	HJ3611	HJ3611	HJ3612	HJ3613	HJ3615	HJ3616	HJ3617		
Sampling Date		2013/08/28 15:50	2013/08/28 15:50	2013/08/28 19:30	2013/08/28 19:30	2013/08/28 19:30	2013/08/28 19:30	2013/08/28 17:45	2013/08/28 17:45	2013/08/28 17:45		
COC#		08377521	08377529	08377529	08377529	08377529	08377529	08377529	08377529	08377529		
	UNITS	**DP2-VC-B**	**DP2-VC-C**	**26-VC-A**	**26-VC-A Lab-Dup**	**26-VC-B**	**26-VC-C**	**18-VC-A**	**18-VC-B**	**18-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		<0.050				<0.050			0.113	0.050	7185983
Total Molybdenum (Mo)	mg/kg	0.080		0.105	0.109	0.085		0.107	0.091		0.050	7191431
Total Nickel (Ni)	mg/kg		0.113				0.313			0.261	0.050	7185983
Total Nickel (Ni)	mg/kg	0.137		0.451	0.499	0.563		0.604	0.210		0.050	7191431
Total Phosphorus (P)	mg/kg		1630				1570			1610	10	7185983
Total Phosphorus (P)	mg/kg	879		410	409	705		468	579		10	7191431
Total Potassium (K)	mg/kg		8980				9200			11500	10	7185983
Total Potassium (K)	mg/kg	8620		1060	1050	4510		1150	3380		10	7191431
Total Selenium (Se)	mg/kg		<0.050				<0.050			<0.050	0.050	7185983
Total Selenium (Se)	mg/kg	<0.050		<0.050	<0.050	<0.050		<0.050	<0.050		0.050	7191431
Total Silver (Ag)	mg/kg		<0.020				<0.020			<0.020	0.020	7185983
Total Silver (Ag)	mg/kg	<0.020		<0.020	<0.020	<0.020		<0.020	<0.020		0.020	7191431
Total Sodium (Na)	mg/kg		<10				<10			<10	10	7185983
Total Sodium (Na)	mg/kg	<10		<10	<10	12		13	32		10	7191431
Total Strontium (Sr)	mg/kg		2.46				1.23			4.40	0.10	7185983
Total Strontium (Sr)	mg/kg	40.9		6.55	6.43	54.5		8.54	34.7		0.10	7191431
Total Thallium (Tl)	mg/kg		<0.0020				<0.0020			<0.0020	0.0020	7185983
Total Thallium (Tl)	mg/kg	<0.0020		0.0034	0.0041	<0.0020		0.0028	<0.0020		0.0020	7191431
Total Tin (Sn)	mg/kg		<0.10				<0.10			<0.10	0.10	7185983
Total Tin (Sn)	mg/kg	<0.10		<0.10	<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Titanium (Ti)	mg/kg		<1.0				<1.0			<1.0	1.0	7185983
Total Titanium (Ti)	mg/kg	<1.0		8.8	8.9	<1.0		12.6	<1.0		1.0	7191431
Total Uranium (U)	mg/kg		<0.0020				<0.0020			<0.0020	0.0020	7185983
Total Uranium (U)	mg/kg	<0.0020		0.0092	0.0105	<0.0020		0.0152	<0.0020		0.0020	7191431
Total Vanadium (V)	mg/kg		<0.20				<0.20			<0.20	0.20	7185983
Total Vanadium (V)	mg/kg	<0.20		0.44	0.48	<0.20		0.64	<0.20		0.20	7191431
Total Zinc (Zn)	mg/kg		14.5				12.1			18.5	0.20	7185983
Total Zinc (Zn)	mg/kg	197		25.6	26.6	337		27.6	234		0.20	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3619	HJ3652	HJ3653	HJ3655	HJ3656	HJ3657	HJ3659	HJ3660	HJ3661		
Sampling Date		2013/08/28 18:30	2013/08/28 18:30	2013/08/28 18:30	2013/08/28 20:20	2013/08/28 20:20	2013/08/28 20:20	2013/08/28 17:10	2013/08/28 17:10	2013/08/28 17:10		
COC#		08377529	08377522	08377522	08377522	08377522	08377522	08377522	08377522	08377522		
	UNITS	**2-VC-A**	**2-VC-B**	**2-VC-C**	**34-VC-A**	**34-VC-B**	**34-VC-C**	**DP1-VC-A**	**DP1-VC-B**	**DP1-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg			17.5			27.5			47.4	1.0	7185983
Total Aluminum (Al)	mg/kg	155	28.2		148	11.3		121	31.4		1.0	7191431
Total Antimony (Sb)	mg/kg			<0.0050			<0.0050			0.0071	0.0050	7185983
Total Antimony (Sb)	mg/kg	0.164	0.0127		0.0426	0.0071		0.0782	0.0204		0.0050	7191431
Total Arsenic (As)	mg/kg			<0.050			<0.050			0.140	0.050	7185983
Total Arsenic (As)	mg/kg	1.21	0.108		0.447	0.081		0.679	0.179		0.050	7191431
Total Barium (Ba)	mg/kg			12.4			8.72			15.0	0.10	7185983
Total Barium (Ba)	mg/kg	17.7	42.0		26.2	57.3		23.8	75.7		0.10	7191431
Total Beryllium (Be)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Bismuth (Bi)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Boron (B)	mg/kg			8.1			11.8			10.3	2.0	7185983
Total Boron (B)	mg/kg	<2.0	6.8		<2.0	7.6		<2.0	5.2		2.0	7191431
Total Cadmium (Cd)	mg/kg			<0.010			<0.010			<0.010	0.010	7185983
Total Cadmium (Cd)	mg/kg	0.871	5.74		0.180	2.91		0.169	4.89		0.010	7191431
Total Calcium (Ca)	mg/kg			1490			1590			1710	10	7185983
Total Calcium (Ca)	mg/kg	1700	7050		3640	16600		1340	10500		10	7191431
Total Chromium (Cr)	mg/kg			<0.20			<0.20			<0.20	0.20	7185983
Total Chromium (Cr)	mg/kg	0.44	<0.20		0.28	<0.20		0.28	<0.20		0.20	7191431
Total Cobalt (Co)	mg/kg			<0.020			<0.020			<0.020	0.020	7185983
Total Cobalt (Co)	mg/kg	0.149	0.317		0.141	0.122		0.098	0.515		0.020	7191431
Total Copper (Cu)	mg/kg			5.83			5.43			7.95	0.050	7185983
Total Copper (Cu)	mg/kg	2.19	6.05		3.07	3.95		1.66	2.96		0.050	7191431
Total Iron (Fe)	mg/kg			17			21			53	10	7185983
Total Iron (Fe)	mg/kg	311	65		256	46		207	69		10	7191431
Total Lead (Pb)	mg/kg			<0.010			<0.010			0.081	0.010	7185983
Total Lead (Pb)	mg/kg	1.10	0.120		0.553	0.057		0.605	0.149		0.010	7191431
Total Magnesium (Mg)	mg/kg			739			828			992	10	7185983
Total Magnesium (Mg)	mg/kg	387	1850		499	2930		316	2850		10	7191431
Total Manganese (Mn)	mg/kg			544			501			645	0.10	7185983
Total Manganese (Mn)	mg/kg	254	264		151	102		229	408		0.10	7191431
Total Mercury (Hg)	mg/kg			<0.010			<0.010			<0.010	0.010	7185983
Total Mercury (Hg)	mg/kg	0.022	<0.010		<0.010	<0.010		<0.010	<0.010		0.010	7191431
Total Molybdenum (Mo)	mg/kg			<0.050			0.089			<0.050	0.050	7185983

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3619	HJ3652	HJ3653	HJ3655	HJ3656	HJ3657	HJ3659	HJ3660	HJ3661		
Sampling Date		2013/08/28 18:30	2013/08/28 18:30	2013/08/28 18:30	2013/08/28 20:20	2013/08/28 20:20	2013/08/28 20:20	2013/08/28 17:10	2013/08/28 17:10	2013/08/28 17:10		
COC#		08377529	08377522	08377522	08377522	08377522	08377522	08377522	08377522	08377522		
	UNITS	**2-VC-A**	**2-VC-B**	**2-VC-C**	**34-VC-A**	**34-VC-B**	**34-VC-C**	**DP1-VC-A**	**DP1-VC-B**	**DP1-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.058	<0.050		<0.050	0.057		<0.050	0.075		0.050	7191431
Total Nickel (Ni)	mg/kg			0.228			0.169			0.496	0.050	7185983
Total Nickel (Ni)	mg/kg	0.457	0.987		0.477	0.890		0.542	1.58		0.050	7191431
Total Phosphorus (P)	mg/kg			1310			1610			1760	10	7185983
Total Phosphorus (P)	mg/kg	345	1060		361	846		419	1070		10	7191431
Total Potassium (K)	mg/kg			8630			9780			10600	10	7185983
Total Potassium (K)	mg/kg	814	9600		956	5890		962	6800		10	7191431
Total Selenium (Se)	mg/kg			<0.050			<0.050			<0.050	0.050	7185983
Total Selenium (Se)	mg/kg	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		0.050	7191431
Total Silver (Ag)	mg/kg			<0.020			<0.020			<0.020	0.020	7185983
Total Silver (Ag)	mg/kg	0.021	<0.020		<0.020	<0.020		0.022	<0.020		0.020	7191431
Total Sodium (Na)	mg/kg			<10			<10			<10	10	7185983
Total Sodium (Na)	mg/kg	<10	<10		10	<10		13	<10		10	7191431
Total Strontium (Sr)	mg/kg			1.76			2.13			2.48	0.10	7185983
Total Strontium (Sr)	mg/kg	8.60	48.3		15.4	68.6		7.68	79.6		0.10	7191431
Total Thallium (Tl)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7185983
Total Thallium (Tl)	mg/kg	0.0042	0.0021		0.0028	<0.0020		0.0021	0.0031		0.0020	7191431
Total Tin (Sn)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Tin (Sn)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Titanium (Ti)	mg/kg			<1.0			<1.0			1.5	1.0	7185983
Total Titanium (Ti)	mg/kg	9.4	<1.0		7.9	<1.0		5.9	1.7		1.0	7191431
Total Uranium (U)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7185983
Total Uranium (U)	mg/kg	0.0097	<0.0020		0.0087	<0.0020		0.0072	<0.0020		0.0020	7191431
Total Vanadium (V)	mg/kg			<0.20			<0.20			<0.20	0.20	7185983
Total Vanadium (V)	mg/kg	0.45	<0.20		0.36	<0.20		0.35	<0.20		0.20	7191431
Total Zinc (Zn)	mg/kg			9.72			14.9			18.9	0.20	7185983
Total Zinc (Zn)	mg/kg	46.3	230		29.1	267		32.4	255		0.20	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3697	HJ3698	HJ3699	HJ3701	HJ3702	HJ3703	HJ3705	HJ3706	HJ3707		
Sampling Date		2013/08/27 09:00	2013/08/27 09:00	2013/08/27 09:00	2013/08/27 15:25	2013/08/27 15:25	2013/08/27 15:25	2013/08/27 11:30	2013/08/27 11:30	2013/08/27 11:30		
COC#		08377523	08377523	08377523	08377523	08377523	08377523	08377523	08377523	08377523		
	UNITS	**13-VC-A**	**13-VC-B**	**13-VC-C**	**5-VC-A**	**5-VC-B**	**5-VC-C**	**14-VC-A**	**14-VC-B**	**14-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg			76.1			4.8			48.0	1.0	7185983
Total Aluminum (Al)	mg/kg	1220	207		260	6.2		160	24.8		1.0	7191431
Total Antimony (Sb)	mg/kg			0.0299			<0.0050			<0.0050	0.0050	7185983
Total Antimony (Sb)	mg/kg	1.26	0.277		0.180	<0.0050		0.0904	0.0121		0.0050	7191431
Total Arsenic (As)	mg/kg			0.583			<0.050			<0.050	0.050	7185983
Total Arsenic (As)	mg/kg	13.8	3.03		1.70	0.053		1.20	0.227		0.050	7191431
Total Barium (Ba)	mg/kg			19.2			8.90			21.6	0.10	7185983
Total Barium (Ba)	mg/kg	62.2	55.6		53.2	8.66		32.1	51.7		0.10	7191431
Total Beryllium (Be)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Bismuth (Bi)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Boron (B)	mg/kg			9.3			9.2			8.9	2.0	7185983
Total Boron (B)	mg/kg	3.5	6.6		3.7	13.7		<2.0	4.9		2.0	7191431
Total Cadmium (Cd)	mg/kg			0.021			0.381			<0.010	0.010	7185983
Total Cadmium (Cd)	mg/kg	0.339	1.75		0.464	0.908		0.064	1.25		0.010	7191431
Total Calcium (Ca)	mg/kg			1950			1560			1890	10	7185983
Total Calcium (Ca)	mg/kg	3450	8860		5030	6840		2030	13800		10	7191431
Total Chromium (Cr)	mg/kg			<0.20			<0.20			<0.20	0.20	7185983
Total Chromium (Cr)	mg/kg	2.14	0.59		0.82	<0.20		0.46	<0.20		0.20	7191431
Total Cobalt (Co)	mg/kg			0.033			<0.020			<0.020	0.020	7185983
Total Cobalt (Co)	mg/kg	1.01	0.329		0.246	0.323		0.145	0.242		0.020	7191431
Total Copper (Cu)	mg/kg			6.34			4.84			8.38	0.050	7185983
Total Copper (Cu)	mg/kg	5.95	3.37		4.19	2.68		3.02	3.79		0.050	7191431
Total Iron (Fe)	mg/kg			105			24			33	10	7185983
Total Iron (Fe)	mg/kg	3060	584		515	49		318	68		10	7191431
Total Lead (Pb)	mg/kg			0.161			0.016			<0.010	0.010	7185983
Total Lead (Pb)	mg/kg	7.93	1.62		1.59	0.027		0.670	0.061		0.010	7191431
Total Magnesium (Mg)	mg/kg			1240			1130			1040	10	7185983
Total Magnesium (Mg)	mg/kg	1670	2930		874	1950		312	2240		10	7191431
Total Manganese (Mn)	mg/kg			647			63.5			454	0.10	7185983
Total Manganese (Mn)	mg/kg	814	226		269	303		197	89.0		0.10	7191431
Total Mercury (Hg)	mg/kg			<0.010			0.016			<0.010	0.010	7185983
Total Mercury (Hg)	mg/kg	0.035	<0.010		0.036	<0.010		0.011	<0.010		0.010	7191431
Total Molybdenum (Mo)	mg/kg			0.137			0.316			0.548	0.050	7185983

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3697	HJ3698	HJ3699	HJ3701	HJ3702	HJ3703	HJ3705	HJ3706	HJ3707		
Sampling Date		2013/08/27 09:00	2013/08/27 09:00	2013/08/27 09:00	2013/08/27 15:25	2013/08/27 15:25	2013/08/27 15:25	2013/08/27 11:30	2013/08/27 11:30	2013/08/27 11:30		
COC#		08377523	08377523	08377523	08377523	08377523	08377523	08377523	08377523	08377523		
	UNITS	**13-VC-A**	**13-VC-B**	**13-VC-C**	**5-VC-A**	**5-VC-B**	**5-VC-C**	**14-VC-A**	**14-VC-B**	**14-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.083	0.095		0.351	0.180		0.073	0.113		0.050	7191431
Total Nickel (Ni)	mg/kg			0.355			0.123			0.656	0.050	7185983
Total Nickel (Ni)	mg/kg	1.42	0.690		0.821	0.086		0.631	1.08		0.050	7191431
Total Phosphorus (P)	mg/kg			2480			1820			2110	10	7185983
Total Phosphorus (P)	mg/kg	831	3330		720	931		393	1330		10	7191431
Total Potassium (K)	mg/kg			13200			11500			10700	10	7185983
Total Potassium (K)	mg/kg	2260	9220		1200	4780		700	6550		10	7191431
Total Selenium (Se)	mg/kg			<0.050			<0.050			<0.050	0.050	7185983
Total Selenium (Se)	mg/kg	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		0.050	7191431
Total Silver (Ag)	mg/kg			<0.020			<0.020			<0.020	0.020	7185983
Total Silver (Ag)	mg/kg	0.166	0.028		0.029	<0.020		<0.020	<0.020		0.020	7191431
Total Sodium (Na)	mg/kg			<10			<10			<10	10	7185983
Total Sodium (Na)	mg/kg	14	<10		14	32		<10	<10		10	7191431
Total Strontium (Sr)	mg/kg			2.70			7.61			4.55	0.10	7185983
Total Strontium (Sr)	mg/kg	12.9	52.7		22.0	46.8		7.07	60.9		0.10	7191431
Total Thallium (Tl)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7185983
Total Thallium (Tl)	mg/kg	0.0509	0.0089		0.0068	<0.0020		0.0106	<0.0020		0.0020	7191431
Total Tin (Sn)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Tin (Sn)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191431
Total Titanium (Ti)	mg/kg			4.4			<1.0			<1.0	1.0	7185983
Total Titanium (Ti)	mg/kg	143	12.0		14.4	<1.0		8.8	1.5		1.0	7191431
Total Uranium (U)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7185983
Total Uranium (U)	mg/kg	0.0284	0.0051		0.0178	<0.0020		0.0087	<0.0020		0.0020	7191431
Total Vanadium (V)	mg/kg			<0.20			<0.20			<0.20	0.20	7185983
Total Vanadium (V)	mg/kg	6.87	1.15		0.83	<0.20		0.52	<0.20		0.20	7191431
Total Zinc (Zn)	mg/kg			18.5			19.9			14.8	0.20	7185983
Total Zinc (Zn)	mg/kg	80.2	136		89.3	103		12.3	36.4		0.20	7191431

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3734		HJ3735	HJ3736	HJ3738	HJ3739	HJ3741	HJ3742	HJ3743	HJ3776		
Sampling Date		2013/08/27 16:20		2013/08/27 16:20	2013/08/27 16:20	2013/08/27 15:25	2013/08/27 15:25	2013/08/27 10:25	2013/08/27 10:25	2013/08/27 10:25	2013/08/27 14:00		
COC#		08377524		08377524	08377524	08377524	08377524	08377524	08377524	08377524	08377525		
	UNITS	**12-VC-A**	**QC Batch**	**12-VC-B**	**12-VC-C**	**44-VC-B**	**44-VC-C**	**30-VC-A**	**30-VC-B**	**30-VC-C**	**43-VC-A**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg		7185983		41.5		16.9			70.0		1.0	7185983
Total Aluminum (Al)	mg/kg	229	7191431	97.9		16.4		297	77.1		263	1.0	7191511
Total Antimony (Sb)	mg/kg		7185983		<0.0050		<0.0050			<0.0050		0.0050	7185983
Total Antimony (Sb)	mg/kg	0.113	7191431	0.0346		0.0067		0.326	0.0534		0.0308	0.0050	7191511
Total Arsenic (As)	mg/kg		7185983		<0.050		0.193			0.116		0.050	7185983
Total Arsenic (As)	mg/kg	1.96	7191431	0.640		0.171		3.62	0.641		0.341	0.050	7191511
Total Barium (Ba)	mg/kg		7185983		29.1		16.1			23.1		0.10	7185983
Total Barium (Ba)	mg/kg	22.5	7191431	52.9		53.6		68.9	199		32.4	0.10	7191511
Total Beryllium (Be)	mg/kg		7185983		<0.10		<0.10			<0.10		0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10	7191431	<0.10		<0.10		<0.10	<0.10		<0.10	0.10	7191511
Total Bismuth (Bi)	mg/kg		7185983		<0.10		<0.10			<0.10		0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10	7191431	<0.10		<0.10		<0.10	<0.10		<0.10	0.10	7191511
Total Boron (B)	mg/kg		7185983		6.8		12.3			5.1		2.0	7185983
Total Boron (B)	mg/kg	<2.0	7191431	5.7		22.9		<2.0	9.2		<2.0	2.0	7191511
Total Cadmium (Cd)	mg/kg		7185983		<0.010		0.100			0.065		0.010	7185983
Total Cadmium (Cd)	mg/kg	0.158	7191431	3.14		5.17		0.437	19.6		0.165	0.010	7191511
Total Calcium (Ca)	mg/kg		7185983		2430		1820			1820		10	7185983
Total Calcium (Ca)	mg/kg	1280	7191431	13800		13700		3780	18400		1830	10	7191511
Total Chromium (Cr)	mg/kg		7185983		<0.20		<0.20			<0.20		0.20	7185983
Total Chromium (Cr)	mg/kg	0.45	7191431	<0.20		<0.20		0.78	0.27		0.64	0.20	7191511
Total Cobalt (Co)	mg/kg		7185983		<0.020		<0.020			0.029		0.020	7185983
Total Cobalt (Co)	mg/kg	0.202	7191431	2.76		0.237		0.293	0.950		0.186	0.020	7191511
Total Copper (Cu)	mg/kg		7185983		6.93		5.52			5.37		0.050	7185983
Total Copper (Cu)	mg/kg	2.64	7191431	3.56		4.70		4.30	5.94		2.59	0.050	7191511
Total Iron (Fe)	mg/kg		7185983		28		29			48		10	7185983
Total Iron (Fe)	mg/kg	384	7191431	124		66		634	178		365	10	7191511
Total Lead (Pb)	mg/kg		7185983		<0.010		0.019			0.037		0.010	7185983
Total Lead (Pb)	mg/kg	1.24	7191431	0.291		0.056		2.16	0.438		0.490	0.010	7191511
Total Magnesium (Mg)	mg/kg		7185983		1070		880			1130		10	7185983
Total Magnesium (Mg)	mg/kg	305	7191431	4430		3940		809	5720		413	10	7191511
Total Manganese (Mn)	mg/kg		7185983		547		85.2			585		0.10	7185983
Total Manganese (Mn)	mg/kg	164	7191431	182		295		375	606		212	0.10	7191511
Total Mercury (Hg)	mg/kg		7185983		<0.010		<0.010			<0.010		0.010	7185983
Total Mercury (Hg)	mg/kg	0.050	7191431	0.014		0.010		0.049	0.015		0.066	0.010	7191511
Total Molybdenum (Mo)	mg/kg		7185983		0.123		0.307			0.326		0.050	7185983

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3734		HJ3735	HJ3736	HJ3738	HJ3739	HJ3741	HJ3742	HJ3743	HJ3776		
Sampling Date		2013/08/27 16:20		2013/08/27 16:20	2013/08/27 16:20	2013/08/27 15:25	2013/08/27 15:25	2013/08/27 10:25	2013/08/27 10:25	2013/08/27 10:25	2013/08/27 14:00		
COC#		08377524		08377524	08377524	08377524	08377524	08377524	08377524	08377524	08377525		
	UNITS	**12-VC-A**	**QC Batch**	**12-VC-B**	**12-VC-C**	**44-VC-B**	**44-VC-C**	**30-VC-A**	**30-VC-B**	**30-VC-C**	**43-VC-A**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.066	7191431	0.252		0.539		0.098	0.465		0.078	0.050	7191511
Total Nickel (Ni)	mg/kg		7185983		0.510		0.524			0.675		0.050	7185983
Total Nickel (Ni)	mg/kg	0.638	7191431	1.54		0.836		1.40	8.97		0.778	0.050	7191511
Total Phosphorus (P)	mg/kg		7185983		1930		1820			2140		10	7185983
Total Phosphorus (P)	mg/kg	411	7191431	1870		2110		944	4540		747	10	7191511
Total Potassium (K)	mg/kg		7185983		8460		8970			8630		10	7185983
Total Potassium (K)	mg/kg	1060	7191431	6590		12200		1980	13500		1480	10	7191511
Total Selenium (Se)	mg/kg		7185983		<0.050		<0.050			<0.050		0.050	7185983
Total Selenium (Se)	mg/kg	<0.050	7191431	<0.050		<0.050		<0.050	0.284		<0.050	0.050	7191511
Total Silver (Ag)	mg/kg		7185983		<0.020		<0.020			<0.020		0.020	7185983
Total Silver (Ag)	mg/kg	0.027	7191431	<0.020		<0.020		0.108	0.033		0.041	0.020	7191511
Total Sodium (Na)	mg/kg		7185983		<10		<10			<10		10	7185983
Total Sodium (Na)	mg/kg	21	7191431	<10		<10		12	<10		26	10	7191511
Total Strontium (Sr)	mg/kg		7185983		6.31		11.7			5.43		0.10	7185983
Total Strontium (Sr)	mg/kg	4.59	7191431	103		125		19.4	146		12.6	0.10	7191511
Total Thallium (Tl)	mg/kg		7185983		<0.0020		<0.0020			<0.0020		0.0020	7185983
Total Thallium (Tl)	mg/kg	0.0105	7191431	0.0049		0.0037		0.0064	0.0045		0.0052	0.0020	7191511
Total Tin (Sn)	mg/kg		7185983		<0.10		<0.10			<0.10		0.10	7185983
Total Tin (Sn)	mg/kg	<0.10	7191431	<0.10		<0.10		<0.10	<0.10		<0.10	0.10	7191511
Total Titanium (Ti)	mg/kg		7185983		<1.0		<1.0			1.4		1.0	7185983
Total Titanium (Ti)	mg/kg	12.8	7191431	2.4		1.1		18.6	3.8		13.1	1.0	7191511
Total Uranium (U)	mg/kg		7185983		<0.0020		0.0036			<0.0020		0.0020	7185983
Total Uranium (U)	mg/kg	0.0169	7191431	0.0078		<0.0020		0.0216	0.0045		0.0126	0.0020	7191511
Total Vanadium (V)	mg/kg		7185983		<0.20		<0.20			<0.20		0.20	7185983
Total Vanadium (V)	mg/kg	0.70	7191431	<0.20		<0.20		1.18	0.29		0.64	0.20	7191511
Total Zinc (Zn)	mg/kg		7185983		16.7		14.4			17.9		0.20	7185983
Total Zinc (Zn)	mg/kg	20.8	7191431	78.2		311		64.8	151		13.6	0.20	7191511

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3777	HJ3778	HJ3780	HJ3781	HJ3782	HJ3784	HJ3784	HJ3785	HJ3797		
Sampling Date		2013/08/27 14:00	2013/08/27 14:00	2013/08/27 11:20	2013/08/27 11:20	2013/08/27 11:20	2013/08/27 17:45	2013/08/27 17:45	2013/08/27 17:45	2013/08/27 17:45		
COC#		08377525	08377525	08377525	08377525	08377525	08377525	08377525	08377525	08377526		
	UNITS	**43-VC-B**	**43-VC-C**	**19-VC-A**	**19-VC-B**	**19-VC-C**	**37-VC-A**	**37-VC-A Lab-Dup**	**37-VC-B**	**37-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg		23.2			49.5				35.1	1.0	7185983
Total Aluminum (Al)	mg/kg	39.8		355	27.7		284	280	68.2		1.0	7191511
Total Antimony (Sb)	mg/kg		<0.0050			<0.0050				<0.0050	0.0050	7185983
Total Antimony (Sb)	mg/kg	0.0060		0.176	0.0149		0.440	0.452	0.0318		0.0050	7191511
Total Arsenic (As)	mg/kg		<0.050			<0.050				0.089	0.050	7185983
Total Arsenic (As)	mg/kg	<0.050		1.70	0.102		3.56	3.57	0.330		0.050	7191511
Total Barium (Ba)	mg/kg		17.4			22.5				13.5	0.10	7185983
Total Barium (Ba)	mg/kg	146		87.7	141		52.3	50.1	199		0.10	7191511
Total Beryllium (Be)	mg/kg		<0.10			<0.10				<0.10	0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10		<0.10	<0.10		<0.10	<0.10	<0.10		0.10	7191511
Total Bismuth (Bi)	mg/kg		<0.10			<0.10				<0.10	0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10		<0.10	<0.10		<0.10	<0.10	<0.10		0.10	7191511
Total Boron (B)	mg/kg		2.6			6.6				9.7	2.0	7185983
Total Boron (B)	mg/kg	7.5		<2.0	17.5		2.2	2.1	7.3		2.0	7191511
Total Cadmium (Cd)	mg/kg		<0.010			<0.010				0.027	0.010	7185983
Total Cadmium (Cd)	mg/kg	1.10		0.268	2.50		0.407	0.400	6.81		0.010	7191511
Total Calcium (Ca)	mg/kg		1480			1780				1570	10	7185983
Total Calcium (Ca)	mg/kg	16700		5270	12100		3210	3070	13400		10	7191511
Total Chromium (Cr)	mg/kg		<0.20			<0.20				<0.20	0.20	7185983
Total Chromium (Cr)	mg/kg	<0.20		1.05	<0.20		0.58	0.56	<0.20		0.20	7191511
Total Cobalt (Co)	mg/kg		<0.020			<0.020				<0.020	0.020	7185983
Total Cobalt (Co)	mg/kg	0.853		0.300	0.231		0.266	0.248	0.663		0.020	7191511
Total Copper (Cu)	mg/kg		6.13			5.47				7.20	0.050	7185983
Total Copper (Cu)	mg/kg	4.27		4.13	4.86		3.89	3.81	4.19		0.050	7191511
Total Iron (Fe)	mg/kg		22			40				24	10	7185983
Total Iron (Fe)	mg/kg	59		641	79		536	510	114		10	7191511
Total Lead (Pb)	mg/kg		<0.010			0.014				0.054	0.010	7185983
Total Lead (Pb)	mg/kg	0.039		1.58	0.070		3.29	3.34	0.267		0.010	7191511
Total Magnesium (Mg)	mg/kg		1010			1020				893	10	7185983
Total Magnesium (Mg)	mg/kg	4750		623	2750		753	731	3740		10	7191511
Total Manganese (Mn)	mg/kg		434			469				575	0.10	7185983
Total Manganese (Mn)	mg/kg	211		478	332		745	727	570		0.10	7191511
Total Mercury (Hg)	mg/kg		<0.010			<0.010				<0.010	0.010	7185983
Total Mercury (Hg)	mg/kg	0.016		0.073	0.015		0.035	0.042	0.011		0.010	7191511

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3777	HJ3778	HJ3780	HJ3781	HJ3782	HJ3784	HJ3784	HJ3785	HJ3797		
Sampling Date		2013/08/27 14:00	2013/08/27 14:00	2013/08/27 11:20	2013/08/27 11:20	2013/08/27 11:20	2013/08/27 17:45	2013/08/27 17:45	2013/08/27 17:45	2013/08/27 17:45		
COC#		08377525	08377525	08377525	08377525	08377525	08377525	08377525	08377525	08377526		
	UNITS	**43-VC-B**	**43-VC-C**	**19-VC-A**	**19-VC-B**	**19-VC-C**	**37-VC-A**	**37-VC-A Lab-Dup**	**37-VC-B**	**37-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		0.362			0.477				0.125	0.050	7185983
Total Molybdenum (Mo)	mg/kg	0.186		0.161	0.186		0.131	0.121	0.111		0.050	7191511
Total Nickel (Ni)	mg/kg		0.736			0.418				0.354	0.050	7185983
Total Nickel (Ni)	mg/kg	1.48		1.21	0.778		0.841	0.794	1.12		0.050	7191511
Total Phosphorus (P)	mg/kg		1870			2070				2120	10	7185983
Total Phosphorus (P)	mg/kg	2210		939	2620		957	916	1360		10	7191511
Total Potassium (K)	mg/kg		7380			11200				11700	10	7185983
Total Potassium (K)	mg/kg	11400		1710	14200		1620	1550	4420		10	7191511
Total Selenium (Se)	mg/kg		<0.050			<0.050				<0.050	0.050	7185983
Total Selenium (Se)	mg/kg	<0.050		<0.050	<0.050		<0.050	<0.050	<0.050		0.050	7191511
Total Silver (Ag)	mg/kg		<0.020			<0.020				<0.020	0.020	7185983
Total Silver (Ag)	mg/kg	<0.020		0.106	<0.020		0.121	0.137	0.024		0.020	7191511
Total Sodium (Na)	mg/kg		<10			<10				<10	10	7185983
Total Sodium (Na)	mg/kg	<10		17	<10		19	18	<10		10	7191511
Total Strontium (Sr)	mg/kg		5.46			2.37				3.85	0.10	7185983
Total Strontium (Sr)	mg/kg	153		16.9	50.3		12.8	12.7	131		0.10	7191511
Total Thallium (Tl)	mg/kg		<0.0020			<0.0020				<0.0020	0.0020	7185983
Total Thallium (Tl)	mg/kg	<0.0020		0.0077	0.0024		0.0227	0.0230	0.0033		0.0020	7191511
Total Tin (Sn)	mg/kg		<0.10			<0.10				<0.10	0.10	7185983
Total Tin (Sn)	mg/kg	<0.10		<0.10	<0.10		<0.10	<0.10	<0.10		0.10	7191511
Total Titanium (Ti)	mg/kg		<1.0			<1.0				<1.0	1.0	7185983
Total Titanium (Ti)	mg/kg	1.2		19.1	1.1		12.6	13.3	1.4		1.0	7191511
Total Uranium (U)	mg/kg		<0.0020			<0.0020				<0.0020	0.0020	7185983
Total Uranium (U)	mg/kg	<0.0020		0.0205	<0.0020		0.0141	0.0148	0.0024		0.0020	7191511
Total Vanadium (V)	mg/kg		<0.20			<0.20				<0.20	0.20	7185983
Total Vanadium (V)	mg/kg	<0.20		1.08	<0.20		0.82	0.85	<0.20		0.20	7191511
Total Zinc (Zn)	mg/kg		10.2			13.7				13.6	0.20	7185983
Total Zinc (Zn)	mg/kg	19.8		39.8	165		52.0	50.5	153		0.20	7191511

