Hudson Bay Mining and Smelting Co., Ltd.

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COLLECTION OF SNOW SAMPLES NEAR FLIN FLON, MANITOBA FOR THE ANALYSIS OF METALS AND NUTRIENTS

Collection of Snow Samples Near Flin Flon, Manitoba for the Analysis of Metals and Nutrients

Report Prepared for

Hudson Bay Mining and Smelting Co., Ltd.

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by
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LIST OF ABBREVIATIONS

ALS	ALS Laboratory Group, Winnipeg, Manitoba
DL	Analytical Detection Limit
HBMS	Hudson Bay Mining and Smelting Co., Ltd.
NSC	North/South Consultants Inc.
PRSD	Percent Relative Standard Deviation
QA/QC	Quality Assurance and Quality Control
SD	Standard deviation of the mean
TKN	Total Kjeldahl Nitrogen
UTM	Universal Transverse Mercator

1.0 INTRODUCTION

Hudson Bay Mining and Smelting Co., Ltd. (HBMS) requested that North/South Consultants Inc. (NSC) conduct a snow sampling survey in the vicinity of Flin Flon, MB in March 2009. The objective of the program was to obtain information on concentrations of metals and other variables at sites located at variable distances from the HBMS Smelter. HBMS identified the sampling sites/waterbodies to be sampled and requested the application of a sampling protocol previously used and provided by the Province of Manitoba (pers. comm.; hereafter referred to as the "Provincial Protocol").

2.0 METHODS

2.1 Sampling Sites

Fifteen sampling sites were visited, all of which were located on lakes (Figure 1). Several of the sites were sampled in 2006 by the Province of Manitoba, and for continuity, sampling occurred as close as feasible to these locations. New sampling sites were selected in consideration of site access and were generally located in sheltered bays near roads or highways.

Sites were accessed by road and/or snow machines and trails. Site Universal Transverse Mercator (UTM) units are indicated in Table 1. Sites were a minimum of 100 m from roads to minimize local contamination due to vehicle traffic and road maintenance. Where possible, sampling sites were located such that buffers (trees/shrubs) occurred between the road and the sampling site. Where snow machine traffic was evident on the lakes, sampling sites were positioned to minimize local contamination from this source.

2.2 Sample Collection

Three replicate samples were collected at each site (i.e., 15 sites x 3 samples/site = 45 samples). Ten to 15 cores were required at each replicate site to provide sufficient snow for the laboratory analyses. The cores for each composite sample were collected as close as possible to one another without disturbing the sampling area. Replicate sampling locations at each site were located approximately three to four feet apart, as this method was used previously and verbally communicated to HBMS by the Province of Manitoba. As the intent was to obtain replicates of a "site" not of an "area," the replicates were located in close proximity to each other.

At each site, the following was recorded:

- Site UTM;
- Method of site access;
- General site conditions;
- Description of snow conditions including texture, presence of particulate materials, snow density/compression, homogeneity/layering, other activities/developments in the area that may affect snow chemistry, and any departures from the sampling protocols;
- Number of cores collected per replicate station;
- Mean snow depth of the cores in each replicate;
- Sampling crew, sampling gear, sample date and sampling time; and

- Photographs of at least one core (available on the CD enclosed on the cover of this report).

2.3 Sampling Methods

A triplicate sample of snow was collected from each sampling site. Snow cores were collected with a 4.5 cm diameter cellulose acetate corer by pushing the corer through the snow pack until it contacted the ice surface. Snow was cleared away for the core tube, a thin plastic shovel was placed underneath the bottom of the corer to retain the snow sample, then the snow-filled core tube was lifted out of the snowpack (Figure 2). The mean depth of the snow was noted at each replicate site, as well as the depth of ice crusts, where present. Representative photographs of the snow pack, sampling area, and sampling protocols were taken and are available on the CD enclosed on the cover of this report.

The cores from each replicate site were extruded into a clean, labelled, pre-weighed polyethylene bag. A sufficient number of cores were collected to fill the sample jars provided by the analytical laboratory. All cores from the same replicate site were composited into one sampling bag.

After sampling was completed, the total weight of the composite snow sample was obtained using a digital scale and the snow samples were allowed to melt at room temperature (Figure 3). This process took a minimum of nine hours. After the snow was completely melted, the water was apportioned into labelled sampling jars provided by ALS Laboratories and samples for metal analyses were preserved with nitric acid. The samples were kept cool and in the dark until delivered to ALS Laboratories in Winnipeg, MB. Staff at ALS Winnipeg shipped the samples to ALS Laboratories in Vancouver (an accredited analytical laboratory) for analysis. Efforts were made to ensure that the samples did not freeze at any point during shipping. All samples were submitted to the analytical laboratory within the specified holding times. Samples were analysed for pH, specific conductance, nitrate/nitrite, total Kjeldahl nitrogen (TKN), dissolved chloride, dissolved sulphate, and a suite of metals. Details of the laboratory analytical methods are provided in Appendix 1.

2.4 Quality Assurance and Quality Control (QA/QC)

Standard operating procedures for the control of sample contamination were adhered to and included:

- Pre-cleaning sampling equipment with phosphate-free laboratory detergent, rinsing with a 10 % nitric acid solution, then triple rinsing with deionized water;
- Using latex gloves during sampling;
- Minimizing the exposure of the interior of sample containers to the atmosphere;
- Never touching the inside of samplers or sample bottles;
- Only using each core tube once per day. At the end of the day, each tube was triple rinsed with distilled and deionized (nano-pure) water; and
- Minimizing cross-contamination between sites by passing the plastic shovel through the snow prior to using it for sample collection (e.g., site rinsing).

QA/QC samples also included a field blank, trip blank, and an equipment blank. As triplicate samples were collected at each sampling site, sample replication was already included in the program.

2.4.1 Field Blank

One field blank (sample code CLRL-1-2) was submitted to the analytical laboratory (ALS). Field blanks are prepared by filling one set of sample bottles provided by the analytical laboratory with deionized water in

the field and treating the blanks in exactly the same manner as actual samples. Samples are preserved in accordance with actual sample treatments. Blanks were blindly labelled so that the analytical laboratory was not aware it was a QA/QC sample.

2.4.2 Trip Blank

One trip blank (sample code CLRL-1-1) was also submitted to the analytical laboratory. Trip blanks are prepared by the analytical laboratory by filling one set of sample bottles provided with deionized water and adding preservatives where appropriate.

Trip blanks are transported to the field site, using the same handling and transport protocols as for actual samples, and submitted along with samples to the analytical laboratory for analysis. Trip blanks thus are treated similarly to field blanks but the bottles are not opened at any point in the field and thus are not exposed to the environment. Trip and field blanks were submitted to the laboratory on the same day.

2.4.3 Equipment Blank

An equipment blank (sample code CLRL-1-3) was collected to assess potential contamination associated with the use of field sampling equipment. One equipment blank was collected during the program. A pre-cleaned core tube was rinsed with deionized water provided by the analytical laboratory then the rinsate was collected into one of the clean polyethylene sampling bags. A sufficient volume of water was poured through the tubes and collected in the bag to fill one set of sample bottles. The samples were preserved as per instructions for samples then submitted to the laboratory in the same manner as the environmental samples.

2.5 Data Analysis

The concentrations (mg/L) reported by the laboratory were converted into deposition amounts using the formula:

D_x (mg/m^2) = C_x (mg/L) x (V (mL)/A (cm^2)) x 10

where D = deposition of substance x, C = concentration of substance x, V = sample volume; and A = area of the sample. As per the Provincial Protocol, the volume of the sample was estimated by calculating the total weight of snow collected (weight of the snow and bag – weight of the clean, empty bag) and assuming that 1 g of snow is equivalent to 1 mL of water. The area of the sample was calculated as the product of the cross-sectional area of the core tube (πr^2) and the number of cores collected.

To facilitate the deposition calculations, measurements reported below analytical detection limits (DL) were assigned a value of one half the DL. Mean and standard deviation (SD) of the concentrations and deposition rates were subsequently calculated.

3.0 RESULTS

3.1 Field Notes

The following is a summary of the field notes indicating method of site access and any possible sources of contamination. Lakes are listed in alphabetical order.

3.1.1 Amisk Lake

- Access by road;

- Buffer of trees between the road and the sampling site;
- Old snow machine tracks in the area; and
- Photographs documenting the distance from the road (access point) and the other side of the lake (available on the CD enclosed on the cover of this report).

3.1.2 Athapapuskow Lake, Site #1

- Accessed by road (see Ray Tardiff for the road name; it may be Baker's Narrows Road);
- Access the lake by following a surveyer's trail over the bedrock and through the woods;
- Buffer of trees between the road and the sampling site, although some developments were lakeside;
- Sampling site was approximately 100 m from shore but there was abundant snow machine traffic in the area. Sampling site was located halfway between an old and a new snow machine trail; and
- Photographs documenting the distance from the road (access point), local traffic, and the other side of the lake (available on the CD enclosed on the cover of this report).

3.1.3 Athapapuskow Lake, Site #2

- Accessed via Lakeside Avenue;
- Housing developments surrounding the lake;
- Buffer of trees between the road and the sampling site; and
- Photographs documenting the distance from the road (access point), local traffic, and the other side of the lake (available on the CD enclosed on the cover of this report).

3.1.4 Cormorant Lake

- Access by road;
- Buffer of trees between the road and the sampling site;
- No snow machine traffic in the area; and
- Photographs documenting the distance from the road (access point; available on the CD enclosed on the cover of this report).

3.1.5 Douglas Lake

- Access by road;
- Buffer of trees between the road and the sampling site;
- Snow machine traffic in the area, although site was located at least 100 m from the trails; and
- Photograph of the distance from the road (available on the CD enclosed on the cover of this report).

3.1.6 Hamell Lake

- Accessed by snow machine; and

- Photographs documenting the distance from the access point and distance from the smelter (available on the CD enclosed on the cover of this report).

3.1.7 Hapnot Lake

- Accessed from Creighton Freeway at the south end of the lake;
- Attempted to access the sampling site at the north end of the lake, but there were no trail-free areas to sample;
- Sampling site was moderately close to the road but was the only area with no snow machine traffic;
- Sampling site included part of a snow drift; and
- Panorama of photos showing the snow machine traffic and distance from the road (available on the CD enclosed on the cover of this report).

3.1.8 Hidden Lake

- Access by road; and
- Photographs documenting the sampling site and distance from the smelter (available on the CD enclosed on the cover of this report).

3.1.9 Kisseynew Lake

- Accessed by snow machine; and
- Photographs illustrating the lack of snow machine traffic in the area (available on the CD enclosed on the cover of this report).

3.1.10 Louis Lake

- Accessed from a walking path off McKeen's Avenue;
- Excessive amount of snow machine traffic in the area;
- Sampling site was located close to the road, but at the bottom of a ~ 10 foot hill, in an area with no snow machine traffic;
- The sampling site was approximately 100 m from the main road but was less then 20 m from snow machine traffic; and
- Panorama of photos illustrating the abundance of snow machine traffic (available on the CD enclosed on the cover of this report).

3.1.11 Schist Lake, Site #1

- Accessed by snow machine; and
- Photographs showing the landscape and lack of snow machine traffic (available on the CD enclosed on the cover of this report).

3.1.12 Schist Lake, Site #2

- Accessed by snow machine; and

- Photographs showing the landscape and lack of snow machine traffic (available on the CD enclosed on the cover of this report).

3.1.13 Simon House Lake

- Accessed by road;
- Buffer of trees between the road and sampling site;
- No snow machine traffic in the area;
- There was a thick crust of ice in the middle section of the snow pack. As the core tube was inserted, compaction of this layer disturbed the lower layers of snow and may have resulted in a loss of some snow from the lower strata; however, all cores and all replicates were collected in the same manner; and
- Photographs documenting the distance from the road (access point), the other side of the lake, the buffer of trees, and the crusts in the snow (available on the CD enclosed on the cover of this report) .

3.1.14 Trout Lake/Embury Lake

- Accessed by snow machine; and
- Photograph illustrating distance from a potential point source (available on the CD enclosed on the cover of this report) .

3.1.15 Tyrell Lake

- Access by road;
- Buffer of trees between the road and sampling site;
- Snow machine traffic in the area; site was located at least 100 m from the trails;
- Bottom of the snowpack was slushy. This component was excluded from the snow sample as it was assumed that it was melting ice not melting snow; and
- Photographs documenting the distance from the road (access point), local traffic, and the buffer of trees (available on the CD enclosed on the cover of this report).

3.2 Summary of Interactions with ALS Laboratories

Personnel at ALS Laboratories, Vancouver were consulted for clarification and verification of various reporting concerns. Those issues are summarized herein.

- Four detection limits were reported for mercury. The laboratory reported that samples with high concentrations of mercury were diluted, thus the detection limit was increased according to the dilution factor.
- The results for the trip, field, and equipment blanks were unexpectedly high for some metals (Table 2). During the initial analysis, the laboratory suspected that these samples were blanks, noted the elevated values of these parameters, and re-analyzed the samples at that time. Similar results were obtained during the re-analysis, thus the laboratory approved the results.

- An unexpectedly high result was obtained for lithium in one replicate from Tyrell Lake (TYRL-1-3). Results of the Inductively Coupled Plasma – Optical Emission Spectroscopy (ICP-OES) scan performed during the initial analysis confirmed the reported concentration [which was obtained through Inductively Coupled Plasma – Mass Spectroscopy (ICPMS)].
- An unexpectedly high result was obtained for nickel in one replicate from Cormorant Lake (CORL-1-1). The sample was re-analysed and a similar result was obtained.
- The percent relative standard deviation (PRSD) of some triplicate samples collected during the sampling program exceeded a reasonable level of replicability for snow samples (50 %; from data in Barrie and Vet 1984). Validation of a number of the results (as described above) revealed that further verification requests would not aid in reducing the PRSD of the triplicates. Rather, the elevated metal concentrations in the trip, field, and equipment blanks suggests that the sample results for certain metals (e.g., antimony) must be interpreted with caution. The results presented herein have not been corrected for the metal concentrations measured in the blanks.

3.3 Analytical Results

The QA/QC results are provided in Tables 2 and 3. The mean concentration of pH, conductivity, and nitrogen in the snow at each site is in Table 4 while the mean metal concentrations are shown in Table 5. Means of the deposition rates for the routine parameters and the metals are provided in Tables 6 and 7, respectively. Raw concentrations and deposition rates for each site are available in Appendices 2 and 3 as well on the CD enclosed on the cover of this report.

4.0 REFERENCES

BARRIE, L.A. AND R.J. VET. 1984. The concentration and deposition of acidity, major ions and trace metals in the snowpack of the eastern Canadian shield during the winter of 1980-1981. Atmospheric Environment **18 (7):** 1459-1469.

Table 1. Site codes and sampling dates, times, and UTM locations for all snow quality sampling sites. To facilitate comparison of similar sites, sites are arranged according to location and distance from Flin Flon, MB.

Sampling Site	Site Code	Sampling Date	Sampling Time	Sampling Team[1]	UTM Zone	UTM Easting	UTM Northing
Flin Flon							
Louis	LOUL-1	5-Mar-09	8:52	bw, rt	14 U	315493	6071487
Hapnot	HAPL-1	5-Mar-09	9:15	bw, rt	14 U	315123	6071795
Hidden	HIDL-1	5-Mar-09	8:58	dg, jd	14 U	314923	6074057
Southeast							
Schist , Site 1	SCHL-1	3-Mar-09	17:50	dg, jd	14 U	318175	6067164
Schist , Site 2	SCHL-2	3-Mar-09	16:03	dg, jd	14 U	316598	6059288
Athapap, Site 1	ATHL-1	4-Mar-09	15:26	bw, rt	14 U	327985	6064943
Athapap, Site 2	ATHL-2	4-Mar-09	14:25	bw, rt	14 U	345532	6050291
Simon House	SIML-1	4-Mar-09	13:15	bw, rt	14 U	357757	6040135
Cormorant	CORL-1	4-Mar-09	11:25	bw, rt	14 U	387617	5998861
Southwest							
Douglas	DOUL-1	3-Mar-09	13:25	bw, rt	14 U	311036	6069724
Amisk	AMIL-1	3-Mar-09	14:50	bw, rt	13 U	685090	6045554
Northwest							
Hamell	HAML-1	4-Mar-09	15:26	dg, jd	14 U	309865	6077395
Tyrell	TYRL-1	3-Mar-09	16:00	bw, rt	13 U	683106	6085346
Northeast							
Trout/Embury	TROL-1	4-Mar-09	13:07	dg, jd	14 U	319833	6078409
Kisseynew	KISL-1	4-Mar-09	11:41	dg, jd	14 U	330528	6093491

[1] bw = Brianna Wyn, NSC; rt = Ray Tardiff, HBMS; dg = Doug Gibson, NSC; jd = James Dauk , HBMS.

Table 2. Results of total and dissolved (chloride and sulphate only) metal analyses performed on blank samples collected during the snow sampling. Values in bold red are greater than or equal to five times the detection limit; values in blue italics are considered questionable.

Site Code	Blank Type	ALS Code	Date Melted	Hardness (as CaCO3)	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Analytical Detection Limit				**0.5**	**0.001**	**0.00005**	**0.00003**	**0.00005**	**0.0002**	**0.0005**	**0.001**	**0.000017**
CLRL-1-1	Trip blank	L739937-16	3/6/2009	<0.50	**0.0051**	**0.000423**	<0.000030	0.000137	<0.00020	<0.0005	<0.001	<0.000017
CLRL-1-2	Field blank	L739937-17	3/6/2009	<0.50	<0.0010	**0.000772**	<0.000030	0.000100	<0.00020	<0.0005	<0.001	<0.000017
CLRL-1-3	Equipment blank	L739937-18	3/6/2009	<0.50	0.0028	**0.000552**	<0.000030	0.000129	<0.00020	<0.0005	<0.001	**0.00154**

Table 2. Continued.

Site Code	Blank Type	Calcium	Dissolved Chloride	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Analytical Detection Limit		**0.02**	**0.2**	**0.0001**	**0.0001**	**0.0001**	**0.01**	**0.00005**	**0.005**	**0.005**	**0.00005**	**0.00001**
CLRL-1-1	Trip blank	0.029	<0.2	0.00013	<0.00010	0.00029	0.012	0.000111	<0.0050	<0.0050	**0.000239**	<0.000010
CLRL-1-2	Field blank	<0.020	<0.2	<0.00010	<0.00010	<0.00010	<0.010	<0.000050	<0.0050	<0.0050	0.000057	<0.000010
CLRL-1-3	Equipment blank	0.026	<0.2	0.00013	<0.00010	0.00025	<0.010	*0.000239*	<0.0050	<0.0050	0.000188	<0.000010

Table 2. Continued.

