# KENO HILL PROPERTY

# REVEGETATION TRIALS - GALENA HILL WASTE ROCK DUMPS

# 2008

**Prepared for:**


**by:**


## S. P. WITHERS


**DRAFT**

**JANUARY 2008**

# Revegetation Trials - Galena Hill Waste Rock Dumps

## 1.0 Background

In order to establish effective measures for revegetating the discontinued waste rock dumps in the Elsa area, three revegetation test sites were established on Galena Hill in 2007. The selected sites include two waste rock dumps and one control site.

A preliminary assessment of these sites was carried out on July 31, 2007. This included an evaluation of the sites' physical characteristics and an inventory of the naturally occurring revegetation. Soil and vegetation samples were collected from the surfaces of the Simes and Hector waste rock dumps prior to recontouring.

Recontouring of the sites and test plot layout took place on September 5, 2007. Seed and fertilizer was applied to the three test plots on September 6, 2007.

## 2.0 Soil Sample Analyses

Composited soil samples were collected from the upper surfaces of the Simes and Hector waste rock dumps prior to recontouring and scarification.

As was anticipated, the level of available nitrogen was very low at both sites. Available phosphorous was moderate at the Simes dump and low at the Hector dump, while available potassium was low at both sites. Available sulfate was moderate at the Simes dump and very high at the Hector dump.

The percent organic matter was very low at both sites. The soil texture was medium, the cation exchange capacity low, and the C:N ratio moderate at both sites.

The analytical report for these samples is attached.

## 3.0 Seed and Fertilizer Applications

Two seed mixes were applied to the Galena Hill test plots:

**Brewery Creek Seed Mix** – acquired for the Brewery Creek Mine in 2006 – pre-mixed by Pickseed Canada.

| Species | % by weight |
|---|---|
| Violet Wheatgrass | 36 |
| Ticklegrass | 15 |
| Sheep Fescue | 14 |
| Rocky Mountain Fescue | 14 |
| Glaucous Bluegrass | 11 |
| Alfalfa | 10 |

**Minto Mine Seed Mix** – includes three species of grass seeds acquired for the Minto Mine from Brett-Young Seeds in 2007 – mixed on-site at the Galena Hill test plots.

| Species | % by weight |
|---|---|
| Violet Wheatgrass | 50 |
| Sheep Fescue | 30 |
| Fowl Bluegrass | 20 |

Both seed mixes were applied to all three test plot sites at a rate of approximately 50 kg/ha.

Fertilizer (24-3-12) was applied to all three test plot sites at a rate of approximately 100 kg/ha.

# 4.0 Revegetation Test Plots

## 4.1 Simes Waste Rock Dump

UTM coordinates: E 0482265
N 7088816

The existing upper surface of the waste rock dump is near-level, compacted and of medium-coarse granular texture.

The very little naturally occurring revegetation (< 5% cover) on the waste rock dump's upper surface consists of:

| | |
|---|---|
| Paper birch | *Betula papyrifera* |
| Dwarf birch | *Betula glandulos*a |
| Trembling aspen | *Populus tremuloides* |
| Balsam poplar | *Populus balsamifera* |
| White spruce | *Picea glauca* |
| Felt-leaf willow | *Salix alaxensis* |
| Grey-leaf willow | *Salix glauca* |
| Fireweed | *Epilobium angustifolium* |
| Bluejoint reedgrass | *Calamagrostis canadensis* |
| Trisetum | *Trisetum spicatum* |
| Ticklegrass | *Agrostis scabra* |
| Squirrel-tail barley | *Hordeum jubatum* |

The surrounding vegetation is sub-alpine forest consisting of:

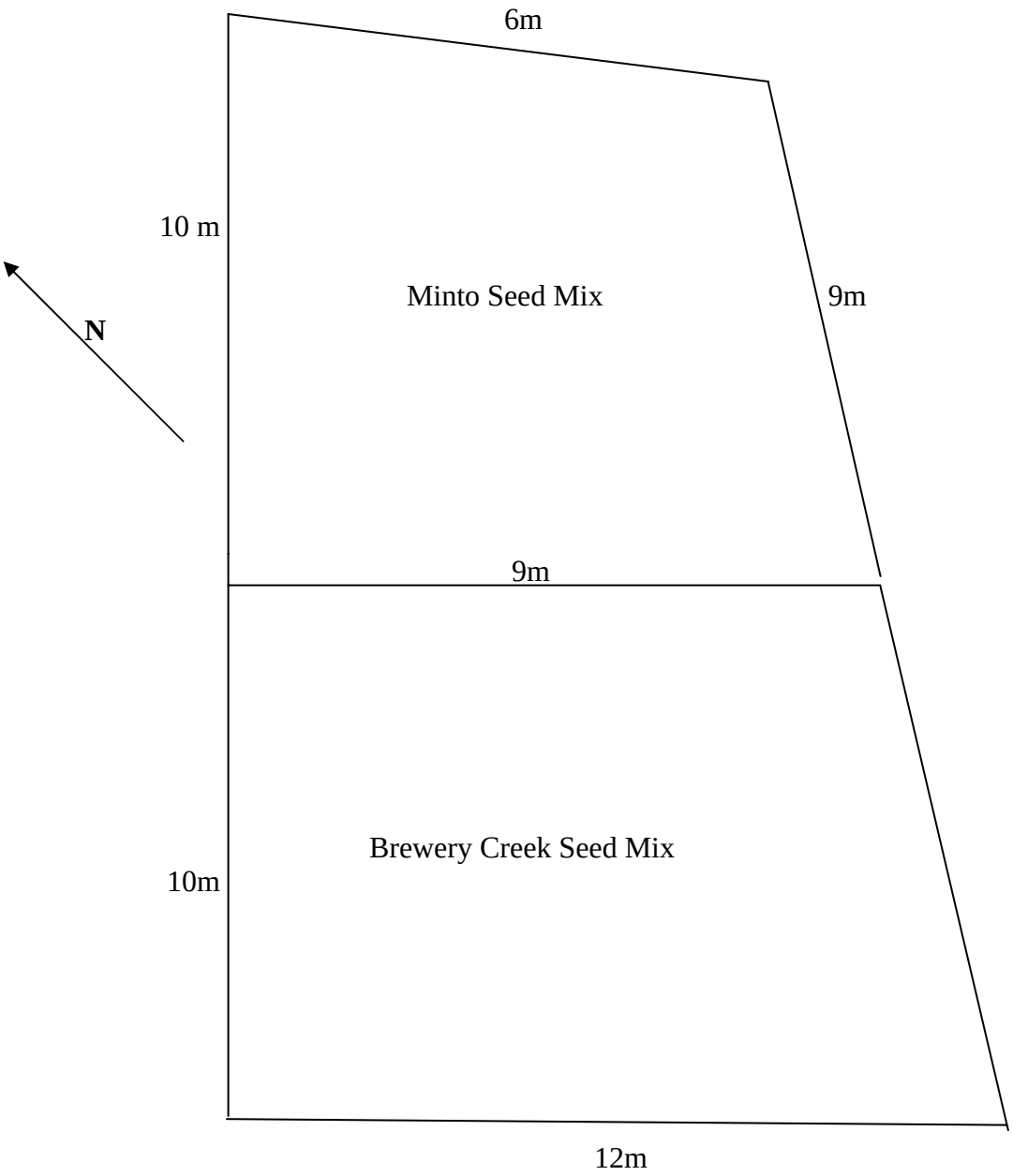
| | |
|---|---|
| Paper birch | *Betula papyrifera* |

| | |
|---|---|
| Dwarf birch | *Betula glandulos*a |
| White spruce | *Picea glauca* |
| Felt-leaf willow | *Salix alaxensis* |
| Grey-leaf willow | *Salix glauca* |
| Labrador tea | *Ledum groenlandicun* |
| Bog blueberry | *Vaccinium uliginosum* |
| Crowberry | *Empetrum nigrum* |
| Feathermoss | *Pleurozium shreberi* |
| Reindeer lichen | *Cladina* sp. |

The Simes waste rock test plot was contoured to an approximately 2:1 slope with a NE aspect. The lower portion of the plot (see diagram) was seeded with the Brewery Creek seed mix and the upper portion was seeded with the Minto seed mix. In addition, seeds from the following nearby naturally occurring wild species were collected and applied to a narrow strip along the upper portion of the test plot:

| | |
|---|---|
| Ticklegrass | *Agrostis scabra* |
| Fireweed | *Epilobium angustifolium* |
| Bluejoint reedgrass | *Calamagrostis Canadensis* |

# Simes Waste Rock Dump Test Plot



## 4.2 Hector Waste Rock Dump

UTM coordinates: E 0480031
N 7088215

The existing upper surface of the waste rock dump is near-level, compacted and of medium granular texture.

The upper surface of the waste rock dump is void of naturally occurring revegetation except for a little felt-leaf willow, ticklegrass and tufted hairgrass occurring around the edges.

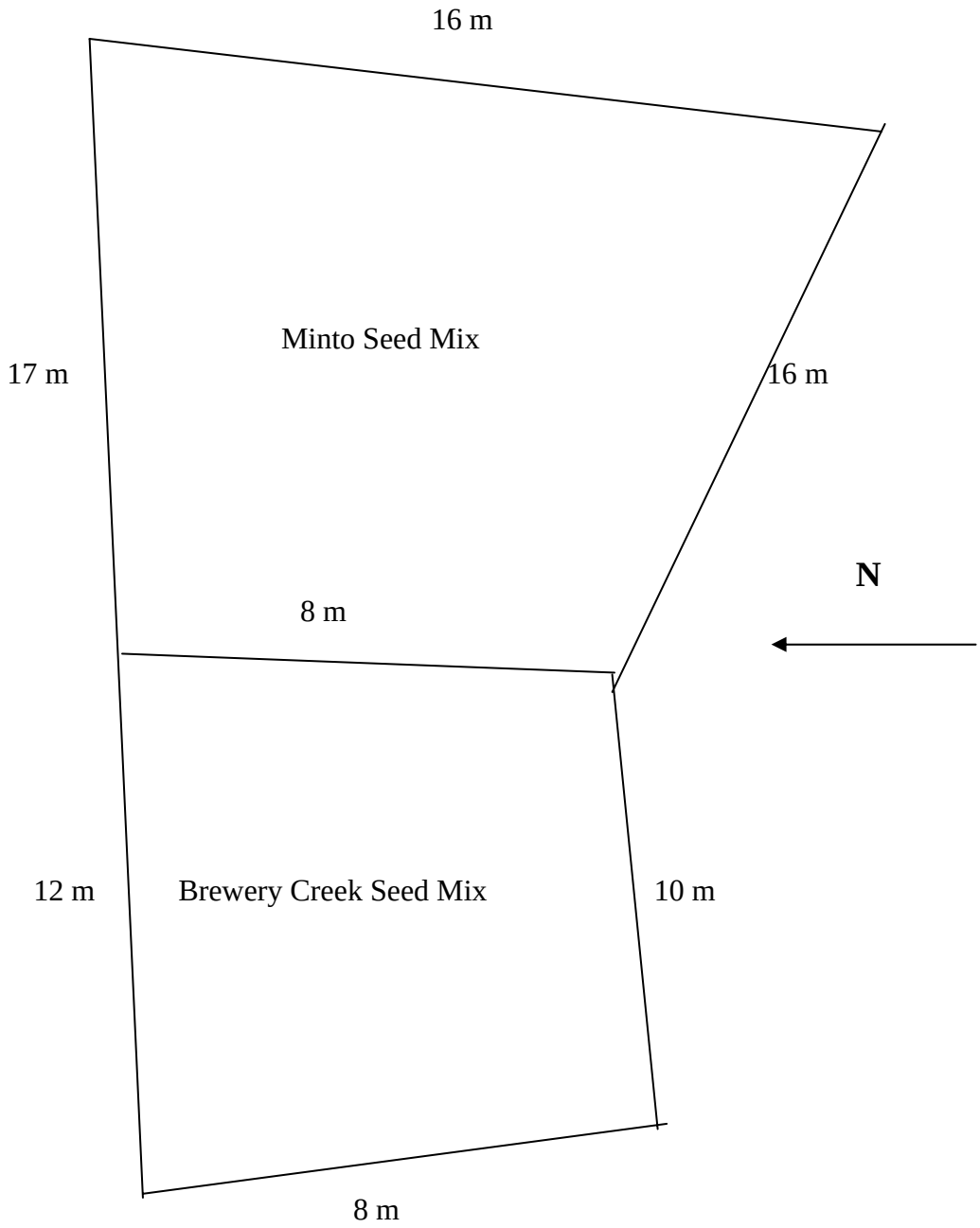
The surrounding vegetation is sub-alpine forest consisting of:

| | |
|---|---|
| Mountain alder | *Alnus* crispa |
| Felt-leaf willow | *Salix alaxensis* |
| Grey-leaf willow | *Salix glauca* |
| Crowberry | *Empetrum nigrum* |
| Alaskan knotweed | *Polygonum alaskanum* |
| Beauverd's spiraea | *Spiraea beauverdiana* |
| Fireweed | *Epilobium angustifolium* |
| Sedge | *Carex* sp. |
| Hairgrass | *Deschampsia brevifolia* |
| Ticklegrass | *Agrostis scabra* |
| Violet wheatgrass | *Agropyron violaceum* |
| Bluejoint reedgrass | Calamagrostis canadensis |
| Wood rush | *Luzula parviflora* |

The Hector waste rock test plot was contoured to an approximately 2:1 slope with a NW aspect. The lower portion of the plot (see diagram) was seeded with the Brewery Creek seed mix and the upper portion was seeded with the Minto seed mix. In addition, seeds from the following nearby naturally occurring wild species were collected and applied to a narrow strip along the upper portion of the test plot:

| | |
|---|---|
| Bluejoint reedgrass | *Calamagrostis canadensis* |
| Hairgrass | *Deschampsia brevifolia* |
| Wood rush | *Luzula parviflora* |
| Alaskan knotweed | *Polygonum alaskanum* |
| Beauverd's spiraea | *Spiraea beauverdiana* |

# Hector Waste Rock Dump Test Plot



## 4.3 Control Site

UTM coordinates: E 0481547
N 7089384

The existing surface of the control site is an approximate 2:1 slope, moderately compacted and of medium granular texture.

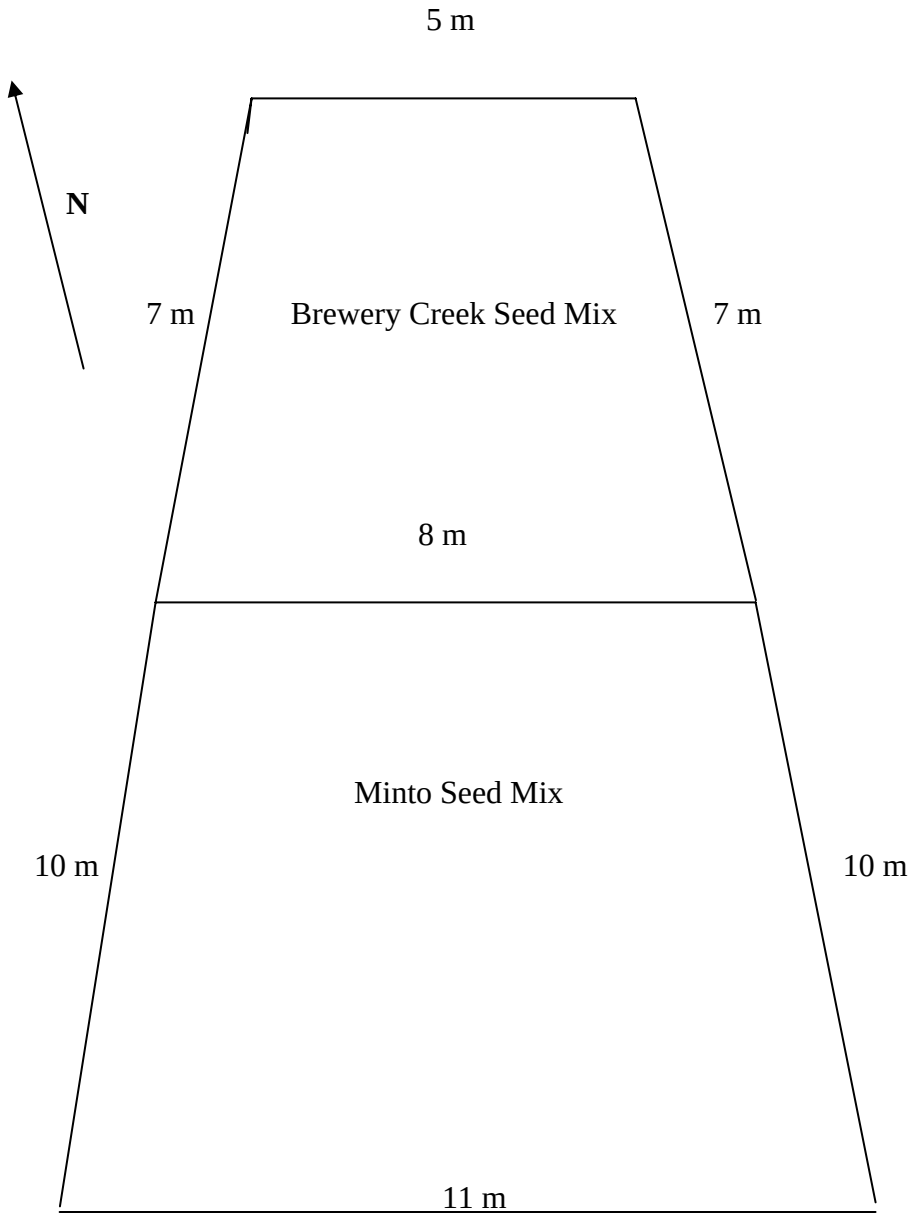
The naturally occurring vegetation on the control plot (prior to scarification) and the surrounding sub-alpine forest consists of:

| | |
|---|---|
| Paper birch | *Betula papyrifera* |
| Dwarf birch | *Betula glandulos*a |
| White spruce | *Picea glauca* |
| Mountain alder | *Alnus crispa* |
| Felt-leaf willow | *Salix alaxensis* |
| Grey-leaf willow | *Salix glauca* |
| Fireweed | *Epilobium angustifolium* |
| Bluejoint reedgrass | *Calamagrostis canadensis* |
| Slender wheatgrass | *Agropyron trachycaulum* |

The control site test plot was recontoured to an approximately 2:1 slope with a NE aspect. The lower portion of the plot (see diagram) was seeded with the Brewery Creek seed mix and the upper portion was seeded with the Minto seed mix. In addition, seeds from the following nearby naturally occurring wild species were collected and applied to a narrow strip along the upper portion of the test plot:

| | |
|---|---|
| Mountain alder | *Alnus crispa* |
| Fireweed | *Epilobium angustifolium* |
| Bluejoint reedgrass | *Calamagrostis canadensis* |
| Slender wheatgrass | *Agropyron trachycaulum* |

## Control Site Test Plot



# 5.0 Recommendations

- A visual examination of the test plots should take place in mid-summer 2008. This should include a documentation of species occurrence and an estimate of vegetative cover. An evaluation of species vigour and health (evidence of discoloration) should also be made.

- It is recommended that soil samples from the recontoured test plots and tissue samples from the seeded grass and legume species (if enough plant material is available) be collected during mid-summer of 2008 at both of the waste rock dumps and the control site (no soil samples were collected from the control site in the summer of 2007 as the site had not yet been selected at the time of sampling). Soil and vegetation samples should be analyzed for metal concentrations, while soil samples should also be texture-classified and analyzed for available nutrients, pH, cation exchange capacity, carbon-nitrogen ratio and the per cent of organic matter.

- It is anticipated that a further application of fertilizer will be required in the fall of 2008. This may consist of a combination of both slow and quick release fertilizers.

- Evidence of soil erosion at the test plots should be noted during the 2008 site visits.

# Appendix A Results of Soil Sample Analysis

Control Number

# NORWEST LABS

# Environmental Sample Information Sheet

**NOTE Proper completion of this form is required in order to proceed with analysis**

See reverse for contacting your nearest Norwest location and proper sampling protocol

| **Billing Address** | | **Report To:** ☐ | **Copy of Report To:** | | **Copy of invoice:** ☐ |
|---|---|---|---|---|---|
| Company: | Access Consulting Group | | Company: | Access Consulting Group | **Mail invoice to this address for approval** ☐ |
| Address: | #3 Calcite Business Centre-151 Industrial Road Whitehorse, YT Y1A 2V3 | **QA/QC Report** ☑ | Address: | #3 Calcite Business Centre-151 Industrial Road Whitehorse, YT Y1A 2V3 | 564838 |
| Attention: | Durand Cornett | **Report Result:** | Attention: | Durand Cornett | **Report Result:** |
| Phone: | 867-668-6364 | Fax ☐ | Phone: | 867-668-6364 | Fax ☐ |
| Fax: | 867-667-6680 | Mail ☐ | Fax: | 867-667-6680 | Mail ☐ |
| Cell: | | Courier ☐ | Cell: | | Courier ☐ |
| Email: | durand@accessconsulting.ca | Email ☑ | Email: | durand@accessconsulting.ca | Email ☑ |

**Information to be included on Report and Invoice**

Project ID: ALEX-07-ESP-01B
Project Name: Keno Valley - Veg Study
Project Location: Keno
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

**RUSH** **Please contact the laboratory to confirm rush dates and times before submitting samples.**

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ **or** ☐

Date required:
Signature:
Norwest Authorization:

Sample Custody (Please Print)

Sampled by: Stu Withers Date: July 31, 2007
Company: ACG Signature:
Relinquished by: Durand Cornett
Company: ACG Date: Aug 6, 2007
Waybill number:
Received by: RECEIVED
Company: Date: AUG 07 2007
Processed by: 10°C Sx 3
Norwest Labs Date:

**Special Instructions/Comments**

| | Sample Identification | Location | Depth | Date/Time Sampled | Matrix | Sampling Method | Number of Containers | ICP Metal Analysis (IT8) | Nutrients (F10) | pH EC (S00) | Texture (PS60) | TOC (CL30) | C:N Ratio (CL41) | CEC (CL11) | Total Nitrogen (CL50) | Metals (TI57) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ↓ | Enter tests above (check off relevant samples below) | | | | | | | | | | | | |
| 1 | Hector | | - | July 31/07 | Soil | Representative | 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 2 | Simes | | - | July 31/07 | Soil | Representative | 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 3 | Hector D brevifolia | | - | July 31/07 | Veg | Representative | 1 | | | | | | | | | ✓ | | | | |
| 4 | Hector S alaxensis | | - | July 31/07 | Veg | Representative | 1 | | | | | | | | | ✓ | | | | |
| 5 | Simes C canadensis | | - | July 31/07 | Veg | Representative | 1 | | | | | | | | | ✓ | | | | |
| 6 | Simes S alaxensis | | - | July 31/07 | Veg | Representative | 1 | | | | | | | | | ✓ | | | | |
| 7 | | | - | | | | | | | | | | | | | | | | | |
| 8 | | | - | | | | | | | | | | | | | | | | | |
| 9 | | | - | | | | | | | | | | | | | | | | | |
| 10 | | | - | | | | | | | | | | | | | | | | | |
| 11 | | | - | | | | | | | | | | | | | | | | | |
| 12 | | | - | | | | | | | | | | | | | | | | | |
| 13 | | | - | | | | | | | | | | | | | | | | | |
| 14 | | | - | | | | | | | | | | | | | | | | | |

**NOTE: All hazardous samples must be labeled according to WHMIS guidelines.**

Accredited by the Standards Council of Canada for specific tests

# Report Transmission Cover Page

| | | | |
|---|---|---|---|
| Bill To: | ELSA Reclamation and | Project: | |
| Report To: | Access Mining Consultants Ltd. | ID: | ALEX-07-ESP-01B |
| | # 3 Calcite Business Centre | Name: | Keno Valley-Veg Study |
| | 151 Industrial Road | Location: | Keno |
| | Whitehorse, YT, Canada | LSD: | |
| | Y1A 2V3 | P.O.: | |
| Attn: | Dave Desmarais | Acct code: | |
| Sampled By: | Stu Withers | | |
| Company: | ACG | | |

| | |
|---|---|
| Lot ID: | **564838** |
| Approval Status: | Approved |
| Invoice Frequency: | by Lot |
| COD Status: | |
| Control Number: | |
| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

| Contact | Company | Address |
|---|---|---|
| Dave Desmarais | Access Mining Consultants Ltd. | # 3 Calcite Business Centre, 151 Industrial Road<br>Whitehorse, YT Y1A 2V3<br>Phone: (867) 668-6463 Fax: (867) 667-6680<br>Email: dave@accessconsulting.ca |

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_____ PAGES IN THIS TRANSMISSION

**Notes To Clients:**

## Reports associated with this Lot

| Id/Format/Report Date | Id/Format/Report Date | Id/Format/Report Date |
|---|---|---|

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# Sample Custody

| | | | |
|---|---|---|---|
| Bill To: | ELSA Reclamation and | Project: | |
| Report To: | Access Mining Consultants Ltd. | ID: | ALEX-07-ESP-01B |
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| Company: | ACG | | |

| | |
|---|---|
| Lot ID: | **564838** |
| Control Number: | |
| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

## Sample Disposal Date: September 27, 2007

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the bottom of this page.

☐ Extend Sample Storage Until _____ (MM/DD/YY)

The following charges apply to extended sample storage:

| | |
|---|---|
| Storage for 1 to 5 samples per month | $ 10.00 |
| Storage for 6 to 20 samples per month | $ 15.00 |
| Storage for 21 to 50 samples per month | $ 30.00 |
| Storage for 51 to 200 samples per month | $ 60.00 |
| Storage for more than 200 samples per month | $ 110.00 |

☐ Return Sample, collect, to the address below via:

- ☐ Greyhound
- ☐ Loomis
- ☐ Purolator
- ☐ Other (specify) _____

Name _____

Company _____

Address _____

_____

Phone _____

Fax _____

Signature _____

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# Analytical Report

| | | | |
|---|---|---|---|
| Bill To: | ELSA Reclamation and | Project: | |
| Report To: | Access Mining Consultants Ltd. | ID: | ALEX-07-ESP-01B |
| | # 3 Calcite Business Centre | Name: | Keno Valley-Veg Study |
| | 151 Industrial Road | Location: | Keno |
| | Whitehorse, YT, Canada | LSD: | |
| | Y1A 2V3 | P.O.: | |
| Attn: | Dave Desmarais | Acct code: | |
| Sampled By: | Stu Withers | | |
| Company: | ACG | | |

| | |
|---|---|
| Lot ID: | **564838** |
| Control Number: | |
| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