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3799	HJ3800	HJ3801	HJ3803	HJ3804	HJ3805	HJ3807	HJ3815	HJ3816		
Sampling Date		2013/08/27 10:04	2013/08/27 10:04	2013/08/27 10:04	2013/08/27 18:30	2013/08/27 18:30	2013/08/27 18:30	2013/08/27 17:20	2013/08/27 17:20	2013/08/27 17:20		
COC#		08377526	08377526	08377526	08377526	08377526	08377526	08377526	08377527	08377527		
	UNITS	**22-VC-A**	**22-VC-B**	**22-VC-C**	**17-VC-A**	**17-VC-B**	**17-VC-C**	**24-VC-A**	**24-VC-B**	**24-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg			31.1			34.4			39.4	1.0	7185983
Total Aluminum (Al)	mg/kg	503	77.9		255	31.5		262	39.8		1.0	7191511
Total Antimony (Sb)	mg/kg			0.0098			<0.0050			0.0071	0.0050	7185983
Total Antimony (Sb)	mg/kg	0.994	0.182		0.283	0.0172		0.156	0.0281		0.0050	7191511
Total Arsenic (As)	mg/kg			0.327			<0.050			0.111	0.050	7185983
Total Arsenic (As)	mg/kg	20.0	4.36		2.44	0.207		1.18	0.192		0.050	7191511
Total Barium (Ba)	mg/kg			12.0			28.0			18.4	0.10	7185983
Total Barium (Ba)	mg/kg	22.1	28.0		35.3	41.5		52.3	81.3		0.10	7191511
Total Beryllium (Be)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Beryllium (Be)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191511
Total Bismuth (Bi)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Bismuth (Bi)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191511
Total Boron (B)	mg/kg			12.5			8.4			10.8	2.0	7185983
Total Boron (B)	mg/kg	<2.0	7.6		<2.0	17.0		<2.0	5.7		2.0	7191511
Total Cadmium (Cd)	mg/kg			0.020			<0.010			0.015	0.010	7185983
Total Cadmium (Cd)	mg/kg	0.201	5.58		0.595	2.53		0.574	4.59		0.010	7191511
Total Calcium (Ca)	mg/kg			1760			1820			2030	10	7185983
Total Calcium (Ca)	mg/kg	1860	12200		4150	19900		2680	12300		10	7191511
Total Chromium (Cr)	mg/kg			<0.20			<0.20			<0.20	0.20	7185983
Total Chromium (Cr)	mg/kg	1.13	0.24		0.66	<0.20		0.62	<0.20		0.20	7191511
Total Cobalt (Co)	mg/kg			<0.020			<0.020			<0.020	0.020	7185983
Total Cobalt (Co)	mg/kg	0.492	0.443		0.235	0.509		0.214	0.607		0.020	7191511
Total Copper (Cu)	mg/kg			5.67			5.69			7.77	0.050	7185983
Total Copper (Cu)	mg/kg	3.89	5.14		2.75	4.89		3.07	3.86		0.050	7191511
Total Iron (Fe)	mg/kg			30			23			43	10	7185983
Total Iron (Fe)	mg/kg	1430	290		453	81		413	76		10	7191511
Total Lead (Pb)	mg/kg			0.068			<0.010			0.074	0.010	7185983
Total Lead (Pb)	mg/kg	9.53	1.60		2.19	0.230		1.17	0.168		0.010	7191511
Total Magnesium (Mg)	mg/kg			876			817			1060	10	7185983
Total Magnesium (Mg)	mg/kg	466	5040		709	4120		478	3960		10	7191511
Total Manganese (Mn)	mg/kg			617			232			770	0.10	7185983
Total Manganese (Mn)	mg/kg	639	471		200	229		396	349		0.10	7191511
Total Mercury (Hg)	mg/kg			<0.010			<0.010			<0.010	0.010	7185983
Total Mercury (Hg)	mg/kg	0.038	0.016		0.034	0.012		0.014	<0.010		0.010	7191511
Total Molybdenum (Mo)	mg/kg			0.067			0.512			<0.050	0.050	7185983

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ3799	HJ3800	HJ3801	HJ3803	HJ3804	HJ3805	HJ3807	HJ3815	HJ3816		
Sampling Date		2013/08/27 10:04	2013/08/27 10:04	2013/08/27 10:04	2013/08/27 18:30	2013/08/27 18:30	2013/08/27 18:30	2013/08/27 17:20	2013/08/27 17:20	2013/08/27 17:20		
COC#		08377526	08377526	08377526	08377526	08377526	08377526	08377526	08377527	08377527		
	UNITS	**22-VC-A**	**22-VC-B**	**22-VC-C**	**17-VC-A**	**17-VC-B**	**17-VC-C**	**24-VC-A**	**24-VC-B**	**24-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.153	0.160		0.163	0.597		0.116	0.096		0.050	7191511
Total Nickel (Ni)	mg/kg			0.165			0.555			0.453	0.050	7185983
Total Nickel (Ni)	mg/kg	1.00	0.730		0.733	0.983		0.958	2.61		0.050	7191511
Total Phosphorus (P)	mg/kg			1380			1590			1840	10	7185983
Total Phosphorus (P)	mg/kg	506	1170		635	3260		610	1790		10	7191511
Total Potassium (K)	mg/kg			8410			8870			11600	10	7185983
Total Potassium (K)	mg/kg	1770	9310		1230	12900		1080	8910		10	7191511
Total Selenium (Se)	mg/kg			<0.050			<0.050			<0.050	0.050	7185983
Total Selenium (Se)	mg/kg	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050		0.050	7191511
Total Silver (Ag)	mg/kg			<0.020			<0.020			<0.020	0.020	7185983
Total Silver (Ag)	mg/kg	0.137	0.031		0.087	<0.020		0.046	<0.020		0.020	7191511
Total Sodium (Na)	mg/kg			<10			<10			<10	10	7185983
Total Sodium (Na)	mg/kg	20	<10		15	<10		20	<10		10	7191511
Total Strontium (Sr)	mg/kg			2.84			4.15			3.09	0.10	7185983
Total Strontium (Sr)	mg/kg	4.49	68.7		17.1	78.8		16.8	94.7		0.10	7191511
Total Thallium (Tl)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7185983
Total Thallium (Tl)	mg/kg	0.0512	0.0136		0.0095	0.0038		0.0049	0.0033		0.0020	7191511
Total Tin (Sn)	mg/kg			<0.10			<0.10			<0.10	0.10	7185983
Total Tin (Sn)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7191511
Total Titanium (Ti)	mg/kg			<1.0			<1.0			1.1	1.0	7185983
Total Titanium (Ti)	mg/kg	25.5	4.3		13.3	1.9		12.3	1.8		1.0	7191511
Total Uranium (U)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7185983
Total Uranium (U)	mg/kg	0.0258	0.0045		0.0149	<0.0020		0.0122	<0.0020		0.0020	7191511
Total Vanadium (V)	mg/kg			<0.20			<0.20			<0.20	0.20	7185983
Total Vanadium (V)	mg/kg	2.47	0.44		0.81	<0.20		0.68	<0.20		0.20	7191511
Total Zinc (Zn)	mg/kg			12.7			12.3			24.9	0.20	7185983
Total Zinc (Zn)	mg/kg	32.4	452		28.2	134		71.2	267		0.20	7191511

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ3518	HJ3522	HJ3526	HJ3564	HJ3568	HJ3609	HJ3613	HJ3617	HJ3653		
Sampling Date		2013/08/28 13:25	2013/08/28 10:15	2013/08/28 16:00	2013/08/28 14:30	2013/08/28 14:00	2013/08/28 15:50	2013/08/28 19:30	2013/08/28 17:45	2013/08/28 18:30		
COC#		08377520	08377520	08377520	08377521	08377521	08377529	08377529	08377529	08377522		
	UNITS	**7-VC-C**	**31-VC-C**	**4-VC-C**	**40-VC-C**	**33-VC-C**	**DP2-VC-C**	**26-VC-C**	**18-VC-C**	**2-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	3.91	4.11	2.13	4.04	2.33	1.67	5.34	2.71	2.90	0.20	7195747
Total Antimony (Sb)	mg/kg	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	7195747
Total Arsenic (As)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7195747
Total Barium (Ba)	mg/kg	3.99	2.00	1.43	2.78	1.70	1.71	1.32	1.61	2.06	0.020	7195747
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Boron (B)	mg/kg	2.19	1.57	2.24	0.82	2.29	2.39	1.40	1.33	1.35	0.40	7195747
Total Cadmium (Cd)	mg/kg	<0.0020	0.0203	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	0.0053	<0.0020	0.0020	7195747
Total Calcium (Ca)	mg/kg	391	257	214	264	214	225	218	220	247	2.0	7195747
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7195747
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7195747
Total Copper (Cu)	mg/kg	0.915	1.06	1.01	0.689	1.24	0.801	1.08	1.13	0.968	0.010	7195747
Total Iron (Fe)	mg/kg	4.0	4.6	3.3	3.1	3.3	3.2	2.7	3.8	2.9	2.0	7195747
Total Lead (Pb)	mg/kg	<0.0020	0.0025	0.0023	<0.0020	<0.0020	<0.0020	0.0020	0.0081	<0.0020	0.0020	7195747
Total Magnesium (Mg)	mg/kg	178	141	127	112	127	123	134	106	123	2.0	7195747
Total Manganese (Mn)	mg/kg	72.7	92.9	46.0	57.5	80.7	47.4	87.5	40.2	90.4	0.020	7195747
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7195747
Total Molybdenum (Mo)	mg/kg	0.042	0.054	<0.010	0.068	<0.010	<0.010	<0.010	0.014	<0.010	0.010	7195747
Total Nickel (Ni)	mg/kg	0.043	0.206	0.016	0.052	0.040	0.017	0.048	0.032	0.038	0.010	7195747
Total Phosphorus (P)	mg/kg	287	272	234	190	231	242	242	198	218	2.0	7195747
Total Potassium (K)	mg/kg	2020	1450	1390	1040	1520	1330	1420	1420	1430	2.0	7195747
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7195747
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7195747
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7195747
Total Strontium (Sr)	mg/kg	0.631	0.360	0.306	0.325	0.424	0.364	0.190	0.541	0.292	0.020	7195747
Total Thallium (Tl)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7195747
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Titanium (Ti)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7195747
Total Uranium (U)	mg/kg	0.00092	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7195747
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7195747
Total Zinc (Zn)	mg/kg	2.76	3.60	2.09	1.78	2.04	2.15	1.86	2.28	1.61	0.040	7195747

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ3657	HJ3661	HJ3699	HJ3703	HJ3707	HJ3736	HJ3736	HJ3739	HJ3743		
Sampling Date		2013/08/28 20:20	2013/08/28 17:10	2013/08/27 09:00	2013/08/27 15:25	2013/08/27 11:30	2013/08/27 16:20	2013/08/27 16:20	2013/08/27 15:25	2013/08/27 10:25		
COC#		08377522	08377522	08377523	08377523	08377523	08377524	08377524	08377524	08377524		
	UNITS	**34-VC-C**	**DP1-VC-C**	**13-VC-C**	**5-VC-C**	**14-VC-C**	**12-VC-C**	**12-VC-C Lab-Dup**	**44-VC-C**	**30-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	4.49	8.62	11.7	0.77	6.71	6.10	6.71	2.11	10.3	0.20	7195747
Total Antimony (Sb)	mg/kg	<0.0010	0.0013	0.0046	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	7195747
Total Arsenic (As)	mg/kg	<0.010	0.025	0.090	<0.010	<0.010	<0.010	<0.010	0.024	0.017	0.010	7195747
Total Barium (Ba)	mg/kg	1.42	2.72	2.96	1.42	3.03	4.27	4.82	2.01	3.40	0.020	7195747
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Boron (B)	mg/kg	1.92	1.87	1.43	1.47	1.25	0.99	0.72	1.54	0.75	0.40	7195747
Total Cadmium (Cd)	mg/kg	<0.0020	<0.0020	0.0032	0.0610	<0.0020	<0.0020	<0.0020	0.0125	0.0095	0.0020	7195747
Total Calcium (Ca)	mg/kg	260	311	301	250	265	358	365	227	268	2.0	7195747
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7195747
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	0.0050	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0043	0.0040	7195747
Total Copper (Cu)	mg/kg	0.886	1.45	0.976	0.775	1.17	1.02	1.04	0.690	0.789	0.010	7195747
Total Iron (Fe)	mg/kg	3.4	9.7	16.2	3.8	4.7	4.1	3.9	3.6	7.0	2.0	7195747
Total Lead (Pb)	mg/kg	<0.0020	0.0147	0.0248	0.0025	<0.0020	<0.0020	<0.0020	0.0023	0.0055	0.0020	7195747
Total Magnesium (Mg)	mg/kg	135	181	190	180	146	157	164	110	166	2.0	7195747
Total Manganese (Mn)	mg/kg	81.6	117	99.7	10.2	63.6	80.4	82.1	10.7	86.0	0.020	7195747
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	0.0026	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7195747
Total Molybdenum (Mo)	mg/kg	0.014	<0.010	0.021	0.051	0.077	0.018	0.016	0.038	0.048	0.010	7195747
Total Nickel (Ni)	mg/kg	0.028	0.090	0.055	0.020	0.092	0.075	0.054	0.065	0.099	0.010	7195747
Total Phosphorus (P)	mg/kg	262	321	382	291	295	284	267	227	315	2.0	7195747
Total Potassium (K)	mg/kg	1590	1920	2040	1850	1500	1240	1310	1120	1270	2.0	7195747
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7195747
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7195747
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7195747
Total Strontium (Sr)	mg/kg	0.348	0.451	0.416	1.22	0.637	0.927	0.862	1.46	0.797	0.020	7195747
Total Thallium (Tl)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00042	<0.00040	<0.00040	0.00040	7195747
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Titanium (Ti)	mg/kg	<0.20	0.27	0.68	<0.20	<0.20	<0.20	<0.20	<0.20	0.21	0.20	7195747
Total Uranium (U)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00045	<0.00040	0.00040	7195747
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7195747
Total Zinc (Zn)	mg/kg	2.44	3.45	2.85	3.19	2.07	2.46	2.22	1.80	2.63	0.040	7195747

RDL = Reportable Detection Limit

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ3778	HJ3782	HJ3797	HJ3801	HJ3805	HJ3816		
Sampling Date		2013/08/27 14:00	2013/08/27 11:20	2013/08/27 17:45	2013/08/27 10:04	2013/08/27 18:30	2013/08/27 17:20		
COC#		08377525	08377525	08377526	08377526	08377526	08377527		
	UNITS	**43-VC-C**	**19-VC-C**	**37-VC-C**	**22-VC-C**	**17-VC-C**	**24-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS									
Total Aluminum (Al)	mg/kg	3.58	7.37	5.09	4.97	5.12	7.01	0.20	7195747
Total Antimony (Sb)	mg/kg	<0.0010	<0.0010	<0.0010	0.0016	<0.0010	0.0013	0.0010	7195747
Total Arsenic (As)	mg/kg	<0.010	<0.010	0.013	0.052	<0.010	0.020	0.010	7195747
Total Barium (Ba)	mg/kg	2.68	3.35	1.95	1.93	4.18	3.28	0.020	7195747
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Boron (B)	mg/kg	0.40	0.98	1.41	2.00	1.25	1.91	0.40	7195747
Total Cadmium (Cd)	mg/kg	<0.0020	<0.0020	0.0039	0.0032	<0.0020	0.0026	0.0020	7195747
Total Calcium (Ca)	mg/kg	228	265	227	281	272	361	2.0	7195747
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7195747
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7195747
Total Copper (Cu)	mg/kg	0.944	0.815	1.04	0.908	0.847	1.38	0.010	7195747
Total Iron (Fe)	mg/kg	3.5	6.0	3.5	4.8	3.4	7.6	2.0	7195747
Total Lead (Pb)	mg/kg	<0.0020	0.0021	0.0078	0.0108	<0.0020	0.0131	0.0020	7195747
Total Magnesium (Mg)	mg/kg	155	152	129	140	122	189	2.0	7195747
Total Manganese (Mn)	mg/kg	66.9	69.9	83.4	98.7	34.6	137	0.020	7195747
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7195747
Total Molybdenum (Mo)	mg/kg	0.056	0.071	0.018	0.011	0.076	<0.010	0.010	7195747
Total Nickel (Ni)	mg/kg	0.113	0.062	0.051	0.026	0.083	0.081	0.010	7195747
Total Phosphorus (P)	mg/kg	288	308	307	221	236	327	2.0	7195747
Total Potassium (K)	mg/kg	1140	1670	1700	1350	1320	2070	2.0	7195747
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7195747
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7195747
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7195747
Total Strontium (Sr)	mg/kg	0.840	0.353	0.558	0.454	0.618	0.550	0.020	7195747
Total Thallium (Tl)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7195747
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7195747
Total Titanium (Ti)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.20	7195747
Total Uranium (U)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7195747
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7195747
Total Zinc (Zn)	mg/kg	1.57	2.04	1.97	2.04	1.84	4.44	0.040	7195747

RDL = Reportable Detection Limit

Maxxam Job #: B378004
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Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

PHYSICAL TESTING (TISSUE)

Maxxam ID		HJ3518	HJ3522	HJ3526	HJ3564	HJ3568	HJ3609	HJ3613	HJ3617	HJ3653	HJ3657		
Sampling Date		2013/08/28 13:25	2013/08/28 10:15	2013/08/28 16:00	2013/08/28 14:30	2013/08/28 14:00	2013/08/28 15:50	2013/08/28 19:30	2013/08/28 17:45	2013/08/28 18:30	2013/08/28 20:20		
COC#		08377520	08377520	08377520	08377521	08377521	08377529	08377529	08377529	08377522	08377522		
	UNITS	**7-VC-C**	**31-VC-C**	**4-VC-C**	**40-VC-C**	**33-VC-C**	**DP2-VC-C**	**26-VC-C**	**18-VC-C**	**2-VC-C**	**34-VC-C**	**RDL**	**QC Batch**
Physical Properties													
Moisture	%	84	83	86	87	86	85	85	88	83	84	0.30	7196725

Maxxam ID		HJ3661	HJ3699	HJ3703	HJ3707	HJ3736	HJ3739	HJ3743	HJ3778	HJ3782		
Sampling Date		2013/08/28 17:10	2013/08/27 09:00	2013/08/27 15:25	2013/08/27 11:30	2013/08/27 16:20	2013/08/27 15:25	2013/08/27 10:25	2013/08/27 14:00	2013/08/27 11:20		
COC#		08377522	08377523	08377523	08377523	08377524	08377524	08377524	08377525	08377525		
	UNITS	**DP1-VC-C**	**13-VC-C**	**5-VC-C**	**14-VC-C**	**12-VC-C**	**44-VC-C**	**30-VC-C**	**43-VC-C**	**19-VC-C**	**RDL**	**QC Batch**
Physical Properties												
Moisture	%	82	85	84	86	85	88	85	85	85	0.30	7196725

Maxxam ID		HJ3782	HJ3797		HJ3801	HJ3805	HJ3816		
Sampling Date		2013/08/27 11:20	2013/08/27 17:45		2013/08/27 10:04	2013/08/27 18:30	2013/08/27 17:20		
COC#		08377525	08377526		08377526	08377526	08377527		
	UNITS	**19-VC-C Lab-Dup**	**37-VC-C**	**QC Batch**	**22-VC-C**	**17-VC-C**	**24-VC-C**	**RDL**	**QC Batch**
Physical Properties									
Moisture	%	86	86	7196725	84	85	82	0.30	7194694

RDL = Reportable Detection Limit

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7134559	Total Antimony (Sb)	2013/09/03	95	75 - 125	99	75 - 125	<0.10	mg/kg	1.9	30	96	70 - 130
7134559	Total Arsenic (As)	2013/09/03	NC	75 - 125	103	75 - 125	<0.50	mg/kg	2.0	30	102	70 - 130
7134559	Total Barium (Ba)	2013/09/03	NC	75 - 125	105	75 - 125	<0.10	mg/kg	1.1	35	109	70 - 130
7134559	Total Beryllium (Be)	2013/09/03	98	75 - 125	103	75 - 125	<0.40	mg/kg	NC	30		
7134559	Total Cadmium (Cd)	2013/09/03	107	75 - 125	110	75 - 125	<0.050	mg/kg	1.1	30	107	70 - 130
7134559	Total Chromium (Cr)	2013/09/03	98	75 - 125	100	75 - 125	<1.0	mg/kg	0.5	30	103	70 - 130
7134559	Total Cobalt (Co)	2013/09/03	96	75 - 125	100	75 - 125	<0.30	mg/kg	1.5	30	91	70 - 130
7134559	Total Copper (Cu)	2013/09/03	99	75 - 125	106	75 - 125	<0.50	mg/kg	1.2	30	93	70 - 130
7134559	Total Lead (Pb)	2013/09/03	107	75 - 125	105	75 - 125	<0.10	mg/kg	3.0	35	100	70 - 130
7134559	Total Lithium (Li)	2013/09/03	95	75 - 125	95	75 - 125	<5.0	mg/kg	NC	30		
7134559	Total Manganese (Mn)	2013/09/03	NC	75 - 125	102	75 - 125	<0.20	mg/kg	1.6	30	101	70 - 130
7134559	Total Mercury (Hg)	2013/09/03	103	75 - 125	105	75 - 125	<0.050	mg/kg	NC	35	81	70 - 130
7134559	Total Molybdenum (Mo)	2013/09/03	99	75 - 125	102	75 - 125	<0.10	mg/kg	0.2	35	121	70 - 130
7134559	Total Nickel (Ni)	2013/09/03	98	75 - 125	104	75 - 125	<0.80	mg/kg	3.2	30	94	70 - 130
7134559	Total Selenium (Se)	2013/09/03	113	75 - 125	116	75 - 125	<0.50	mg/kg	NC	30		
7134559	Total Silver (Ag)	2013/09/03	102	75 - 125	101	75 - 125	<0.050	mg/kg	5.8	35		
7134559	Total Strontium (Sr)	2013/09/03	103	75 - 125	101	75 - 125	<0.10	mg/kg	2.6	35	107	70 - 130
7134559	Total Thallium (Tl)	2013/09/03	104	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	97	70 - 130
7134559	Total Tin (Sn)	2013/09/03	95	75 - 125	96	75 - 125	<0.10	mg/kg	NC	35		
7134559	Total Titanium (Ti)	2013/09/03	NC	75 - 125	97	75 - 125	<1.0	mg/kg	0.7	35	107	70 - 130
7134559	Total Uranium (U)	2013/09/03	103	75 - 125	106	75 - 125	<0.050	mg/kg	2.9	30	102	70 - 130
7134559	Total Vanadium (V)	2013/09/03	NC	75 - 125	100	75 - 125	<2.0	mg/kg	0.2	30	104	70 - 130
7134559	Total Zinc (Zn)	2013/09/03	NC	75 - 125	116	75 - 125	<1.0	mg/kg	3.9	30	97	70 - 130
7134559	Total Aluminum (Al)	2013/09/03					<100	mg/kg	1.2	35	114	70 - 130
7134559	Total Calcium (Ca)	2013/09/03					<100	mg/kg	4.7	30	109	70 - 130
7134559	Total Iron (Fe)	2013/09/03					<100	mg/kg	1.2	30	106	70 - 130
7134559	Total Magnesium (Mg)	2013/09/03					<100	mg/kg	0.6	30	105	70 - 130
7134559	Total Phosphorus (P)	2013/09/03					<10	mg/kg	0.01	30	101	70 - 130
7134559	Total Bismuth (Bi)	2013/09/03					<0.10	mg/kg	NC	30		
7134559	Total Potassium (K)	2013/09/03					<100	mg/kg	0.2	35		
7134559	Total Sodium (Na)	2013/09/03					<100	mg/kg	NC	35		
7134559	Total Zirconium (Zr)	2013/09/03					<0.50	mg/kg	NC	30		
7134560	Soluble (2:1) pH	2013/09/05			100	97 - 103			0.4	20		
7134564	Total Antimony (Sb)	2013/09/04	95	75 - 125	102	75 - 125	<0.10	mg/kg	6.5	30	101	70 - 130
7134564	Total Arsenic (As)	2013/09/04	104	75 - 125	103	75 - 125	<0.50	mg/kg	0.5	30	102	70 - 130
7134564	Total Barium (Ba)	2013/09/04	NC	75 - 125	95	75 - 125	<0.10	mg/kg	2.1	35	98	70 - 130
7134564	Total Beryllium (Be)	2013/09/04	103	75 - 125	104	75 - 125	<0.40	mg/kg	NC	30		
7134564	Total Cadmium (Cd)	2013/09/04	109	75 - 125	109	75 - 125	<0.050	mg/kg	NC	30	106	70 - 130
7134564	Total Chromium (Cr)	2013/09/04	102	75 - 125	101	75 - 125	<1.0	mg/kg	1.6	30	102	70 - 130
7134564	Total Cobalt (Co)	2013/09/04	96	75 - 125	103	75 - 125	<0.30	mg/kg	20.6	30	93	70 - 130

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7134564	Total Copper (Cu)	2013/09/04	101	75 - 125	104	75 - 125	<0.50	mg/kg	0.7	30	92	70 - 130
7134564	Total Lead (Pb)	2013/09/04	106	75 - 125	109	75 - 125	<0.10	mg/kg	3.4	35	99	70 - 130
7134564	Total Lithium (Li)	2013/09/04	101	75 - 125	100	75 - 125	<5.0	mg/kg				
7134564	Total Manganese (Mn)	2013/09/04	NC	75 - 125	103	75 - 125	0.22, RDL=0.20	mg/kg	13.7	30	99	70 - 130
7134564	Total Mercury (Hg)	2013/09/04	112	75 - 125	114	75 - 125	<0.050	mg/kg	NC	35	83	70 - 130
7134564	Total Molybdenum (Mo)	2013/09/04	103	75 - 125	101	75 - 125	<0.10	mg/kg	3.7	35	108	70 - 130
7134564	Total Nickel (Ni)	2013/09/04	121	75 - 125	101	75 - 125	<0.80	mg/kg	3.3	30	95	70 - 130
7134564	Total Selenium (Se)	2013/09/04	118	75 - 125	116	75 - 125	<0.50	mg/kg	NC	30		
7134564	Total Silver (Ag)	2013/09/04	102	75 - 125	103	75 - 125	<0.050	mg/kg	NC	35		
7134564	Total Strontium (Sr)	2013/09/04	105	75 - 125	99	75 - 125	<0.10	mg/kg	0.1	35	101	70 - 130
7134564	Total Thallium (Tl)	2013/09/04	105	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	91	70 - 130
7134564	Total Tin (Sn)	2013/09/04	96	75 - 125	96	75 - 125	<0.10	mg/kg	NC	35		
7134564	Total Titanium (Ti)	2013/09/04	NC	75 - 125	98	75 - 125	<1.0	mg/kg	11.8	35	106	70 - 130
7134564	Total Uranium (U)	2013/09/04	103	75 - 125	102	75 - 125	<0.050	mg/kg			96	70 - 130
7134564	Total Vanadium (V)	2013/09/04	NC	75 - 125	101	75 - 125	<2.0	mg/kg	3.2	30	104	70 - 130
7134564	Total Zinc (Zn)	2013/09/04	NC	75 - 125	118	75 - 125	<1.0	mg/kg	3.7	30	98	70 - 130
7134564	Total Aluminum (Al)	2013/09/04					<100	mg/kg	0.8	35	113	70 - 130
7134564	Total Calcium (Ca)	2013/09/04					<100	mg/kg	0.7	30	96	70 - 130
7134564	Total Iron (Fe)	2013/09/04					<100	mg/kg	4.6	30	95	70 - 130
7134564	Total Magnesium (Mg)	2013/09/04					<100	mg/kg	1.9	30	96	70 - 130
7134564	Total Phosphorus (P)	2013/09/04					<10	mg/kg	1.6	30	97	70 - 130
7134564	Total Bismuth (Bi)	2013/09/04					<0.10	mg/kg	NC	30		
7134564	Total Potassium (K)	2013/09/04					<100	mg/kg	2.2	35		
7134564	Total Sodium (Na)	2013/09/04					<100	mg/kg	NC	35		
7134564	Total Zirconium (Zr)	2013/09/04					<0.50	mg/kg	0.3	30		
7134567	Soluble (2:1) pH	2013/09/04			100	97 - 103			1.2	20		
7176830	Total Arsenic (As)	2013/09/20	98	75 - 125	111	75 - 125	<0.050	mg/kg	0.8	35	114	75 - 125
7176830	Total Barium (Ba)	2013/09/20	NC	75 - 125	112	75 - 125	<0.10	mg/kg	2.2	35	93	75 - 125
7176830	Total Beryllium (Be)	2013/09/20	101	75 - 125	111	75 - 125	<0.10	mg/kg	NC	35		
7176830	Total Cadmium (Cd)	2013/09/20	101	75 - 125	113	75 - 125	<0.010	mg/kg	5.3	35	93	75 - 125
7176830	Total Chromium (Cr)	2013/09/20	83	75 - 125	110	75 - 125	<0.20	mg/kg	3.4	35	42	28 - 97
7176830	Total Cobalt (Co)	2013/09/20	96	75 - 125	112	75 - 125	<0.020	mg/kg	1.4	35	89	75 - 125
7176830	Total Copper (Cu)	2013/09/20	NC	75 - 125	111	75 - 125	<0.050	mg/kg	1.9	35	91	75 - 125
7176830	Total Lead (Pb)	2013/09/20	97	75 - 125	106	75 - 125	<0.010	mg/kg	1.6	35		
7176830	Total Manganese (Mn)	2013/09/20	NC	75 - 125	112	75 - 125	<0.10	mg/kg	1.5	35	98	75 - 125
7176830	Total Mercury (Hg)	2013/09/20	109	75 - 125	109	75 - 125	<0.010	mg/kg	NC	35	76	75 - 125
7176830	Total Nickel (Ni)	2013/09/20	87	75 - 125	113	75 - 125	<0.050	mg/kg	10.5	35	70	58 - 126
7176830	Total Selenium (Se)	2013/09/20	100	75 - 125	115	75 - 125	<0.050	mg/kg	NC	35	94	75 - 125
7176830	Total Silver (Ag)	2013/09/20	77	75 - 125	96	75 - 125	<0.020	mg/kg	NC	35		
7176830	Total Strontium (Sr)	2013/09/20	NC	75 - 125	108	75 - 125	<0.10	mg/kg	2.4	35	97	75 - 125