Site Code	Blank Type	Molybdenum	Nickel	Phosphorous	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Dissolved Sulphate	Thallium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Analytical Detection Limit		**0.00005**	**0.0001**	**0.3**	**0.05**	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**
CLRL-1-1	Trip blank	<0.000050	*0.00032*	<0.30	<0.050	<0.00010	**0.371**	<0.000010	0.027	<0.00010	<0.50	<0.000050
CLRL-1-2	Field blank	<0.000050	<0.00010	<0.30	<0.050	<0.00010	<0.050	<0.000010	0.029	<0.00010	<0.50	<0.000050
CLRL-1-3	Equipment blank	<0.000050	<0.00010	<0.30	<0.050	<0.00010	<0.050	<0.000010	0.019	<0.00010	<0.50	<0.000050

Table 2. Continued.

Site Code	Blank Type	Tin	Titanium	Uranium	Vanadium	Zinc
		mg/L	mg/L	mg/L	mg/L	mg/L
Analytical Detection Limit		**0.0001**	**0.01**	**0.00001**	**0.00005**	**0.001**
CLRL-1-1	Trip blank	<0.00010	<0.010	<0.000010	<0.000050	0.0020
CLRL-1-2	Field blank	*0.00046*	<0.010	<0.000010	<0.000050	<0.0010
CLRL-1-3	Equipment blank	**0.00058**	<0.010	<0.000010	<0.000050	**0.0053**

Table 3. Results of routine analyses performed on blank samples collected during the snow sampling.

Site Code	Blank Type	ALS Code	Date Melted	pH	Conductivity	Dissolved Nitrate/nitrite	TKN
				pH units	umhos/cm	mg/L	mg/L
Analytical Detection Limit				**0.01**	**0.4**	**0.005**	**0.2**
CLRL-1-1	Trip blank	L739937-16	3/6/2009	5.63	0.8	0.007	<0.2
CLRL-1-2	Field blank	L739937-17	3/6/2009	5.59	1.0	0.014	<0.2
CLRL-1-3	Equipment blank	L739937-18	3/6/2009	5.61	1.1	0.014	<0.2

Table 4. Mean (± SD) pH and conductance and mean (± SD) concentration of nitrate/nitrate and TKN as measured in the snow samples in March 2009.

Sampling Site	Date Melted	pH (pH units)		Conductivity (µmhos/cm)		Dissolved Nitrate/nitrite (mg/L)		TKN (mg/L)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon									
Louis	7-Mar-09	5.81	0.04	12.7	1.40	0.178	0.003	<0.2	0.00
Hapnot	7-Mar-09	6.22	0.02	21.4	0.98	0.149	0.004	<0.2	0.12
Hidden	7-Mar-09	6.36	0.04	13.5	0.10	0.152	0.004	<0.2	0.06
Southeast									
Schist-1	6-Mar-09	6.07	0.18	55.7	9.64	0.151	0.005	<0.2	0.00
Schist-2	6-Mar-09	5.38	0.03	6.8	0.68	0.149	0.010	<0.2	0.00
Athapap-1	6-Mar-09	5.31	0.04	5.1	0.26	0.141	0.017	<0.2	0.00
Athapap-2	6-Mar-09	7.09	0.27	53.2	20.19	0.181	0.042	<0.2	0.00
Simon House	6-Mar-09	7.05	0.42	14.9	8.78	0.181	0.023	<0.2	0.00
Cormorant	6-Mar-09	7.26	0.15	19.8	5.59	0.209	0.021	<0.2	0.00
Southwest									
Douglas	6-Mar-09	6.44	0.39	17.4	6.52	0.164	0.004	<0.2	0.06
Amisk	6-Mar-09	5.06	0.04	5.4	0.15	0.147	0.011	<0.2	0.00
Northwest									
Hamell	6-Mar-09	6.34	0.28	10.2	1.84	0.158	0.006	<0.2	0.00
Tyrell	6-Mar-09	8.18	0.70	106.9	63.67	0.201	0.068	0.2	0.15
Northeast									
Trout/Embury	6-Mar-09	6.23	0.36	6.2	1.35	0.162	0.006	<0.2	0.00
Kisseynew	6-Mar-09	5.68	0.33	4.2	0.21	0.120	0.003	<0.2	0.00

Table 5. Mean (± SD) concentration of total and dissolved (chloride and sulphate only) metals (mg/L) measured in the snow samples collected in March 2009.

Sampling Site	Date Melted	Hardness (as CaCO3)		Aluminum		Antimony		Arsenic		Barium	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Analytical DL		**0.5**		**0.0010**		**0.000050**		**0.00003**		**0.00005**	
Flin Flon											
LOUL-1	7-Mar-09	1.84	0.39	0.159	0.044	0.00342	0.00068	0.0932	0.0201	0.00804	0.00178
HAPL-1	7-Mar-09	4.57	0.51	0.573	0.069	0.00393	0.00009	0.101	0.009	0.0163	0.0012
HIDL-1	7-Mar-09	1.96	0.14	0.224	0.008	0.00424	0.00040	0.0439	0.0049	0.0152	0.0011
Southeast											
SCHL-1	6-Mar-09	14.43	3.67	0.0332	0.0042	0.00279	0.00025	0.0628	0.0034	0.00461	0.00010
SCHL-2	6-Mar-09	1.04	0.20	0.0354	0.0155	0.00151	0.00025	0.0304	0.0062	0.00267	0.00035
ATHL-1	6-Mar-09	0.56	0.08	0.0214	0.0054	0.00102	0.00010	0.0123	0.0016	0.00140	0.00015
ATHL-2	6-Mar-09	17.99	7.38	0.0323	0.0167	0.000622	0.000057	0.00279	0.00116	0.00275	0.00064
SIML-1	6-Mar-09	6.36	3.87	0.0232	0.0061	0.000515	0.000033	0.00131	0.00031	0.00138	0.00039
CORL-1	6-Mar-09	18.27	6.11	0.0649	0.0234	0.000581	0.000060	0.00069	0.00039	0.00283	0.00097
Southwest											
DOUL-1	6-Mar-09	4.00	2.54	0.0390	0.0162	0.00233	0.00012	0.0315	0.0047	0.00425	0.00091
AMIL-1	6-Mar-09	0.47	0.19	0.0233	0.0096	0.000561	0.000021	0.00115	0.00012	0.000691	0.000033
Northwest											
HAML1	6-Mar-09	2.62	0.95	0.0262	0.0034	0.00186	0.00010	0.0329	0.0006	0.00276	0.00066
TYRL-1	6-Mar-09	35.90	19.39	0.0189	0.0043	0.000636	0.000030	0.00512	0.00186	0.00350	0.00087
Northeast											
TROL-1	6-Mar-09	1.93	0.90	0.0257	0.0036	0.00114	0.00003	0.0140	0.0001	0.00180	0.00027
KISL-1	6-Mar-09	1.12	0.41	0.0083	0.0015	0.000559	0.000006	0.00131	0.00009	0.000767	0.000124

Table 5. Continued.

Sampling	Beryllium		Bismuth		Boron		Cadmium		Calcium		Dissolved Chloride	
Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Analytical DL	**0.0002**		**0.00050**		**0.0010**		**0.0000**		**0.020**		**0.2**	
Flin Flon												
LOUL-1	<0.0002	0.0000	0.00337	0.00116	<0.0010	0.0000	0.0921	0.0207	0.390	0.072	1.1	0.15
HAPL-1	<0.0002	0.0000	0.00437	0.00022	0.0011	0.0001	0.0838	0.0071	0.892	0.102	2.5	0.15
HIDL-1	<0.0002	0.0000	0.00196	0.00006	<0.0010	0.0000	0.0767	0.0025	0.472	0.056	0.6	0.06
Southeast												
SCHL-1	<0.0002	0.0000	0.00178	0.00021	0.0027	0.0001	0.137	0.037	4.43	1.42	8.0	0.52
SCHL-2	<0.0002	0.0000	0.00141	0.00044	<0.0010	0.0000	0.0507	0.0144	0.329	0.060	0.2	0.06
ATHL-1	<0.0002	0.0000	<0.00050	0.00000	<0.0010	0.0000	0.0148	0.0018	0.190	0.026	<0.2	0.00
ATHL-2	<0.0002	0.0000	<0.00050	0.00000	0.0027	0.0011	0.0029	0.0013	5.14	2.15	4.7	2.12
SIML-1	<0.0002	0.0000	<0.00050	0.00000	<0.0010	0.0004	0.0014	0.0004	0.707	0.088	0.3	0.00
CORL-1	<0.0002	0.0000	<0.00050	0.00000	<0.0010	0.0005	0.0008	0.0005	3.78	1.26	0.2	0.00
Southwest												
DOUL-1	<0.0002	0.0000	0.00115	0.00020	<0.0010	0.0000	0.0540	0.0135	1.27	0.87	1.3	0.20
AMIL-1	<0.0002	0.0000	<0.00050	0.00000	<0.0010	0.0000	0.0010	0.0002	0.145	0.029	<0.2	0.00
Northwest												
HAML1	<0.0002	0.0000	0.00060	0.00002	<0.0010	0.0000	0.0528	0.0020	0.790	0.274	0.4	0.12
TYRL-1	<0.0002	0.0000	<0.00050	0.00000	0.0125	0.0085	0.0047	0.0018	4.07	0.96	2.3	1.93
Northeast												
TROL-1	<0.0002	0.0000	0.00096	0.00007	<0.0010	0.0000	0.0235	0.0007	0.577	0.270	<0.2	0.00
KISL-1	<0.0002	0.0000	<0.00050	0.00000	<0.0010	0.0000	0.0012	0.0001	0.297	0.107	<0.2	0.00

Table 5. Continued.

Sampling	Chromium		Cobalt		Copper		Iron		Lead		Lithium	
Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Analytical DL	**0.00010**		**0.00010**		**0.00010**		**0.01**		**0.000050**		**0.0050**	
Flin Flon												
LOUL-1	0.00101	0.00011	0.00193	0.00035	0.891	0.140	1.09	0.29	0.335	0.066	<0.0050	0.0000
HAPL-1	0.00173	0.00015	0.00349	0.00035	1.23	0.09	2.89	0.31	0.324	0.018	<0.0050	0.0000
HIDL-1	0.00073	0.00004	0.00334	0.00028	1.76	0.15	2.24	0.23	0.271	0.013	<0.0050	0.0000
Southeast												
SCHL-1	0.00023	0.00004	0.00053	0.00001	0.392	0.008	0.262	0.025	0.295	0.009	<0.0050	0.0000
SCHL-2	0.00017	0.00002	0.00018	0.00003	0.144	0.018	0.091	0.017	0.155	0.027	<0.0050	0.0000
ATHL-1	0.00020	0.00005	0.00020	0.00002	0.134	0.015	0.094	0.020	0.0788	0.0098	<0.0050	0.0000
ATHL-2	0.00021	0.00003	<0.00010	0.00000	0.022	0.008	0.034	0.002	0.0125	0.0057	<0.0050	0.0000
SIML-1	0.00029	0.00008	<0.00010	0.00000	0.012	0.001	0.044	0.023	0.0068	0.0018	<0.0050	0.0000
CORL-1	0.00025	0.00004	<0.00010	0.00000	0.004	0.001	0.092	0.057	0.0028	0.0015	<0.0050	0.0000
Southwest												
DOUL-1	0.00022	0.00010	0.00103	0.00022	0.666	0.105	0.410	0.141	0.169	0.029	<0.0050	0.0000
AMIL-1	0.00014	0.00003	<0.00010	0.00000	0.019	0.000	0.031	0.006	0.0069	0.0009	<0.0050	0.0000
Northwest												
HAML1	0.00024	0.00003	0.00036	0.00005	0.222	0.019	0.152	0.037	0.198	0.012	<0.0050	0.0000
TYRL-1	0.00020	0.00011	0.00030	0.00015	0.023	0.004	0.077	0.015	0.0186	0.0053	0.0101	0.0085
Northeast												
TROL-1	0.00027	0.00004	0.00017	0.00002	0.138	0.022	0.088	0.004	0.0922	0.0029	<0.0050	0.0000
KISL-1	0.00014	0.00002	<0.00010	0.00000	0.007	0.000	0.010	0.004	0.0069	0.0005	<0.0050	0.0000

Table 5. Continued.

Sampling	Magnesium		Manganese		Mercury		Molybdenum		Nickel	
Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Analytical DL	**0.005**		**0.00005**		**0.00001**		**0.000050**		**0.00010**	
Flin Flon										
LOUL-1	0.210	0.051	0.0160	0.0019	0.0154	0.0108	0.00102	0.00031	0.00084	0.00011
HAPL-1	0.568	0.061	0.0293	0.0035	0.0129	0.0049	0.00157	0.00002	0.00134	0.00012
HIDL-1	0.189	0.001	0.0257	0.0012	0.0024	0.0007	0.00100	0.00010	0.00123	0.00007
Southeast										
SCHL-1	0.818	0.038	0.0033	0.0001	0.0038	0.0021	0.00080	0.00010	0.00025	0.00005
SCHL-2	0.054	0.011	0.0074	0.0010	0.0003	0.0000	0.00033	0.00006	0.00016	0.00006
ATHL-1	0.022	0.003	0.0012	0.0001	0.0003	0.0001	0.00011	0.00002	0.00018	0.00012
ATHL-2	1.25	0.53	0.0022	0.0004	0.0001	0.0002	0.00009	0.00000	0.00015	0.00002
SIML-1	1.12	0.90	0.0015	0.0002	<0.00001	0.0000	<0.000050	0.00002	0.00012	0.00001
CORL-1	2.15	0.72	0.0051	0.0018	<0.00001	0.0000	<0.000050	0.00002	0.00053	0.00061
Southwest										
DOUL-1	0.202	0.090	0.0039	0.0003	0.0018	0.0008	0.00041	0.00001	0.00022	0.00006
AMIL-1	0.041	0.003	0.0011	0.0001	0.0000	0.0000	<0.000050	0.00000	<0.00010	0.00000
Northwest										
HAML1	0.158	0.065	0.0024	0.0001	0.0003	0.0001	0.00022	0.00001	0.00022	0.00013
TYRL-1	6.26	4.63	0.0226	0.0038	0.0001	0.0001	0.00020	0.00013	0.00035	0.00018
Northeast										
TROL-1	0.119	0.056	0.0014	0.0001	0.0001	0.0000	0.00017	0.00002	0.00031	0.00009
KISL-1	0.092	0.036	0.0008	0.0001	<0.00001	0.0000	<0.000050	0.00000	<0.00010	0.00000

Table 5. Continued.

Sampling	phosphorous		Potassium		Selenium		Silicon		Silver		Sodium	
Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Analytical DL	**0.3**		**0.050**		**0.00010**		**0.050**		**0.000010**		**0.010**	
Flin Flon												
LOUL-1	<0.3	0.00	0.065	0.010	0.0037	0.0016	0.27	0.07	0.00128	0.00031	0.280	0.001
HAPL-1	<0.3	0.00	0.19	0.01	0.0040	0.0006	0.92	0.08	0.00198	0.00011	1.45	0.05
HIDL-1	<0.3	0.00	0.078	0.003	0.0021	0.0001	0.53	0.05	0.00219	0.00041	0.310	0.002
Southeast												
SCHL-1	<0.3	0.00	0.38	0.04	0.00133	0.00015	0.06	0.01	0.000582	0.000059	2.52	0.20
SCHL-2	<0.3	0.00	<0.050	0.017	0.00046	0.00005	<0.050	0.02	0.000296	0.000074	0.101	0.018
ATHL-1	<0.3	0.00	<0.050	0.000	0.00020	0.00006	<0.050	0.00	0.000157	0.000041	0.078	0.007
ATHL-2	<0.3	0.00	0.32	0.12	0.00011	0.00002	0.08	0.02	0.000026	0.000009	1.76	0.66
SIML-1	<0.3	0.00	0.089	0.057	<0.00010	0.00000	0.07	0.01	0.000014	0.000008	0.366	0.121
CORL-1	<0.3	0.00	0.11	0.04	<0.00010	0.00005	0.23	0.09	<0.000010	0.000006	0.192	0.038
Southwest												
DOUL-1	<0.3	0.00	0.053	0.049	0.00105	0.00015	0.08	0.02	0.000751	0.000407	0.982	0.158
AMIL-1	<0.3	0.00	<0.050	0.000	<0.00010	0.00000	<0.050	0.00	0.000021	0.000003	0.066	0.004
Northwest												
HAML1	<0.3	0.00	0.064	0.035	0.00057	0.00007	<0.050	0.02	0.000256	0.000051	0.300	0.058
TYRL-1	<0.3	0.00	2.31	1.85	<0.00010	0.00006	1.89	0.40	0.000039	0.000011	6.19	4.92
Northeast												
TROL-1	<0.3	0.00	<0.050	0.024	0.00020	0.00004	0.07	0.02	0.000174	0.000012	0.135	0.035
KISL-1	<0.3	0.00	<0.050	0.000	<0.00010	0.00000	<0.050	0.00	<0.000010	0.000000	0.104	0.031

Table 5. Continued.

Sampling	Strontium		Dissolved Sulphate		Thallium		Tin		Titanium		Uranium	
Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Analytical DL	**0.00010**		**0.50**		**0.000050**		**0.00010**		**0.010**		**0.000010**	
Flin Flon												
LOUL-1	0.00172	0.00014	3.26	0.60	0.000427	0.000101	0.00094	0.00009	<0.010	0.00	0.000019	0.000003
HAPL-1	0.00336	0.00012	3.18	0.30	0.000425	0.000025	0.0011	0.0002	0.021	0.002	0.000045	0.000006
HIDL-1	0.00309	0.00010	2.90	0.19	0.000315	0.000016	0.00081	0.00018	<0.010	0.00	0.000034	0.000004
Southeast												
SCHL-1	0.0423	0.0076	7.43	2.94	0.000434	0.000078	0.00065	0.00021	<0.010	0.00	<0.000010	0.000000
SCHL-2	0.00167	0.00046	0.92	0.12	0.000157	0.000011	0.00037	0.00006	<0.010	0.00	<0.000010	0.000000
ATHL-1	0.00045	0.00013	<0.50	0.00	0.000071	0.000008	0.00033	0.00023	<0.010	0.00	<0.000010	0.000000
ATHL-2	0.0347	0.0140	7.62	3.20	<0.000050	0.000000	0.00032	0.00023	<0.010	0.00	0.000012	0.000006
SIML-1	0.00142	0.00021	0.68	0.19	<0.000050	0.000000	0.00018	0.00023	<0.010	0.00	0.000010	0.000009
CORL-1	0.00324	0.00094	1.40	0.39	<0.000050	0.000000	0.00024	0.00016	<0.010	0.00	0.000010	0.000005
Southwest												
DOUL-1	0.00242	0.00136	1.95	0.28	0.000230	0.000034	0.00049	0.00024	<0.010	0.00	<0.000010	0.000000
AMIL-1	0.00042	0.00008	<0.50	0.00	<0.000050	0.000000	0.00022	0.00022	<0.010	0.00	<0.000010	0.000000
Northwest												
HAML1	0.00177	0.00055	1.33	0.11	0.000260	0.000012	0.00034	0.00003	<0.010	0.00	<0.000010	0.000000
TYRL-1	0.0268	0.0089	12.6	9.8	<0.000050	0.000000	0.00014	0.00002	<0.010	0.00	0.000010	0.000009
Northeast												
TROL-1	0.00142	0.00055	0.98	0.02	0.000089	0.000003	0.00035	0.00024	<0.010	0.00	<0.000010	0.000000
KISL-1	0.00101	0.00036	<0.50	0.00	<0.000050	0.000000	0.00012	0.00006	<0.010	0.00	<0.000010	0.000000

Table 5. Continued.

