



**Sä Dena Hes Mine
2005 Annual Report
Yukon Production Licence QML - 0004**



Prepared by
Bruce Donald
April 2006

TABLE OF CONTENTS

Section	Page
1.0 Summary	1
2.0 Production Data.....	1
2.1 Ore & Waste Mined	1
2.2 Head Grades Processed	1
2.3 Concentrate Production	1
2.4 Stockpiles	1
3.0 Forecast Mine Life	1
4.0 Backfill Placed Underground.....	2
5.0 Mine Plans.....	2
6.0 Reclamation.....	2
6.1 Reclamation Plan.....	2
6.2 Revegetation Studies.....	2
7.0 Solid Waste Disposal.....	2
7.1 Solid Waste Disposal & Recycling.....	2
7.2 Inventory of Wastes Placed in the Landfill.....	3
8.0 Wildlife Observations	3
9.0 Production Plans For 2005.....	3

Appendices

- Appendix A - Memorandum Regarding Sä Dena Hes Resources February 7, 2006
- Appendix B - Results Summary of Phase II Revegetation Test Program - 2005
- Appendix C - Listing of 2005 Wildlife Sightings at the Mine Site

1.0 SUMMARY

A Joint Venture consisting of Teck Cominco Limited (25%), Teck Cominco Metals Ltd. (25%), and Pan-Pacific Metal Mining Corporation (50%) (a wholly owned subsidiary of Korea Zinc) formed the Sä Dena Hes Operating Corporation which purchased the Sä Dena Hes Mine from Coopers and Lybrand Ltd. the appointed Court Receiver, in March 1994. Teck Cominco Ltd. operates the mine under an Agreement with the Joint Venture Partners. Full-time security and property management is provided by Teck Cominco Ltd. through on-site personnel. The mine operation continued to be maintained on a 'Temporary Closure' basis throughout 2005. In 2001 Sä Dena Hes was granted a Yukon Quartz Mining Production Licence QML-0004 ('Production Licence'). This report is submitted in compliance with Section 13 of the Production Licence.

2.0 PRODUCTION DATA

The mine was under 'Temporary Closure' status throughout 2005.

2.1 Ore & Waste Mined

Ore Produced	0 tonnes
Waste Produced	0 tonnes

2.2 Head Grades Processed

Zinc Grade	N. A.
Lead Grade.....	N. A.

2.3 Concentrate Production

Zinc Concentrate	0 tonnes
Lead Concentrate	0 tonnes

2.4 Stockpiles

Ore Stockpiles	0 tonnes
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3.0 FORECAST MINE LIFE

Expected mine life is approximately 4 years based on current resources. The Mineral Resources have not changed from 2005 and are as follows (Appendix A – Memorandum from W.P. Armstrong to Bruce Donald Re: Sä Dena Hes Resources February 7, 2005):

Mineral Resources

Indicated	2,190,000 tonnes
Zinc	10.4%
Lead	2.6%

4.0 BACKFILL PLACED UNDERGROUND

There was no backfill placed underground during 2005.

5.0 MINE PLANS

Mine plans and sections were submitted with the Production Licence 2001 Annual Report. They are not being resubmitted as there have been no changes to the plans in 2005.

6.0 RECLAMATION

The site was in Temporary Closure throughout the year awaiting return of economic metal prices. Site reclamation activities were related to study activity.

6.1 Reclamation Plan

The Production Licence requires that the “Sä Dena Hes Mine Detailed Decommissioning & Reclamation Plan – February 2000” be updated during 2005. To be consistent with the Water Licence, Energy, Mines and Resources has agreed to permit the plan to be submitted no later than January 28th, 2006. At year end, work on updating the plan was in the final stages ensuring that the updated plan will be submitted by the January 28th deadline.

6.2 Revegetation Studies

The Reclamation Plan proposed Revegetation studies in Section 3.6 of the report. The Production Licence requires that the testing proposed in Section 3.6 and 3.6.2.1 be conducted.

In 2000, the initial work related to Revegetation was initiated to obtain basic information for use in designing the revegetation test work. In 2001 and 2002 revegetation studies continued and the information reported on an annual basis. In 2003 and 2004 progress monitoring of the vegetation program was continued by Access Consulting Group and the results were reported each year. In 2005, Access Consulting continued with progress monitoring and also established new test plots. Results from the 2005 program are included in Appendix B.

7.0 SOLID WASTE DISPOSAL

7.1 Solid Waste Disposal & Recycling

The site is in Temporary Closure with one person living on-site. All putrescible waste has been stored in animal proof containers prior to disposal. The site generates waste oil from onsite power generation and mobile equipment. During Temporary Closure the

quantity of used oil generated is limited. The oil is held in storage containers on site pending proper disposal and/or recycling offsite.

7.2 Inventory of Wastes Placed in the Landfill

There were no wastes placed into the landfill in 2005. Putrescible wastes from the caretaker were taken to the local municipal landfill on a regular basis.

8.0 WILDLIFE OBSERVATIONS

The Production Licence requires that sightings of wildlife at the mine site are reported on an annual basis. The caretaker who resides at the site records wildlife sightings in a log book retained at the site and a summary of this information has been compiled and is attached in Appendix C.

9.0 PRODUCTION PLANS FOR 2006

In early 2005, Teck Cominco conducted a review of the economics of the mine as metal prices were starting to strengthen. At the time the review was completed, it was concluded that metal prices were insufficient to re-commence operations; however metal prices have increased substantially since the review. Prior to reopening the mine, investments of both capital funds and management resources will be required. In 1999, Teck Cominco attempted to restart the mine as a result of higher metal prices. A management team was assembled, a mining contractor engaged, and work underground at the mine was initiated to prepare the Jewelbox deposit for production. However the increase in metal prices was short lived and fell before the mine could resume production. Once metal prices are sufficient to consider re-opening, there must be confidence that the markets will remain strong for the projected 4 year mine life before a decision to re-open will be made.

Bruce J. Donald, P. Eng. (B.C.)
Reclamation Manager,
Environment and Corporate Affairs
Teck Cominco Limited

APPENDIX A

MEMORANDUM REGARDING

Sä DENA HES RESOURCES –

FEBRUARY 7, 2006

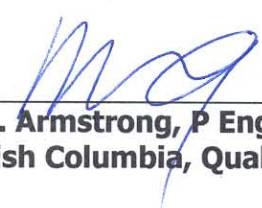
MEMORANDUM

TO: Bruce Donald
FROM: General Manager, Resource Evaluation (WPA)
DATE: Tuesday, February 07, 2006
SUBJECT: Sa Dena Hes Resources December 31, 2005

Sa Dena Hes

<u>Ore Body</u>	<u>Indicated Resources</u>			
	<u>Tonnes</u>	<u>% Zn</u>	<u>% Pb</u>	<u>g/t Ag</u>
Burnick	1,170,000	10.4	0.6	40
Jewel Box	630,000	9.9	5.9	45
Attila	390,000	11.5	3.1	60
Total:	2,190,000	10.4	2.6	45

This property was acquired from Curragh Inc. in 1994. Resources are contained in three ore zones Attila, Burnick and Jewel Box. Curragh had operated the mine until 1992 and prior to closure had mined 726,758 tonnes grading 11.7% Zn, 7.2% Pb from the Jewel Box ore body. Resources are based on an 8% Pb plus Zn cut-off. Estimates for individual ore zones have been completed over a seven year period. The Attila resource was calculated by Curragh in 1992 and confirmed by Cominco in 1995. The Burnick resource was calculated by Cominco in November 1995 following the completion of 5900 metres of drilling and development of a preliminary mine plan. The Jewel Box resources were recalculated by Cominco in 2001.


W.P. Armstrong, P Eng
British Columbia, Qualified Person

APPENDIX B

RESULTS SUMMARY OF PHASE II REVEGETATION TEST PROGRAM - 2005



**SÄ DENA HES MINE
LAND RECLAMATION AND REVEGETATION PLAN**

***RESULTS SUMMARY OF
Phase II Revegetation Test Program - 2005***

Prepared for:

Teck Cominco Ltd.
#600-200 Burrard Street
Vancouver, B.C.
V6C 3L9

February 2006

Prepared by:



A Registered Tradename for Access Mining Consultants Ltd.
www.accessconsulting.ca

Table of Contents

1.0 Introduction 1
 1.1 Background 1
 2.0 Phase II program..... 2
 2.1 2001 Program..... 2
 2.2 2002 Program..... 3
 2.3 2003 Program..... 3
 2.4 2004 Program..... 3
 2.5 2005 Program..... 4
 3.0 2005 Project Methods 8
 3.1 Seed Test Plot Monitoring 8
 3.2 New Test Plot Establishment..... 8
 3.3 Shrub Test Plot Monitoring 9
 3.4 Vegetation and Soil Sampling for Metal Concentrations 9
 4.0 2005 Monitoring Results 11
 4.1 Seed Test Plot Observations 11
 4.2 Seed Test Plot Conclusions 25
 4.3 Shrub Test Plot Observations..... 27
 4.4 Plant Tissue and Soils Metals Analysis 27
 5.0 Recommendations 29
 6.0 References..... 30

List of Figures

Figure 1 General Project Location Map 5
 Figure 2 Test Plot Locations – Mine Access Road 6
 Figure 3 Test Plot Locations – Mine Site / Tailings Area 7

List of Tables

Table 1 Test Plot Observations at Km 20 Main Access Road (Site 1)..... 11
 Table 2 Test Plot Observations at Jewel Box Haul Road (Site 2)..... 13
 Table 3 Test Plot Observations at Landfill (Site 3)..... 15
 Table 4 Test Plot Observations at TMF with 200 mm Soil (Site 5A) 17
 Table 5 Test Plot Observations at TMF with 300 mm Soil (Site 5B)..... 19
 Table 6 Test Plot Observations at TMF with 500 mm Rock and 300 mm Soil (Site 5C)..... 21
 Table 7 Correlations between elevated soil metal concentrations and plant tissue metal concentrations by metal parameter and plant species from samples collected at Sites 1 and 5A in 2004 and 2005..... 28
 Table 8 Lead Concentrations (ug/g) at Site 1 (Km 20 Main Access Road) and Site 5A (TMF with 200 mm Soil) for 2000, 2004 and 2005. 28

List of Appendices

Appendix A 2005 Laboratory Results of Plant Tissue Metal Analysis
 Appendix B 2005 Site Visit Photos

1.0 INTRODUCTION

1.1 BACKGROUND

In February 2000, Cominco submitted a Detailed Decommissioning & Reclamation Plan (the "DDRP") for the Sä Dena Hes Mine to the Yukon Territory Water Board. As part of the DDRP, a land reclamation and revegetation plan and test program was proposed with the overall goal of preparing the site for eventual closure. Revegetation efforts would assist in returning the site to a state that existed prior to mining activities.