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7176830	Total Thallium (Tl)	2013/09/20	104	75 - 125	106	75 - 125	<0.0020	mg/kg	NC	35		
7176830	Total Uranium (U)	2013/09/20	98	75 - 125	105	75 - 125	<0.0020	mg/kg	29.7	35		
7176830	Total Vanadium (V)	2013/09/20	90	75 - 125	107	75 - 125	<0.20	mg/kg	2.6	35		
7176830	Total Zinc (Zn)	2013/09/20	NC	75 - 125	113	75 - 125	<0.20	mg/kg	2.5	35	84	75 - 125
7176830	Total Aluminum (Al)	2013/09/20					<1.0	mg/kg	2.3	35	43	20 - 93
7176830	Total Antimony (Sb)	2013/09/20					<0.0050	mg/kg	11.3	35	81	75 - 125
7176830	Total Boron (B)	2013/09/20					<2.0	mg/kg	NC	35	94	75 - 125
7176830	Total Iron (Fe)	2013/09/20					<10	mg/kg	4.9	35	83	75 - 125
7176830	Total Magnesium (Mg)	2013/09/20					<10	mg/kg	0.5	35	87	75 - 125
7176830	Total Molybdenum (Mo)	2013/09/20					<0.050	mg/kg	NC	35	91	75 - 125
7176830	Total Sodium (Na)	2013/09/20					<10	mg/kg	NC	35	83	75 - 125
7176830	Total Bismuth (Bi)	2013/09/20					<0.10	mg/kg	NC	35		
7176830	Total Calcium (Ca)	2013/09/20					<10	mg/kg	1.7	35		
7176830	Total Phosphorus (P)	2013/09/20					<10	mg/kg	3.7	35		
7176830	Total Potassium (K)	2013/09/20					<10	mg/kg	5.6	35		
7176830	Total Tin (Sn)	2013/09/20					<0.10	mg/kg	NC	35		
7176830	Total Titanium (Ti)	2013/09/20					<1.0	mg/kg	6.7	35		
7191431	Total Arsenic (As)	2013/10/01	NC	75 - 125	99	75 - 125	<0.050	mg/kg	17.3	35	134(1, 2)	75 - 125
7191431	Total Barium (Ba)	2013/10/01	NC	75 - 125	104	75 - 125	<0.10	mg/kg	1.1	35	94	75 - 125
7191431	Total Beryllium (Be)	2013/10/01	88	75 - 125	100	75 - 125	<0.10	mg/kg	NC	35		
7191431	Total Cadmium (Cd)	2013/10/01	98	75 - 125	105	75 - 125	<0.010	mg/kg	7.8	35	102	75 - 125
7191431	Total Chromium (Cr)	2013/10/01	93	75 - 125	101	75 - 125	<0.20	mg/kg	NC	35	41	28 - 97
7191431	Total Cobalt (Co)	2013/10/01	94	75 - 125	103	75 - 125	<0.020	mg/kg	11.1	35	95	75 - 125
7191431	Total Copper (Cu)	2013/10/01	91	75 - 125	103	75 - 125	<0.050	mg/kg	1.9	35	95	75 - 125
7191431	Total Lead (Pb)	2013/10/01	NC	75 - 125	99	75 - 125	<0.010	mg/kg	7.6	35		
7191431	Total Manganese (Mn)	2013/10/01	NC	75 - 125	107	75 - 125	<0.10	mg/kg	2.7	35	105	75 - 125
7191431	Total Mercury (Hg)	2013/10/01	102	75 - 125	97	75 - 125	<0.010	mg/kg	NC	35	100	75 - 125
7191431	Total Nickel (Ni)	2013/10/01	94	75 - 125	105	75 - 125	<0.050	mg/kg	10	35	76	58 - 126
7191431	Total Selenium (Se)	2013/10/01	101	75 - 125	112	75 - 125	<0.050	mg/kg	NC	35	129(1, 2)	75 - 125
7191431	Total Silver (Ag)	2013/10/01	95	75 - 125	83	75 - 125	<0.020	mg/kg	NC	35		
7191431	Total Strontium (Sr)	2013/10/01	NC	75 - 125	98	75 - 125	<0.10	mg/kg	1.9	35	102	75 - 125
7191431	Total Thallium (Tl)	2013/10/01	107	75 - 125	99	75 - 125	<0.0020	mg/kg	NC	35		
7191431	Total Uranium (U)	2013/10/01	95	75 - 125	95	75 - 125	0.0023, RDL=0.0020	mg/kg	NC	35		
7191431	Total Vanadium (V)	2013/10/01	94	75 - 125	104	75 - 125	<0.20	mg/kg	NC	35		
7191431	Total Zinc (Zn)	2013/10/01	NC	75 - 125	106	75 - 125	<0.20	mg/kg	4.1	35	95	75 - 125
7191431	Total Aluminum (Al)	2013/10/01					<1.0	mg/kg	0.7	35	32	20 - 93
7191431	Total Antimony (Sb)	2013/10/01					<0.0050	mg/kg	17.8	35	110	75 - 125
7191431	Total Boron (B)	2013/10/01					<2.0	mg/kg	NC	35	87	75 - 125
7191431	Total Iron (Fe)	2013/10/01					<10	mg/kg	1.8	35	90	75 - 125
7191431	Total Magnesium (Mg)	2013/10/01					<10	mg/kg	2.3	35	93	75 - 125

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7191431	Total Molybdenum (Mo)	2013/10/01					<0.050	mg/kg	NC	35	101	75 - 125
7191431	Total Sodium (Na)	2013/10/01					<10	mg/kg	NC	35	91	75 - 125
7191431	Total Bismuth (Bi)	2013/10/01					<0.10	mg/kg	NC	35		
7191431	Total Calcium (Ca)	2013/10/01					<10	mg/kg	2.3	35		
7191431	Total Phosphorus (P)	2013/10/01					<10	mg/kg	0.2	35		
7191431	Total Potassium (K)	2013/10/01					<10	mg/kg	0.7	35		
7191431	Total Tin (Sn)	2013/10/01					<0.10	mg/kg	NC	35		
7191431	Total Titanium (Ti)	2013/10/01					<1.0	mg/kg	0.8	35		
7191511	Total Arsenic (As)	2013/09/27	125	75 - 125	97	75 - 125	<0.050	mg/kg	0.2	35	121	75 - 125
7191511	Total Barium (Ba)	2013/09/27	NC	75 - 125	97	75 - 125	<0.10	mg/kg	4.2	35	96	75 - 125
7191511	Total Beryllium (Be)	2013/09/27	125	75 - 125	99	75 - 125	<0.10	mg/kg	NC	35		
7191511	Total Cadmium (Cd)	2013/09/27	125	75 - 125	102	75 - 125	<0.010	mg/kg	1.6	35	97	75 - 125
7191511	Total Chromium (Cr)	2013/09/27	119	75 - 125	103	75 - 125	<0.20	mg/kg	NC	35	57	28 - 97
7191511	Total Cobalt (Co)	2013/09/27	123	75 - 125	102	75 - 125	<0.020	mg/kg	7.2	35	96	75 - 125
7191511	Total Copper (Cu)	2013/09/27	NC	75 - 125	101	75 - 125	<0.050	mg/kg	2.0	35	97	75 - 125
7191511	Total Lead (Pb)	2013/09/27	120	75 - 125	96	75 - 125	<0.010	mg/kg	1.4	35		
7191511	Total Manganese (Mn)	2013/09/27	NC	75 - 125	103	75 - 125	<0.10	mg/kg	2.5	35	102	75 - 125
7191511	Total Mercury (Hg)	2013/09/27	120	75 - 125	109	75 - 125	<0.010	mg/kg	NC	35	124	75 - 125
7191511	Total Nickel (Ni)	2013/09/27	118	75 - 125	102	75 - 125	<0.050	mg/kg	5.7	35	84	58 - 126
7191511	Total Selenium (Se)	2013/09/27	124	75 - 125	104	75 - 125	<0.050	mg/kg	NC	35	116	75 - 125
7191511	Total Silver (Ag)	2013/09/27	104	75 - 125	83	75 - 125	<0.020	mg/kg	12.5	35		
7191511	Total Strontium (Sr)	2013/09/27	NC	75 - 125	97	75 - 125	<0.10	mg/kg	0.8	35	109	75 - 125
7191511	Total Thallium (Tl)	2013/09/27	108	75 - 125	101	75 - 125	<0.0020	mg/kg	1.5	35		
7191511	Total Uranium (U)	2013/09/27	121	75 - 125	97	75 - 125	<0.0020	mg/kg	4.6	35		
7191511	Total Vanadium (V)	2013/09/27	123	75 - 125	99	75 - 125	<0.20	mg/kg	NC	35		
7191511	Total Zinc (Zn)	2013/09/27	NC	75 - 125	107	75 - 125	<0.20	mg/kg	3.0	35	88	75 - 125
7191511	Total Aluminum (Al)	2013/09/27					<1.0	mg/kg	1.4	35	36	20 - 93
7191511	Total Antimony (Sb)	2013/09/27					<0.0050	mg/kg	2.7	35	87	75 - 125
7191511	Total Boron (B)	2013/09/27					<2.0	mg/kg	NC	35	90	75 - 125
7191511	Total Iron (Fe)	2013/09/27					<10	mg/kg	4.9	35	92	75 - 125
7191511	Total Magnesium (Mg)	2013/09/27					<10	mg/kg	3.0	35	91	75 - 125
7191511	Total Molybdenum (Mo)	2013/09/27					<0.050	mg/kg	NC	35	100	75 - 125
7191511	Total Sodium (Na)	2013/09/27					<10	mg/kg	NC	35	89	75 - 125
7191511	Total Bismuth (Bi)	2013/09/27					<0.10	mg/kg	NC	35		
7191511	Total Calcium (Ca)	2013/09/27					<10	mg/kg	4.5	35		
7191511	Total Phosphorus (P)	2013/09/27					<10	mg/kg	4.4	35		
7191511	Total Potassium (K)	2013/09/27					<10	mg/kg	4.6	35		
7191511	Total Tin (Sn)	2013/09/27					<0.10	mg/kg	NC	35		
7191511	Total Titanium (Ti)	2013/09/27					<1.0	mg/kg	5.7	35		
7194694	Moisture	2013/09/28					<0.30	%	4.7	20		

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7195747	Total Arsenic (As)	2013/10/01	101	75 - 125	111	75 - 125	<0.010	mg/kg	NC	35	112	75 - 125
7195747	Total Barium (Ba)	2013/10/01	NC	75 - 125	110	75 - 125	<0.020	mg/kg	11.9	35	89	75 - 125
7195747	Total Beryllium (Be)	2013/10/01	95	75 - 125	111	75 - 125	<0.020	mg/kg	NC	35		
7195747	Total Cadmium (Cd)	2013/10/01	99	75 - 125	111	75 - 125	<0.0020	mg/kg	NC	35	90	75 - 125
7195747	Total Chromium (Cr)	2013/10/01	102	75 - 125	114	75 - 125	<0.040	mg/kg	NC	35	46	28 - 97
7195747	Total Cobalt (Co)	2013/10/01	103	75 - 125	112	75 - 125	<0.0040	mg/kg	NC	35	82	75 - 125
7195747	Total Copper (Cu)	2013/10/01	NC	75 - 125	113	75 - 125	<0.010	mg/kg	2.4	35	86	75 - 125
7195747	Total Lead (Pb)	2013/10/01	94	75 - 125	109	75 - 125	<0.0020	mg/kg	NC	35		
7195747	Total Manganese (Mn)	2013/10/01	NC	75 - 125	117	75 - 125	<0.020	mg/kg	2.0	35	91	75 - 125
7195747	Total Mercury (Hg)	2013/10/01	93	75 - 125	119	75 - 125	<0.0020	mg/kg	NC	35	100	75 - 125
7195747	Total Nickel (Ni)	2013/10/01	101	75 - 125	114	75 - 125	<0.010	mg/kg	32.6	35	74	58 - 126
7195747	Total Selenium (Se)	2013/10/01	103	75 - 125	118	75 - 125	<0.010	mg/kg	NC	35	130(1, 3)	75 - 125
7195747	Total Silver (Ag)	2013/10/01	76	75 - 125	96	75 - 125	<0.0040	mg/kg	NC	35		
7195747	Total Strontium (Sr)	2013/10/01	104	75 - 125	112	75 - 125	<0.020	mg/kg	7.3	35	100	75 - 125
7195747	Total Thallium (Tl)	2013/10/01	100	75 - 125	116	75 - 125	<0.00040	mg/kg	NC	35		
7195747	Total Uranium (U)	2013/10/01	89	75 - 125	114	75 - 125	<0.00040	mg/kg	NC	35		
7195747	Total Vanadium (V)	2013/10/01	102	75 - 125	115	75 - 125	<0.040	mg/kg	NC	35		
7195747	Total Zinc (Zn)	2013/10/01	NC	75 - 125	113	75 - 125	<0.040	mg/kg	10.1	35	77	75 - 125
7195747	Total Aluminum (Al)	2013/10/01					0.26, RDL=0.20	mg/kg	9.5	35	31	20 - 93
7195747	Total Antimony (Sb)	2013/10/01					<0.0010	mg/kg	NC	35	92	75 - 125
7195747	Total Boron (B)	2013/10/01					<0.40	mg/kg	NC	35	79	75 - 125
7195747	Total Iron (Fe)	2013/10/01					<2.0	mg/kg	NC	35	84	75 - 125
7195747	Total Magnesium (Mg)	2013/10/01					<2.0	mg/kg	4.5	35	83	75 - 125
7195747	Total Molybdenum (Mo)	2013/10/01					<0.010	mg/kg	NC	35	96	75 - 125
7195747	Total Sodium (Na)	2013/10/01					<2.0	mg/kg	NC	35	76	75 - 125
7195747	Total Bismuth (Bi)	2013/10/01					<0.020	mg/kg	NC	35		
7195747	Total Calcium (Ca)	2013/10/01					<2.0	mg/kg	2.0	35		
7195747	Total Phosphorus (P)	2013/10/01					<2.0	mg/kg	6.1	35		
7195747	Total Potassium (K)	2013/10/01					<2.0	mg/kg	4.9	35		
7195747	Total Tin (Sn)	2013/10/01					<0.020	mg/kg	NC	35		

Maxxam Job #: B378004
Report Date: 2013/10/02

Ecological Logistics & Research Ltd
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE, YUKON
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7195747	Total Titanium (Ti)	2013/10/01					<0.20	mg/kg	NC	35		
7196725	Moisture	2013/09/28					<0.30	%	0.5	20		

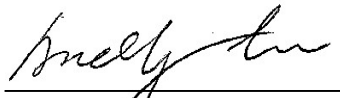
N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(2) - Ref Mat outside acceptance criteria (10% of analytes failure allowed).
(3) - Reference outside acceptance criteria (10% of analytes failure allowed).

Validation Signature Page

Maxxam Job #: B378004

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

Rob Reinert, Data Validation Coordinator



Andy Lu, Data Validation Coordinator

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics Inc

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 COC #: 08377520 Page: 1 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab)
- ○ 1 Day ○ 2 Day ○ 3 Day

Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	7-VC-A	HJ3516	Plant	28/08/13 13:25	x	
3	7-VC-B	HJ3517	Plant	28/08/13 13:25	x	
4	7-VC-C	HJ3518	Plant	28/08/13 13:25	x	
5	7-VC-D	HJ3519	Soil	28/08/13 13:25	x	
6	31-VC-A	HJ3520	Plant	28/08/13 10:15	x	
7	31-VC-B	HJ3521	Plant	28/08/13 10:15	x	
8	31-VC-C	HJ3522	Plant	28/08/13 10:15	x	
9	31-VC-D	HJ3523	Soil	28/08/13 10:15	x	
10	4-VC-A	HJ3524	Plant	28/08/13 16:00	x	
11	4-VC-B	HJ3525	Plant	28/08/13 16:00	x	
12	4-VC-C	HJ3526	Plant	28/08/13 16:00	x	

B378004

Print name and sign	Date (yy/mm/dd):	Time (24hr):	Print name and sign	Date (yy/mm/dd)	Time (24 hr):	Time Sensitive
*Relinquished By: Heidi Schindler	13/08/29	08:00	Received by:	13/09/30	13:35	☐

Laboratory Use Only

Temperature on Receipt (°C): A) 7 3 4 Custody Seal Present? N/A

Just sampled & rec'd o ☐ Intact? N/A

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 C

COC #: 08377521

Page: 2 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867.668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project #:	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab)
- ○ 1 Day ○ 2 Day ○ 3 Day

Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Tissue Metals - Tissue	Number of Containers
1	4-VC-D	HJ3561	Soil	28/08/13 16:00	x	
3	40-VC-A	HJ3562	Plant	28/08/13 14:30	x	
4	40-VC-B	HJ3563	Plant	28/08/13 14:30	x	
5	40-VC-C	HJ3564	Plant	28/08/13 14:30	x	
6	40-VC-D	HJ3565	Soil	28/08/13 14:30	x	
7	33-VC-A	HJ3566	Plant	28/08/13 14:00	x	
8	33-VC-B	HJ3567	Plant	28/08/13 14:00	x	
9	33-VC-C	HJ3568	Plant	28/08/13 14:00	x	
10	33-VC-D	HJ3569	Soil	28/08/13 14:00	x	
11	DP2-VC-A	HJ3570	Plant	28/08/13 15:50	x	
12	DP2-VC-B	HJ3571	Plant	28/08/13 15:50	x	

B378004

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):
Heidi Schindler	13/08/29	08:00

Print name and sign

Received by:	Date (yy/mm/dd)	Time (24 hr)
	13/08/30	335

Time Sensitive ☐

Laboratory Use Only

Temperature on Receipt: A) 7 3 4

Just sampled & rec'd ☐

Custody Seal Present? N/A

Intact? N/A

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 | COC #: 08377529 | Page: 3 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:
- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:
- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:
Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐
Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	DP2-VC-C	HJ3608	Plant	28/08/13 15:50	x	
3	DP2-VC-D	HJ3609	Soil	28/08/13 15:50	x	
4	26-VC-A	HJ3611	Plant	28/08/13 19:30	x	
5	26-VC-B	HJ3612	Plant	28/08/13 19:30	x	
6	26-VC-C	HJ3613	Plant	28/08/13 19:30	x	
7	26-VC-D	HJ3614	Soil	28/08/13 19:30	x	
8	18-VC-A	HJ3615	Plant	28/08/13 1745	x	
9	18-VC-B	HJ3616	Plant	28/08/13 1745	x	
10	18-VC-C	HJ3617	Plant	28/08/13 1745	x	
11	18-VC-D	HJ3618	Soil	28/08/13 1745	x	
12	2-VC-A	HJ3619	Plant	28/08/13 18:30	x	

B378004

Print name and sign | Print name and sign | Laboratory Use Only

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by:	Date (yy/mm/dd)	Time (24hr)	Time Sensitive
Heidi Schindler	13/08/29	08:00		2013/08/30	13:35	☐

Temperature on Receipt (°C): A) 7 3 4 | Custody Seal: Present? N/A | Just sampled & rec'd cold? | Intact? N/A

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 **COC #** 08377522

Page: 4 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca; chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	2-VC-B	HJ3652	Plant	28/08/13 18:30	x	
3	2-VC-C	HJ3653	Plant	28/08/13 18:30	x	
4	2-VC-D	HJ3654	Soil	28/08/13 18:30	x	
5	34-VC-A	HJ3655	Plant	28/08/13 20:20	x	
6	34-VC-B	HJ3656	Plant	28/08/13 20:20	x	
7	34-VC-C	HJ3657	Plant	28/08/13 20:20	x	
8	34-VC-D	HJ3658	Soil	28/08/13 20:20	x	
9	DP1-VC-A	HJ3659	Plant	27/08/13 17:10	x	
10	DP1-VC-B	HJ3660	Plant	27/08/13 17:10	x	
11	DP1-VC-C	HJ3661	Plant	27/08/13 17:10	x	
12	DP1-VC-D	HJ3662	Soil	27/08/13 17:10	x	

B378004

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by:	Date (yy/mm/dd):	Time (24 hr):	Time Sensitive
Heidi Schindler	13/08/29	08:00		2013/05/30	1335	☐

Laboratory Use Only

Temperature on Receipt (°C): A: 7 3 4 Just sampled & rec'd on ice? Custody Seal Present? N/A Intact? N/A

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,5,5

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 **COC #:** 08377523

Page: 5 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day

Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ Ship Sample Bottles (please specify) ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	13-VC-A	HJ3697	Plant	08/27/13 09:00	x	
	13-VC-B	HJ3698	Plant	08/27/13 09:00	x	
4	13-VC-C	HJ3699	Plant	08/27/13 09:00	x	
5	13-VC-D	HJ3700	Soil	08/27/13 09:00	x	
6	5-VC-A	HJ37[illegible]	Plant	08/27/13 15:25	x	
7	5-VC-B	HJ3702	Plant	08/27/13 15:25	x	
8	5-VC-C	HJ3703	Plant	08/27/13 15:25	x	
9	5-VC-D	HJ3704	Soil	08/27/13 15:25	x	
10	14-VC-A	HJ37[illegible]	Plant	08/27/13 11:30	x	
11	14-VC-B	HJ3706	Plant	08/27/13 11:30	x	
12	14-VC-C	HJ3707	Plant	08/27/13 11:30	x	

B378004

Print name and sign			Print name and sign				Laboratory Use Only	
*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive	Temperature on Receipt	Custody Seal Nr.
Heidi Schindler	13/08/29	08:00	[signature]	2013/08/28	13:55	☐	A) 7 3 4	Present? NA
							Just sampled & rec'd ☐	Intact? NA

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,55

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 **COC #** 08377524 Page: 6 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name: ELR
Contact Name: Heidi Schindler
Address: 204-105 Titanium Way
Whithorse PC: Yukon
Phone / Fax#: Ph: 867 668.6386 Fax:
E-mail: chris@elr.ca

Report To:

Company Name: ELR
Contact Name: Heidi Schindler
Address: 204-105 Titanium Way
Whitehorse PC: yukon
Phone / Fax#: Ph: 8676686386 Fax
E-mail: heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ◯ 1 Day ◯ 2 Day ◯ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:
Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	14-VC-D	H53733	Soil	08/27/13 11:30	x	
	12-VC-A	H53734	Plant	08/27/13 16:20	x	
4	12-VC-B	H53735	Plant	08/27/13 16:20	x	
5	12-VC-C	H53736	Plant	08/27/13 16:20	x	
6	12-VC-D	H53737	Soil	08/27/13 16:20	x	
7	44-VC-B	H53738	Plant	08/27/13 15:25	x	
8	44-VC-C	H53739	Plant	08/27/13 15:25	x	
9	44-VC-D	H53740	Soil	08/27/13 15:25	x	
10	30-VC-A	H53741	Plant	08/27/13 10:25	x	
11	30-VC-B	H53742	Plant	08/27/13 10:25	x	
12	30-VC-C	H53743	Plant	08/27/13 10:25	x	

B378004

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/08/29	08:00	[signature]	2013/08/30	13:35	☐

Laboratory Use Only

Temperature on Receipt			Custody Seal	N
7	3	4	Present?	NA
Just sampled & rec'd			Intact?	NA

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,5,5

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004

COC #: 08377525

Page: 7 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax:
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab)
- ◯ 1 Day ◯ 2 Day ◯ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	30-VC-D	HJ3775	Soil	08/27/13 10:25	x	
	43-VC-A	HJ3776	Plant	08/27/13 14:00	x	
4	43-VC-B	HJ3777	Plant	08/27/13 14:00	x	
5	43-VC-C	HJ3778	Plant	08/27/13 14:00	x	
6	43-VC-D	HJ3779	Soil	08/27/13 14:00	x	
7	19-VC-A	HJ3780	Plant	08/27/13 11:20	x	
8	19-VC-B	HJ3781	Plant	08/27/13 11:20	x	
9	19-VC-C	HJ3782	Plant	08/27/13 11:20	x	
10	19-VC-D	HJ3783	Soil	08/27/13 11:20	x	
11	37-VC-A	HJ3784	Plant	08/27/13 17:45	x	
12	37-VC-B	HJ3785	Plant	08/27/13 17:45	x	

B378004

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/08/29	08:00	[signature]	13/08/30	13:35	☐

Laboratory Use Only

Temperature on Receipt (°C)				Custody Seal	N
A)	7	3	4	Present?	NA
Just sampled & rec'd ☐				Intact?	NA

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,5,5

Maxxam Analytics Inc

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 **COC #:** 08377526

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ Ship Sample Bottles (please specify) ☐

ANALYSIS REQUESTED

Total Metals: Tissue

Number of Containers

Lab Use Only

	Sample Identification	Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals: Tissue	Number of Containers
1	37-VC-C	HJ3797	Plant	08/27/13 17:45	x	
	37-VC-D	HJ3798	Soil	08/27/13 17:45	x	
4	22-VC-A	HJ3799	Plant	08/27/13 10:04	x	
5	22-VC-B	HJ3800	Plant	08/27/13 10:04	x	
6	22-VC-C	HJ3801	Plant	08/27/13 10:04	x	
7	22-VC-D	HJ3802	Soil	08/27/13 10:04	x	
8	17-VC-A	HJ3803	Plant	08/27/13 18:30	x	
9	17-VC-B	HJ3804	Plant	08/27/13 18:30	x	
10	17-VC-C	HJ3805	Plant	08/27/13 18:30	x	
11	17-VC-D	HJ3806	Soil	08/27/13 18:30	x	
12	24-VC-A	HJ3807	Plant	08/27/13 17:20	x	

B378004

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/08/29	08:00		13/08/30	8:35	☐

Print name and sign

Laboratory Use Only

Temperature on Receipt (	Custody Seal	Yes/No	
A) 7 3 4	Present?	NA	
Just sampled & rec'd a ☐	Intact?	NA	

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,5,5

Maxxam Analytics Inc

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378004 **COC #** 08377527

Page: 9 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

Total Metals - Tissue

Number of Containers

Lab Use Only

	Sample Identification	Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	24-VC-B	#1385	Plant	08/27/13 17:20	x	
	24-VC-C	#1386	Plant	08/27/13 17:20	x	
4	24-VC-D	#1387	Soil	08/27/13 17:20	x	
5						
6						
7						
8						
9						
10						
11						
12						

B376004

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):
Heidi Schindler	13/08/29	08:00

Print name and sign

Received by:	Date (yy/mm/dd)	Time (24 hr)
	13/08/30	8:35

Time Sensitive ☐

Laboratory Use Only

Temperature on Receipt (°C)		Custody Seal	No
#1	7 3 4	Present?	N/A
Just sampled & rec'd ☐		Intact?	N/A

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,5,5

Your Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

Attention: Chris Jastrebski
Ecological Logistics & Research
31 Thompson Road
Whitehorse, YT
CANADA Y1AOC4

Your C.O.C. #: 08377598, 08377761, 08377762, 08377763, 08377764, 08377765, 08377766, 08377767, 08377768, 08377769, 08377770, 08377771, 08377772

Report Date: 2013/09/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B378712
Received: 2013/09/03, 14:07

Sample Matrix: Soil
Samples Received: 30

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICPMS (total)	29	2013/09/06	2013/09/06	BBY7SOP-00004	BCMOE-SALM
Elements by ICPMS (total)	1	2013/09/17	2013/09/17	BBY7SOP-00004	BCMOE-SALM
pH (2:1 DI Water Extract)	29	2013/09/06	2013/09/06	BBY6SOP-00028	Carter, SSMA 16.2
pH (2:1 DI Water Extract)	1	2013/09/17	2013/09/17	BBY6SOP-00028	Carter, SSMA 16.2

Sample Matrix: TISSUE
Samples Received: 90

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by CRC ICPMS - Tissue Dry Wt	1	2013/09/05	2013/09/27	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS - Tissue Dry Wt	29	2013/09/13	2013/09/27	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total) - Plant	30	2013/09/18	2013/09/21	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total) - Plant	30	2013/09/18	2013/09/26	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS - Tissue Wet Wt	30	2013/09/23	2013/09/27	BBY7SOP-00002	EPA 6020A
Moisture	1	N/A	2013/09/17	BBY8SOP-00017	Ont MOE -E 3139
Moisture	29	N/A	2013/09/26	BBY8SOP-00017	Ont MOE -E 3139

* Results relate only to the items tested.

Encryption Key

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

Ken Pomeroy, Project Manager
Email: KPomeroy@maxxam.ca
Phone# (604) 638-5020

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Total cover pages: 1

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		HJ8677	HJ8677		HJ8681		HJ8706	HJ8710	HJ8714		HJ8719		
Sampling Date		2013/08/29 16:20	2013/08/29 16:20		2013/08/29 09:15		2013/08/29 12:04	2013/08/29 15:44	2013/08/29 19:00		2013/08/29 15:05		
COC#		08377598	08377598		08377598		08377761	08377761	08377761		08377762		
	UNITS	**9-VC-D**	**9-VC-D Lab-Dup**	**QC Batch**	**20-VC-D**	**QC Batch**	**39-VC-D**	**6-VC-D**	**DP3-VC-D**	**QC Batch**	**10-VC-D**	**RDL**	**QC Batch**
Physical Properties													
Soluble (2:1) pH	pH Units	5.50	5.49	7149525	5.38	7149634	6.28	6.29	4.66	7149525	5.35	0.010	7173053

Maxxam ID		HJ8723	HJ8727	HJ8731	HJ8735	HJ8739		HJ8743		HJ8748	HJ8752		
Sampling Date		2013/08/29 12:45	2013/08/29 10:55	2013/08/29 17:00	2013/08/29 19:10	2013/08/29 18:25		2013/08/29 17:35		2013/08/29 09:55	2013/08/30 17:17		
COC#		08377763	08377763	08377763	08377764	08377764		08377764		08377765	08377765		
	UNITS	**21-VC-D**	**16-VC-D**	**36-VC-D**	**1-VC-D**	**32-VC-D**	**QC Batch**	**28-VC-D**	**QC Batch**	**8-VC-D**	**27-VC-D**	**RDL**	**QC Batch**
Physical Properties													
Soluble (2:1) pH	pH Units	5.23	5.87	5.41	4.69	4.73	7149525	5.82	7149634	5.33	5.47	0.010	7149525

Maxxam ID		HJ8768	HJ8772		HJ8776		HJ8806	HJ8810	HJ8814	HJ8846	HJ8941		
Sampling Date		2013/08/30 09:30	2013/08/30 11:20		2013/08/30 11:50		2013/08/30 11:20	2013/08/30 13:15	2013/08/30 10:15	2013/08/30 15:42	2013/08/30 16:00		
COC#		08377766	08377766		08377766		08377767	08377767	08377767	08377768	08377769		
	UNITS	**42-VC-D**	**38-VC-D**	**QC Batch**	**DP4-VC-D**	**QC Batch**	**29-VC-D**	**11-VC-D**	**15-VC-D**	**CR1-VC-D**	**CU1-VC-D**	**RDL**	**QC Batch**
Physical Properties													
Soluble (2:1) pH	pH Units	5.13	6.13	7149525	5.51	7149634	5.72	5.12	5.86	6.97	5.29	0.010	7149609

Maxxam ID		HJ8945	HJ8952	HJ8956	HJ8960	HJ8964	HJ8968	HJ8972		HJ8977		
Sampling Date		2013/08/30 12:00	2013/08/31 10:00	2013/08/31 09:09	2013/08/31 11:45	2013/08/31 10:30	2013/08/31	2013/08/31 08:45		2013/08/31 11:06		
COC#		08377769	08377770	08377770	08377770	08377771	08377771	08377771		08377772		
	UNITS	**23-VC-D**	**35-VC-D**	**CU2-VC-D**	**25-VC-D**	**3-VC-D**	**DP5-VC-D**	**CR2-VC-D**	**QC Batch**	**41-VC-D**	**RDL**	**QC Batch**
Physical Properties												
Soluble (2:1) pH	pH Units	5.73	5.18	5.04	5.67	6.03	5.27	6.30	7149609	6.53	0.010	7149525