Sampling Site	Vanadium Mean	Vanadium SD	Zinc Mean	Zinc SD
Analytical DL	**0.000050**		**0.0010**	
Flin Flon				
LOUL-1	0.000843	0.000276	1.31	0.15
HAPL-1	0.00229	0.00034	1.60	0.03
HIDL-1	0.00183	0.00019	2.30	0.30
Southeast				
SCHL-1	0.000210	0.000091	0.697	0.112
SCHL-2	0.000095	0.000012	0.231	0.035
ATHL-1	0.000060	0.000033	0.136	0.013
ATHL-2	0.000068	0.000021	0.0271	0.0097
SIML-1	0.000052	0.000047	0.0185	0.0017
CORL-1	0.000174	0.000086	0.0084	0.0022
Southwest				
DOUL-1	0.000161	0.000028	0.391	0.057
AMIL-1	<0.000050	0.000024	0.0140	0.0018
Northwest				
HAML1	0.000101	0.000009	0.449	0.018
TYRL-1	0.000131	0.000076	0.0301	0.0058
Northeast				
TROL-1	0.000048	0.000020	0.169	0.012
KISL-1	<0.000050	0.000000	0.0134	0.0008

Table 6. Mean (± SD) pH and conductivity of snow samples and mean (± SD) deposition rates of nitrate/nitrite and total Kjeldahl nitrogen (TKN), as determined from snow samples collected in March 2009.

Sampling Site	Date Melted	pH (pH units)		Conductivity (µmhos/cm)		Dissolved Nitrate/nitrite (mg/m^2)		TKN (mg/m^2)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon									
Louis	7-Mar-09	5.81	0.04	12.70	1.40	13.44	0.32	7.55	0.09
Hapnot	7-Mar-09	6.22	0.02	21.40	0.98	16.07	0.93	18.16	13.15
Hidden	7-Mar-09	6.36	0.04	13.50	0.10	10.20	0.55	8.90	3.68
Southeast									
Schist-1	6-Mar-09	6.07	0.18	55.67	9.64	11.94	1.12	7.89	0.47
Schist-2	6-Mar-09	5.38	0.03	6.83	0.68	10.79	2.07	7.22	0.93
Athapap-1	6-Mar-09	5.31	0.04	5.10	0.26	9.56	1.28	6.79	0.24
Athapap-2	6-Mar-09	7.09	0.27	53.20	20.19	15.48	7.17	8.27	1.88
Simon House	6-Mar-09	7.05	0.42	14.90	8.78	11.33	2.86	6.23	1.01
Cormorant	6-Mar-09	7.26	0.15	19.75	5.59	15.61	0.89	7.50	0.31
Southwest									
Douglas	6-Mar-09	6.44	0.39	17.40	6.52	12.99	0.33	10.57	4.56
Amisk	6-Mar-09	5.06	0.04	5.43	0.15	8.20	0.76	5.61	0.63
Northwest									
Hamell	6-Mar-09	6.34	0.28	10.20	1.84	11.88	0.49	7.50	0.06
Tyrell	6-Mar-09	8.18	0.70	106.90	63.67	14.18	5.23	16.57	11.24
Northeast									
Trout/Embury	6-Mar-09	6.23	0.36	6.20	1.35	9.21	0.14	5.70	0.26
Kisseynew	6-Mar-09	5.68	0.33	4.23	0.21	8.58	0.36	7.13	0.15

Table 7. Mean (± SD) winter rates of metal deposition (mg/m^2/season) to fifteen sites, as determined from snow samples collected in March 2009.

	Date	Hardness (as CaCO3)		Aluminum		Antimony		Arsenic		Barium		Beryllium	
Sampling Site	Melted	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon													
Louis	7-Mar-09	1.84	0.39	12.01	3.44	0.26	0.05	7.04	1.56	0.61	0.14	0.01	0.00
Hapnot	7-Mar-09	4.57	0.51	61.81	9.42	0.42	0.01	10.90	1.15	1.75	0.08	0.01	0.00
Hidden	7-Mar-09	1.96	0.14	15.05	0.91	0.29	0.05	2.94	0.21	1.02	0.14	0.01	0.00
Southeast													
Schist-1	6-Mar-09	14.43	3.67	2.61	0.18	0.22	0.02	4.95	0.16	0.36	0.02	0.01	0.00
Schist-2	6-Mar-09	1.04	0.20	2.48	0.78	0.11	0.03	2.21	0.66	0.19	0.04	0.01	0.00
Athapap-1	6-Mar-09	0.56	0.08	1.45	0.36	0.07	0.01	0.83	0.11	0.10	0.01	0.01	0.00
Athapap-2	6-Mar-09	17.99	7.38	2.56	1.02	0.05	0.01	0.22	0.06	0.23	0.10	0.01	0.00
Simon House	6-Mar-09	6.36	3.87	1.40	0.18	0.03	0.00	0.08	0.01	0.09	0.04	0.01	0.00
Cormorant	6-Mar-09	18.27	6.11	4.26	1.47	0.04	0.01	0.04	0.01	0.18	0.04	0.01	0.00
Southwest													
Douglas	6-Mar-09	4.00	2.54	3.09	1.28	0.18	0.01	2.50	0.38	0.34	0.07	0.01	0.00
Amisk	6-Mar-09	0.47	0.19	1.33	0.69	0.03	0.00	0.06	0.00	0.04	0.00	0.01	0.00
Northwest													
Hamell	6-Mar-09	2.62	0.95	1.96	0.24	0.14	0.01	2.47	0.04	0.21	0.05	0.01	0.00
Tyrell	6-Mar-09	35.90	19.39	1.32	0.26	0.04	0.00	0.36	0.14	0.25	0.07	0.01	0.00
Northeast													
Trout/Embury	6-Mar-09	1.93	0.90	1.47	0.27	0.07	0.00	0.80	0.04	0.10	0.02	0.01	0.00
Kisseynew	6-Mar-09	1.12	0.41	0.59	0.12	0.04	0.00	0.09	0.01	0.05	0.01	0.01	0.00

Table 7. Continued.

	Bismuth		Boron		Cadmium		Calcium		Dissolved Chloride		Chromium		Cobalt	
Sampling Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon														
Louis	0.26	0.09	0.04	0.00	6.95	1.57	29.49	5.75	80.54	11.32	0.08	0.01	0.15	0.03
Hapnot	0.47	0.02	0.11	0.01	9.02	0.99	96.14	13.97	265.20	16.62	0.19	0.02	0.38	0.05
Hidden	0.13	0.01	0.03	0.00	5.15	0.32	31.84	5.50	38.18	6.11	0.05	0.00	0.22	0.02
Southeast														
Schist-1	0.14	0.01	0.21	0.01	10.86	3.28	351.53	124.62	631.95	62.38	0.02	0.00	0.04	0.00
Schist-2	0.10	0.04	0.04	0.00	3.73	1.48	23.95	6.91	17.13	6.25	0.01	0.00	0.01	0.00
Athapap-1	0.02	0.00	0.03	0.00	1.00	0.13	12.89	1.72	6.79	0.24	0.01	0.00	0.01	0.00
Athapap-2	0.02	0.00	0.23	0.12	0.23	0.08	427.25	199.98	404.17	237.28	0.02	0.01	0.00	0.00
Simon House	0.02	0.00	0.05	0.03	0.08	0.01	44.54	12.38	18.68	3.02	0.02	0.00	0.00	0.00
Cormorant	0.02	0.00	0.05	0.02	0.05	0.02	253.71	100.75	15.01	0.62	0.02	0.00	0.00	0.00
Southwest														
Douglas	0.09	0.02	0.04	0.00	4.29	1.09	100.56	68.84	103.15	15.81	0.02	0.01	0.08	0.02
Amisk	0.01	0.00	0.03	0.00	0.06	0.00	8.04	0.92	5.61	0.63	0.01	0.00	0.00	0.00
Northwest														
Hamell	0.04	0.00	0.04	0.00	3.96	0.17	59.23	20.61	32.50	8.69	0.02	0.00	0.03	0.00
Tyrell	0.02	0.00	0.89	0.62	0.33	0.13	286.37	73.51	166.17	140.85	0.01	0.01	0.02	0.01
Northeast														
Trout/Embury	0.05	0.01	0.03	0.00	1.34	0.02	33.36	17.12	5.70	0.26	0.02	0.00	0.01	0.00
Kisseynew	0.02	0.00	0.04	0.00	0.09	0.01	21.04	7.22	7.13	0.15	0.01	0.00	0.00	0.00

Table 7. Continued.

	Copper		Iron		Lead		Lithium		Magnesium		Manganese		Mercury	
Sampling Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon														
Louis	67.36	11.31	82.39	23.08	25.35	5.19	0.19	0.00	15.91	4.04	1.21	0.15	1.17	0.83
Hapnot	131.74	5.31	311.82	43.10	34.88	2.15	0.27	0.01	61.25	8.54	3.16	0.47	1.40	0.56
Hidden	118.42	13.40	150.37	18.36	18.20	1.65	0.17	0.01	12.69	0.96	1.73	0.18	0.16	0.05
Southeast														
Schist-1	30.92	1.96	20.63	1.39	23.28	1.37	0.20	0.01	64.53	3.80	0.26	0.01	0.30	0.16
Schist-2	10.48	2.35	6.58	1.62	11.31	3.25	0.18	0.02	3.92	1.21	0.53	0.07	0.02	0.00
Athapap-1	9.09	0.92	6.39	1.25	5.35	0.70	0.17	0.01	1.47	0.18	0.08	0.01	0.02	0.01
Athapap-2	1.72	0.45	2.83	0.55	0.98	0.33	0.21	0.05	107.00	62.64	0.18	0.07	0.01	0.01
Simon House	0.73	0.04	2.90	2.03	0.41	0.06	0.16	0.03	75.61	72.00	0.10	0.02	0.00	0.00
Cormorant	0.23	0.03	6.15	4.27	0.18	0.05	0.17	0.03	144.51	57.80	0.33	0.12	0.00	0.00
Southwest														
Douglas	52.84	8.32	32.52	11.10	13.41	2.30	0.20	0.00	15.99	7.14	0.31	0.02	0.14	0.06
Amisk	1.09	0.14	1.72	0.17	0.38	0.02	0.14	0.02	2.31	0.11	0.06	0.00	0.00	0.00
Northwest														
Hamell	16.64	1.32	11.41	2.71	14.88	0.93	0.19	0.00	11.82	4.91	0.18	0.01	0.02	0.00
Tyrell	1.59	0.36	5.40	0.93	1.31	0.41	0.72	0.62	445.46	338.99	1.58	0.24	0.01	0.01
Northeast														
Trout/Embury	7.82	0.98	5.03	0.27	5.25	0.11	0.14	0.01	6.86	3.55	0.08	0.00	0.01	0.00
Kisseynew	0.51	0.04	0.69	0.29	0.49	0.04	0.18	0.00	6.54	2.46	0.06	0.01	0.00	0.00

Table 7. Continued.

	Molybdenum		Nickel		phosphorous		Potassium		Selenium		Silicon		Silver	
Sampling Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon														
Louis	0.08	0.02	0.06	0.01	11.33	0.13	4.91	0.84	0.28	0.13	20.56	5.57	0.10	0.02
Hapnot	0.17	0.00	0.14	0.02	16.13	0.51	20.97	2.11	0.43	0.07	99.19	11.34	0.21	0.01
Hidden	0.07	0.00	0.08	0.00	10.07	0.75	5.26	0.51	0.14	0.01	35.36	2.47	0.15	0.03
Southeast														
Schist-1	0.06	0.01	0.02	0.00	11.84	0.71	30.43	4.92	0.10	0.01	4.65	0.35	0.05	0.00
Schist-2	0.02	0.01	0.01	0.01	10.83	1.39	2.61	1.59	0.03	0.01	2.51	1.41	0.02	0.01
Athapap-1	0.01	0.00	0.01	0.01	10.18	0.36	1.70	0.06	0.01	0.00	1.70	0.06	0.01	0.00
Athapap-2	0.01	0.00	0.01	0.00	12.40	2.82	26.97	13.68	0.01	0.00	6.62	2.61	0.00	0.00
Simon House	0.00	0.00	0.01	0.00	9.34	1.51	5.90	4.73	0.00	0.00	4.44	1.56	0.00	0.00
Cormorant	0.00	0.00	0.04	0.05	10.12	1.98	7.14	2.36	0.00	0.00	14.96	4.86	0.00	0.00
Southwest														
Douglas	0.03	0.00	0.02	0.00	11.90	0.03	4.23	3.88	0.08	0.01	6.21	1.57	0.06	0.03
Amisk	0.00	0.00	0.00	0.00	8.41	0.95	1.40	0.16	0.00	0.00	1.40	0.16	0.00	0.00
Northwest														
Hamell	0.02	0.00	0.02	0.01	11.25	0.09	4.83	2.61	0.04	0.01	2.57	1.21	0.02	0.00
Tyrell	0.01	0.01	0.02	0.01	10.51	0.38	164.63	134.92	0.01	0.00	133.03	30.69	0.00	0.00
Northeast														
Trout/Embury	0.01	0.00	0.02	0.01	8.55	0.39	2.27	1.52	0.01	0.00	4.05	1.51	0.01	0.00
Kisseynew	0.00	0.00	0.00	0.00	10.69	0.23	1.78	0.04	0.00	0.00	1.78	0.04	0.00	0.00

Table 7. Continued.

	Sodium		Strontium		Dissolved Sulphate		Thallium		Tin		Titanium		Uranium	
Sampling Site	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flin Flon														
Louis	21.12	0.26	0.13	0.01	245.97	45.22	0.03	0.01	0.07	0.01	0.38	0.00	0.001	0.000
Hapnot	155.68	9.74	0.36	0.02	342.23	41.34	0.05	0.00	0.12	0.03	2.30	0.26	0.005	0.001
Hidden	20.80	1.59	0.21	0.02	194.71	21.64	0.02	0.00	0.05	0.01	0.34	0.02	0.002	0.000
Southeast														
Schist-1	199.52	24.43	3.34	0.66	590.79	251.49	0.03	0.01	0.05	0.02	0.39	0.02	0.000	0.000
Schist-2	7.42	2.25	0.12	0.05	66.87	16.95	0.01	0.00	0.03	0.01	0.36	0.05	0.000	0.000
Athapap-1	5.28	0.62	0.03	0.01	16.97	0.60	0.00	0.00	0.02	0.01	0.34	0.01	0.000	0.000
Athapap-2	148.78	76.44	2.92	1.47	643.94	343.22	0.00	0.00	0.03	0.02	0.41	0.09	0.001	0.001
Simon House	23.61	11.87	0.09	0.03	43.41	19.89	0.00	0.00	0.01	0.02	0.31	0.05	0.001	0.001
Cormorant	12.67	1.21	0.21	0.05	91.35	9.68	0.00	0.00	0.02	0.01	0.34	0.07	0.001	0.000
Southwest														
Douglas	77.91	12.44	0.19	0.11	154.72	22.20	0.02	0.00	0.04	0.02	0.40	0.00	0.000	0.000
Amisk	3.67	0.32	0.02	0.00	14.02	1.58	0.00	0.00	0.01	0.01	0.28	0.03	0.000	0.000
Northwest														
Hamell	22.48	4.39	0.13	0.04	99.52	9.06	0.02	0.00	0.03	0.00	0.37	0.00	0.000	0.000
Tyrell	440.37	359.80	1.89	0.68	895.97	718.86	0.00	0.00	0.01	0.00	0.35	0.01	0.001	0.001
Northeast														
Trout/Embury	7.75	2.38	0.08	0.04	55.70	3.72	0.01	0.00	0.02	0.01	0.28	0.01	0.000	0.000
Kisseynew	7.36	2.11	0.07	0.02	17.82	0.38	0.00	0.00	0.01	0.00	0.36	0.01	0.000	0.000

Table 7. Continued.

	Vanadium		Zinc	
Sampling Site	Mean	SD	Mean	SD
Flin Flon				
Louis	0.06	0.02	99.23	12.10
Hapnot	0.25	0.04	172.06	5.30
Hidden	0.12	0.01	154.91	30.00
Southeast				
Schist-1	0.02	0.01	55.14	10.76
Schist-2	0.01	0.00	16.87	4.54
Athapap-1	0.00	0.00	9.21	0.99
Athapap-2	0.01	0.00	2.15	0.55
Simon House	0.00	0.00	1.14	0.07
Cormorant	0.01	0.01	0.55	0.03
Southwest				
Douglas	0.01	0.00	31.06	4.61
Amisk	0.00	0.00	0.78	0.04
Northwest				
Hamell	0.01	0.00	33.69	1.21
Tyrell	0.01	0.01	2.12	0.48
Northeast				
Trout/Embury	0.00	0.00	9.63	0.36
Kisseynew	0.00	0.00	0.96	0.07

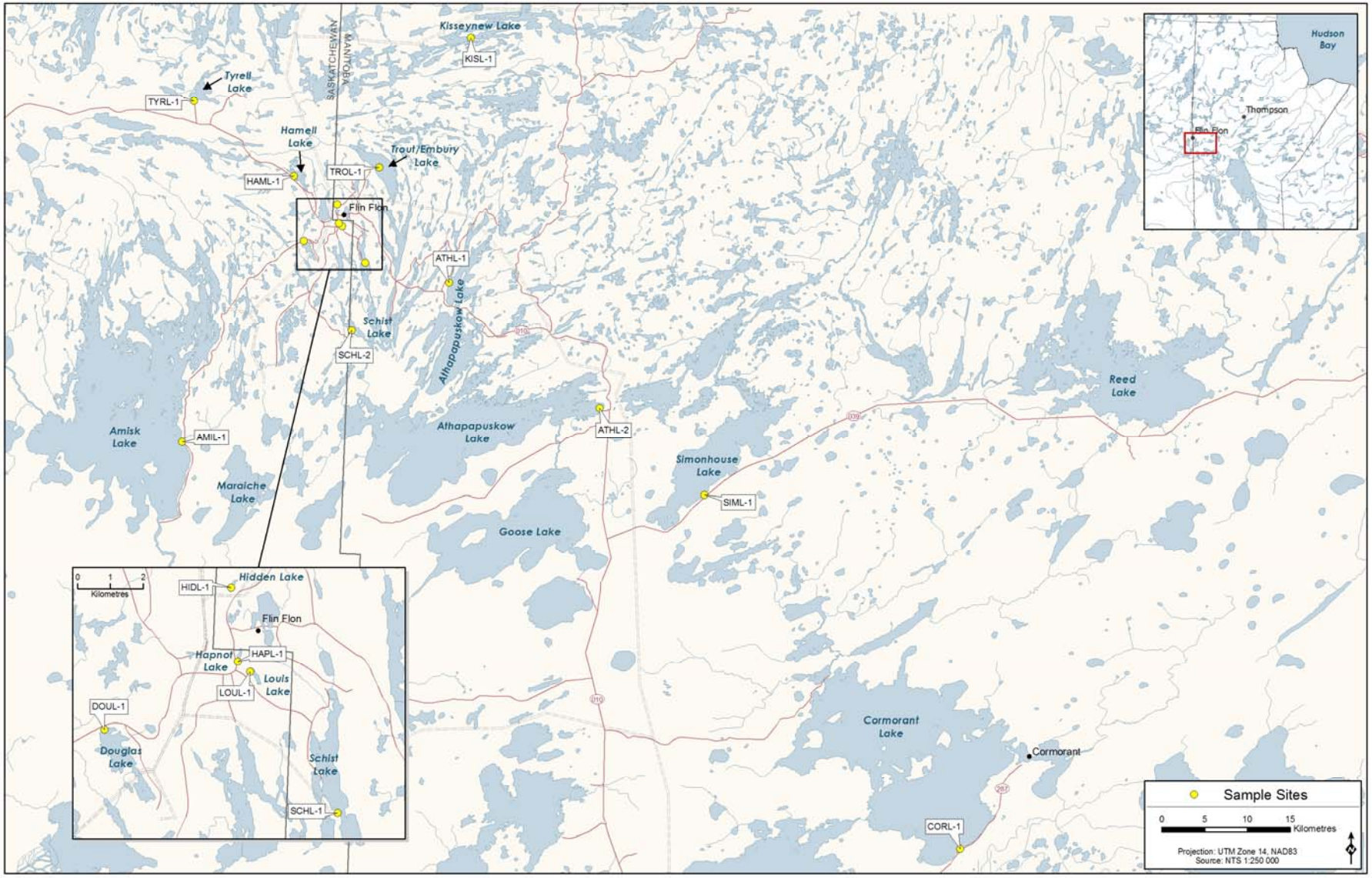

Figure 1. Locations of snow sampling sites.