| | | | |
|---|---|---|---|
| **Reference Number** | | 564838-1 | 564838-2 |
| **Sample Date** | | Jul 31, 2007 | Jul 31, 2007 |
| **Sample Location** | | | |
| **Sample Description** | | Hector | Simes |
| **Matrix** | | Soil | Soil |

| Analyte | | Units | Results | Results | Results | Detection Limit |
|---|---|---|---|---|---|---|
| **Available Nutrients** | | | | | | |
| Nitrate - N | Available | mg/kg | <1 | 1 | | 1 |
| Phosphorus | Available | mg/kg | <5 | 10 | | 5 |
| Potassium | Available | mg/kg | 20 | 20 | | 10 |
| Sulfate-S | Available | mg/kg | 489 | 9 | | 1 |
| Ammonium - N | Available-dry basis | mg/kg | 0.8 | 1.1 | | 0.3 |
| **Classification** | | | | | | |
| C:N Ratio | | | 9 | 8 | | |
| Organic Matter | | % | 0.93 | 0.86 | | 0.09 |
| Nitrogen | Total | % | 0.05 | 0.05 | | 0.03 |
| Carbon | Total Organic | % | 0.47 | 0.43 | | 0.05 |
| Cation Exchange Capacity | | meq/100g | 2.7 | 2.3 | | |
| Texture | | | Medium | Medium | | |
| **Metals Strong Acid Digestion** | | | | | | |
| Aluminum | Strong Acid Extractable | ug/g | 5620 | 5940 | | 20 |
| Antimony | Strong Acid Extractable | ug/g | 79.0 | 142 | | 0.2 |
| Arsenic | Strong Acid Extractable | ug/g | 622 | 225 | | 0.2 |
| Barium | Strong Acid Extractable | ug/g | 38 | 35 | | 1 |
| Beryllium | Strong Acid Extractable | ug/g | 0.2 | 0.2 | | 0.1 |
| Bismuth | Strong Acid Extractable | ug/g | <0.5 | 2.2 | | 0.5 |
| Cadmium | Strong Acid Extractable | ug/g | 78.7 | 25.3 | | 0.01 |
| Chromium | Strong Acid Extractable | ug/g | 15.7 | 10.2 | | 0.5 |
| Calcium | Strong Acid Extractable | ug/g | 1400 | 500 | | 200 |
| Cobalt | Strong Acid Extractable | ug/g | 4.7 | 2.3 | | 0.1 |
| Copper | Strong Acid Extractable | ug/g | 356 | 264 | | 1 |
| Iron | Strong Acid Extractable | ug/g | 55900 | 27100 | | 100 |
| Lead | Strong Acid Extractable | ug/g | 29300 | 18800 | | 0.1 |
| Magnesium | Strong Acid Extractable | ug/g | <100 | 500 | | 100 |
| Manganese | Strong Acid Extractable | ug/g | 7880 | 1630 | | 10 |
| Molybdenum | Strong Acid Extractable | ug/g | 1 | 1 | | 1 |
| Nickel | Strong Acid Extractable | ug/g | 20.2 | 9.3 | | 0.5 |
| Phosphorus | Strong Acid Extractable | ug/g | 1210 | 800 | | 30 |
| Selenium | Strong Acid Extractable | ug/g | 4.1 | 1.7 | | 0.3 |
| Silicon | Strong Acid Extractable | ug/g | 450 | 540 | | 50 |
| Silver | Strong Acid Extractable | ug/g | 740 | 340 | | 0.1 |
| Strontium | Strong Acid Extractable | ug/g | 10 | 13 | | 1 |
| Thallium | Strong Acid Extractable | ug/g | 0.71 | 0.16 | | 0.05 |
| Tin | Strong Acid Extractable | ug/g | 8 | 15 | | 1 |
| Titanium | Strong Acid Extractable | ug/g | 97.8 | 53.6 | | 0.5 |

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# Analytical Report

| | | | |
|---|---|---|---|
| Bill To: | ELSA Reclamation and | Project: | |
| Report To: | Access Mining Consultants Ltd. | ID: | ALEX-07-ESP-01B |
| | # 3 Calcite Business Centre | Name: | Keno Valley-Veg Study |
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| | Whitehorse, YT, Canada | LSD: | |
| | Y1A 2V3 | P.O.: | |
| Attn: | Dave Desmarais | Acct code: | |
| Sampled By: | Stu Withers | | |
| Company: | ACG | | |

| | |
|---|---|
| Lot ID: | **564838** |
| Control Number: | |
| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **Reference Number** | 564838-1 | 564838-2 | | |
| | | **Sample Date** | Jul 31, 2007 | Jul 31, 2007 | | |
| | | **Sample Location** | | | | |
| | | **Sample Description** | Hector | Simes | | |
| | | **Matrix** | Soil | Soil | | |
| **Analyte** | | **Units** | **Results** | **Results** | **Results** | **Detection Limit** |
| **Metals Strong Acid Digestion - Continued** | | | | | | |
| Vanadium | Strong Acid Extractable | ug/g | 17.1 | 12.1 | | 0.1 |
| Zinc | Strong Acid Extractable | ug/g | 8140 | 1100 | | 1 |
| **Salinity** | | | | | | |
| pH | Saturated Paste | pH | 6.0 | 6.4 | | |
| Electrical Conductivity | Saturated Paste | dS/m at 25 C | 4.33 | 0.16 | | 0.01 |