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ8677	HJ8677		HJ8681		HJ8706	HJ8710	HJ8714		HJ8719		
Sampling Date		2013/08/29 16:20	2013/08/29 16:20		2013/08/29 09:15		2013/08/29 12:04	2013/08/29 15:44	2013/08/29 19:00		2013/08/29 15:05		
COC#		08377598	08377598		08377598		08377761	08377761	08377761		08377762		
	UNITS	**9-VC-D**	**9-VC-D Lab-Dup**	**QC Batch**	**20-VC-D**	**QC Batch**	**39-VC-D**	**6-VC-D**	**DP3-VC-D**	**QC Batch**	**10-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg	6990	7270	7149519	5490	7149610	4150	1280	7560	7149519	5460	100	7173047
Total Antimony (Sb)	mg/kg	1.38	1.71	7149519	42.5	7149610	0.13	0.31	0.35	7149519	0.21	0.10	7173047
Total Arsenic (As)	mg/kg	11.4	13.7	7149519	1190	7149610	1.07	0.99	7.74	7149519	5.63	0.50	7173047
Total Barium (Ba)	mg/kg	123	131	7149519	135	7149610	66.4	119	56.0	7149519	69.4	0.10	7173047
Total Beryllium (Be)	mg/kg	<0.40	<0.40	7149519	0.58	7149610	<0.40	<0.40	<0.40	7149519	<0.40	0.40	7173047
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	7149519	<0.10	7149610	<0.10	<0.10	<0.10	7149519	<0.10	0.10	7173047
Total Cadmium (Cd)	mg/kg	0.093	0.113	7149519	0.614	7149610	0.113	0.115	0.130	7149519	0.094	0.050	7173047
Total Calcium (Ca)	mg/kg	1480	1730	7149519	2960	7149610	1810	2200	881	7149519	2140	100	7173047
Total Chromium (Cr)	mg/kg	12.7	14.1	7149519	7.4	7149610	4.8	1.9	9.7	7149519	7.3	1.0	7173047
Total Cobalt (Co)	mg/kg	4.41	5.07	7149519	13.7	7149610	4.47	1.26	4.09	7149519	2.85	0.30	7173047
Total Copper (Cu)	mg/kg	9.75	10.4	7149519	28.5	7149610	16.4	8.24	6.36	7149519	15.5	0.50	7173047
Total Iron (Fe)	mg/kg	14600	18100	7149519	46600	7149610	10000	3510	16200	7149519	13200	100	7173047
Total Lead (Pb)	mg/kg	3.39	4.33	7149519	30.7	7149610	1.42	0.70	4.43	7149519	2.80	0.10	7173047
Total Lithium (Li)	mg/kg	5.5	5.7	7149519	<5.0	7149610	<5.0	<5.0	5.9	7149519	<5.0	5.0	7173047
Total Magnesium (Mg)	mg/kg	1930	2010	7149519	1550	7149610	1090	587	2790	7149519	1860	100	7173047
Total Manganese (Mn)	mg/kg	175	189	7149519	1900	7149610	270	60.2	182	7149519	124	0.20	7173047
Total Mercury (Hg)	mg/kg	<0.050	<0.050	7149519	0.086	7149610	<0.050	<0.050	<0.050	7149519	<0.050	0.050	7173047
Total Molybdenum (Mo)	mg/kg	0.45	0.51	7149519	0.68	7149610	0.22	<0.10	0.55	7149519	0.48	0.10	7173047
Total Nickel (Ni)	mg/kg	9.47	12.1	7149519	9.88	7149610	3.17	1.76	5.21	7149519	4.97	0.80	7173047
Total Phosphorus (P)	mg/kg	206	240	7149519	1200	7149610	430	643	266	7149519	386	10	7173047
Total Potassium (K)	mg/kg	622	641	7149519	1290	7149610	396	168	888	7149519	643	100	7173047
Total Selenium (Se)	mg/kg	<0.50	<0.50	7149519	<0.50	7149610	<0.50	<0.50	<0.50	7149519	<0.50	0.50	7173047
Total Silver (Ag)	mg/kg	0.053	0.078	7149519	0.707	7149610	0.146	<0.050	<0.050	7149519	0.078	0.050	7173047
Total Sodium (Na)	mg/kg	140	144	7149519	<100	7149610	293	307	107	7149519	376	100	7173047
Total Strontium (Sr)	mg/kg	13.2	14.0	7149519	41.5	7149610	14.7	16.1	7.93	7149519	16.8	0.10	7173047
Total Thallium (Tl)	mg/kg	0.125	0.123	7149519	2.43	7149610	<0.050	0.064	0.092	7149519	<0.050	0.050	7173047
Total Tin (Sn)	mg/kg	0.30	0.27	7149519	0.25	7149610	0.11	<0.10	0.31	7149519	0.15	0.10	7173047
Total Titanium (Ti)	mg/kg	325	361	7149519	68.4	7149610	394	433	725	7149519	415	1.0	7173047
Total Uranium (U)	mg/kg	0.333	0.388	7149519	0.801	7149610	0.200	0.135	0.245	7149519	0.431	0.050	7173047
Total Vanadium (V)	mg/kg	35.2	40.6	7149519	42.1	7149610	33.6	12.0	47.2	7149519	35.7	2.0	7173047
Total Zinc (Zn)	mg/kg	34.1	35.7	7149519	147	7149610	14.7	10.6	39.4	7149519	22.8	1.0	7173047
Total Zirconium (Zr)	mg/kg	<0.50	<0.50	7149519	<0.50	7149610	<0.50	<0.50	1.22	7149519	<0.50	0.50	7173047

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ8723	HJ8727	HJ8731	HJ8735	HJ8739		HJ8743		HJ8748	HJ8752		
Sampling Date		2013/08/29 12:45	2013/08/29 10:55	2013/08/29 17:00	2013/08/29 19:10	2013/08/29 18:25		2013/08/29 17:35		2013/08/29 09:55	2013/08/30 17:17		
COC#		08377763	08377763	08377763	08377764	08377764		08377764		08377765	08377765		
	UNITS	**21-VC-D**	**16-VC-D**	**36-VC-D**	**1-VC-D**	**32-VC-D**	**QC Batch**	**28-VC-D**	**QC Batch**	**8-VC-D**	**27-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg	2420	5550	9840	6190	3910	7149519	12600	7149610	5760	9800	100	7149519
Total Antimony (Sb)	mg/kg	<0.10	0.12	0.76	0.26	1.03	7149519	1.36	7149610	0.65	3.86	0.10	7149519
Total Arsenic (As)	mg/kg	1.97	2.20	9.91	4.60	27.6	7149519	16.2	7149610	6.07	35.0	0.50	7149519
Total Barium (Ba)	mg/kg	38.8	62.3	137	41.8	53.0	7149519	273	7149610	114	84.7	0.10	7149519
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	7149519	<0.40	7149610	<0.40	<0.40	0.40	7149519
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	7149519	<0.10	7149610	<0.10	0.31	0.10	7149519
Total Cadmium (Cd)	mg/kg	<0.050	<0.050	0.163	0.109	0.170	7149519	0.353	7149610	<0.050	0.126	0.050	7149519
Total Calcium (Ca)	mg/kg	1100	1780	1760	827	1140	7149519	3930	7149610	1920	2110	100	7149519
Total Chromium (Cr)	mg/kg	3.0	6.5	15.0	7.8	9.9	7149519	20.6	7149610	5.6	15.2	1.0	7149519
Total Cobalt (Co)	mg/kg	3.69	3.48	5.26	3.04	4.34	7149519	9.36	7149610	4.75	7.40	0.30	7149519
Total Copper (Cu)	mg/kg	2.93	9.29	9.43	4.56	9.90	7149519	40.5	7149610	8.77	17.8	0.50	7149519
Total Iron (Fe)	mg/kg	7270	12300	17100	13000	13300	7149519	24000	7149610	15700	18400	100	7149519
Total Lead (Pb)	mg/kg	0.98	1.72	5.08	3.81	3.73	7149519	5.80	7149610	2.71	15.7	0.10	7149519
Total Lithium (Li)	mg/kg	<5.0	<5.0	7.1	<5.0	<5.0	7149519	7.7	7149610	<5.0	5.5	5.0	7149519
Total Magnesium (Mg)	mg/kg	419	2520	2650	2100	1160	7149519	4820	7149610	974	2370	100	7149519
Total Manganese (Mn)	mg/kg	165	156	184	124	199	7149519	487	7149610	411	533	0.20	7149519
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7149519	0.060	7149610	0.081	<0.050	0.050	7149519
Total Molybdenum (Mo)	mg/kg	0.13	0.18	0.49	0.35	0.70	7149519	0.54	7149610	0.32	0.76	0.10	7149519
Total Nickel (Ni)	mg/kg	1.93	3.51	10.9	3.56	7.88	7149519	15.2	7149610	4.20	7.52	0.80	7149519
Total Phosphorus (P)	mg/kg	289	546	343	183	158	7149519	502	7149610	559	437	10	7149519
Total Potassium (K)	mg/kg	270	1170	687	774	574	7149519	1660	7149610	515	560	100	7149519
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	7149519	<0.50	7149610	<0.50	<0.50	0.50	7149519
Total Silver (Ag)	mg/kg	0.085	0.063	0.061	<0.050	<0.050	7149519	0.186	7149610	0.155	0.734	0.050	7149519
Total Sodium (Na)	mg/kg	251	197	<100	126	161	7149519	196	7149610	278	266	100	7149519
Total Strontium (Sr)	mg/kg	8.60	12.3	16.2	8.16	10.9	7149519	31.3	7149610	14.7	18.7	0.10	7149519
Total Thallium (Tl)	mg/kg	<0.050	<0.050	0.130	0.082	0.121	7149519	0.513	7149610	0.251	0.183	0.050	7149519
Total Tin (Sn)	mg/kg	<0.10	0.19	0.31	0.32	0.24	7149519	0.39	7149610	0.14	0.26	0.10	7149519
Total Titanium (Ti)	mg/kg	291	648	346	769	290	7149519	444	7149610	480	592	1.0	7149519
Total Uranium (U)	mg/kg	0.132	0.183	0.340	0.235	0.246	7149519	0.748	7149610	0.331	0.671	0.050	7149519
Total Vanadium (V)	mg/kg	24.8	35.3	40.3	42.4	40.9	7149519	58.4	7149610	48.6	51.7	2.0	7149519
Total Zinc (Zn)	mg/kg	10.9	23.6	35.2	32.9	30.1	7149519	63.5	7149610	22.5	47.2	1.0	7149519
Total Zirconium (Zr)	mg/kg	<0.50	<0.50	<0.50	0.93	<0.50	7149519	0.72	7149610	<0.50	0.73	0.50	7149519

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ8768	HJ8772		HJ8776		HJ8806	HJ8810	HJ8814	HJ8846	HJ8941		
Sampling Date		2013/08/30 09:30	2013/08/30 11:20		2013/08/30 11:50		2013/08/30 11:20	2013/08/30 13:15	2013/08/30 10:15	2013/08/30 15:42	2013/08/30 16:00		
COC#		08377766	08377766		08377766		08377767	08377767	08377767	08377768	08377769		
	UNITS	**42-VC-D**	**38-VC-D**	**QC Batch**	**DP4-VC-D**	**QC Batch**	**29-VC-D**	**11-VC-D**	**15-VC-D**	**CR1-VC-D**	**CU1-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg	6890	6690	7149519	8760	7149610	7490	8440	6320	6850	9880	100	7149603
Total Antimony (Sb)	mg/kg	<0.10	0.54	7149519	1.89	7149610	3.29	3.71	2.07	0.60	0.31	0.10	7149603
Total Arsenic (As)	mg/kg	1.11	6.49	7149519	18.6	7149610	28.8	51.9	71.0	10.1	5.07	0.50	7149603
Total Barium (Ba)	mg/kg	116	80.7	7149519	110	7149610	113	126	98.6	52.3	51.3	0.10	7149603
Total Beryllium (Be)	mg/kg	<0.40	<0.40	7149519	<0.40	7149610	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7149603
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	7149519	<0.10	7149610	<0.10	0.17	<0.10	<0.10	<0.10	0.10	7149603
Total Cadmium (Cd)	mg/kg	0.093	0.100	7149519	0.100	7149610	0.261	0.454	0.093	0.196	0.199	0.050	7149603
Total Calcium (Ca)	mg/kg	2100	2210	7149519	2650	7149610	2030	1620	2780	1980	1480	100	7149603
Total Chromium (Cr)	mg/kg	7.2	6.9	7149519	12.3	7149610	9.6	10.0	4.1	10.2	13.9	1.0	7149603
Total Cobalt (Co)	mg/kg	4.35	3.86	7149519	3.92	7149610	4.96	4.22	3.61	3.36	3.98	0.30	7149603
Total Copper (Cu)	mg/kg	16.0	16.7	7149519	10.9	7149610	10.9	23.7	8.84	6.42	6.84	0.50	7149603
Total Iron (Fe)	mg/kg	11200	12900	7149519	15800	7149610	13800	15400	12100	11800	14900	100	7149603
Total Lead (Pb)	mg/kg	1.62	2.37	7149519	4.47	7149610	17.7	10.8	2.62	5.34	4.21	0.10	7149603
Total Lithium (Li)	mg/kg	<5.0	<5.0	7149519	8.4	7149610	<5.0	<5.0	<5.0	<5.0	5.3	5.0	7149603
Total Magnesium (Mg)	mg/kg	2030	2020	7149519	4130	7149610	1850	1640	763	2260	2390	100	7149603
Total Manganese (Mn)	mg/kg	145	210	7149519	159	7149610	631	198	379	148	103	0.20	7149603
Total Mercury (Hg)	mg/kg	<0.050	<0.050	7149519	0.056	7149610	<0.050	<0.050	0.072	<0.050	<0.050	0.050	7149603
Total Molybdenum (Mo)	mg/kg	0.24	0.21	7149519	0.28	7149610	0.49	0.73	0.61	0.31	0.38	0.10	7149603
Total Nickel (Ni)	mg/kg	4.01	4.38	7149519	5.80	7149610	5.96	7.06	3.33	6.59	8.25	0.80	7149603
Total Phosphorus (P)	mg/kg	487	329	7149519	462	7149610	453	398	485	297	361	10	7149603
Total Potassium (K)	mg/kg	666	704	7149519	1580	7149610	506	816	477	366	391	100	7149603
Total Selenium (Se)	mg/kg	<0.50	<0.50	7149519	<0.50	7149610	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7149603
Total Silver (Ag)	mg/kg	0.129	0.148	7149519	0.093	7149610	0.150	0.613	0.137	<0.050	<0.050	0.050	7149603
Total Sodium (Na)	mg/kg	284	270	7149519	115	7149610	186	247	521	107	<100	100	7149603
Total Strontium (Sr)	mg/kg	19.9	14.5	7149519	17.6	7149610	15.8	19.9	17.9	11.6	10.2	0.10	7149603
Total Thallium (Tl)	mg/kg	0.063	0.067	7149519	0.231	7149610	0.122	0.250	0.346	0.057	0.052	0.050	7149603
Total Tin (Sn)	mg/kg	0.16	0.16	7149519	0.26	7149610	0.21	0.27	0.11	0.26	0.26	0.10	7149603
Total Titanium (Ti)	mg/kg	428	422	7149519	615	7149610	424	277	105	274	347	1.0	7149603
Total Uranium (U)	mg/kg	0.579	0.318	7149519	0.387	7149610	0.486	0.668	0.360	0.449	0.297	0.050	7149603
Total Vanadium (V)	mg/kg	31.2	36.6	7149519	45.4	7149610	35.9	40.4	20.2	27.1	36.1	2.0	7149603
Total Zinc (Zn)	mg/kg	19.5	22.6	7149519	38.4	7149610	38.6	47.3	26.8	24.4	29.1	1.0	7149603
Total Zirconium (Zr)	mg/kg	<0.50	<0.50	7149519	0.50	7149610	0.87	<0.50	0.55	0.90	0.70	0.50	7149603

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HJ8945	HJ8952	HJ8956	HJ8960	HJ8964	HJ8968	HJ8972		HJ8977		
Sampling Date		2013/08/30 12:00	2013/08/31 10:00	2013/08/31 09:09	2013/08/31 11:45	2013/08/31 10:30	2013/08/31	2013/08/31 08:45		2013/08/31 11:06		
COC#		08377769	08377770	08377770	08377770	08377771	08377771	08377771		08377772		
	UNITS	**23-VC-D**	**35-VC-D**	**CU2-VC-D**	**25-VC-D**	**3-VC-D**	**DP5-VC-D**	**CR2-VC-D**	**QC Batch**	**41-VC-D**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	9680	1560	6290	8810	2000	1840	5310	7149603	2080	100	7149519
Total Antimony (Sb)	mg/kg	2.06	<0.10	0.30	0.50	<0.10	<0.10	0.61	7149603	3.47	0.10	7149519
Total Arsenic (As)	mg/kg	20.3	0.79	4.78	17.0	0.65	1.55	7.58	7149603	6.18	0.50	7149519
Total Barium (Ba)	mg/kg	130	23.7	65.7	82.3	57.9	27.3	66.5	7149603	72.0	0.10	7149519
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	7149603	<0.40	0.40	7149519
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	0.10	<0.10	<0.10	<0.10	0.11	7149603	<0.10	0.10	7149519
Total Cadmium (Cd)	mg/kg	0.132	<0.050	0.101	0.127	0.052	0.076	0.099	7149603	<0.050	0.050	7149519
Total Calcium (Ca)	mg/kg	3000	586	1080	4020	2400	683	2800	7149603	2740	100	7149519
Total Chromium (Cr)	mg/kg	13.3	3.8	10.6	16.2	8.9	4.6	8.4	7149603	2.8	1.0	7149519
Total Cobalt (Co)	mg/kg	4.36	1.19	3.15	4.42	2.28	1.76	3.34	7149603	2.38	0.30	7149519
Total Copper (Cu)	mg/kg	12.9	2.27	6.52	6.48	3.25	3.39	5.96	7149603	5.67	0.50	7149519
Total Iron (Fe)	mg/kg	17100	4900	13000	16500	7270	6590	11800	7149603	7030	100	7149519
Total Lead (Pb)	mg/kg	4.73	0.79	3.63	4.68	0.55	0.95	6.27	7149603	0.70	0.10	7149519
Total Lithium (Li)	mg/kg	9.1	<5.0	<5.0	7.2	<5.0	<5.0	5.7	7149603	<5.0	5.0	7149519
Total Magnesium (Mg)	mg/kg	4440	664	1680	3990	586	818	2250	7149603	491	100	7149519
Total Manganese (Mn)	mg/kg	186	26.9	112	224	329	34.7	166	7149603	95.8	0.20	7149519
Total Mercury (Hg)	mg/kg	0.063	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	7149603	<0.050	0.050	7149519
Total Molybdenum (Mo)	mg/kg	0.39	0.13	0.45	0.34	0.13	0.14	0.54	7149603	0.22	0.10	7149519
Total Nickel (Ni)	mg/kg	6.49	1.91	5.41	8.82	1.87	2.78	5.30	7149603	3.24	0.80	7149519
Total Phosphorus (P)	mg/kg	503	85	186	554	503	106	428	7149603	479	10	7149519
Total Potassium (K)	mg/kg	1790	356	254	727	256	388	343	7149603	239	100	7149519
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7149603	<0.50	0.50	7149519
Total Silver (Ag)	mg/kg	0.102	<0.050	<0.050	0.054	<0.050	<0.050	0.059	7149603	<0.050	0.050	7149519
Total Sodium (Na)	mg/kg	<100	255	<100	191	522	318	130	7149603	496	100	7149519
Total Strontium (Sr)	mg/kg	18.9	8.04	9.72	23.4	18.1	9.24	23.8	7149603	17.6	0.10	7149519
Total Thallium (Tl)	mg/kg	0.264	<0.050	<0.050	0.067	<0.050	<0.050	<0.050	7149603	<0.050	0.050	7149519
Total Tin (Sn)	mg/kg	0.28	<0.10	0.19	0.24	<0.10	<0.10	0.18	7149603	<0.10	0.10	7149519
Total Titanium (Ti)	mg/kg	560	240	220	587	363	306	256	7149603	326	1.0	7149519
Total Uranium (U)	mg/kg	0.409	0.112	0.259	0.452	0.105	0.125	0.617	7149603	0.139	0.050	7149519
Total Vanadium (V)	mg/kg	46.1	17.1	32.8	39.2	24.1	22.5	25.4	7149603	23.4	2.0	7149519
Total Zinc (Zn)	mg/kg	40.9	9.8	20.8	40.2	11.4	13.2	31.9	7149603	12.6	1.0	7149519
Total Zirconium (Zr)	mg/kg	0.56	<0.50	1.26	0.95	<0.50	<0.50	<0.50	7149603	<0.50	0.50	7149519

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8674	HJ8675	HJ8676	HJ8678	HJ8679	HJ8680	HJ8682	HJ8683	HJ8684		
Sampling Date		2013/08/29 16:20	2013/08/29 16:20	2013/08/29 16:20	2013/08/29 09:15	2013/08/29 09:15	2013/08/29 09:15	2013/08/29 12:04	2013/08/29 12:04	2013/08/29 12:04		
COC#		08377598	08377598	08377598	08377598	08377598	08377598	08377598	08377598	08377598		
	UNITS	**9-VC-A**	**9-VC-B**	**9-VC-C**	**20-VC-A**	**20-VC-B**	**20-VC-C**	**39-VC-A**	**39-VC-B**	**39-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg			25.1			18.0			12.9	1.0	7168265
Total Aluminum (Al)	mg/kg	127	19.5		190	18.5		230	22.1		1.0	7176856
Total Antimony (Sb)	mg/kg			<0.0050			<0.0050			<0.0050	0.0050	7168265
Total Antimony (Sb)	mg/kg	0.0157	<0.0050		0.544	0.0565		0.0490	0.0077		0.0050	7176856
Total Arsenic (As)	mg/kg			<0.050			0.067			<0.050	0.050	7168265
Total Arsenic (As)	mg/kg	0.156	0.055		3.68	0.385		0.420	0.099		0.050	7176856
Total Barium (Ba)	mg/kg			26.2			8.53			15.8	0.10	7168265
Total Barium (Ba)	mg/kg	39.9	207		13.0	47.3		29.5	160		0.10	7176856
Total Beryllium (Be)	mg/kg			<0.10			<0.10			<0.10	0.10	7168265
Total Beryllium (Be)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7176856
Total Bismuth (Bi)	mg/kg			<0.10			<0.10			<0.10	0.10	7168265
Total Bismuth (Bi)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7176856
Total Boron (B)	mg/kg			7.7			9.8			4.1	2.0	7168265
Total Boron (B)	mg/kg	<2.0	12.7		<2.0	9.9		<2.0	8.0		2.0	7176856
Total Cadmium (Cd)	mg/kg			<0.010			<0.010			0.015	0.010	7168265
Total Cadmium (Cd)	mg/kg	0.268	0.986		0.164	3.70		0.256	2.18		0.010	7176856
Total Calcium (Ca)	mg/kg			1620			1330			1490	10	7168265
Total Calcium (Ca)	mg/kg	2610	20400		1170	13100		2420	14800		10	7176856
Total Chromium (Cr)	mg/kg			<0.20			<0.20			<0.20	0.20	7168265
Total Chromium (Cr)	mg/kg	0.24	<0.20		0.38	<0.20		0.52	<0.20		0.20	7176856
Total Cobalt (Co)	mg/kg			<0.020			<0.020			<0.020	0.020	7168265
Total Cobalt (Co)	mg/kg	0.123	0.674		0.148	0.285		0.188	0.730		0.020	7176856
Total Copper (Cu)	mg/kg			9.11			4.17			5.39	0.050	7168265
Total Copper (Cu)	mg/kg	2.03	6.66		2.02	4.22		2.10	4.10		0.050	7176856
Total Iron (Fe)	mg/kg			26			15			22	10	7168265
Total Iron (Fe)	mg/kg	178	54		346	59		334	87		10	7176856
Total Lead (Pb)	mg/kg			<0.010			<0.010			<0.010	0.010	7168265
Total Lead (Pb)	mg/kg	0.282	0.056		4.10	0.233		0.522	0.052		0.010	7176856
Total Magnesium (Mg)	mg/kg			1010			615			771	10	7168265
Total Magnesium (Mg)	mg/kg	389	4130		257	2170		673	3810		10	7176856
Total Manganese (Mn)	mg/kg			578			436			373	0.10	7168265
Total Manganese (Mn)	mg/kg	261	296		214	753		232	416		0.10	7176856
Total Mercury (Hg)	mg/kg			<0.010			<0.010			<0.010	0.010	7168265
Total Mercury (Hg)	mg/kg	0.024	0.012		0.017	0.013		0.038	0.012		0.010	7176856
Total Molybdenum (Mo)	mg/kg			0.685			<0.050			0.098	0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8674	HJ8675	HJ8676	HJ8678	HJ8679	HJ8680	HJ8682	HJ8683	HJ8684		
Sampling Date		2013/08/29 16:20	2013/08/29 16:20	2013/08/29 16:20	2013/08/29 09:15	2013/08/29 09:15	2013/08/29 09:15	2013/08/29 12:04	2013/08/29 12:04	2013/08/29 12:04		
COC#		08377598	08377598	08377598	08377598	08377598	08377598	08377598	08377598	08377598		
	UNITS	**9-VC-A**	**9-VC-B**	**9-VC-C**	**20-VC-A**	**20-VC-B**	**20-VC-C**	**39-VC-A**	**39-VC-B**	**39-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.099	0.268		0.050	0.064		0.101	0.245		0.050	7176856
Total Nickel (Ni)	mg/kg			0.622			0.201			0.226	0.050	7168265
Total Nickel (Ni)	mg/kg	0.526	4.24		0.495	0.673		0.600	0.613		0.050	7176856
Total Phosphorus (P)	mg/kg			2430			1090			1620	10	7168265
Total Phosphorus (P)	mg/kg	727	4020		395	1400		718	3190		10	7176856
Total Potassium (K)	mg/kg			11700			7420			9890	10	7168265
Total Potassium (K)	mg/kg	1730	16500		906	8070		1310	11800		10	7176856
Total Selenium (Se)	mg/kg			<0.050			<0.050			<0.050	0.050	7168265
Total Selenium (Se)	mg/kg	<0.050	<0.050		<0.050	<0.050		<0.050	0.075		0.050	7176856
Total Silver (Ag)	mg/kg			<0.020			<0.020			<0.020	0.020	7168265
Total Silver (Ag)	mg/kg	0.046	<0.020		0.367	0.035		0.026	<0.020		0.020	7176856
Total Sodium (Na)	mg/kg			<10			<10			<10	10	7168265
Total Sodium (Na)	mg/kg	25	<10		11	<10		18	<10		10	7176856
Total Strontium (Sr)	mg/kg			3.08			1.41			4.11	0.10	7168265
Total Strontium (Sr)	mg/kg	11.4	121		4.45	74.3		15.1	118		0.10	7176856
Total Thallium (Tl)	mg/kg			<0.0020			<0.0020			<0.0020	0.0020	7168265
Total Thallium (Tl)	mg/kg	0.0063	0.0038		0.0063	0.0111		0.0040	0.0026		0.0020	7176856
Total Tin (Sn)	mg/kg			<0.10			<0.10			<0.10	0.10	7168265
Total Tin (Sn)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10		0.10	7176856
Total Titanium (Ti)	mg/kg			<1.0			<1.0			<1.0	1.0	7168265
Total Titanium (Ti)	mg/kg	6.6	<1.0		10.0	1.1		12.3	1.3		1.0	7176856
Total Uranium (U)	mg/kg			0.0043			<0.0020			<0.0020	0.0020	7168265
Total Uranium (U)	mg/kg	0.0105	<0.0020		0.0113	<0.0020		0.0113	<0.0020		0.0020	7176856
Total Vanadium (V)	mg/kg			<0.20			<0.20			<0.20	0.20	7168265
Total Vanadium (V)	mg/kg	0.26	<0.20		0.55	<0.20		0.62	<0.20		0.20	7176856
Total Zinc (Zn)	mg/kg			17.4			9.70			12.3	0.20	7168265
Total Zinc (Zn)	mg/kg	17.0	61.3		26.3	380		23.6	105		0.20	7176856

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8707	HJ8708	HJ8709	HJ8711	HJ8712	HJ8713	HJ8715	HJ8716		HJ8718		
Sampling Date		2013/08/29 15:44	2013/08/29 15:44	2013/08/29 15:44	2013/08/29 19:00	2013/08/29 19:00	2013/08/29 19:00	2013/08/29 15:05	2013/08/29 15:05		2013/08/29 15:05		
COC#		08377761	08377761	08377761	08377761	08377761	08377761	08377761	08377761		08377762		
	UNITS	**6-VC-A**	**6-VC-B**	**6-VC-C**	**DP3-VC-A**	**DP3-VC-B**	**DP3-VC-C**	**10-VC-A**	**10-VC-B**	**QC Batch**	**10-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg			6.8			22.9			7168265	57.9	1.0	7147937
Total Aluminum (Al)	mg/kg	278	20.6		631	67.9		137	34.3	7176856		1.0	
Total Antimony (Sb)	mg/kg			<0.0050			<0.0050			7168265	0.0086	0.0050	7147937
Total Antimony (Sb)	mg/kg	0.0579	0.0078		0.0985	0.0059		0.0399	0.0052	7176856		0.0050	
Total Arsenic (As)	mg/kg			<0.050			<0.050			7168265	<0.050	0.050	7147937
Total Arsenic (As)	mg/kg	0.493	<0.050		0.844	0.061		0.315	<0.050	7176856		0.050	
Total Barium (Ba)	mg/kg			14.2			9.89			7168265	21.2	0.10	7147937
Total Barium (Ba)	mg/kg	37.0	55.8		57.3	236		32.8	61.6	7176856		0.10	
Total Beryllium (Be)	mg/kg			<0.10			<0.10			7168265	<0.10	0.10	7147937
Total Beryllium (Be)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	7176856		0.10	
Total Bismuth (Bi)	mg/kg			<0.10			<0.10			7168265	<0.10	0.10	7147937
Total Bismuth (Bi)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	7176856		0.10	
Total Boron (B)	mg/kg			11.2			3.0			7168265	7.2	2.0	7147937
Total Boron (B)	mg/kg	4.6	12.1		<2.0	8.9		2.3	7.6	7176856		2.0	
Total Cadmium (Cd)	mg/kg			<0.010			<0.010			7168265	0.085	0.010	7147937
Total Cadmium (Cd)	mg/kg	0.227	7.23		0.111	5.47		0.144	2.76	7176856		0.010	
Total Calcium (Ca)	mg/kg			1790			1520			7168265	2350	10	7147937
Total Calcium (Ca)	mg/kg	2350	11300		2000	14800		3550	10800	7176856		10	
Total Chromium (Cr)	mg/kg			<0.20			<0.20			7168265	<0.20	0.20	7147937
Total Chromium (Cr)	mg/kg	0.67	<0.20		1.00	<0.20		0.50	<0.20	7176856		0.20	
Total Cobalt (Co)	mg/kg			<0.020			<0.020			7168265	0.040	0.020	7147937
Total Cobalt (Co)	mg/kg	0.201	0.181		0.432	0.949		0.229	1.40	7176856		0.020	
Total Copper (Cu)	mg/kg			5.19			5.38			7168265	7.93	0.050	7147937
Total Copper (Cu)	mg/kg	2.66	3.96		4.22	6.67		3.39	4.11	7176856		0.050	
Total Iron (Fe)	mg/kg			17			22			7168265	54	10	7147937
Total Iron (Fe)	mg/kg	435	63		676	53		256	70	7176856		10	
Total Lead (Pb)	mg/kg			<0.010			<0.010			7168265	0.041	0.010	7147937
Total Lead (Pb)	mg/kg	0.580	0.057		1.36	0.114		0.304	0.054	7176856		0.010	
Total Magnesium (Mg)	mg/kg			725			832			7168265	1180	10	7147937
Total Magnesium (Mg)	mg/kg	449	2340		434	4380		768	1090	7176856		10	
Total Manganese (Mn)	mg/kg			258			430			7168265	903	0.10	7147937
Total Manganese (Mn)	mg/kg	268	307		226	507		980	1780	7176856		0.10	
Total Mercury (Hg)	mg/kg			<0.010			<0.010			7168265	<0.010	0.010	7147937
Total Mercury (Hg)	mg/kg	0.028	<0.010		0.092	0.011		0.025	<0.010	7176856		0.010	
Total Molybdenum (Mo)	mg/kg			1.29			0.213			7168265	0.269	0.050	7147937

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8707	HJ8708	HJ8709	HJ8711	HJ8712	HJ8713	HJ8715	HJ8716		HJ8718		
Sampling Date		2013/08/29 15:44	2013/08/29 15:44	2013/08/29 15:44	2013/08/29 19:00	2013/08/29 19:00	2013/08/29 19:00	2013/08/29 15:05	2013/08/29 15:05		2013/08/29 15:05		
COC#		08377761	08377761	08377761	08377761	08377761	08377761	08377761	08377761		08377762		
	UNITS	**6-VC-A**	**6-VC-B**	**6-VC-C**	**DP3-VC-A**	**DP3-VC-B**	**DP3-VC-C**	**10-VC-A**	**10-VC-B**	**QC Batch**	**10-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.393	0.220		0.210	0.106		0.100	0.375	7176856		0.050	
Total Nickel (Ni)	mg/kg			0.640			0.557			7168265	0.735	0.050	7147937
Total Nickel (Ni)	mg/kg	1.11	2.45		1.33	7.22		0.869	0.821	7176856		0.050	
Total Phosphorus (P)	mg/kg			1180			2000			7168265	2590	10	7147937
Total Phosphorus (P)	mg/kg	522	749		829	3570		887	2300	7176856		10	
Total Potassium (K)	mg/kg			8240			10500			7168265	12200	10	7147937
Total Potassium (K)	mg/kg	975	7850		1260	10600		1460	12400	7176856		10	
Total Selenium (Se)	mg/kg			<0.050			<0.050			7168265	<0.050	0.050	7147937
Total Selenium (Se)	mg/kg	<0.050	<0.050		0.071	0.052		<0.050	<0.050	7176856		0.050	
Total Silver (Ag)	mg/kg			<0.020			<0.020			7168265	<0.020	0.020	7147937
Total Silver (Ag)	mg/kg	<0.020	<0.020		0.214	<0.020		0.030	<0.020	7176856		0.020	
Total Sodium (Na)	mg/kg			<10			<10			7168265	<10	10	7147937
Total Sodium (Na)	mg/kg	20	13		37	<10		12	101	7176856		10	
Total Strontium (Sr)	mg/kg			3.70			2.83			7168265	4.43	0.10	7147937
Total Strontium (Sr)	mg/kg	8.61	53.6		15.2	139		12.0	57.4	7176856		0.10	
Total Thallium (Tl)	mg/kg			<0.0020			<0.0020			7168265	<0.0020	0.0020	7147937
Total Thallium (Tl)	mg/kg	0.0061	<0.0020		0.0074	0.0055		0.0027	<0.0020	7176856		0.0020	
Total Tin (Sn)	mg/kg			<0.10			<0.10			7168265	<0.10	0.10	7147937
Total Tin (Sn)	mg/kg	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	7176856		0.10	
Total Titanium (Ti)	mg/kg			<1.0			<1.0			7168265	<1.0	1.0	7147937
Total Titanium (Ti)	mg/kg	17.0	<1.0		22.6	1.2		9.5	1.4	7176856		1.0	
Total Uranium (U)	mg/kg			<0.0020			<0.0020			7168265	<0.0020	0.0020	7147937
Total Uranium (U)	mg/kg	0.0137	<0.0020		0.0246	<0.0020		0.0087	<0.0020	7176856		0.0020	
Total Vanadium (V)	mg/kg			<0.20			<0.20			7168265	<0.20	0.20	7147937
Total Vanadium (V)	mg/kg	0.89	<0.20		1.18	<0.20		0.45	<0.20	7176856		0.20	
Total Zinc (Zn)	mg/kg			20.8			13.4			7168265	24.4	0.20	7147937
Total Zinc (Zn)	mg/kg	36.2	429		34.0	118		66.9	91.7	7176856		0.20	