Figure 1 shows the general location of the mine in the Yukon.

The primary objectives of the revegetation test program are to:

- Determine seed mixtures that will provide short-term soil stability while allowing the natural invasion of local plant species;
- Determine fertilizer applications optimal for sustaining the healthy growth of seeded species without inhibiting colonization by indigenous plant species;
- Investigate methods of encouraging natural plant succession on reclaimed surfaces; and
- Determine potential success rates of revegetation at test plots on different areas of the mine site, in particular the tailings management facility.

The revegetation and reclamation program for the site is being undertaken in phases, with the results of the initial program used to further define subsequent phases. The DDRP outlined a program of additional data collection and test work in order to support the overall revegetation and reclamation components of the DDRP. The program included:

Phase I:

- Completing an inventory of soils around the site necessary to provide revegetative soil covers for various mine site components;
- Testing the available nutrients in soils; and
- Establishing initial shrub propagation trials.

Phase II:

- Establishing test plots at various mine site locations in order to determine the optimum applications of seed and fertilizer; and
- Determining the metal uptake of the seeded plants.

The Phase I program, conducted in 2000, completed some of the tasks identified above, specifically, the soils inventory and nutrient testing. Test plots for shrub propagation trials were also established at two locations on the property. Recommendations resulting from the Phase I program detailed further efforts that would be required to successfully implement the DDRP and to complete the remaining revegetation test program tasks listed above. Results from the Phase I program are presented in a report prepared by Access Mining Consultants in 2001 (AMCL 2001).

2.0 PHASE II PROGRAM

2.1 2001 PROGRAM

The Phase II program was initiated in the fall of 2001. The goal of the Phase II program was to implement the reclamation and revegetation activities identified in the DDRP. As mentioned in Section 1.0, the objectives were to:

- Establish test plots various mine site locations in order to determine the optimum applications of seed and fertilizer; and
- Determine the metal uptake of the seeded plants.

Access Consulting Group prepared a report in early 2002 describing the methods and results of the work conducted in 2001 (AMCL 2002). The report included a description of the seed test plots established in the fall of 2001 and the monitoring results of the shrub test plots established in 2000. The metal uptake analysis was not initiated until 2003.

Figures 2 and 3 show the seed test plot locations.

2.2 2002 PROGRAM

The specific objectives for the 2002 season were to:

- Examine the test plots for vegetative growth;
- Assess the application rates of seed and fertilizer;
- Provide recommendations for future action.

A report prepared by Access Consulting Group in early 2003 (AMCL 2003) describes the methods and results of the 2002 monitoring program and recommends action for the 2003 season.

2.3 2003 PROGRAM

The specific objectives for the 2003 season were to:

- Examine the test plots for vegetative growth;
- Assess the application rates of seed and fertilizer and reapply seed and fertilizer as deemed appropriate;
- Provide recommendations for future action.

A report prepared by Access Consulting Group in March 2004 (AMCL 2004) describes the methods and results of the 2003 monitoring program and recommends action for the 2004 season.

2.4 2004 PROGRAM

The specific objectives for the 2004 season were to:

- Examine the test plots for vegetative growth;
- Analyze seeded vegetation for the uptake of metals;

- Evaluate the results of the Phase II Program over the period from 2001 to 2004 and develop conclusions regarding the relative successes of the various revegetation protocols;
- Provide recommendations for future action.

A report prepared by Access Consulting Group in January 2005 (AMCL 2005) describes the methods and results of the 2004 monitoring program and recommends action for the 2005 season.

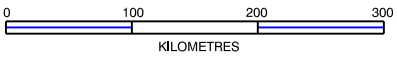
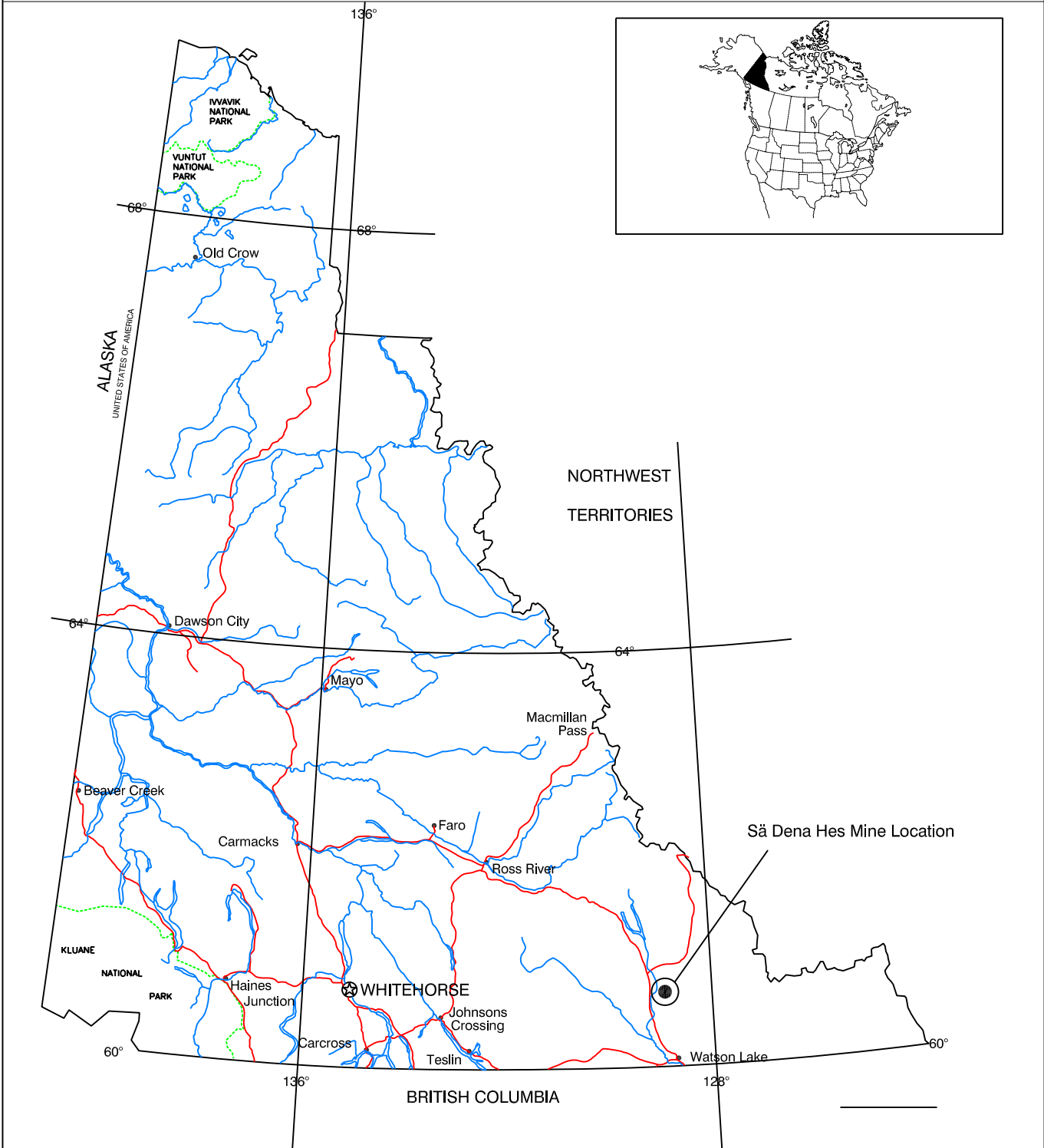
2.5 2005 PROGRAM

The specific objectives for the 2005 season were to:

- Examine the test plots for vegetative growth;
- Analyze seeded vegetation for the uptake of metals;
- Evaluate the results of the Phase II Program over the period from 2001 to 2005 and develop conclusions regarding the relative successes of the various revegetation protocols;
- Establish new test plots at the mine site in order to determine which seeding season (spring or fall) results in the higher rate of seed germination,
- Provide recommendations for future action.

The following sections provide a description of the 2005 project methods and a summary of the results.

Yukon Territory



Lambert Conformal Conic Projection
with Standard Parallels at 49°N and 77°N

- *Populated Settlements*
- ★ *Territorial Capital*

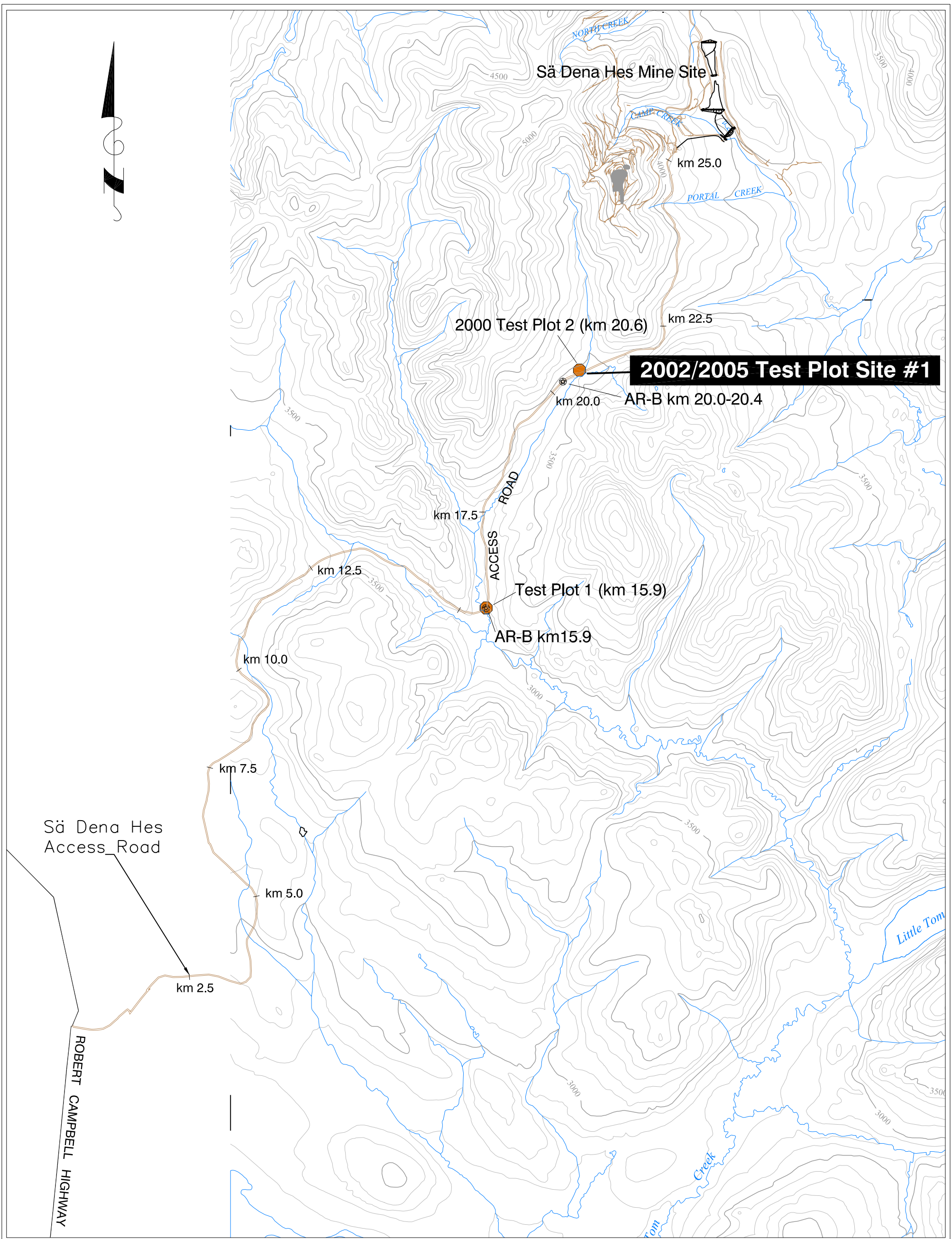
Teck Cominco Ltd. Sa Dena Hes Mine
Land Reclamation & Revegetation Plan:
2005 Revegetation Test Program