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# Analytical Report

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| Company: | ACG | | |

| | |
|---|---|
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| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **Reference Number** | 564838-3 | 564838-4 | 564838-5 | |
| | | **Sample Date** | Jul 31, 2007 | Jul 31, 2007 | Jul 31, 2007 | |
| | | **Sample Location** | | | | |
| | | **Sample Description** | Hector D brevifolia | Hector S alaxensis | Simes C canadensis | |
| | | **Matrix** | Tissue | Tissue | Tissue | |
| **Analyte** | | **Units** | **Results** | **Results** | **Results** | **Detection Limit** |
| **Metals Total** | | | | | | |
| Aluminum | Total (wet weight) | ug/g | 258 | 72.0 | 19 | 1 |
| Antimony | Total (wet weight) | ug/g | 8.09 | 1.5 | <0.5 | 0.5 |
| Arsenic | Total (wet weight) | ug/g | 23.0 | 2.9 | <0.2 | 0.2 |
| Barium | Total (wet weight) | ug/g | 8.56 | 20.8 | 22.2 | 0.03 |
| Beryllium | Total (wet weight) | ug/g | 0.02 | <0.01 | <0.02 | 0.01 |
| Bismuth | Total (wet weight) | ug/g | <0.5 | 1.3 | <0.5 | 0.5 |
| Cadmium | Total (wet weight) | ug/g | 15.6 | 39.6 | 2.6 | 0.05 |
| Calcium | Total (wet weight) | ug/g | 2070 | 29300 | 1870 | 2 |
| Chromium | Total (wet weight) | ug/g | 1.96 | 0.12 | 0.26 | 0.04 |
| Cobalt | Total (wet weight) | ug/g | 0.5 | 0.3 | 0.08 | 0.05 |
| Copper | Total (wet weight) | ug/g | 11.3 | 8.96 | 7.76 | 0.05 |
| Iron | Total (wet weight) | ug/g | 1520 | 270 | 96.4 | 1 |
| Lead | Total (wet weight) | ug/g | 676 | 86.5 | 57.0 | 0.3 |
| Lithium | Total (wet weight) | ug/g | 0.74 | 2.4 | 0.4 | 0.1 |
| Magnesium | Total (wet weight) | ug/g | 904 | 4980 | 504 | 1 |
| Manganese | Total (wet weight) | ug/g | 566 | 288 | 580 | 0.3 |
| Molybdenum | Total (wet weight) | ug/g | 0.5 | 0.97 | 0.2 | 0.05 |
| Nickel | Total (wet weight) | ug/g | 4.1 | 3.2 | 8.84 | 0.1 |
| Phosphorus | Total (wet weight) | ug/g | 856 | 2550 | 2040 | 0.5 |
| Potassium | Total (wet weight) | ug/g | 7540 | 13400 | 8560 | 5 |
| Selenium | Total (wet weight) | ug/g | 0.4 | 0.5 | 0.3 | 0.3 |
| Silver | Total (wet weight) | ug/g | 7.12 | 1.4 | 0.4 | 0.2 |
| Sodium | Total (wet weight) | ug/g | 26 | 12 | 9.1 | 1 |
| Strontium | Total (wet weight) | ug/g | 8.93 | 58.8 | 6.55 | 0.02 |
| Titanium | Total (wet weight) | ug/g | 6.24 | 1.0 | 0.3 | 0.05 |
| Vanadium | Total (wet weight) | ug/g | 0.78 | <0.1 | <0.2 | 0.1 |
| Zinc | Total (wet weight) | ug/g | 1030 | 1260 | 122 | 0.1 |
| Zirconium | Total (wet weight) | ug/g | 0.3 | <0.05 | <0.05 | 0.05 |
| Thallium | Total (wet weight) | ug/g | 2.7 | 2.2 | 2.5 | 0.3 |

Bodycote TESTING GROUP

# Analytical Report

| | | | |
|---|---|---|---|
| Bill To: | ELSA Reclamation and | Project: | |
| Report To: | Access Mining Consultants Ltd. | ID: | ALEX-07-ESP-01B |
| | # 3 Calcite Business Centre | Name: | Keno Valley-Veg Study |
| | 151 Industrial Road | Location: | Keno |
| | Whitehorse, YT, Canada | LSD: | |
| | Y1A 2V3 | P.O.: | |
| Attn: | Dave Desmarais | Acct code: | |
| Sampled By: | Stu Withers | | |
| Company: | ACG | | |

| | |
|---|---|
| Lot ID: | **564838** |
| Control Number: | |
| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

| | |
|---|---|
| **Reference Number** | 564838-6 |
| **Sample Date** | Jul 31, 2007 |
| **Sample Location** | |
| **Sample Description** | Simes S alaxensis |
| **Matrix** | Tissue |