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8720	HJ8721		HJ8722	HJ8724	HJ8725	HJ8726	HJ8728	HJ8729	HJ8730		
Sampling Date		2013/08/29 12:45	2013/08/29 12:45		2013/08/29 12:45	2013/08/29 10:55	2013/08/29 10:55	2013/08/29 10:55	2013/08/29 17:00	2013/08/29 17:00	2013/08/29 17:00		
COC#		08377762	08377762		08377763	08377763	08377763	08377763	08377763	08377763	08377763		
	UNITS	**21-VC-A**	**21-VC-B**	**QC Batch**	**21-VC-C**	**16-VC-A**	**16-VC-B**	**16-VC-C**	**36-VC-A**	**36-VC-B**	**36-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg			7147937	8.2			24.2			21.9	1.0	7168265
Total Aluminum (Al)	mg/kg	290	48.2	7176856		139	20.5		202	29.1		1.0	7176856
Total Antimony (Sb)	mg/kg			7147937	<0.0050			<0.0050			<0.0050	0.0050	7168265
Total Antimony (Sb)	mg/kg	0.0589	0.0085	7176856		0.0325	0.0076		0.0429	0.0215		0.0050	7176856
Total Arsenic (As)	mg/kg			7147937	<0.050			<0.050			<0.050	0.050	7168265
Total Arsenic (As)	mg/kg	0.562	0.051	7176856		0.283	<0.050		0.333	0.143		0.050	7176856
Total Barium (Ba)	mg/kg			7147937	14.0			13.0			12.7	0.10	7168265
Total Barium (Ba)	mg/kg	68.8	169	7176856		14.3	102		92.6	312		0.10	7176856
Total Beryllium (Be)	mg/kg			7147937	<0.10			<0.10			<0.10	0.10	7168265
Total Beryllium (Be)	mg/kg	<0.10	<0.10	7176856		<0.10	<0.10		<0.10	<0.10		0.10	7176856
Total Bismuth (Bi)	mg/kg			7147937	<0.10			<0.10			<0.10	0.10	7168265
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	7176856		<0.10	<0.10		<0.10	<0.10		0.10	7176856
Total Boron (B)	mg/kg			7147937	6.4			10.1			2.7	2.0	7168265
Total Boron (B)	mg/kg	<2.0	8.7	7176856		<2.0	6.2		<2.0	9.9		2.0	7176856
Total Cadmium (Cd)	mg/kg			7147937	<0.010			<0.010			<0.010	0.010	7168265
Total Cadmium (Cd)	mg/kg	0.288	1.51	7176856		0.052	1.40		0.098	2.34		0.010	7176856
Total Calcium (Ca)	mg/kg			7147937	1580			1410			935	10	7168265
Total Calcium (Ca)	mg/kg	9650	12800	7176856		1080	12000		5400	22400		10	7176856
Total Chromium (Cr)	mg/kg			7147937	<0.20			<0.20			<0.20	0.20	7168265
Total Chromium (Cr)	mg/kg	0.69	<0.20	7176856		0.39	<0.20		0.60	<0.20		0.20	7176856
Total Cobalt (Co)	mg/kg			7147937	<0.020			<0.020			<0.020	0.020	7168265
Total Cobalt (Co)	mg/kg	0.249	1.07	7176856		0.114	0.313		0.194	1.17		0.020	7176856
Total Copper (Cu)	mg/kg			7147937	4.54			5.16			4.30	0.050	7168265
Total Copper (Cu)	mg/kg	3.56	5.91	7176856		1.70	3.43		3.35	5.42		0.050	7176856
Total Iron (Fe)	mg/kg			7147937	19			31			17	10	7168265
Total Iron (Fe)	mg/kg	434	74	7176856		245	61		321	68		10	7176856
Total Lead (Pb)	mg/kg			7147937	<0.010			<0.010			<0.010	0.010	7168265
Total Lead (Pb)	mg/kg	0.547	0.067	7176856		0.276	0.044		0.397	0.112		0.010	7176856
Total Magnesium (Mg)	mg/kg			7147937	794			783			597	10	7168265
Total Magnesium (Mg)	mg/kg	1190	4660	7176856		321	4590		737	5020		10	7176856
Total Manganese (Mn)	mg/kg			7147937	353			440			251	0.10	7168265
Total Manganese (Mn)	mg/kg	388	440	7176856		209	423		503	370		0.10	7176856
Total Mercury (Hg)	mg/kg			7147937	<0.010			<0.010			<0.010	0.010	7168265
Total Mercury (Hg)	mg/kg	0.083	0.015	7176856		0.013	<0.010		0.022	0.010		0.010	7176856
Total Molybdenum (Mo)	mg/kg			7147937	0.059			<0.050			0.541	0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8720	HJ8721		HJ8722	HJ8724	HJ8725	HJ8726	HJ8728	HJ8729	HJ8730		
Sampling Date		2013/08/29 12:45	2013/08/29 12:45		2013/08/29 12:45	2013/08/29 10:55	2013/08/29 10:55	2013/08/29 10:55	2013/08/29 17:00	2013/08/29 17:00	2013/08/29 17:00		
COC#		08377762	08377762		08377763	08377763	08377763	08377763	08377763	08377763	08377763		
	UNITS	**21-VC-A**	**21-VC-B**	**QC Batch**	**21-VC-C**	**16-VC-A**	**16-VC-B**	**16-VC-C**	**36-VC-A**	**36-VC-B**	**36-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.095	0.343	7176856		0.054	0.180		0.296	0.373		0.050	7176856
Total Nickel (Ni)	mg/kg			7147937	0.201			0.345			0.677	0.050	7168265
Total Nickel (Ni)	mg/kg	1.22	4.25	7176856		0.516	1.04		1.30	7.92		0.050	7176856
Total Phosphorus (P)	mg/kg			7147937	1460			1400			1360	10	7168265
Total Phosphorus (P)	mg/kg	1090	4120	7176856		609	3420		806	4960		10	7176856
Total Potassium (K)	mg/kg			7147937	8820			8410			7700	10	7168265
Total Potassium (K)	mg/kg	2440	15700	7176856		1260	11700		1430	12400		10	7176856
Total Selenium (Se)	mg/kg			7147937	<0.050			<0.050			<0.050	0.050	7168265
Total Selenium (Se)	mg/kg	<0.050	0.066	7176856		<0.050	<0.050		<0.050	<0.050		0.050	7176856
Total Silver (Ag)	mg/kg			7147937	<0.020			<0.020			<0.020	0.020	7168265
Total Silver (Ag)	mg/kg	0.111	<0.020	7176856		<0.020	<0.020		0.049	<0.020		0.020	7176856
Total Sodium (Na)	mg/kg			7147937	<10			<10			<10	10	7168265
Total Sodium (Na)	mg/kg	17	<10	7176856		11	40		10	<10		10	7176856
Total Strontium (Sr)	mg/kg			7147937	3.25			2.56			3.38	0.10	7168265
Total Strontium (Sr)	mg/kg	41.9	99.0	7176856		3.90	80.2		30.6	210		0.10	7176856
Total Thallium (Tl)	mg/kg			7147937	<0.0020			<0.0020			<0.0020	0.0020	7168265
Total Thallium (Tl)	mg/kg	0.0065	0.0052	7176856		0.0023	0.0026		0.0065	0.0063		0.0020	7176856
Total Tin (Sn)	mg/kg			7147937	<0.10			<0.10			<0.10	0.10	7168265
Total Tin (Sn)	mg/kg	<0.10	<0.10	7176856		<0.10	<0.10		<0.10	<0.10		0.10	7176856
Total Titanium (Ti)	mg/kg			7147937	<1.0			<1.0			<1.0	1.0	7168265
Total Titanium (Ti)	mg/kg	14.5	1.5	7176856		8.7	1.3		12.0	1.2		1.0	7176856
Total Uranium (U)	mg/kg			7147937	<0.0020			<0.0020			<0.0020	0.0020	7168265
Total Uranium (U)	mg/kg	0.0144	<0.0020	7176856		0.0094	<0.0020		0.0107	<0.0020		0.0020	7176856
Total Vanadium (V)	mg/kg			7147937	<0.20			<0.20			<0.20	0.20	7168265
Total Vanadium (V)	mg/kg	0.82	<0.20	7176856		0.44	<0.20		0.56	<0.20		0.20	7176856
Total Zinc (Zn)	mg/kg			7147937	13.1			12.1			8.26	0.20	7168265
Total Zinc (Zn)	mg/kg	88.9	156	7176856		18.0	71.6		26.6	57.3		0.20	7176856

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8732	HJ8733	HJ8734	HJ8736	HJ8736	HJ8737	HJ8738	HJ8740	HJ8741		
Sampling Date		2013/08/29 19:10	2013/08/29 19:10	2013/08/29 19:10	2013/08/29 18:25	2013/08/29 18:25	2013/08/29 18:25	2013/08/29 18:25	2013/08/29 17:35	2013/08/29 17:35		
COC#		08377763	08377764	08377764	08377764	08377764	08377764	08377764	08377764	08377764		
	UNITS	**1-VC-A**	**1-VC-B**	**1-VC-C**	**32-VC-A**	**32-VC-A Lab-Dup**	**32-VC-B**	**32-VC-C**	**28-VC-A**	**28-VC-B**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg			23.6				15.3			1.0	7168265
Total Aluminum (Al)	mg/kg	1170	66.6		163	179	56.5		261	24.7	1.0	7176856
Total Antimony (Sb)	mg/kg			<0.0050				<0.0050			0.0050	7168265
Total Antimony (Sb)	mg/kg	0.113	0.0058		0.0534	0.0597	0.0101		0.0590	0.0069	0.0050	7176856
Total Arsenic (As)	mg/kg			<0.050				<0.050			0.050	7168265
Total Arsenic (As)	mg/kg	0.983	0.076		0.480	0.614	<0.050		0.447	<0.050	0.050	7176856
Total Barium (Ba)	mg/kg			10.4				7.48			0.10	7168265
Total Barium (Ba)	mg/kg	83.7	208		14.0	15.1	52.2		115	131	0.10	7176856
Total Beryllium (Be)	mg/kg			<0.10				<0.10			0.10	7168265
Total Beryllium (Be)	mg/kg	<0.10	<0.10		<0.10	<0.10	<0.10		<0.10	<0.10	0.10	7176856
Total Bismuth (Bi)	mg/kg			<0.10				<0.10			0.10	7168265
Total Bismuth (Bi)	mg/kg	<0.10	<0.10		<0.10	<0.10	<0.10		<0.10	<0.10	0.10	7176856
Total Boron (B)	mg/kg			3.4				8.7			2.0	7168265
Total Boron (B)	mg/kg	<2.0	9.2		<2.0	<2.0	10.4		3.3	17.4	2.0	7176856
Total Cadmium (Cd)	mg/kg			<0.010				<0.010			0.010	7168265
Total Cadmium (Cd)	mg/kg	0.257	6.61		0.168	0.169	1.40		0.164	3.15	0.010	7176856
Total Calcium (Ca)	mg/kg			1450				1140			10	7168265
Total Calcium (Ca)	mg/kg	1650	14900		1470	1590	9310		5850	12100	10	7176856
Total Chromium (Cr)	mg/kg			<0.20				<0.20			0.20	7168265
Total Chromium (Cr)	mg/kg	1.67	<0.20		0.45	0.49	<0.20		0.45	<0.20	0.20	7176856
Total Cobalt (Co)	mg/kg			<0.020				<0.020			0.020	7168265
Total Cobalt (Co)	mg/kg	0.738	1.44		0.178	0.175	0.708		0.160	0.148	0.020	7176856
Total Copper (Cu)	mg/kg			5.18				4.57			0.050	7168265
Total Copper (Cu)	mg/kg	5.50	5.54		2.07	2.23	4.27		3.70	6.87	0.050	7176856
Total Iron (Fe)	mg/kg			20				16			10	7168265
Total Iron (Fe)	mg/kg	1160	67		283	310	91		305	84	10	7176856
Total Lead (Pb)	mg/kg			<0.010				<0.010			0.010	7168265
Total Lead (Pb)	mg/kg	1.68	0.061		0.400	0.497	0.042		0.385	0.050	0.010	7176856
Total Magnesium (Mg)	mg/kg			795				744			10	7168265
Total Magnesium (Mg)	mg/kg	459	5170		451	489	2870		1040	2980	10	7176856
Total Manganese (Mn)	mg/kg			418				349			0.10	7168265
Total Manganese (Mn)	mg/kg	136	549		217	223	610		148	462	0.10	7176856
Total Mercury (Hg)	mg/kg			<0.010				<0.010			0.010	7168265
Total Mercury (Hg)	mg/kg	0.119	<0.010		0.032	0.025	<0.010		0.026	<0.010	0.010	7176856

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8732	HJ8733	HJ8734	HJ8736	HJ8736	HJ8737	HJ8738	HJ8740	HJ8741		
Sampling Date		2013/08/29 19:10	2013/08/29 19:10	2013/08/29 19:10	2013/08/29 18:25	2013/08/29 18:25	2013/08/29 18:25	2013/08/29 18:25	2013/08/29 17:35	2013/08/29 17:35		
COC#		08377763	08377764	08377764	08377764	08377764	08377764	08377764	08377764	08377764		
	UNITS	**1-VC-A**	**1-VC-B**	**1-VC-C**	**32-VC-A**	**32-VC-A Lab-Dup**	**32-VC-B**	**32-VC-C**	**28-VC-A**	**28-VC-B**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg			0.236				<0.050			0.050	7168265
Total Molybdenum (Mo)	mg/kg	0.575	0.137		<0.050	0.054	0.136		<0.050	0.126	0.050	7176856
Total Nickel (Ni)	mg/kg			0.555				0.273			0.050	7168265
Total Nickel (Ni)	mg/kg	1.97	6.52		0.965	0.815	1.52		1.54	0.885	0.050	7176856
Total Phosphorus (P)	mg/kg			1810				1420			10	7168265
Total Phosphorus (P)	mg/kg	781	3670		517	547	1490		701	1320	10	7176856
Total Potassium (K)	mg/kg			9550				7660			10	7168265
Total Potassium (K)	mg/kg	962	10600		980	1040	10800		1580	10400	10	7176856
Total Selenium (Se)	mg/kg			<0.050				<0.050			0.050	7168265
Total Selenium (Se)	mg/kg	0.080	<0.050		<0.050	<0.050	<0.050		<0.050	<0.050	0.050	7176856
Total Silver (Ag)	mg/kg			<0.020				<0.020			0.020	7168265
Total Silver (Ag)	mg/kg	0.800	0.034		<0.020	<0.020	<0.020		0.093	<0.020	0.020	7176856
Total Sodium (Na)	mg/kg			<10				<10			10	7168265
Total Sodium (Na)	mg/kg	37	<10		15	15	<10		19	<10	10	7176856
Total Strontium (Sr)	mg/kg			2.79				1.43			0.10	7168265
Total Strontium (Sr)	mg/kg	17.9	151		5.18	5.41	56.0		33.2	71.6	0.10	7176856
Total Thallium (Tl)	mg/kg			<0.0020				<0.0020			0.0020	7168265
Total Thallium (Tl)	mg/kg	0.0082	0.0061		0.0027	0.0031	0.0075		0.0118	0.0070	0.0020	7176856
Total Tin (Sn)	mg/kg			<0.10				<0.10			0.10	7168265
Total Tin (Sn)	mg/kg	<0.10	<0.10		<0.10	<0.10	<0.10		<0.10	<0.10	0.10	7176856
Total Titanium (Ti)	mg/kg			<1.0				<1.0			1.0	7168265
Total Titanium (Ti)	mg/kg	34.7	1.5		10.0	10.8	<1.0		9.1	1.5	1.0	7176856
Total Uranium (U)	mg/kg			<0.0020				<0.0020			0.0020	7168265
Total Uranium (U)	mg/kg	0.0364	<0.0020		0.0097	0.0116	0.0032		0.0128	<0.0020	0.0020	7176856
Total Vanadium (V)	mg/kg			<0.20				<0.20			0.20	7168265
Total Vanadium (V)	mg/kg	1.91	<0.20		0.45	0.50	<0.20		0.52	<0.20	0.20	7176856
Total Zinc (Zn)	mg/kg			12.8				11.0			0.20	7168265
Total Zinc (Zn)	mg/kg	21.5	84.3		39.3	41.3	170		36.3	361	0.20	7176856

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8742	HJ8745	HJ8746	HJ8747	HJ8749	HJ8750	HJ8751	HJ8753	HJ8754		
Sampling Date		2013/08/29 17:35	2013/08/29 09:55	2013/08/29 09:55	2013/08/29 09:55	2013/08/30 17:17	2013/08/30 17:17	2013/08/30 17:17	2013/08/30 09:30	2013/08/30 09:30		
COC#		08377764	08377765	08377765	08377765	08377765	08377765	08377765	08377765	08377765		
	UNITS	**28-VC-C**	**8-VC-A**	**8-VC-B**	**8-VC-C**	**27-VC-A**	**27-VC-B**	**27-VC-C**	**42-VC-A**	**42-VC-B**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	12.8			36.3			29.4			1.0	7168265
Total Aluminum (Al)	mg/kg		179	32.3		184	42.8		536	55.1	1.0	7176856
Total Antimony (Sb)	mg/kg	<0.0050			0.0073			0.0487			0.0050	7168265
Total Antimony (Sb)	mg/kg		0.0728	0.0061		0.143	0.0310		0.0797	0.0054	0.0050	7176856
Total Arsenic (As)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Arsenic (As)	mg/kg		0.517	<0.050		1.12	0.278		0.687	<0.050	0.050	7176856
Total Barium (Ba)	mg/kg	11.4			13.8			13.4			0.10	7168265
Total Barium (Ba)	mg/kg		12.7	68.5		21.1	61.9		44.5	96.4	0.10	7176856
Total Beryllium (Be)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Beryllium (Be)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7176856
Total Bismuth (Bi)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Bismuth (Bi)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7176856
Total Boron (B)	mg/kg	10.0			12.0			4.7			2.0	7168265
Total Boron (B)	mg/kg		<2.0	9.7		<2.0	6.1		<2.0	6.0	2.0	7176856
Total Cadmium (Cd)	mg/kg	<0.010			<0.010			0.027			0.010	7168265
Total Cadmium (Cd)	mg/kg		0.073	1.56		0.205	4.48		0.060	0.567	0.010	7176856
Total Calcium (Ca)	mg/kg	1170			1460			1600			10	7168265
Total Calcium (Ca)	mg/kg		1230	7260		2440	14800		1960	7280	10	7176856
Total Chromium (Cr)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Chromium (Cr)	mg/kg		0.59	<0.20		0.46	<0.20		1.31	0.21	0.20	7176856
Total Cobalt (Co)	mg/kg	<0.020			<0.020			<0.020			0.020	7168265
Total Cobalt (Co)	mg/kg		0.162	0.571		0.163	0.643		0.384	1.13	0.020	7176856
Total Copper (Cu)	mg/kg	3.98			7.42			4.31			0.050	7168265
Total Copper (Cu)	mg/kg		1.64	4.74		1.93	4.75		3.62	4.40	0.050	7176856
Total Iron (Fe)	mg/kg	15			37			25			10	7168265
Total Iron (Fe)	mg/kg		323	67		304	72		780	96	10	7176856
Total Lead (Pb)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Lead (Pb)	mg/kg		0.563	0.050		0.937	0.184		1.09	0.046	0.010	7176856
Total Magnesium (Mg)	mg/kg	755			852			878			10	7168265
Total Magnesium (Mg)	mg/kg		302	1630		482	4010		485	2520	10	7176856
Total Manganese (Mn)	mg/kg	399			521			296			0.10	7168265
Total Manganese (Mn)	mg/kg		109	1350		174	299		392	493	0.10	7176856
Total Mercury (Hg)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Mercury (Hg)	mg/kg		<0.010	0.011		0.010	<0.010		0.053	<0.010	0.010	7176856
Total Molybdenum (Mo)	mg/kg	0.127			<0.050			0.220			0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8742	HJ8745	HJ8746	HJ8747	HJ8749	HJ8750	HJ8751	HJ8753	HJ8754		
Sampling Date		2013/08/29 17:35	2013/08/29 09:55	2013/08/29 09:55	2013/08/29 09:55	2013/08/30 17:17	2013/08/30 17:17	2013/08/30 17:17	2013/08/30 09:30	2013/08/30 09:30		
COC#		08377764	08377765	08377765	08377765	08377765	08377765	08377765	08377765	08377765		
	UNITS	**28-VC-C**	**8-VC-A**	**8-VC-B**	**8-VC-C**	**27-VC-A**	**27-VC-B**	**27-VC-C**	**42-VC-A**	**42-VC-B**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		0.059	0.098		0.084	0.103		0.193	0.189	0.050	7176856
Total Nickel (Ni)	mg/kg	0.355			0.357			0.801			0.050	7168265
Total Nickel (Ni)	mg/kg		0.674	0.985		0.577	1.28		1.29	1.37	0.050	7176856
Total Phosphorus (P)	mg/kg	1500			1500			1970			10	7168265
Total Phosphorus (P)	mg/kg		402	1180		666	4140		686	1680	10	7176856
Total Potassium (K)	mg/kg	7990			9540			11600			10	7168265
Total Potassium (K)	mg/kg		747	9180		1280	10600		1750	10400	10	7176856
Total Selenium (Se)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Selenium (Se)	mg/kg		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	0.050	7176856
Total Silver (Ag)	mg/kg	<0.020			<0.020			<0.020			0.020	7168265
Total Silver (Ag)	mg/kg		0.061	<0.020		0.096	<0.020		0.044	<0.020	0.020	7176856
Total Sodium (Na)	mg/kg	<10			<10			15			10	7168265
Total Sodium (Na)	mg/kg		14	24		18	<10		41	11	10	7176856
Total Strontium (Sr)	mg/kg	2.03			1.55			4.07			0.10	7168265
Total Strontium (Sr)	mg/kg		5.67	47.2		9.56	83.4		8.64	57.3	0.10	7176856
Total Thallium (Tl)	mg/kg	<0.0020			<0.0020			<0.0020			0.0020	7168265
Total Thallium (Tl)	mg/kg		0.0038	0.0085		0.0056	0.0035		0.0187	0.0031	0.0020	7176856
Total Tin (Sn)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Tin (Sn)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7176856
Total Titanium (Ti)	mg/kg	<1.0			<1.0			<1.0			1.0	7168265
Total Titanium (Ti)	mg/kg		10.8	1.1		11.8	1.6		30.1	1.1	1.0	7176856
Total Uranium (U)	mg/kg	<0.0020			<0.0020			<0.0020			0.0020	7168265
Total Uranium (U)	mg/kg		0.0099	<0.0020		0.0099	<0.0020		0.0405	<0.0020	0.0020	7176856
Total Vanadium (V)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Vanadium (V)	mg/kg		0.53	<0.20		0.56	<0.20		1.45	<0.20	0.20	7176856
Total Zinc (Zn)	mg/kg	11.5			14.2			13.7			0.20	7168265
Total Zinc (Zn)	mg/kg		18.5	113		26.4	147		24.9	168	0.20	7176856

