Copper Fox Metals Inc.

Schaft Creek Project:
Aquatic Resources Baseline 2008

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SCHAFT CREEK PROJECT:
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Prepared for:

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Executive Summary

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Copper Fox Metals Inc. (Copper Fox) is a Canadian mineral exploration and development company focused on developing the Schaft Creek deposit located in northwestern British Columbia. The deposit is situated within the upper source regions of Schaft Creek, which drains northerly into Mess Creek and onwards into the Stikine River. The Schaft Creek Project is located within the traditional territory of the Tahltan Nation. The Schaft Creek Project entered the British Columbia Environmental Assessment (EA) process in August 2006.

This report presents the results of the 2008 baseline aquatics assessment, which adds to data collected in 2006 and 2007 and further characterizes aquatic habitats in the Project area. Aquatic components (water quality, sediment quality, primary producers and secondary producers) were assessed in streams, rivers, wetlands and lakes within the Project area.

Similar to 2007, stream water hardness levels were greatest at each site during winter months and pH values were slightly alkaline. Nutrients peaked from May to July and the Skeeter Creek Watershed generally had the highest concentrations. Metals that most frequently exceeded the BC Maximum and CCME aquatic life guidelines include aluminum, cadmium, chromium, copper and iron. The sites that most often exceeded guidelines were in the Schaft Creek Watershed. At lake and wetland sites these guidelines were exceeded by total aluminum (L5), total and dissolved copper (WL7) and total and dissolved iron (WL10, WL11 and the Airstrip WL).

Stream substrates were primarily composed of sand; whereas, wetland and lake sediments generally contained a higher proportion of silt and clay. Nutrient concentrations in stream sediments were generally low or below detection in many cases. Most metal concentrations were very similar to the concentrations found in 2007 and the Schaft Creek sites generally had the lowest concentrations. Several metals exceeded the available guidelines including arsenic, chromium, copper, iron, nickel, selenium (wetlands only) and zinc.

Stream periphyton communities were almost completely composed of diatoms and average cell density was considerably lower than in previous years. Lake phytoplankton biomass was more than double the wetland biomass. Wetland and lake communities were composed of large proportions of bacillariophycae, chlorophytes and cyanophytes.

Similar to 2006 and 2007, the Skeeter Creek Watershed had the most dense benthos communities and the most dominant taxonomic groups at all stream sites were stoneflies (Plecoptera), dipterans, and mayflies (Ephemeroptera). Genus richness was greatest at SKC4 with the Schaft Creek Watershed having the lowest average richness. Diptera (flies) were the dominant taxonomic group in lake and wetland benthos communities. L2 had the highest mean zooplankton density, as was the case in 2007. Densities at both lakes are greater than what was found in for these communities in 2007 (ten times greater in the case of L5). Zooplankton communities were dominated by the cyclopoid and calanoid copepods.

Overall, streams in the Schaft Creek Watershed contained the greatest metal concentrations and community diversity among watersheds in the Project area was similar.

Table of Contents

SCHAFT CREEK PROJECT: AQUATIC RESOURCES BASELINE 2008

Table of Contents

List of Appendices

List of Figures

FIGURE **PAGE**

List of Tables

TABLE **PAGE**

List of Plates

PLATE **PAGE**

1. Introduction

1. Introduction

1.1 PROJECT SUMMARY

Copper Fox Metals Inc. (Copper Fox) is a Canadian mineral exploration and development company focused on developing the Schaft Creek deposit located in northwestern British Columbia, approximately 60 km south of the village of Telegraph Creek (Figure 1.1-1). The Schaft Creek deposit was discovered in 1957 and has since been investigated by prospecting, geological mapping, geophysical surveys as well as diamond and percussion drilling. The deposit is situated within the upper source regions of Schaft Creek, which drains northerly into Mess Creek and onwards into the Stikine River. The Stikine River is an international river that crosses the US/Canadian border near Wrangell, Alaska. The Schaft Creek deposit is a polymetallic (copper-gold-silver-molybdenum) deposit located in the Liard District of northwestern British Columbia (Latitude 57o 22′ 42″; Longitude 130o, 58′ 48.9″). The property is comprised of 40 mineral claims covering an area totalling approximately 20,932 ha within the Cassiar Iskut-Stikine Land and Resource Management Plan (Figure 1.1-2).

The Schaft Creek Project is located within the traditional territory of the Tahltan Nation. Copper Fox has been in discussions with the Tahltan Central Council (TCC) and the Tahltan Heritage Resources Environmental Assessment Team (THREAT) since initiating exploration activities in 2005. Copper Fox will continue to work together with the Tahltan Nation as work on the Schaft Creek Project continues.

The Schaft Creek Project entered the British Columbia Environmental Assessment (EA) process in August 2006. Although a formal federal decision has not yet been made, the Project will likely require federal approval as per the Canadian Environmental Assessment Act. Copper Fox has targeted the third quarter of 2010 for submission of their Schaft Creek EA Application.

The current mine plan would see ore mined from an open pit at a rate of 100,000 tonnes per day. The mine plan includes 812 million tonnes of Measured and Indicated Mineable resources providing for an estimated 23-year mine life. The Project is estimated to generate up to 2,100 jobs during the construction phase and approximately 700 permanent jobs during mine operations.

The deposit will be mined with large truck/shovel operations and typical drill and blast techniques. The ore will be crushed, milled, and filtered on site to produce separate copper and molybdenum concentrates. The Process Plant will include a typical comminution circuit (Semi-Autogenous Mill, Ball Mill, and Pebble Crusher) followed by a flotation circuit and a copper circuit with thickener, filtration and concentrate loadout and transportation. The Process Plant includes a designated molybdenum circuit with thickener, filtration, drying and bagging. A tailings thickener and water reclaim system will be used to recycle process water. The circuit will have a design capacity of 108,700 tonnes per day and a nominal capacity of 100,000 tonnes per day (36,000,000 tonnes per year). Approximately 293,000 tonnes of concentrates will be produced each year, which will be transported via truck to the port of Stewart, B.C, for onward shipping to markets.

Copper Fox will construct an access road to the mine site (Schaft Creek Access Road; Schaft Road) to the 65.1 km point of the Galore Creek Access Road (Galore Road). The Schaft Road will cover a distance of 39.5 km from the Galore Road to the Schaft mine site (Figure 1.1-3). Both the Galore and Schaft roads will be gravel roads with a six-metre wide driving surface. Pullouts and radio controls will be used to manage two-way traffic on the road. The Schaft Road will be a private road used to service the Schaft Creek mine.

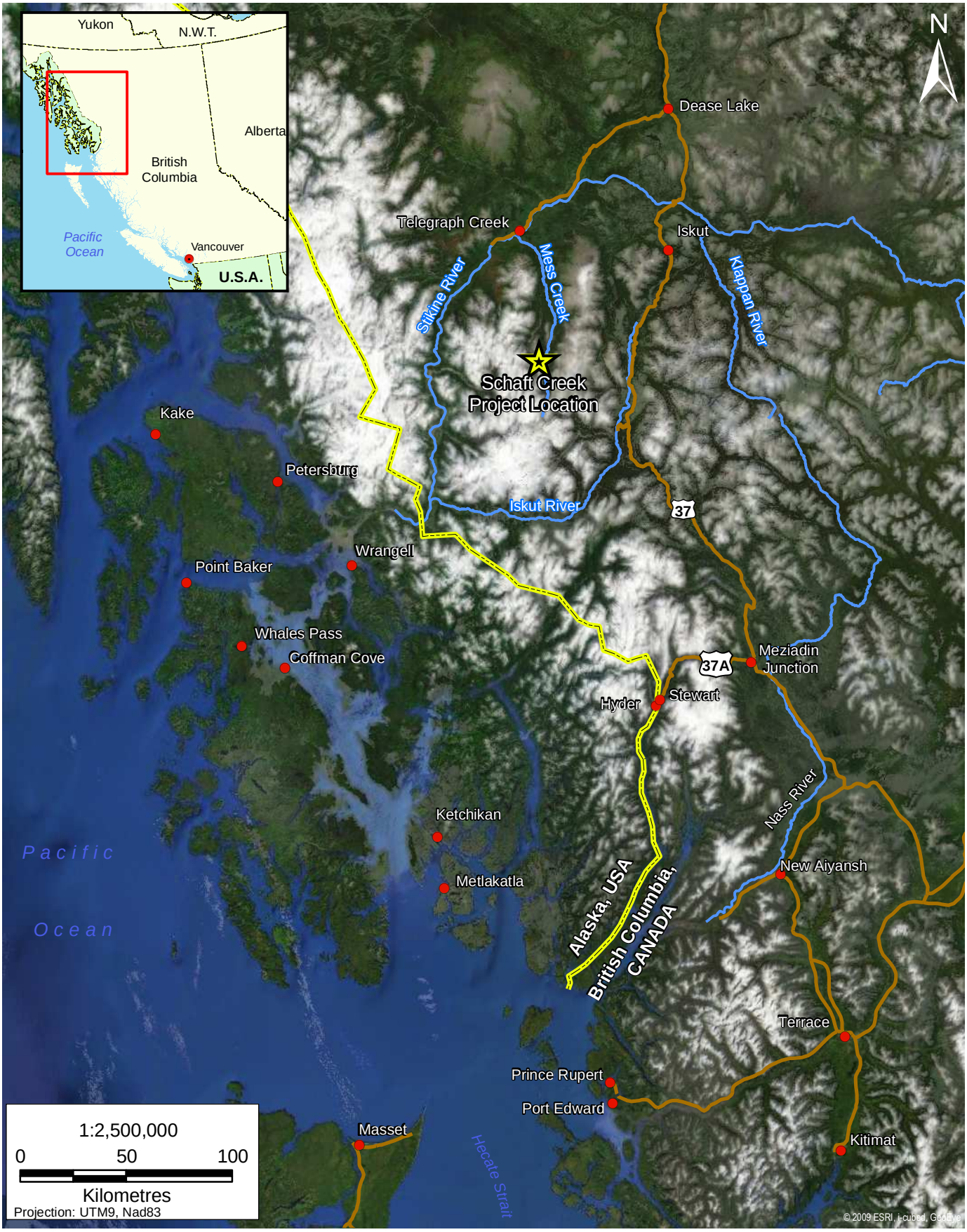
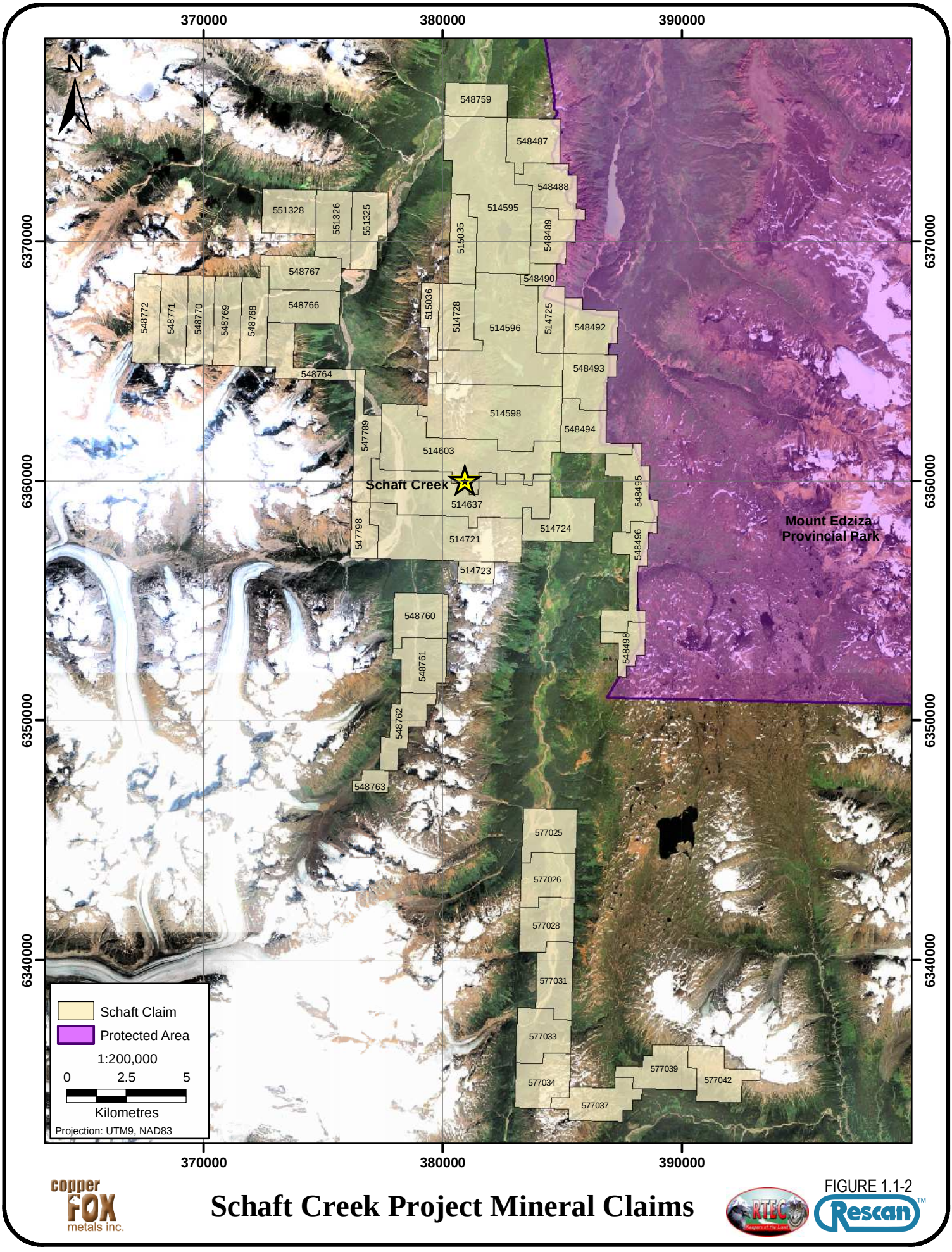


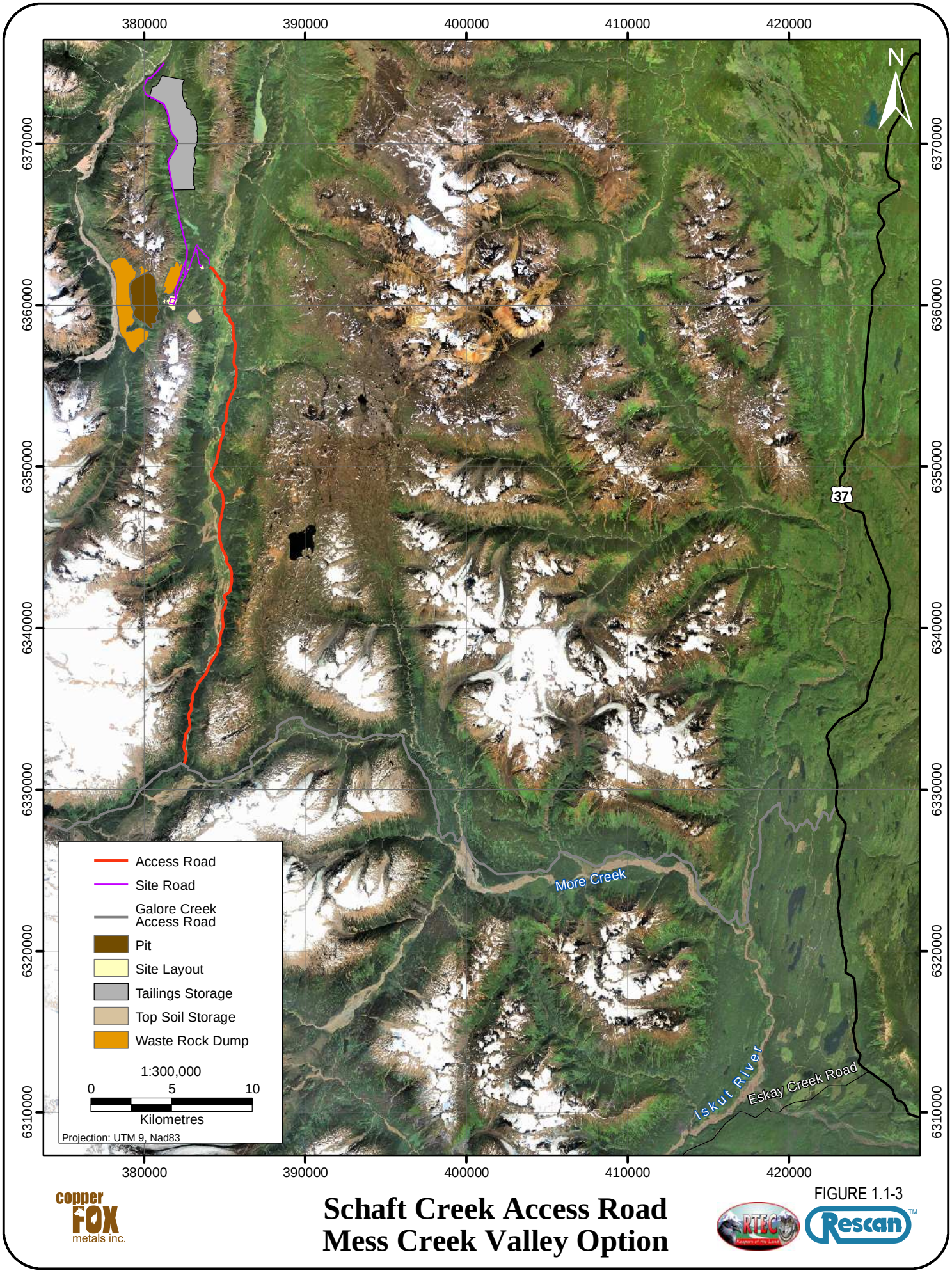
FIGURE 1.1-1

Location Map for Schaft Creek Project



Schaft Creek Project Mineral Claims

FIGURE 1.1-2



Schaft Creek Access Road
Mess Creek Valley Option

FIGURE 1.1-3

The Galore Road is a fully permitted multi-use road: British Columbia Ministry of Forests and Range Special Use Permit (S24637). Galore Creek Mining Corporation is constructing the Galore Road. Currently, Galore Creek Mining is only planning to construct the Galore Road to 40 km while they review the current Galore Creek Project for which the road was to service. Copper Fox will engage Galore Creek Mining with respect to the completion of the Galore Road, and if necessary, arrange to transfer the permit to Copper Fox as the Schaft Creek Project advances.

The Galore Road connects to Highway 37 near Bob Quinn Lake. The total road distance from the Schaft mine site to Highway 37 is 105 km. The majority of the 39.5 km Schaft Road is within the Mess Creek watershed. In order to avoid geohazards along the Mess Creek valley, the Schaft Road will cross Mess Creek twice (Figure 1.1-3). Mess Creek is considered navigable per Transportation Canada criteria.

