

The proposed schedule for the Nanisivik Mine EEM program is outlined in Table 7.1, below.

Table 7.1 Work Schedule for Nanisivik Mine EEM Study

Year	Water and Effluent Quality Monitoring	Sublethal Toxicity Testing	Fish Study	Benthic Invertebrate Community Survey
MMER Expectation	Four times each year, at intervals of not less than one month	Two times each year	Once in each EEM cycle	Once in each EEM cycle
2004	<p>Expected in June, July and August.</p> <p>To be performed at WTDA discharge point and in Twin Lakes Creek.</p> <p>Contingency plan exists for sampling at the East Adit Treatment Facility, in the event that effluent is discharged at that location.</p>	Expected in June and August	Late July or early August, to be performed in the marine environment at the mouth of Twin Lakes Creek	Late July or early August, to be performed in Twin Lakes Creek, proximal to the effluent discharge from WTDA
2005	<p>Expected in June, July and August.</p> <p>To be performed at WTDA discharge point and in Twin Lakes Creek.</p> <p>Contingency plan exists for sampling at the East Adit Treatment Facility, in the event that effluent is discharged at that location.</p>	Expected in June and August	Not required	Not required
2006	<p>Expected in June, July and August.</p> <p>To be performed at WTDA discharge point and in Twin Lakes Creek.</p> <p>Contingency plan exists for sampling at the East Adit Treatment Facility, in the event that effluent is discharged at that location.</p>	Expected in June and August	Not required	Not required



Reports for the Nanisivik Mine EEM Study will be prepared according to the schedule provided in Table 7.2 below, in accordance with the requirements of the *MMER*.

Table 7.2 Reporting Schedule for Nanisivik Mine EEM Study

Year	Reports Due
2003	July 30, 2003, Environment Canada received notification from the Nanisivik Mine of the intent to obtain recognized closed mine status.
2004	January 30, 2004, required date of submission of EEM Study Design (this document), six months following Environment Canada's receipt of notification by the mine of their intent to obtain recognized closed mine status. March 31, 2004, report on effluent and water quality monitoring, and sublethal toxicity testing, from 2003 calendar year.
2005	March 31, 2005, report on effluent and water quality monitoring, and sublethal toxicity testing, from 2004 calendar year.
2006	March 31, 2006, report on effluent and water quality monitoring, and sublethal toxicity testing, from 2005 calendar year. July 30, 2006. Final Interpretive Report on biological study components due, 36 months following Environment Canada's receipt of notification by the mine of their intent to obtain recognized closed mine status.
2007	March 31, 2007, report on effluent and water quality monitoring, and sublethal toxicity testing, from 2006 calendar year.



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- Environment Canada.** 1992a. Biological Test Method: Test of reproduction and survival using the cladoceran *Ceriodaphnia dubia*, Environmental Technology Centre, Ottawa, Ontario. Report EPS 1/RM/21. February, 1992, Amended November, 1997.
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- Gartner Lee Limited (GLL).** 2002. 2002 Phase II Environmental Site Assessment, Nanisivik Mine, Nunavut. Report prepared on behalf of CanZinco Limited and Nanisivik Mine.
- Jacques Whitford Environment Limited (JWEL).** 2003a. Terrestrial Sampling at Nanisivik Mine, July, 2003. Letter to Mr. Bob Carreau (CanZinco Limited) from Malcolm Stephenson (JWEL), dated December 5, 2003. JWEL Project No. 15058. The letter is provided as an Appendix to this report.
- Jacques Whitford Environment Limited (JWEL).** 2003b. Studies in Twin Lakes Creek, July, 2003. Letter to Mr. Bob Carreau (CanZinco Limited) from Malcolm Stephenson (JWEL), dated November 19, 2003. JWEL Project No. 15058. The letter is provided as an Appendix to this report.