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8755		HJ8769	HJ8770	HJ8771	HJ8773	HJ8774	HJ8775	HJ8777	HJ8778		
Sampling Date		2013/08/30 09:30		2013/08/30 11:20	2013/08/30 11:20	2013/08/30 11:20	2013/08/30 11:50	2013/08/30 11:50	2013/08/30 11:50	2013/08/30 14:41	2013/08/30 14:41		
COC#		08377765		08377766	08377766	08377766	08377766	08377766	08377766	08377766	08377766		
	UNITS	**42-VC-C**	**QC Batch**	**38-VC-A**	**38-VC-B**	**38-VC-C**	**DP4-VC-A**	**DP4-VC-B**	**DP4-VC-C**	**29-VC-A**	**29-VC-B**	**RDL**	**QC Batch**
Total Metals by ICPMS													
Total Aluminum (Al)	mg/kg	16.7	7168265			17.9			12.4			1.0	7168265
Total Aluminum (Al)	mg/kg		7176856	189	28.2		224	27.3		303	54.7	1.0	7177179
Total Antimony (Sb)	mg/kg	<0.0050	7168265			<0.0050			<0.0050			0.0050	7168265
Total Antimony (Sb)	mg/kg		7176856	0.483	0.0220		0.130	0.0071		0.152	0.0219	0.0050	7177179
Total Arsenic (As)	mg/kg	<0.050	7168265			<0.050			<0.050			0.050	7168265
Total Arsenic (As)	mg/kg		7176856	3.15	0.175		0.901	0.057		1.19	0.172	0.050	7177179
Total Barium (Ba)	mg/kg	8.16	7168265			7.99			15.6			0.10	7168265
Total Barium (Ba)	mg/kg		7176856	10.1	35.7		41.2	75.9		38.1	205	0.10	7177179
Total Beryllium (Be)	mg/kg	<0.10	7168265			<0.10			<0.10			0.10	7168265
Total Beryllium (Be)	mg/kg		7176856	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Bismuth (Bi)	mg/kg	<0.10	7168265			<0.10			<0.10			0.10	7168265
Total Bismuth (Bi)	mg/kg		7176856	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Boron (B)	mg/kg	3.2	7168265			8.0			12.3			2.0	7168265
Total Boron (B)	mg/kg		7176856	<2.0	4.4		<2.0	6.6		<2.0	9.0	2.0	7177179
Total Cadmium (Cd)	mg/kg	<0.010	7168265			<0.010			<0.010			0.010	7168265
Total Cadmium (Cd)	mg/kg		7176856	0.074	1.68		0.570	1.76		0.393	4.91	0.010	7177179
Total Calcium (Ca)	mg/kg	1230	7168265			1300			1310			10	7168265
Total Calcium (Ca)	mg/kg		7176856	1070	8840		3010	8320		4390	15200	10	7177179
Total Chromium (Cr)	mg/kg	<0.20	7168265			<0.20			<0.20			0.20	7168265
Total Chromium (Cr)	mg/kg		7176856	0.34	<0.20		0.52	<0.20		0.51	<0.20	0.20	7177179
Total Cobalt (Co)	mg/kg	<0.020	7168265			<0.020			<0.020			0.020	7168265
Total Cobalt (Co)	mg/kg		7176856	0.101	0.334		0.231	0.259		0.195	0.865	0.020	7177179
Total Copper (Cu)	mg/kg	4.58	7168265			4.91			7.12			0.050	7168265
Total Copper (Cu)	mg/kg		7176856	1.76	4.25		3.60	3.84		2.39	4.48	0.050	7177179
Total Iron (Fe)	mg/kg	17	7168265			18			19			10	7168265
Total Iron (Fe)	mg/kg		7176856	261	89		400	70		437	71	10	7177179
Total Lead (Pb)	mg/kg	<0.010	7168265			<0.010			<0.010			0.010	7168265
Total Lead (Pb)	mg/kg		7176856	2.70	0.125		1.03	0.063		1.14	0.169	0.010	7177179
Total Magnesium (Mg)	mg/kg	821	7168265			805			845			10	7168265
Total Magnesium (Mg)	mg/kg		7176856	272	2330		630	2450		441	4360	10	7177179
Total Manganese (Mn)	mg/kg	404	7168265			440			424			0.10	7168265
Total Manganese (Mn)	mg/kg		7176856	243	280		398	341		294	290	0.10	7177179
Total Mercury (Hg)	mg/kg	<0.010	7168265			<0.010			<0.010			0.010	7168265
Total Mercury (Hg)	mg/kg		7176856	0.011	<0.010		0.016	<0.010		0.041	<0.010	0.010	7177179
Total Molybdenum (Mo)	mg/kg	0.107	7168265			<0.050			<0.050			0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8755		HJ8769	HJ8770	HJ8771	HJ8773	HJ8774	HJ8775	HJ8777	HJ8778		
Sampling Date		2013/08/30 09:30		2013/08/30 11:20	2013/08/30 11:20	2013/08/30 11:20	2013/08/30 11:50	2013/08/30 11:50	2013/08/30 11:50	2013/08/30 14:41	2013/08/30 14:41		
COC#		08377765		08377766	08377766	08377766	08377766	08377766	08377766	08377766	08377766		
	UNITS	**42-VC-C**	**QC Batch**	**38-VC-A**	**38-VC-B**	**38-VC-C**	**DP4-VC-A**	**DP4-VC-B**	**DP4-VC-C**	**29-VC-A**	**29-VC-B**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		7176856	0.055	0.078		0.109	0.088		0.082	0.145	0.050	7177179
Total Nickel (Ni)	mg/kg	0.240	7168265			0.288			0.211			0.050	7168265
Total Nickel (Ni)	mg/kg		7176856	0.391	0.644		0.757	0.680		0.775	1.73	0.050	7177179
Total Phosphorus (P)	mg/kg	1280	7168265			1290			1240			10	7168265
Total Phosphorus (P)	mg/kg		7176856	431	1450		567	831		935	4620	10	7177179
Total Potassium (K)	mg/kg	8370	7168265			9260			10100			10	7168265
Total Potassium (K)	mg/kg		7176856	999	9820		1250	7480		1850	13600	10	7177179
Total Selenium (Se)	mg/kg	<0.050	7168265			<0.050			<0.050			0.050	7168265
Total Selenium (Se)	mg/kg		7176856	<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	0.050	7177179
Total Silver (Ag)	mg/kg	<0.020	7168265			<0.020			<0.020			0.020	7168265
Total Silver (Ag)	mg/kg		7176856	0.146	<0.020		0.051	<0.020		0.062	<0.020	0.020	7177179
Total Sodium (Na)	mg/kg	<10	7168265			<10			<10			10	7168265
Total Sodium (Na)	mg/kg		7176856	15	<10		19	<10		37	<10	10	7177179
Total Strontium (Sr)	mg/kg	1.05	7168265			1.38			2.50			0.10	7168265
Total Strontium (Sr)	mg/kg		7176856	2.65	44.9		14.5	54.2		17.0	147	0.10	7177179
Total Thallium (Tl)	mg/kg	<0.0020	7168265			<0.0020			<0.0020			0.0020	7168265
Total Thallium (Tl)	mg/kg		7176856	0.0038	0.0039		0.0052	0.0029		<0.0020	0.0048	0.0020	7177179
Total Tin (Sn)	mg/kg	<0.10	7168265			<0.10			<0.10			0.10	7168265
Total Tin (Sn)	mg/kg		7176856	<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Titanium (Ti)	mg/kg	<1.0	7168265			<1.0			<1.0			1.0	7168265
Total Titanium (Ti)	mg/kg		7176856	6.6	1.3		11.3	1.5		13.3	1.5	1.0	7177179
Total Uranium (U)	mg/kg	<0.0020	7168265			<0.0020			<0.0020			0.0020	7168265
Total Uranium (U)	mg/kg		7176856	0.0075	<0.0020		0.0125	<0.0020		0.0197	<0.0020	0.0020	7177179
Total Vanadium (V)	mg/kg	<0.20	7168265			<0.20			<0.20			0.20	7168265
Total Vanadium (V)	mg/kg		7176856	0.38	<0.20		0.58	<0.20		0.76	<0.20	0.20	7177179
Total Zinc (Zn)	mg/kg	11.3	7168265			11.7			15.2			0.20	7168265
Total Zinc (Zn)	mg/kg		7176856	17.4	101		69.0	239		33.6	71.7	0.20	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8805	HJ8807	HJ8808	HJ8809	HJ8811	HJ8812	HJ8813	HJ8815	HJ8844		
Sampling Date		2013/08/30 14:41	2013/08/30 13:15	2013/08/30 13:15	2013/08/30 13:15	2013/08/30 10:15	2013/08/30 10:15	2013/08/30 10:15	2013/08/30 15:42	2013/08/30 15:42		
COC#		08377767	08377767	08377767	08377767	08377767	08377767	08377767	08377767	08377768		
	UNITS	**29-VC-C**	**11-VC-A**	**11-VC-B**	**11-VC-C**	**15-VC-A**	**15-VC-B**	**15-VC-C**	**CR1-VC-A**	**CR1-VC-B**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	21.6			23.8			11.6			1.0	7168265
Total Aluminum (Al)	mg/kg		180	71.7		243	94.1		467	42.0	1.0	7177179
Total Antimony (Sb)	mg/kg	0.0056			<0.0050			<0.0050			0.0050	7168265
Total Antimony (Sb)	mg/kg		0.120	0.0140		0.128	0.0107		0.0516	0.0128	0.0050	7177179
Total Arsenic (As)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Arsenic (As)	mg/kg		0.904	0.149		0.689	<0.050		0.497	0.576	0.050	7177179
Total Barium (Ba)	mg/kg	15.4			10.5			7.63			0.10	7168265
Total Barium (Ba)	mg/kg		17.4	47.7		22.6	30.2		62.5	32.0	0.10	7177179
Total Beryllium (Be)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Beryllium (Be)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Bismuth (Bi)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Bismuth (Bi)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Boron (B)	mg/kg	7.5			6.0			11.6			2.0	7168265
Total Boron (B)	mg/kg		<2.0	13.3		<2.0	17.2		<2.0	15.3	2.0	7177179
Total Cadmium (Cd)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Cadmium (Cd)	mg/kg		0.137	2.90		0.199	3.82		0.266	1.41	0.010	7177179
Total Calcium (Ca)	mg/kg	1350			1500			1240			10	7168265
Total Calcium (Ca)	mg/kg		1840	8680		2590	12100		2840	19000	10	7177179
Total Chromium (Cr)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Chromium (Cr)	mg/kg		0.50	<0.20		0.58	<0.20		0.84	<0.20	0.20	7177179
Total Cobalt (Co)	mg/kg	0.022			<0.020			<0.020			0.020	7168265
Total Cobalt (Co)	mg/kg		0.156	0.944		0.194	0.267		0.350	0.300	0.020	7177179
Total Copper (Cu)	mg/kg	4.44			5.10			5.83			0.050	7168265
Total Copper (Cu)	mg/kg		2.99	5.29		3.74	4.67		4.01	5.01	0.050	7177179
Total Iron (Fe)	mg/kg	20			26			20			10	7168265
Total Iron (Fe)	mg/kg		287	180		419	55		641	185	10	7177179
Total Lead (Pb)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Lead (Pb)	mg/kg		0.834	0.078		0.687	0.087		0.790	0.059	0.010	7177179
Total Magnesium (Mg)	mg/kg	764			797			760			10	7168265
Total Magnesium (Mg)	mg/kg		403	2410		567	3870		674	4420	10	7177179
Total Manganese (Mn)	mg/kg	122			507			298			0.10	7168265
Total Manganese (Mn)	mg/kg		357	396		439	715		237	403	0.10	7177179
Total Mercury (Hg)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Mercury (Hg)	mg/kg		0.013	<0.010		0.014	0.011		0.036	<0.010	0.010	7177179
Total Molybdenum (Mo)	mg/kg	0.257			<0.050			<0.050			0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8805	HJ8807	HJ8808	HJ8809	HJ8811	HJ8812	HJ8813	HJ8815	HJ8844		
Sampling Date		2013/08/30 14:41	2013/08/30 13:15	2013/08/30 13:15	2013/08/30 13:15	2013/08/30 10:15	2013/08/30 10:15	2013/08/30 10:15	2013/08/30 15:42	2013/08/30 15:42		
COC#		08377767	08377767	08377767	08377767	08377767	08377767	08377767	08377767	08377768		
	UNITS	**29-VC-C**	**11-VC-A**	**11-VC-B**	**11-VC-C**	**15-VC-A**	**15-VC-B**	**15-VC-C**	**CR1-VC-A**	**CR1-VC-B**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		0.055	0.121		0.106	0.093		0.142	0.290	0.050	7177179
Total Nickel (Ni)	mg/kg	0.633			0.352			0.532			0.050	7168265
Total Nickel (Ni)	mg/kg		0.681	2.68		0.708	0.569		1.29	0.264	0.050	7177179
Total Phosphorus (P)	mg/kg	1560			1420			1330			10	7168265
Total Phosphorus (P)	mg/kg		588	1480		709	957		971	1800	10	7177179
Total Potassium (K)	mg/kg	9840			8590			8960			10	7168265
Total Potassium (K)	mg/kg		1190	12000		1330	4790		1430	8030	10	7177179
Total Selenium (Se)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Selenium (Se)	mg/kg		<0.050	<0.050		<0.050	<0.050		<0.050	<0.050	0.050	7177179
Total Silver (Ag)	mg/kg	<0.020			<0.020			<0.020			0.020	7168265
Total Silver (Ag)	mg/kg		0.057	0.020		0.115	<0.020		0.043	<0.020	0.020	7177179
Total Sodium (Na)	mg/kg	<10			<10			<10			10	7168265
Total Sodium (Na)	mg/kg		14	19		18	149		30	43	10	7177179
Total Strontium (Sr)	mg/kg	4.85			1.09			1.88			0.10	7168265
Total Strontium (Sr)	mg/kg		4.28	54.8		7.85	49.8		16.6	95.2	0.10	7177179
Total Thallium (Tl)	mg/kg	<0.0020			0.0066			0.0044			0.0020	7168265
Total Thallium (Tl)	mg/kg		0.0050	<0.0020		0.0044	0.0127		0.0047	0.0043	0.0020	7177179
Total Tin (Sn)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Tin (Sn)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Titanium (Ti)	mg/kg	<1.0			<1.0			<1.0			1.0	7168265
Total Titanium (Ti)	mg/kg		8.5	1.0		12.8	<1.0		22.2	2.0	1.0	7177179
Total Uranium (U)	mg/kg	<0.0020			<0.0020			<0.0020			0.0020	7168265
Total Uranium (U)	mg/kg		0.0096	<0.0020		0.0134	<0.0020		0.0220	0.0180	0.0020	7177179
Total Vanadium (V)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Vanadium (V)	mg/kg		0.46	<0.20		0.70	<0.20		1.21	<0.20	0.20	7177179
Total Zinc (Zn)	mg/kg	10.8			12.2			14.3			0.20	7168265
Total Zinc (Zn)	mg/kg		36.9	247		55.6	346		39.7	301	0.20	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8845	HJ8847	HJ8939	HJ8940	HJ8942	HJ8943	HJ8944	HJ8946	HJ8950		
Sampling Date		2013/08/30 15:42	2013/08/30 16:00	2013/08/30 16:00	2013/08/30 16:00	2013/08/30 12:00	2013/08/30 12:00	2013/08/30 12:00	2013/08/31 10:00	2013/08/31 10:00		
COC#		08377768	08377768	08377769	08377769	08377769	08377769	08377769	08377769	08377770		
	UNITS	**CR1-VC-C**	**CU1-VC-A**	**CU1-VC-B**	**CU1-VC-C**	**23-VC-A**	**23-VC-B**	**23-VC-C**	**35-VC-A**	**35-VC-B**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	36.8			17.0			11.2			1.0	7168265
Total Aluminum (Al)	mg/kg		514	71.8		251	24.0		300	116	1.0	7177179
Total Antimony (Sb)	mg/kg	<0.0050			<0.0050			<0.0050			0.0050	7168265
Total Antimony (Sb)	mg/kg		0.133	0.0257		0.180	0.0111		0.619	0.0378	0.0050	7177179
Total Arsenic (As)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Arsenic (As)	mg/kg		1.16	0.147		1.31	0.074		6.72	0.300	0.050	7177179
Total Barium (Ba)	mg/kg	14.8			19.6			13.0			0.10	7168265
Total Barium (Ba)	mg/kg		115	63.0		23.6	119		31.3	77.9	0.10	7177179
Total Beryllium (Be)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Beryllium (Be)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Bismuth (Bi)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Bismuth (Bi)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Boron (B)	mg/kg	3.8			6.1			9.5			2.0	7168265
Total Boron (B)	mg/kg		<2.0	5.8		<2.0	7.9		<2.0	7.5	2.0	7177179
Total Cadmium (Cd)	mg/kg	0.015			<0.010			<0.010			0.010	7168265
Total Cadmium (Cd)	mg/kg		0.140	0.798		0.150	2.19		0.241	1.38	0.010	7177179
Total Calcium (Ca)	mg/kg	1750			1420			1140			10	7168265
Total Calcium (Ca)	mg/kg		7060	14200		1540	12600		1970	11900	10	7177179
Total Chromium (Cr)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Chromium (Cr)	mg/kg		1.36	<0.20		0.73	<0.20		0.78	<0.20	0.20	7177179
Total Cobalt (Co)	mg/kg	0.031			<0.020			<0.020			0.020	7168265
Total Cobalt (Co)	mg/kg		0.354	0.435		0.201	0.381		0.328	1.43	0.020	7177179
Total Copper (Cu)	mg/kg	5.44			4.57			5.81			0.050	7168265
Total Copper (Cu)	mg/kg		3.74	3.42		5.11	4.15		3.26	4.29	0.050	7177179
Total Iron (Fe)	mg/kg	40			22			17			10	7168265
Total Iron (Fe)	mg/kg		770	52		476	80		557	126	10	7177179
Total Lead (Pb)	mg/kg	0.020			<0.010			<0.010			0.010	7168265
Total Lead (Pb)	mg/kg		1.01	0.109		1.44	0.067		3.61	0.220	0.010	7177179
Total Magnesium (Mg)	mg/kg	874			774			701			10	7168265
Total Magnesium (Mg)	mg/kg		586	2530		348	3070		479	3760	10	7177179
Total Manganese (Mn)	mg/kg	155			375			357			0.10	7168265
Total Manganese (Mn)	mg/kg		339	127		153	445		385	541	0.10	7177179
Total Mercury (Hg)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Mercury (Hg)	mg/kg		0.046	0.010		<0.010	<0.010		0.024	<0.010	0.010	7177179
Total Molybdenum (Mo)	mg/kg	0.189			0.920			<0.050			0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8845	HJ8847	HJ8939	HJ8940	HJ8942	HJ8943	HJ8944	HJ8946	HJ8950		
Sampling Date		2013/08/30 15:42	2013/08/30 16:00	2013/08/30 16:00	2013/08/30 16:00	2013/08/30 12:00	2013/08/30 12:00	2013/08/30 12:00	2013/08/31 10:00	2013/08/31 10:00		
COC#		08377768	08377768	08377769	08377769	08377769	08377769	08377769	08377769	08377770		
	UNITS	**CR1-VC-C**	**CU1-VC-A**	**CU1-VC-B**	**CU1-VC-C**	**23-VC-A**	**23-VC-B**	**23-VC-C**	**35-VC-A**	**35-VC-B**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		0.374	0.144		0.068	0.119		0.093	0.144	0.050	7177179
Total Nickel (Ni)	mg/kg	0.921			0.521			0.281			0.050	7168265
Total Nickel (Ni)	mg/kg		1.32	0.924		0.822	0.591		1.07	3.46	0.050	7177179
Total Phosphorus (P)	mg/kg	1380			1910			1140			10	7168265
Total Phosphorus (P)	mg/kg		909	2360		419	839		568	1920	10	7177179
Total Potassium (K)	mg/kg	7970			8500			9460			10	7168265
Total Potassium (K)	mg/kg		1360	10400		844	9690		1270	11300	10	7177179
Total Selenium (Se)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Selenium (Se)	mg/kg		0.056	<0.050		<0.050	<0.050		<0.050	<0.050	0.050	7177179
Total Silver (Ag)	mg/kg	<0.020			<0.020			<0.020			0.020	7168265
Total Silver (Ag)	mg/kg		0.046	<0.020		0.066	<0.020		0.079	0.020	0.020	7177179
Total Sodium (Na)	mg/kg	<10			<10			<10			10	7168265
Total Sodium (Na)	mg/kg		28	15		11	<10		19	12	10	7177179
Total Strontium (Sr)	mg/kg	6.83			4.78			1.98			0.10	7168265
Total Strontium (Sr)	mg/kg		39.5	84.2		7.21	81.0		8.09	86.0	0.10	7177179
Total Thallium (Tl)	mg/kg	0.0034			0.0025			0.0029			0.0020	7168265
Total Thallium (Tl)	mg/kg		0.0114	<0.0020		0.0044	0.0025		0.0069	0.0029	0.0020	7177179
Total Tin (Sn)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Tin (Sn)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Titanium (Ti)	mg/kg	<1.0			<1.0			<1.0			1.0	7168265
Total Titanium (Ti)	mg/kg		25.0	<1.0		14.9	1.3		16.2	1.6	1.0	7177179
Total Uranium (U)	mg/kg	<0.0020			<0.0020			<0.0020			0.0020	7168265
Total Uranium (U)	mg/kg		0.0247	0.0045		0.0168	<0.0020		0.0155	0.0021	0.0020	7177179
Total Vanadium (V)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Vanadium (V)	mg/kg		1.37	<0.20		0.77	<0.20		0.87	<0.20	0.20	7177179
Total Zinc (Zn)	mg/kg	11.9			10.7			13.5			0.20	7168265
Total Zinc (Zn)	mg/kg		25.9	15.3		34.5	251		56.9	178	0.20	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8951	HJ8953	HJ8954	HJ8955	HJ8957	HJ8958	HJ8959	HJ8961	HJ8962		
Sampling Date		2013/08/31 10:00	2013/08/31 09:09	2013/08/31 09:09	2013/08/31 09:09	2013/08/31 11:45	2013/08/31 11:45	2013/08/31 11:45	2013/08/31 10:30	2013/08/31 10:30		
COC#		08377770	08377770	08377770	08377770	08377770	08377770	08377770	08377770	08377771		
	UNITS	**35-VC-C**	**CU2-VC-A**	**CU2-VC-B**	**CU2-VC-C**	**25-VC-A**	**25-VC-B**	**25-VC-C**	**3-VC-A**	**3-VC-B**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	31.6			27.3			12.9			1.0	7168265
Total Aluminum (Al)	mg/kg		147	24.5		663	21.0		254	22.0	1.0	7177179
Total Antimony (Sb)	mg/kg	<0.0050			<0.0050			0.0110			0.0050	7168265
Total Antimony (Sb)	mg/kg		0.0119	<0.0050		4.72	0.0216		0.387	0.0101	0.0050	7177179
Total Arsenic (As)	mg/kg	<0.050			<0.050			0.485			0.050	7168265
Total Arsenic (As)	mg/kg		0.153	<0.050		39.8	0.438		3.72	0.113	0.050	7177179
Total Barium (Ba)	mg/kg	12.3			17.3			12.8			0.10	7168265
Total Barium (Ba)	mg/kg		35.1	73.0		48.8	9.80		22.7	54.6	0.10	7177179
Total Beryllium (Be)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Beryllium (Be)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Bismuth (Bi)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Bismuth (Bi)	mg/kg		<0.10	<0.10		0.28	<0.10		<0.10	<0.10	0.10	7177179
Total Boron (B)	mg/kg	7.8			<2.0			15.8			2.0	7168265
Total Boron (B)	mg/kg		<2.0	19.2		13.2	40.6		2.0	12.9	2.0	7177179
Total Cadmium (Cd)	mg/kg	<0.010			<0.010			0.350			0.010	7168265
Total Cadmium (Cd)	mg/kg		0.030	0.643		1.27	5.63		0.676	2.39	0.010	7177179
Total Calcium (Ca)	mg/kg	1750			1160			1930			10	7168265
Total Calcium (Ca)	mg/kg		2780	13900		10300	11500		2550	10700	10	7177179
Total Chromium (Cr)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Chromium (Cr)	mg/kg		0.31	<0.20		1.47	<0.20		0.60	<0.20	0.20	7177179
Total Cobalt (Co)	mg/kg	<0.020			<0.020			<0.020			0.020	7168265
Total Cobalt (Co)	mg/kg		0.094	0.760		2.70	0.303		0.178	0.122	0.020	7177179
Total Copper (Cu)	mg/kg	5.54			5.51			6.42			0.050	7168265
Total Copper (Cu)	mg/kg		2.19	4.93		12.5	5.08		2.61	4.79	0.050	7177179
Total Iron (Fe)	mg/kg	20			19			47			10	7168265
Total Iron (Fe)	mg/kg		180	98		2500	59		454	72	10	7177179
Total Lead (Pb)	mg/kg	<0.010			<0.010			0.043			0.010	7168265
Total Lead (Pb)	mg/kg		0.235	0.040		22.6	0.138		2.31	0.086	0.010	7177179
Total Magnesium (Mg)	mg/kg	1170			705			1040			10	7168265
Total Magnesium (Mg)	mg/kg		305	3810		1590	1800		409	2210	10	7177179
Total Manganese (Mn)	mg/kg	687			342			197			0.10	7168265
Total Manganese (Mn)	mg/kg		159	248		924	382		275	400	0.10	7177179
Total Mercury (Hg)	mg/kg	<0.010			<0.010			<0.010			0.010	7168265
Total Mercury (Hg)	mg/kg		<0.010	<0.010		0.065	<0.010		0.017	0.010	0.010	7177179
Total Molybdenum (Mo)	mg/kg	0.112			0.400			0.331			0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8951	HJ8953	HJ8954	HJ8955	HJ8957	HJ8958	HJ8959	HJ8961	HJ8962		
Sampling Date		2013/08/31 10:00	2013/08/31 09:09	2013/08/31 09:09	2013/08/31 09:09	2013/08/31 11:45	2013/08/31 11:45	2013/08/31 11:45	2013/08/31 10:30	2013/08/31 10:30		
COC#		08377770	08377770	08377770	08377770	08377770	08377770	08377770	08377770	08377771		
	UNITS	**35-VC-C**	**CU2-VC-A**	**CU2-VC-B**	**CU2-VC-C**	**25-VC-A**	**25-VC-B**	**25-VC-C**	**3-VC-A**	**3-VC-B**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg		<0.050	0.273		0.597	0.505		0.084	0.101	0.050	7177179
Total Nickel (Ni)	mg/kg	0.514			0.882			0.584			0.050	7168265
Total Nickel (Ni)	mg/kg		0.388	1.54		2.84	1.11		0.616	0.440	0.050	7177179
Total Phosphorus (P)	mg/kg	1690			1490			1270			10	7168265
Total Phosphorus (P)	mg/kg		481	2630		594	1500		511	942	10	7177179
Total Potassium (K)	mg/kg	10500			9020			9860			10	7168265
Total Potassium (K)	mg/kg		1100	16700		362	9740		1150	7360	10	7177179
Total Selenium (Se)	mg/kg	<0.050			<0.050			<0.050			0.050	7168265
Total Selenium (Se)	mg/kg		<0.050	<0.050		0.118	<0.050		<0.050	<0.050	0.050	7177179
Total Silver (Ag)	mg/kg	<0.020			<0.020			<0.020			0.020	7168265
Total Silver (Ag)	mg/kg		<0.020	<0.020		0.588	<0.020		0.054	<0.020	0.020	7177179
Total Sodium (Na)	mg/kg	<10			<10			<10			10	7168265
Total Sodium (Na)	mg/kg		11	<10		29	19		25	31	10	7177179
Total Strontium (Sr)	mg/kg	1.46			4.76			4.27			0.10	7168265
Total Strontium (Sr)	mg/kg		18.2	111		35.5	34.2		7.99	44.1	0.10	7177179
Total Thallium (Tl)	mg/kg	<0.0020			<0.0020			<0.0020			0.0020	7168265
Total Thallium (Tl)	mg/kg		0.0060	0.0071		0.0330	0.0048		0.0061	0.0025	0.0020	7177179
Total Tin (Sn)	mg/kg	<0.10			<0.10			<0.10			0.10	7168265
Total Tin (Sn)	mg/kg		<0.10	<0.10		<0.10	<0.10		<0.10	<0.10	0.10	7177179
Total Titanium (Ti)	mg/kg	<1.0			<1.0			<1.0			1.0	7168265
Total Titanium (Ti)	mg/kg		5.3	<1.0		31.5	1.1		14.4	1.1	1.0	7177179
Total Uranium (U)	mg/kg	<0.0020			<0.0020			<0.0020			0.0020	7168265
Total Uranium (U)	mg/kg		0.0095	<0.0020		0.784	0.0028		0.0131	<0.0020	0.0020	7177179
Total Vanadium (V)	mg/kg	<0.20			<0.20			<0.20			0.20	7168265
Total Vanadium (V)	mg/kg		0.28	<0.20		2.04	<0.20		0.78	<0.20	0.20	7177179
Total Zinc (Zn)	mg/kg	15.0			8.22			16.0			0.20	7168265
Total Zinc (Zn)	mg/kg		12.1	45.4		54.5	412		93.4	293	0.20	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8963	HJ8965	HJ8966	HJ8967	HJ8969	HJ8969	HJ8970	HJ8971	HJ8973		
Sampling Date		2013/08/31 10:30	2013/08/31	2013/08/31	2013/08/31	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 11:06		
COC#		08377771	08377771	08377771	08377771	08377771	08377771	08377771	08377771	08377771		
	UNITS	**3-VC-C**	**DP5-VC-A**	**DP5-VC-B**	**DP5-VC-C**	**CR2-VC-A**	**CR2-VC-A Lab-Dup**	**CR2-VC-B**	**CR2-VC-C**	**41-VC-A**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	10.4			38.6				10.1		1.0	7168265
Total Aluminum (Al)	mg/kg		153	83.9		465	393	16.3		171	1.0	7177179
Total Antimony (Sb)	mg/kg	<0.0050			0.0070				<0.0050		0.0050	7168265
Total Antimony (Sb)	mg/kg		0.729	0.0486		0.134	0.121	0.0141		0.100	0.0050	7177179
Total Arsenic (As)	mg/kg	<0.050			<0.050				<0.050		0.050	7168265
Total Arsenic (As)	mg/kg		4.85	0.317		1.91	1.39	0.175		0.856	0.050	7177179
Total Barium (Ba)	mg/kg	8.06			13.3				12.0		0.10	7168265
Total Barium (Ba)	mg/kg		17.4	85.1		51.2	46.0	26.2		18.4	0.10	7177179
Total Beryllium (Be)	mg/kg	<0.10			<0.10				<0.10		0.10	7168265
Total Beryllium (Be)	mg/kg		<0.10	<0.10		<0.10	<0.10	<0.10		<0.10	0.10	7177179
Total Bismuth (Bi)	mg/kg	<0.10			<0.10				<0.10		0.10	7168265
Total Bismuth (Bi)	mg/kg		<0.10	<0.10		<0.10	<0.10	<0.10		<0.10	0.10	7177179
Total Boron (B)	mg/kg	9.4			7.9				14.9		2.0	7168265
Total Boron (B)	mg/kg		<2.0	9.8		4.1	3.4	28.3		<2.0	2.0	7177179
Total Cadmium (Cd)	mg/kg	<0.010			<0.010				<0.010		0.010	7168265
Total Cadmium (Cd)	mg/kg		0.071	1.58		0.444	0.386	4.56		0.204	0.010	7177179
Total Calcium (Ca)	mg/kg	1090			1870				1440		10	7168265
Total Calcium (Ca)	mg/kg		1210	11300		8340	7580	10200		5030	10	7177179
Total Chromium (Cr)	mg/kg	<0.20			<0.20				<0.20		0.20	7168265
Total Chromium (Cr)	mg/kg		0.44	<0.20		1.09	0.94	<0.20		0.39	0.20	7177179
Total Cobalt (Co)	mg/kg	<0.020			<0.020				<0.020		0.020	7168265
Total Cobalt (Co)	mg/kg		0.137	1.67		0.304	0.262	0.260		0.107	0.020	7177179
Total Copper (Cu)	mg/kg	4.27			6.39				7.06		0.050	7168265
Total Copper (Cu)	mg/kg		2.51	4.57		3.94	3.70	5.41		1.39	0.050	7177179
Total Iron (Fe)	mg/kg	15			20				26		10	7168265
Total Iron (Fe)	mg/kg		318	136		797	684	51		279	10	7177179
Total Lead (Pb)	mg/kg	<0.010			<0.010				<0.010		0.010	7168265
Total Lead (Pb)	mg/kg		2.47	0.323		1.16	1.00	0.049		0.544	0.010	7177179
Total Magnesium (Mg)	mg/kg	718			1250				754		10	7168265
Total Magnesium (Mg)	mg/kg		318	3720		982	883	3080		873	10	7177179
Total Manganese (Mn)	mg/kg	376			829				268		0.10	7168265
Total Manganese (Mn)	mg/kg		397	698		305	295	251		25.4	0.10	7177179
Total Mercury (Hg)	mg/kg	<0.010			<0.010				<0.010		0.010	7168265
Total Mercury (Hg)	mg/kg		0.017	0.011		0.030	0.027	<0.010		<0.010	0.010	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8963	HJ8965	HJ8966	HJ8967	HJ8969	HJ8969	HJ8970	HJ8971	HJ8973		
Sampling Date		2013/08/31 10:30	2013/08/31	2013/08/31	2013/08/31	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 11:06		
COC#		08377771	08377771	08377771	08377771	08377771	08377771	08377771	08377771	08377771		
	UNITS	**3-VC-C**	**DP5-VC-A**	**DP5-VC-B**	**DP5-VC-C**	**CR2-VC-A**	**CR2-VC-A Lab-Dup**	**CR2-VC-B**	**CR2-VC-C**	**41-VC-A**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	<0.050			0.173				0.143		0.050	7168265
Total Molybdenum (Mo)	mg/kg		0.067	0.173		0.275	0.268	0.244		0.067	0.050	7177179
Total Nickel (Ni)	mg/kg	0.155			0.553				0.269		0.050	7168265
Total Nickel (Ni)	mg/kg		0.521	3.58		1.29	1.18	0.969		0.394	0.050	7177179
Total Phosphorus (P)	mg/kg	1130			1660				1570		10	7168265
Total Phosphorus (P)	mg/kg		484	1950		651	616	894		321	10	7177179
Total Potassium (K)	mg/kg	9710			10700				9800		10	7168265
Total Potassium (K)	mg/kg		1250	10600		1260	1280	6090		640	10	7177179
Total Selenium (Se)	mg/kg	<0.050			<0.050				<0.050		0.050	7168265
Total Selenium (Se)	mg/kg		<0.050	<0.050		<0.050	<0.050	<0.050		<0.050	0.050	7177179
Total Silver (Ag)	mg/kg	<0.020			<0.020				<0.020		0.020	7168265
Total Silver (Ag)	mg/kg		0.141	<0.020		<0.020	0.023	<0.020		0.023	0.020	7177179
Total Sodium (Na)	mg/kg	<10			<10				<10		10	7168265
Total Sodium (Na)	mg/kg		14	18		29	28	<10		21	10	7177179
Total Strontium (Sr)	mg/kg	1.31			1.74				5.14		0.10	7168265
Total Strontium (Sr)	mg/kg		3.58	82.6		58.4	53.0	103		18.9	0.10	7177179
Total Thallium (Tl)	mg/kg	<0.0020			<0.0020				0.0026		0.0020	7168265
Total Thallium (Tl)	mg/kg		0.0088	0.0041		0.0115	0.0101	0.0037		0.0027	0.0020	7177179
Total Tin (Sn)	mg/kg	<0.10			<0.10				<0.10		0.10	7168265
Total Tin (Sn)	mg/kg		<0.10	<0.10		<0.10	<0.10	<0.10		<0.10	0.10	7177179
Total Titanium (Ti)	mg/kg	<1.0			<1.0				<1.0		1.0	7168265
Total Titanium (Ti)	mg/kg		8.5	1.8		24.7	20.5	<1.0		9.2	1.0	7177179
Total Uranium (U)	mg/kg	<0.0020			<0.0020				<0.0020		0.0020	7168265
Total Uranium (U)	mg/kg		0.0094	0.0021		0.144	0.118	0.0025		0.0094	0.0020	7177179
Total Vanadium (V)	mg/kg	<0.20			<0.20				<0.20		0.20	7168265
Total Vanadium (V)	mg/kg		0.43	<0.20		1.44	1.25	<0.20		0.45	0.20	7177179
Total Zinc (Zn)	mg/kg	13.3			15.4				18.7		0.20	7168265
Total Zinc (Zn)	mg/kg		17.7	221		41.3	37.6	372		21.3	0.20	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8975	HJ8976		
Sampling Date		2013/08/31 11:06	2013/08/31 11:06		
COC#		08377772	08377772		
	UNITS	**41-VC-B**	**41-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS					
Total Aluminum (Al)	mg/kg		2.9	1.0	7168265
Total Aluminum (Al)	mg/kg	18.9		1.0	7177179
Total Antimony (Sb)	mg/kg		<0.0050	0.0050	7168265
Total Antimony (Sb)	mg/kg	0.0088		0.0050	7177179
Total Arsenic (As)	mg/kg		<0.050	0.050	7168265
Total Arsenic (As)	mg/kg	<0.050		0.050	7177179
Total Barium (Ba)	mg/kg		6.47	0.10	7168265
Total Barium (Ba)	mg/kg	35.8		0.10	7177179
Total Beryllium (Be)	mg/kg		<0.10	0.10	7168265
Total Beryllium (Be)	mg/kg	<0.10		0.10	7177179
Total Bismuth (Bi)	mg/kg		<0.10	0.10	7168265
Total Bismuth (Bi)	mg/kg	<0.10		0.10	7177179
Total Boron (B)	mg/kg		17.5	2.0	7168265
Total Boron (B)	mg/kg	20.6		2.0	7177179
Total Cadmium (Cd)	mg/kg		0.049	0.010	7168265
Total Cadmium (Cd)	mg/kg	4.88		0.010	7177179
Total Calcium (Ca)	mg/kg		1160	10	7168265
Total Calcium (Ca)	mg/kg	13300		10	7177179
Total Chromium (Cr)	mg/kg		<0.20	0.20	7168265
Total Chromium (Cr)	mg/kg	<0.20		0.20	7177179
Total Cobalt (Co)	mg/kg		<0.020	0.020	7168265
Total Cobalt (Co)	mg/kg	0.270		0.020	7177179
Total Copper (Cu)	mg/kg		5.82	0.050	7168265
Total Copper (Cu)	mg/kg	4.43		0.050	7177179
Total Iron (Fe)	mg/kg		18	10	7168265
Total Iron (Fe)	mg/kg	60		10	7177179
Total Lead (Pb)	mg/kg		<0.010	0.010	7168265
Total Lead (Pb)	mg/kg	0.058		0.010	7177179
Total Magnesium (Mg)	mg/kg		772	10	7168265
Total Magnesium (Mg)	mg/kg	2990		10	7177179
Total Manganese (Mn)	mg/kg		239	0.10	7168265
Total Manganese (Mn)	mg/kg	403		0.10	7177179
Total Mercury (Hg)	mg/kg		<0.010	0.010	7168265
Total Mercury (Hg)	mg/kg	0.011		0.010	7177179
Total Molybdenum (Mo)	mg/kg		0.135	0.050	7168265

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - DRY WT (TISSUE)

Maxxam ID		HJ8975	HJ8976		
Sampling Date		2013/08/31 11:06	2013/08/31 11:06		
COC#		08377772	08377772		
	UNITS	**41-VC-B**	**41-VC-C**	**RDL**	**QC Batch**
Total Molybdenum (Mo)	mg/kg	0.350		0.050	7177179
Total Nickel (Ni)	mg/kg		0.117	0.050	7168265
Total Nickel (Ni)	mg/kg	0.591		0.050	7177179
Total Phosphorus (P)	mg/kg		1400	10	7168265
Total Phosphorus (P)	mg/kg	1020		10	7177179
Total Potassium (K)	mg/kg		9570	10	7168265
Total Potassium (K)	mg/kg	7930		10	7177179
Total Selenium (Se)	mg/kg		<0.050	0.050	7168265
Total Selenium (Se)	mg/kg	<0.050		0.050	7177179
Total Silver (Ag)	mg/kg		<0.020	0.020	7168265
Total Silver (Ag)	mg/kg	<0.020		0.020	7177179
Total Sodium (Na)	mg/kg		<10	10	7168265
Total Sodium (Na)	mg/kg	<10		10	7177179
Total Strontium (Sr)	mg/kg		1.57	0.10	7168265
Total Strontium (Sr)	mg/kg	45.9		0.10	7177179
Total Thallium (Tl)	mg/kg		<0.0020	0.0020	7168265
Total Thallium (Tl)	mg/kg	<0.0020		0.0020	7177179
Total Tin (Sn)	mg/kg		<0.10	0.10	7168265
Total Tin (Sn)	mg/kg	<0.10		0.10	7177179
Total Titanium (Ti)	mg/kg		<1.0	1.0	7168265
Total Titanium (Ti)	mg/kg	<1.0		1.0	7177179
Total Uranium (U)	mg/kg		<0.0020	0.0020	7168265
Total Uranium (U)	mg/kg	<0.0020		0.0020	7177179
Total Vanadium (V)	mg/kg		<0.20	0.20	7168265
Total Vanadium (V)	mg/kg	<0.20		0.20	7177179
Total Zinc (Zn)	mg/kg		16.1	0.20	7168265
Total Zinc (Zn)	mg/kg	316		0.20	7177179