General Location Map (Map of Yukon)

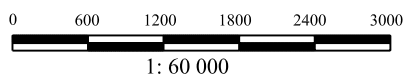


DRAWN BY: JEA	MODIFIED BY: HD	CHECKED BY: SK
DATE: 10/17/2000	DATE: FEB. 2006	SCALE 1:6 000 000

Figure 1







CONTOUR INTERVAL 100 FEET



NOTE
 BASE TOPOGRAPHY FROM NORTH AMERICAN DATUM 1983
 ALL SURFACE FACILITIES AND BOUNDARIES HAVE BEEN
 ADJUSTED FROM NAD 1927



Legend:

-  Soil sample location
-  Access Road
-  Watercourse
-  Test plot area



**Teck Cominco Ltd. Sä Dena Hes Mine
 Land Reclamation & Revegetation Plan:
 2005 Revegetation Test Program**

Figure 2: Test Plot Locations - Mine Access Road




Drawn By: JEA	Revised By: HD	Checked By: SK
Date: 10/17/2000	Date: Feb. 2006	

File: D:\Project\AIP\Projects\Cominco\dwg\Reveg\Fig2_TestPlotLoc_road.dwg

Teck Cominco Ltd.
 Sā Dena Hes Mine
 Land Reclamation &
 Revegetation Plan:
 2005 Revegetation Test
 Program



Legend:

-  Watercourse
-  Road within cleared area
-  Topography

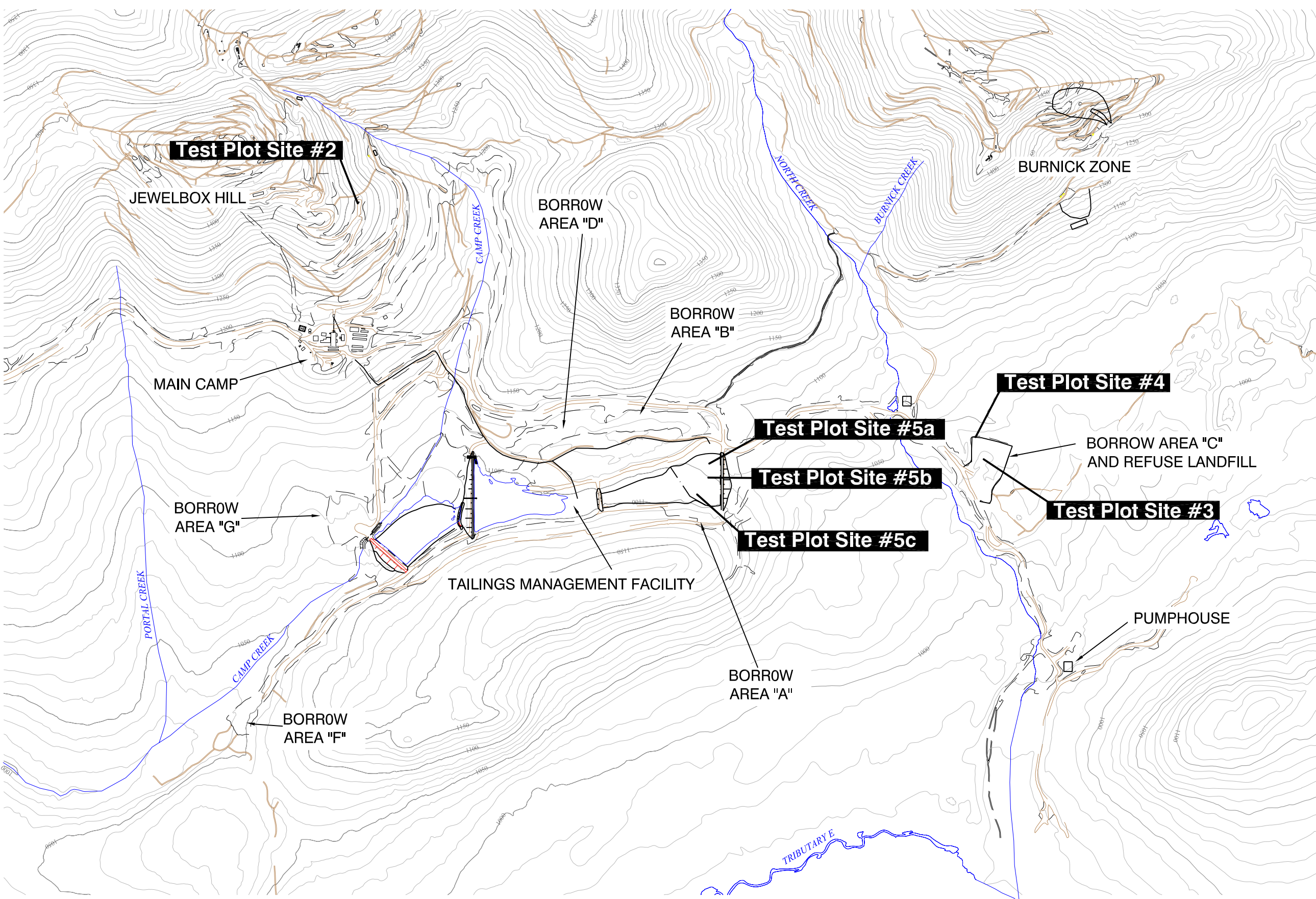
NOTE
 CONTOUR INTERVAL=10m
 BASE TOPOGRAPHY FROM NORTH AMERICAN DATUM 1983
 ALL SURFACE FACILITIES AND BOUNDARIES HAVE BEEN
 ADJUSTED FROM NAD 1927

Figure 3:
 Test Plot Locations - Mine Site /
 Tailings Area

Drawn By: JEA Date: 10/17/2000

Revised By: HD Date: Feb. 2006

Checked By: SK



3.0 2005 PROJECT METHODS

3.1 SEED TEST PLOT MONITORING

The revegetation test plots were surveyed on September 19 and 20, 2005. Although the weather was cool and windy at the time of the survey, the ground was still unfrozen and with no snow cover. At each site, the total vegetative cover was estimated and an assessment of the success of each seeded species was made. The results are presented in Section 4.1.

3.2 NEW TEST PLOT ESTABLISHMENT

New test plots were established at the Sa Dena Hes Mine on June 17-18 and September 19-20, 2005. This component of the revegetation test program was initiated to determine whether spring or fall seeding would result in a higher rate of seed germination. New plots were established at two existing on-site test locations (landfill site and Jewel Box haul road site) and one off-site test location (km 20 main access road). At each location the two new 5m X 5m test plots (one spring and one fall) were laid out adjacent to the existing plots.

Northern indigenous grass and legume seeds were purchased in Whitehorse from Arctic Alpine Seed Ltd. The same mix of seed and fertilizer was applied during the spring and fall seedings.

The following mix of northern native grass seeds were applied to each test plot:

Species	Common Name	Percent by Weight
<i>Agropyron violaceum</i>	Violet Wheatgrass	60%
<i>Deschampsia caespitosa</i>	Tufted Hairgrass	5%
<i>Agrostis scabra</i>	Ticklegrass	5%
<i>Festuca saximontana</i>	Rocky Mountain Fescue	20%
<i>Poa alpina</i>	Alpine Bluegrass	10%

The grass seed mix was broadcast by hand at a seeding rate of 50 kg/ha.

The following mix of northern legume seeds were applied to each test plot:

Species	Common Name	Percent by Weight
<i>Hedysarum alpinum</i>	Bear Root	32 %
<i>Hedysarum mackenzii</i>	Mackenzie's Hedysarum	27%
<i>Oxytropis campestris</i>	Yellow Locoweed	10%
<i>Oxytropis splendens</i>	Showy Locoweed	12%
<i>Lupinus arcticus</i>	Arctic Lupine	19%

The hard seed coats of the lupine and locoweeds were scarified by stirring the seeds with sand in a bucket. The legume seed mix was broadcast by hand at a seeding rate of 12.5 kg/ha.

Fertilizer (20-20-20) was applied to each test plot at a rate of 120 kg/ha. The seed and fertilizer were hand-raked into the soil surface.

The weather was dry at the time of spring seeding, although there was obvious residual soil moisture from recent rains. At the time of the fall seeding the ground was moist but not yet frozen.

3.3 SHRUB TEST PLOT MONITORING

The two shrub test plots established in the fall of 2000 were surveyed. The number of surviving willow species was counted. The results are shown in Section 4.2.

3.4 VEGETATION AND SOIL SAMPLING FOR METAL CONCENTRATIONS

Samples of plant tissue were collected from two locations for metal analysis. These included an off-site location (Site 1- km 20 main access road) and an on-site tailings location (Site 5A -TMF with 200 mm soil base). At each site, tissue samples from each species were composited from the four test plots. Approximately 20 grams of each plant species (stem and leaves) were collected. Samples were taken from the following species:

Km 22 Main Access Road (Site 1)

Violet Wheatgrass
Tufted Hairgrass
Ticklegrass
Alpine bluegrass
Sheep Fescue
Alfalfa

TMF with 200 mm Soil (Site 5A)

Violet Wheatgrass
Tufted Wheatgrass
Ticklegrass
Alpine Bluegrass
Rocky Mountain Fescue
Alfalfa

Soil samples were also collected from each of the four test plots at the two sites.