(a) 

(b) 

Figure 2. Photographs of the snow core collection procedures: (a) measurement of the snow depth, and (b) extraction of the core from the snowpack.

(a) 

(b) 

Figure 3. Photographs of the snow processing procedures: (a) measuring the total weight of snow collected, and (b) allowing the samples to thaw at room temperature.

APPENDIX 1.

DETAILED METHODOLOGIES FOR THE ANALYSES PERFORMED BY ALS LABORATORIES

Page

A1-1.0 Analysis of Water Samples

A1-1.1 Chloride

Method Reference: APHA 4500/LACHAT

Measured colourimetrically using mercuric thiocyanate.

A1-1.2 Conductivity

Method Reference: APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

A1-1.3 Hardness

Method Reference: APHA 2340B

Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.

A1-1.4 Mercury (Total)

Method References: EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

A1-1.5 Total Metals (Except Total Mercury) by ICPOES

Method References: EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

A1-1.6 Total Metals (Except Total Mercury) by ICPMS (Low)

Method References: EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846

published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

A1-1.7 Total Metals (Except Total Mercury) by ICPMS (Ultra)

Method References: EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

A1-1.8 Total Kjeldahl Nitrogen (TKN)

Method References: Quickchem Method 10-107-06-2-E Lachat

Samples are digested with a sulphuric acid solution, cooled, diluted with water, and analyzed for ammonia. TKN is the sum of free-ammonia and organic nitrogen compounds which are converted to ammonium sulphate through this digestion process. Analysis is performed by Flow Injection Analysis (FIA). The pH of the digested sample is raised to a known, basic pH by neutralization with a concentrated buffer solution. This neutralization converts the ammonium cation to ammonia. The ammonia produced is heated with saliclyate and hypochlorite to produce blue colour with is proportional to the ammonia concentration.

A1-1.9 Nitrate and Nitrite (Dissolved)

Method References: APHA4500; 2005/LACHAT; 1997, 1999

A1-1.10 pH

Method Reference: APHA 4500H

pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

A1-1.11 Sulphate

Method References: APHA 4500-SO4 “Sulphate”

Measured using a turbidimetric method.

APPENDIX 2.

RAW CONCENTRATIONS OF PARAMETERS

Page

Table A2-1. Routine parameters measured in each snow sample collected in March 2009.

Sampling Site	ALS Code	Date	pH	Conductivity	Dissolved Nitrate/nitrite	TKN
			pH units	umhos/cm	mg/L	mg/L
Analytical Detection Limit			**0.01**	**0.4**	**0.005**	**0.2**
AMIL-1-1	L739937-4	6-Mar-09	5.11	5.3	0.149	<0.2
AMIL-1-2	L739937-5	6-Mar-09	5.03	5.4	0.135	<0.2
AMIL-1-3	L739937-6	6-Mar-09	5.05	5.6	0.156	<0.2
ATHL-1-1	L739937-19	6-Mar-09	5.36	5.2	0.155	<0.2
ATHL-1-2	L739937-20	6-Mar-09	5.30	4.8	0.122	<0.2
ATHL-1-3	L739937-21	6-Mar-09	5.28	5.3	0.145	<0.2
ATHL-2-1	L739937-22	6-Mar-09	7.14	64.2	0.228	<0.2
ATHL-2-2	L739937-23	6-Mar-09	6.80	29.9	0.148	<0.2
ATHL-2-3	L739937-24	6-Mar-09	7.33	65.5	0.168	<0.2
CORL-1-1	L739937-28	6-Mar-09	7.36	23.7	0.223	<0.2
CORL-1-2	L739937-29	6-Mar-09	na	na	na	na
CORL-1-3	L739937-30	6-Mar-09	7.15	15.8	0.194	<0.2
DOUL-1-1	L739937-1	6-Mar-09	6.84	24.8	0.166	0.2
DOUL-1-2	L739937-2	6-Mar-09	6.42	14.9	0.166	<0.2
DOUL-1-3	L739937-3	6-Mar-09	6.06	12.5	0.159	<0.2
HAML1-1	L739937-31	6-Mar-09	6.53	11.0	0.152	<0.2
HAML-1-2	L739937-32	6-Mar-09	6.48	11.5	0.162	<0.2
HAML-1-3	L739937-33	6-Mar-09	6.02	8.1	0.161	<0.2
HAPL-1-1	L740052-5	7-Mar-09	6.19	20.3	0.147	<0.2
HAPL-1-2	L740052-6	7-Mar-09	6.23	22.2	0.154	0.3
HAPL-1-3	L740052-7	7-Mar-09	6.23	21.7	0.147	<0.2
HIDL-1-1	L740052-8	7-Mar-09	6.31	13.4	0.155	0.2
HIDL-1-2	L740052-9	7-Mar-09	6.37	13.5	0.148	<0.2
HIDL-1-3	L740052-10	7-Mar-09	6.39	13.6	0.153	<0.2
KISL-1-1	L739937-34	6-Mar-09	5.39	4.0	0.123	<0.2
KISL-1-2	L739937-35	6-Mar-09	6.04	4.4	0.118	<0.2
KISL-1-3	L739937-36	6-Mar-09	5.62	4.3	0.120	<0.2
LOUL-1-1	L740052-2	7-Mar-09	5.78	13.3	0.180	<0.2
LOUL-1-2	L740052-3	7-Mar-09	5.85	11.1	0.174	<0.2
LOUL-1-3	L740052-4	7-Mar-09	5.79	13.7	0.180	<0.2
SCHL-1-1	L739937-10	6-Mar-09	6.16	62.8	0.157	<0.2
SCHL-1-2	L739937-11	6-Mar-09	6.19	59.5	0.149	<0.2
SCHL-1-3	L739937-12	6-Mar-09	5.86	44.7	0.147	<0.2
SCHL-2-1	L739937-13	6-Mar-09	5.41	7.6	0.160	<0.2
SCHL-2-2	L739937-14	6-Mar-09	5.37	6.6	0.141	<0.2
SCHL-2-3	L739937-15	6-Mar-09	5.36	6.3	0.145	<0.2
SIML-1-1	L739937-25	6-Mar-09	6.72	9.1	0.190	<0.2
SIML-1-2	L739937-26	6-Mar-09	7.53	25.0	0.197	<0.2
SIML-1-3	L739937-27	6-Mar-09	6.91	10.6	0.155	<0.2
TROL-1-1	L739937-37	6-Mar-09	5.87	5.1	0.164	<0.2
TROL-1-2	L739937-38	6-Mar-09	6.58	7.7	0.155	<0.2
TROL-1-3	L739937-39	6-Mar-09	6.25	5.8	0.166	<0.2
TYRL-1-1	L739937-7	6-Mar-09	7.52	50.6	0.148	<0.2
TYRL-1-2	L739937-8	6-Mar-09	8.12	94.1	0.177	0.2
TYRL-1-3	L739937-9	6-Mar-09	8.91	176	0.278	0.4

Table A2-2. Metal concentrations measured in each snow sample collected in March 2009

Sampling Site	ALS Code	Date Melted	Hardness, as $CaCO_3$ (mg/L)	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)
Analytical Detection Limit			**0.5**	**0.0010**	**0.000050**	**0.00003**	**0.00005**	**0.0002**
AMIL-1-1	L739937-4	6-Mar-09	0.60	0.0188	0.000564	0.00125	0.000722	<0.00020
AMIL-1-2	L739937-5	6-Mar-09	<0.50	0.0343	0.000580	0.00102	0.000657	<0.00020
AMIL-1-3	L739937-6	6-Mar-09	0.56	0.0167	0.000539	0.00118	0.000695	<0.00020
ATHL-1-1	L739937-19	6-Mar-09	0.65	0.0276	0.00112	0.0141	0.00157	<0.00020
ATHL-1-2	L739937-20	6-Mar-09	0.50	0.0174	0.000929	0.0109	0.00136	<0.00020
ATHL-1-3	L739937-21	6-Mar-09	0.54	0.0192	0.00101	0.0119	0.00128	<0.00020
ATHL-2-1	L739937-22	6-Mar-09	21.1	0.0251	0.000557	0.00154	0.00326	<0.00020
ATHL-2-2	L739937-23	6-Mar-09	9.56	0.0204	0.000664	0.00384	0.00203	<0.00020
ATHL-2-3	L739937-24	6-Mar-09	23.3	0.0513	0.000644	0.00300	0.00295	<0.00020
CORL-1-1	L739937-28	6-Mar-09	24.6	0.0801	0.000628	0.000545	0.00302	<0.00020
CORL-1-2	L739937-29	6-Mar-09	17.8	0.0767	0.000603	0.00113	0.00369	<0.00020
CORL-1-3	L739937-30	6-Mar-09	12.4	0.0379	0.000513	0.000392	0.00178	<0.00020
DOUL-1-1	L739937-1	6-Mar-09	6.88	0.0410	0.00220	0.0303	0.00523	<0.00020
DOUL-1-2	L739937-2	6-Mar-09	3.01	0.0219	0.00234	0.0367	0.00407	<0.00020
DOUL-1-3	L739937-3	6-Mar-09	2.10	0.0541	0.00244	0.0275	0.00344	<0.00020
HAML1-1	L739937-31	6-Mar-09	3.13	0.0284	0.00179	0.0329	0.00339	<0.00020
HAML-1-2	L739937-32	6-Mar-09	3.21	0.0223	0.00182	0.0323	0.00282	<0.00020
HAML-1-3	L739937-33	6-Mar-09	1.53	0.0279	0.00197	0.0335	0.00208	<0.00020
HAPL-1-1	L740052-5	7-Mar-09	4.27	0.528	0.00392	0.0917	0.0177	<0.00020
HAPL-1-2	L740052-6	7-Mar-09	5.15	0.653	0.00385	0.103	0.0153	<0.00020
HAPL-1-3	L740052-7	7-Mar-09	4.28	0.539	0.00402	0.109	0.0160	<0.00020
HIDL-1-1	L740052-8	7-Mar-09	2.05	0.219	0.00387	0.0415	0.0141	<0.00020
HIDL-1-2	L740052-9	7-Mar-09	2.03	0.221	0.00467	0.0407	0.0163	<0.00020
HIDL-1-3	L740052-10	7-Mar-09	1.79	0.233	0.00418	0.0496	0.0152	<0.00020
KISL-1-1	L739937-34	6-Mar-09	0.65	0.0100	0.000566	0.00127	0.000626	<0.00020
KISL-1-2	L739937-35	6-Mar-09	1.42	0.0077	0.000555	0.00124	0.000821	<0.00020
KISL-1-3	L739937-36	6-Mar-09	1.30	0.0072	0.000556	0.00141	0.000855	<0.00020
LOUL-1-1	L740052-2	7-Mar-09	2.29	0.209	0.00406	0.111	0.0101	<0.00020
LOUL-1-2	L740052-3	7-Mar-09	1.58	0.134	0.00270	0.0714	0.00701	<0.00020
LOUL-1-3	L740052-4	7-Mar-09	1.66	0.133	0.00349	0.0972	0.00702	<0.00020
SCHL-1-1	L739937-10	6-Mar-09	17.3	0.0290	0.00275	0.0604	0.00464	<0.00020
SCHL-1-2	L739937-11	6-Mar-09	15.7	0.0373	0.00305	0.0666	0.00469	<0.00020
SCHL-1-3	L739937-12	6-Mar-09	10.3	0.0334	0.00256	0.0613	0.00450	<0.00020
SCHL-2-1	L739937-13	6-Mar-09	1.26	0.0293	0.00179	0.0368	0.00300	<0.00020
SCHL-2-2	L739937-14	6-Mar-09	0.98	0.0530	0.00144	0.0300	0.00269	<0.00020
SCHL-2-3	L739937-15	6-Mar-09	0.88	0.0239	0.00131	0.0244	0.00231	<0.00020
SIML-1-1	L739937-25	6-Mar-09	3.70	0.0276	0.000497	0.00146	0.00110	<0.00020
SIML-1-2	L739937-26	6-Mar-09	10.8	0.0163	0.000495	0.000955	0.00183	<0.00020
SIML-1-3	L739937-27	6-Mar-09	4.59	0.0257	0.000553	0.00151	0.00122	<0.00020
TROL-1-1	L739937-37	6-Mar-09	1.11	0.0229	0.00111	0.0141	0.00150	<0.00020
TROL-1-2	L739937-38	6-Mar-09	2.90	0.0297	0.00117	0.0141	0.00202	<0.00020
TROL-1-3	L739937-39	6-Mar-09	1.78	0.0245	0.00115	0.0139	0.00187	<0.00020
TYRL-1-1	L739937-7	6-Mar-09	18.0	0.0231	0.000615	0.00331	0.00268	<0.00020
TYRL-1-2	L739937-8	6-Mar-09	33.2	0.0146	0.000622	0.00504	0.00341	<0.00020
TYRL-1-3	L739937-9	6-Mar-09	56.5	0.0190	0.000670	0.00702	0.00441	<0.00020

Table A2-2. Continued.

Sampling Site	Bismuth (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Dissolved Chloride (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)
Analytical DL	**0.00050**	**0.0010**	**0.0000**	**0.020**	**0.2**	**0.00010**	**0.00010**	**0.000**
AMIL-1-1	<0.00050	<0.0010	0.00120	0.168	<0.2	0.00018	<0.00010	0.0191
AMIL-1-2	<0.00050	<0.0010	0.000823	0.113	<0.2	0.00012	<0.00010	0.0197
AMIL-1-3	<0.00050	<0.0010	0.00105	0.155	<0.2	0.00013	<0.00010	0.0193
ATHL-1-1	<0.00050	<0.0010	0.0164	0.219	<0.2	0.00017	0.00023	0.151
ATHL-1-2	<0.00050	<0.0010	0.0129	0.169	<0.2	0.00026	0.00019	0.125
ATHL-1-3	<0.00050	<0.0010	0.0150	0.182	<0.2	0.00017	0.00019	0.126
ATHL-2-1	<0.00050	0.0033	0.00154	5.71	6.2	0.00024	<0.00010	0.0132
ATHL-2-2	<0.00050	0.0014	0.00421	2.76	2.3	0.00020	<0.00010	0.0300
ATHL-2-3	<0.00050	0.0034	0.00304	6.94	5.7	0.00019	<0.00010	0.0225
CORL-1-1	<0.00050	<0.0010	0.000532	5.08	0.2	0.00029	<0.00010	0.00300
CORL-1-2	<0.00050	0.0013	0.00137	3.69		0.00025	<0.00010	0.00513
CORL-1-3	<0.00050	<0.0010	0.000478	2.56	0.2	0.00021	<0.00010	0.00274
DOUL-1-1	0.00112	<0.0010	0.0471	2.25	1.5	0.00028	0.00102	0.585
DOUL-1-2	0.00097	<0.0010	0.0696	0.961	1.3	0.00011	0.00082	0.628
DOUL-1-3	0.00136	<0.0010	0.0453	0.593	1.1	0.00028	0.00125	0.785
HAML1-1	0.00061	<0.0010	0.0506	0.950	0.5	0.00023	0.00041	0.234
HAML-1-2	0.00060	<0.0010	0.0533	0.946	0.5	0.00027	0.00031	0.200
HAML-1-3	0.00058	<0.0010	0.0544	0.473	0.3	0.00021	0.00035	0.232
HAPL-1-1	0.00439	0.0010	0.0756	0.839	2.6	0.00156	0.00322	1.32
HAPL-1-2	0.00415	0.0011	0.0874	1.01	2.5	0.00178	0.00388	1.15
HAPL-1-3	0.00458	0.0011	0.0884	0.827	2.3	0.00185	0.00337	1.21
HIDL-1-1	0.00201	<0.0010	0.0749	0.507	0.6	0.00070	0.00310	1.60
HIDL-1-2	0.00190	<0.0010	0.0757	0.502	0.6	0.00073	0.00327	1.81
HIDL-1-3	0.00196	<0.0010	0.0796	0.408	0.5	0.00077	0.00365	1.88
KISL-1-1	<0.00050	<0.0010	0.00113	0.176	<0.2	0.00012	<0.00010	0.00759
KISL-1-2	<0.00050	<0.0010	0.00114	0.378	<0.2	0.00015	<0.00010	0.00687
KISL-1-3	<0.00050	<0.0010	0.00131	0.336	<0.2	0.00016	<0.00010	0.00697
LOUL-1-1	0.00428	<0.0010	0.103	0.472	1.1	0.00103	0.00232	1.05
LOUL-1-2	0.00206	<0.0010	0.0682	0.339	0.9	0.00110	0.00165	0.786
LOUL-1-3	0.00378	<0.0010	0.105	0.359	1.2	0.00089	0.00182	0.837
SCHL-1-1	0.00167	0.0027	0.166	5.57	8.3	0.00023	0.00053	0.389
SCHL-1-2	0.00202	0.0028	0.149	4.87	8.3	0.00027	0.00054	0.385
SCHL-1-3	0.00164	0.0026	0.0957	2.84	7.4	0.00020	0.00052	0.401
SCHL-2-1	0.00187	<0.0010	0.0672	0.395	0.3	0.00017	0.00018	0.163
SCHL-2-2	0.00136	<0.0010	0.0447	0.313	0.2	0.00015	0.00021	0.142
SCHL-2-3	0.00100	<0.0010	0.0403	0.278	0.2	0.00018	0.00016	0.128
SIML-1-1	<0.00050	<0.0010	0.00160	0.613	0.3	0.00026	<0.00010	0.0128
SIML-1-2	<0.00050	0.0012	0.000984	0.787	0.3	0.00024	<0.00010	0.0104
SIML-1-3	<0.00050	<0.0010	0.00162	0.721	0.3	0.00038	<0.00010	0.0122
TROL-1-1	0.00090	<0.0010	0.0241	0.329	<0.2	0.00030	0.00019	0.162
TROL-1-2	0.00103	<0.0010	0.0227	0.865	<0.2	0.00028	0.00016	0.119
TROL-1-3	0.00094	<0.0010	0.0236	0.538	<0.2	0.00023	0.00017	0.132
TYRL-1-1	<0.00050	0.0052	0.00268	3.21	0.8	0.00011	0.00017	0.0187
TYRL-1-2	<0.00050	0.0104	0.00607	5.11	1.7	0.00017	0.00026	0.0218
TYRL-1-3	<0.00050	0.0218	0.00533	3.90	4.5	0.00033	0.00047	0.0275

Table A2-2. Continued.