After crossing Mess Creek at the north end of the Schaft Road (32.5 km), the route rises up the side of Mount LaCasse crossing Shift Creek (10 m bridge) and Big B Creek (10 m bridge). The route terminates at Snipe Lake (39.5 km). Conventional 30-tonne trucks will be used to transport concentrate from the mine site to the Bob Quinn area along the Schaft and Galore roads. From Bob Quinn to Stewart, convention B-train commercial truck haulage can then be used along Highway 37 and 37A. There will be 30 concentrate trucks along this route over a 24-hour period, seven days per week.

Electrical power to the mine site will be provided via a 138 kV transmission line, extending from Bob Quinn Lake to the Project along the proposed corridor for the Galore and Schaft roads. The proposed transmission line assumes that electrical power will be supplied from British Columba Transmission Corporation's (BCTC) proposed new 287 kV Northwest Transmission Line from a point near Bob Quinn Lake.

The Schaft Pit will encompass an area of 4.9 km2 at the end of the mine life (Figure 1.1-4). The Pit will extend 330 m below the current elevation (520 masl). An ore stockpile and crusher will be located between the Pit and Schaft Creek. Crushed ore will be conveyed to the Plant site on the saddle just east of the Pit. Tailings from the Process Plant will be piped to the Skeeter Tailings Storage Facility (TSF) as slurry (55% solids).

Over the life of the mine, the Project will generate over 812 million tonnes of tailings, which will be managed in the Skeeter TSF. The TSF will not span the low relief watershed divide between Skeeter and Start watersheds. The Skeeter TSF will require three embankments to contain the tailings generated over the life of the mine (Figure 1.1-5). Based on average climatic conditions, the TSF will have a positive water balance. Discharge from the TSF will be to Skeeter Creek.

The Project will generate an estimated 1,547 million tonnes of waste rock. Waste rock dumps are proposed around the perimeter of the Schaft Pit, with the majority of the material being placed on the east side of Schaft Creek (Figure 1.1-4). The current plan assumes the waste rock will be non-acid generating and will not leach metals at or near neutral pH. The plan is subject to change as work progresses on the metal leaching and acid rock drainage program.

The Project will be a fly-in, fly-out operation, and a new airfield capable of handling a Boeing 737 will be constructed to the east of the Pit. The preliminary design includes a 1,600 m compacted gravel landing strip, terminal building, fuelling facilities, small maintenance facility and control and lighting systems.

A permanent camp will be constructed to support approximately 700 employees. Other facilities include a truck shop, warehouse, administration, maintenance laboratory, explosive storage, water treatment facilities, and potable water storage.

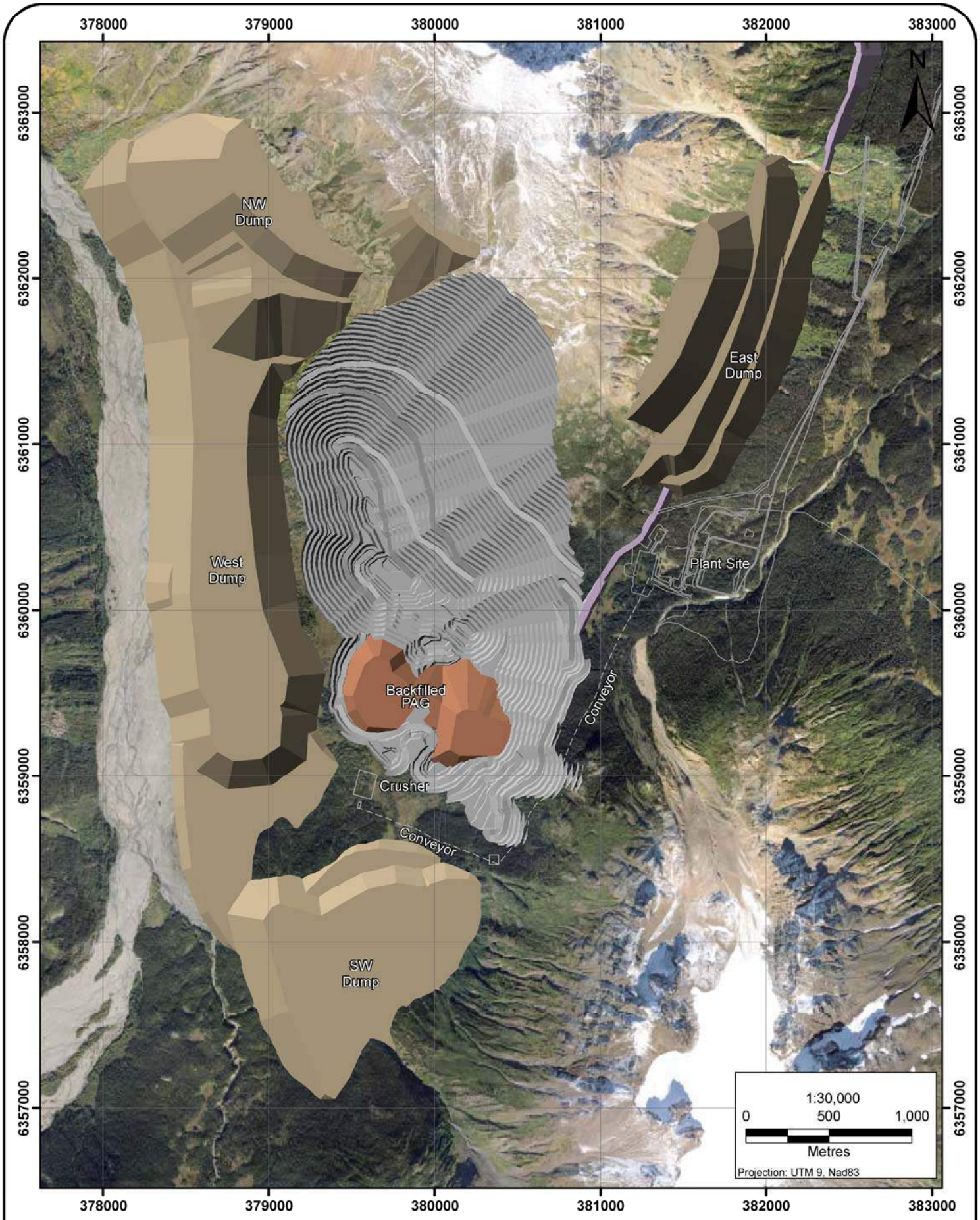
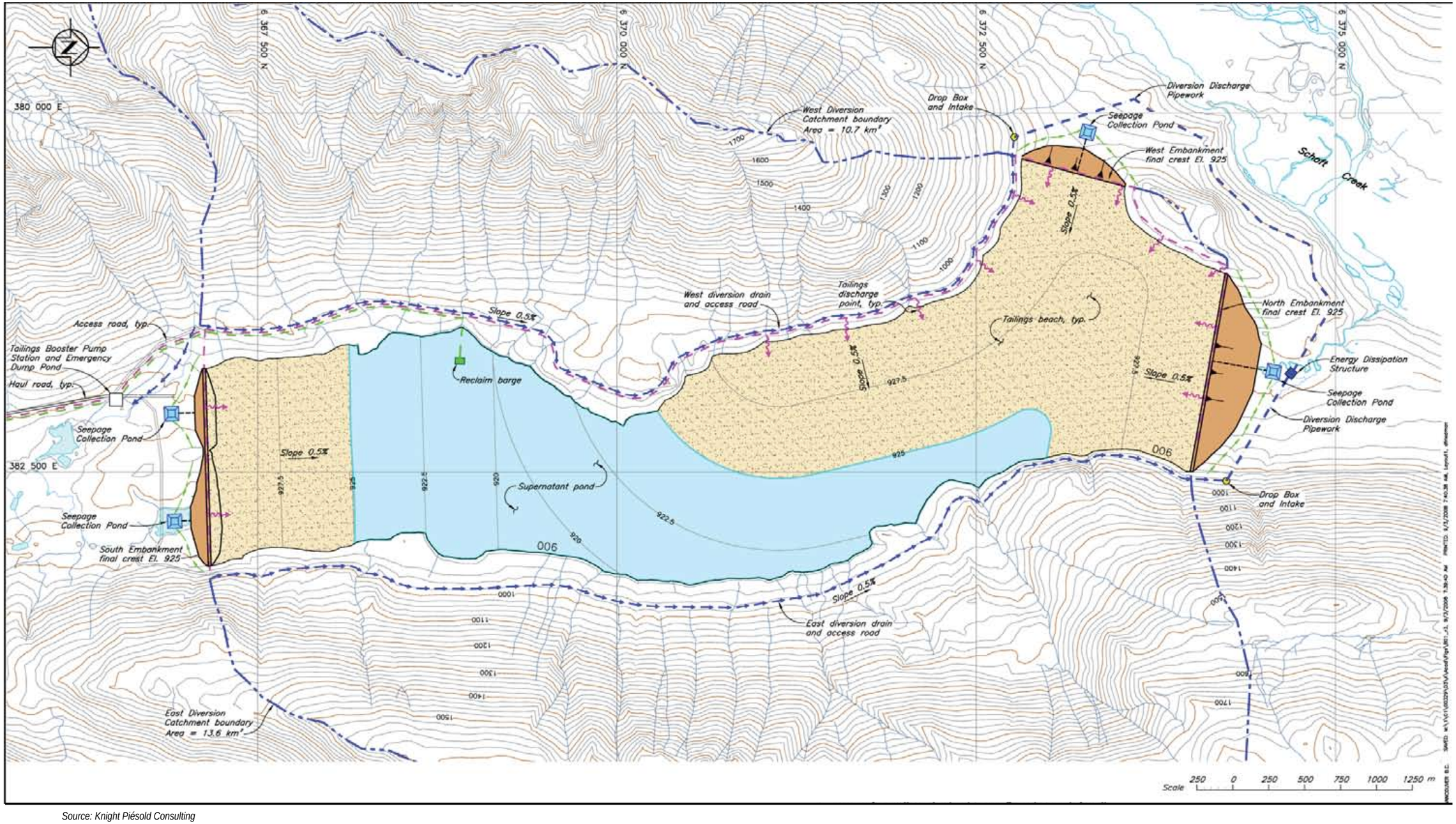


FIGURE 1.1-4

Schaft Creek Project Mine Site



Source: Knight Piésold Consulting

Note: This layout represents the tailings storage facility in the final years of operation prior to closure. Several years before the end of operations and closure, the tailings deposition pattern will be modified to relocate the supernatant pond towards the north of the facility, where a permanent spillway will be constructed in the west abutment of the North Embankment.

FIGURE 1.1-5

Schaft Creek Project - Skeeter Tailings Storage Facility

1.2 OBJECTIVES

This report presents the results of the 2008 baseline aquatics assessment. Aquatic components (water quality, sediment quality, primary producers and secondary producers) were assessed in streams, rivers, wetlands and lakes within the Project area. The goal of the 2008 aquatics program was to continue to add to the available data from 2006 and 2007 and to further characterize aquatic habitats. All available baseline data will provide an understanding of the natural variation in each component of the freshwater environment so monitoring programs may determine significant changes to these sites as a result of project activities.

2. Methods

2. Methods

2.1 STREAM STUDY DESIGN

Some stream sites that have been sampled in previous years were discontinued in 2008 either because they were no longer relevant to the Project (related to previously considered tailings options) or it was determined that there was sufficient data (~ two years) for these sites.

Figure 2.1-1 shows the location of sites where sampling occurred in 2008. WC1, MC5 and MC2 are visible on this figure even though sampling was discontinued during 2008 for these sites. WC1 and MC5 are included in the discussion of results in Section 3.1 as there were three or more samples for these sites. MC2 was not included in this discussion (or figures) as only one sample (March) was available for this site. All data are available in Appendix 3.1-1.

The 15 stream sites presented in this baseline report include data from the Schaft Creek (SC1, SC6, SC3, SC4, SC7, SC5 and SC8), Mess Creek (MT1, MC10, WC1 and MC5), Skeeter Creek (SKC1, SKC3 and SKC4) and Yehenico Creek (YC1) watersheds. SC1 and YC1 are considered reference sites for these data as they are upstream and beyond the reach of Project activities. In 2008, the 15 sites listed above were assessed for water quality and all but WC1, MC5 and MC2 were assessed for water quality, periphyton, benthic invertebrates and sediment quality.

2.2 STREAM WATER QUALITY

One water sample was collected per site per sampling period (Section 2.2.1) using standardized methods (RISC 1997). Water samples were analyzed for general physico-chemical variables, anions, nutrients, total cyanide, total organic carbon (TOC), and total and dissolved metals at the lowest feasible detection limit by ALS Environmental Services of Vancouver.

For each sample, the scientist stood facing upstream and triple-rinsed the bottle and cap prior to filling. Preservatives were added for total metals (ultra-pure nitric acid), TOC (hydrochloric acid), and total cyanides (NaOH). No air bubbles were left in any of the bottles. A list of all routine chemistry variables is presented along with the lowest method detection limits (MDL) in Table 2.1-1.

All data are presented in appendices (listed in Section 3.1). The analyzed data were then summarized for each variable by site and grouped by watershed. Some variables could not be measured reliably below a specified detection limit and are reported by the analytical laboratory as below that detection limit. When required for the purpose of statistical analyses and graphical presentation, these values (called non-detects) were replaced with half of the detection limit.

A summary table showing the mean, minimum and maximum value for the total and dissolved metals is presented in Section 3.1. This table also indicates how many times a site exceeded available CCME and BC water quality guidelines (CCME 1999; BC MOE 2006).

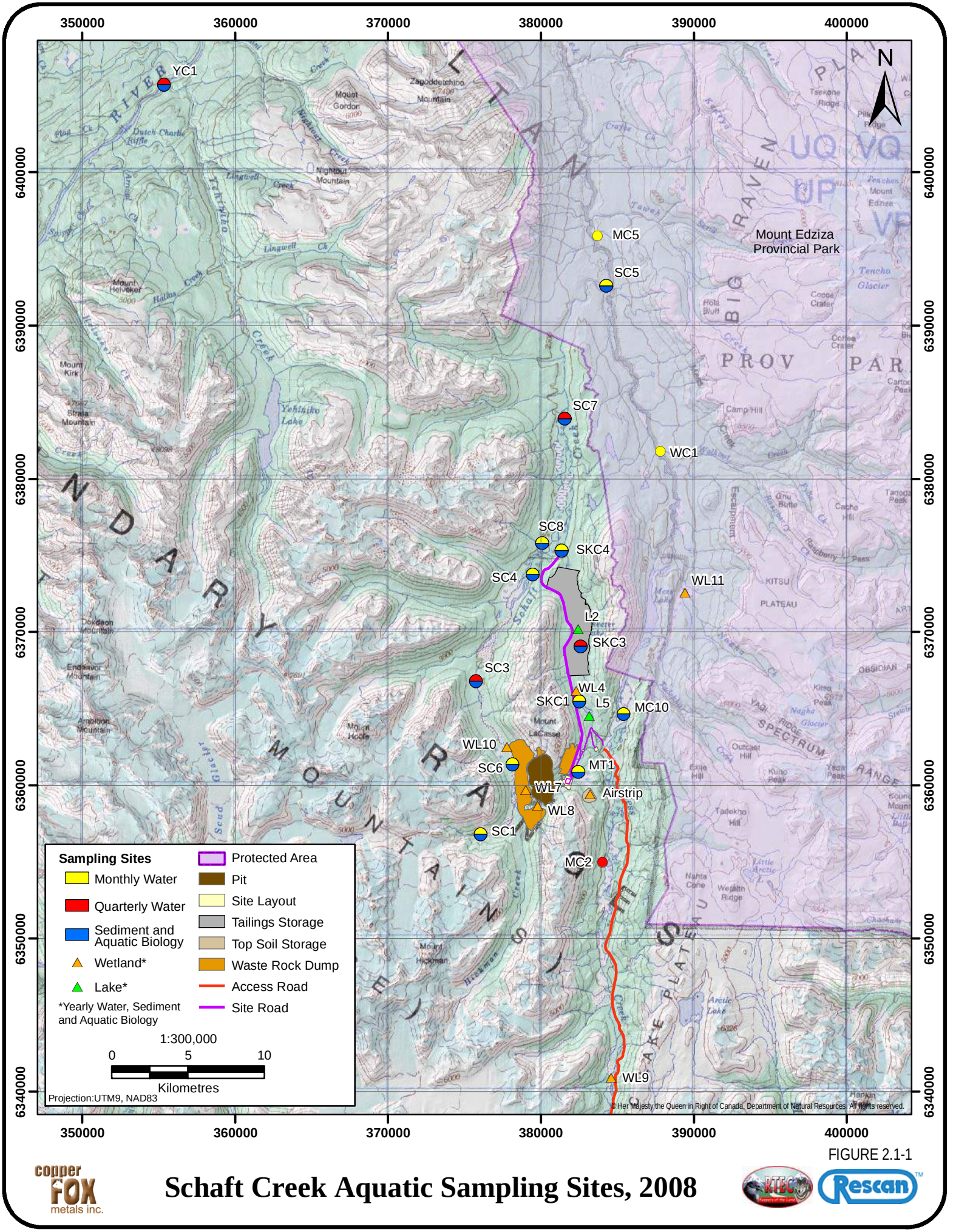


FIGURE 2.1-1

Schaft Creek Aquatic Sampling Sites, 2008

Table 2.1-1. Water Quality Variables and Lowest Method Detection Limits, 2008

Variable	Units	Detection Limit	Variable	Units	Detection Limit
Physical/Dissolved Anions			**Total and Dissolved Metals (cont'd)**		
Colour	Cu	5	Selenium	mg/L	0.0001
Conductivity	uS/cm	0.5	Silicon	mg/L	0.05
pH	pH	0.01	Silver	mg/L	0.00001
Total Suspended Solids	mg/L	3	Sodium	mg/L	2
Turbidity	NTU	0.1	Strontium	mg/L	0.0001
Total Dissolved Solids	mg/L	3	Thallium	mg/L	0.0001
Hardness	mg/L	0.5	Tin	mg/L	0.0001
Alkalinity, Bicarbonate (as $CaCO_3$)	mg/L	1	Titanium	mg/L	0.01
Alkalinity, Carbonate (as $CaCO_3$)	mg/L	1	Uranium	mg/L	0.00001
Alkalinity, Hydroxide (as $CaCO_3$)	mg/L	1	Vanadium	mg/L	0.001
Total Alkalinity (as $CaCO_3$)	mg/L	1	Zinc	mg/L	0.001
Acidity	mg/L	1	**Dissolved Metals**		
Bromide	mg/L	0.05	Aluminium	mg/L	0.001
Chloride	mg/L	0.5	Antimony	mg/L	0.0001
Fluoride	mg/L	0.02	Arsenic	mg/L	0.0001
Sulphate	mg/L	0.005	Barium	mg/L	0.00005
Nutrients			Beryllium	mg/L	0.0005
Ammonia Nitrogen	mg/L	0.005	Bismuth	mg/L	0.0005
Nitrate	mg/L	0.001	Boron	mg/L	0.01
Nitrite	mg/L	0.001	Cadmium	mg/L	0.000017
Total Kjeldahl Nitrogen	mg/L	0.05	Calcium	mg/L	0.02
Total Nitrogen	mg/L	0.002	Chromium	mg/L	0.0005
Total Phosphorus	mg/L	0.002	Cobalt	mg/L	0.0001
Cyanides	mg/L		Copper	mg/L	0.0001
Total Cyanide	mg/L	0.001	Iron	mg/L	0.03
Total and Dissolved Metals	mg/L		Lead	mg/L	0.00005
Aluminium	mg/L	0.001	Lithium	mg/L	0.005
Antimony	mg/L	0.0001	Magnesium	mg/L	0.005
Arsenic	mg/L	0.0001	Manganese	mg/L	0.00005
Barium	mg/L	0.00005	Mercury	mg/L	0.00001
Beryllium	mg/L	0.0005	Molybdenum	mg/L	0.00005
Bismuth	mg/L	0.0005	Nickel	mg/L	0.0005
Boron	mg/L	0.01	Phosphorous	mg/L	0.3
Cadmium	mg/L	0.000017	Potassium	mg/L	0.05
Calcium	mg/L	0.02	Selenium	mg/L	0.0001
Chromium	mg/L	0.0005	Silicon	mg/L	0.05
Cobalt	mg/L	0.0001	Silver	mg/L	0.00001
Copper	mg/L	0.0001	Sodium	mg/L	2
Iron	mg/L	0.03	Strontium	mg/L	0.0001
Lead	mg/L	0.00005	Thallium	mg/L	0.0001
Lithium	mg/L	0.005	Tin	mg/L	0.0001
Magnesium	mg/L	0.005	Titanium	mg/L	0.01
Manganese	mg/L	0.00005	Uranium	mg/L	0.00001
Mercury	mg/L	0.00001	Vanadium	mg/L	0.001
Molybdenum	mg/L	0.00005	Zinc	mg/L	0.001
Nickel	mg/L	0.0005	**Organic Variables**		
Phosphorous	mg/L	0.3	Total Organic Carbon	mg/L	0.5
Potassium	mg/L	0.05			

2.2.1 Sampling Period

Water quality sampling occurred either on a monthly or quarterly schedule depending on the data available and the site's proximity to Project activities. Figure 2.1-1 indicates which sites were designated for monthly or quarterly sampling. Weekly (freshet) samples were also collected SC6, SC5, MC10 and SKC4. At some sites a sample may not have been collected for a particular month (most often occurred during the winter months) as a result of the site being inaccessible (i.e. frozen or unsafe to sample).