- Jacques Whitford Environment Limited (JWEL).** 2003c. Marine Sampling in Strathcona Sound, July, 2003. Letter to Mr. Bob Carreau (CanZinco Limited) from Malcolm Stephenson (JWEL), dated November 19, 2003. JWEL Project No. 15058. The letter is provided as an Appendix to this report.
- Lorax.** 2000. Toxicity Testing, Mouth of Twin Lakes Creek in Strathcona Sound. Report prepared for Nanisivik Mine by Lorax Inc., dated October, 2000.
- Nanisivik Mine Limited.** 1995. Twin Lakes Creek 1995 Metal Loading Data. Report to Nunavut Water Board, dated October, 1995.
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- Nanisivik Mine Limited.** 2000. Nanisivik Mine Metal Loading Study. Report to Nunavut Water Board.
- United States Food and Drug Administration.** 1993. Guidance Document for Arsenic in Shellfish. Accessed via internet site: <http://www.cfsan.fda.gov/~frf/guid-as.html>
- World Health Organization.** 2001. Environmental Health Criteria 224. Arsenic and Arsenic Compounds. Accessed via internet site: <http://www.inchem.org/documents/ehc/ehc/ehc224.htm>



APPENDIX A
Terrestrial Sampling at Nanisivik Mine, July, 2003





**Jacques Whitford
Environment Limited**

Consulting Engineers
Environmental Scientists
Risk Consultants

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New Brunswick • Nova Scotia • Prince Edward Island • Newfoundland & Labrador • Quebec • Ontario • Saskatchewan • Alberta • British Columbia
Maine • New Hampshire • New York • Pennsylvania • Trinidad • Russia • Argentina

December 5, 2003

Mr. Robert Carreau
Corporate Manager, Environmental Affairs
Breakwater Resources Limited
Suite 2000, 95 Wellington Street East
Toronto, Ontario
M5J 2N7

JWEL 15058

Dear Mr. Carreau,

Re: Terrestrial Sampling at Nanisivik Mine, July, 2003

This letter is to provide you with the results of soils and vegetation sampling that was carried out at the Nanisivik Mine, during July 2003. Specifically, sampling included collection of soil and vegetation samples from five "meadows" located around the Nanisivik townsite. In addition, an effort was made to trap lemmings in each of the meadows, however, this effort was not successful (no lemmings were trapped, and no evidence of lemmings was observed in any of the meadows).

Information on the specific samples collected, and sampling locations, can be found in Appendix A to this letter.

Methods

Trapping for lemmings was attempted using standard "snap traps". Both "mouse" and "rat" sized traps were deployed in each of five meadows. Traps were baited using peanut butter. Traps were deployed for periods of approximately 24 hours at each location. None of the traps was observed to have been triggered by an animal, and the peanut butter bait was not disturbed in any case. No lemmings or other small mammals were captured. However, this result was consistent with the results of earlier work carried out by BC Research (1975). They were likewise unsuccessful at collecting small mammals from meadow habitat at Nanisivik prior to the development of the mine.

Within each meadow, a composite soil sample was collected from within an area having a radius of approximately 10 m. Soil samples were taken as surface scrapes of approximately 30 g of relatively fine-grained soil, using a stainless steel spoon. At least five discrete locations were sampled, and combined to form a composite sample having a volume of approximately 100 mL, and a mass of approximately 150 to 180 g. Soil samples were stored in polypropylene cups (urine specimen cups with screw caps) and kept cool until they could be submitted to the Research and Productivity Council (RPC) laboratory in Fredericton, New Brunswick, for trace element analysis. The RPC lab is CAEAL-accredited for the analysis of environmental samples.

Concurrently with soil sampling, a composite sample of herbaceous vegetation was collected from the same area within each meadow. The vegetation consisted mainly of grasses and sedges, and was predominantly fresh and green. Vegetation was cut off above the roots using a pair of heavy-duty stainless steel scissors, and was stored cool, in ziploc bags, until it could be submitted to the RPC laboratory for trace element analysis (within two weeks of collection). Vegetation samples were not washed prior to analysis.

Results

The Certificate of Analysis provided by RPC is attached to this letter as Appendix B. Selected results are also presented in Table 1 for your convenience.