Sampling Site	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)
Analytical DL	**0.01**	**0.000**	**0.0050**	**0.005**	**0.00005**	**0.00001**	**0.000050**	**0.00010**
AMIL-1-1	0.038	0.00782	<0.0050	0.0443	0.00121	0.000025	<0.000050	<0.00010
AMIL-1-2	0.028	0.00594	<0.0050	0.0384	0.00102	0.000043	<0.000050	<0.00010
AMIL-1-3	0.027	0.00705	<0.0050	0.0416	0.00108	0.000057	<0.000050	<0.00010
ATHL-1-1	0.117	0.0886	<0.0050	0.0245	0.00133	0.000252	0.000133	0.00032
ATHL-1-2	0.083	0.0690	<0.0050	0.0192	0.00114	0.000281	0.000096	0.00011
ATHL-1-3	0.083	0.0789	<0.0050	0.0212	0.00117	0.000378	0.000101	0.00010
ATHL-2-1	0.033	0.00657	<0.0050	1.66	0.00253	<0.00001	0.000088	0.00016
ATHL-2-2	0.036	0.0179	<0.0050	0.647	0.00167	0.00036 [1]	0.000097	0.00013
ATHL-2-3	0.034	0.0131	<0.0050	1.44	0.00230	0.000018	0.000093	0.00016
CORL-1-1	0.151	0.00233	<0.0050	2.90	0.00630	<0.00001	<0.000050	0.00124
CORL-1-2	0.086	0.00449	<0.0050	2.09	0.00598	<0.00001	0.000055	0.00021
CORL-1-3	0.038	0.00168	<0.0050	1.46	0.00295	<0.00001	<0.000050	0.00015
DOUL-1-1	0.417	0.139	<0.0050	0.306	0.00395	0.00104	0.000401	0.00027
DOUL-1-2	0.266	0.196	<0.0050	0.148	0.00359	0.00182	0.000415	0.00016
DOUL-1-3	0.547	0.172	<0.0050	0.151	0.00410	0.00256 [1]	0.000421	0.00023
HAML1-1	0.192	0.186	<0.0050	0.183	0.00243	0.000268	0.000234	0.00013
HAML-1-2	0.118	0.200	<0.0050	0.206	0.00223	0.000241	0.000216	0.00036
HAML-1-3	0.147	0.209	<0.0050	0.0836	0.00245	0.000363	0.000217	0.00016
HAPL-1-1	2.70	0.313	<0.0050	0.529	0.0269	0.0075 [2]	0.00157	0.00122
HAPL-1-2	3.25	0.315	<0.0050	0.639	0.0333	0.017 [3]	0.00156	0.00146
HAPL-1-3	2.73	0.345	<0.0050	0.537	0.0278	0.0143 [2]	0.00159	0.00134
HIDL-1-1	1.99	0.256	<0.0050	0.190	0.0243	0.0016 [2]	0.000960	0.00118
HIDL-1-2	2.29	0.275	<0.0050	0.189	0.0265	0.0029 [2]	0.000916	0.00120
HIDL-1-3	2.44	0.282	<0.0050	0.188	0.0263	0.0028 [2]	0.001110	0.00131
KISL-1-1	0.012	0.00676	<0.0050	0.0506	0.000708	<0.00001	<0.000050	<0.00010
KISL-1-2	0.012	0.00653	<0.0050	0.114	0.000811	<0.00001	<0.000050	<0.00010
KISL-1-3	<0.010	0.00749	<0.0050	0.112	0.000900	<0.00001	<0.000050	<0.00010
LOUL-1-1	1.42	0.397	<0.0050	0.269	0.0179	0.0276 [2]	0.00132	0.00093
LOUL-1-2	0.862	0.265	<0.0050	0.178	0.0141	0.0071 [2]	0.000710	0.00072
LOUL-1-3	0.985	0.344	<0.0050	0.184	0.0159	0.0115 [2]	0.00103	0.00088
SCHL-1-1	0.237	0.295	<0.0050	0.813	0.00326	0.00148	0.000845	0.00025
SCHL-1-2	0.263	0.304	<0.0050	0.858	0.00340	0.00444 [1]	0.000859	0.00030
SCHL-1-3	0.286	0.286	<0.0050	0.783	0.00326	0.00562 [1]	0.000685	0.00021
SCHL-2-1	0.104	0.186	<0.0050	0.0657	0.00752	0.000256	0.000387	0.00014
SCHL-2-2	0.097	0.144	<0.0050	0.0490	0.00841	0.000310	0.000326	0.00011
SCHL-2-3	0.072	0.135	<0.0050	0.0462	0.00632	0.000252	0.000275	0.00023
SIML-1-1	0.029	0.00785	<0.0050	0.527	0.00158	<0.00001	<0.000050	0.00011
SIML-1-2	0.071	0.00473	<0.0050	2.15	0.00164	<0.00001	<0.000050	0.00013
SIML-1-3	0.032	0.00781	<0.0050	0.677	0.00135	<0.00001	0.000062	0.00011
TROL-1-1	0.092	0.0952	<0.0050	0.0710	0.00142	0.000188	0.000194	0.00022
TROL-1-2	0.088	0.0894	<0.0050	0.180	0.00125	0.000119	0.000162	0.00032
TROL-1-3	0.085	0.0921	<0.0050	0.105	0.00140	0.000124	0.000157	0.00040
TYRL-1-1	0.088	0.0126	<0.0050	2.42	0.0245	0.000017	0.000088	0.00019
TYRL-1-2	0.084	0.0211	0.0085	4.97	0.0251	0.000211	0.000171	0.00031
TYRL-1-3	0.060	0.0222	0.0193	11.4	0.0182	0.000049	0.000346	0.00055

Table A2-2. Continued.

Sampling Site	phosphorous ((mg/L))	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Dissolved Sulphate (mg/L)
Analytical DL	**0.3**	**0.050**	**0.00010**	**0.050**	**0.000010**	**0.010**	**0.00010**	**0.50**
AMIL-1-1	<0.3	<0.050	<0.00010	<0.050	0.000019	0.067	0.00046	<0.50
AMIL-1-2	<0.3	<0.050	<0.00010	<0.050	0.000025	0.061	0.00033	<0.50
AMIL-1-3	<0.3	<0.050	<0.00010	<0.050	0.000019	0.069	0.00048	<0.50
ATHL-1-1	<0.3	<0.050	0.00021	<0.050	0.000202	0.080	0.00059	<0.50
ATHL-1-2	<0.3	<0.050	0.00014	<0.050	0.000121	0.070	0.00034	<0.50
ATHL-1-3	<0.3	<0.050	0.00026	<0.050	0.000148	0.083	0.00042	<0.50
ATHL-2-1	<0.3	0.394	0.00010	0.090	0.000017	2.18	0.0414	9.39
ATHL-2-2	<0.3	0.184	0.00013	0.056	0.000035	0.997	0.0186	3.92
ATHL-2-3	<0.3	0.377	0.00011	0.091	0.000025	2.09	0.0441	9.54
CORL-1-1	<0.3	0.133	<0.00010	0.270	<0.000010	0.193	0.00363	1.35
CORL-1-2	<0.3	0.128	0.00013	0.291	0.000015	0.230	0.00393	1.82
CORL-1-3	<0.3	0.065	<0.00010	0.129	<0.000010	0.154	0.00217	1.04
DOUL-1-1	<0.3	0.110	0.00093	0.074	0.000835	1.16	0.00397	2.22
DOUL-1-2	<0.3	<0.050	0.00100	0.061	0.000309	0.928	0.00191	1.97
DOUL-1-3	<0.3	<0.050	0.00122	0.100	0.001110	0.858	0.00139	1.66
HAML1-1	<0.3	0.078	0.00051	<0.050	0.000267	0.328	0.00206	1.30
HAML-1-2	<0.3	0.090	0.00055	<0.050	0.000200	0.338	0.00212	1.45
HAML-1-3	<0.3	<0.050	0.00065	0.053	0.000300	0.233	0.00114	1.23
HAPL-1-1	<0.3	0.185	0.00330	0.895	0.00197	1.40	0.00327	2.84
HAPL-1-2	<0.3	0.210	0.00413	1.01	0.00188	1.49	0.00349	3.39
HAPL-1-3	<0.3	0.189	0.00442	0.858	0.00210	1.45	0.00332	3.30
HIDL-1-1	<0.3	0.081	0.00197	0.497	0.00172	0.311	0.00299	3.07
HIDL-1-2	<0.3	0.079	0.00201	0.498	0.00250	0.310	0.00319	2.92
HIDL-1-3	<0.3	0.075	0.00224	0.590	0.00234	0.308	0.00308	2.70
KISL-1-1	<0.3	<0.050	<0.00010	<0.050	<0.000010	0.068	0.00060	<0.50
KISL-1-2	<0.3	<0.050	<0.00010	<0.050	<0.000010	0.117	0.00125	<0.50
KISL-1-3	<0.3	<0.050	<0.00010	<0.050	<0.000010	0.126	0.00118	<0.50
LOUL-1-1	<0.3	0.077	0.00549	0.353	0.00160	0.280	0.00185	3.53
LOUL-1-2	<0.3	0.058	0.00232	0.230	0.000993	0.279	0.00158	2.57
LOUL-1-3	<0.3	0.060	0.00328	0.232	0.00124	0.280	0.00173	3.67
SCHL-1-1	<0.3	0.426	0.00127	0.053	0.000519	2.69	0.0460	9.71
SCHL-1-2	<0.3	0.389	0.00150	0.059	0.000637	2.58	0.0473	8.47
SCHL-1-3	<0.3	0.338	0.00122	0.065	0.000589	2.30	0.0335	4.12
SCHL-2-1	<0.3	0.055	0.00051	0.051	0.000375	0.122	0.00219	1.05
SCHL-2-2	<0.3	<0.050	0.00042	<0.050	0.000283	0.087	0.00150	0.82
SCHL-2-3	<0.3	<0.050	0.00046	<0.050	0.000229	0.095	0.00133	0.88
SIML-1-1	<0.3	0.055	<0.00010	0.058	0.000021	0.300	0.00129	0.57
SIML-1-2	<0.3	0.154	<0.00010	0.084	<0.000010	0.506	0.00167	0.90
SIML-1-3	<0.3	0.057	<0.00010	0.068	0.000017	0.293	0.00131	0.56
TROL-1-1	<0.3	<0.050	0.00024	0.053	0.000188	0.102	0.00091	0.97
TROL-1-2	<0.3	0.067	0.00016	0.096	0.000165	0.172	0.00201	1.00
TROL-1-3	<0.3	<0.050	0.00019	0.062	0.000170	0.131	0.00134	0.96
TYRL-1-1	<0.3	0.828	<0.00010	1.55	0.000030	2.23	0.0168	4.41
TYRL-1-2	<0.3	1.73	0.00016	2.33	0.000036	4.63	0.0300	9.85
TYRL-1-3	<0.3	4.38	<0.00010	1.80	0.000051	11.7	0.0337	23.5

Table A2-2. Continued.

Sampling Site	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
Analytical DL	**0.000050**	**0.00010**	**0.010**	**0.000010**	**0.000050**	**0.0010**
AMIL-1-1	<0.000050	<0.00010	<0.010	<0.000010	0.000067	0.0156
AMIL-1-2	<0.000050	0.00014	<0.010	<0.000010	<0.000050	0.0120
AMIL-1-3	<0.000050	0.00046	<0.010	<0.000010	<0.000050	0.0145
ATHL-1-1	0.000078	0.00020	<0.010	<0.000010	0.000089	0.148
ATHL-1-2	0.000062	0.00059	<0.010	<0.000010	<0.000050	0.122
ATHL-1-3	0.000074	0.00019	<0.010	<0.000010	0.000067	0.137
ATHL-2-1	<0.000050	0.00041	<0.010	0.000014	0.000059	0.0179
ATHL-2-2	<0.000050	<0.00010	<0.010	<0.000010	0.000054	0.0373
ATHL-2-3	<0.000050	0.00049	<0.010	0.000017	0.000092	0.0261
CORL-1-1	<0.000050	0.00019	<0.010	0.000013	0.000229	0.0078
CORL-1-2	<0.000050	0.00042	<0.010	0.000013	0.000218	0.0109
CORL-1-3	<0.000050	0.00012	<0.010	<0.000010	0.000074	0.0066
DOUL-1-1	0.000213	0.00033	<0.010	<0.000010	0.000179	0.355
DOUL-1-2	0.000269	0.00037	<0.010	<0.000010	0.000128	0.457
DOUL-1-3	0.000209	0.00076	<0.010	<0.000010	0.000175	0.362
HAML1-1	0.000247	0.00031	<0.010	<0.000010	0.000108	0.447
HAML-1-2	0.000262	0.00037	<0.010	<0.000010	0.000091	0.433
HAML-1-3	0.000271	0.00035	<0.010	<0.000010	0.000104	0.468
HAPL-1-1	0.000396	0.00095	0.022	0.000040	0.00206	1.59
HAPL-1-2	0.000439	0.00098	0.023	0.000051	0.00268	1.58
HAPL-1-3	0.000441	0.00138	0.019	0.000044	0.00212	1.63
HIDL-1-1	0.000324	0.00091	<0.010	0.000031	0.00170	1.99
HIDL-1-2	0.000297	0.00061	<0.010	0.000038	0.00173	2.59
HIDL-1-3	0.000324	0.00092	<0.010	0.000032	0.00205	2.31
KISL-1-1	<0.000050	0.00015	<0.010	<0.000010	<0.000050	0.0136
KISL-1-2	<0.000050	<0.00010	<0.010	<0.000010	<0.000050	0.0125
KISL-1-3	<0.000050	0.00015	<0.010	<0.000010	<0.000050	0.0141
LOUL-1-1	0.000522	0.00102	<0.010	0.000021	0.00111	1.45
LOUL-1-2	0.000321	0.00096	<0.010	0.000015	0.000558	1.15
LOUL-1-3	0.000437	0.00084	<0.010	0.000020	0.000861	1.34
SCHL-1-1	0.000507	0.00052	<0.010	<0.000010	0.000144	0.781
SCHL-1-2	0.000444	0.00055	<0.010	<0.000010	0.000314	0.740
SCHL-1-3	0.000352	0.00089	<0.010	<0.000010	0.000172	0.569
SCHL-2-1	0.000169	0.00044	<0.010	<0.000010	0.000107	0.272
SCHL-2-2	0.000148	0.00032	<0.010	<0.000010	0.000096	0.213
SCHL-2-3	0.000154	0.00036	<0.010	<0.000010	0.000083	0.209
SIML-1-1	<0.000050	<0.00010	<0.010	<0.000010	0.000106	0.0198
SIML-1-2	<0.000050	0.00044	<0.010	0.000020	<0.000050	0.0166
SIML-1-3	<0.000050	<0.00010	<0.010	<0.000010	<0.000050	0.0190
TROL-1-1	0.000092	0.00018	<0.010	<0.000010	<0.000050	0.182
TROL-1-2	0.000086	0.00062	<0.010	<0.000010	0.000061	0.158
TROL-1-3	0.000088	0.00025	<0.010	<0.000010	0.000057	0.168
TYRL-1-1	<0.000050	0.00014	<0.010	<0.000010	0.000056	0.0236
TYRL-1-2	<0.000050	0.00013	<0.010	<0.000010	0.000129	0.0320
TYRL-1-3	<0.000050	0.00016	<0.010	0.000021	0.000207	0.0347

[1] Detection Limit was 0.0001
[2] Detection Limit was 0.001
[3] Detection Limit was 0.01

APPENDIX 3.

RAW DEPOSITION RATES OF PARAMETERS

Page

Table A3-1. Winter deposition rates of nitrate/nitrogen and total Kjeldahl nitrogen (TKN) as determined from snow cores collected in March 2009. Rates were calculated from the volume of snow collected, the area sampled, and the concentration of each compound (values in blue were below the detection limit (DL), so one half the DL has been applied for these calculations).