2.2.2 Water Quality Assurance and Quality Control (QA/QC)

A separate set of bottles for field and travel blanks were included as part of the field QA/QC program. The travel blank bottles were filled with distilled deionised water in the laboratory and remained closed throughout the field trip. This allowed assessment of contamination associated with the laboratory procedures. The field blank bottles were also filled with distilled deionised water, but were opened in the field at a random site and preserved as required for certain analyses. This allowed assessment of contamination associated with field sampling (airborne contamination, contamination of the lid/bottle, *etc.*) and preservation procedures. All data for field and travel QA/QC are reported in appendices. The frequency of detection of a concentration for a water quality variable above the method detection limit (MDL) was noted for both travel and field blanks, indicating possible contamination.

A minimum of 10% of the water samples were randomly collected in duplicate in order to assess the magnitude and potential causes of variability between samples. For each pair of QA/QC field duplicates, the relative percent differences (RPD) were calculated,

where: $$RPD = 100 \mid rep1 - rep2 \mid /[(rep1 + rep2)/2]$$

The RPD between the duplicates is a measure of the variability inherent in field sampling (environmental heterogeneity, sampler handling leading to contamination). Water quality variables where one or both values were less than five times the MDL were not included in the RPD calculations because variability this close to the MDL is too high, according to the BC Field Sampling Manual (BCMWLAP 2003). Also, RPD values less than 20% were not considered notable. The BC provincial government suggests that any field duplicates with RPD values exceeding 20% should be noted and data should be interpreted accordingly. The results of RPD calculations were examined in order to detect patterns of high variation for multiple parameters within sample pairs, indicating possible contamination during field sampling.

Analyses were conducted utilizing the lowest possible detection limit. For some samples, detection limits were greater due to interference from high conductivity, high TSS, or a high metal value. These samples were diluted in the laboratory in order to facilitate analysis and the result is a higher detection limit for those particular samples.

2.3 STREAM SEDIMENT QUALITY

Sediment was collected at 14 stream sites in September, 2008 (Figure 2.1-1). Results for WL8 (a wetland site) are presented with stream sediment data (this is also the case for the periphyton and benthos results) since at the time of sampling in 2008 the only open water was flowing through a channel and the substrate was more similar to streams than wetlands (Plate 2.3-1). This was also the case in 2007 (Rescan 2008).

Plate 2.3-1. Aerial View of WL8.

Three composite samples were collected at each site. Methods for stream sediment sampling were standardized (RISC 1998) to collect multiple grab samples at stream stations. Sediment was spooned from the top 5 cm at depositional zones along the river. It was pooled (excess water drained off) and manually homogenized for one minute. Sediment was then carefully spooned into clean, pre-laboratoryelled Whirl-Pak bags, sealed (no air bubbles), and kept cool in the dark until analysis by ALS Environmental Services of Vancouver. This was done at three distinct areas per site (different braids, or different stretches of the main channel), covering a total stretch of 50 to 250 m, depending on site width and access, and resulted in three separate replicates per site.

Whole sediment samples were analyzed for moisture, particle size, nutrients, TOC, and total metals using the lowest feasible detection limit. A list of sediment variables is presented in Table 2.1-2. Non-detects were replaced by half of the detection limit. Data are summarized by site and watershed, and compared to the current working guidelines from the British Columbia Ministry of Environment (BC MOE 2006). These working guidelines are based on guidelines established in various Canadian (primarily the Canadian Council of the Ministers of the Environment or CCME; CCME 1999) and other North American jurisdictions.

Working guidelines include the Lowest Effect Level (LEL), Severe Effect Level (SEL) Interim Sediment Quality Guideline (ISQG) and the Probable Effect Level (PEL). Even though whole sediment samples were analysed for metals, it is possible to normalize this data to the percent of fines (<62 µm) in each sample as per the environmental effects monitoring (EEM) guidance document (Environment Canada 2003). The following equation (ESP 1996) is described in the EEM document to normalize this data:

$$Metal_{NF} = Metal / \% Fines$$

Where $Metal_{NF}$ is the metal concentration normalized to the percent fines in the sample. Although normalizing to the percent fines was not completed for every sample, sites that had a considerable proportion of fines present were identified in an effort to point out that bioavailable metals may actually occur at greater concentrations than reported for that site.

Table 2.1-2. Sediment Quality Variables and Detection Limits, 2008

Variable	Units	Detection Limit (mg/kg dry weight)	Variable	Units	Detection Limit (mg/kg dry weight)
Physical Tests			**Total Metals (cont'd)**		
Particle Size	%	1	Lithium	mg/kg	2
			Magnesium	mg/kg	50
Nutrients			Manganese	mg/kg	1
Available Phosphate	mg/kg	1	Mercury	mg/kg	0.005
Total Nitrogen	%	0.02	Molybdenum	mg/kg	4
Total Metals			Nickel	mg/kg	5
Aluminum	mg/kg	50	Phosphorus	mg/kg	50
Antimony	mg/kg	10	Potassium	mg/kg	200
Arsenic	mg/kg	5	Selenium	mg/kg	0.5
Barium	mg/kg	1	Silver	mg/kg	2
Beryllium	mg/kg	0.5	Sodium	mg/kg	200
Bismuth	mg/kg	20	Strontium	mg/kg	0.5
Cadmium	mg/kg	0.5	Thallium	mg/kg	1
Calcium	mg/kg	50	Tin	mg/kg	5
Chromium	mg/kg	2	Titanium	mg/kg	1
Cobalt	mg/kg	2	Vanadium	mg/kg	2
Copper	mg/kg	1	Zinc	mg/kg	1
Iron	mg/kg	50	**Organic Variable**		
Lead	mg/kg	30	Total Organic Carbon	%	0.1

2.4 STREAM PERIPHYTON

Periphyton sampling was conducted at each stream sites and WL8 in early September 2008 when sediment and biological surveys were scheduled. Samples were collected from three separate rocks per site using a toothbrush to gently sample a known surface area, assisted by a rinse bottle. Three areas were sampled from each rock (forming a composite sample: one for taxonomic identification and enumeration; one for measurement of chlorophyll *a* biomass) to accurately characterize the periphyton coverage and community composition.

Taxonomic samples were stored in 250 mL plastic bottles and preserved in Lugol's iodine solution. Taxonomic identification and enumeration was conducted by G3 Consulting Ltd. (Vancouver, BC). For each sample, genus richness, evenness and diversity (as Simpson diversity index) were calculated and mean and standard error by site was determined and graphed.

Chlorophyll α samples were prepared by filtering the sample through a 0.45 µm filter, folding it in half and wrapping it in tinfoil, and laboratoryelling and freezing it until analysis by ALS Environmental Services of Vancouver. Biomass as chlorophyll *a* (mean ± SE) was plotted by site.

2.5 STREAM BENTHIC INVERTEBRATES

Benthic macroinvertebrate communities were sampled at all stream sites and WL8 concurrently with periphyton surveys in September, 2008. Stream benthic samples were collected using a Hess sampler with a surface area of 0.096 m^2 and a mesh size of 250 µm. WL8 was also sampled in this way since the

site more resembled a stream than a wetland at the time of sampling. Five composite replicates were collected at each site (except WL8 as there was only enough habitat available to collect three composites) associated with potential mine effects. Each composite was composed of three pooled grab samples taken five to 10 m apart or located on separate braids of the stream.

For each stream subsample, the Hess sampler was driven 10 cm into the substrate of an undisturbed riffle zone, facing upstream with the cod-end trailing downstream. Larger gravel and rocks inside the sampler were carefully cleaned of dirt and debris (washed into the sampler area water) and thrown away. The sediment was then stirred, scrubbed, and lifted up and dropped inside the Hess sampler allowing the stream current to wash benthos into the cod-end. The mesh of the sampler was carefully washed and rinsed into the cod-end to capture all benthos contained in the sampler area. Once the three subsamples were collected, all contents were then carefully transferred to a clean 500 mL, pre-labelled plastic jar which was then filled with 10% buffered formalin. Replicate samples were preserved separately in plastic jars.

Taxonomic identification and enumeration was conducted by Biologica Environmental Services (Victoria, BC). Invertebrates were sorted and identified to the lowest possible taxonomic level (usually genus). Genus richness, evenness, Simpson's Diversity and Bray-Curtis Similarity indices were calculated for each sample. Richness of Ephemeroptera/Plecoptera/Trichoptera (EPT), which are three important taxonomic groups usually associated with pristine stream environments, was also calculated for each site. Their constant exposure to substrate and potential contaminants make benthic invertebrates important indicators of aquatic impacts and are therefore an important feature of aquatic environmental effects monitoring programs (Environment Canada 2003).

2.6 LAKE AND WETLAND STUDY DESIGN

In 2008, a total of two lake (L2, or Skeeter Lake and L5, or Start Lake) and seven wetland (WL7, WL10, WL4, WL9, WL11, Airstrip WL and WL8) sites were assessed for phytoplankton, benthic invertebrates, sediment quality and water quality (Figure 2.1-1). Sampling occurred in August (except for WL8 which was sampled during stream work in September), with the objective to further characterize aquatic communities and habitat in the receiving environment that will be potentially impacted or receive discharge during mine operations.

2.7 LAND AND WETLAND WATER QUALITY

Water samples from wetlands and lakes were collected once at each site during 2008. Preservation and analyses of water samples was identical to that done for stream water samples. All data are presented in appendices (listed in Section 3.1) and variables thought to be most relevant to potential water quality issues within the Schaft Creek Project area have been presented graphically. As was described above for stream water quality samples, field and travel blanks were collected and RPD duplicate samples were analyzed.

2.8 PHYSICAL LIMNOLOGY

Physical limnology variables were measured at two lakes. These variables included Secchi depth, surface pH and conductivity and depth profiles of dissolved oxygen and temperature measured at the deepest point in the lake.

Secchi depth, a measure of water transparency, was determined using a standard 20 cm black and white Secchi disk. Using a metered line, the weighted Secchi disk was lowered over the shaded side of

the boat until it was no longer visible in the water column. The disk was then slowly raised until it once again became visible, and the depth was recorded to the nearest 10 cm.

Depth profiles were measured using a YSI Model 85 meter and probe to determine the degree and position of stratification, if present. Both before and after conducting a profile, the membrane of the probe was checked for air bubbles. If air bubbles were present, the membrane was replaced and the profile was redone. After initial calibration, measurements were taken just below the surface and at 1m intervals. The probe was lowered to a depth of 1 m above the sediment-water interface (as indicated by the depth sounder).

2.9 LAKE AND WETLAND SEDIMENT QUALITY

Three composite samples were collected at each site. An Ekman sampler was used to collect bottom sediment from three distinct zones at each lake or wetland (Plate 2.9-1). At each zone, three separate grabs were collected a minimum of 5 m apart and sediment was then pooled into one composite. Sediment was first photographed and physical appearance (organics, homogeneity, and organisms) noted. The top 4 cm of the Ekman grab sample was then spooned off and deposited into a clean stainless steel bowl. The top layer of three separate grabs were then homogenized using a stainless steel spoon for one minute, and sediment was then spooned into clean, pre-laboratoryelled Whirl-Pak bags, sealed (no air bubbles), and kept cool in the dark until analysis by ALS Environmental Services of Vancouver.

Wetland and lake whole sediment samples were analyzed for the same variables (nutrients, total metals, TOC, particle size) as done for stream sediment samples (Table 2.1-2). Procedures for sample handling, transport and comparison of data to guidelines were identical to those described for stream samples.

2.10 LAKE AND WETLAND PHYTOPLANKTON

At lake and wetland sites phytoplankton communities were sampled for biomass (chlorophyll α) as well as taxonomic composition and enumeration. A replicate consisting of a pair of 1 L pre-laboratoryelled plastic bottles were filled with surface water. Samples were collected by immersing the pre-laboratoryelled 1 L clear plastic sample bottles just below surface. One bottle from each replicate pair was used for determination of chlorophyll α biomass, and the other was used to determine taxonomic composition and enumeration.

The samples were kept cool and dark and transported back to camp. Known volumes of the 1 L samples for biomass determination were filtered onto 47 mm membrane filters using a hand pump and filter apparatus. The filters (with 0.45 µm pore size) were carefully folded in half, wrapped in aluminum foil, laboratoryelled with sampling information and frozen. Samples were kept frozen and transported to ALS Environmental Services in Vancouver for analyses.

Samples for taxonomic identification were preserved with Lugol's iodine solution, kept cool and dark and transported to Fraser Environmental Services (Surrey, BC) for taxonomic identification and enumeration.

Plate 2.9-1. Sampling Sediment at Airstrip WL with Ekman.

2.11 LAKE AND WETLAND BENTHIC INVERTEBRATES

Benthic macroinvertebrate communities were sampled at lake and wetland sites concurrently with primary producer surveys. A sample replicate was collected with a standard Ekman grab at three zones within the site. Each replicate was composed of three grabs pooled together to form a composite sample. Ekman grabs were brought to the surface and contents were released into a 500 µm mesh sieve bucket. The bucket was one third submersed in the water while sieving and spinning continued until no silt clouds were produced in surrounding water. The remaining benthos from three successful grabs were rinsed into a clean, pre-laboratoryeled 500 ml jar. Procedures for sample handling, preservation, transport and analysis were identical to those described for the stream samples.

2.12 LAKE ZOOPLANKTON

Zooplankton communities were sampled for taxonomic composition and enumeration at each lake site (Figure 2.1-1). As with other sampling, three separate zones were identified to provide three composite replicates per site. Each replicate sample was made up of the contents of three separate zooplankton hauls using a 0.3 m diameter (118 µm mesh) net. For each haul, the net was lowered to a known depth using a metered cable line. The net was then raised to the surface at a constant speed of approximately 0.5 m/s. Each time the net was brought to the surface, the contents of the cod end were transferred into the same pre-laboratoryelled, clean, 500 ml wide mouth plastic jar and preserved with buffered formalin. Sample jars were closed, agitated gently, and kept cool and dark during storage and transport to Biologica Environmental Services (Victoria, BC), for taxonomic identification and enumeration. Data were analyzed for density, relative abundance, genus richness

diversity and evenness. Zooplankton densities were normalized to number of organisms/m^3 by calculating the volume of water the zooplankton net filtered.

2.13 DATA ANALYSIS

The number of organisms per sample was converted to density (organisms/m^2 for benthos, organisms/m^3 for zooplankton, cells/cm^2 for periphyton and cells/L for phytoplankton) by dividing the each sample by the area or volume sampled and calculating the mean of all replicates. All graphically represented data and the calculation of means and standard errors were produced using SigmaPlot software (SYSTAT 2006).

Genus richness, diversity indices and Bray-Curtis Similarity were calculated were calculated using Primer (Clark and Gorley 2006). The results presented from the Bray-Curtis analysis are similarity values, not dissimilarity values, since similarity is interpreted more intuitively. Richness is defined as the number of separate genera present in a sample. In assessing genus richness multiple species of the same genus were pooled together. For sites where the available data only occurred at higher taxonomic levels (e.g., Family or Order), a single genus was considered to be present in the sample.

Simpson's Index is a dominance-type index and is calculated based on the formula:

$$D_s = \sum_{i=1}^{s} [\, n_i(n_i-1)] \,/\, [N(N-1)]$$

where n_i is the number of individuals in the i^{th} species and N is the total number of individuals.

2.14 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

The same QA/QC measures that were used for stream water sampling were applied to lake samples, including the use of field and travel blanks to monitor for contamination during sampling and transport. In addition to this, an equipment blank was used during lake water sampling to assess potential contamination from the equipment required for deep water sampling.

Replicate samples were collected at each site for sediment, phytoplankton, zooplankton and benthos sampling. Additionally, at 10% of the sites, one sediment sample was split for QA/QC purposes to ensure that sample homogenization was thorough. The RPD statistic was used to assess the degree of homogenization. Variables where one or both values were less than five times the MDL were not included in the RPD calculations because variability near the MDL is too high, according to the BC Field Sampling Manual (BC MWLAP 2003).

3. Results

3. Results

The results from the 2008 baseline studies are discussed below. The discussion is organized by presenting all stream data first followed by all data for lakes and wetlands.

3.1 STREAM WATER QUALITY

3.1.1 General Variables and Nutrients

All data for receiving environment stream water quality are provided in Appendix 3.1-1. All detection limits for these data are in Appendix 3.1-2.

Key physical variables are presented graphically and discussed below. Within each figure, sites are shown from upstream to downstream, and are grouped by watershed. If available, CCME and BC guidelines are indicated on figures. SC1 within Schaft Creek and YC1 (on Yehiniko Creek, a tributary to the Stikine River) are considered reference stream sites for monitoring changes in water quality.