Meadow habitat was described by BC Research as comprising about 1% of the land surface at Nanisivik prior to the development of the mine. Due to the dependency of this habitat on the availability of moisture, it tends to be found in low-lying areas or adjacent to small watercourses. Meadow habitat is characterized by grasses and sedges, close to the water table. Soils associated with meadow habitat tend to be organic, and finer-grained than soils elsewhere at Nanisivik (see Appendix C for selected photographs of terrestrial habitat types at Nanisivik). As the land surface rises away from the water table, moisture becomes more limiting, and the grassy vegetation becomes sparse, giving way to a very limited and sparse assemblage of herbs. On hillsides and upland areas, vegetation is almost completely absent.

Table 1. Metal Concentrations in Meadow Soils and Vegetation

Soils (mg/kg dry weight)	Meadow 1		Meadow 2	Meadow 3	Meadow 4	Meadow 5
Arsenic	7	8	7	10	9	1
Cadmium	1.1	1.2	3.3	1.3	0.4	0.3
Copper	37	39	38	24	45	3
Lead	172	143	206	50.5	31.3	13.6
Zinc	355	376	1050	491	150	56
Vegetation (mg/kg dry weight)						
Arsenic	0.2	0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	0.97	0.96	2.70	0.84	0.15	0.15
Copper	17.9	20.0	9.90	6.70	5.40	9.30
Lead	186	184	43.1	36.0	9.40	7.82
Zinc	309	320	405	290	62.0	81.5

Soil Samples

Soil samples M1 to M5 represent meadows that potentially received metal loadings during the period in the late 1980's and early 1990's when fugitive tailings dispersment was known to have occurred at Nanisivik. In addition, some metal loading may have resulted from other mine operations (e.g. trucking or blasting). However, these meadows are also located closest to the natural mineral outcropping that was the basis for the Nanisivik zinc/lead mine. Therefore, the high concentrations of heavy metals



found in soils from meadows M1, M2 and M3 must be regarded as attributable to some combination of natural and anthropogenic factors.

Soils in meadows M1, M2 and M3 are all relatively low in aluminum content (11,200 to 18,200 mg/kg), calcareous (30,000 to 58,800 mg/kg), and have high concentrations of iron (28,200 to 36,900 mg/kg). Meadow M4 (located near Kuhulu Lake) contained more aluminum (27,200 mg/kg) and potassium mineralization, and was less calcareous (6,450 mg/kg), although it too contained abundant iron (37,100 mg/kg). Meadow M5 soils were more organic, containing substantially less mineralization than the other meadows (aluminum was 2,050 mg/kg, calcium 4,300 mg/kg and iron was 7,390 mg/kg).

Meadows M1 and M2 are located immediately south (uphill) and north (downhill) of the townsite, respectively (see Figure 1 in Appendix A). Meadow M3 is located southeast of the townsite. All three of these meadows are located in the area where deposition of wind-borne tailings may have occurred during the late 1980's and early 1990's. Evidence of these loadings is reflected in the zinc (355 to 1,050 mg/kg dry soil) and lead (50.5 to 206 mg/kg dry soil) concentrations measured in soils. In contrast the two reference meadows (M4 and M5) contained substantially less zinc (150 mg/kg and 56 mg/kg respectively), and less lead (31.3 and 13.6 mg/kg respectively) than the other meadows. The copper concentration in meadow M4 (45 mg/kg) was higher than in meadows M1, M2 or M3 (24 to 39 mg/kg), although the copper concentration in meadow M5 was the lowest overall (3 mg/kg).

These results (Appendix B) show that the meadow soils display a substantial range of heavy metal concentrations, as a result of natural and anthropogenic factors.

Vegetation Samples

Vegetation samples are labelled "Meadow 1" through "Meadow 5" in Appendix B. Concentrations of heavy metals in the vegetation samples (dry weight basis) were relatively low and uniform for arsenic (0.2 mg/kg or less), cadmium (0.15 to 2.70 mg/kg) and copper (5.4 to 20 mg/kg), but were relatively high and more variable for lead (7.82 to 186 mg/kg) and zinc (62 to 405 mg/kg).