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ8676	HJ8680	HJ8684	HJ8709	HJ8713	HJ8718	HJ8722	HJ8726	HJ8730		
Sampling Date		2013/08/29 16:20	2013/08/29 09:15	2013/08/29 12:04	2013/08/29 15:44	2013/08/29 19:00	2013/08/29 15:05	2013/08/29 12:45	2013/08/29 10:55	2013/08/29 17:00		
COC#		08377598	08377598	08377598	08377761	08377761	08377762	08377763	08377763	08377763		
	UNITS	**9-VC-C**	**20-VC-C**	**39-VC-C**	**6-VC-C**	**DP3-VC-C**	**10-VC-C**	**21-VC-C**	**16-VC-C**	**36-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	3.58	2.93	1.81	0.98	3.19	7.24	1.50	3.82	3.24	0.20	7186262
Total Antimony (Sb)	mg/kg	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	0.0010	7186262
Total Arsenic (As)	mg/kg	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Barium (Ba)	mg/kg	3.74	1.39	2.23	2.05	1.37	2.65	2.55	2.06	1.88	0.020	7186262
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Boron (B)	mg/kg	1.09	1.59	0.58	1.63	0.42	0.90	1.18	1.59	0.40	0.40	7186262
Total Cadmium (Cd)	mg/kg	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	0.0106	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Calcium (Ca)	mg/kg	231	217	210	259	211	293	289	223	138	2.0	7186262
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0050	<0.0040	<0.0040	<0.0040	0.0040	7186262
Total Copper (Cu)	mg/kg	1.30	0.679	0.760	0.752	0.748	0.991	0.831	0.815	0.636	0.010	7186262
Total Iron (Fe)	mg/kg	3.7	2.4	3.1	2.5	3.0	6.7	3.4	5.0	2.5	2.0	7186262
Total Lead (Pb)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0052	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Magnesium (Mg)	mg/kg	144	100	109	105	116	148	145	124	88.3	2.0	7186262
Total Manganese (Mn)	mg/kg	82.6	71.1	52.6	37.4	59.8	113	64.5	69.5	37.1	0.020	7186262
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Molybdenum (Mo)	mg/kg	0.098	<0.010	0.014	0.186	0.030	0.034	0.011	<0.010	0.080	0.010	7186262
Total Nickel (Ni)	mg/kg	0.089	0.033	0.032	0.093	0.077	0.092	0.037	0.054	0.100	0.010	7186262
Total Phosphorus (P)	mg/kg	347	178	228	171	278	323	266	221	201	2.0	7186262
Total Potassium (K)	mg/kg	1680	1210	1390	1190	1460	1520	1610	1330	1140	2.0	7186262
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7186262
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7186262
Total Strontium (Sr)	mg/kg	0.440	0.230	0.580	0.536	0.393	0.554	0.595	0.405	0.501	0.020	7186262
Total Thallium (Tl)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7186262
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Titanium (Ti)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7186262
Total Uranium (U)	mg/kg	0.00061	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7186262
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Zinc (Zn)	mg/kg	2.49	1.58	1.73	3.01	1.86	3.05	2.40	1.91	1.22	0.040	7186262

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ8734	HJ8738	HJ8742	HJ8747	HJ8751	HJ8755	HJ8771	HJ8775	HJ8805		
Sampling Date		2013/08/29 19:10	2013/08/29 18:25	2013/08/29 17:35	2013/08/29 09:55	2013/08/30 17:17	2013/08/30 09:30	2013/08/30 11:20	2013/08/30 11:50	2013/08/30 14:41		
COC#		08377764	08377764	08377764	08377765	08377765	08377765	08377766	08377766	08377767		
	UNITS	**1-VC-C**	**32-VC-C**	**28-VC-C**	**8-VC-C**	**27-VC-C**	**42-VC-C**	**38-VC-C**	**DP4-VC-C**	**29-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS												
Total Aluminum (Al)	mg/kg	3.52	2.50	1.91	5.37	4.14	2.51	2.90	1.85	3.95	0.20	7186262
Total Antimony (Sb)	mg/kg	<0.0010	<0.0010	<0.0010	0.0011	0.0069	<0.0010	<0.0010	<0.0010	0.0010	0.0010	7186262
Total Arsenic (As)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Barium (Ba)	mg/kg	1.55	1.22	1.69	2.04	1.90	1.22	1.29	2.32	2.82	0.020	7186262
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Boron (B)	mg/kg	0.51	1.43	1.48	1.78	0.67	0.48	1.29	1.83	1.37	0.40	7186262
Total Cadmium (Cd)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	0.0038	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Calcium (Ca)	mg/kg	216	186	174	216	225	184	210	195	247	2.0	7186262
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	0.0040	7186262
Total Copper (Cu)	mg/kg	0.772	0.746	0.592	1.10	0.607	0.688	0.796	1.06	0.812	0.010	7186262
Total Iron (Fe)	mg/kg	3.0	2.7	2.3	5.5	3.5	2.6	2.9	2.8	3.6	2.0	7186262
Total Lead (Pb)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Magnesium (Mg)	mg/kg	118	121	112	126	124	123	130	126	140	2.0	7186262
Total Manganese (Mn)	mg/kg	62.2	57.0	59.4	77.0	41.8	60.7	71.3	63.1	22.4	0.020	7186262
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Molybdenum (Mo)	mg/kg	0.035	<0.010	0.019	<0.010	0.031	0.016	<0.010	<0.010	0.047	0.010	7186262
Total Nickel (Ni)	mg/kg	0.083	0.045	0.053	0.053	0.113	0.036	0.047	0.031	0.116	0.010	7186262
Total Phosphorus (P)	mg/kg	270	231	224	222	278	193	208	185	285	2.0	7186262
Total Potassium (K)	mg/kg	1420	1250	1190	1410	1630	1260	1500	1500	1800	2.0	7186262
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7186262
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	<2.0	<2.0	2.0	7186262
Total Strontium (Sr)	mg/kg	0.416	0.233	0.303	0.229	0.575	0.157	0.223	0.373	0.888	0.020	7186262
Total Thallium (Tl)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7186262
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Titanium (Ti)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7186262
Total Uranium (U)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7186262
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Zinc (Zn)	mg/kg	1.90	1.79	1.71	2.11	1.93	1.70	1.90	2.27	1.98	0.040	7186262

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ8809	HJ8813	HJ8845	HJ8940	HJ8944	HJ8951	HJ8955		
Sampling Date		2013/08/30 13:15	2013/08/30 10:15	2013/08/30 15:42	2013/08/30 16:00	2013/08/30 12:00	2013/08/31 10:00	2013/08/31 09:09		
COC#		08377767	08377767	08377768	08377769	08377769	08377770	08377770		
	UNITS	**11-VC-C**	**15-VC-C**	**CR1-VC-C**	**CU1-VC-C**	**23-VC-C**	**35-VC-C**	**CU2-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS										
Total Aluminum (Al)	mg/kg	3.83	1.83	6.14	2.81	1.71	5.24	4.91	0.20	7186262
Total Antimony (Sb)	mg/kg	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	7186262
Total Arsenic (As)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Barium (Ba)	mg/kg	1.69	1.21	2.47	3.23	1.99	2.04	3.12	0.020	7186262
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Boron (B)	mg/kg	0.96	1.83	0.64	1.01	1.46	1.30	<0.40	0.40	7186262
Total Cadmium (Cd)	mg/kg	<0.0020	<0.0020	0.0025	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Calcium (Ca)	mg/kg	241	197	293	235	175	291	209	2.0	7186262
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	0.0052	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7186262
Total Copper (Cu)	mg/kg	0.820	0.922	0.908	0.754	0.889	0.920	0.992	0.010	7186262
Total Iron (Fe)	mg/kg	4.1	3.2	6.7	3.6	2.7	3.4	3.5	2.0	7186262
Total Lead (Pb)	mg/kg	<0.0020	<0.0020	0.0033	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Magnesium (Mg)	mg/kg	128	120	146	128	107	194	127	2.0	7186262
Total Manganese (Mn)	mg/kg	81.6	47.1	26.0	61.9	54.7	114	61.5	0.020	7186262
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Molybdenum (Mo)	mg/kg	<0.010	<0.010	0.031	0.152	<0.010	0.019	0.072	0.010	7186262
Total Nickel (Ni)	mg/kg	0.057	0.084	0.154	0.086	0.043	0.085	0.159	0.010	7186262
Total Phosphorus (P)	mg/kg	229	210	231	315	175	280	267	2.0	7186262
Total Potassium (K)	mg/kg	1380	1410	1330	1400	1450	1740	1620	2.0	7186262
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7186262
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7186262
Total Strontium (Sr)	mg/kg	0.176	0.297	1.14	0.789	0.302	0.242	0.856	0.020	7186262
Total Thallium (Tl)	mg/kg	0.00107	0.00070	0.00057	0.00042	0.00045	<0.00040	<0.00040	0.00040	7186262
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Titanium (Ti)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7186262
Total Uranium (U)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7186262
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Zinc (Zn)	mg/kg	1.96	2.26	1.99	1.76	2.06	2.48	1.48	0.040	7186262

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

ELEMENTS BY ATOMIC SPECTROSCOPY - WET WT (TISSUE)

Maxxam ID		HJ8959	HJ8963	HJ8967	HJ8971	HJ8971	HJ8976		
Sampling Date		2013/08/31 11:45	2013/08/31 10:30	2013/08/31	2013/08/31 08:45	2013/08/31 08:45	2013/08/31 11:06		
COC#		08377770	08377771	08377771	08377771	08377771	08377772		
	UNITS	**25-VC-C**	**3-VC-C**	**DP5-VC-C**	**CR2-VC-C**	**CR2-VC-C Lab-Dup**	**41-VC-C**	**RDL**	**QC Batch**
Total Metals by ICPMS									
Total Aluminum (Al)	mg/kg	1.78	1.54	6.33	1.67	1.69	0.43	0.20	7186262
Total Antimony (Sb)	mg/kg	0.0015	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	0.0010	7186262
Total Arsenic (As)	mg/kg	0.067	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Barium (Ba)	mg/kg	1.77	1.19	2.18	2.00	1.92	0.958	0.020	7186262
Total Beryllium (Be)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Bismuth (Bi)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Boron (B)	mg/kg	2.18	1.40	1.29	2.47	2.33	2.59	0.40	7186262
Total Cadmium (Cd)	mg/kg	0.0483	<0.0020	<0.0020	<0.0020	<0.0020	0.0072	0.0020	7186262
Total Calcium (Ca)	mg/kg	267	161	306	240	234	171	2.0	7186262
Total Chromium (Cr)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Cobalt (Co)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	7186262
Total Copper (Cu)	mg/kg	0.886	0.632	1.05	1.17	1.06	0.861	0.010	7186262
Total Iron (Fe)	mg/kg	6.6	2.1	3.3	4.3	3.8	2.7	2.0	7186262
Total Lead (Pb)	mg/kg	0.0060	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Magnesium (Mg)	mg/kg	143	106	205	125	116	114	2.0	7186262
Total Manganese (Mn)	mg/kg	27.2	55.6	136	44.5	44.7	35.4	0.020	7186262
Total Mercury (Hg)	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	7186262
Total Molybdenum (Mo)	mg/kg	0.046	<0.010	0.028	0.024	0.023	0.020	0.010	7186262
Total Nickel (Ni)	mg/kg	0.081	0.023	0.091	0.045	0.040	0.017	0.010	7186262
Total Phosphorus (P)	mg/kg	175	167	272	261	248	207	2.0	7186262
Total Potassium (K)	mg/kg	1360	1440	1750	1630	1510	1420	2.0	7186262
Total Selenium (Se)	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7186262
Total Silver (Ag)	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040 (1)	<0.0040	<0.0040	0.0040	7186262
Total Sodium (Na)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	7186262
Total Strontium (Sr)	mg/kg	0.589	0.194	0.286	0.854	0.864	0.232	0.020	7186262
Total Thallium (Tl)	mg/kg	<0.00040	<0.00040	<0.00040	0.00043	<0.00040	<0.00040	0.00040	7186262
Total Tin (Sn)	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7186262
Total Titanium (Ti)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7186262
Total Uranium (U)	mg/kg	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	7186262
Total Vanadium (V)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7186262
Total Zinc (Zn)	mg/kg	2.21	1.97	2.53	3.11	3.24	2.38	0.040	7186262

RDL = Reportable Detection Limit
(1) - Matrix Spike outside acceptance criteria (10% of analytes failure allowed).

Maxxam Job #: B378712
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Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

PHYSICAL TESTING (TISSUE)

Maxxam ID		HJ8676	HJ8680	HJ8684	HJ8684	HJ8709	HJ8713	HJ8718	HJ8722	HJ8726	HJ8730		
Sampling Date		2013/08/29 16:20	2013/08/29 09:15	2013/08/29 12:04	2013/08/29 12:04	2013/08/29 15:44	2013/08/29 19:00	2013/08/29 15:05	2013/08/29 12:45	2013/08/29 10:55	2013/08/29 17:00		
COC#		08377598	08377598	08377598	08377598	08377761	08377761	08377762	08377763	08377763	08377763		
	UNITS	**9-VC-C**	**20-VC-C**	**39-VC-C**	**39-VC-C Lab-Dup**	**6-VC-C**	**DP3-VC-C**	**10-VC-C**	**21-VC-C**	**16-VC-C**	**36-VC-C**	**RDL**	**QC Batch**
Physical Properties													
Moisture	%	86	84	86	87	86	86	88	82	84	85	0.30	7190925

Maxxam ID		HJ8734	HJ8738	HJ8742	HJ8747	HJ8751	HJ8755	HJ8771	HJ8775	HJ8805	HJ8809		
Sampling Date		2013/08/29 19:10	2013/08/29 18:25	2013/08/29 17:35	2013/08/29 09:55	2013/08/30 17:17	2013/08/30 09:30	2013/08/30 11:20	2013/08/30 11:50	2013/08/30 14:41	2013/08/30 13:15		
COC#		08377764	08377764	08377764	08377765	08377765	08377765	08377766	08377766	08377767	08377767		
	UNITS	**1-VC-C**	**32-VC-C**	**28-VC-C**	**8-VC-C**	**27-VC-C**	**42-VC-C**	**38-VC-C**	**DP4-VC-C**	**29-VC-C**	**11-VC-C**	**RDL**	**QC Batch**
Physical Properties													
Moisture	%	85	84	85	85	86	85	84	85	82	84	0.30	7190925

Maxxam ID		HJ8813	HJ8845	HJ8940	HJ8944		HJ8951		HJ8955		
Sampling Date		2013/08/30 10:15	2013/08/30 15:42	2013/08/30 16:00	2013/08/30 12:00		2013/08/31 10:00		2013/08/31 09:09		
COC#		08377767	08377768	08377769	08377769		08377770		08377770		
	UNITS	**15-VC-C**	**CR1-VC-C**	**CU1-VC-C**	**23-VC-C**	**QC Batch**	**35-VC-C**	**QC Batch**	**CU2-VC-C**	**RDL**	**QC Batch**
Physical Properties											
Moisture	%	84	83	84	85	7191793	83	7189090	82	0.30	7191793

Maxxam ID		HJ8959	HJ8963	HJ8967	HJ8971		HJ8976		
Sampling Date		2013/08/31 11:45	2013/08/31 10:30	2013/08/31	2013/08/31 08:45		2013/08/31 11:06		
COC#		08377770	08377771	08377771	08377771		08377772		
	UNITS	**25-VC-C**	**3-VC-C**	**DP5-VC-C**	**CR2-VC-C**	**QC Batch**	**41-VC-C**	**RDL**	**QC Batch**
Physical Properties									
Moisture	%	86	85	84	83	7191793	85	0.30	7190925

RDL = Reportable Detection Limit

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7149519	Total Antimony (Sb)	2013/09/06	93	75 - 125	95	75 - 125	<0.10	mg/kg	21.3	30	108	70 - 130
7149519	Total Arsenic (As)	2013/09/06	91	75 - 125	94	75 - 125	<0.50	mg/kg	17.9	30	95	70 - 130
7149519	Total Barium (Ba)	2013/09/06	NC	75 - 125	98	75 - 125	<0.10	mg/kg	6.3	35	108	70 - 130
7149519	Total Beryllium (Be)	2013/09/06	100	75 - 125	98	75 - 125	<0.40	mg/kg	NC	30		
7149519	Total Cadmium (Cd)	2013/09/06	93	75 - 125	96	75 - 125	<0.050	mg/kg	NC	30	106	70 - 130
7149519	Total Chromium (Cr)	2013/09/06	95	75 - 125	97	75 - 125	<1.0	mg/kg	10.1	30	108	70 - 130
7149519	Total Cobalt (Co)	2013/09/06	97	75 - 125	100	75 - 125	<0.30	mg/kg	13.9	30	97	70 - 130
7149519	Total Copper (Cu)	2013/09/06	98	75 - 125	102	75 - 125	<0.50	mg/kg	6.2	30	98	70 - 130
7149519	Total Lead (Pb)	2013/09/06	101	75 - 125	104	75 - 125	<0.10	mg/kg	24.3	35	102	70 - 130
7149519	Total Lithium (Li)	2013/09/06	96	75 - 125	98	75 - 125	<5.0	mg/kg	NC	30		
7149519	Total Manganese (Mn)	2013/09/06	NC	75 - 125	100	75 - 125	<0.20	mg/kg	7.7	30	101	70 - 130
7149519	Total Mercury (Hg)	2013/09/06	96	75 - 125	99	75 - 125	<0.050	mg/kg	NC	35	93	70 - 130
7149519	Total Molybdenum (Mo)	2013/09/06	99	75 - 125	98	75 - 125	<0.10	mg/kg	NC	35	116	70 - 130
7149519	Total Nickel (Ni)	2013/09/06	98	75 - 125	101	75 - 125	<0.80	mg/kg	24.5	30	105	70 - 130
7149519	Total Selenium (Se)	2013/09/06	92	75 - 125	95	75 - 125	<0.50	mg/kg	NC	30		
7149519	Total Silver (Ag)	2013/09/06	96	75 - 125	100	75 - 125	<0.050	mg/kg	NC	35		
7149519	Total Strontium (Sr)	2013/09/06	102	75 - 125	97	75 - 125	<0.10	mg/kg	5.4	35	106	70 - 130
7149519	Total Thallium (Tl)	2013/09/06	99	75 - 125	99	75 - 125	<0.050	mg/kg	NC	30	94	70 - 130
7149519	Total Tin (Sn)	2013/09/06	91	75 - 125	97	75 - 125	<0.10	mg/kg	NC	35		
7149519	Total Titanium (Ti)	2013/09/06	NC	75 - 125	96	75 - 125	<1.0	mg/kg	10.3	35	107	70 - 130
7149519	Total Uranium (U)	2013/09/06	101	75 - 125	103	75 - 125	<0.050	mg/kg	15.1	30	103	70 - 130
7149519	Total Vanadium (V)	2013/09/06	NC	75 - 125	97	75 - 125	<2.0	mg/kg	14.2	30	105	70 - 130
7149519	Total Zinc (Zn)	2013/09/06	NC	75 - 125	99	75 - 125	<1.0	mg/kg	4.5	30	94	70 - 130
7149519	Total Aluminum (Al)	2013/09/06					<100	mg/kg	3.9	35	108	70 - 130
7149519	Total Calcium (Ca)	2013/09/06					<100	mg/kg	15.7	30	106	70 - 130
7149519	Total Iron (Fe)	2013/09/06					<100	mg/kg	21.5	30	103	70 - 130
7149519	Total Magnesium (Mg)	2013/09/06					<100	mg/kg	3.8	30	103	70 - 130
7149519	Total Phosphorus (P)	2013/09/06					<10	mg/kg	15.4	30	94	70 - 130
7149519	Total Bismuth (Bi)	2013/09/06					<0.10	mg/kg	NC	30		
7149519	Total Potassium (K)	2013/09/06					<100	mg/kg	2.9	35		
7149519	Total Sodium (Na)	2013/09/06					<100	mg/kg	NC	35		
7149519	Total Zirconium (Zr)	2013/09/06					<0.50	mg/kg	NC	30		
7149525	Soluble (2:1) pH	2013/09/06			100	97 - 103			0.2	20		
7149603	Total Antimony (Sb)	2013/09/06	90	75 - 125	93	75 - 125	<0.10	mg/kg	NC	30	106	70 - 130
7149603	Total Arsenic (As)	2013/09/06	88	75 - 125	95	75 - 125	<0.50	mg/kg	27.0	30	99	70 - 130
7149603	Total Barium (Ba)	2013/09/06	NC	75 - 125	99	75 - 125	<0.10	mg/kg	3.2	35	110	70 - 130
7149603	Total Beryllium (Be)	2013/09/06	97	75 - 125	99	75 - 125	<0.40	mg/kg	NC	30		
7149603	Total Cadmium (Cd)	2013/09/06	95	75 - 125	97	75 - 125	<0.050	mg/kg	4.7	30	108	70 - 130
7149603	Total Chromium (Cr)	2013/09/06	94	75 - 125	97	75 - 125	<1.0	mg/kg	2.5	30	109	70 - 130
7149603	Total Cobalt (Co)	2013/09/06	93	75 - 125	100	75 - 125	<0.30	mg/kg	3.2	30	101	70 - 130

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Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7149603	Total Copper (Cu)	2013/09/06	89	75 - 125	102	75 - 125	<0.50	mg/kg	5.3	30	102	70 - 130
7149603	Total Lead (Pb)	2013/09/06	98	75 - 125	104	75 - 125	<0.10	mg/kg	7.1	35	109	70 - 130
7149603	Total Lithium (Li)	2013/09/06	95	75 - 125	98	75 - 125	<5.0	mg/kg				
7149603	Total Manganese (Mn)	2013/09/06	NC	75 - 125	101	75 - 125	<0.20	mg/kg	2.3	30	105	70 - 130
7149603	Total Mercury (Hg)	2013/09/06	101	75 - 125	100	75 - 125	<0.050	mg/kg	NC	35	98	70 - 130
7149603	Total Molybdenum (Mo)	2013/09/06	105	75 - 125	97	75 - 125	<0.10	mg/kg	14.8	35	108	70 - 130
7149603	Total Nickel (Ni)	2013/09/06	93	75 - 125	101	75 - 125	<0.80	mg/kg	3.5	30	107	70 - 130
7149603	Total Selenium (Se)	2013/09/06	100	75 - 125	97	75 - 125	<0.50	mg/kg	NC	30		
7149603	Total Silver (Ag)	2013/09/06	95	75 - 125	99	75 - 125	<0.050	mg/kg	NC	35		
7149603	Total Strontium (Sr)	2013/09/06	NC	75 - 125	96	75 - 125	<0.10	mg/kg	7.1	35	110	70 - 130
7149603	Total Thallium (Tl)	2013/09/06	94	75 - 125	100	75 - 125	<0.050	mg/kg			98	70 - 130
7149603	Total Tin (Sn)	2013/09/06	93	75 - 125	95	75 - 125	<0.10	mg/kg	NC	35		
7149603	Total Titanium (Ti)	2013/09/06	NC	75 - 125	96	75 - 125	<1.0	mg/kg	0.7	35	108	70 - 130
7149603	Total Uranium (U)	2013/09/06	101	75 - 125	104	75 - 125	<0.050	mg/kg			112	70 - 130
7149603	Total Vanadium (V)	2013/09/06	95	75 - 125	96	75 - 125	<2.0	mg/kg	2.0	30	106	70 - 130
7149603	Total Zinc (Zn)	2013/09/06	NC	75 - 125	100	75 - 125	<1.0	mg/kg	8.6	30	98	70 - 130
7149603	Total Aluminum (Al)	2013/09/06					<100	mg/kg	2.9	35	111	70 - 130
7149603	Total Calcium (Ca)	2013/09/06					<100	mg/kg			108	70 - 130
7149603	Total Iron (Fe)	2013/09/06					<100	mg/kg			104	70 - 130
7149603	Total Magnesium (Mg)	2013/09/06					<100	mg/kg			103	70 - 130
7149603	Total Phosphorus (P)	2013/09/06					<10	mg/kg			96	70 - 130
7149603	Total Bismuth (Bi)	2013/09/06					<0.10	mg/kg				
7149603	Total Potassium (K)	2013/09/06					<100	mg/kg				
7149603	Total Sodium (Na)	2013/09/06					<100	mg/kg				
7149603	Total Zirconium (Zr)	2013/09/06					<0.50	mg/kg				
7149609	Soluble (2:1) pH	2013/09/06			99	97 - 103			0.2	20		
7149610	Total Antimony (Sb)	2013/09/06	92	75 - 125	96	75 - 125	<0.10	mg/kg	NC	30	99	70 - 130
7149610	Total Arsenic (As)	2013/09/06	93	75 - 125	93	75 - 125	<0.50	mg/kg	NC	30	94	70 - 130
7149610	Total Barium (Ba)	2013/09/06	NC	75 - 125	98	75 - 125	<0.10	mg/kg	9.4	35	105	70 - 130
7149610	Total Beryllium (Be)	2013/09/06	100	75 - 125	98	75 - 125	<0.40	mg/kg	NC	30		
7149610	Total Cadmium (Cd)	2013/09/06	97	75 - 125	97	75 - 125	<0.050	mg/kg	NC	30	107	70 - 130
7149610	Total Chromium (Cr)	2013/09/06	NC	75 - 125	95	75 - 125	<1.0	mg/kg	4.1	30	105	70 - 130
7149610	Total Cobalt (Co)	2013/09/06	96	75 - 125	97	75 - 125	<0.30	mg/kg	1	30	95	70 - 130
7149610	Total Copper (Cu)	2013/09/06	98	75 - 125	100	75 - 125	<0.50	mg/kg	0.9	30	97	70 - 130
7149610	Total Lead (Pb)	2013/09/06	102	75 - 125	105	75 - 125	<0.10	mg/kg	3.6	35	104	70 - 130
7149610	Total Lithium (Li)	2013/09/06	101	75 - 125	98	75 - 125	<5.0	mg/kg	NC	30		
7149610	Total Manganese (Mn)	2013/09/06	NC	75 - 125	97	75 - 125	<0.20	mg/kg	4.2	30	100	70 - 130
7149610	Total Mercury (Hg)	2013/09/06	99	75 - 125	102	75 - 125	<0.050	mg/kg	NC	35	89	70 - 130
7149610	Total Molybdenum (Mo)	2013/09/06	101	75 - 125	97	75 - 125	<0.10	mg/kg	NC	35	123	70 - 130
7149610	Total Nickel (Ni)	2013/09/06	NC	75 - 125	99	75 - 125	<0.80	mg/kg	5.2	30	100	70 - 130

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Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7149610	Total Selenium (Se)	2013/09/06	96	75 - 125	96	75 - 125	<0.50	mg/kg	NC	30		
7149610	Total Silver (Ag)	2013/09/06	99	75 - 125	95	75 - 125	<0.050	mg/kg	NC	35		
7149610	Total Strontium (Sr)	2013/09/06	99	75 - 125	96	75 - 125	<0.10	mg/kg	13.9	35	107	70 - 130
7149610	Total Thallium (Tl)	2013/09/06	100	75 - 125	100	75 - 125	<0.050	mg/kg	NC	30	97	70 - 130
7149610	Total Tin (Sn)	2013/09/06	95	75 - 125	95	75 - 125	<0.10	mg/kg	NC	35		
7149610	Total Titanium (Ti)	2013/09/06	NC	75 - 125	94	75 - 125	<1.0	mg/kg	5.2	35	102	70 - 130
7149610	Total Uranium (U)	2013/09/06	104	75 - 125	105	75 - 125	<0.050	mg/kg	NC	30	106	70 - 130
7149610	Total Vanadium (V)	2013/09/06	NC	75 - 125	95	75 - 125	<2.0	mg/kg	0.5	30	103	70 - 130
7149610	Total Zinc (Zn)	2013/09/06	NC	75 - 125	100	75 - 125	<1.0	mg/kg	0.1	30	94	70 - 130
7149610	Total Aluminum (Al)	2013/09/06					<100	mg/kg	3.7	35	108	70 - 130
7149610	Total Calcium (Ca)	2013/09/06					<100	mg/kg	4.2	30	104	70 - 130
7149610	Total Iron (Fe)	2013/09/06					<100	mg/kg	2.1	30	100	70 - 130
7149610	Total Magnesium (Mg)	2013/09/06					<100	mg/kg	3.4	30	102	70 - 130
7149610	Total Phosphorus (P)	2013/09/06					<10	mg/kg	1.1	30	93	70 - 130
7149610	Total Bismuth (Bi)	2013/09/06					<0.10	mg/kg	NC	30		
7149610	Total Potassium (K)	2013/09/06					<100	mg/kg	NC	35		
7149610	Total Sodium (Na)	2013/09/06					<100	mg/kg	NC	35		
7149610	Total Zirconium (Zr)	2013/09/06					<0.50	mg/kg	8.3	30		
7149634	Soluble (2:1) pH	2013/09/06			100	97 - 103			1.4	20		
7173047	Total Antimony (Sb)	2013/09/17	91	75 - 125	90	75 - 125	<0.10	mg/kg	NC	30	91	70 - 130
7173047	Total Arsenic (As)	2013/09/17	91	75 - 125	89	75 - 125	<0.50	mg/kg	NC	30	95	70 - 130
7173047	Total Barium (Ba)	2013/09/17	NC	75 - 125	95	75 - 125	<0.10	mg/kg	6.4	35	105	70 - 130
7173047	Total Beryllium (Be)	2013/09/17	90	75 - 125	103	75 - 125	<0.40	mg/kg	NC	30		
7173047	Total Cadmium (Cd)	2013/09/17	94	75 - 125	95	75 - 125	<0.050	mg/kg	NC	30	112	70 - 130
7173047	Total Chromium (Cr)	2013/09/17	92	75 - 125	95	75 - 125	<1.0	mg/kg	0.4	30	100	70 - 130
7173047	Total Cobalt (Co)	2013/09/17	92	75 - 125	95	75 - 125	<0.30	mg/kg	3.0	30	95	70 - 130
7173047	Total Copper (Cu)	2013/09/17	NC	75 - 125	98	75 - 125	<0.50	mg/kg	0.7	30	95	70 - 130
7173047	Total Lead (Pb)	2013/09/17	101	75 - 125	103	75 - 125	<0.10	mg/kg	2.6	35	104	70 - 130
7173047	Total Lithium (Li)	2013/09/17	95	75 - 125	100	75 - 125	<5.0	mg/kg				
7173047	Total Manganese (Mn)	2013/09/17	NC	75 - 125	96	75 - 125	<0.20	mg/kg	4.2	30	100	70 - 130
7173047	Total Mercury (Hg)	2013/09/17	98	75 - 125	97	75 - 125	<0.050	mg/kg	NC	35	90	70 - 130
7173047	Total Molybdenum (Mo)	2013/09/17	100	75 - 125	96	75 - 125	<0.10	mg/kg	4.5	35	124	70 - 130
7173047	Total Nickel (Ni)	2013/09/17	96	75 - 125	97	75 - 125	<0.80	mg/kg	2.0	30	97	70 - 130
7173047	Total Selenium (Se)	2013/09/17	92	75 - 125	91	75 - 125	<0.50	mg/kg	NC	30		
7173047	Total Silver (Ag)	2013/09/17	92	75 - 125	93	75 - 125	<0.050	mg/kg	NC	35		
7173047	Total Strontium (Sr)	2013/09/17	NC	75 - 125	97	75 - 125	<0.10	mg/kg	1.2	35	112	70 - 130
7173047	Total Thallium (Tl)	2013/09/17	98	75 - 125	98	75 - 125	<0.050	mg/kg			97	70 - 130
7173047	Total Tin (Sn)	2013/09/17	93	75 - 125	92	75 - 125	<0.10	mg/kg	NC	35		
7173047	Total Titanium (Ti)	2013/09/17	NC	75 - 125	94	75 - 125	<1.0	mg/kg	1.3	35	95	70 - 130
7173047	Total Uranium (U)	2013/09/17	100	75 - 125	100	75 - 125	<0.050	mg/kg			101	70 - 130