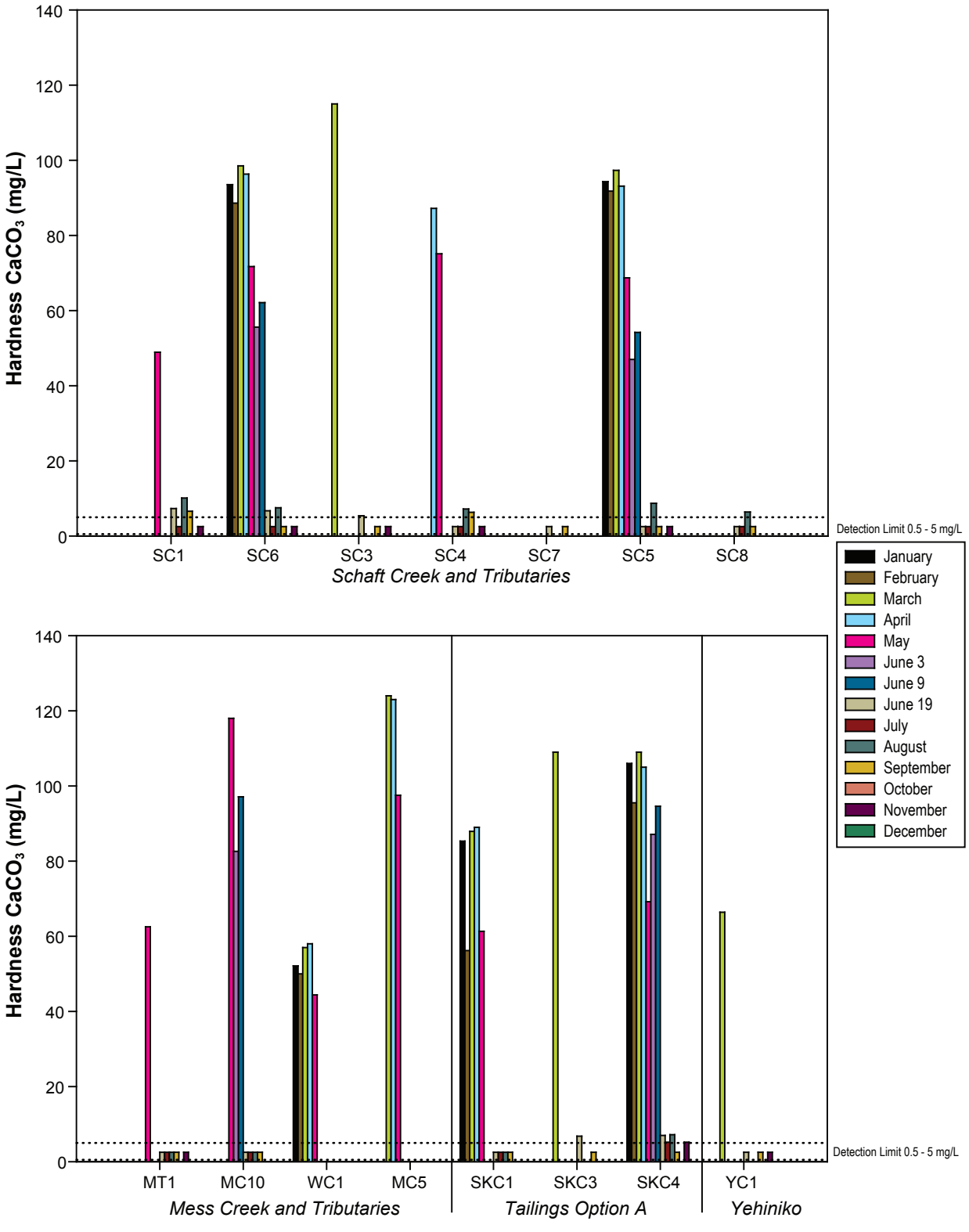
Hardness levels (as $CaCO_3$) in stream water quality were generally greatest at each site during winter (January to March) and spring and decreased during the summer months (Figure 3.1-1). Hardness ranged from below detection at most sites during the summer to 123 mg/L (MC5, March) and were similar to 2007 concentrations (Rescan 2008). No BC or CCME aquatic life guidelines exist for hardness.

All pH values were within range of the CCME guideline of pH 6.5 to 9.0 (Figure 3.1-2). The lowest pH was found at SC8 (6.80, August) but most readings were slightly alkaline falling between 7.70 and 8.00. No seasonal or spatial trends were observed.

Concentrations of total suspended solids (TSS) were generally below 150 mg/L at each site (Figure 3.1-3). The exceptions to this include SC6 (540 mg/L; June 9) and SC5 (187 mg/L; May). These TSS concentrations are similar to what was seen in 2007. Although during 2007 more sites from Schaft Creek showed a spike in TSS and it occurred later than in 2008 (early July). CCME or BC aquatic life guidelines are dependent on background TSS concentrations.

Total nitrogen (TN) concentrations were most often between 0.10 and 0.20 mg/L (Figure 3.1-4). TN concentrations were lowest, below detection in several cases, in the August and September, which may be a result of increased biological uptake during this period of high productivity, reduced nutrient input compared to the spring freshet or a combination of both these factors. The highest TN concentration observed was 0.50 mg/L at SC1 (June 19). No CCME or BC aquatic life guidelines exist for TN.

Total phosphate (as phosphorus; TP) concentrations peaked at each site either in June or July (Figure 3.1-5). Where most concentrations at other times were below 1 mg/L (as was observed in 2007), TP concentrations in June and July primarily fell between 1 and 10 mg/L. Exceptions to this were SKC1 and SKC4, which both had TP concentrations near 20 mg/L for those two months. No CCME or BC aquatic life guidelines exist for exceeding TP concentrations.



Note: No CCME or BC aquatic life guidelines exist.
Dotted line represents analytical detection limit.

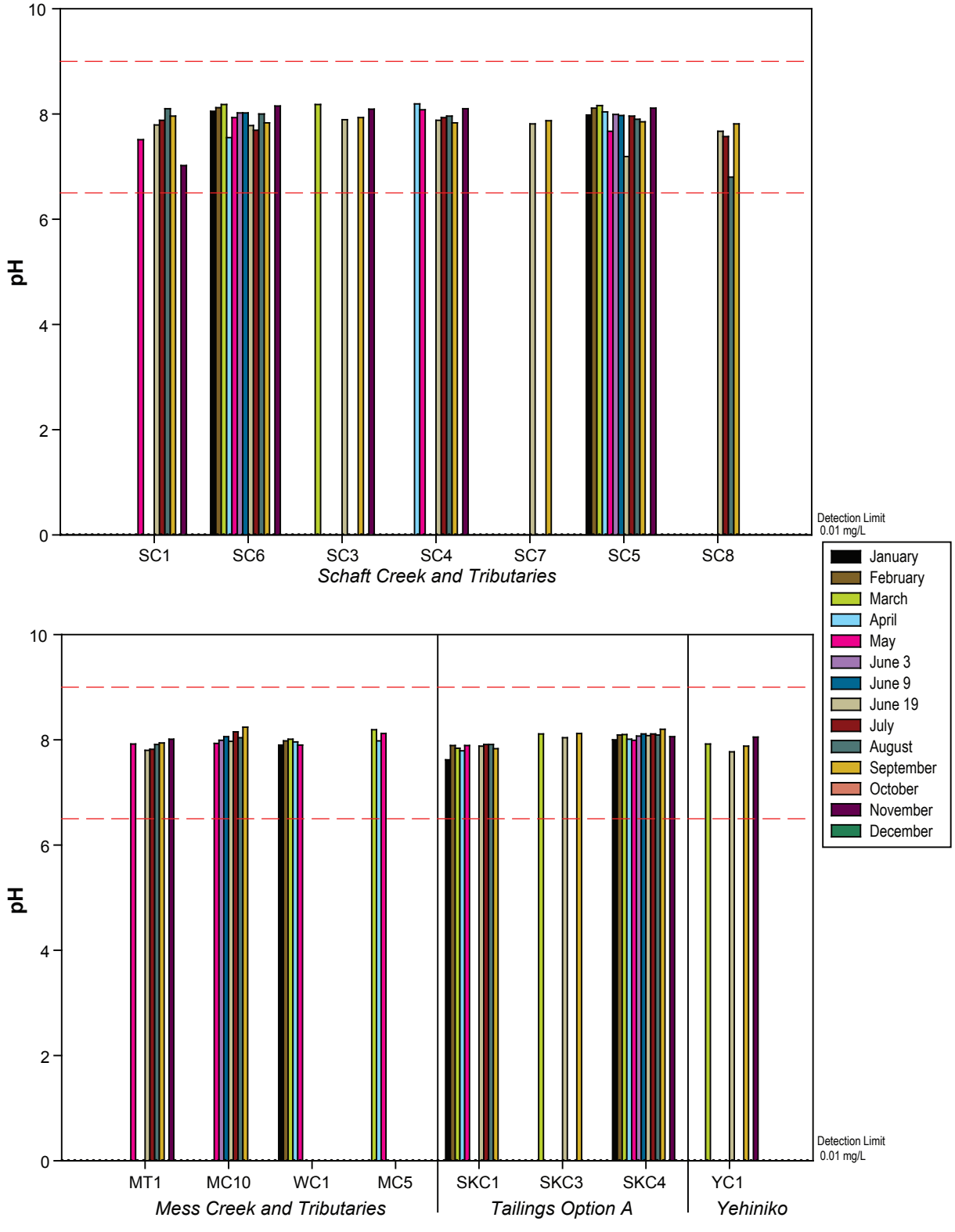
FIGURE 3.1-1

Hardness Concentrations in Schaft Creek Project Streams, 2008

copper FOX metals inc.

Rescan™

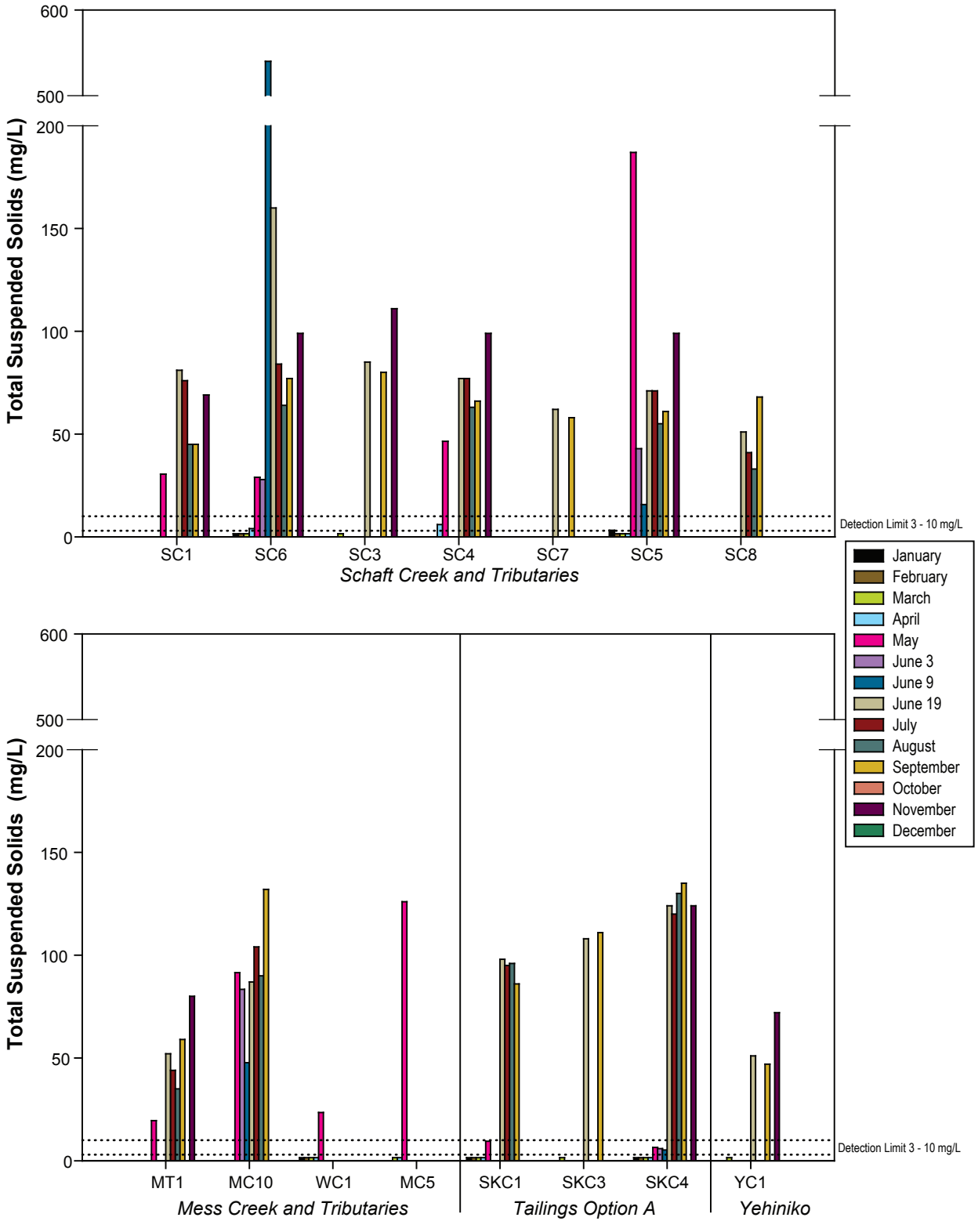
RTEC



Notes: Dashed red line represents CCME guideline (6.5 and 9.0).
Dotted line represents analytical detection limit.

FIGURE 3.1-2

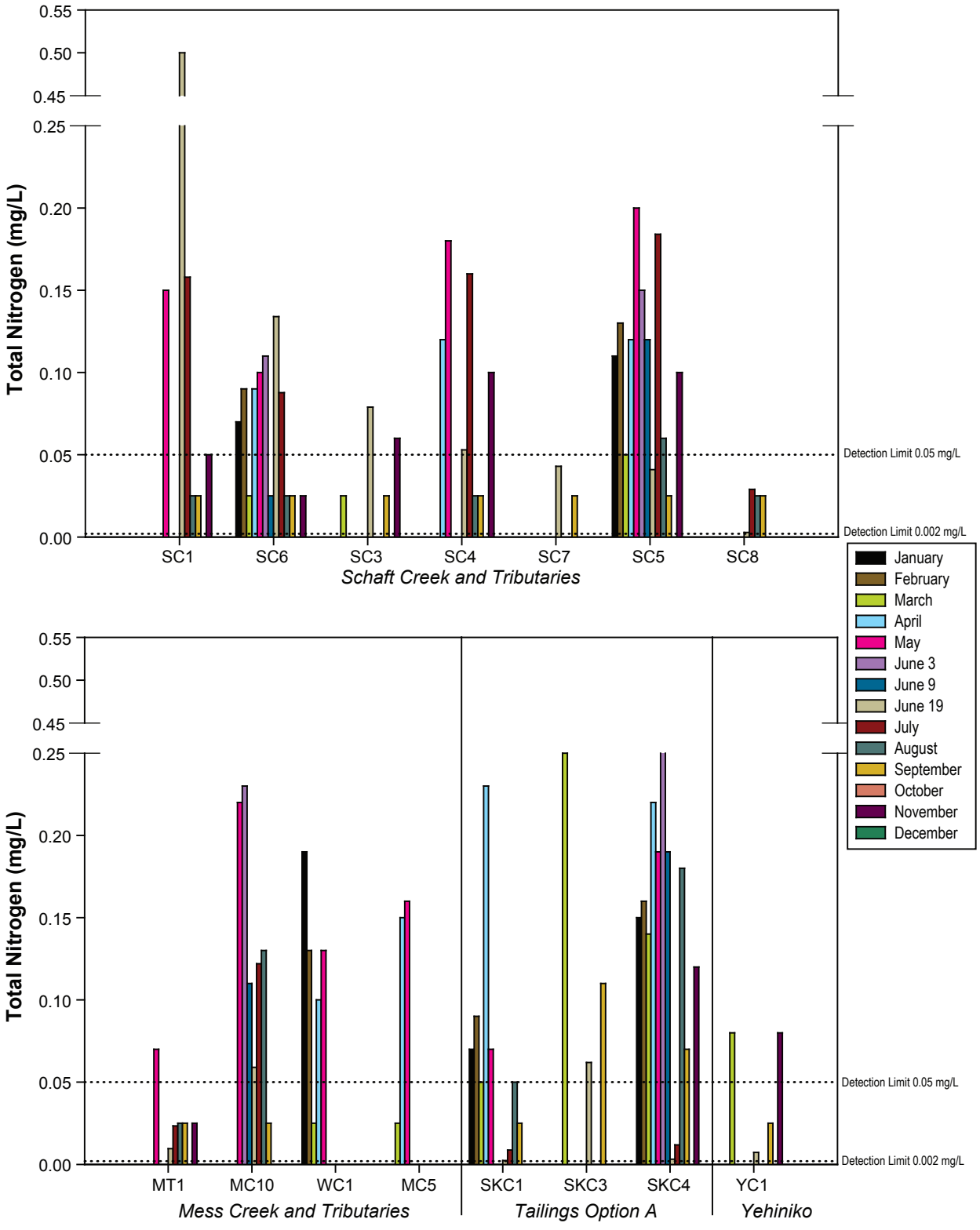
pH Values in Schaft Creek Project Streams, 2008



Notes: CCME or BC aquatic life guidelines depend on background.
Dotted line represents analytical detection limit.