The distribution of metals on vegetation did not precisely match the distribution in soils. A high lead concentration was observed in vegetation from Meadow 1, which is closest to the tailings area and located in an area of known high tailings dust deposition. This suggests that a significant amount of the lead found on this vegetation may be associated with surface dust or soil particles present in the vegetation. At Meadow 2, much less lead was found in the vegetation, although the sample contained more zinc than the sample from Meadow 1. This suggests that lead and zinc at Meadow 2 may be predominantly from natural sources (i.e., there is less tailings dust present on the vegetation sample). Lead in soils usually has very low bioavailability to vegetation, whereas zinc is more readily taken up by plants.

Consistent with the interpretation that high concentrations of lead and zinc in vegetation from Meadow 1 are caused by the presence of tailings dust, the ratios of the metal concentrations in vegetation to soil were more stable for cadmium and copper.



Other Observations

BC Research (1975) described the terrestrial environment at Nanisivik, and our observations during the 2003 field program fully agree with the descriptions they provided. The area lies in the eastern Canadian Arctic region. It receives low annual precipitation, and this, combined with the low temperatures, produce restricted plant growth and create desert like conditions. Valley bottoms have the most moisture, and have accumulated some soil, and as a result these areas support the most abundant plant growth (see Appendix C, Photo 5). Moving away from the valley bottoms, the availability of moisture drops rapidly, and the degree of soil development also falls (see Appendix C, Photo 4). On steep slopes, high ground and ridges, there is essentially no soil (only rubble), and little or no plant growth (see Appendix C, Photo 7). BC Research (1975) also noted that due to the permafrost conditions, downward movement of water is often restricted. As a result, salts do not leach from the upper soil layers. Areas where dolomitic rock is predominant are often barren, due to the high salt content in the soil solution, which adds to the water stress experienced by plants that are already stressed due to the Arctic conditions.

Conclusions

The terrestrial environment at Nanisivik is largely barren, due to the extreme climatic conditions and rocky terrain. Meadow habitat, comprising about 1% of the land area, is found in low-lying areas where moisture is available, soils are better developed, and some shelter may be available.

Five meadows in the vicinity of the Nanisivik townsite were studied. It was not possible to obtain small mammal (lemming) tissue samples from any of these meadows, probably because they are too small and isolated to sustain significant populations. However, soil and vegetation samples were collected and analyzed for trace metals.

Soil samples from Meadows 1, 2 and 3 show evidence of high lead and zinc concentrations, consistent with the presence of natural mineralization or the deposition of wind-borne tailings that occurred during the late 1980's and early 1990's. Meadows 4 and 5 were reference systems, expected to be unaffected by tailings dust, but also located in areas where natural mineralization is expected to be less marked.

Vegetation samples from Meadow 1 appear to be influenced by the presence of tailings dust (high lead and zinc concentrations). However, concentrations of other metals, including arsenic, cadmium and copper, did not appear to be significantly elevated in any of the meadows.

A human health and ecological risk assessment (JWEL 2003) was recently carried out to evaluate the risk to humans and ecological receptors that may result from measured heavy metal concentrations in site soils. As an outcome of the risk assessment, soil quality remedial objectives were established. The lowest soil quality remedial objectives for lead and zinc, calculated to be protective of both human and ecological receptors, were 700 mg/kg and 10,800 mg/kg, respectively. Based on the data collected from the meadows by JWEL during 2003, there is no reason to believe that these habitat units are ecologically impaired, or that they represent any significant risk to humans.



Closing

We trust that this letter provides the information you require. Please do not hesitate to contact the undersigned at (506) 457-3200 should you require any further information.

Sincerely

JACQUES WHITFORD ENVIRONMENT LIMITED

A handwritten signature in black ink, appearing to read 'M. Stephenson', written over a horizontal line.

Malcolm Stephenson, Ph.D.
Senior Aquatic Scientist



References

BC Research. 1975. Terrestrial Environmental Studies at Strathcona Sound, N.W.T. Project 1552, Progress Report No. 2. Prepared for Strathcona Mineral Services, March, 1975.