Vegetation and soil samples were collected with latex gloves, placed in Ziploc bags, and shipped to Norwest Labs in Surrey, BC for metals analysis. The analysis results are discussed in Section 4.3.

4.0 2005 MONITORING RESULTS

Following are the results of the 2005 monitoring program.

4.1 SEED TEST PLOT OBSERVATIONS

The 2005 revegetation test plot observations are summarized in the following tables. For the applied seed mixes and fertilizer formulations, see 2001 and 2003 Summary Reports (AMCL 2002 and 2004).

Table 1 Test Plot Observations at Km 20 Main Access Road (Site 1)

Plot #1	Plot #2	Plot # 3	Plot # 4
<p>2001: 24 kg/ha seed & 120 kg/ha fertilizer</p> <p>2003: 25 kg/ha seed & 120 kg/ha fertilizer</p>	<p>2001: 24 kg/ha seed & 60 kg/ha fertilizer</p> <p>2003: 50 kg/ha seed & 180 kg/ha fertilizer</p>	<p>2001: 12 kg/ha seed & 60 kg/ha fertilizer</p> <p>2003: 75 kg/ha seed & 240 kg/ha fertilizer</p>	<p>Control (no seed or fertilizer)</p>
<p>Estimated total cover 70%</p>	<p>Estimated total cover 90%</p>	<p>Estimated total cover 80%</p>	<p>Estimated total cover <5%</p>
<p>Violet Wheatgrass</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● all plants in seed 	<p>Violet Wheatgrass</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● all plants in seed 	<p>Violet Wheatgrass</p> <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● most plants in seed 	
<p>Tufted Hairgrass</p> <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	<p>Tufted Hairgrass</p> <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 60 cm high ● all plants in seed 	<p>Tufted Hairgrass</p> <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	
<p>Ticklegrass</p> <ul style="list-style-type: none"> ● no evidence of Ticklegrass on plot 	<p>Ticklegrass</p> <ul style="list-style-type: none"> ● a few dense patches on plot (otherwise sparse distribution) ● approximately 15 cm high ● very few plants seed 	<p>Ticklegrass</p> <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 15 cm high ● few plants in seed 	

Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2005

<p>Sheep Fescue</p> <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 20 cm high ● all plants in seed 	<p>Sheep Fescue</p> <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 20 cm high ● all plants in seed 	<p>Sheep Fescue</p> <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 15 cm high ● all plants in seed 	
<p>Alpine Bluegrass</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● few plants in seed 	<p>Alpine Bluegrass</p> <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● few plants in seed 	<p>Alpine Bluegrass</p> <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 15 cm high ● few plants in seed 	
<p>Alfalfa</p> <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 30 cm high ● no plants in flower 	<p>Alfalfa</p> <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 30 cm high ● a few plants in flower 	<p>Alfalfa</p> <ul style="list-style-type: none"> ● moderate but patchy distribution over plot ● approximately 30 cm high ● a few plants in flower 	
<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● large amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	
<p>Volunteer species on and between test plots include White Spruce (<i>Picea glauca</i>), Willows (<i>Salix</i> spp.), Arctic Lupine (<i>Lupinus arcticus</i>), Fleabane (<i>Erigeron</i> sp.), Foxtail Barley (<i>Hordeum jubatum</i>), Trisetum (<i>Trisetum spicatum</i>) and Timothy (<i>Phleum pratense</i>).</p>			<p>Volunteer species on control plot include White Spruce (<i>Picea glauca</i>), Willows (<i>Salix</i> spp.), Soapberry (<i>Shepherdia canadensis</i>), Foxtail Barley (<i>Hordeum jubatum</i>), Trisetum (<i>Trisetum spicatum</i>) and Wood Rush (<i>Luzula parviflora</i>).</p>

Table 2 Test Plot Observations at Jewel Box Haul Road (Site 2)

Plot #1	Plot #2	Plot # 3	Plot # 4
2001: 26 kg/ha seed & 120 kg/ha fertilizer 2003: 25 kg/ha seed & 120 kg/ha fertilizer	2001: 26 kg/ha seed & 60 kg/ha fertilizer 2003: 50 kg/ha seed & 180 kg/ha fertilizer	2001: 13 kg/ha seed & 60 kg/ha fertilizer 2003: 75 kg/ha seed & 240 kg/ha fertilizer	Control (no seed or fertilizer)
Estimated total cover 70%	Estimated total cover 80%	Estimated total cover 90%	Estimated total cover <5%
Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot with thick patches ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● heavy cover on one side of plot with little on the other ● approximately 25 cm high ● most plants in seed 	
Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 60 cm high ● all plants in seed 	
Ticklegrass <ul style="list-style-type: none"> ● moderate distribution over plot (heaviest along plot edges) ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● sparse distribution over plot (mostly on plot edges) ● approximately 15 cm high ● most plants in seed 	
Sheep Fescue <ul style="list-style-type: none"> ● no evidence of Sheep Fescue on plot 	Sheep Fescue <ul style="list-style-type: none"> ● no evidence of Sheep Fescue on plot 	Sheep Fescue <ul style="list-style-type: none"> ● no evidence of Sheep Fescue on plot 	
Alpine Bluegrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● most plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● most plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● most plants in seed 	

Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2005

<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● large amount of litter from previous years' growth (mostly Violet Wheatgrass) ● several Bear Root plants observed (seeded in 2001) ● no evidence of other legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● large amount of litter from previous years' growth (mostly Violet Wheatgrass) ● several Bear Root plants observed (seeded in 2001) ● no evidence of other legumes seeded in 2001 	
<p>Volunteer species on and between test plots include Alpine Fir (<i>Abies lasiocarpa</i>), Willows (<i>Salix</i> spp.), Fireweed (<i>Epilobium angustifolium</i>), River Beauty (<i>Epilobium latifolium</i>), Trisetum (<i>Trisetum spicatum</i>), Timothy (<i>Phleum pratense</i>) and Sedge (<i>Carex</i> sp.).</p>		<p>Volunteer species on control plot include Alpine Fir (<i>Abies lasiocarpa</i>), Fireweed (<i>Epilobium angustifolium</i>), and Trisetum (<i>Trisetum spicatum</i>).</p>	

Table 3 Test Plot Observations at Landfill (Site 3)

Plot #1	Plot #2	Plot # 3	Plot # 4
2001: 26 kg/ha seed & 120 kg/ha fertilizer 2003: 25 kg/ha seed & 120 kg/ha fertilizer	2001: 26 kg/ha seed & 60 kg/ha fertilizer 2003: 50 kg/ha seed & 180 kg/ha fertilizer	2001: 13 kg/ha seed & 60 kg/ha fertilizer 2003: 75 kg/ha seed & 240 kg/ha fertilizer	Control (no seed or fertilizer)
Estimated total cover 100%	Estimated total cover 100%	Estimated total cover 95%	Estimated total cover <5%
Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot (less than last year) ● approximately 20 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot (but less than last year) ● approximately 20 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● all plants in seed 	
Tufted Hairgrass <ul style="list-style-type: none"> ● good (but not dense) distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 60 cm high ● all plants in seed 	
Ticklegrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● no evidence of Ticklegrass on plot 	
Sheep Fescue <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● all plants in seed 	Sheep Fescue <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● all plants in seed 	Sheep Fescue <ul style="list-style-type: none"> ● good distribution over plot ● approximately 20 cm high ● all plants in seed 	
Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 20 cm high ● most plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 20 cm high ● most plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 20 cm high ● most plants in seed 	
Alfalfa <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 30 cm high ● some plants in flower 	Alfalfa <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 30 cm high ● some plants in flower 	Alfalfa <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● most plants in flower 	

Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2005

<p>Comments</p> <ul style="list-style-type: none"> ● very large amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● large amount of litter from previous years' growth ● one Bear Root plant observed (seeded in 2001) ● no evidence of other legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● large amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	
<p>Volunteer species on and between test plots include White Spruce (<i>Picea glauca</i>), willows (<i>Salix</i> spp.), Timothy (<i>Phleum pratense</i>) and Foxtail Barley (<i>Hordeum jubatum</i>).</p>		<p>Volunteer species on control plot include White Spruce (<i>Picea glauca</i>) and willows (<i>Salix</i> spp.).</p>	

Table 4 Test Plot Observations at TMF with 200 mm Soil (Site 5A)

Plot #1	Plot #2	Plot # 3	Plot # 4
2001: 25 kg/ha seed & 120 kg/ha fertilizer 2003: 25 kg/ha seed & 120 kg/ha fertilizer	2001: 25 kg/ha seed & 60 kg/ha fertilizer 2003: 50 kg/ha seed & 180 kg/ha fertilizer	2001: 12 kg/ha seed & 60 kg/ha fertilizer 2003: 75 kg/ha seed & 240 kg/ha fertilizer	Control (no seed or fertilizer)
Estimated total cover 70%	Estimated total cover 80%	Estimated total cover 60%	Estimated total cover <5%
Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● all plants in seed 	
Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	
Ticklegrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● sparse distribution over plot (mostly around edges of plot) ● approximately 15 cm high ● most plants in seed 	
Rocky Mountain Fescue <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 20 cm high ● all plants in seed 	Rocky Mountain Fescue <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 20 cm high ● all plants in seed 	Rocky Mountain Fescue <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 20 cm high ● all plants in seed 	
Alpine Bluegrass <ul style="list-style-type: none"> ● no evidence of Alpine Bluegrass on plot 	Alpine Bluegrass <ul style="list-style-type: none"> ● no evidence of Alpine Bluegrass on plot 	Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot (only on edges of plot) ● approximately 10 cm high ● few plants in seed 	
Alfalfa <ul style="list-style-type: none"> ● good (but patchy) distribution over plot ● approximately 30 cm high ● some plants in flower 	Alfalfa <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● most plants in flower 	Alfalfa <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 30 cm high ● some plants in flower 	

Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2005

<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	
<p>Volunteer species on and between test plots include Fireweed (<i>Epilobium angustifolium</i>) and Fleabane (<i>Erigeron</i> sp.)</p>			<p>Growth on the control plot includes small amounts of Violet Wheatgrass, Tufted Hairgrass, Ticklegrass and Rocky Mountain Fescue. These grasses are presumably the result of windblown seed from the other plots.</p>