FIGURE 3.1-3

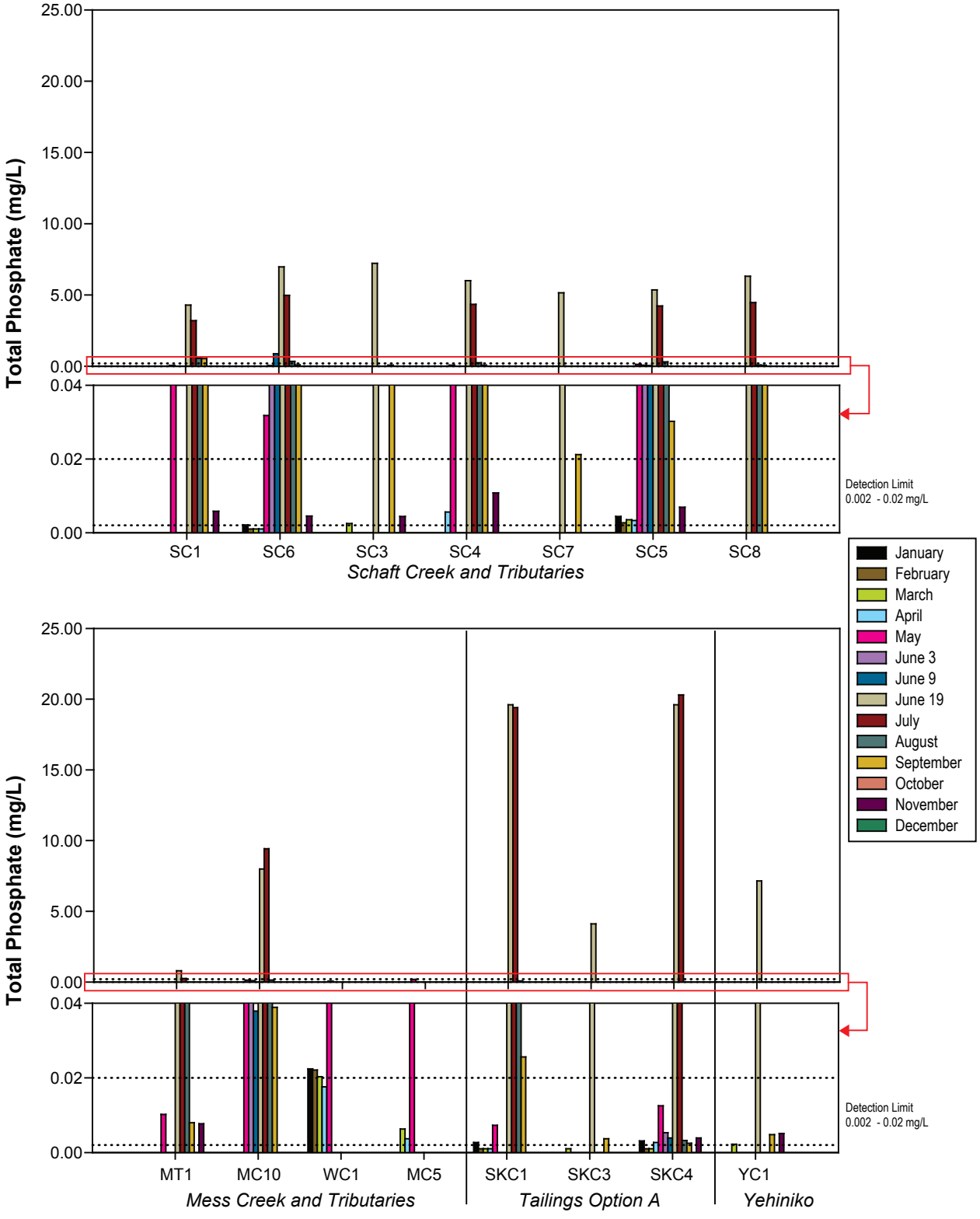
Total Suspended Solid Concentrations in Schaft Creek Project Streams, 2008



Notes: No CCME or BC aquatic life guidelines exist.
Dotted line represents analytical detection limit.

FIGURE 3.1-4

Total Nitrogen Concentrations in Schaft Creek Project Streams, 2008



Notes: No CCME or BC aquatic life guidelines exist.
Dotted line represents analytical detection limit.

FIGURE 3.1-5

Total Phosphate Concentrations in Schaft Creek Project Streams, 2008

In all sites that were sampled in May, total organic carbon (TOC) was highest during that month (Figure 3.1-6). The highest concentration was observed at SKC3 (7.9 mg/L) on June 19th (no May sample available for this site) and SKC4, the outflow of Skeeter Lake (L2), had the highest TOC each month (except for the June 19 sampling period). No CCME or BC aquatic life guidelines exist for TOC.

Total cyanide concentrations were below the detection limit of 0.0010 mg/L at most sites each month (Figure 3.1-7). However, a spike was seen in the spring (May for all sites; June 19th for SKC3), corresponds to the pattern seen for TOC concentrations. The June 19th sample at SKC3 (0.006 mg/L) clearly exceeded the CCME guideline of 0.005 mg/L.

3.1.2 Total and Dissolved Metals

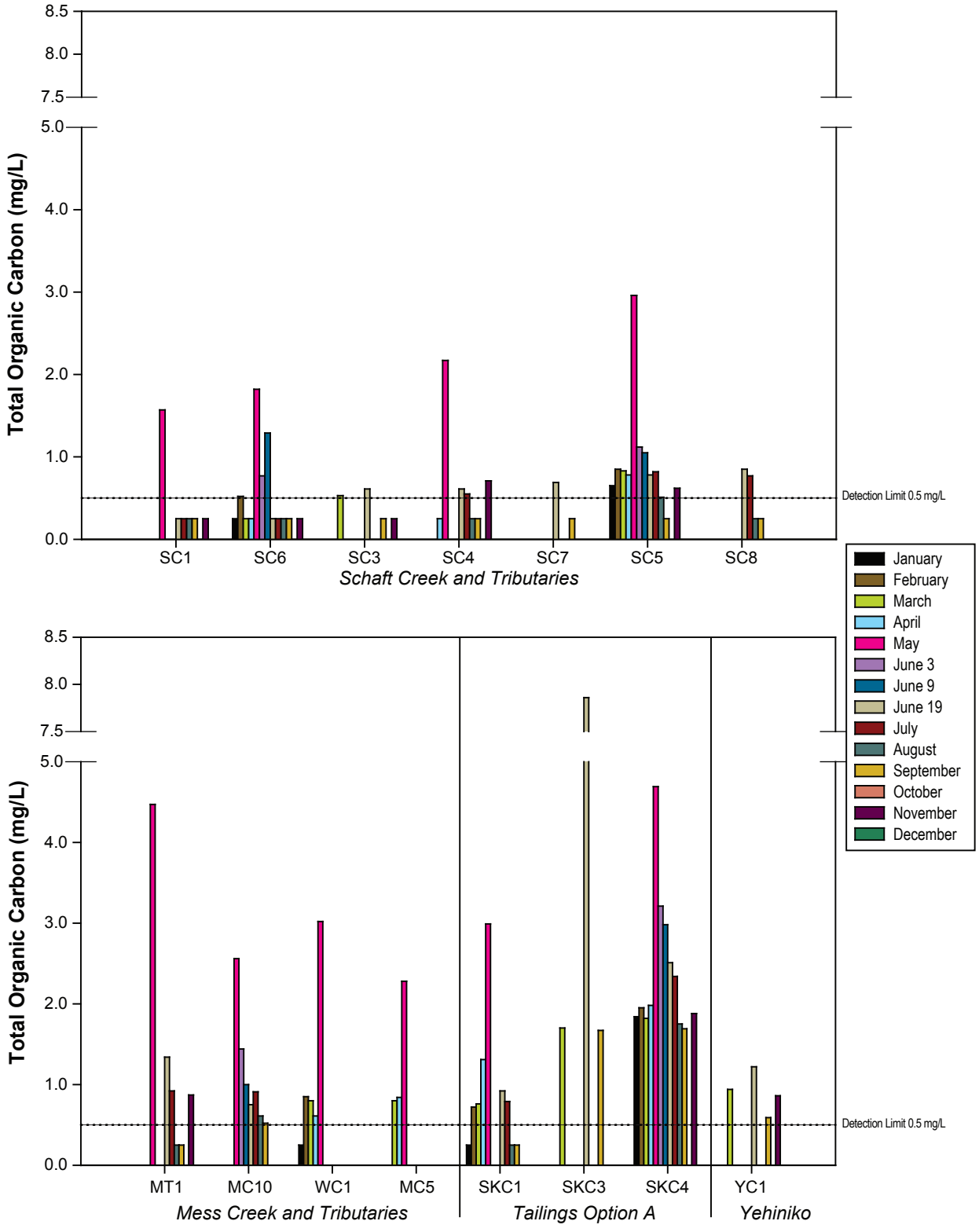
All data for receiving environment stream water quality are provided in Appendix 3.1-1 and all detection limits in Appendix 3.1-2. Metals with guidelines were screened for exceedances and those metals with greater than 60% of samples below detection are not discussed with a figure or in detail. However, a comment may be made to make a comparison to concentrations from previous years. CCME and BC guidelines for total metals were used to screen both total and dissolved metal concentrations, except for dissolved aluminium which has a specific BC guideline. Often in 2008 SC1, SC6 and MC10 had the greatest metal concentrations.

Total and dissolved metals data were summarized (mean, minimum, maximum) by variable for each site in Appendix 3.1-3. This summary table also indicates the number of times a particular site exceeded CCME and BC guidelines.

Total aluminum (T-Al) concentrations ranged from 0.005 mg/L (SKC1) to 11.1 mg/L (SC1) (Figure 3.1-8). The greatest concentrations at each site generally occurred in mid-June, July or August. SC1 also had the highest T-Al concentrations in 2007 (16 mg/L in July; Rescan 2008). Of the samples analysed, 51% exceeded the CCME guideline for T-Al (0.1 mg/L at pH >= 6.5) with each site exceeding the CCME guideline at least once during the sampling period (Appendix 3.1-3). Dissolved aluminum (D-Al) concentrations ranged from below detection limits at several sites to 0.54 mg/L at SC6 (July) indicating that in comparison to the T-Al concentrations, the majority of aluminum was particulate bound (Figure 3.1-9). The BC and CCME guidelines used for D-Al were exceeded by 8% of samples at SC1, SC6 and SC5 (Appendix 3.1-3) primarily in June or August.

Total arsenic (T-As) ranged from below the detection limit at SC4 and SC8 to 0.0077 mg/L at MC10 (May) (Figure 3.1-10). The BC Max and CCME guideline of 0.005 mg/L for T-As was exceeded at MC10 only (May and August). All other sites were well below this guideline value and generally below 0.002 mg/L. Dissolved arsenic (D-As) concentrations were generally well below 0.001 mg/L (Figure 3.1-11). Concentrations ranged from below the detection limit at several sites to 0.018 mg/L at SC6.

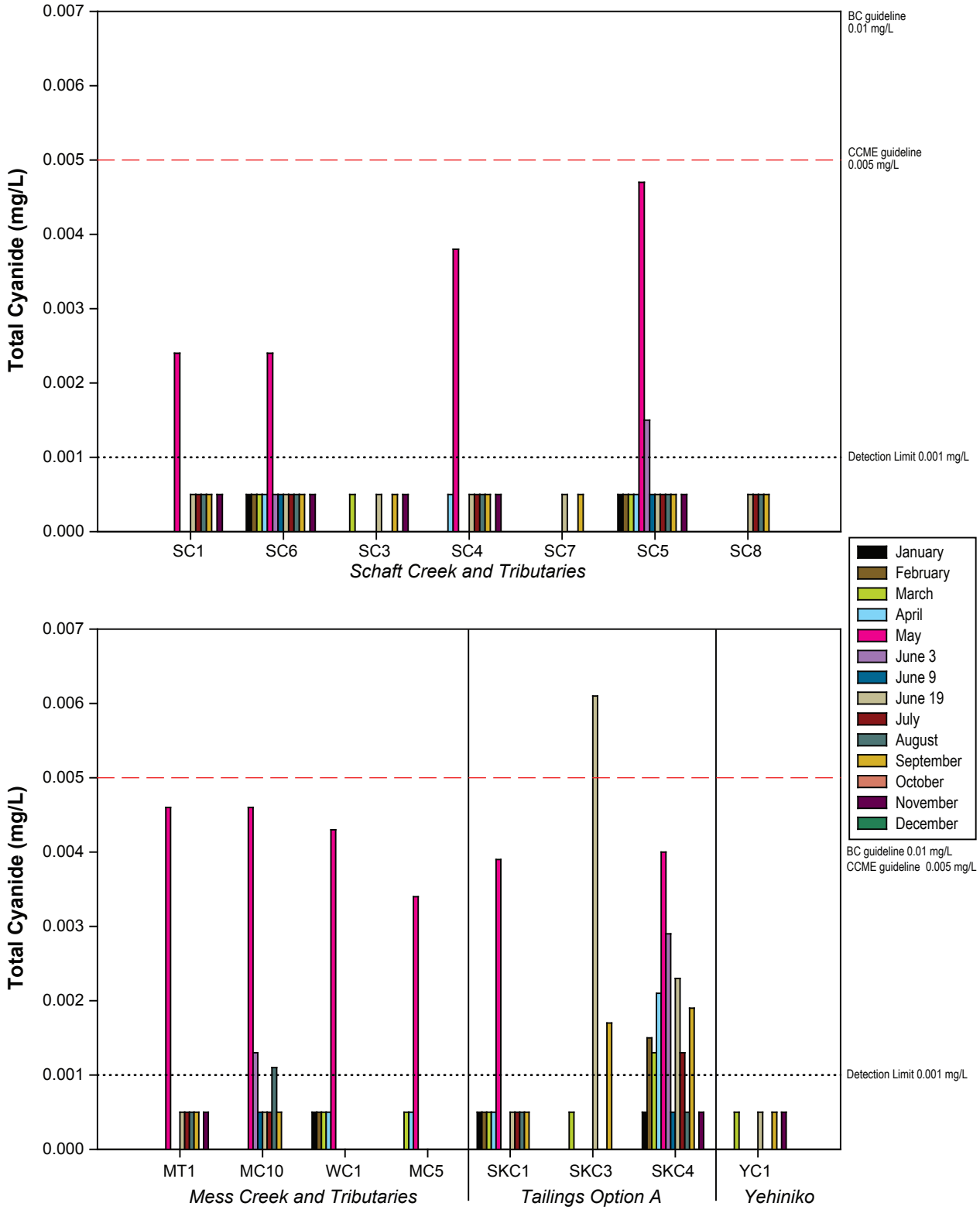
Several samples were below the detection limit for total cadmium (T-Cd) with SKC4 having the greatest concentration at just below 0.00014 mg/L (September) (Figure 3.1-12). It should be noted that all other samples in 2008 for SKC4 and all 2007 samples were below detection limits for T-Cd and this high concentration in September is an anomaly. The BC Max guideline for T-Cd is hardness dependent and the CCME guideline is 0.000017 mg/L. These guidelines were exceeded by several sites (27% for BC Max and 42% for CCME) more than once (Appendix 3.1-3). SC6 and MC10 were the sites that most often exceeded guidelines. Dissolved cadmium concentrations were all below detection.



Notes: Dotted line represents analytical detection limit.

FIGURE 3.1-6

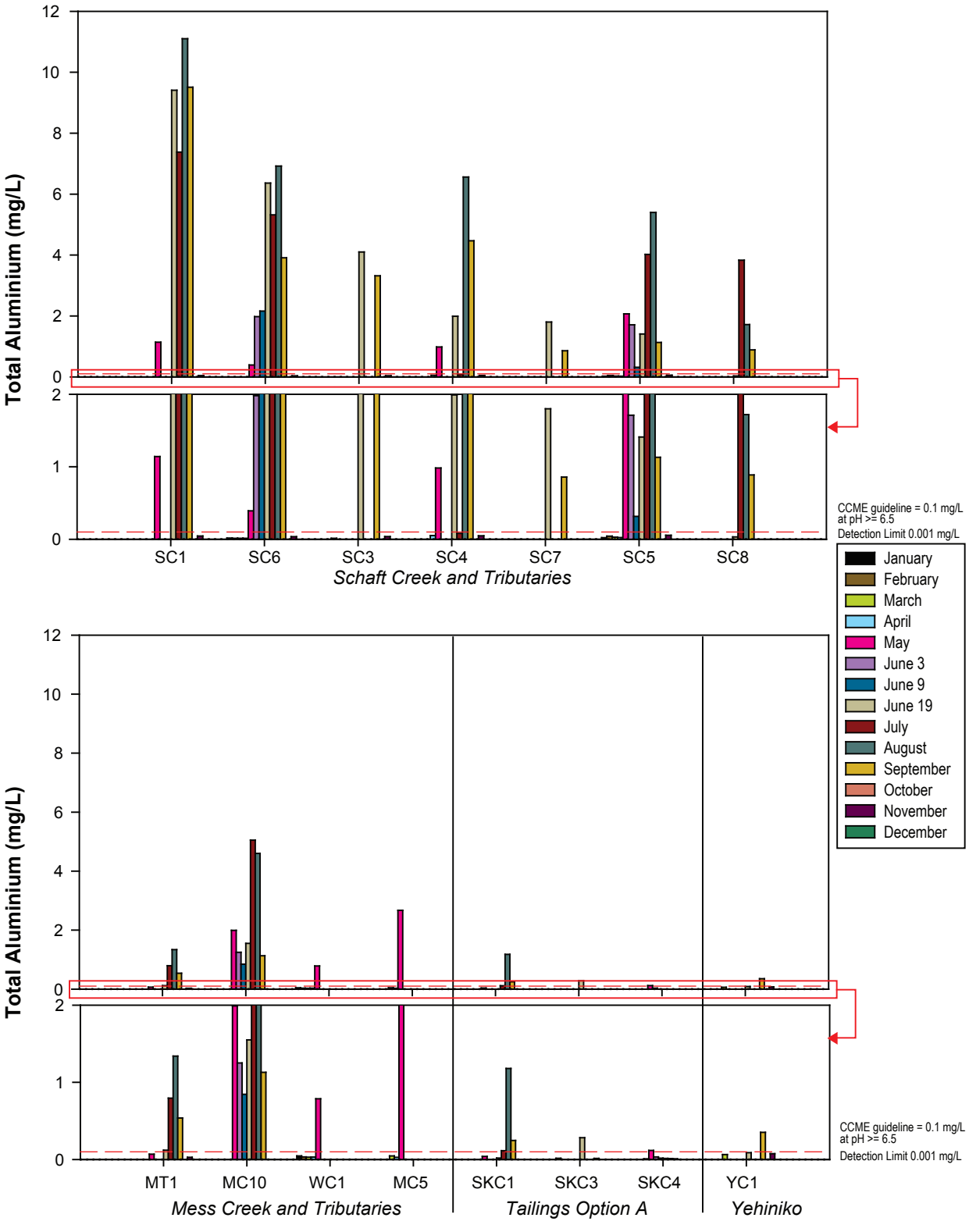
Total Organic Carbon Concentrations in Schaft Creek Project Streams, 2008



Notes: Dashed red line represents BC and CCME guidelines.
Dotted line represents analytical detection limit.