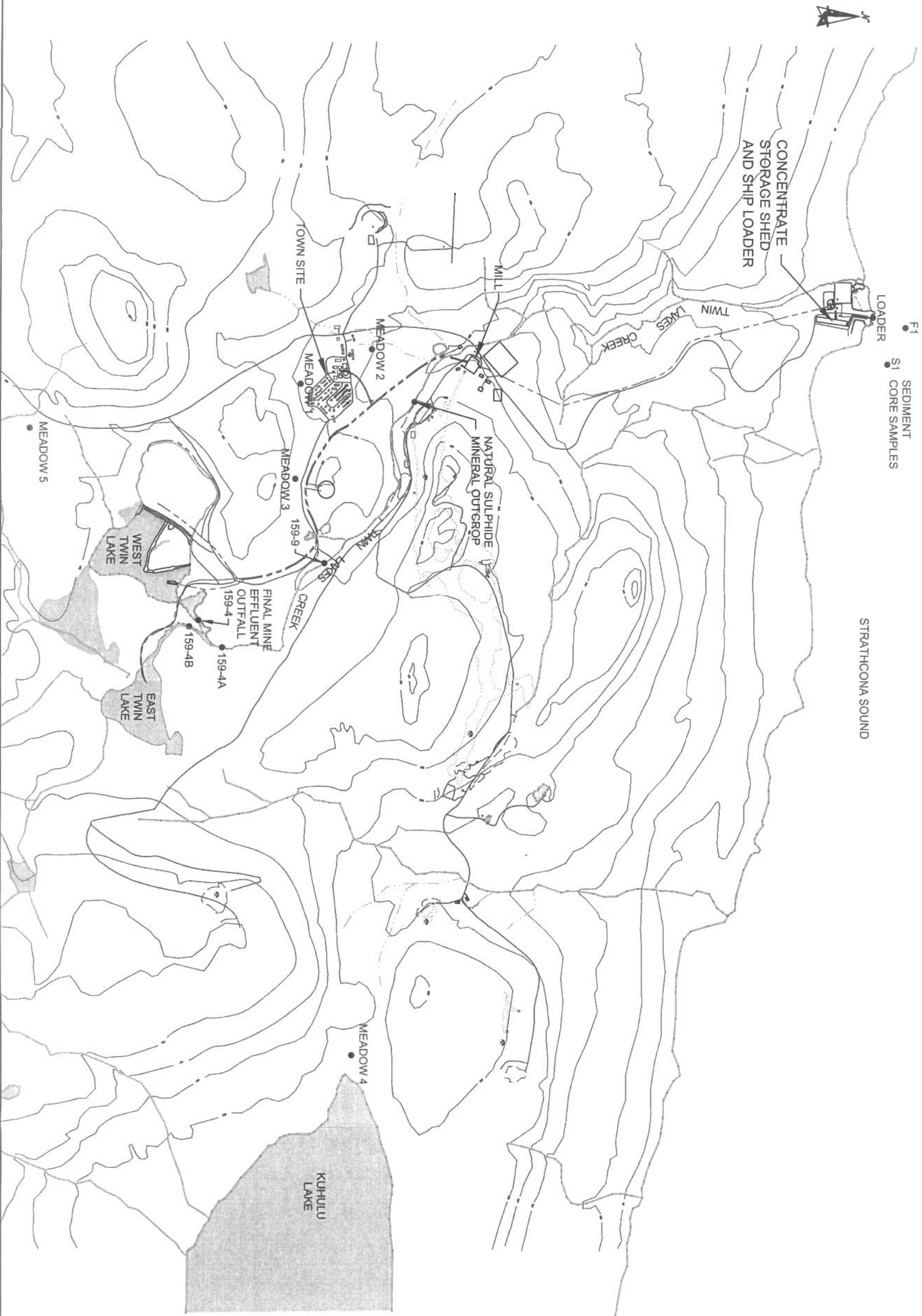
Jacques Whitford Environment Limited. 2003. Human Health and Ecological Risk Assessment, Nanisivik Mine, Nunavut Final Report, October 21, 2003.