Table 5 Test Plot Observations at TMF with 300 mm Soil (Site 5B)

Plot #1	Plot #2	Plot # 3	Plot # 4
2001: 25 kg/ha seed & 120 kg/ha fertilizer 2003: 25 kg/ha seed & 120 kg/ha fertilizer	2001: 25 kg/ha seed & 60 kg/ha fertilizer 2003: 50 kg/ha seed & 180 kg/ha fertilizer	2001: 12 kg/ha seed & 60 kg/ha fertilizer 2003: 75 kg/ha seed & 240 kg/ha fertilizer	Control (no seed or fertilizer)
Estimated total cover 60%	Estimated total cover 60%	Estimated total cover 60%	Estimated total cover <5%
Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● all plants in seed 	
Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	
Ticklegrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	
Rocky Mountain Fescue <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● all plants in seed 	Rocky Mountain Fescue <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● all plants in seed 	Rocky Mountain Fescue <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 20 cm high ● all plants in seed 	
Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot (only on edges of plot) ● approximately 10 cm high ● low, tufted growth with few plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 10 cm high ● low, tufted growth with few plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 10 cm high ● low, tufted growth with no plants in seed 	
Alfalfa <ul style="list-style-type: none"> ● sparse, patchy distribution over plot ● approximately 30 cm high ● some plants in flower 	Alfalfa <ul style="list-style-type: none"> ● moderate, but patchy, distribution over plot ● approximately 30 cm high ● most plants in flower 	Alfalfa <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 30 cm high ● some plants in flower 	

Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2005

<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● no evidence of legumes seeded in 2001 	
<p>No volunteer species on or between test plots.</p>			<p>Growth on the control plot includes small amounts of Violet Wheatgrass, Ticklegrass and Rocky Mountain Fescue. These grasses are presumably the result of windblown seed from the other plots.</p>

Table 6 Test Plot Observations at TMF with 500 mm Rock and 300 mm Soil (Site 5C)

Plot #1	Plot #2	Plot # 3	Plot # 4
2001: 24 kg/ha seed & 120 kg/ha fertilizer 2003: 25 kg/ha seed & 120 kg/ha fertilizer	2001: 24 kg/ha seed & 60 kg/ha fertilizer 2003: 50 kg/ha seed & 180 kg/ha fertilizer	2001: 12 kg/ha seed & 60 kg/ha fertilizer 2003: 75 kg/ha seed & 240 kg/ha fertilizer	Control (no seed or fertilizer)
Estimated total cover 90%	Estimated total cover 90%	Estimated total cover 90%	Estimated total cover <5%
Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● all plants in seed 	Violet Wheatgrass <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 25 cm high ● all plants in seed 	
Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	Tufted Hairgrass <ul style="list-style-type: none"> ● sparse distribution over plot ● approximately 60 cm high ● all plants in seed 	
Ticklegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	Ticklegrass <ul style="list-style-type: none"> ● very sparse distribution over plot ● approximately 15 cm high ● most plants in seed 	
Rocky Mountain Fescue <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● all plants in seed 	Rocky Mountain Fescue <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● all plants in seed 	Rocky Mountain Fescue <ul style="list-style-type: none"> ● moderate distribution over plot ● approximately 20 cm high ● all plants in seed 	
Red Fescue <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● very few plants in seed 	Red Fescue <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● very few plants in seed 	Red Fescue <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● very few plants in seed 	
Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot (only on edges of plot) ● approximately 10 cm high ● low, tufted growth with no plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot (only on edges of plot) ● approximately 10 cm high ● low, tufted growth with no plants in seed 	Alpine Bluegrass <ul style="list-style-type: none"> ● very sparse distribution over plot (only on edges of plot) ● approximately 10 cm high ● low, tufted growth with no plants in seed 	

<p>Kentucky Bluegrass</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25cm high ● very few plants in seed 	<p>Kentucky Bluegrass</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● very few plants in seed 	<p>Kentucky Bluegrass</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 25 cm high ● very few plants in seed 	
<p>Alfalfa</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● some plants in flower 	<p>Alfalfa</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● some plants in flower 	<p>Alfalfa</p> <ul style="list-style-type: none"> ● good distribution over plot ● approximately 30 cm high ● some plants in flower 	
<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● Red Fescue and Kentucky Bluegrass are both forming a dense ground cover but producing seed ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● Red Fescue and Kentucky Bluegrass are both forming a dense ground cover but producing seed ● no evidence of legumes seeded in 2001 	<p>Comments</p> <ul style="list-style-type: none"> ● moderate amount of litter from previous years' growth ● Red Fescue and Kentucky Bluegrass are both forming a dense ground cover but producing seed ● no evidence of legumes seeded in 2001 	
<p>A good growth of Violet Wheatgrass, Tufted Hairgrass and Alfalfa is forming between the plots. Volunteer species include Bearded Wheatgrass (<i>Agropyron subsecundus</i>), Foxtail Barley (<i>Hordeum jubatum</i>) and Bluejoint Reedgrass (<i>Calamagrostis canadensis</i>).</p>			<p>Growth on the control plot includes small amounts of Violet Wheatgrass and Ticklegrass. These grasses are presumably the result of windblown seed from the other plots.</p>

From an examination of the 2005 monitoring results, the following assessment of the seeded species can be made:

Violet Wheatgrass (northern native grass seeded at all sites in 2001 and 2003)

This species has been the most successful of all the seeded grasses. It is fairly well distributed over most of the test plots and most plants were in seed at the time of 2005 monitoring. At some sites (particularly noticeable at the Landfill Site 3), the dense layer of Violet Wheatgrass litter from previous years is interfering with the current season's growth.

Tufted Hairgrass (northern native grass seeded at all sites in 2001)

Although this species was not seeded in 2003 (seed not available at time of seeding), it has persisted at all sites from its initial seeding in 2001. Tufted Hairgrass plants appear to be well developed and are producing seed.

Ticklegrass (northern native grass seeded at all sites in 2001 and 2003)

Ticklegrass has a sparse to moderate distribution over the test plots. It is not competing well with the other grasses, and because it has very small seeds that are easily wind-blown, ticklegrass is found growing in patches away from the seeded plots. At most sites, plants are well developed and producing seed.

Alpine Bluegrass (northern native grass seeded at Sites 2 and 3 in 2001 and at all sites in 2003)

The distribution of this bluegrass species ranges from very sparse to good. Its best showing is at Site 2 (Jewel Box haul road site) where it is one of the dominant species. The plants here are mostly all in seed. On the TMF Sites, Alpine Bluegrass plants are poorly developed with a low, tufted growth form and with very few producing seed.

Glaucous Bluegrass (northern native grass seeded at Sites 1, 5A, 5B and 5C in 2001)

Glaucous Bluegrass was not identified at any of the test plots in 2005, although this species can easily be confused with Alpine Bluegrass if not in flower or seed.

Kentucky Bluegrass (non-native grass seeded at Site 5C in 2003)

Kentucky Bluegrass is well distributed over the plots at Site 5C (the only site where it was seeded). It has a dense growth on all three plots, but these plants are poorly developed with few in seed (this agronomic turf-forming species is a good soil binder and, although it can grow to 70 cm or higher, it can withstand close cropping and is used to form sod and lawns).

Sheep Fescue (northern native grass seeded at Sites 1, 2 and 3 in 2001)

This distribution of this species ranges from sparse to good on the lower elevation sites. There was no evidence of Sheep Fescue at the Jewel Box Haul Road Site (Site 2) in 2005. All plants observed in 2005 were in seed.

Rocky Mountain Fescue (northern native grass seeded at Sites 5A, 5B and 5C in 2001)

Rocky Mountain Fescue has a sparse to moderate distribution over the three TMF sites where it was seeded in 2001. Like Sheep Fescue, it is not a major component of the vegetative cover. All plants observed in 2005 were in seed.

Red Fescue (non-native grass seeded at Site 5C in 2003)

Red Fescue is well distributed over the plots at Site 5C (the only site where it was seeded). It has a dense growth on all plots, but these plants are poorly developed with few in seed (like Kentucky Bluegrass, this agronomic species is sod-forming and has the potential to choke out less competitive grass species).

Showy Locoweed (northern native legume seeded at all sites in 2001)

There was no evidence of Showy Locoweed growing at any of the test sites in 2005 (it had not been observed during earlier monitoring surveys either).

Bear Root (northern native legume seeded at all sites in 2001)

Several Bear Root plants were observed growing at the Jewel Box Haul Road Ste (Site 2) and the Landfill (Site 3). This is the first time this legume species has been observed since it was seeded in 2001.

Alfalfa (non-native legume seeded at all sites in 2003)

The distribution of this legume ranges from very sparse to good. It has a non-uniform (patchy) cover on the test plots. Some plants were in flower at all sites.

4.2 SEED TEST PLOT CONCLUSIONS

Based on the 2005 monitoring results, the following provisional conclusions can be made about the revegetation test plots:

- Violet Wheatgrass, Tufted Hairgrass and Alpine Bluegrass are the most successful of the northern native grass species seeded at the test plots. The success of Alpine Bluegrass is most notable at the Site 2 (Jewel Box haul road near treeline).
- Sheep Fescue (Rocky Mountain Fescue on the TMF plots) is persistent on the lower elevation sites but is not growing well at the treeline site (Jewel Box haul road).
- Ticklegrass is surviving at most sites but is not a major component of the vegetative cover.
- Glaucous Bluegrass (a northern native species seeded in 2001) was not successful.
- The northern native legume species seeded at the test plots in 2001 have not been successful. There is still no evidence of Showy Locoweed. A few Bear Root plants were observed for the first time during the 2005 monitoring.
- The non-native legume, Alfalfa (seeded in the spring of 2003) has survived two growing seasons, but has a limited presence.
- The two non-native agronomic grass species (Red Fescue and Kentucky Bluegrass), seeded at the TMF Site 5C in 2003, are growing well. These aggressive, rhizomatous, turf-forming species may inhibit the growth of the less competitive native species, but their soil-binding properties may be an asset for revegetating more difficult areas of the TMF.
- The two TMF sites with soil covers (a 200 mm cap at Site 5A and a 300 mm cap at Site 5B) have similar plant species compositions and densities. The cap thickness, so far, has no noticeable effect on plant growth.
- The marginal success of the TMF plot revegetation is most likely attributable to plant tissue dehydration as a result of constant exposure to the wind.
- Volunteer revegetation in certain plots (excluding the TMF plots) has been strong, showing good potential for the use of natural revegetation in some areas.