FIGURE 3.1-7

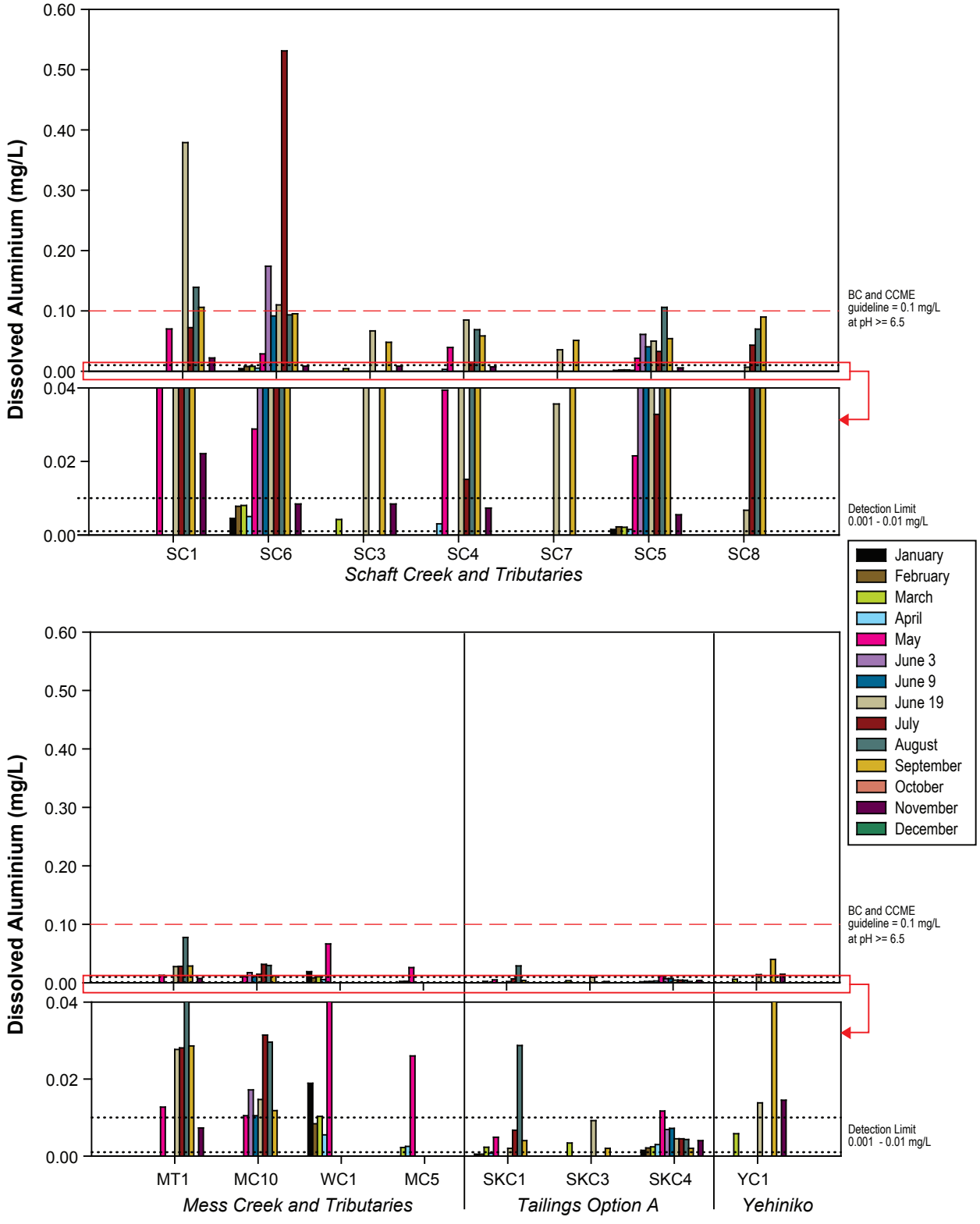
Total Cyanide Concentrations in Schaft Creek Project Streams, 2008



Notes: Dashed red line represents CCME guidelines.
Dotted line represents analytical detection limit.

FIGURE 3.1-8

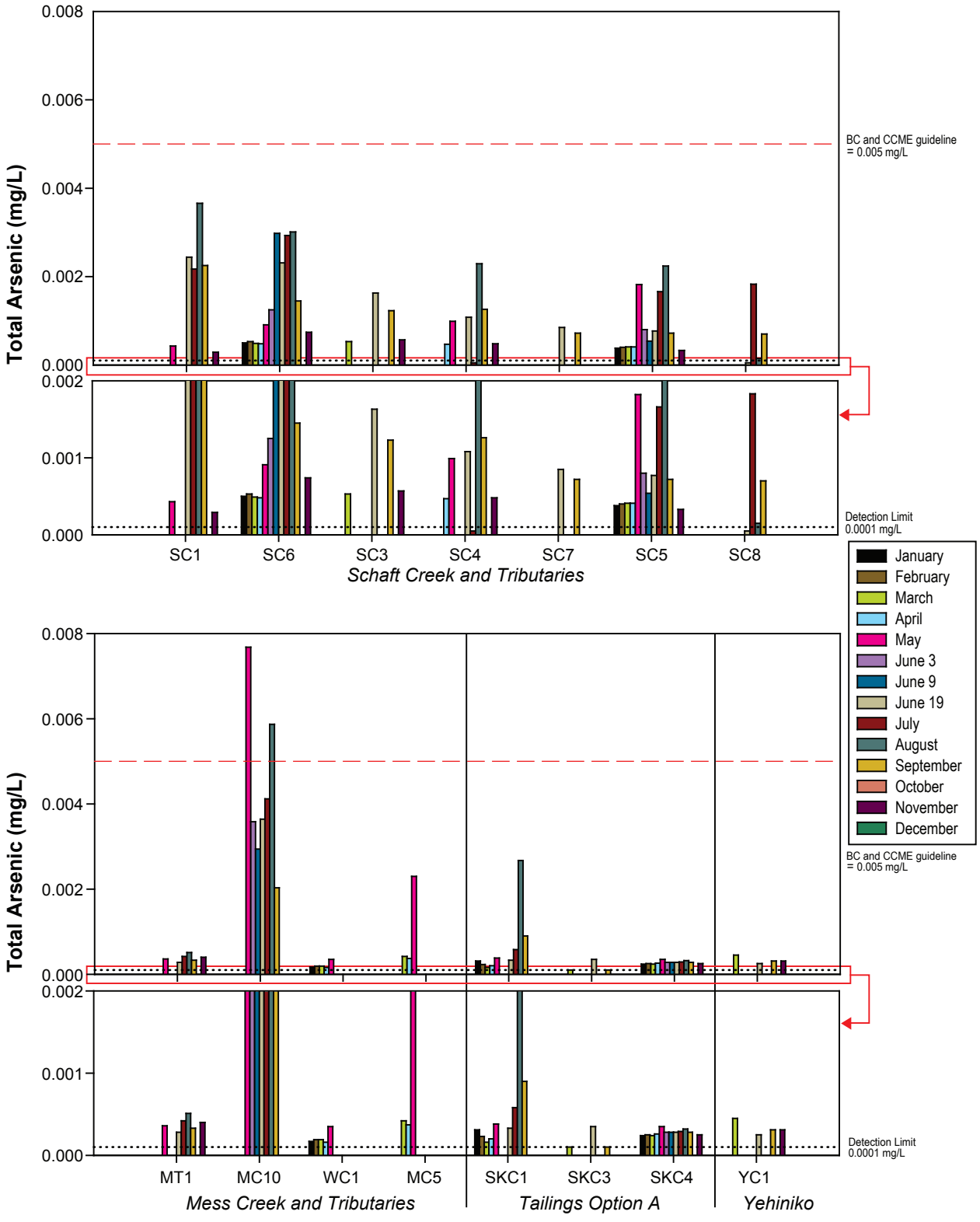
Total Aluminum Concentrations in Schaft Creek Project Streams, 2008



Notes: Dashed red line represents BC and CCME guidelines.
Dotted line represents analytical detection limit.

FIGURE 3.1-9

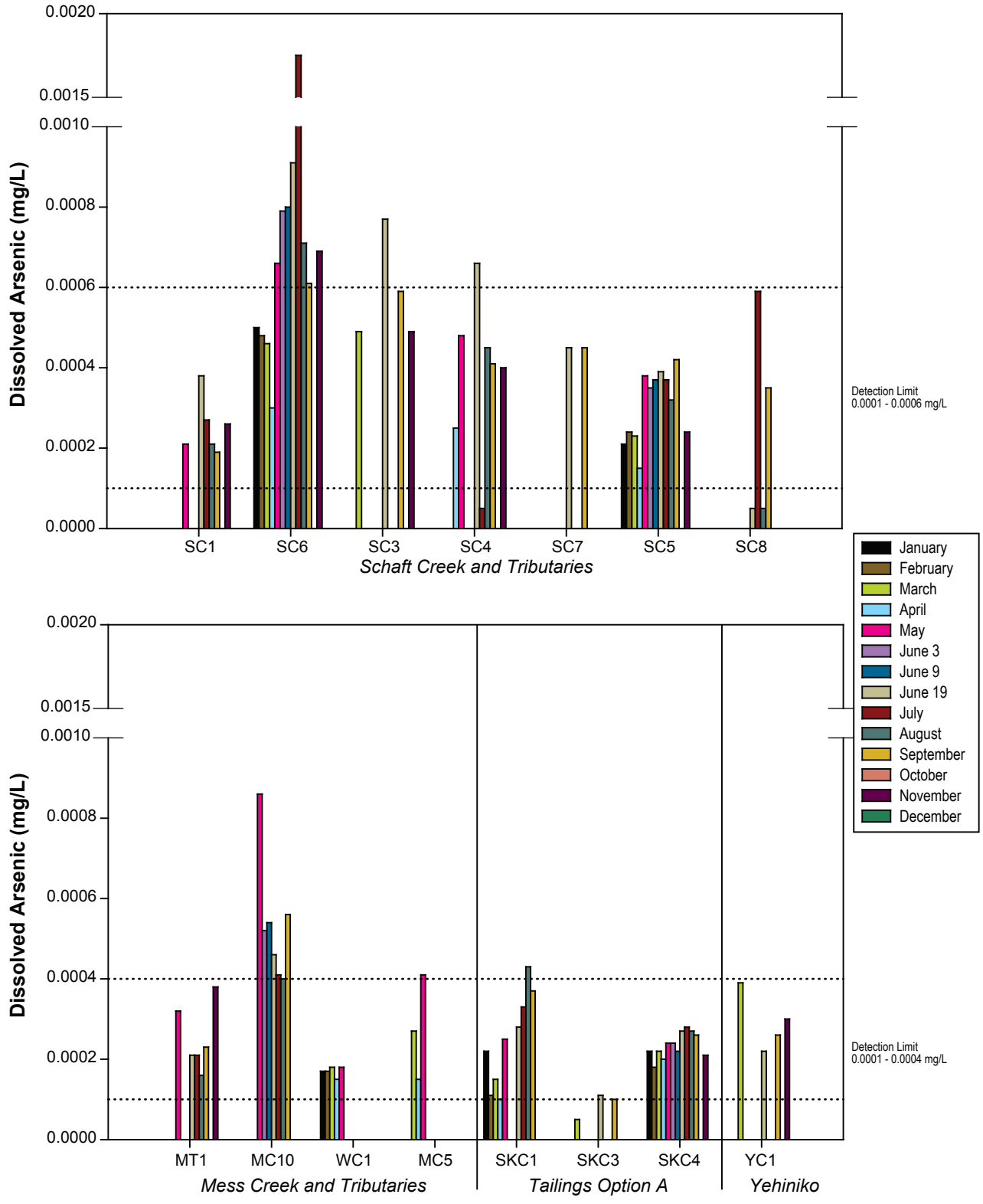
Dissolved Aluminum Concentrations in Schaft Creek Project Streams, 2008



Notes: Dashed red line represents BC and CCME guidelines.
Dotted line represents analytical detection limit.

FIGURE 3.1-10

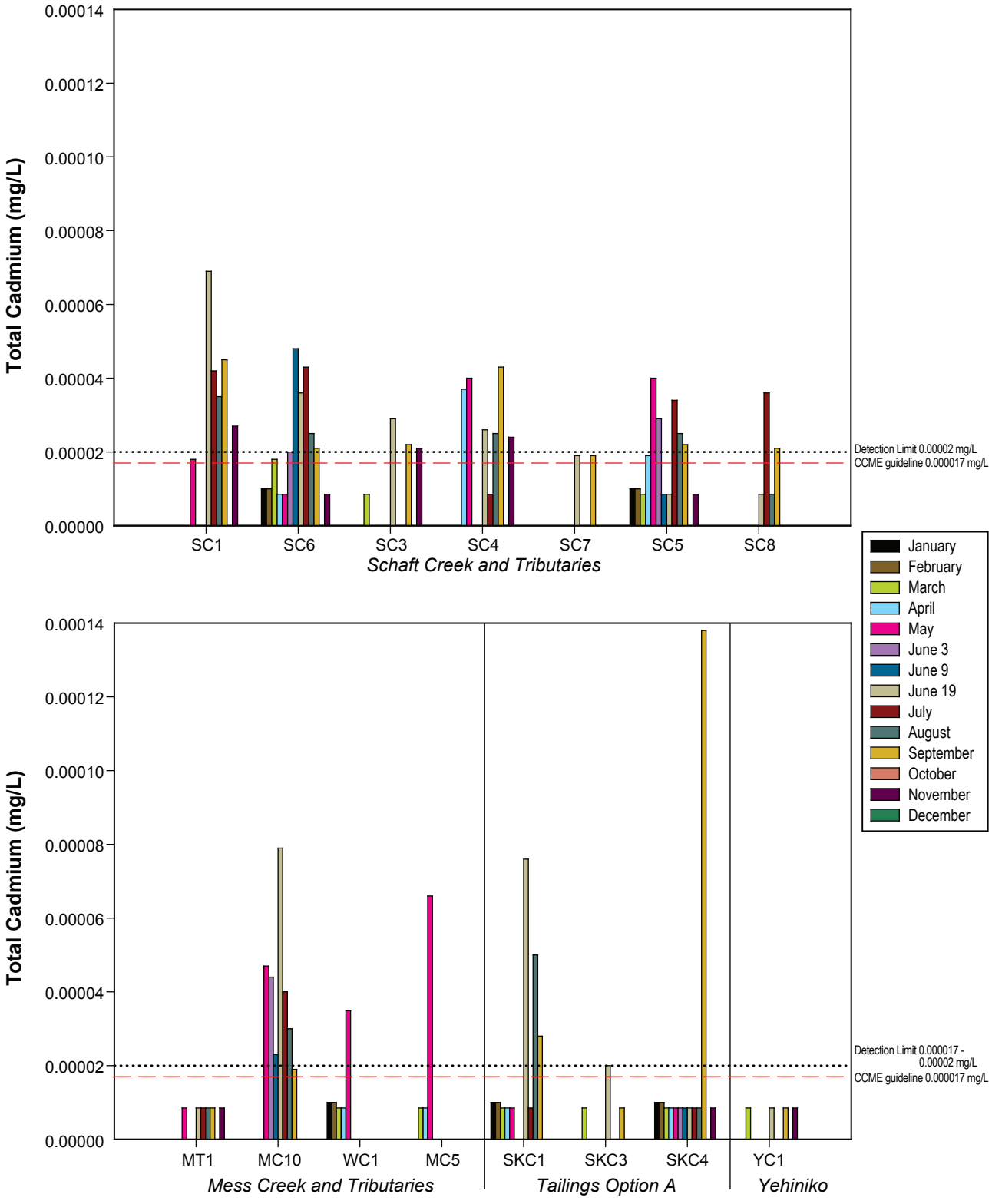
Total Arsenic Concentrations in Schaft Creek Project Streams, 2008



Notes: No CCME or BC aquatic life guidelines exist.
Dotted line represents analytical detection limit.

FIGURE 3.1-11

Dissolved Arsenic Concentrations in Schaft Creek Project Streams, 2008



Notes: BC guideline depends on hardness.
Dashed red line represents CCME guidelines.
Dotted line represents analytical detection limit.
(0.00002 mg/L for January and February samples only).

FIGURE 3.1-12

Total Cadmium Concentrations in Schaft Creek Project Streams, 2008

Total chromium (T-Cr) ranged from below detection several times at each site to 0.015 mg/L (July) at MC10 (Figure 3.1-13). T-Cr was generally greatest at SC6 and MC10 with 40% of all 2008 samples exceeding BC and CCME guidelines (0.001 mg/L). Most of these exceedances occurred at SC6, SC5 or MC10 (Appendix 3.1-3). Dissolved chromium concentrations were all below detection.

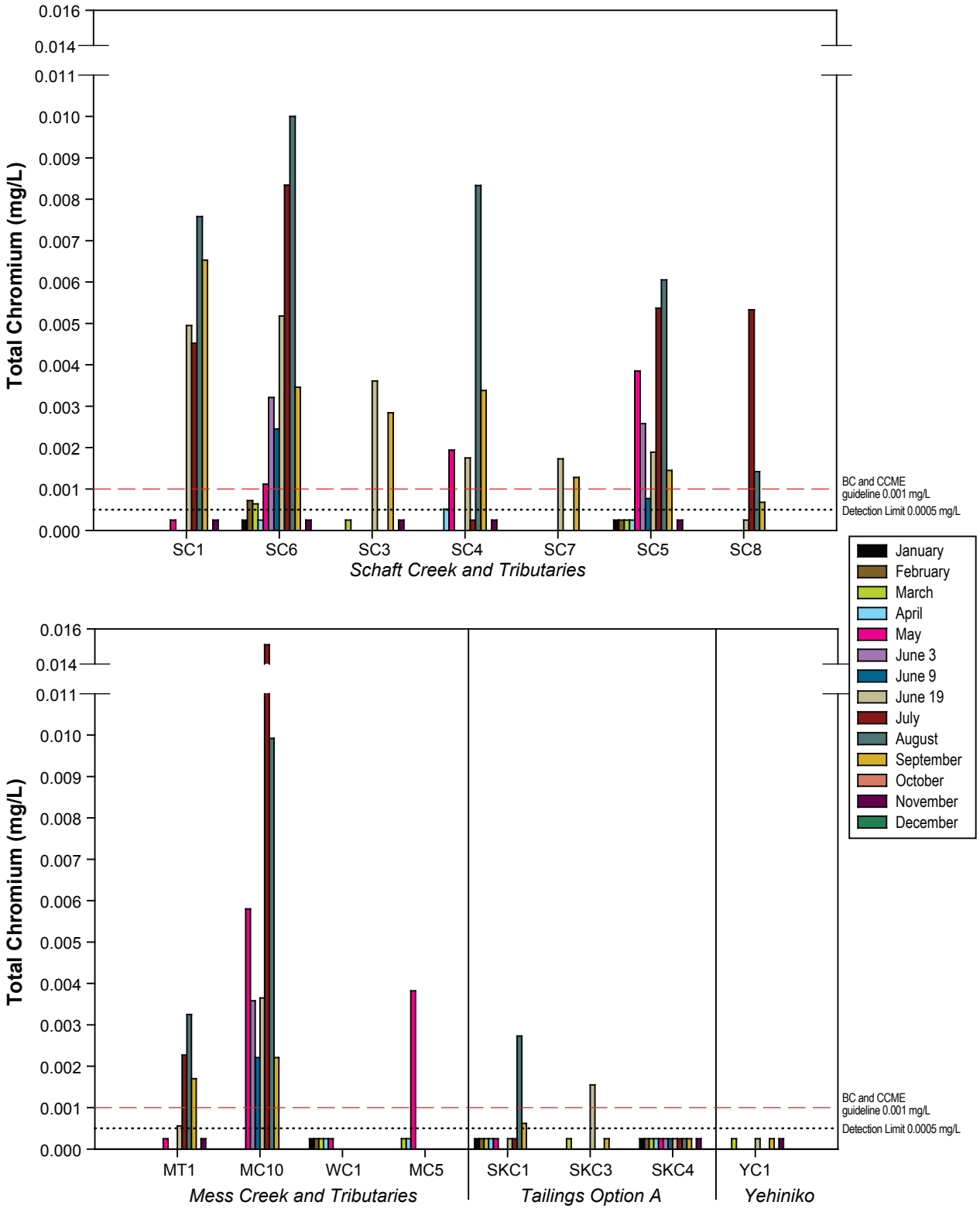
Similar to 2007, total copper concentrations (T-Cu) were often greatest at the Schaft Creek sites with peak concentrations occurring during the summer months (Figure 3.1-14). T-Cu ranged from below detection at several sites to 0.037 mg/L (SCI, August). The BC and CCME guidelines, which are hardness dependent, were exceeded by 32% and 43% of samples, respectively. The majority of these exceedances occurred at SC1 and SC6 (Appendix 3.1-3). Dissolved copper (D-Cu) concentrations ranged from below detection at several sites to 0.0096 mg/L at SC6 in July (Figure 3.1-15). Generally the D-Cu concentrations were considerably lower than the T-Cu concentrations, indicating that most of the copper was bound to particulates. However, the May MT1 sample and the July SC6 sample had D-Cu concentrations just below T-Cu concentrations indicating that a considerable amount of the copper was in the dissolved form for these samples. These samples exceeded the BC Max (SC6 only) and CCME guidelines for copper (Appendix 3.1-3).