Appendix A

**Figure 1: Locations of Terrestrial and Marine Sampling Locations
Details of Soil and Vegetation Samples Collected at Meadow Sites**





REFERENCE DRAWING FROM
GARTNER LEE LIMITED
PROJECT # 21-957
FILE NAME: 21957-D3-02.DWG
OCT. 1, 2002

LOCATIONS OF TERRESTRIAL AND MARINE SAMPLING STATIONS
NANISIVIK MINE, JULY 2003

Date:	2003 11 25	Scale:	1 : 30 000
Job No.:	15058	Fig. No.:	1



Jacques Whitford
Consulting Engineers
Environmental Scientists

THIS DRAWING IS THE PROPERTY OF JACQUES WHITFORD AND IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF JACQUES WHITFORD. THE USER OF THIS DRAWING SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

Meadow 1. Location: 73° 01' 57.010" N, 84° 31' 56.076" W. Elevation approximately 326 m. A total of 24 baited mouse and rat traps were deployed for 24 hours, with no animals being caught. A composite soil sample, and a composite vegetation sample, were collected for chemical analysis.

Meadow 2. Location: 73° 02' 12.663" N, 84° 32' 24.190" W. Elevation approximately 315 m. A total of 24 baited mouse and rat traps were deployed for 24 hours, with no animals being caught. A composite soil sample, and a composite vegetation sample, were collected for chemical analysis.

Meadow 3. Location: 73° 01' 54.562" N, 84° 30' 04.517" W. Elevation approximately 339 m. A total of 24 baited mouse and rat traps were deployed for 24 hours, with no animals being caught. A composite soil sample, and a composite vegetation sample, were collected for chemical analysis.

Meadow 4. Location: GPS not available due to poor geometry of available satellites. A nearby location at Kuhulu Lake had coordinates of 73° 02' 09.772" N, 84° 22' 19.761" W. Elevation approximately 265 m. A total of 24 baited mouse and rat traps were deployed for 24 hours, with no animals being caught. A composite soil sample, and a composite vegetation sample, were collected for chemical analysis.

Meadow 5. Location: 73° 00' 52.062" N, 84° 31' 20.109" W. Elevation approximately 446 m. A total of 24 baited mouse and rat traps were deployed for 24 hours, with no animals being caught. A composite soil sample, and a composite vegetation sample, were collected for chemical analysis.



Appendix B

Analytical Data Reports by RPC, for Soil and Vegetation Samples



RPC
921 College Hill Rd,
Fredericton, N.B. E3B 6Z9
Report No.: 31733-IAS

Jacques Whitford Environment
PO Box 1116
Fredericton NB E3B 5C2
Attn: M. Stephenson
Job No.: 15058