Based on the revegetation observations to date (2002-2005), the recommended seed mixtures at the specific areas on the property should be modified to the following:

Main Access Road

Violet Wheatgrass	(<i>Agropyron violaceum</i>)
Alpine Bluegrass	(<i>Poa alpina</i>)
Sheep Fescue	(<i>Festuca ovina</i>)
Tufted Hairgrass	(<i>Deschampsia caespitosa</i>)

Service and Haul Roads

Violet Wheatgrass	(<i>Agropyron violaceum</i>)
Alpine Bluegrass	<i>Poa alpina</i>)
Tufted Hairgrass	<i>Deschampsia caespitosa</i>)
Ticklegrass	(<i>Agrostis scabra</i>)

Tailings Management Facility

Violet Wheatgrass	(<i>Agropyron violaceum</i>)
Tufted Hairgrass	(<i>Deschampsia caespitosa</i>)
Rocky Mountain Fescue	(<i>Festuca saximontana</i>)
Ticklegrass	(<i>Agrostis scabra</i>)
Kentucky Bluegrass	(<i>Poa alpina</i>)
Red Fescue	(<i>Festuca rubra</i>)

Camp and Mill Area, Refuse Site, and Borrow Pits

Violet Wheatgrass	(<i>Agropyron violaceum</i>)
Alpine Bluegrass	(<i>Poa alpina</i>)
Sheep Fescue	(<i>Festuca ovina</i>)
Tufted Hairgrass	(<i>Deschampsia caespitosa</i>)

These successful grass species are all northern native species, with the exception of Kentucky Bluegrass and Red Fescue. These two non-native, turf-forming species may be required to help stabilize the mobile fine soils on the TMF.

The northern native legumes seeded on the test plots, however, have so far not been successful – with the exception of a few Bear Root (*Hedysarum*) plants – and are therefore not component to the recommended revegetation mixtures.

4.3 SHRUB TEST PLOT OBSERVATIONS

Following are 2005 observations of the two shrub test plots located at Km 16 and at km 20 of the main access road (these willow stem cuttings were staked in September 2000):

Site	Number of Cuttings Established in 2000	Number of Plants Surviving in 2005
Access Road Km 16	40	21
Access Road Km 22	40	16

At the km 20 site, the number of surviving transplanted willow cuttings have dropped and the transplants are not thriving. Staked willow stem cuttings at the Km 16 site appear much healthier and have grown into large shrubs.

4.4 PLANT TISSUE AND SOILS METALS ANALYSIS

The 2005 soil metal analysis results reflect observations from 2004, showing that some soil metal concentrations are noticeably higher at Site 1 (Km 20 Main Access Road), including antimony, arsenic, barium, cadmium and molybdenum, while other soil metal levels are higher at Site 5A (TMF site with 200 mm soil cap), including beryllium, cobalt and lead. These comparisons are generally consistent with results from the Phase I soil sampling conducted in 2000, where the same trends, although not as pronounced, were observed in composite samples collected at Site 1 and from the soil used to establish the plot at Site 5A. A comparison of soil zinc concentrations between the two sites remains inconclusive, due to variation in soil zinc concentrations within the plots.

A non-statistical examination of the plant tissue analysis results for the aforementioned metals shows that – generally consistent with observations in 2004 – elevated metal concentrations in some of the plant tissues correspond with elevated soil metal levels. The metals/plant species that show this correlation are indicated in the following table:

Table 7 Correlations between elevated soil metal concentrations and plant tissue metal concentrations by metal parameter and plant species from samples collected at Sites 1 and 5A in 2004 and 2005.

<i>Metal</i>	Alpine Bluegrass		Alfalfa		Ticklegrass		Violet Wheatgrass		Tufted Hairgrass		Sheep/Rocky Mtn Fescue	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
<i>Barium</i>	●		●	●	●		●	●	●	●	●	●
<i>Beryllium</i>	●											
<i>Cadmium</i>	●		●				●				●	
<i>Cobalt</i>	●	●	●	●		●				●		●
<i>Lead</i>	●	●	●	●	●	●	●	●	●	●	●	●
<i>Molybdenum</i>	●		●						●	●	●	●

This data provides an indication of an uptake of some metals by each of the surviving seeded plant species. Lead concentrations, in particular, appear to have increased in all plant species on Site 5A (TMF Plot), as seen in the following table:

Table 8 Lead Concentrations (ug/g) at Site 1 (Km 20 Main Access Road) and Site 5A (TMF with 200 mm Soil) for 2000, 2004 and 2005.

	Site 1			Site 5A		
	2000*	2004**	2005**	2000*	2004**	2005**
Soil	8.6	12.79	12.87	20.0	40.10	58.93
Alpine Bluegrass	-	<1	0.79	-	<2	8.21
Alfalfa	-	<1	<0.2	-	1.3	1.90
Ticklegrass	-	<1	<0.2	-	8.0	16.6
Violet Wheatgrass	-	<1	<0.2	-	1.7	1.80
Tufted Hairgrass	-	<1	<0.2	-	1.5	7.17
Sheep/Rocky Mtn Fescue	-	<1	<0.2	-	7.9	1.60

* single composite soil sample

**average of four soil samples, composite sample for plants

The rise in soil lead concentrations at Site 5A is considered suspect. Given observations of tailings mobilization and deposition by wind in the area of this testplot, it is suspected that windblown tailings may be contaminating the soil of this testplot. This in turn may be leading to actual metal uptake and/or foliar deposition that is showing up as elevated metal concentrations in the plant samples. Further investigation is required to determine the source of the metals.

It should also be noted that the observed metal uptake trends have not been subjected to statistical analysis for significance and are based on only two data sets (2004 and 2005). To

provide further confidence in these observations, more annual data sets are required. In addition, any toxicity thresholds, potential pathways and implications to foraging wildlife have not been determined as of yet, so these metal uptake findings should be considered preliminary in nature, in advance of further toxicity investigations. The results of the 2005 laboratory analysis for metals are shown in Appendix A.

5.0 RECOMMENDATIONS

- Monitoring of the original seed test plots (established in 2001 and reseeded in 2003) should be continued. Only through continued annual monitoring can the ultimate determination of appropriate revegetation seed formulations (particularly for the TMF) be achieved.
- Monitoring of the three new seed test plots (established in June 2005) should be monitored in late summer 2006.
- Soil and vegetation sampling for metal uptake analysis should continue. This monitoring should be extended to natural revegetation and soils as a quality control program element aimed at addressing possible windblown tailings contamination of the Site 5A testplot. Vegetation samples should also be washed with de-ionized water prior to analysis to eliminate foliar contamination. Overall, the elements of this program should be revisited and refined.
- Consultation with contaminant specialists and a literature review regarding northern plant tissue metal levels and toxicity to foraging wildlife is underway and will be reported separately.

6.0 REFERENCES

Access Mining Consultants Ltd. 2005. *Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2004*. Prepared for TeckCominco Ltd.

Access Mining Consultants Ltd. 2004. *Results Summary of Sä Dena Hes Mine Phase II Revegetation Test Program - 2003*. Prepared for TeckCominco Ltd.

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Access Mining Consultants Ltd. 2001. *Land Reclamation and Revegetation Plan Preliminary Test Program Summary Report - 2000*. Prepared for Cominco Ltd.

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Sä Dena Hes Mine

Land Reclamation and Revegetation Plan

Results Summary of

Phase II Revegetation Test Program - 2005

Appendix A

Laboratory Results of Plants Tissue and Soils Metal Analysis



Analytical Report

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Bill to: Access Mining Consultants Ltd.
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 # 3 Calcite Business Centre
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 Attn: Jennifer Taylor
 Sampled By: J.Taylor
 Company: Access

Project
ID: COM-01
Name: SaDena Hes Mine
Location: Test Reveg
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 411067
 Control Number: E 01704
 Date Received: Sep 26, 2005
 Date Reported: Oct 04, 2005
 Report Number: 752270

			NWL Number	411067-1	411067-2	411067-3	
			Sample Date	Sep 19, 2005	Sep 19, 2005	Sep 19, 2005	
			Sample Description	Site 1-1	Site 1-2	Site 1-3	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte	Units	Results	Results	Results	Detection Limit		
Available Nutrients							
Nitrate - N	Available	mg/kg	<1	<1	<1	1	
Phosphorus	Available	mg/kg	12	44	8	5	
Potassium	Available	mg/kg	50	40	20	10	
Sulfate-S	Available	mg/kg	13	2	<1	1	
Ammonium - N	Available-dry basis	mg/kg	1.2	1.0	0.5	0.3	
Metals Strong Acid Digestion							
Antimony	Strong Acid Extractable	ug/g	4.6	6.24	5.50	0.5	
Arsenic	Strong Acid Extractable	ug/g	18.1	30.8	22.3	0.2	
Barium	Strong Acid Extractable	ug/g	114	257	200	0.03	
Beryllium	Strong Acid Extractable	ug/g	0.34	0.44	0.44	0.01	
Cadmium	Strong Acid Extractable	ug/g	2.0	2.8	2.0	0.05	
Chromium	Strong Acid Extractable	ug/g	38.5	12.8	18.7	0.04	
Cobalt	Strong Acid Extractable	ug/g	4.0	7.46	6.28	0.05	
Copper	Strong Acid Extractable	ug/g	24.7	33.2	26.6	0.05	
Lead	Strong Acid Extractable	ug/g	9.56	14.8	13.5	0.3	
Mercury	Strong Acid Extractable	ug/g	0.113	0.124	0.147	0.003	
Molybdenum	Strong Acid Extractable	ug/g	6.98	7.38	7.71	0.05	
Nickel	Strong Acid Extractable	ug/g	57.6	58.2	57.4	0.1	
Selenium	Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.3	
Silver	Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.2	
Thallium	Strong Acid Extractable	ug/g	0.5	0.57	0.4	0.3	
Tin	Strong Acid Extractable	ug/g	0.3	0.3	0.3	0.2	
Vanadium	Strong Acid Extractable	ug/g	28.3	33.3	41.1	0.1	
Zinc	Strong Acid Extractable	ug/g	200	246	209	0.1	
Physical and Aggregate Properties							
Texture			Sandy Loam	Sandy Loam	Sandy Loam		
Sand	Soil Texture	% by weight	78.0	73.4	69.0	0.1	
Silt	Soil Texture	% by weight	14.0	17.6	23.0	0.1	
Clay	Soil Texture	% by weight	8.0	9.0	8.0	0.1	
Salinity							
pH	Saturated Paste	pH	7.7	7.8	8.0		
Electrical Conductivity	Saturated Paste	dS/m at 25 C	0.35	0.25	0.19	0.01	
Soil Acidity							
pH	1:2 Soil:Water	pH	8.1	7.9	7.6	0.5	