Total iron (T-Fe) concentrations ranged from below the detection limit at several sites to 11.4 mg/L (SC1, August) (Figure 3.1-16). Peak concentrations were slightly higher at several Schaft Creek sites in the 2007 and SCI (18.6 mg/L; July 2007) was again found to have the greatest T-Fe concentration (Rescan 2008). The BC Max guideline (1 mg/L) was exceeded by 36% of samples and the CCME guideline (0.3 mg/L) was exceeded by 49% of samples. Although most of these exceedances occurred at the Schaft Creek sites, samples from MC10 consistently exceeded both guidelines (Appendix 3.1-3). Many dissolved iron (D-Fe) concentrations were below the detection limit (0.03 mg/L) and most measurable concentrations were between 0.04 and 0.06 mg/L (Figure 3.1-17). Two sites, SC1 (June 19) and SC6 (July), had D-Fe concentrations considerable greater than other sites (0.25 and 0.73 mg/L, respectively). This July sample from SC6 was also the only sample that exceeded the BC guideline for D-Fe (0.35 mg/L).

Total lead (T-Pb) ranged from below the detection limit at most sites to 0.0035 mg/L (SC1, August) (Figure 3.1-18). The majority of samples had T-Pb concentrations below 0.0015 mg/L. Similar to 2007, the Schaft Creek sites generally had the greatest T-Pb concentrations. The BC Max and CCME guidelines are hardness specific. SC1 (August) was the only site to exceed the BC guideline and 15% of samples, primarily from SC1 and SC6, exceeded the CCME guideline for T-Pb (Appendix 3.1-3). Almost all dissolved lead concentrations were below detection limit.

Most total manganese (T-Mn) concentrations were below 0.1 mg/L (Figure 3.1-19). Although SC1, SC6, SC4 and SC5 had spring and summer concentrations close to 0.2 mg/L with the greatest found at SC1 (0.47 mg/L, August). The BC Max guideline is dependent on hardness and no CCME guideline for T-Mn is currently available. No sample exceeded the BC Max guideline. Most dissolved manganese (no figure) samples were less than 0.02 mg/L and all were below 0.07 mg/L.

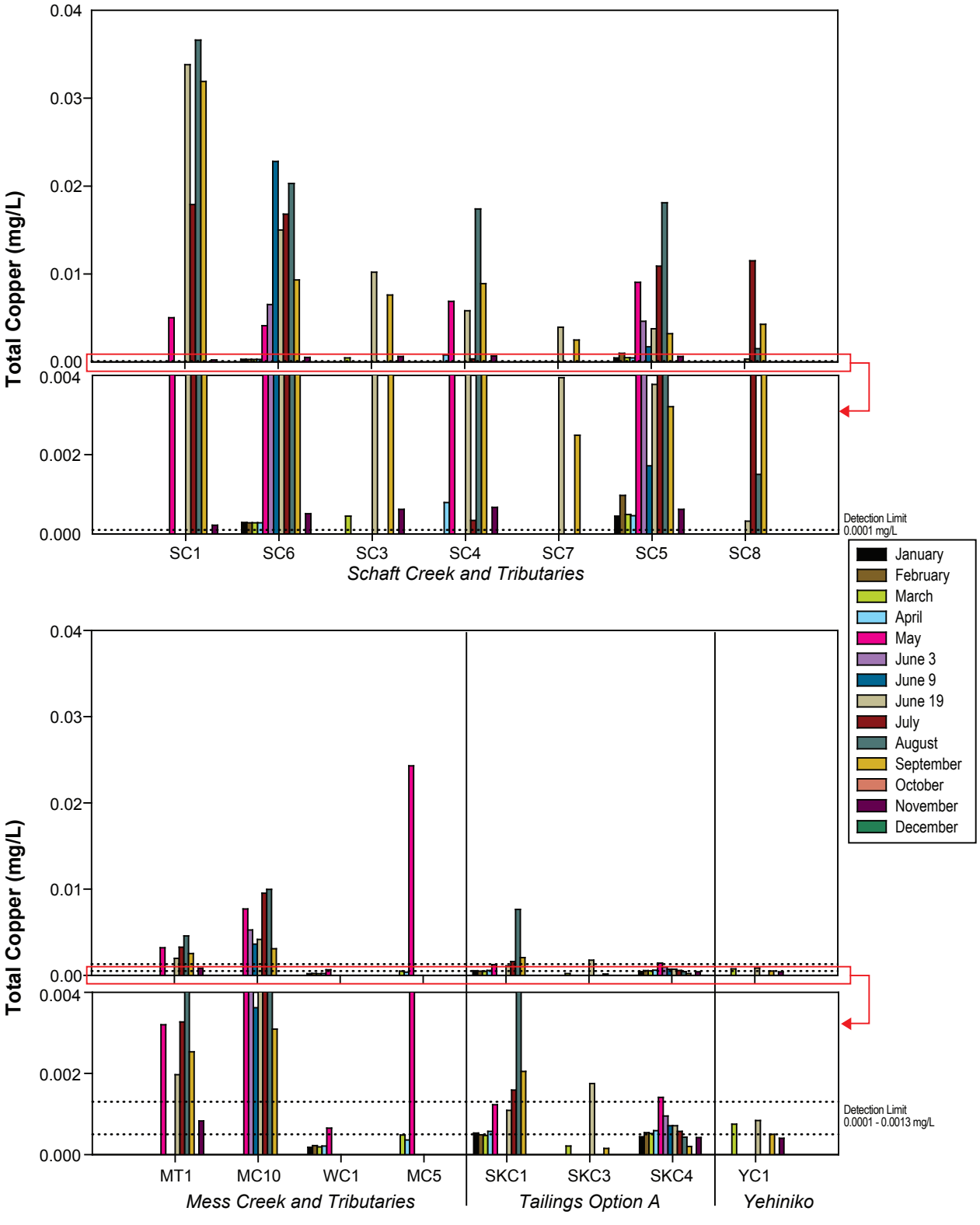
In contrast to most other metals, peak concentrations of total molybdenum (T-Mo) occurred in winter months as opposed to the spring and summer months. This was also the case in 2007 (Rescan 2008). T-Mo ranged from below the detection limit 0.0001 mg/L (MT1, August) to 0.0140 mg/L (SC3, March) (Figure 3.1-20). Dissolved molybdenum concentrations (no figure) were similar or slightly less than T-Mo concentrations indicating that molybdenum was mostly bound to particulates. All samples were well below the BC (2 mg/L) and CCME (0.073 mg/L) guidelines.



Notes: Dashed red line represents BC and CCME guidelines.
Dotted line represents analytical detection limit.

FIGURE 3.1-13

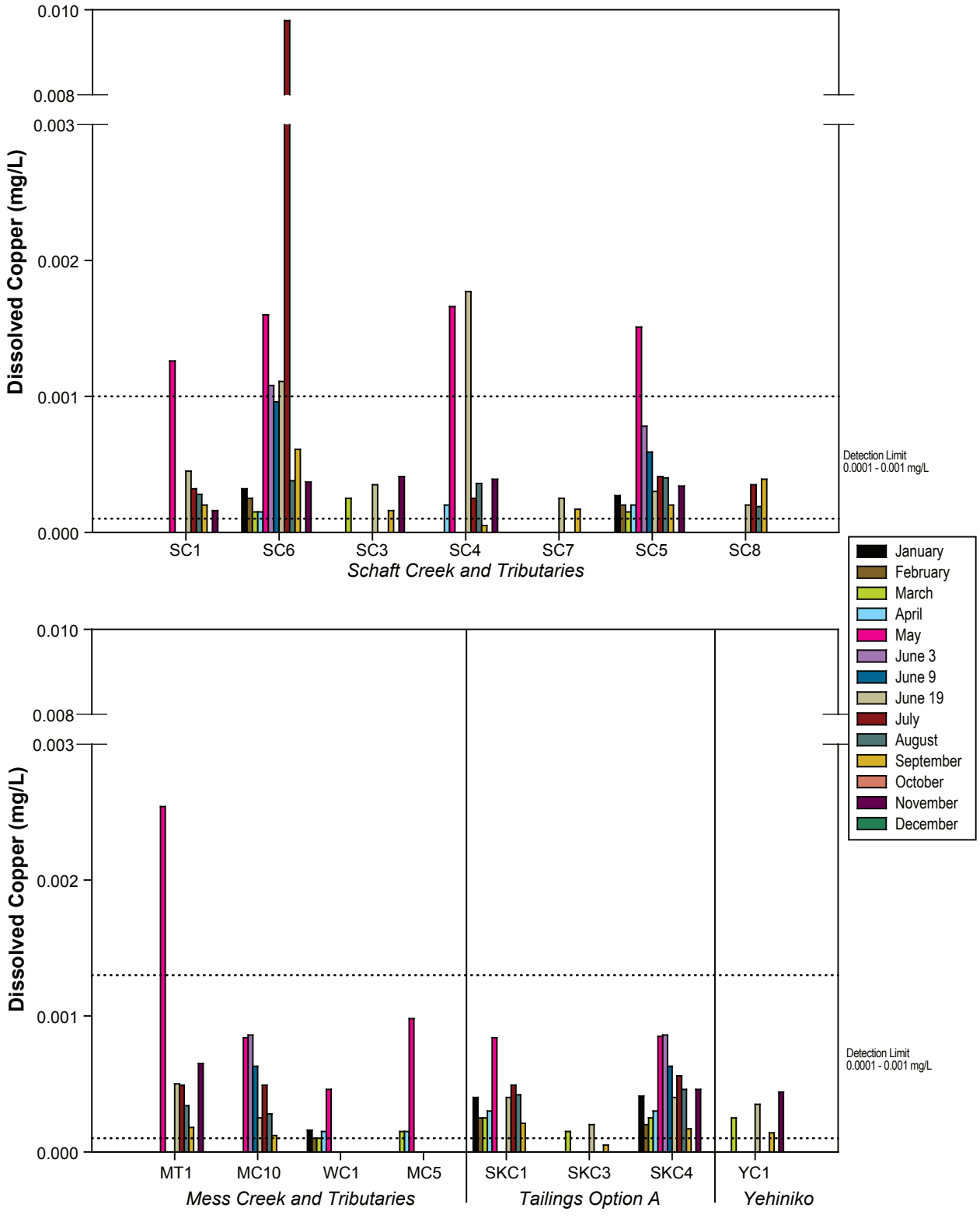
Total Chromium Concentrations in Schaft Creek Project Streams, 2008



Notes: BC and CCME guidelines depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.1-14

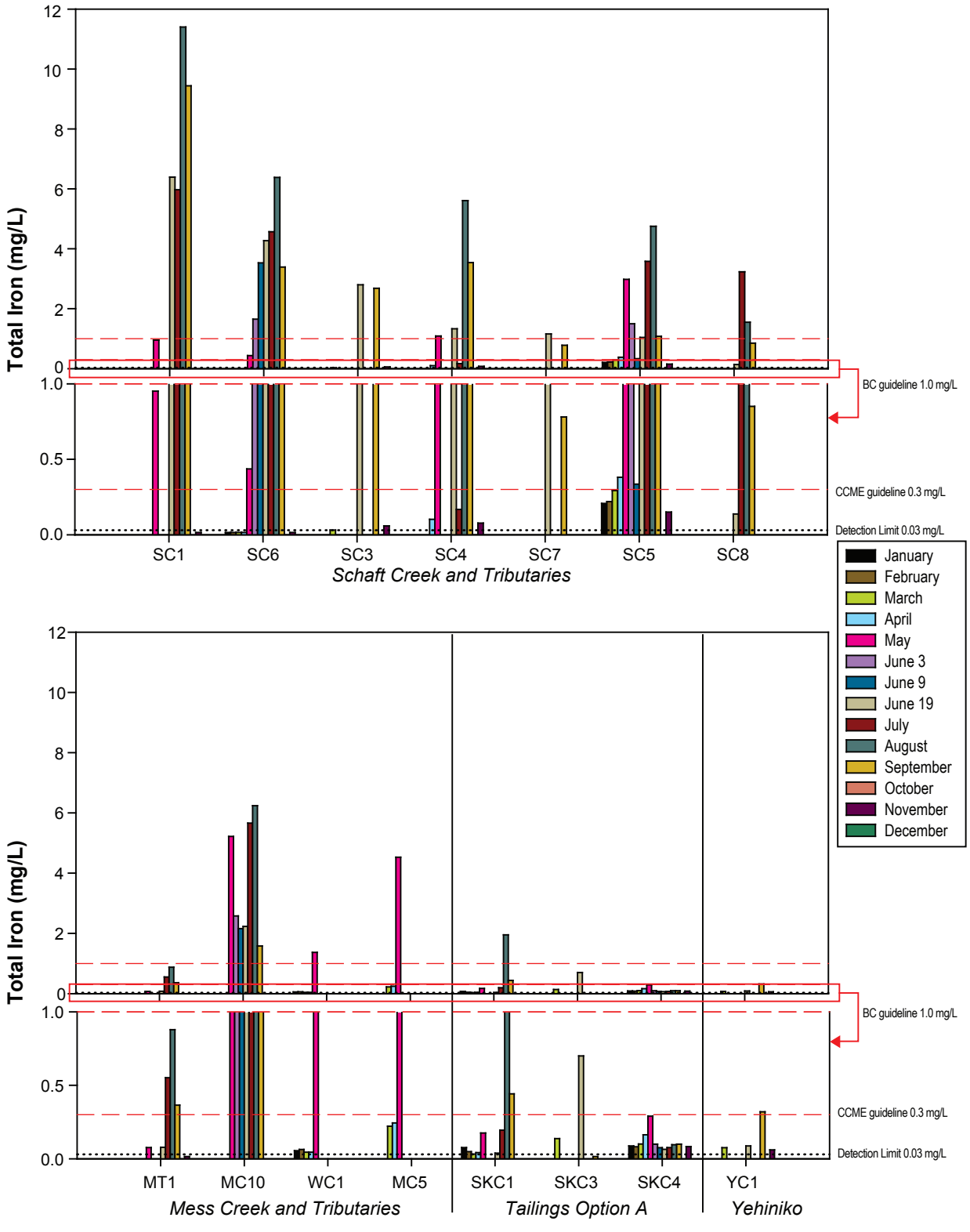
Total Copper Concentrations in Schaft Creek Project Streams, 2008



Notes: BC and CCME guidelines depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.1-15

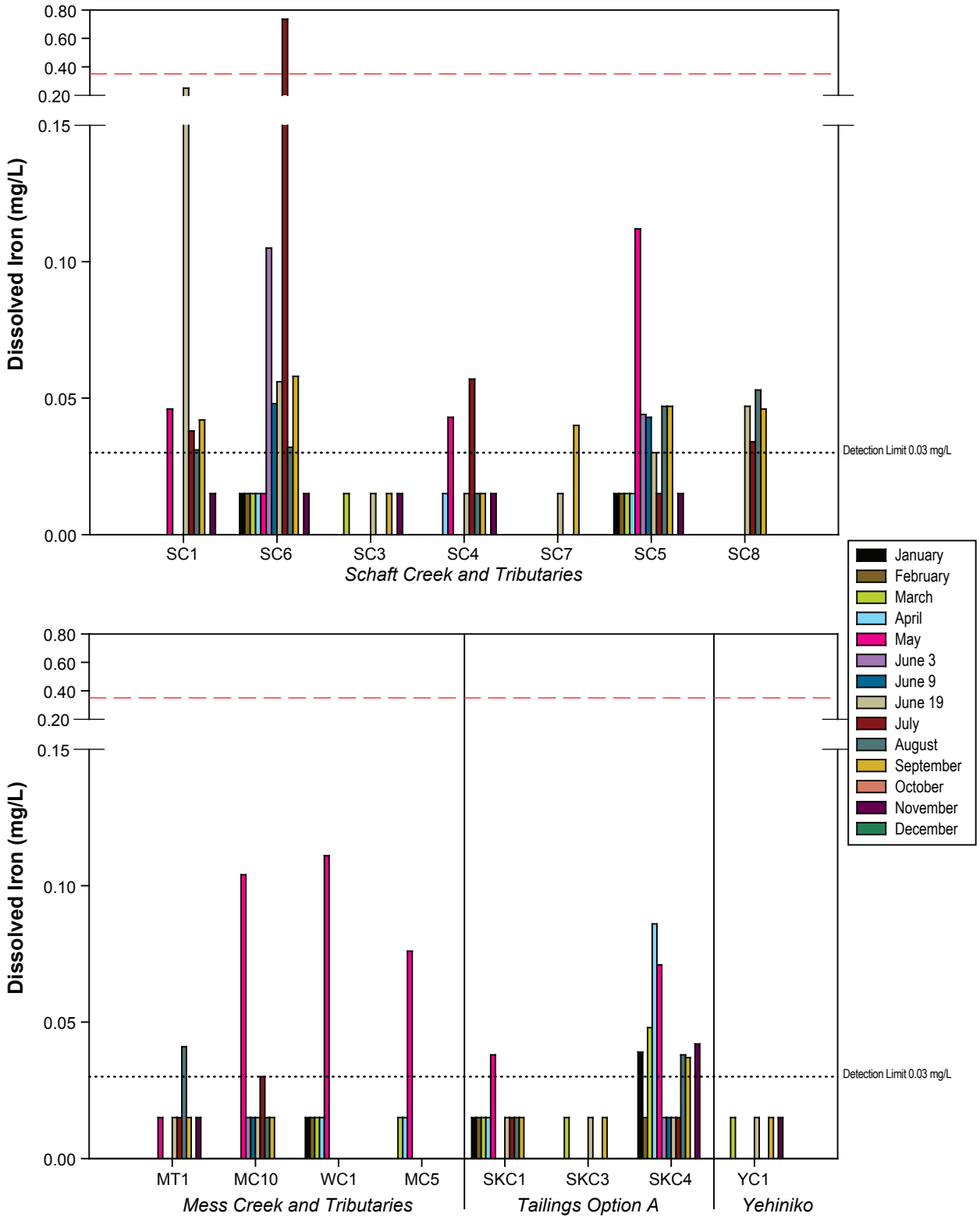
Dissolved Copper Concentrations in Schaft Creek Project Streams, 2008



Notes: Dashed red line represents BC and CCME guideline.
Dotted line represents analytical detection limit.