Sampling Site	Date Melted	Volume Collected (mL)	Area Sampled (cm^2)	Dissolved Nitrate/nitrite		TKN	
				Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	6-Mar-09	943.13	190.8517537	0.149	7.363	0.1	4.942
AMIL-1-2	6-Mar-09	1184.09	190.8517537	0.135	8.376	0.1	6.204
AMIL-1-3	6-Mar-09	1082.78	190.8517537	0.156	8.851	0.1	5.673
ATHL-1-1	6-Mar-09	1274.93	190.8517537	0.155	10.354	0.1	6.680
ATHL-1-2	6-Mar-09	1263.06	190.8517537	0.122	8.074	0.1	6.618
ATHL-1-3	6-Mar-09	1347.64	190.8517537	0.145	10.239	0.1	7.061
ATHL-2-1	6-Mar-09	1656.75	159.0431281	0.228	23.751	0.1	10.417
ATHL-2-2	6-Mar-09	1186.26	159.0431281	0.148	11.039	0.1	7.459
ATHL-2-3	6-Mar-09	1102.46	159.0431281	0.168	11.645	0.1	6.932
CORL-1-1	6-Mar-09	1390.13	190.8517537	0.223	16.243	0.1	7.284
CORL-1-2	6-Mar-09	1000.53	190.8517537	-	-	-	-
CORL-1-3	6-Mar-09	1473.68	190.8517537	0.194	14.980	0.1	7.722
DOUL-1-1	6-Mar-09	1511.55	190.8517537	0.166	13.147	0.2	15.840
DOUL-1-2	6-Mar-09	1518.91	190.8517537	0.166	13.211	0.1	7.959
DOUL-1-3	6-Mar-09	1512.61	190.8517537	0.159	12.602	0.1	7.926
HAML1-1	6-Mar-09	1302.74	174.9474409	0.152	11.319	0.1	7.446
HAML-1-2	6-Mar-09	1322.71	174.9474409	0.162	12.248	0.1	7.561
HAML-1-3	6-Mar-09	1310.57	174.9474409	0.161	12.061	0.1	7.491
HAPL-1-1	7-Mar-09	1660.04	159.0431281	0.147	15.343	0.1	10.438
HAPL-1-2	7-Mar-09	1767.64	159.0431281	0.154	17.116	0.3	33.343
HAPL-1-3	7-Mar-09	1703.67	159.0431281	0.147	15.747	0.1	10.712
HIDL-1-1	7-Mar-09	1250.75	190.8517537	0.155	10.158	0.2	13.107
HIDL-1-2	7-Mar-09	1388.10	190.8517537	0.148	10.764	0.1	7.273
HIDL-1-3	7-Mar-09	1205.72	190.8517537	0.153	9.666	0.1	6.318
KISL-1-1	6-Mar-09	1277.38	174.9474409	0.123	8.981	0.1	7.302
KISL-1-2	6-Mar-09	1225.98	174.9474409	0.118	8.269	0.1	7.008
KISL-1-3	6-Mar-09	1238.22	174.9474409	0.120	8.493	0.1	7.078
LOUL-1-1	7-Mar-09	1459.31	190.8517537	0.180	13.763	0.1	7.646
LOUL-1-2	7-Mar-09	1439.27	190.8517537	0.174	13.122	0.1	7.541
LOUL-1-3	7-Mar-09	1425.81	190.8517537	0.180	13.447	0.1	7.471
SCHL-1-1	6-Mar-09	1338.84	159.0431281	0.157	13.216	0.1	8.418
SCHL-1-2	6-Mar-09	1311.08	174.9474409	0.149	11.166	0.1	7.494
SCHL-1-3	6-Mar-09	1359.72	174.9474409	0.147	11.425	0.1	7.772
SCHL-2-1	6-Mar-09	1285.00	159.0431281	0.160	12.927	0.1	8.080
SCHL-2-2	6-Mar-09	1091.54	174.9474409	0.141	8.797	0.1	6.239
SCHL-2-3	6-Mar-09	1284.31	174.9474409	0.145	10.645	0.1	7.341
SIML-1-1	6-Mar-09	1049.46	190.8517537	0.190	10.448	0.1	5.499
SIML-1-2	6-Mar-09	1407.33	190.8517537	0.197	14.527	0.1	7.374
SIML-1-3	6-Mar-09	1108.59	190.8517537	0.155	9.003	0.1	5.809
TROL-1-1	6-Mar-09	1316.16	238.5646921	0.164	9.048	0.1	5.517
TROL-1-2	6-Mar-09	1431.40	238.5646921	0.155	9.300	0.1	6.000
TROL-1-3	6-Mar-09	1331.89	238.5646921	0.166	9.268	0.1	5.583
TYRL-1-1	6-Mar-09	1282.63	190.8517537	0.148	9.946	0.1	6.721
TYRL-1-2	6-Mar-09	1353.69	190.8517537	0.177	12.554	0.2	14.186
TYRL-1-3	6-Mar-09	1374.85	190.8517537	0.278	20.026	0.4	28.815

Table A3-2. Deposition rates of metals, as determined from snow cores collected in March 2009. Rates were calculated from the volume of snow collected, the area sampled, and the concentration of each compound (values in blue were below the detection limit (DL) so one half the DL was used for these calculations).

Sampling Site	Date Melted	Volume Collected (mL)	Area Sampled (cm^2)	Hardness (as CaCO3) (mg/L)	Aluminum Concentration (mg/L)	Aluminum Deposition (mg/m^2)
AMIL-1-1	6-Mar-09	943.13	190.8517537	0.60	0.0188	0.9290
AMIL-1-2	6-Mar-09	1184.09	190.8517537	0.25	0.0343	2.1281
AMIL-1-3	6-Mar-09	1082.78	190.8517537	0.56	0.0167	0.9475
ATHL-1-1	6-Mar-09	1274.93	190.8517537	0.65	0.0276	1.8437
ATHL-1-2	6-Mar-09	1263.06	190.8517537	0.50	0.0174	1.1515
ATHL-1-3	6-Mar-09	1347.64	190.8517537	0.54	0.0192	1.3557
ATHL-2-1	6-Mar-09	1656.75	159.0431281	21.1	0.0251	2.6147
ATHL-2-2	6-Mar-09	1186.26	159.0431281	9.56	0.0204	1.5216
ATHL-2-3	6-Mar-09	1102.46	159.0431281	23.3	0.0513	3.5560
CORL-1-1	6-Mar-09	1390.13	190.8517537	24.6	0.0801	5.8343
CORL-1-2	6-Mar-09	1000.53	190.8517537	17.8	0.0767	4.0210
CORL-1-3	6-Mar-09	1473.68	190.8517537	12.4	0.0379	2.9265
DOUL-1-1	6-Mar-09	1511.55	190.8517537	6.88	0.0410	3.2472
DOUL-1-2	6-Mar-09	1518.91	190.8517537	3.01	0.0219	1.7429
DOUL-1-3	6-Mar-09	1512.61	190.8517537	2.10	0.0541	4.2877
HAML1-1	6-Mar-09	1302.74	174.9474409	3.13	0.0284	2.1148
HAML-1-2	6-Mar-09	1322.71	174.9474409	3.21	0.0223	1.6860
HAML-1-3	6-Mar-09	1310.57	174.9474409	1.53	0.0279	2.0901
HAPL-1-1	7-Mar-09	1660.04	159.0431281	4.27	0.528	55.1109
HAPL-1-2	7-Mar-09	1767.64	159.0431281	5.15	0.653	72.5758
HAPL-1-3	7-Mar-09	1703.67	159.0431281	4.28	0.539	57.7377
HIDL-1-1	7-Mar-09	1250.75	190.8517537	2.05	0.219	14.3522
HIDL-1-2	7-Mar-09	1388.10	190.8517537	2.03	0.221	16.0737
HIDL-1-3	7-Mar-09	1205.72	190.8517537	1.79	0.233	14.7199
KISL-1-1	6-Mar-09	1277.38	174.9474409	0.65	0.0100	0.7302
KISL-1-2	6-Mar-09	1225.98	174.9474409	1.42	0.0077	0.5396
KISL-1-3	6-Mar-09	1238.22	174.9474409	1.30	0.0072	0.5096
LOUL-1-1	7-Mar-09	1459.31	190.8517537	2.29	0.209	15.9808
LOUL-1-2	7-Mar-09	1439.27	190.8517537	1.58	0.134	10.1053
LOUL-1-3	7-Mar-09	1425.81	190.8517537	1.66	0.133	9.9361
SCHL-1-1	6-Mar-09	1338.84	159.0431281	17.3	0.0290	2.4412
SCHL-1-2	6-Mar-09	1311.08	174.9474409	15.7	0.0373	2.7953
SCHL-1-3	6-Mar-09	1359.72	174.9474409	10.3	0.0334	2.5959
SCHL-2-1	6-Mar-09	1285.00	159.0431281	1.26	0.0293	2.3673
SCHL-2-2	6-Mar-09	1091.54	174.9474409	0.98	0.0530	3.3068
SCHL-2-3	6-Mar-09	1284.31	174.9474409	0.88	0.0239	1.7545
SIML-1-1	6-Mar-09	1049.46	190.8517537	3.70	0.0276	1.5177
SIML-1-2	6-Mar-09	1407.33	190.8517537	10.8	0.0163	1.2020
SIML-1-3	6-Mar-09	1108.59	190.8517537	4.59	0.0257	1.4928
TROL-1-1	6-Mar-09	1316.16	238.5646921	1.11	0.0229	1.2634
TROL-1-2	6-Mar-09	1431.40	238.5646921	2.90	0.0297	1.7820
TROL-1-3	6-Mar-09	1331.89	238.5646921	1.78	0.0245	1.3678
TYRL-1-1	6-Mar-09	1282.63	190.8517537	18.0	0.0231	1.5524
TYRL-1-2	6-Mar-09	1353.69	190.8517537	33.2	0.0146	1.0356
TYRL-1-3	6-Mar-09	1374.85	190.8517537	56.5	0.0190	1.3687

Table A3-2. Continued.

Sampling Site	Antimony		Arsenic		Barium	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.000564	0.0279	0.00125	0.0618	0.000722	0.0357
AMIL-1-2	0.000580	0.0360	0.00102	0.0633	0.000657	0.0408
AMIL-1-3	0.000539	0.0306	0.00118	0.0669	0.000695	0.0394
ATHL-1-1	0.00112	0.0748	0.0141	0.9419	0.00157	0.1049
ATHL-1-2	0.000929	0.0615	0.0109	0.7214	0.00136	0.0900
ATHL-1-3	0.00101	0.0713	0.0119	0.8403	0.00128	0.0904
ATHL-2-1	0.000557	0.0580	0.00154	0.1604	0.00326	0.3396
ATHL-2-2	0.000664	0.0495	0.00384	0.2864	0.00203	0.1514
ATHL-2-3	0.000644	0.0446	0.00300	0.2080	0.00295	0.2045
CORL-1-1	0.000628	0.0457	0.000545	0.0397	0.00302	0.2200
CORL-1-2	0.000603	0.0316	0.00113	0.0592	0.00369	0.1934
CORL-1-3	0.000513	0.0396	0.000392	0.0303	0.00178	0.1374
DOUL-1-1	0.00220	0.1742	0.0303	2.3998	0.00523	0.4142
DOUL-1-2	0.00234	0.1862	0.0367	2.9208	0.00407	0.3239
DOUL-1-3	0.00244	0.1934	0.0275	2.1795	0.00344	0.2726
HAML1-1	0.00179	0.1333	0.0329	2.4499	0.00339	0.2524
HAML-1-2	0.00182	0.1376	0.0323	2.4421	0.00282	0.2132
HAML-1-3	0.00197	0.1476	0.0335	2.5096	0.00208	0.1558
HAPL-1-1	0.00392	0.4092	0.0917	9.5713	0.0177	1.8475
HAPL-1-2	0.00385	0.4279	0.103	11.4476	0.0153	1.7005
HAPL-1-3	0.00402	0.4306	0.109	11.6761	0.0160	1.7139
HIDL-1-1	0.00387	0.2536	0.0415	2.7197	0.0141	0.9240
HIDL-1-2	0.00467	0.3397	0.0407	2.9602	0.0163	1.1855
HIDL-1-3	0.00418	0.2641	0.0496	3.1335	0.0152	0.9603
KISL-1-1	0.000566	0.0413	0.00127	0.0927	0.000626	0.0457
KISL-1-2	0.000555	0.0389	0.00124	0.0869	0.000821	0.0575
KISL-1-3	0.000556	0.0394	0.00141	0.0998	0.000855	0.0605
LOUL-1-1	0.00406	0.3104	0.111	8.4874	0.0101	0.7723
LOUL-1-2	0.00270	0.2036	0.0714	5.3845	0.00701	0.5286
LOUL-1-3	0.00349	0.2607	0.0972	7.2616	0.00702	0.5244
SCHL-1-1	0.00275	0.2315	0.0604	5.0845	0.00464	0.3906
SCHL-1-2	0.00305	0.2286	0.0666	4.9911	0.00469	0.3515
SCHL-1-3	0.00256	0.1990	0.0613	4.7643	0.00450	0.3497
SCHL-2-1	0.00179	0.1446	0.0368	2.9733	0.00300	0.2424
SCHL-2-2	0.00144	0.0898	0.0300	1.8718	0.00269	0.1678
SCHL-2-3	0.00131	0.0962	0.0244	1.7912	0.00231	0.1696
SIML-1-1	0.000497	0.0273	0.00146	0.0803	0.00110	0.0605
SIML-1-2	0.000495	0.0365	0.000955	0.0704	0.00183	0.1349
SIML-1-3	0.000553	0.0321	0.00151	0.0877	0.00122	0.0709
TROL-1-1	0.00111	0.0612	0.0141	0.7779	0.00150	0.0828
TROL-1-2	0.00117	0.0702	0.0141	0.8460	0.00202	0.1212
TROL-1-3	0.00115	0.0642	0.0139	0.7760	0.00187	0.1044
TYRL-1-1	0.000615	0.0413	0.00331	0.2225	0.00268	0.1801
TYRL-1-2	0.000622	0.0441	0.00504	0.3575	0.00341	0.2419
TYRL-1-3	0.000670	0.0483	0.00702	0.5057	0.00441	0.3177

Table A3-2. Continued.

Sampling Site	Beryllium		Bismuth		Boron	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.0001	0.0049	0.00025	0.0124	0.0005	0.0247
AMIL-1-2	0.0001	0.0062	0.00025	0.0155	0.0005	0.0310
AMIL-1-3	0.0001	0.0057	0.00025	0.0142	0.0005	0.0284
ATHL-1-1	0.0001	0.0067	0.00025	0.0167	0.0005	0.0334
ATHL-1-2	0.0001	0.0066	0.00025	0.0165	0.0005	0.0331
ATHL-1-3	0.0001	0.0071	0.00025	0.0177	0.0005	0.0353
ATHL-2-1	0.0001	0.0104	0.00025	0.0260	0.0033	0.3438
ATHL-2-2	0.0001	0.0075	0.00025	0.0186	0.0014	0.1044
ATHL-2-3	0.0001	0.0069	0.00025	0.0173	0.0034	0.2357
CORL-1-1	0.0001	0.0073	0.00025	0.0182	0.0005	0.0364
CORL-1-2	0.0001	0.0052	0.00025	0.0131	0.0013	0.0682
CORL-1-3	0.0001	0.0077	0.00025	0.0193	0.0005	0.0386
DOUL-1-1	0.0001	0.0079	0.00112	0.0887	0.0005	0.0396
DOUL-1-2	0.0001	0.0080	0.00097	0.0772	0.0005	0.0398
DOUL-1-3	0.0001	0.0079	0.00136	0.1078	0.0005	0.0396
HAML1-1	0.0001	0.0074	0.00061	0.0454	0.0005	0.0372
HAML-1-2	0.0001	0.0076	0.00060	0.0454	0.0005	0.0378
HAML-1-3	0.0001	0.0075	0.00058	0.0434	0.0005	0.0375
HAPL-1-1	0.0001	0.0104	0.00439	0.4582	0.0010	0.1044
HAPL-1-2	0.0001	0.0111	0.00415	0.4612	0.0011	0.1223
HAPL-1-3	0.0001	0.0107	0.00458	0.4906	0.0011	0.1178
HIDL-1-1	0.0001	0.0066	0.00201	0.1317	0.0005	0.0328
HIDL-1-2	0.0001	0.0073	0.00190	0.1382	0.0005	0.0364
HIDL-1-3	0.0001	0.0063	0.00196	0.1238	0.0005	0.0316
KISL-1-1	0.0001	0.0073	0.00025	0.0183	0.0005	0.0365
KISL-1-2	0.0001	0.0070	0.00025	0.0175	0.0005	0.0350
KISL-1-3	0.0001	0.0071	0.00025	0.0177	0.0005	0.0354
LOUL-1-1	0.0001	0.0076	0.00428	0.3273	0.0005	0.0382
LOUL-1-2	0.0001	0.0075	0.00206	0.1554	0.0005	0.0377
LOUL-1-3	0.0001	0.0075	0.00378	0.2824	0.0005	0.0374
SCHL-1-1	0.0001	0.0084	0.00167	0.1406	0.0027	0.2273
SCHL-1-2	0.0001	0.0075	0.00202	0.1514	0.0028	0.2098
SCHL-1-3	0.0001	0.0078	0.00164	0.1275	0.0026	0.2021
SCHL-2-1	0.0001	0.0081	0.00187	0.1511	0.0005	0.0404
SCHL-2-2	0.0001	0.0062	0.00136	0.0849	0.0005	0.0312
SCHL-2-3	0.0001	0.0073	0.00100	0.0734	0.0005	0.0367
SIML-1-1	0.0001	0.0055	0.00025	0.0137	0.0005	0.0275
SIML-1-2	0.0001	0.0074	0.00025	0.0184	0.0012	0.0885
SIML-1-3	0.0001	0.0058	0.00025	0.0145	0.0005	0.0290
TROL-1-1	0.0001	0.0055	0.00090	0.0497	0.0005	0.0276
TROL-1-2	0.0001	0.0060	0.00103	0.0618	0.0005	0.0300
TROL-1-3	0.0001	0.0056	0.00094	0.0525	0.0005	0.0279
TYRL-1-1	0.0001	0.0067	0.00025	0.0168	0.0052	0.3495
TYRL-1-2	0.0001	0.0071	0.00025	0.0177	0.0104	0.7377
TYRL-1-3	0.0001	0.0072	0.00025	0.0180	0.0218	1.5704

Table A3-2. Continued.