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7173047	Total Vanadium (V)	2013/09/17	NC	75 - 125	93	75 - 125	<2.0	mg/kg	1.7	30	96	70 - 130
7173047	Total Zinc (Zn)	2013/09/17	NC	75 - 125	92	75 - 125	<1.0	mg/kg	4.0	30	92	70 - 130
7173047	Total Aluminum (Al)	2013/09/17					<100	mg/kg	0.4	35	111	70 - 130
7173047	Total Calcium (Ca)	2013/09/17					<100	mg/kg			108	70 - 130
7173047	Total Iron (Fe)	2013/09/17					<100	mg/kg			105	70 - 130
7173047	Total Magnesium (Mg)	2013/09/17					<100	mg/kg			111	70 - 130
7173047	Total Phosphorus (P)	2013/09/17					<10	mg/kg			96	70 - 130
7173047	Total Bismuth (Bi)	2013/09/17					<0.10	mg/kg				
7173047	Total Potassium (K)	2013/09/17					<100	mg/kg				
7173047	Total Sodium (Na)	2013/09/17					<100	mg/kg				
7173047	Total Zirconium (Zr)	2013/09/17					<0.50	mg/kg				
7173053	Soluble (2:1) pH	2013/09/17			100	97 - 103			1.0	20		
7176856	Total Arsenic (As)	2013/09/21	119	75 - 125	97	75 - 125	<0.050	mg/kg	24.5	35	103	75 - 125
7176856	Total Barium (Ba)	2013/09/21	NC	75 - 125	97	75 - 125	<0.10	mg/kg	7.5	35	78	75 - 125
7176856	Total Beryllium (Be)	2013/09/21	120	75 - 125	99	75 - 125	<0.10	mg/kg	NC	35		
7176856	Total Cadmium (Cd)	2013/09/21	107	75 - 125	102	75 - 125	<0.010	mg/kg	0.9	35	83	75 - 125
7176856	Total Chromium (Cr)	2013/09/21	122	75 - 125	101	75 - 125	<0.20	mg/kg	NC	35	39	28 - 97
7176856	Total Cobalt (Co)	2013/09/21	124	75 - 125	107	75 - 125	<0.020	mg/kg	2.0	35	78	75 - 125
7176856	Total Copper (Cu)	2013/09/21	121	75 - 125	104	75 - 125	<0.050	mg/kg	7.2	35	79	75 - 125
7176856	Total Lead (Pb)	2013/09/21	121	75 - 125	99	75 - 125	<0.010	mg/kg	21.6	35		
7176856	Total Manganese (Mn)	2013/09/21	NC	75 - 125	106	75 - 125	<0.10	mg/kg	2.7	35	89	75 - 125
7176856	Total Mercury (Hg)	2013/09/21	101	75 - 125	100	75 - 125	<0.010	mg/kg	NC	35	75	75 - 125
7176856	Total Nickel (Ni)	2013/09/21	121	75 - 125	106	75 - 125	<0.050	mg/kg	16.9	35	66	58 - 126
7176856	Total Selenium (Se)	2013/09/21	111	75 - 125	99	75 - 125	<0.050	mg/kg	NC	35	69(1, 2)	75 - 125
7176856	Total Silver (Ag)	2013/09/21	94	75 - 125	76	75 - 125	<0.020	mg/kg	NC	35		
7176856	Total Strontium (Sr)	2013/09/21	NC	75 - 125	101	75 - 125	<0.10	mg/kg	4.3	35	86	75 - 125
7176856	Total Thallium (Tl)	2013/09/21	121	75 - 125	98	75 - 125	<0.0020	mg/kg	NC	35		
7176856	Total Uranium (U)	2013/09/21	120	75 - 125	94	75 - 125	<0.0020	mg/kg	NC	35		
7176856	Total Vanadium (V)	2013/09/21	118	75 - 125	99	75 - 125	<0.20	mg/kg	NC	35		
7176856	Total Zinc (Zn)	2013/09/21	NC	75 - 125	108	75 - 125	<0.20	mg/kg	4.8	35	76	75 - 125
7176856	Total Aluminum (Al)	2013/09/21					<1.0	mg/kg	9.6	35	29	20 - 93
7176856	Total Antimony (Sb)	2013/09/21					<0.0050	mg/kg	11.0	35	115	75 - 125
7176856	Total Boron (B)	2013/09/21					<2.0	mg/kg	NC	35	85	75 - 125
7176856	Total Iron (Fe)	2013/09/21					<10	mg/kg	9.1	35	78	75 - 125
7176856	Total Magnesium (Mg)	2013/09/21					<10	mg/kg	8.0	35	76	75 - 125
7176856	Total Molybdenum (Mo)	2013/09/21					<0.050	mg/kg	NC	35	81	75 - 125
7176856	Total Sodium (Na)	2013/09/21					<10	mg/kg	NC	35	78	75 - 125
7176856	Total Bismuth (Bi)	2013/09/21					<0.10	mg/kg	NC	35		
7176856	Total Calcium (Ca)	2013/09/21					<10	mg/kg	7.9	35		
7176856	Total Phosphorus (P)	2013/09/21					<10	mg/kg	5.8	35		

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7176856	Total Potassium (K)	2013/09/21					<10	mg/kg	6.4	35		
7176856	Total Tin (Sn)	2013/09/21					<0.10	mg/kg	NC	35		
7176856	Total Titanium (Ti)	2013/09/21					<1.0	mg/kg	7.1	35		
7177179	Total Arsenic (As)	2013/09/26	86	75 - 125	105	75 - 125	<0.050	mg/kg	31.4	35	121	75 - 125
7177179	Total Barium (Ba)	2013/09/26	NC	75 - 125	100	75 - 125	<0.10	mg/kg	10.6	35	107	75 - 125
7177179	Total Beryllium (Be)	2013/09/26	95	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35		
7177179	Total Cadmium (Cd)	2013/09/26	91	75 - 125	104	75 - 125	<0.010	mg/kg	14.1	35	109	75 - 125
7177179	Total Chromium (Cr)	2013/09/26	93	75 - 125	105	75 - 125	<0.20	mg/kg	NC	35	60	28 - 97
7177179	Total Cobalt (Co)	2013/09/26	98	75 - 125	106	75 - 125	<0.020	mg/kg	14.8	35	104	75 - 125
7177179	Total Copper (Cu)	2013/09/26	NC	75 - 125	104	75 - 125	<0.050	mg/kg	6.4	35	107	75 - 125
7177179	Total Lead (Pb)	2013/09/26	86	75 - 125	100	75 - 125	<0.010	mg/kg	14.1	35		
7177179	Total Manganese (Mn)	2013/09/26	NC	75 - 125	107	75 - 125	<0.10	mg/kg	3.5	35	121	75 - 125
7177179	Total Mercury (Hg)	2013/09/26	90	75 - 125	111	75 - 125	<0.010	mg/kg	NC	35	101	75 - 125
7177179	Total Nickel (Ni)	2013/09/26	94	75 - 125	108	75 - 125	<0.050	mg/kg	8.3	35	87	58 - 126
7177179	Total Selenium (Se)	2013/09/26	95	75 - 125	102	75 - 125	<0.050	mg/kg	NC	35	110	75 - 125
7177179	Total Silver (Ag)	2013/09/26	120	75 - 125	89	75 - 125	<0.020	mg/kg	NC	35		
7177179	Total Strontium (Sr)	2013/09/26	NC	75 - 125	101	75 - 125	<0.10	mg/kg	9.7	35	120	75 - 125
7177179	Total Thallium (Tl)	2013/09/26	97	75 - 125	102	75 - 125	<0.0020	mg/kg	12.9	35		
7177179	Total Uranium (U)	2013/09/26	90	75 - 125	97	75 - 125	<0.0020	mg/kg	20.4	35		
7177179	Total Vanadium (V)	2013/09/26	90	75 - 125	101	75 - 125	<0.20	mg/kg	13.8	35		
7177179	Total Zinc (Zn)	2013/09/26	NC	75 - 125	108	75 - 125	<0.20	mg/kg	9.3	35	99	75 - 125
7177179	Total Aluminum (Al)	2013/09/26					<1.0	mg/kg	16.7	35	38	20 - 93
7177179	Total Antimony (Sb)	2013/09/26					<0.0050	mg/kg	9.5	35	99	75 - 125
7177179	Total Boron (B)	2013/09/26					<2.0	mg/kg	NC	35	108	75 - 125
7177179	Total Iron (Fe)	2013/09/26					<10	mg/kg	15.3	35	99	75 - 125
7177179	Total Magnesium (Mg)	2013/09/26					<10	mg/kg	10.7	35	104	75 - 125
7177179	Total Molybdenum (Mo)	2013/09/26					<0.050	mg/kg	2.3	35	114	75 - 125
7177179	Total Sodium (Na)	2013/09/26					<10	mg/kg	NC	35	105	75 - 125
7177179	Total Bismuth (Bi)	2013/09/26					<0.10	mg/kg	NC	35		
7177179	Total Calcium (Ca)	2013/09/26					<10	mg/kg	9.5	35		
7177179	Total Phosphorus (P)	2013/09/26					<10	mg/kg	5.5	35		
7177179	Total Potassium (K)	2013/09/26					<10	mg/kg	1	35		
7177179	Total Tin (Sn)	2013/09/26					<0.10	mg/kg	NC	35		
7177179	Total Titanium (Ti)	2013/09/26					<1.0	mg/kg	18.7	35		
7186262	Total Arsenic (As)	2013/09/27	90	75 - 125	98	75 - 125	<0.010	mg/kg	NC	35	114	75 - 125
7186262	Total Barium (Ba)	2013/09/27	NC	75 - 125	98	75 - 125	<0.020	mg/kg	4.0	35	99	75 - 125
7186262	Total Beryllium (Be)	2013/09/27	88	75 - 125	97	75 - 125	<0.020	mg/kg	NC	35		
7186262	Total Cadmium (Cd)	2013/09/27	91	75 - 125	103	75 - 125	<0.0020	mg/kg	NC	35	103	75 - 125
7186262	Total Chromium (Cr)	2013/09/27	97	75 - 125	102	75 - 125	<0.040	mg/kg	NC	35	58	28 - 97
7186262	Total Cobalt (Co)	2013/09/27	93	75 - 125	101	75 - 125	<0.0040	mg/kg	NC	35	104	75 - 125

Maxxam Job #: B378712
Report Date: 2013/09/30

Ecological Logistics & Research
Client Project #: 12-127/TA07.VC MNRP
Site Location: WHITEHORSE YUKON

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7186262	Total Copper (Cu)	2013/09/27	NC	75 - 125	103	75 - 125	<0.010	mg/kg	10.2	35	101	75 - 125
7186262	Total Lead (Pb)	2013/09/27	90	75 - 125	97	75 - 125	<0.0020	mg/kg	NC	35		
7186262	Total Manganese (Mn)	2013/09/27	NC	75 - 125	102	75 - 125	<0.020	mg/kg	0.4	35	114	75 - 125
7186262	Total Mercury (Hg)	2013/09/27	92	75 - 125	101	75 - 125	<0.0020	mg/kg	NC	35	100	75 - 125
7186262	Total Nickel (Ni)	2013/09/27	92	75 - 125	104	75 - 125	<0.010	mg/kg	NC	35	91	58 - 126
7186262	Total Selenium (Se)	2013/09/27	96	75 - 125	102	75 - 125	<0.010	mg/kg	NC	35	124	75 - 125
7186262	Total Silver (Ag)	2013/09/27	74(1)	75 - 125	84	75 - 125	<0.0040	mg/kg	NC	35		
7186262	Total Strontium (Sr)	2013/09/27	NC	75 - 125	100	75 - 125	<0.020	mg/kg	1.1	35	114	75 - 125
7186262	Total Thallium (Tl)	2013/09/27	96	75 - 125	97	75 - 125	<0.00040	mg/kg	NC	35		
7186262	Total Uranium (U)	2013/09/27	87	75 - 125	95	75 - 125	<0.00040	mg/kg	NC	35		
7186262	Total Vanadium (V)	2013/09/27	97	75 - 125	104	75 - 125	<0.040	mg/kg	NC	35		
7186262	Total Zinc (Zn)	2013/09/27	NC	75 - 125	106	75 - 125	<0.040	mg/kg	4.1	35	96	75 - 125
7186262	Total Aluminum (Al)	2013/09/27					<0.20	mg/kg	1.3	35	36	20 - 93
7186262	Total Antimony (Sb)	2013/09/27					<0.0010	mg/kg	NC	35	98	75 - 125
7186262	Total Boron (B)	2013/09/27					<0.40	mg/kg	6.0	35	97	75 - 125
7186262	Total Iron (Fe)	2013/09/27					<2.0	mg/kg	NC	35	97	75 - 125
7186262	Total Magnesium (Mg)	2013/09/27					<2.0	mg/kg	7.4	35	99	75 - 125
7186262	Total Molybdenum (Mo)	2013/09/27					<0.010	mg/kg	NC	35	119	75 - 125
7186262	Total Sodium (Na)	2013/09/27					<2.0	mg/kg	NC	35	94	75 - 125
7186262	Total Bismuth (Bi)	2013/09/27					<0.020	mg/kg	NC	35		
7186262	Total Calcium (Ca)	2013/09/27					<2.0	mg/kg	2.3	35		
7186262	Total Phosphorus (P)	2013/09/27					<2.0	mg/kg	5.2	35		
7186262	Total Potassium (K)	2013/09/27					<2.0	mg/kg	7.4	35		
7186262	Total Tin (Sn)	2013/09/27					<0.020	mg/kg	NC	35		
7186262	Total Titanium (Ti)	2013/09/27					<0.20	mg/kg	NC	35		
7189090	Moisture	2013/09/26					<0.30	%	0.2	20		
7190925	Moisture	2013/09/26					<0.30	%	0.8	20		
7191793	Moisture	2013/09/26					<0.30	%	0.4	20		

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(2) - Reference outside acceptance criteria (10% of analytes failure allowed).

Validation Signature Page

Maxxam Job #: B378712

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

Rob Reinert, Data Validation Coordinator

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-6566

CHAIN OF CUSTODY RECORD

B378712

Click here to get the COC number

Maxxam Job #: _____ **COC #:** 08377598

Page 1 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other _____
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required: _____

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	9-VC-A HJ8674		Plant	08/29/13 16:20	x	
	9-VC-B HJ8675		Plant	08/29/13 16:20	x	
4	9-VC-C HJ8676		Plant	08/29/13 16:20	x	
5	9-VC-D HJ8677		Soil	08/29/13 16:20	x	
6	20-VC-A HJ8678		Plant	08/29/13 09:15	x	
7	20-VC-B HJ8679		Plant	08/29/13 09:15	x	
8	20-VC-C HJ8680		Plant	08/29/13 09:15	x	
9	20-VC-D HJ8681		Soil	08/29/13 09:15	x	
10	39-VC-A HJ8682		Plant	08/29/13 12:04	x	
11	39-VC-B HJ8683		Plant	08/29/13 12:04	x	
12	39-VC-C HJ8684		Plant	08/29/13 12:04	x	

B378712

Print name and sign

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by:	Date (yy/mm/dd)	Time (24 hr):	Time Sensitive
Heidi Schindler	13/09/02	18:00	Helgren Helen Ann	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt (°C)	5 7 12
Just sampled & rec'd o	
Custody Seal Present?	N/A
Intact?	

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6,6,11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 Click here to get the COC number

COC #: 08377762

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Invoice To: Require Report? Yes ☐ No ☐		**Report To:**	
Company Name:	ELR	Company Name:	ELR
Contact Name:	Heidi Schindler	Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way	Address:	204-105 Titanium Way
	Whithorse PC: Yukon		Whitehorse PC: yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:	Phone / Fax#:	Ph: 8676686386 Fax
E-mail	chris@elr.ca	E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	10-VC-C HJ8718		Soil	08/29/13 15:05	x	
	10-VC-D HJ8719		Plant	08/29/13 15:05	x	
4	43-VC-B		Plant	08/29/13 15:05	x	
5	43-VC-C		Plant	08/29/13 15:05	x	
6	43-VC-D		Soil	08/29/13 15:05	x	
7	19-VC-A		Plant	08/29/13 15:05	x	
8	19-VC-B		Plant	08/29/13 15:05	x	
9	19-VC-C		Plant	08/29/13 15:05	x	
10	19-VC-D		Soil	08/29/13 15:05	x	
11	21-VC-A HJ8720		Plant	08/29/13 12:45	x	
12	21-VC-B HJ8721		Plant	08/29/13 12:45	x	

B378712

Print name and sign: *Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	[illegible]	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12 Just sampled & rec'd o ☐

Custody Seal Nr: NA

Present? ~

Intact? ~

"IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6/6/11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 **COC #:** 08377764 Click here to get the COC number

Page: 5 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day

Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	1-VC-B HJ8733		Plant	08/29/13 19:10	x	
	1-VC-C HJ8734		Plant	08/29/13 19:10	x	
4	1-VC-D HJ8735		Soil	08/29/13 19:10	x	
5	32-VC-A HJ8736		Plant	08/29/13 18:25	x	
6	32-VC-B HJ8737		Plant	08/29/13 18:25	x	
7	32-VC-C HJ8738		Plant	08/29/13 18:25	x	
8	32-VC-D HJ8739		Soil	08/29/13 18:25	x	
9	28-VC-A HJ8740		Plant	08/29/13 17:35	x	
10	28-VC-B HJ8741		Plant	08/29/13 17:35	x	
11	28-VC-C HJ8742		Plant	08/29/13 17:35	x	
12	28-VC-D HJ8743		Soil	08/29/13 17:35	x	

B378712

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	[signature]	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12 Just sampled & rec'd o ☐

Custody Seal No: Present? NA Intact?

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6, 6, 11.

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 **COC #:** 08377766 Click here to get the COC number

Page 7 of 9

Invoice To: Require Report? Yes ☐ No ☐		**Report To:**	
Company Name:	ELR	Company Name:	ELR
Contact Name:	Heidi Schindler	Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way	Address:	204-105 Titanium Way
	Whithorse PC: Yukon		Whitehorse PC: yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:	Phone / Fax#:	Ph: 8676686386 Fax
E-mail	chris@elr.ca	E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other _____
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required: _____

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	42-VC-D HJ8768		Soil	08/30/13 09:30	x	
	38-VC-A HJ8769		Plant	08/30/13 11:20	x	
4	38-VC-B HJ8770		Plant	08/30/13 11:20	x	
5	38-VC-C HJ8771		Plant	08/30/13 11:20	x	
6	38-VC-D HJ8772		Soil	08/30/13 11:20	x	
7	DP4-VC-A HJ8773		Plant	08/30/13 11:50	x	
8	DP4-VC-B HJ8774		Plant	08/30/13 11:50	x	
9	DP4-VC-C HJ8775		Plant	08/30/13 11:50	x	
10	DP4-VC-D HJ8776		Soil	08/30/13 11:50	x	
11	29-VC-A HJ8777		Plant	08/30/13 14:41	x	
12	29-VC-B HJ8778		Plant	08/30/13 14:41	x	

B378712

Print name and sign			Print name and sign				Laboratory Use Only
***Relinquished By:**	**Date (yy/mm/dd):**	**Time (24hr):**	**Received by:**	**Date (yy/mm/dd)**	**Time (24 hr):**	**Time Sensitive**	Temperature on Receipt (°C): 5.7 12 Custody Seal Present? Intact?
Heidi Schindler	13/09/02	18:00	Relinquished by	2013/09/03	14:07	☐	

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

BBY FCD-00077R2_C

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 **COC #:** 08377768

Click here to get the COC number

Page: 9 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867.668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	CR1-VC-B HJ8844		Plant	08/30/13 15:42	x	
	CR1-VC-C HJ8845		Plant	08/30/13 15:42	x	
4	CR1-VC-D HJ8846		Soil	08/30/13 15:42	x	
	11-VC-A		Plant	08/30/13 13:15	x	
5	11-VC-B		Plant	08/30/13 13:15	x	
6	11-VC-C		Plant	08/30/13 13:15	x	
7	11-VC-D		Soil	08/30/13 13:15	x	
8	15-VC-A		Plant	08/30/13 10:15	x	
9	15-VC-B		Plant	08/30/13 10:15	x	
10	15-VC-C		Plant	08/30/13 10:15	x	
11	15-VC-D		Soil	08/30/13 10:15	x	
12	CU1-VC-A HJ8847		Plant	08/30/13 16:00	x	

B378712

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	[signature]	2013/09/03	14:37	☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12 Custody Seal Present? NA Nr:

Just sampled & rec'd o ☐ Intact? ☑

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6, 6, 11

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712

COC #: - 08377770

Click here to get the COC -

Page 1 of 2

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day

Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	35-VC-B HJ8950		Plant	08/31/13 10:00	x	
	35-VC-C HJ8951		Plant	08/31/13 10:00	x	
4	35-VC-D HJ8952		Soil	08/31/13 10:00	x	
	CU2-VC-A HJ8953		Plant	08/31/13 09:09	x	
5	CU2-VC-B HJ8954		Plant	08/31/13 09:09	x	
6	CU2-VC-C HJ8955		Plant	08/31/13 09:09	x	
7	CU2-VC-D HJ8956		Soil	08/31/13 09:09	x	
8	25-VC-A HJ8957		Plant	08/31/13 11:45	x	
9	25-VC-B HJ8958		Plant	08/31/13 11:45	x	
10	25-VC-C HJ8959		Plant	08/31/13 11:45	x	
11	25-VC-D HJ8960		Soil	08/31/13 11:45	x	
12	3-VC-A HJ8961		Plant	08/31/13 10:30	x	

B378712

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by:	Date (yy/mm/dd)	Time (24 hr):	Time Sensitive
Heidi Schindler	13/09/02	18:00	Alex Shan Helen Zhao	2013/09/03	14 07	☐

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Laboratory Use Only

Temperature on Receipt (°C): A) 5 . 7 12 Custody Seal No:

Present? NA

Just sampled & rec'd c Intact?

6, 6, 11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

13

Maxxam Job #: ~~B35~~ B378712 Click here to get the COC number

COC #: 08377772

Page: 4 of 9

Invoice To: Require Report? Yes ☐ No ☐		Report To:	
Company Name:	ELR	Company Name:	ELR
Contact Name:	Heidi Schindler	Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way	Address:	204-105 Titanium Way
	Whithorse PC: Yukon		Whitehorse PC: yukon
Phone / Fax#:	Ph: 867 668 6386 Fax:	Phone / Fax#:	Ph: 8676686386 Fax
E-mail	chris@elr.ca	E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	41-VC-B HJ8975		Plant	08/31/13 11:06	x	
	41-VC-C HJ8976		Plant	08/31/13 11:06	x	
4	41-VC-D HJ8977		Soil	08/31/13 11:06	x	
5						
6						
7						
8						
9						
10						
11						
12						

8378712

Print name and sign: *Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	Hughes Helen Ann	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt	Custody Seal No: NA
A) 5 7 12	Present?
Just sampled & rec'd o[illegible]	Intact?

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6/6/11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 | COC #: 08377761 | Click here to get the COC number | Page: 2 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project #:	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	39-VC-D HJ8706		Soil	08/29/13 12:04	x	
	6-VC-A HJ8707		Plant	08/29/13 15:44	x	
4	6-VC-B HJ8708		Plant	08/29/13 15:44	x	
5	6-VC-C HJ8709		Plant	08/29/13 15:44	x	
6	6-VC-D HJ8710		Soil	08/29/13 15:44	x	
7	DP3-VC-A HJ8711		Plant	08/29/13 19:00	x	
8	DP3-VC-B HJ8712		Plant	08/29/13 19:00	x	
9	DP3-VC-C HJ8713		Plant	08/29/13 19:00	x	
10	DP3-VC-D HJ8714		Soil	08/29/13 19:00	x	
11	10-VC-A HJ8715		Plant	08/29/13 15:05	x	
12	10-VC-B HJ8716		Plant	08/29/13 15:05	x	

B378712

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	[signature]	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt (°C): Air 5.7.12 | Custody Seal Present? No: N/A

Just sampled & rec'd o[illegible] Intact?

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

BBY FCD-00077R2_C

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Maxxam Analytics Inc

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 **COC #:** 08377763 Click here to get the COC number

Page: 4 of 9

Invoice To: Require Report? Yes ☐ No ☐		**Report To:**	
Company Name:	ELR	Company Name:	ELR
Contact Name:	Heidi Schindler	Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way	Address:	204-105 Titanium Way
	Whithorse PC: Yukon		Whitehorse PC: yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:	Phone / Fax#:	Ph: 8676686386 Fax
E-mail	chris@elr.ca	E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:
- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other _____
- ☐ DRINKING WATER

SERVICE REQUESTED:
- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required: _____

SPECIAL INSTRUCTIONS:
Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

ANALYSIS REQUESTED

	Sample Identification	Lab Use Only: Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	21-VC-C HJ8722		Plant	08/29/13 12:45	x	
	21-VC-D HJ8723		Soil	08/29/13 12:45	x	
4	16-VC-A HJ8724		Plant	08/29/13 10:55	x	
5	16-VC-B HJ8725		Plant	08/29/13 10:55	x	
6	16-VC-C HJ8726		Plant	08/29/13 10:55	x	
7	16-VC-D HJ8727		Soil	08/29/13 10:55	x	
8	36-VC-A HJ8728		Plant	08/29/13 17:00	x	
9	36-VC-B HJ8729		Plant	08/29/13 17:00	x	
10	36-VC-C HJ8730		Plant	08/29/13 17:00	x	
11	36-VC-D HJ8731		Soil	08/29/13 17:00	x	
12	1-VC-A HJ8732		Plant	08/29/13 19:10	x	

B378712

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign: Received by :	Date (yy/mm/dd)	Time (24 hr):	Time Sensitive
Heidi Schindler	13/09/02	18:00	[signature]	2013/09/03	14:57	☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12 Just sampled & rec'd ☐

Custody Seal No: 1 A Present? Intact?

"IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6, b, 11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712

COC #: 08377765

Click here to get the COC number

Page: 6 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other _____
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required: _____

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	8-VC-A HJ8745		Plant	08/29/13 09:55	x	
	8-VC-B HJ8746		Plant	08/29/13 09:55	x	
4	8-VC-C HJ8747		Plant	08/29/13 09:55	x	
5	8-VC-D HJ8748		Soil	08/29/13 09:55	x	
6	27-VC-A HJ8749		Plant	08/30/13 17:17	x	
7	27-VC-B HJ8750		Plant	08/30/13 17:17	x	
8	27-VC-C HJ8751		Plant	08/30/13 17:17	x	
9	27-VC-D HJ8752		Soil	08/30/13 17:17	x	
10	42-VC-A HJ8753		Plant	08/30/13 09:30	x	
11	42-VC-B HJ8754		Plant	08/30/13 09:30	x	
12	42-VC-C HJ8755		Plant	08/30/13 09:30	x	

B378712

Lab Use Only

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):
Heidi Schindler	13/09/02	18:00

Print name and sign

Received by:	Date (yy/mm/dd)	Time (24 hr)
[signature]	2013/09/03	14:07

Time Sensitive ☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12

Custody Seal Present? NA

Just sampled & rec'd o ☐ Extract?

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

BBY FCD-00077R2_C

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6,6,11

Maxxam Analytics Inc

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CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 **COC #:** 08377767 Click here to get the COC number

Page: 8 of 9

Invoice To: Require Report? Yes ☐ No ☐		**Report To:**	
Company Name:	ELR	Company Name:	ELR
Contact Name:	Heidi Schindler	Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way	Address:	204-105 Titanium Way
	Whithorse PC: Yukon		Whitehorse PC: yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:	Phone / Fax#:	Ph: 8676686386 Fax
E-mail	chris@elr.ca	E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:
- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other _____
- ☐ DRINKING WATER

SERVICE REQUESTED:
- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required: _____

SPECIAL INSTRUCTIONS:
Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐
Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification (Lab Use Only)	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	29-VC-C HJ8805		Plant	08/30/13 14:41	x	
	29-VC-D HJ8806		Soil	08/30/13 11:20	x	
4	11-VC-A HJ8807		Plant	08/30/13 13:15	x	
5	11-VC-B HJ8808		Plant	08/30/13 13:15	x	
6	11-VC-C HJ8809		Plant	08/30/13 13:15	x	
7	11-VC-D HJ8810		Soil	08/30/13 13:15	x	
8	15-VC-A HJ8811		Plant	08/30/13 10:15	x	
9	15-VC-B HJ8812		Plant	08/30/13 10:15	x	
10	15-VC-C HJ8813		Plant	08/30/13 10:15	x	
11	15-VC-D HJ8814		Soil	08/30/13 10:15	x	
12	CR1-VC-A HJ8815		Plant	08/30/13 15:42	x	

B378712

Print name and sign | Print name and sign | x

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	[signature]	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt: Custody Seal No: NA
A) 5 7 12 Present?
Just sampled & rec'd o ☐ Intact?

"IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6/6/11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 **COC #:** 08377769 Click here to get the COC number

Page: 10 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8676686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other _____
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required: _____

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

Lab Use Only

	Sample Identification	Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	CU1-VC-B HJ8939		Plant	08/30/13 16:00	x	
	CU1-VC-C HJ8940		Plant	08/30/13 16:00	x	
4	CU1-VC-D HJ8941		Soil	08/30/13 16:00	x	
	23-VC-A HJ8942		Plant	08/30/13 12:00	x	
5	23-VC-B HJ8943		Plant	08/30/13 12:00	x	
6	23-VC-C HJ8944		Plant	08/30/13 12:00	x	
7	23-VC-D HJ8945		Soil	08/30/13 12:00	x	
8	15-VC-A		Plant	08/30/13 16:00	x	
9	15-VC-B		Plant	08/30/13 16:00	x	
10	15-VC-C		Plant	08/30/13 16:00	x	
11	15-VC-D		Soil	08/30/13 16:00	x	
12	35-VC-A HJ8946		Plant	08/31/13 10:00	x	

B378712

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):
Heidi Schindler	13/09/02	18:00

Print name and sign

Received by:	Date (yy/mm/dd)	Time (24 hr)
[signature]	2013/09/03	14:07

Time Sensitive ☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12 Custody Seal Present? N/A

Just sampled & rec'd o[illegible] Intact?

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6, 6, 11

Maxxam Analytics Inc

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Ph: (604) 734-7276 Fax: (604) 731-2386, Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD

Maxxam Job #: B378712 COC #: 08377771

Click here to get the COC

Page: 12 of 9

Invoice To: Require Report? Yes ☐ No ☐

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whithorse PC: Yukon
Phone / Fax#:	Ph: 867 668.6386 Fax:
E-mail	chris@elr.ca

Report To:

Company Name:	ELR
Contact Name:	Heidi Schindler
Address:	204-105 Titanium Way
	Whitehorse PC: yukon
Phone / Fax#:	Ph: 8678686386 Fax
E-mail	heidi@elr.ca, chris@elr.ca

PO #:	none
Quotation #:	
Project # :	12-127/TA07.VC
Proj. Name:	MNRP
Location:	Whithorse, Yukon
Sampled by:	Heidi Schindler, Alexandra Westman

REGULATORY REQUIREMENTS:

- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☑ Other
- ☐ DRINKING WATER

SERVICE REQUESTED:

- ◉ Regular Turn Around Time (TAT) (5 days for most tests)
- **RUSH** (Please contact the lab) ○ 1 Day ○ 2 Day ○ 3 Day
- Date Required:

SPECIAL INSTRUCTIONS:

Return Cooler ☐ **Ship Sample Bottles (please specify)** ☐

Note - Sample ID consists of "sample ID" on label AND "set/number" on label.

ANALYSIS REQUESTED

	Sample Identification	Lab Identification	Sample Type	Date/Time(24hr) Sampled	Total Metals - Tissue	Number of Containers
1	3-VC-B HJ8962		Plant	08/31/13 10:30	x	
	3-VC-C HJ8963		Plant	08/31/13 10:30	x	
4	3-VC-D HJ8964		Soil	08/31/13 10:30	x	
	DP5-VC-A HJ8965		Plant	08/31/13	x	
5	DP5-VC-B HJ8966		Plant	08/31/13	x	
6	DP5-VC-C HJ8967		Plant	08/31/13	x	
7	DP5-VC-D HJ8968		Soil	08/31/13	x	
8	CR2-VC-A HJ8969		Plant	08/31/13 08:45	x	
9	CR2-VC-B HJ8970		Plant	08/31/13 08:45	x	
10	CR2-VC-C HJ8971		Plant	08/31/13 08:45	x	
11	CR2-VC-D HJ8972		Soil	08/31/13 08:45	x	
12	41-VC-A HJ8973		Plant	08/31/13 11:06	x	

B378712

Lab Use Only

Print name and sign

*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Print name and sign Received by:	Date (yy/mm/dd)	Time (24 hr)	Time Sensitive
Heidi Schindler	13/09/02	18:00	[signature]	2013/09/03	14:07	☐

Laboratory Use Only

Temperature on Receipt (°C): A) 5 7 12 Custody Seal Present? Nr. NA

Just sampled & rec'd o[illegible] Intact?

*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

6, 6/11