August 15, 2003
Revised: October 14, 2003

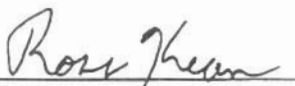
Fax: 506-452-7652

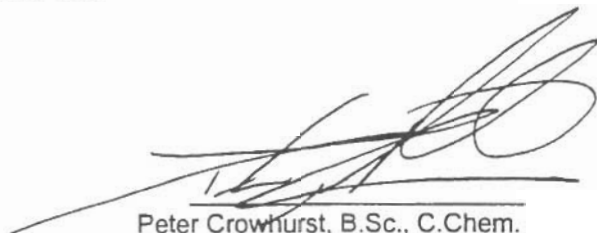
RECEIVED
OCT 14 2003

Trace Metals Analysis

RPC ID	31733 RB1	31733 RB2	NIST 2709	NIST 2709	NIST 2711	NIST 2711
Client ID	QA/QC	QA/QC	CRM	Target Values	CRM	Target Values
Concentration (mg/Kg)						
Aluminum	7	6	26500	20000 - 31000	19200	12000 - 23000
Antimony	< 0.1	< 0.1	0.7	< 10	4.6	< 10
Arsenic	< 1	< 1	17	< 20	103	88 - 110
Barium	< 1	< 1	410	392 - 400	193	170 - 260
Beryllium	< 0.1	< 0.1	0.9	-	1.1	-
Bismuth	< 1	< 1	< 1	-	4	-
Boron	< 1	< 1	36	-	10	-
Cadmium	< 0.1	< 0.1	0.4	< 1	42.5	32 - 46
Calcium	< 50	< 50	15200	14000 - 17000	21000	20000 - 25000
Chromium	< 1	< 1	93	60 - 115	24	15 - 25
Cobalt	< 0.1	< 0.1	12.7	10-15	8.5	7 - 12
Copper	< 1	< 1	33	26 - 40	110	91 - 110
Iron	< 20	< 20	32300	25000 - 33000	24700	17000 - 26000
Lead	< 0.1	< 0.1	11.6	12 - 18	1120	930 - 1500
Lithium	< 0.1	< 0.1	40.3	-	16.8	-
Magnesium	< 10	< 10	13400	12000 - 15000	7920	7200 - 8900
Manganese	1	1	493	360 - 600	533	400 - 620
Molybdenum	< 0.1	< 0.1	1.3	< 2	1.3	< 2
Nickel	< 1	< 1	80	65 - 90	18	14 - 20
Potassium	< 20	< 20	4090	2600 - 3700	4760	2600 - 5300
Rubidium	< 0.1	< 0.1	39.4	-	38.0	-
Selenium	< 1	< 1	2	-	2	-
Silver	< 0.1	< 0.1	0.4	-	4.4	2.5 - 5.5
Sodium	< 50	< 50	770	630 - 1100	270	200 - 290
Strontium	< 1	< 1	121	100 - 112	56	48 - 55
Tellurium	< 0.1	< 0.1	< 0.1	-	1.2	-
Thallium	< 0.1	< 0.1	0.3	-	1.5	-
Tin	0.3	0.3	1.0	-	2.4	-
Uranium	< 0.1	< 0.1	1.4	-	1.0	-
Vanadium	< 1	< 1	87	51 - 70	54	34 - 50
Zinc	3	2	99	87 - 120	313	290 - 340

Samples were air dried and sieved at 1mm. Portions were digested according to EPA Method 3050. The resulting solutions were diluted to volume for trace element analysis by ICP-MS and ICP-ES.


A. Ross Kean, M.Sc.
Department Head
Inorganic Analytical Chemistry


Peter Crowhurst, B.Sc., C.Chem.
Analytical Chemist
Inorganic Analytical Chemistry

RPC
921 College Hill Rd,
Fredericton, N.B. E3B 6Z9
Report No.: 31733-IAS

Jacques Whitford Environment
PO Box 1116
Fredericton NB E3B 5C2
Attn: M. Stephenson
Job No.: 15058

August 15, 2003
Revised: October 14, 2003
Fax: 506-452-7652

Trace Metals Analysis

RPC ID	31733-11A	31733-11B	31733-12	31733-13	31733-14	31733-15
Client ID	M1	Duplicate	M2	M3	M4	M5
	Concentration (mg/Kg)					
Aluminum	13700	13800	18200	11200	27200	2050
Antimony	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Arsenic	7	8	7	10	9	1
Barium	57	53	54	92	138	28
Beryllium	0.8	0.8	1.0	0.8	1.5	0.1
Bismuth	< 1	< 1	< 1	< 1	< 1	< 1
Boron	47	47	60	27	34	9
Cadmium	1.1	1.2	3.3	1.3	0.4	0.3
Calcium	30200	30000	53800	58800	6450	4300
Chromium	22	23	30	21	38	4
Cobalt	11.2	12.3	12.2	16.6	18.3	1.8
Copper	37	39	38	24	45	3
Iron	28200	30300	26700	36900	37100	7390
Lead	172	143	206	50.5	31.3	13.6
Lithium	40.7	43.8	78.9	28.9	52.1	6.5
Magnesium	26000	26200	47600	40300	15300	1880
Manganese	339	365	561	1220	444	167
Molybdenum	2.3	2.3	2.2	2.0	3.0	0.4
Nickel	26	27	30	25	40	3
Potassium	5560	5400	7280	2760	6680	480
Rubidium	24.7	27.9	38.6	21.8	46.4	3.5
Selenium	< 1	< 1	< 1	< 1	< 1	< 1
Silver	0.4	0.4	0.7	0.6	0.2	< 0.1
Sodium	100	120	210	180	120	< 50
Strontium	17	18	40	20	10	3
Tellurium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thallium	0.5	0.5	0.6	0.5	0.9	< 0.1
Tin	0.6	0.7	0.9	0.7	1.1	0.2
Uranium	1.0	0.8	0.9	1.0	3.1	0.4
Vanadium	54	58	78	44	80	8
Zinc	355	376	1050	491	150	56