Sampling Site	Cadmium		Calcium		Dissolved Chloride	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.00120	0.0593	0.168	8.3020	0.1	4.9417
AMIL-1-2	0.000823	0.0511	0.113	7.0108	0.1	6.2042
AMIL-1-3	0.00105	0.0596	0.155	8.7938	0.1	5.6734
ATHL-1-1	0.0164	1.0956	0.219	14.6297	0.1	6.6802
ATHL-1-2	0.0129	0.8537	0.169	11.1844	0.1	6.6180
ATHL-1-3	0.0150	1.0592	0.182	12.8514	0.1	7.0612
ATHL-2-1	0.00154	0.1604	5.71	594.8099	6.2	645.8531
ATHL-2-2	0.00421	0.3140	2.76	205.8610	2.3	171.5508
ATHL-2-3	0.00304	0.2107	6.94	481.0690	5.7	395.1143
CORL-1-1	0.000532	0.0387	5.08	370.0181	0.2	14.5676
CORL-1-2	0.00137	0.0718	3.69	193.4463		
CORL-1-3	0.000478	0.0369	2.56	197.6728	0.2	15.4432
DOUL-1-1	0.0471	3.7303	2.25	178.2005	1.5	118.8003
DOUL-1-2	0.0696	5.5392	0.961	76.4820	1.3	103.4616
DOUL-1-3	0.0453	3.5903	0.593	46.9987	1.1	87.1813
HAML1-1	0.0506	3.7679	0.950	70.7414	0.5	37.2323
HAML-1-2	0.0533	4.0298	0.946	71.5234	0.5	37.8031
HAML-1-3	0.0544	4.0752	0.473	35.4335	0.3	22.4737
HAPL-1-1	0.0756	7.8909	0.839	87.5721	2.6	271.3795
HAPL-1-2	0.0874	9.7138	1.01	112.2536	2.5	277.8555
HAPL-1-3	0.0884	9.4694	0.827	88.5882	2.3	246.3760
HIDL-1-1	0.0749	4.9086	0.507	33.2263	0.6	39.3211
HIDL-1-2	0.0757	5.5058	0.502	36.5114	0.6	43.6391
HIDL-1-3	0.0796	5.0288	0.408	25.7757	0.5	31.5879
KISL-1-1	0.00113	0.0825	0.176	12.8507	0.1	7.3015
KISL-1-2	0.00114	0.0799	0.378	26.4891	0.1	7.0077
KISL-1-3	0.00131	0.0927	0.336	23.7810	0.1	7.0777
LOUL-1-1	0.103	7.8757	0.472	36.0905	1.1	84.1093
LOUL-1-2	0.0682	5.1432	0.339	25.5650	0.9	67.8717
LOUL-1-3	0.105	7.8443	0.359	26.8201	1.2	89.6493
SCHL-1-1	0.166	13.9740	5.57	468.8878	8.3	698.7018
SCHL-1-2	0.149	11.1663	4.87	364.9644	8.3	622.0133
SCHL-1-3	0.0957	7.4380	2.84	220.7294	7.4	575.1401
SCHL-2-1	0.0672	5.4295	0.395	31.9143	0.3	24.2387
SCHL-2-2	0.0447	2.7889	0.313	19.5288	0.2	12.4785
SCHL-2-3	0.0403	2.9585	0.278	20.4083	0.2	14.6822
SIML-1-1	0.00160	0.0880	0.613	33.7078	0.3	16.4965
SIML-1-2	0.000984	0.0726	0.787	58.0329	0.3	22.1218
SIML-1-3	0.00162	0.0941	0.721	41.8803	0.3	17.4259
TROL-1-1	0.0241	1.3296	0.329	18.1509	0.1	5.5170
TROL-1-2	0.0227	1.3620	0.865	51.9004	0.1	6.0000
TROL-1-3	0.0236	1.3176	0.538	30.0362	0.1	5.5829
TYRL-1-1	0.00268	0.1801	3.21	215.7299	0.8	53.7645
TYRL-1-2	0.00607	0.4305	5.11	362.4465	1.7	120.5791
TYRL-1-3	0.00533	0.3840	3.90	280.9466	4.5	324.1691

Table A3-2. Continued.

Sampling Site	Chromium		Cobalt		Copper	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.00018	0.0089	0.00005	0.0025	0.0191	0.9439
AMIL-1-2	0.00012	0.0074	0.00005	0.0031	0.0197	1.2222
AMIL-1-3	0.00013	0.0074	0.00005	0.0028	0.0193	1.0950
ATHL-1-1	0.00017	0.0114	0.00023	0.0154	0.151	10.0871
ATHL-1-2	0.00026	0.0172	0.00019	0.0126	0.125	8.2725
ATHL-1-3	0.00017	0.0120	0.00019	0.0134	0.126	8.8971
ATHL-2-1	0.00024	0.0250	0.00005	0.0052	0.0132	1.3750
ATHL-2-2	0.00020	0.0149	0.00005	0.0037	0.0300	2.2376
ATHL-2-3	0.00019	0.0132	0.00005	0.0035	0.0225	1.5597
CORL-1-1	0.00029	0.0211	0.00005	0.0036	0.00300	0.2185
CORL-1-2	0.00025	0.0131	0.00005	0.0026	0.00513	0.2689
CORL-1-3	0.00021	0.0162	0.00005	0.0039	0.00274	0.2116
DOUL-1-1	0.00028	0.0222	0.00102	0.0808	0.585	46.3321
DOUL-1-2	0.00011	0.0088	0.00082	0.0653	0.628	49.9799
DOUL-1-3	0.00028	0.0222	0.00125	0.0991	0.785	62.2158
HAML1-1	0.00023	0.0171	0.00041	0.0305	0.234	17.4247
HAML-1-2	0.00027	0.0204	0.00031	0.0234	0.200	15.1212
HAML-1-3	0.00021	0.0157	0.00035	0.0262	0.232	17.3796
HAPL-1-1	0.00156	0.1628	0.00322	0.3361	1.32	137.7773
HAPL-1-2	0.00178	0.1978	0.00388	0.4312	1.15	127.8135
HAPL-1-3	0.00185	0.1982	0.00337	0.3610	1.21	129.6152
HIDL-1-1	0.00070	0.0459	0.00310	0.2032	1.60	104.8563
HIDL-1-2	0.00073	0.0531	0.00327	0.2378	1.81	131.6446
HIDL-1-3	0.00077	0.0486	0.00365	0.2306	1.88	118.7704
KISL-1-1	0.00012	0.0088	0.00005	0.0037	0.00759	0.5542
KISL-1-2	0.00015	0.0105	0.00005	0.0035	0.00687	0.4814
KISL-1-3	0.00016	0.0113	0.00005	0.0035	0.00697	0.4933
LOUL-1-1	0.00103	0.0788	0.00232	0.1774	1.05	80.2862
LOUL-1-2	0.00110	0.0830	0.00165	0.1244	0.786	59.2746
LOUL-1-3	0.00089	0.0665	0.00182	0.1360	0.837	62.5304
SCHL-1-1	0.00023	0.0194	0.00053	0.0446	0.389	32.7464
SCHL-1-2	0.00027	0.0202	0.00054	0.0405	0.385	28.8524
SCHL-1-3	0.00020	0.0155	0.00052	0.0404	0.401	31.1664
SCHL-2-1	0.00017	0.0137	0.00018	0.0145	0.163	13.1697
SCHL-2-2	0.00015	0.0094	0.00021	0.0131	0.142	8.8597
SCHL-2-3	0.00018	0.0132	0.00016	0.0117	0.128	9.3966
SIML-1-1	0.00026	0.0143	0.00005	0.0027	0.0128	0.7038
SIML-1-2	0.00024	0.0177	0.00005	0.0037	0.0104	0.7669
SIML-1-3	0.00038	0.0221	0.00005	0.0029	0.0122	0.7087
TROL-1-1	0.00030	0.0166	0.00019	0.0105	0.162	8.9375
TROL-1-2	0.00028	0.0168	0.00016	0.0096	0.119	7.1401
TROL-1-3	0.00023	0.0128	0.00017	0.0095	0.132	7.3695
TYRL-1-1	0.00011	0.0074	0.00017	0.0114	0.0187	1.2567
TYRL-1-2	0.00017	0.0121	0.00026	0.0184	0.0218	1.5462
TYRL-1-3	0.00033	0.0238	0.00047	0.0339	0.0275	1.9810

Table A3-2. Continued.

Sampling Site	Iron		Lead		Lithium	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.038	1.8778	0.00782	0.3864	0.0025	0.1235
AMIL-1-2	0.028	1.7372	0.00594	0.3685	0.0025	0.1551
AMIL-1-3	0.027	1.5318	0.00705	0.4000	0.0025	0.1418
ATHL-1-1	0.117	7.8158	0.0886	5.9187	0.0025	0.1670
ATHL-1-2	0.083	5.4930	0.0690	4.5664	0.0025	0.1655
ATHL-1-3	0.083	5.8608	0.0789	5.5713	0.0025	0.1765
ATHL-2-1	0.033	3.4376	0.00657	0.6844	0.0025	0.2604
ATHL-2-2	0.036	2.6851	0.0179	1.3351	0.0025	0.1865
ATHL-2-3	0.034	2.3568	0.0131	0.9081	0.0025	0.1733
CORL-1-1	0.151	10.9986	0.00233	0.1697	0.0025	0.1821
CORL-1-2	0.086	4.5085	0.00449	0.2354	0.0025	0.1311
CORL-1-3	0.038	2.9342	0.00168	0.1297	0.0025	0.1930
DOUL-1-1	0.417	33.0265	0.139	11.0088	0.0025	0.1980
DOUL-1-2	0.266	21.1698	0.196	15.5988	0.0025	0.1990
DOUL-1-3	0.547	43.3529	0.172	13.6320	0.0025	0.1981
HAML1-1	0.192	14.2972	0.186	13.8504	0.0025	0.1862
HAML-1-2	0.118	8.9215	0.200	15.1212	0.0025	0.1890
HAML-1-3	0.147	11.0121	0.209	15.6567	0.0025	0.1873
HAPL-1-1	2.70	281.8171	0.313	32.6699	0.0025	0.2609
HAPL-1-2	3.25	361.2121	0.315	35.0098	0.0025	0.2779
HAPL-1-3	2.73	292.4376	0.345	36.9564	0.0025	0.2678
HIDL-1-1	1.99	130.4150	0.256	16.7770	0.0025	0.1638
HIDL-1-2	2.29	166.5559	0.275	20.0013	0.0025	0.1818
HIDL-1-3	2.44	154.1488	0.282	17.8156	0.0025	0.1579
KISL-1-1	0.012	0.8762	0.00676	0.4936	0.0025	0.1825
KISL-1-2	0.012	0.8409	0.00653	0.4576	0.0025	0.1752
KISL-1-3	0.005	0.3539	0.00749	0.5301	0.0025	0.1769
LOUL-1-1	1.42	108.5775	0.397	30.3558	0.0025	0.1912
LOUL-1-2	0.862	65.0060	0.265	19.9844	0.0025	0.1885
LOUL-1-3	0.985	73.5871	0.344	25.6995	0.0025	0.1868
SCHL-1-1	0.237	19.9509	0.295	24.8334	0.0025	0.2105
SCHL-1-2	0.263	19.7096	0.304	22.7822	0.0025	0.1874
SCHL-1-3	0.286	22.2284	0.286	22.2284	0.0025	0.1943
SCHL-2-1	0.104	8.4028	0.186	15.0280	0.0025	0.2020
SCHL-2-2	0.097	6.0521	0.144	8.9845	0.0025	0.1560
SCHL-2-3	0.072	5.2856	0.135	9.9105	0.0025	0.1835
SIML-1-1	0.029	1.5947	0.00785	0.4317	0.0025	0.1375
SIML-1-2	0.071	5.2355	0.00473	0.3488	0.0025	0.1843
SIML-1-3	0.032	1.8588	0.00781	0.4537	0.0025	0.1452
TROL-1-1	0.092	5.0756	0.0952	5.2522	0.0025	0.1379
TROL-1-2	0.088	5.2800	0.0894	5.3640	0.0025	0.1500
TROL-1-3	0.085	4.7455	0.0921	5.1419	0.0025	0.1396
TYRL-1-1	0.088	5.9141	0.0126	0.8468	0.0025	0.1680
TYRL-1-2	0.084	5.9580	0.0211	1.4966	0.0085	0.6029
TYRL-1-3	0.060	4.3223	0.0222	1.5992	0.0193	1.3903

Table A3-2. Continued.

Sampling Site	Magnesium		Manganese		Mercury	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.0443	2.1892	0.00121	0.0598	0.000025	0.0012
AMIL-1-2	0.0384	2.3824	0.00102	0.0633	0.000043	0.0027
AMIL-1-3	0.0416	2.3601	0.00108	0.0613	0.000057	0.0032
ATHL-1-1	0.0245	1.6367	0.00133	0.0888	0.000252	0.0168
ATHL-1-2	0.0192	1.2707	0.00114	0.0754	0.000281	0.0186
ATHL-1-3	0.0212	1.4970	0.00117	0.0826	0.000378	0.0267
ATHL-2-1	1.66	172.9220	0.00253	0.2635	0.000005	0.0005
ATHL-2-2	0.647	48.2580	0.00167	0.1246	0.00036	0.0269
ATHL-2-3	1.44	99.8184	0.00230	0.1594	0.000018	0.0012
CORL-1-1	2.90	211.2308	0.00630	0.4589	0.000005	0.0004
CORL-1-2	2.09	109.5671	0.00598	0.3135	0.000005	0.0003
CORL-1-3	1.46	112.7353	0.00295	0.2278	0.000005	0.0004
DOUL-1-1	0.306	24.2353	0.00395	0.3128	0.00104	0.0824
DOUL-1-2	0.148	11.7787	0.00359	0.2857	0.00182	0.1448
DOUL-1-3	0.151	11.9676	0.00410	0.3249	0.00256	0.2029
HAML1-1	0.183	13.6270	0.00243	0.1809	0.000268	0.0200
HAML-1-2	0.206	15.5749	0.00223	0.1686	0.000241	0.0182
HAML-1-3	0.0836	6.2627	0.00245	0.1835	0.000363	0.0272
HAPL-1-1	0.529	55.2153	0.0269	2.8077	0.0075	0.7828
HAPL-1-2	0.639	71.0199	0.0333	3.7010	0.017	1.8894
HAPL-1-3	0.537	57.5234	0.0278	2.9779	0.0143	1.5318
HIDL-1-1	0.190	12.4517	0.0243	1.5925	0.0016	0.1049
HIDL-1-2	0.189	13.7463	0.0265	1.9274	0.0029	0.2109
HIDL-1-3	0.188	11.8770	0.0263	1.6615	0.0028	0.1769
KISL-1-1	0.0506	3.6946	0.000708	0.0517	0.000005	0.0004
KISL-1-2	0.114	7.9888	0.000811	0.0568	0.000005	0.0004
KISL-1-3	0.112	7.9270	0.000900	0.0637	0.000005	0.0004
LOUL-1-1	0.269	20.5686	0.0179	1.3687	0.0276	2.1104
LOUL-1-2	0.178	13.4235	0.0141	1.0633	0.0071	0.5354
LOUL-1-3	0.184	13.7462	0.0159	1.1879	0.0115	0.8591
SCHL-1-1	0.813	68.4391	0.00326	0.2744	0.00148	0.1246
SCHL-1-2	0.858	64.2997	0.00340	0.2548	0.00444	0.3327
SCHL-1-3	0.783	60.8560	0.00326	0.2534	0.00562	0.4368
SCHL-2-1	0.0657	5.3083	0.00752	0.6076	0.000256	0.0207
SCHL-2-2	0.0490	3.0572	0.00841	0.5247	0.000310	0.0193
SCHL-2-3	0.0462	3.3916	0.00632	0.4640	0.000252	0.0185
SIML-1-1	0.527	28.9788	0.00158	0.0869	0.000005	0.0003
SIML-1-2	2.15	158.5398	0.00164	0.1209	0.000005	0.0004
SIML-1-3	0.677	39.3245	0.00135	0.0784	0.000005	0.0003
TROL-1-1	0.0710	3.9171	0.00142	0.0783	0.000188	0.0104
TROL-1-2	0.180	10.8001	0.00125	0.0750	0.000119	0.0071
TROL-1-3	0.105	5.8621	0.00140	0.0782	0.000124	0.0069
TYRL-1-1	2.42	162.6375	0.0245	1.6465	0.000017	0.0011
TYRL-1-2	4.97	352.5165	0.0251	1.7803	0.000211	0.0150
TYRL-1-3	11.4	821.2285	0.0182	1.3111	0.000049	0.0035

Table A3-2. Continued.

Sampling Site	Molybdenum		Nickel		phosphorous	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.000025	0.0012	0.00005	0.0025	0.15	7.4125
AMIL-1-2	0.000025	0.0016	0.00005	0.0031	0.15	9.3064
AMIL-1-3	0.000025	0.0014	0.00005	0.0028	0.15	8.5101
ATHL-1-1	0.000133	0.0089	0.00032	0.0214	0.15	10.0203
ATHL-1-2	0.000096	0.0064	0.00011	0.0073	0.15	9.9270
ATHL-1-3	0.000101	0.0071	0.00010	0.0071	0.15	10.5918
ATHL-2-1	0.000088	0.0092	0.00016	0.0167	0.15	15.6255
ATHL-2-2	0.000097	0.0072	0.00013	0.0097	0.15	11.1881
ATHL-2-3	0.000093	0.0064	0.00016	0.0111	0.15	10.3977
CORL-1-1	0.000025	0.0018	0.00124	0.0903	0.15	10.9257
CORL-1-2	0.000055	0.0029	0.00021	0.0110	0.15	7.8637
CORL-1-3	0.000025	0.0019	0.00015	0.0116	0.15	11.5824
DOUL-1-1	0.000401	0.0318	0.00027	0.0214	0.15	11.8800
DOUL-1-2	0.000415	0.0330	0.00016	0.0127	0.15	11.9379
DOUL-1-3	0.000421	0.0334	0.00023	0.0182	0.15	11.8884
HAML1-1	0.000234	0.0174	0.00013	0.0097	0.15	11.1697
HAML-1-2	0.000216	0.0163	0.00036	0.0272	0.15	11.3409
HAML-1-3	0.000217	0.0163	0.00016	0.0120	0.15	11.2368
HAPL-1-1	0.00157	0.1639	0.00122	0.1273	0.15	15.6565
HAPL-1-2	0.00156	0.1734	0.00146	0.1623	0.15	16.6713
HAPL-1-3	0.00159	0.1703	0.00134	0.1435	0.15	16.0680
HIDL-1-1	0.000960	0.0629	0.00118	0.0773	0.15	9.8303
HIDL-1-2	0.000916	0.0666	0.00120	0.0873	0.15	10.9098
HIDL-1-3	0.001110	0.0701	0.00131	0.0828	0.15	9.4764
KISL-1-1	0.000025	0.0018	0.00005	0.0037	0.15	10.9523
KISL-1-2	0.000025	0.0018	0.00005	0.0035	0.15	10.5116
KISL-1-3	0.000025	0.0018	0.00005	0.0035	0.15	10.6165
LOUL-1-1	0.00132	0.1009	0.00093	0.0711	0.15	11.4695
LOUL-1-2	0.000710	0.0535	0.00072	0.0543	0.15	11.3119
LOUL-1-3	0.00103	0.0769	0.00088	0.0657	0.15	11.2062
SCHL-1-1	0.000845	0.0711	0.00025	0.0210	0.15	12.6271
SCHL-1-2	0.000859	0.0644	0.00030	0.0225	0.15	11.2412
SCHL-1-3	0.000685	0.0532	0.00021	0.0163	0.15	11.6582
SCHL-2-1	0.000387	0.0313	0.00014	0.0113	0.15	12.1194
SCHL-2-2	0.000326	0.0203	0.00011	0.0069	0.15	9.3589
SCHL-2-3	0.000275	0.0202	0.00023	0.0169	0.15	11.0117
SIML-1-1	0.000025	0.0014	0.00011	0.0060	0.15	8.2482
SIML-1-2	0.000025	0.0018	0.00013	0.0096	0.15	11.0609
SIML-1-3	0.000062	0.0036	0.00011	0.0064	0.15	8.7130
TROL-1-1	0.000194	0.0107	0.00022	0.0121	0.15	8.2755
TROL-1-2	0.000162	0.0097	0.00032	0.0192	0.15	9.0001
TROL-1-3	0.000157	0.0088	0.00040	0.0223	0.15	8.3744
TYRL-1-1	0.000088	0.0059	0.00019	0.0128	0.15	10.0808
TYRL-1-2	0.000171	0.0121	0.00031	0.0220	0.15	10.6393
TYRL-1-3	0.000346	0.0249	0.00055	0.0396	0.15	10.8056

Table A3-2. Continued.