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Analyte	Units	Results	411067-4		411067-5		411067-6	
			Sample Date	Sample Description	Sample Date	Sample Description	Sample Date	Sample Description
			Sep 19, 2005	Site 1-4	Sep 19, 2005	Site 5A-1	Sep 19, 2005	Site 5A-2
			Matrix	Soil - general	Matrix	Soil - general	Matrix	Soil - general
Analyte	Units	Results	Results	Results	Results	Detection Limit		
Available Nutrients								
Nitrate - N	Available	mg/kg	<1	<1	<1	1		
Phosphorus	Available	mg/kg	24	7	9	5		
Potassium	Available	mg/kg	40	50	50	10		
Sulfate-S	Available	mg/kg	2	14	33	1		
Ammonium - N	Available-dry basis	mg/kg	0.4	0.3	0.4	0.3		
Metals Strong Acid Digestion								
Antimony	Strong Acid Extractable	ug/g	5.78	1.4	1.9	0.5		
Arsenic	Strong Acid Extractable	ug/g	24.2	6.84	8.90	0.2		
Barium	Strong Acid Extractable	ug/g	156	105	101	0.03		
Beryllium	Strong Acid Extractable	ug/g	0.39	0.694	0.652	0.01		
Cadmium	Strong Acid Extractable	ug/g	2.0	0.54	1.4	0.05		
Chromium	Strong Acid Extractable	ug/g	14.1	26.3	23.4	0.04		
Cobalt	Strong Acid Extractable	ug/g	5.24	12.3	12.4	0.05		
Copper	Strong Acid Extractable	ug/g	26.1	23.9	26.8	0.05		
Lead	Strong Acid Extractable	ug/g	13.6	36.6	121	0.3		
Mercury	Strong Acid Extractable	ug/g	0.121	0.032	0.026	0.003		
Molybdenum	Strong Acid Extractable	ug/g	7.87	0.92	1.2	0.05		
Nickel	Strong Acid Extractable	ug/g	47.8	32.8	31.9	0.1		
Selenium	Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.3		
Silver	Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.2		
Thallium	Strong Acid Extractable	ug/g	<0.3	<0.3	0.4	0.3		
Tin	Strong Acid Extractable	ug/g	0.3	0.4	0.58	0.2		
Vanadium	Strong Acid Extractable	ug/g	32.6	25.0	25.2	0.1		
Zinc	Strong Acid Extractable	ug/g	194	121	279	0.1		
Physical and Aggregate Properties								
Texture			Sandy Loam	Sandy Loam	Sandy Loam			
Sand	Soil Texture	% by weight	75.0	52.0	59.0	0.1		
Silt	Soil Texture	% by weight	18.0	31.0	26.0	0.1		
Clay	Soil Texture	% by weight	7.0	17.0	15.0	0.1		
Salinity								
pH	Saturated Paste	pH	8.0	7.8	7.8			
Electrical Conductivity	Saturated Paste	dS/m at 25 C	0.27	0.41	0.59	0.01		
Soil Acidity								
pH	1:2 Soil:Water	pH	8.0	7.8	7.8	0.5		



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Analyte	Units	Results	Results	Results	Detection Limit
Available Nutrients					
Nitrate - N	Available	mg/kg	<1	<1	1
Phosphorus	Available	mg/kg	11	<5	5
Potassium	Available	mg/kg	50	30	10
Sulfate-S	Available	mg/kg	16	180	1
Ammonium - N	Available-dry basis	mg/kg	0.3	0.4	0.3
Metals Strong Acid Digestion					
Antimony	Strong Acid Extractable	ug/g	1.9	2.1	0.5
Arsenic	Strong Acid Extractable	ug/g	8.20	8.02	0.2
Barium	Strong Acid Extractable	ug/g	97.6	109	0.03
Beryllium	Strong Acid Extractable	ug/g	0.667	0.702	0.01
Cadmium	Strong Acid Extractable	ug/g	0.58	0.62	0.05
Chromium	Strong Acid Extractable	ug/g	22.0	37.0	0.04
Cobalt	Strong Acid Extractable	ug/g	13.1	13.3	0.05
Copper	Strong Acid Extractable	ug/g	25.9	27.3	0.05
Lead	Strong Acid Extractable	ug/g	36.5	41.6	0.3
Mercury	Strong Acid Extractable	ug/g	0.029	0.034	0.003
Molybdenum	Strong Acid Extractable	ug/g	0.94	1.0	0.05
Nickel	Strong Acid Extractable	ug/g	31.4	39.4	0.1
Selenium	Strong Acid Extractable	ug/g	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	ug/g	<0.2	<0.2	0.2
Thallium	Strong Acid Extractable	ug/g	<0.3	<0.3	0.3
Tin	Strong Acid Extractable	ug/g	0.5	0.53	0.2
Vanadium	Strong Acid Extractable	ug/g	24.5	26.0	0.1
Zinc	Strong Acid Extractable	ug/g	132	139	0.1
Physical and Aggregate Properties					
Texture			Sandy Loam	Sandy Loam	
Sand	Soil Texture	% by weight	57.4	57.0	0.1
Silt	Soil Texture	% by weight	26.0	26.0	0.1
Clay	Soil Texture	% by weight	16.6	17.0	0.1
Salinity					
pH	Saturated Paste	pH	7.9	7.7	
Electrical Conductivity	Saturated Paste	dS/m at 25 C	0.44	1.81	0.01
Soil Acidity					
pH	1:2 Soil:Water	pH	7.9	7.6	0.5



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Analyte	Units	NWL Number	411067-9	411067-10	411067-11	Detection Limit
		Sample Date	Sep 19, 2005	Sep 19, 2005	Sep 19, 2005	
		Sample Description	Alfalfa	Violet Wheatgrass	Ticklegrass	
		Matrix	Tissue	Tissue	Tissue	
Metals Total						
Aluminum	Total (dry weight)	ug/g	47	39	49.8	1
Antimony	Total (dry weight)	ug/g	<0.5	<0.5	<0.5	0.5
Arsenic	Total (dry weight)	ug/g	<0.2	<0.2	<0.2	0.2
Barium	Total (dry weight)	ug/g	184	46.3	19.9	0.03
Beryllium	Total (dry weight)	ug/g	<0.01	<0.02	<0.01	0.01
Bismuth	Total (dry weight)	ug/g	<0.5	<0.5	<0.5	0.5
Cadmium	Total (dry weight)	ug/g	0.4	0.1	0.1	0.05
Calcium	Total (dry weight)	ug/g	42000	2040	2330	2
Chromium	Total (dry weight)	ug/g	0.060	11.6	1.74	0.04
Cobalt	Total (dry weight)	ug/g	<0.05	<0.05	<0.05	0.05
Copper	Total (dry weight)	ug/g	6.14	2.2	3.4	0.05
Iron	Total (dry weight)	ug/g	72.4	70.6	41	1
Lead	Total (dry weight)	ug/g	<0.2	<0.2	<0.2	0.3
Lithium	Total (dry weight)	ug/g	3.8	0.3	0.4	0.1
Magnesium	Total (dry weight)	ug/g	5280	792	1080	1
Manganese	Total (dry weight)	ug/g	44.2	22.3	36.7	0.3
Molybdenum	Total (dry weight)	ug/g	2.6	0.4	1.6	0.05
Nickel	Total (dry weight)	ug/g	2.6	6.65	3.2	0.1
Phosphorus	Total (dry weight)	ug/g	1960	1260	1280	1
Potassium	Total (dry weight)	ug/g	10700	6880	5450	5
Selenium	Total (dry weight)	ug/g	<0.2	<0.2	<0.2	0.3
Silver	Total (dry weight)	ug/g	<0.15	<0.15	<0.15	0.2
Sodium	Total (dry weight)	ug/g	32	9.4	13	1
Strontium	Total (dry weight)	ug/g	91.4	3.68	3.74	0.02
Titanium	Total (dry weight)	ug/g	0.84	0.66	0.88	0.05
Vanadium	Total (dry weight)	ug/g	<0.1	0.3	0.2	0.1
Zinc	Total (dry weight)	ug/g	28.6	14.8	16.0	0.1
Zirconium	Total (dry weight)	ug/g	<0.05	<0.05	<0.05	0.05



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Analyte		Matrix	NWL Number	411067-12	411067-13	411067-14	Detection Limit
			Sample Date	Sep 19, 2005	Sep 19, 2005	Sep 19, 2005	
	Units		Sample Description	Alpine Bluegrass	Tufted Hairgrass	Sheep Fescue	
			Matrix	Tissue	Tissue	Tissue	
			Results	Results	Results	Results	
Metals Total							
Aluminum	Total (dry weight)	ug/g	249	26	25	1	
Antimony	Total (dry weight)	ug/g	<0.5	<0.5	<0.5	0.5	
Arsenic	Total (dry weight)	ug/g	<0.2	<0.2	<0.2	0.2	
Barium	Total (dry weight)	ug/g	77.6	42.9	23.9	0.03	
Beryllium	Total (dry weight)	ug/g	<0.01	<0.02	<0.02	0.01	
Bismuth	Total (dry weight)	ug/g	<0.5	<0.5	<0.5	0.5	
Cadmium	Total (dry weight)	ug/g	0.05	<0.05	0.08	0.05	
Calcium	Total (dry weight)	ug/g	3000	1770	1500	2	
Chromium	Total (dry weight)	ug/g	2.54	2.41	1.44	0.04	
Cobalt	Total (dry weight)	ug/g	<0.05	<0.05	<0.05	0.05	
Copper	Total (dry weight)	ug/g	5.40	2.9	3.4	0.05	
Iron	Total (dry weight)	ug/g	139	29	27	1	
Lead	Total (dry weight)	ug/g	0.79	<0.2	<0.2	0.3	
Lithium	Total (dry weight)	ug/g	0.51	0.3	0.3	0.1	
Magnesium	Total (dry weight)	ug/g	1040	577	682	1	
Manganese	Total (dry weight)	ug/g	28.6	42.5	30.6	0.3	
Molybdenum	Total (dry weight)	ug/g	3.3	1.7	3.4	0.05	
Nickel	Total (dry weight)	ug/g	4.7	3.6	3.4	0.1	
Phosphorus	Total (dry weight)	ug/g	2950	1150	653	1	
Potassium	Total (dry weight)	ug/g	5910	7220	3270	5	
Selenium	Total (dry weight)	ug/g	<0.2	<0.2	<0.2	0.3	
Silver	Total (dry weight)	ug/g	<0.15	<0.15	<0.15	0.2	
Sodium	Total (dry weight)	ug/g	31	5.5	6.5	1	
Strontium	Total (dry weight)	ug/g	6.16	3.08	2.61	0.02	
Titanium	Total (dry weight)	ug/g	4.5	0.4	0.4	0.05	
Vanadium	Total (dry weight)	ug/g	2.1	0.3	<0.2	0.1	
Zinc	Total (dry weight)	ug/g	25.4	15.5	15.5	0.1	
Zirconium	Total (dry weight)	ug/g	0.2	<0.05	<0.05	0.05	