RPC
921 College Hill Rd,
Fredericton, N.B. E3B 6Z9
Report No.: 31733-IAS

Jacques Whitford Environment
PO Box 1116
Fredericton NB E3B 5C2
Attn: M. Stephenson
Job No.: 15058

August 15, 2003
Revised: October 14, 2003
Fax: 506-452-7652

Trace Metals Analysis

RPC ID	31733 RB	31733-16A	31733-16B	31733-17
Client ID	QA/QC	Meadow 1	Duplicate	Meadow 2
	Concentration (mg/Kg)			
Aluminum	< 5	117	119	104
Antimony	< 0.02	0.04	0.03	< 0.02
Arsenic	< 0.2	0.2	0.2	< 0.2
Barium	< 0.2	32.0	30.7	28.4
Beryllium	< 0.02	< 0.02	< 0.02	< 0.02
Bismuth	< 0.02	< 0.02	< 0.02	< 0.02
Boron	< 0.2	18.2	18.3	37.8
Cadmium	< 0.02	0.97	0.96	2.70
Calcium	< 10	9780	10200	6890
Chromium	< 0.2	0.5	0.4	0.4
Cobalt	< 0.02	2.07	2.53	0.82
Copper	< 0.2	17.9	20.0	9.9
Iron	< 20	1500	1540	580
Lead	< 0.02	186	184	43.1
Lithium	< 0.02	0.57	0.54	0.56
Magnesium	< 2	2950	2990	3190
Manganese	< 0.2	414	387	698
Molybdenum	< 0.02	1.05	0.95	0.59
Nickel	< 0.2	2.1	2.4	1.1
Potassium	< 4	6320	6280	11200
Rubidium	< 0.02	1.58	1.53	1.74
Selenium	< 0.2	< 0.2	< 0.2	< 0.2
Silver	< 0.02	0.11	0.11	0.06
Sodium	< 10	40	40	20
Strontium	< 0.2	7.9	8.0	10.5
Tellurium	< 0.02	< 0.02	< 0.02	< 0.02
Thallium	< 0.02	0.02	0.02	< 0.02
Tin	< 0.02	0.21	0.19	0.12
Uranium	< 0.02	0.04	0.04	0.02
Vanadium	< 0.2	0.7	0.7	0.6
Zinc	< 0.5	309	320	405

Portions of the samples were dried, ground and digested with nitric acid. The resulting solutions were diluted to volume for trace element analysis by ICP-MS and ICP-ES. Mercury was analysed by Cold Vapour AAS.

Trace Metals Analysis

RPC ID	31733-18	31733-19	31733-20
Client ID	Meadow 3	Meadow 4	Meadow 5
	Concentration (mg/Kg)		
Aluminum	79	99	52
Antimony	< 0.02	< 0.02	< 0.02
Arsenic	< 0.2	< 0.2	< 0.2
Barium	24.0	38.6	10.9
Beryllium	< 0.02	< 0.02	< 0.02
Bismuth	< 0.02	< 0.02	< 0.02
Boron	15.6	13.4	11.2
Cadmium	0.84	0.15	0.15
Calcium	6380	7200	5900
Chromium	0.3	0.3	0.2
Cobalt	0.59	0.21	0.31
Copper	6.7	5.4	9.3
Iron	780	320	280
Lead	36.0	9.40	7.82
Lithium	0.32	0.30	0.30
Magnesium	2460	2210	2830
Manganese	569	287	766
Molybdenum	1.76	1.66	0.35
Nickel	0.9	0.6	0.4
Potassium	5680	4810	9260
Rubidium	1.59	0.75	7.17
Selenium	< 0.2	< 0.2	< 0.2
Silver	0.07	< 0.02	< 0.02
Sodium	30	50	20
Strontium	3.8	4.4	2.2
Tellurium	< 0.02	< 0.02	< 0.02
Thallium	< 0.02	< 0.02	< 0.02
Tin	0.10	0.13	0.87
Uranium	0.02	< 0.02	< 0.02
Vanadium	0.6	0.5	0.4
Zinc	290	62.0	81.5

Appendix C

Selected Photographs of Meadow and Upland Habitat at Nanisivik