| Analyte | | Units | Results | Results | Results | Detection Limit |
|---|---|---|---|---|---|---|
| **Metals Total** | | | | | | |
| Aluminum | Total (wet weight) | ug/g | 45 | | | 1 |
| Antimony | Total (wet weight) | ug/g | <0.5 | | | 0.5 |
| Arsenic | Total (wet weight) | ug/g | 0.4 | | | 0.2 |
| Barium | Total (wet weight) | ug/g | 37.5 | | | 0.03 |
| Beryllium | Total (wet weight) | ug/g | <0.01 | | | 0.01 |
| Bismuth | Total (wet weight) | ug/g | <0.5 | | | 0.5 |
| Cadmium | Total (wet weight) | ug/g | 95.5 | | | 0.05 |
| Calcium | Total (wet weight) | ug/g | 19800 | | | 2 |
| Chromium | Total (wet weight) | ug/g | 0.04 | | | 0.04 |
| Cobalt | Total (wet weight) | ug/g | 0.2 | | | 0.05 |
| Copper | Total (wet weight) | ug/g | 4.2 | | | 0.05 |
| Iron | Total (wet weight) | ug/g | 90.2 | | | 1 |
| Lead | Total (wet weight) | ug/g | 23.5 | | | 0.3 |
| Lithium | Total (wet weight) | ug/g | 2.6 | | | 0.1 |
| Magnesium | Total (wet weight) | ug/g | 4990 | | | 1 |
| Manganese | Total (wet weight) | ug/g | 557 | | | 0.3 |
| Molybdenum | Total (wet weight) | ug/g | 0.2 | | | 0.05 |
| Nickel | Total (wet weight) | ug/g | 9.59 | | | 0.1 |
| Phosphorus | Total (wet weight) | ug/g | 2210 | | | 0.5 |
| Potassium | Total (wet weight) | ug/g | 11500 | | | 5 |
| Selenium | Total (wet weight) | ug/g | 1.6 | | | 0.3 |
| Silver | Total (wet weight) | ug/g | 0.60 | | | 0.2 |
| Sodium | Total (wet weight) | ug/g | 29 | | | 1 |
| Strontium | Total (wet weight) | ug/g | 64.6 | | | 0.02 |
| Titanium | Total (wet weight) | ug/g | 0.57 | | | 0.05 |
| Vanadium | Total (wet weight) | ug/g | <0.1 | | | 0.1 |
| Zinc | Total (wet weight) | ug/g | 600 | | | 0.1 |
| Zirconium | Total (wet weight) | ug/g | <0.05 | | | 0.05 |
| Thallium | Total (wet weight) | ug/g | 2.3 | | | 0.3 |

Approved by:

Walter Brandl
Operations Manager - Surrey

Bodycote TESTING GROUP

# Methodology and Notes

| | | | |
|---|---|---|---|
| Bill To: | ELSA Reclamation and | Project: | |
| Report To: | Access Mining Consultants Ltd. | ID: | ALEX-07-ESP-01B |
| | # 3 Calcite Business Centre | Name: | Keno Valley-Veg Study |
| | 151 Industrial Road | Location: | Keno |
| | Whitehorse, YT, Canada | LSD: | |
| | Y1A 2V3 | P.O.: | |
| Attn: | Dave Desmarais | Acct code: | |
| Sampled By: | Stu Withers | | |
| Company: | ACG | | |

| | |
|---|---|
| Lot ID: | **564838** |
| Control Number: | |
| Date Received: | Aug 7, 2007 |
| Date Reported: | Aug 28, 2007 |
| Report Number: | 1032151 |

## Method of Analysis

| Method Name | Reference | | Method | Date Analysis Started | Location |
|---|---|---|---|---|---|
| Ammonium-N (Extractable) in Soil | McKeague | * | Nitrate and Ammonium Extractable by 2N KCl, 4.35 | 15-Aug-07 | BTG Edmonton |
| Carbon, Nitrogen, Sulfur in soil | Agronomy No 9, Part 2 | * | Organic Matter, 29-4 | 23-Aug-07 | BTG Lethbridge |
| Carbon, Nitrogen, Sulfur in soil | Agronomy No 9, Part 2 | * | Total Carbon, Method Using High-Temperature Induction Furnace, 29-2.2.4 | 23-Aug-07 | BTG Lethbridge |
| Carbon, Nitrogen, Sulfur in soil | Carter | * | Total Nitrogen, 22.4 | 23-Aug-07 | BTG Lethbridge |
| Cation Exchange Capacity (CEC) - Ammonium | McKeague | * | CEC and Exchangeable Cations by NH4OAc at pH 7, 3.32 | 13-Aug-07 | BTG Edmonton |
| Metals (Total) wet weight | US EPA | * | Metals & Trace Elements by ICP-AES, 6010B | 09-Aug-07 | BTG Surrey |
| Metals ICP-MS (Hot Block) in soil | SW-846 | * | Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B | 10-Aug-07 | BTG Edmonton |
| Nutrients in General Soil | Comm. Soil Sci. Pl. Anal. | * | Modified Kelowna Soil Test, Vol 26, 1995 | 10-Aug-07 | BTG Edmonton |
| Saturated Paste in General Soil | McKeague | * | EC of Saturated Soil Paste, 4.13 | 10-Aug-07 | BTG Edmonton |
| Saturated Paste in General Soil | McKeague | * | pH of Saturated Soil Paste, 3.14 | 10-Aug-07 | BTG Edmonton |
| Sulfate in General Soil | McKeague | * | Sulfate Extractable by 0.1M CaCl2, 4.47 | 10-Aug-07 | BTG Edmonton |
| Texture of Soil (by hand) | McKeague | | Soil Texture, Hand Method, 4.8 | 10-Aug-07 | BTG Edmonton |

** Bodycote method(s) based on reference method*

## References

| | |
|---|---|
| Agronomy No 9, | Methods of Soil Analysis, Part 2 |
| Carter | Soil Sampling and Methods of Analysis |
| Comm. Soil Sci. | Communications in Soil Science and Plant Analysis |
| McKeague | Manual on Soil Sampling and Methods of Analysis |
| SW-846 | Test Methods for Evaluating Solid Waste |
| US EPA | US Environmental Protection Agency Test Methods |

## Comments:

# Appendix B Photographs

**Simes Test Plot**

**Hector Test Plot**

**Hector Test Plot**

**Hector Test Plot**