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Analyte	Units	NWL Number	411067-15	411067-16	411067-17	Detection Limit
		Sample Date	Results	Results	Results	
		Sample Description	Alpine Bluegrass	Alfalfa	Violet Wheatgrass	
		Matrix	Tissue	Tissue	Tissue	
Metals Total						
Aluminum	Total (dry weight)	ug/g	1300	38	107	1
Antimony	Total (dry weight)	ug/g	<0.5	<0.5	<0.5	0.5
Arsenic	Total (dry weight)	ug/g	0.3	<0.2	<0.2	0.2
Barium	Total (dry weight)	ug/g	117	36.7	24.3	0.03
Beryllium	Total (dry weight)	ug/g	<0.02	<0.01	<0.02	0.01
Bismuth	Total (dry weight)	ug/g	<0.5	<0.50	<0.5	0.5
Cadmium	Total (dry weight)	ug/g	0.2	0.51	0.07	0.05
Calcium	Total (dry weight)	ug/g	5440	50100	2870	2
Chromium	Total (dry weight)	ug/g	2.45	0.569	3.63	0.04
Cobalt	Total (dry weight)	ug/g	0.1	0.07	<0.05	0.05
Copper	Total (dry weight)	ug/g	6.13	5.47	3.3	0.05
Iron	Total (dry weight)	ug/g	762	55.8	90.2	1
Lead	Total (dry weight)	ug/g	8.21	1.9	1.8	0.3
Lithium	Total (dry weight)	ug/g	1.8	4.3	0.4	0.1
Magnesium	Total (dry weight)	ug/g	876	1710	508	1
Manganese	Total (dry weight)	ug/g	57.6	44.8	29.7	0.3
Molybdenum	Total (dry weight)	ug/g	5.71	0.60	0.3	0.05
Nickel	Total (dry weight)	ug/g	3.9	1.6	4.2	0.1
Phosphorus	Total (dry weight)	ug/g	4670	1620	1390	1
Potassium	Total (dry weight)	ug/g	13000	8210	5370	5
Selenium	Total (dry weight)	ug/g	<0.2	<0.2	<0.2	0.3
Silver	Total (dry weight)	ug/g	<0.15	<0.15	<0.15	0.2
Sodium	Total (dry weight)	ug/g	86.4	40	13	1
Strontium	Total (dry weight)	ug/g	28.9	151	11.4	0.02
Titanium	Total (dry weight)	ug/g	8.38	0.2	1.2	0.05
Vanadium	Total (dry weight)	ug/g	2.2	<0.1	0.2	0.1
Zinc	Total (dry weight)	ug/g	71.8	52.4	15.0	0.1
Zirconium	Total (dry weight)	ug/g	0.4	<0.05	<0.05	0.05



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 Sampled By: J.Taylor
 Company: Access

Project ID: COM-01
Name: SaDena Hes Mine
Location: Test Reveg
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 411067
Control Number: E 01704
Date Received: Sep 26, 2005
Date Reported: Oct 04, 2005
Report Number: 752270

Analyte	Units	NWL Number	411067-18	411067-19	411067-20	Detection Limit
		Sample Date	Sep 19, 2005	Sep 19, 2005	Sep 19, 2005	
		Sample Description Matrix	Tufted Hairgrass Tissue	Rocky Mtn. Fescue Tissue	Ticklegrass Tissue	
Metals Total						
Aluminum	Total (dry weight)	ug/g	130	88.3	147	1
Antimony	Total (dry weight)	ug/g	<0.5	<0.5	<0.6	0.5
Arsenic	Total (dry weight)	ug/g	<0.2	<0.2	0.2	0.2
Barium	Total (dry weight)	ug/g	21.8	48.9	21.4	0.03
Beryllium	Total (dry weight)	ug/g	<0.02	<0.01	<0.02	0.01
Bismuth	Total (dry weight)	ug/g	<0.5	<0.5	<0.6	0.5
Cadmium	Total (dry weight)	ug/g	0.06	<0.05	0.2	0.05
Calcium	Total (dry weight)	ug/g	1970	6060	3110	2
Chromium	Total (dry weight)	ug/g	3.30	2.48	1.51	0.04
Cobalt	Total (dry weight)	ug/g	0.1	0.1	3.0	0.05
Copper	Total (dry weight)	ug/g	3.0	3.6	3.8	0.05
Iron	Total (dry weight)	ug/g	112	70.0	104	1
Lead	Total (dry weight)	ug/g	7.17	1.6	16.6	0.3
Lithium	Total (dry weight)	ug/g	0.4	0.73	0.5	0.1
Magnesium	Total (dry weight)	ug/g	234	414	811	1
Manganese	Total (dry weight)	ug/g	43.1	81.8	53.2	0.3
Molybdenum	Total (dry weight)	ug/g	0.3	2.0	2.4	0.05
Nickel	Total (dry weight)	ug/g	5.0	3.5	3.0	0.1
Phosphorus	Total (dry weight)	ug/g	847	782	1370	1
Potassium	Total (dry weight)	ug/g	4190	3230	4740	5
Selenium	Total (dry weight)	ug/g	<0.3	<0.2	<0.3	0.3
Silver	Total (dry weight)	ug/g	<0.16	<0.15	<0.17	0.2
Sodium	Total (dry weight)	ug/g	20	12	28	1
Strontium	Total (dry weight)	ug/g	8.61	33.9	12.2	0.02
Titanium	Total (dry weight)	ug/g	1.9	1.1	2.0	0.05
Vanadium	Total (dry weight)	ug/g	0.3	0.2	0.4	0.1
Zinc	Total (dry weight)	ug/g	22.1	39.7	33.6	0.1
Zirconium	Total (dry weight)	ug/g	0.09	<0.05	0.08	0.05

Approved by:

Bill Warning, B.Sc.
 Lab Operations Manager



Methodology and Notes

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
3 Calcite Business Centre
151 Industrial Road
Whitehorse, YT, Canada
Y1A 2V3
Attn: Jennifer Taylor
Sampled By: J.Taylor
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Page: 8 of 8

Method of Analysis:

MethodName	Reference	Method	Date Analysis Started	Location
Ammonium-N (Extractable) in Soil	McKeague	* Nitrate and Ammonium Extractable by 2N KCl, 4.35	28-Sep-05	Norwest Labs Edmonton
Metals (Strong Acid Leachable) in soils	B.C. Ministry of WLAP	* Strong Acid Leachable Metals (SALM) in Soil, V 1.0, SALM	3-Oct-05	Norwest Labs Surrey
Metals (Total) in vegetation	US EPA	Metals & Trace Elements by ICP-AES, 6010B	28-Sep-05	Norwest Labs Surrey
Nutrients in General Soil	Comm. Soil Sci. Pl. Anal.	* Modified Kelowna Soil Test, Vol 26, 1995	28-Sep-05	Norwest Labs Edmonton
Particle Size Analysis - GS	Carter	* Hydrometer Method, 47.3	28-Sep-05	Norwest Labs Edmonton
pH and EC in Soil - 1:2 (Surrey)	McKeague	* 1:2 Soil:Water Ratio, 4.12	3-Oct-05	Norwest Labs Surrey
Saturated Paste in General Soil	McKeague	* EC of Saturated Soil Paste, 4.13	28-Sep-05	Norwest Labs Edmonton
Saturated Paste in General Soil	McKeague	* pH of Saturated Soil Paste, 3.14	28-Sep-05	Norwest Labs Edmonton
Sulfate in General Soil	McKeague	* Sulfate Extractable by 0.1M CaCl ₂ , 4.47	28-Sep-05	Norwest Labs Edmonton

* Norwest method(s) is based on reference method

References:

B.C. Ministry of WLAP	B.C. Ministry of Water, Land and Air Protection
Carter	Soil Sampling and Methods of Analysis
Comm. Soil Sci. Pl. Anal.	Communications in Soil Science and Plant Analysis
McKeague	Manual on Soil Sampling and Methods of Analysis
US EPA	US Environmental Protection Agency Test Methods

Comments:

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

The test report shall not be reproduced except in full, without the written approval of the laboratory



Sä Dena Hes Mine

Land Reclamation and Revegetation Plan

Results Summary of

Phase II Revegetation Test Program - 2005

Appendix B

2005 Revegetation

Test Program Photos



Site 1 Test Plots - Km 22 Main Access Road



Site 2 Test Plots - Jewel Box Haul Road



Site 3 Test Plots - Landfill



Site 3 Test Plots - Landfill - 1st Season's Growth on New Plot



Site 5A Test Plots -TMF with 200 mm Soil (Note dense, patchy Alfalfa)



Site 5B Test Plots -TMF with 300 mm Soil



Site 5C Test Plots – TMF with 500 mm Rock and 300 mm Soil



Natural Revegetation on TMF (Water Sedge and Blue-joint Reed Grass)

APPENDIX C

LISTING OF

2005 WILDLIFE SIGHTINGS

AT THE MINE SITE

SA DENA HES MINE SITE - WILDLIFE SIGHTINGS - 2005

ARCTIC LOONS

BEAVER

12-Jul-05 1 Reclaim Pond

BLACK BEAR

6-Jun-05 3 Dump - bear with 2 cubs

8-Jun-05 1 Reclaim Pond

7-Jul-05 1 At gate

GEESE

21-Jun-05 12 North Dam

28-Jun-05 Tailings Pond

GROUSE

LYNX

18-Jan-05 1 km 16

21-Nov-05 1 km 11

MOOSE

2-May-05 1 km 8 - cow

16-May-05 1 km 18 - cow

17-Aug-05 1 Tailings Pond - bull

29-Aug-05 2 North Dam - cow and last year's calf

5-Oct-05 1 Reclaim Pond - bull

OSPREY

7-Jun-05 1 Reclaim Pond

3-Sep-05 3 Osprey gone south for winter; had two chicks this year

OTTER

PORCUPINE

WOLF

12-Nov-05 9 Wolf pack in the yard after the dogs

17-Nov-05 Mine Road - wolves killed cow & calf at km 18

3-Jan-06 2 At the gate

WOLVERINE