Sampling Site	Potassium		Selenium		Silicon	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.025	1.2354	0.00005	0.0025	0.025	1.2354
AMIL-1-2	0.025	1.5511	0.00005	0.0031	0.025	1.5511
AMIL-1-3	0.025	1.4184	0.00005	0.0028	0.025	1.4184
ATHL-1-1	0.025	1.6701	0.00021	0.0140	0.025	1.6701
ATHL-1-2	0.025	1.6545	0.00014	0.0093	0.025	1.6545
ATHL-1-3	0.025	1.7653	0.00026	0.0184	0.025	1.7653
ATHL-2-1	0.394	41.0429	0.00010	0.0104	0.090	9.3753
ATHL-2-2	0.184	13.7241	0.00013	0.0097	0.056	4.1769
ATHL-2-3	0.377	26.1330	0.00011	0.0076	0.091	6.3080
CORL-1-1	0.133	9.6875	0.00005	0.0036	0.270	19.6663
CORL-1-2	0.128	6.7103	0.00013	0.0068	0.291	15.2555
CORL-1-3	0.065	5.0190	0.00005	0.0039	0.129	9.9609
DOUL-1-1	0.110	8.7120	0.00093	0.0737	0.074	5.8608
DOUL-1-2	0.025	1.9896	0.00100	0.0796	0.061	4.8547
DOUL-1-3	0.025	1.9814	0.00122	0.0967	0.100	7.9256
HAML1-1	0.078	5.8082	0.00051	0.0380	0.025	1.8616
HAML-1-2	0.090	6.8046	0.00055	0.0416	0.025	1.8902
HAML-1-3	0.025	1.8728	0.00065	0.0487	0.053	3.9703
HAPL-1-1	0.185	19.3097	0.00330	0.3444	0.895	93.4172
HAPL-1-2	0.210	23.3399	0.00413	0.4590	1.01	112.2536
HAPL-1-3	0.189	20.2457	0.00442	0.4735	0.858	91.9090
HIDL-1-1	0.081	5.3083	0.00197	0.1291	0.497	32.5710
HIDL-1-2	0.079	5.7458	0.00201	0.1462	0.498	36.2205
HIDL-1-3	0.075	4.7382	0.00224	0.1415	0.590	37.2737
KISL-1-1	0.025	1.8254	0.00005	0.0037	0.025	1.8254
KISL-1-2	0.025	1.7519	0.00005	0.0035	0.025	1.7519
KISL-1-3	0.025	1.7694	0.00005	0.0035	0.025	1.7694
LOUL-1-1	0.077	5.8877	0.00549	0.4198	0.353	26.9914
LOUL-1-2	0.058	4.3740	0.00232	0.1750	0.230	17.3450
LOUL-1-3	0.060	4.4825	0.00328	0.2450	0.232	17.3322
SCHL-1-1	0.426	35.8611	0.00127	0.1069	0.053	4.4616
SCHL-1-2	0.389	29.1522	0.00150	0.1124	0.059	4.4215
SCHL-1-3	0.338	26.2699	0.00122	0.0948	0.065	5.0519
SCHL-2-1	0.055	4.4438	0.00051	0.0412	0.051	4.1206
SCHL-2-2	0.025	1.5598	0.00042	0.0262	0.025	1.5598
SCHL-2-3	0.025	1.8353	0.00046	0.0338	0.025	1.8353
SIML-1-1	0.055	3.0244	0.00005	0.0027	0.058	3.1893
SIML-1-2	0.154	11.3559	0.00005	0.0037	0.084	6.1941
SIML-1-3	0.057	3.3109	0.00005	0.0029	0.068	3.9499
TROL-1-1	0.025	1.3792	0.00024	0.0132	0.053	2.9240
TROL-1-2	0.067	4.0200	0.00016	0.0096	0.096	5.7600
TROL-1-3	0.025	1.3957	0.00019	0.0106	0.062	3.4614
TYRL-1-1	0.828	55.6462	0.00005	0.0034	1.55	104.1686
TYRL-1-2	1.73	122.7070	0.00016	0.0113	2.33	165.2643
TYRL-1-3	4.38	315.5246	0.00005	0.0036	1.80	129.6677

Table A3-2. Continued.

Sampling Site	Silver		Sodium		Strontium	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.000019	0.0009	0.067	3.3109	0.00046	0.0227
AMIL-1-2	0.000025	0.0016	0.061	3.7846	0.00033	0.0205
AMIL-1-3	0.000019	0.0011	0.069	3.9147	0.00048	0.0272
ATHL-1-1	0.000202	0.0135	0.080	5.3442	0.00059	0.0394
ATHL-1-2	0.000121	0.0080	0.070	4.6326	0.00034	0.0225
ATHL-1-3	0.000148	0.0105	0.083	5.8608	0.00042	0.0297
ATHL-2-1	0.000017	0.0018	2.18	227.0903	0.0414	4.3126
ATHL-2-2	0.000035	0.0026	0.997	74.3636	0.0186	1.3873
ATHL-2-3	0.000025	0.0017	2.09	144.8753	0.0441	3.0569
CORL-1-1	0.000005	0.0004	0.193	14.0578	0.00363	0.2644
CORL-1-2	0.000015	0.0008	0.230	12.0576	0.00393	0.2060
CORL-1-3	0.000005	0.0004	0.154	11.8913	0.00217	0.1676
DOUL-1-1	0.000835	0.0661	1.16	91.8722	0.00397	0.3144
DOUL-1-2	0.000309	0.0246	0.928	73.8557	0.00191	0.1520
DOUL-1-3	0.001110	0.0880	0.858	68.0014	0.00139	0.1102
HAML1-1	0.000267	0.0199	0.328	24.4244	0.00206	0.1534
HAML-1-2	0.000200	0.0151	0.338	25.5549	0.00212	0.1603
HAML-1-3	0.000300	0.0225	0.233	17.4545	0.00114	0.0854
HAPL-1-1	0.00197	0.2056	1.40	146.1274	0.00327	0.3413
HAPL-1-2	0.00188	0.2089	1.49	165.6018	0.00349	0.3879
HAPL-1-3	0.00210	0.2250	1.45	155.3240	0.00332	0.3556
HIDL-1-1	0.00172	0.1127	0.311	20.3814	0.00299	0.1960
HIDL-1-2	0.00250	0.1818	0.310	22.5469	0.00319	0.2320
HIDL-1-3	0.00234	0.1478	0.308	19.4581	0.00308	0.1946
KISL-1-1	0.000005	0.0004	0.068	4.9650	0.00060	0.0438
KISL-1-2	0.000005	0.0004	0.117	8.1990	0.00125	0.0876
KISL-1-3	0.000005	0.0004	0.126	8.9179	0.00118	0.0835
LOUL-1-1	0.00160	0.1223	0.280	21.4096	0.00185	0.1415
LOUL-1-2	0.000993	0.0749	0.279	21.0402	0.00158	0.1192
LOUL-1-3	0.00124	0.0926	0.280	20.9182	0.00173	0.1292
SCHL-1-1	0.000519	0.0437	2.69	226.4467	0.0460	3.8723
SCHL-1-2	0.000637	0.0477	2.58	193.3487	0.0473	3.5447
SCHL-1-3	0.000589	0.0458	2.30	178.7597	0.0335	2.6037
SCHL-2-1	0.000375	0.0303	0.122	9.8571	0.00219	0.1769
SCHL-2-2	0.000283	0.0177	0.087	5.4281	0.00150	0.0936
SCHL-2-3	0.000229	0.0168	0.095	6.9741	0.00133	0.0976
SIML-1-1	0.000021	0.0012	0.300	16.4965	0.00129	0.0709
SIML-1-2	0.000005	0.0004	0.506	37.3122	0.00167	0.1231
SIML-1-3	0.000017	0.0010	0.293	17.0193	0.00131	0.0761
TROL-1-1	0.000188	0.0104	0.102	5.6273	0.00091	0.0502
TROL-1-2	0.000165	0.0099	0.172	10.3201	0.00201	0.1206
TROL-1-3	0.000170	0.0095	0.131	7.3136	0.00134	0.0748
TYRL-1-1	0.000030	0.0020	2.23	149.8684	0.0168	1.1291
TYRL-1-2	0.000036	0.0026	4.63	328.4007	0.0300	2.1279
TYRL-1-3	0.000051	0.0037	11.7	842.8398	0.0337	2.4277

Table A3-2. Continued.

Sampling Site	Dissolved Sulphate		Thallium		Tin	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.25	12.3542	0.000025	0.0012	0.00005	0.0025
AMIL-1-2	0.25	15.5106	0.000025	0.0016	0.00014	0.0087
AMIL-1-3	0.25	14.1835	0.000025	0.0014	0.00046	0.0261
ATHL-1-1	0.25	16.7005	0.000078	0.0052	0.00020	0.0134
ATHL-1-2	0.25	16.5450	0.000062	0.0041	0.00059	0.0390
ATHL-1-3	0.25	17.6530	0.000074	0.0052	0.00019	0.0134
ATHL-2-1	9.39	978.1550	0.000025	0.0026	0.00041	0.0427
ATHL-2-2	3.92	292.3823	0.000025	0.0019	0.00005	0.0037
ATHL-2-3	9.54	661.2966	0.000025	0.0017	0.00049	0.0340
CORL-1-1	1.35	98.3316	0.000025	0.0018	0.00019	0.0138
CORL-1-2	1.82	95.4125	0.000025	0.0013	0.00042	0.0220
CORL-1-3	1.04	80.3046	0.000025	0.0019	0.00012	0.0093
DOUL-1-1	2.22	175.8245	0.000213	0.0169	0.00033	0.0261
DOUL-1-2	1.97	156.7841	0.000269	0.0214	0.00037	0.0294
DOUL-1-3	1.66	131.5646	0.000209	0.0166	0.00076	0.0602
HAML1-1	1.30	96.8040	0.000247	0.0184	0.00031	0.0231
HAML-1-2	1.45	109.6289	0.000262	0.0198	0.00037	0.0280
HAML-1-3	1.23	92.1420	0.000271	0.0203	0.00035	0.0262
HAPL-1-1	2.84	296.4299	0.000396	0.0413	0.00095	0.0992
HAPL-1-2	3.39	376.7720	0.000439	0.0488	0.00098	0.1089
HAPL-1-3	3.30	353.4960	0.000441	0.0472	0.00138	0.1478
HIDL-1-1	3.07	201.1929	0.000324	0.0212	0.00091	0.0596
HIDL-1-2	2.92	212.3770	0.000297	0.0216	0.00061	0.0444
HIDL-1-3	2.70	170.5745	0.000324	0.0205	0.00092	0.0581
KISL-1-1	0.25	18.2538	0.000025	0.0018	0.00015	0.0110
KISL-1-2	0.25	17.5193	0.000025	0.0018	0.00005	0.0035
KISL-1-3	0.25	17.6942	0.000025	0.0018	0.00015	0.0106
LOUL-1-1	3.53	269.9144	0.000522	0.0399	0.00102	0.0780
LOUL-1-2	2.57	193.8114	0.000321	0.0242	0.00096	0.0724
LOUL-1-3	3.67	274.1773	0.000437	0.0326	0.00084	0.0628
SCHL-1-1	9.71	817.3969	0.000507	0.0427	0.00052	0.0438
SCHL-1-2	8.47	634.7534	0.000444	0.0333	0.00055	0.0412
SCHL-1-3	4.12	320.2131	0.000352	0.0274	0.00089	0.0692
SCHL-2-1	1.05	84.8355	0.000169	0.0137	0.00044	0.0356
SCHL-2-2	0.82	51.1618	0.000148	0.0092	0.00032	0.0200
SCHL-2-3	0.88	64.6018	0.000154	0.0113	0.00036	0.0264
SIML-1-1	0.57	31.3433	0.000025	0.0014	0.00005	0.0027
SIML-1-2	0.90	66.3655	0.000025	0.0018	0.00044	0.0324
SIML-1-3	0.56	32.5284	0.000025	0.0015	0.00005	0.0029
TROL-1-1	0.97	53.5148	0.000092	0.0051	0.00018	0.0099
TROL-1-2	1.00	60.0005	0.000086	0.0052	0.00062	0.0372
TROL-1-3	0.96	53.5961	0.000088	0.0049	0.00025	0.0140
TYRL-1-1	4.41	296.3765	0.000025	0.0017	0.00014	0.0094
TYRL-1-2	9.85	698.6494	0.000025	0.0018	0.00013	0.0092
TYRL-1-3	23.5	1692.8833	0.000025	0.0018	0.00016	0.0115

Table A3-2. Continued.

Sampling Site	Titanium		Uranium		Vanadium	
	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.005	0.2471	0.000005	0.0002	0.000067	0.0033
AMIL-1-2	0.005	0.3102	0.000005	0.0003	0.000025	0.0016
AMIL-1-3	0.005	0.2837	0.000005	0.0003	0.000025	0.0014
ATHL-1-1	0.005	0.3340	0.000005	0.0003	0.000089	0.0059
ATHL-1-2	0.005	0.3309	0.000005	0.0003	0.000025	0.0017
ATHL-1-3	0.005	0.3531	0.000005	0.0004	0.000067	0.0047
ATHL-2-1	0.005	0.5208	0.000014	0.0015	0.000059	0.0061
ATHL-2-2	0.005	0.3729	0.000005	0.0004	0.000054	0.0040
ATHL-2-3	0.005	0.3466	0.000017	0.0012	0.000092	0.0064
CORL-1-1	0.005	0.3642	0.000013	0.0009	0.000229	0.0167
CORL-1-2	0.005	0.2621	0.000013	0.0007	0.000218	0.0114
CORL-1-3	0.005	0.3861	0.000005	0.0004	0.000074	0.0057
DOUL-1-1	0.005	0.3960	0.000005	0.0004	0.000179	0.0142
DOUL-1-2	0.005	0.3979	0.000005	0.0004	0.000128	0.0102
DOUL-1-3	0.005	0.3963	0.000005	0.0004	0.000175	0.0139
HAML1-1	0.005	0.3723	0.000005	0.0004	0.000108	0.0080
HAML-1-2	0.005	0.3780	0.000005	0.0004	0.000091	0.0069
HAML-1-3	0.005	0.3746	0.000005	0.0004	0.000104	0.0078
HAPL-1-1	0.022	2.2963	0.000040	0.0042	0.00206	0.2150
HAPL-1-2	0.023	2.5563	0.000051	0.0057	0.00268	0.2979
HAPL-1-3	0.019	2.0353	0.000044	0.0047	0.00212	0.2271
HIDL-1-1	0.005	0.3277	0.000031	0.0020	0.00170	0.1114
HIDL-1-2	0.005	0.3637	0.000038	0.0028	0.00173	0.1258
HIDL-1-3	0.005	0.3159	0.000032	0.0020	0.00205	0.1295
KISL-1-1	0.005	0.3651	0.000005	0.0004	0.000025	0.0018
KISL-1-2	0.005	0.3504	0.000005	0.0004	0.000025	0.0018
KISL-1-3	0.005	0.3539	0.000005	0.0004	0.000025	0.0018
LOUL-1-1	0.005	0.3823	0.000021	0.0016	0.00111	0.0849
LOUL-1-2	0.005	0.3771	0.000015	0.0011	0.000558	0.0421
LOUL-1-3	0.005	0.3735	0.000020	0.0015	0.000861	0.0643
SCHL-1-1	0.005	0.4209	0.000005	0.0004	0.000144	0.0121
SCHL-1-2	0.005	0.3747	0.000005	0.0004	0.000314	0.0235
SCHL-1-3	0.005	0.3886	0.000005	0.0004	0.000172	0.0134
SCHL-2-1	0.005	0.4040	0.000005	0.0004	0.000107	0.0086
SCHL-2-2	0.005	0.3120	0.000005	0.0003	0.000096	0.0060
SCHL-2-3	0.005	0.3671	0.000005	0.0004	0.000083	0.0061
SIML-1-1	0.005	0.2749	0.000005	0.0003	0.000106	0.0058
SIML-1-2	0.005	0.3687	0.000020	0.0015	0.000025	0.0018
SIML-1-3	0.005	0.2904	0.000005	0.0003	0.000025	0.0015
TROL-1-1	0.005	0.2758	0.000005	0.0003	0.000025	0.0014
TROL-1-2	0.005	0.3000	0.000005	0.0003	0.000061	0.0037
TROL-1-3	0.005	0.2791	0.000005	0.0003	0.000057	0.0032
TYRL-1-1	0.005	0.3360	0.000005	0.0003	0.000056	0.0038
TYRL-1-2	0.005	0.3546	0.000005	0.0004	0.000129	0.0091
TYRL-1-3	0.005	0.3602	0.000021	0.0015	0.000207	0.0149

Table A3-2. Continued.

Sampling Site	Zinc	
	Concentration (mg/L)	Deposition (mg/m^2)
AMIL-1-1	0.0156	0.7709
AMIL-1-2	0.0120	0.7445
AMIL-1-3	0.0145	0.8226
ATHL-1-1	0.148	9.8867
ATHL-1-2	0.122	8.0740
ATHL-1-3	0.137	9.6738
ATHL-2-1	0.0179	1.8646
ATHL-2-2	0.0373	2.7821
ATHL-2-3	0.0261	1.8092
CORL-1-1	0.0078	0.5681
CORL-1-2	0.0109	0.5714
CORL-1-3	0.0066	0.5096
DOUL-1-1	0.355	28.1161
DOUL-1-2	0.457	36.3707
DOUL-1-3	0.362	28.6906
HAML1-1	0.447	33.2857
HAML-1-2	0.433	32.7375
HAML-1-3	0.468	35.0589
HAPL-1-1	1.59	165.9590
HAPL-1-2	1.58	175.6046
HAPL-1-3	1.63	174.6056
HIDL-1-1	1.99	130.4150
HIDL-1-2	2.59	188.3755
HIDL-1-3	2.31	145.9360
KISL-1-1	0.0136	0.9930
KISL-1-2	0.0125	0.8760
KISL-1-3	0.0141	0.9980
LOUL-1-1	1.45	110.8714
LOUL-1-2	1.15	86.7249
LOUL-1-3	1.34	100.1083
SCHL-1-1	0.781	65.7453
SCHL-1-2	0.740	55.4566
SCHL-1-3	0.569	44.2236
SCHL-2-1	0.272	21.9764
SCHL-2-2	0.213	13.2896
SCHL-2-3	0.209	15.3429
SIML-1-1	0.0198	1.0888
SIML-1-2	0.0166	1.2241
SIML-1-3	0.0190	1.1036
TROL-1-1	0.182	10.0409
TROL-1-2	0.158	9.4801
TROL-1-3	0.168	9.3793
TYRL-1-1	0.0236	1.5861
TYRL-1-2	0.0320	2.2697
TYRL-1-3	0.0347	2.4997