FIGURE 3.1-16

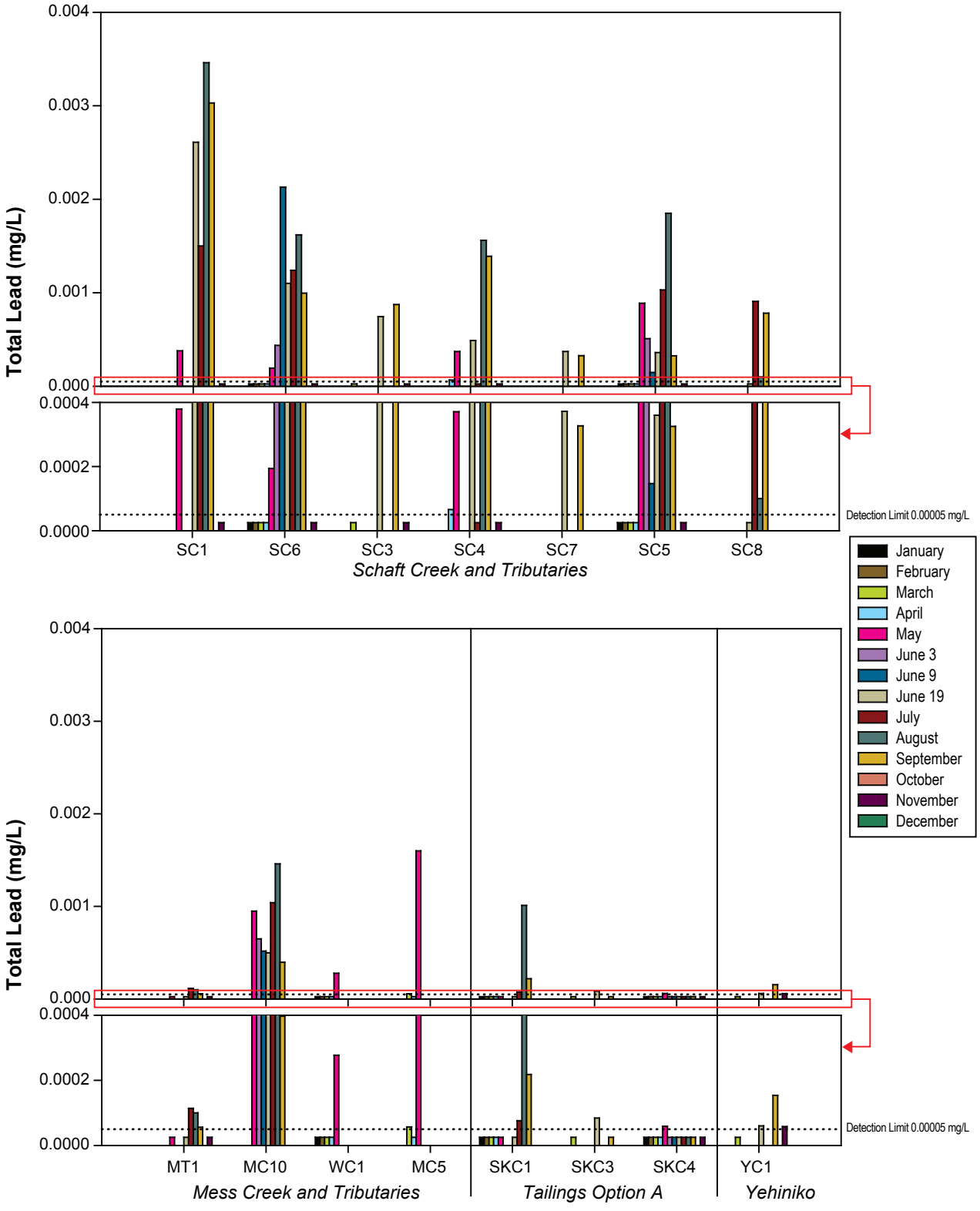
Total Iron Concentrations in Schaft Creek Project Streams, 2008



Notes: Dashed red line represents BC guideline (0.35 mg/L).
Dotted line represents analytical detection limit.

FIGURE 3.1-17

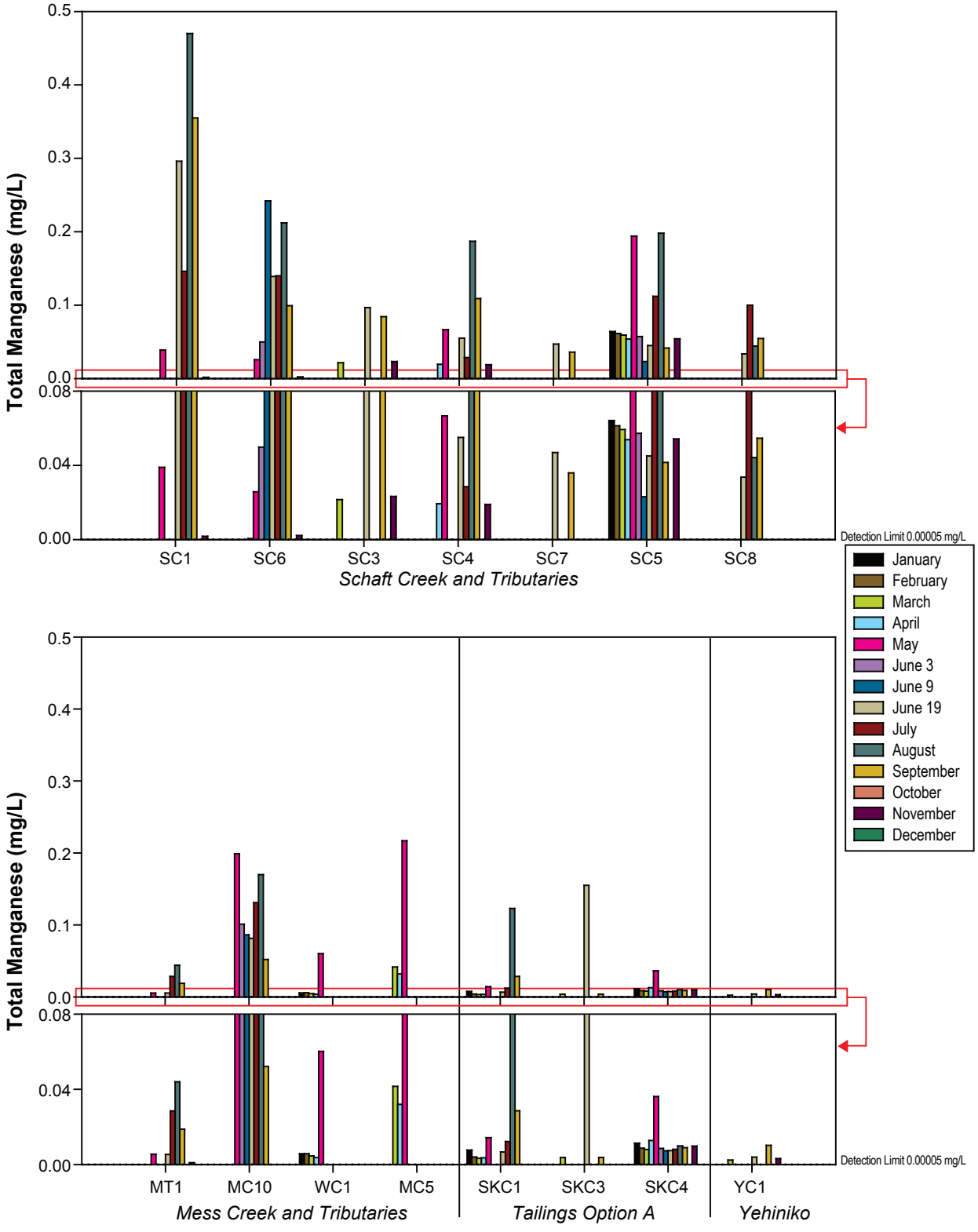
Dissolved Iron Concentrations in Schaft Creek Project Streams, 2008



Notes: BC and CCME guidelines depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.1-18

Total Lead Concentrations in Schaft Creek Project Streams, 2008



Notes: BC guideline depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.1-19

Total Manganese Concentrations in Schaft Creek Project Streams, 2008

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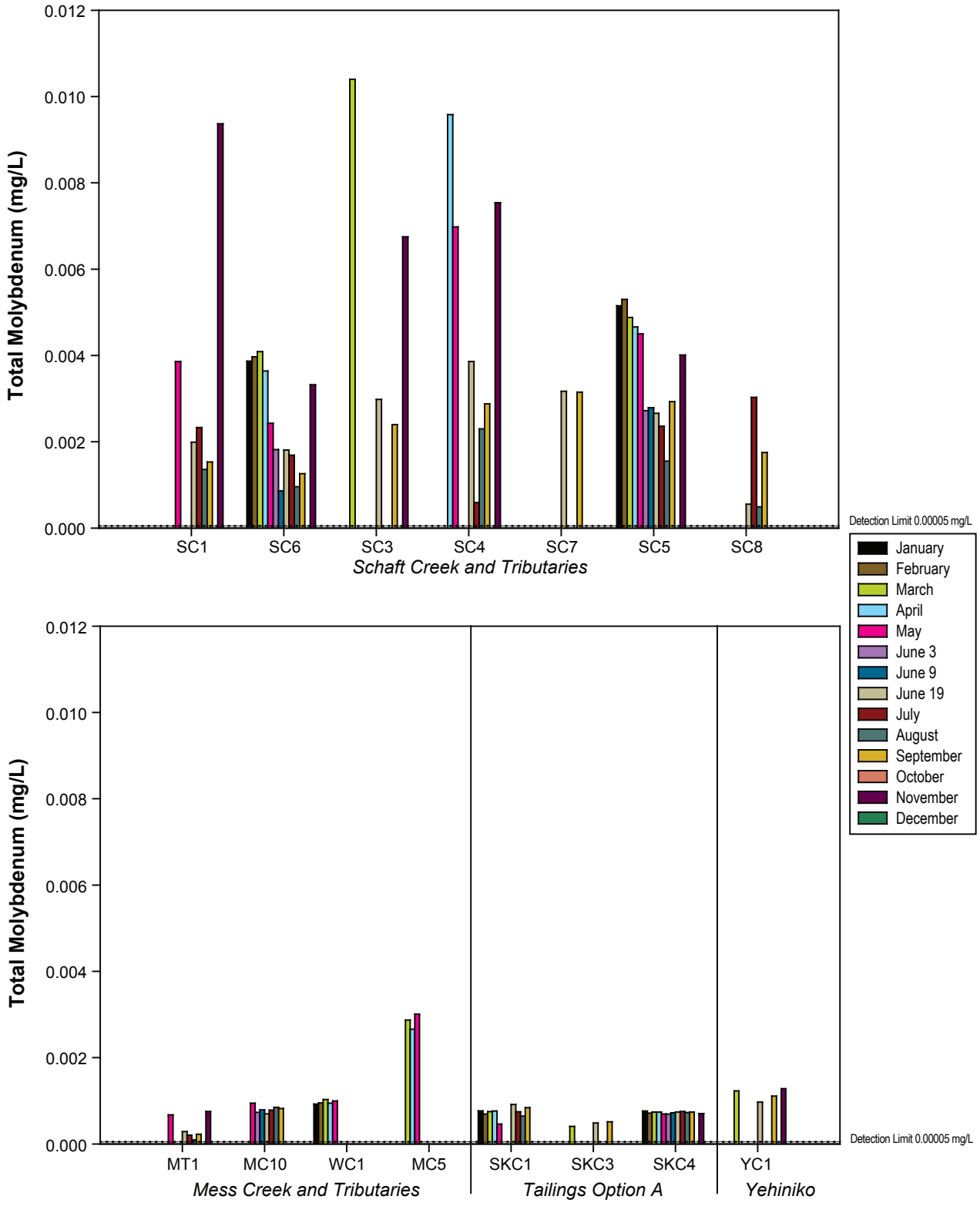

Notes: BC guideline = 2 mg/L; CCME guideline = 0.073 mg/L.
Dotted line represents analytical detection limit.

FIGURE 3.1-20

Total Molybdenum Concentrations in Schaft Creek Project Streams, 2008

copper FOX metals inc.

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Total nickel (T-Ni) concentrations ranged from below the detection limit at most sites to 0.037 mg/L (MC10, July) (Figure 3.1-21). As was the case in 2007, peak concentrations at most sites occurred in July or August. Dissolved nickel was below the detection limit for most sites except SC6, SC4, MC10 and SKC4 (Appendix 3.1-3). T-Ni concentrations were well below the BC and CCME guidelines, which are hardness dependent.

Total selenium (T-Se) ranged from below the detection limit at many sites to 0.00125 mg/L (SKC1, January) (Figure 3.1-22). Similar to total molybdenum, T-Se concentrations tended to be highest in winter months. No sample exceeded the BC guideline (0.002 mg/L) and only SKC1 (January and July) exceeded the CCME guideline (0.001 mg/L) value. No dissolved selenium concentrations (no figure) exceeded guideline values.

Many total zinc (T-Zn) concentrations (no figure) were below detection (0.001 mg/L). Concentrations were somewhat lower than observed in 2007 and no sample exceeded the BC (hardness dependent) or CCME (0.03 mg/L) guidelines.

3.1.3 Quality Assurance and Quality Control (QA/QC)

Field and travel blank data are presented in Appendix 3.1-1. Field blank data were all below MDL values, with the exception of total nitrogen and phosphate in 2 of 11 field blanks (<2 times MDL), ammonia in 2 of 11 field blanks (<2 times MDL) and total organic carbon (TOC) in 3 of 11 field blanks (all <3 times MDL). Travel blank data were all below MDL values, with the exception of total nitrogen and phosphate in 1 of 11 travel blanks (both <2 times MDL), total molybdenum in 1 of 11 travel blanks (<3 times MDL) and TOC in 1 of 11 travel blanks (<3 times MDL).

The RPD analysis of QA/QC field duplicate data for receiving environment streams are reported in Appendix 3.1-4. In summary, 8 duplicate pairs of samples were compared for each variable, using the RPD between the replicates as a measure of the variability inherent in field sampling (environmental heterogeneity). Approximately 40-50% of analytical results within each duplicate pair were below or less than 5 times the method detection limit (MDL), and therefore RPD values were not calculated. Of the remaining results, only 3% (10 of 364 RPD calculations) were greater than the threshold of 20% indicated by provincial guidance.

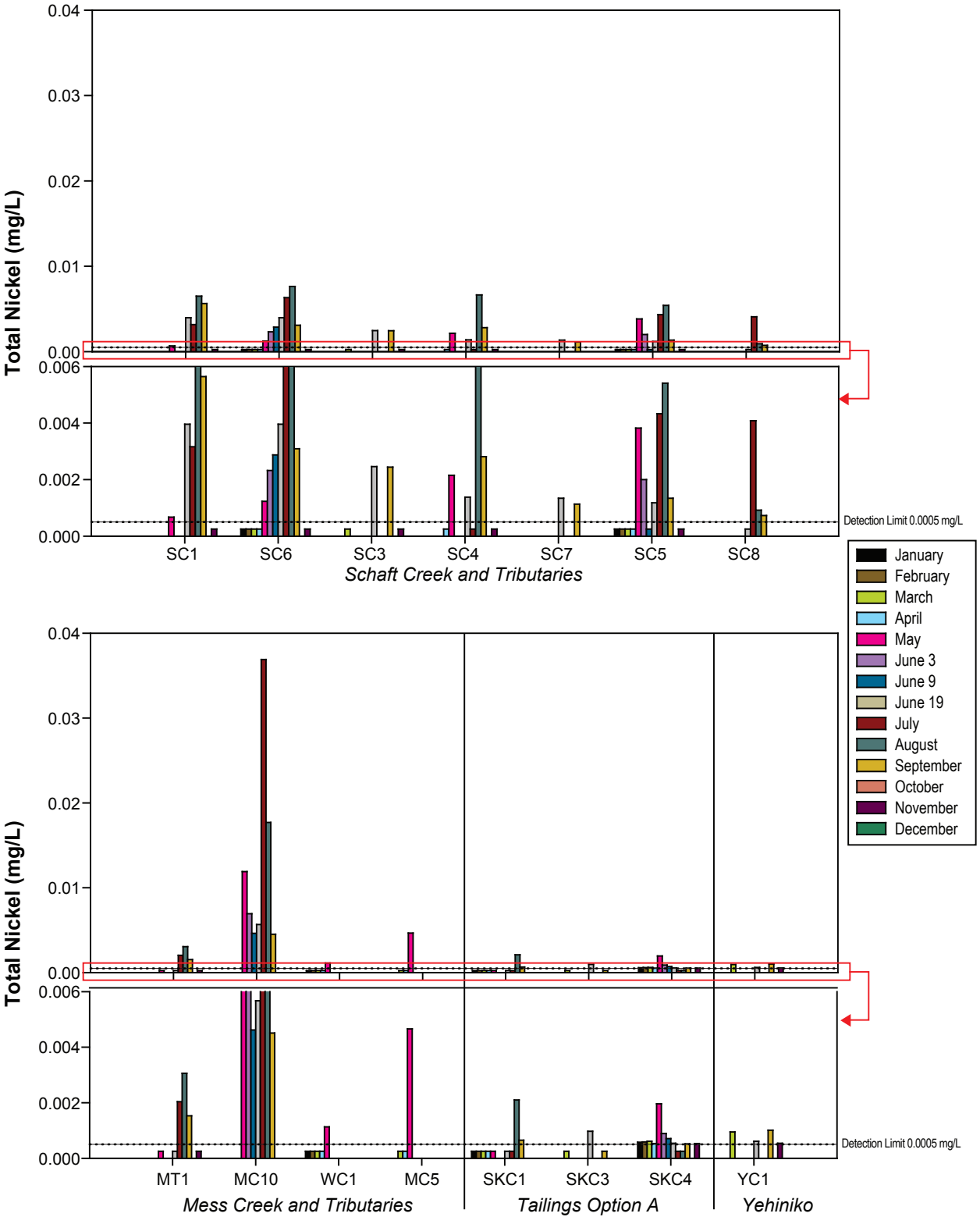
3.2 STREAM SEDIMENT QUALITY

The physical and chemical quality of stream sediments were assessed at 14 sites by collecting triplicate sediment samples in 2008 (Figure 2.1-1). All original data are shown in Appendix 3.2-1.

3.2.1 Particle Size

Sampling of stream substrates focused on available depositional zones (areas of a reduced flow regime relative to the faster mid-channel flow) at each stream site. Whole sediment samples were analyzed in order to produce data comparable to previous sample years. Particle size distributions in stream sediments indicated that stream substrates were primarily dominated by sand (50 to 97%), with smaller proportions of silt (1.0 to 45%), gravel (0.5 to 8%), and clay (0.5 to 4.0%) (Figure 3.2-1).

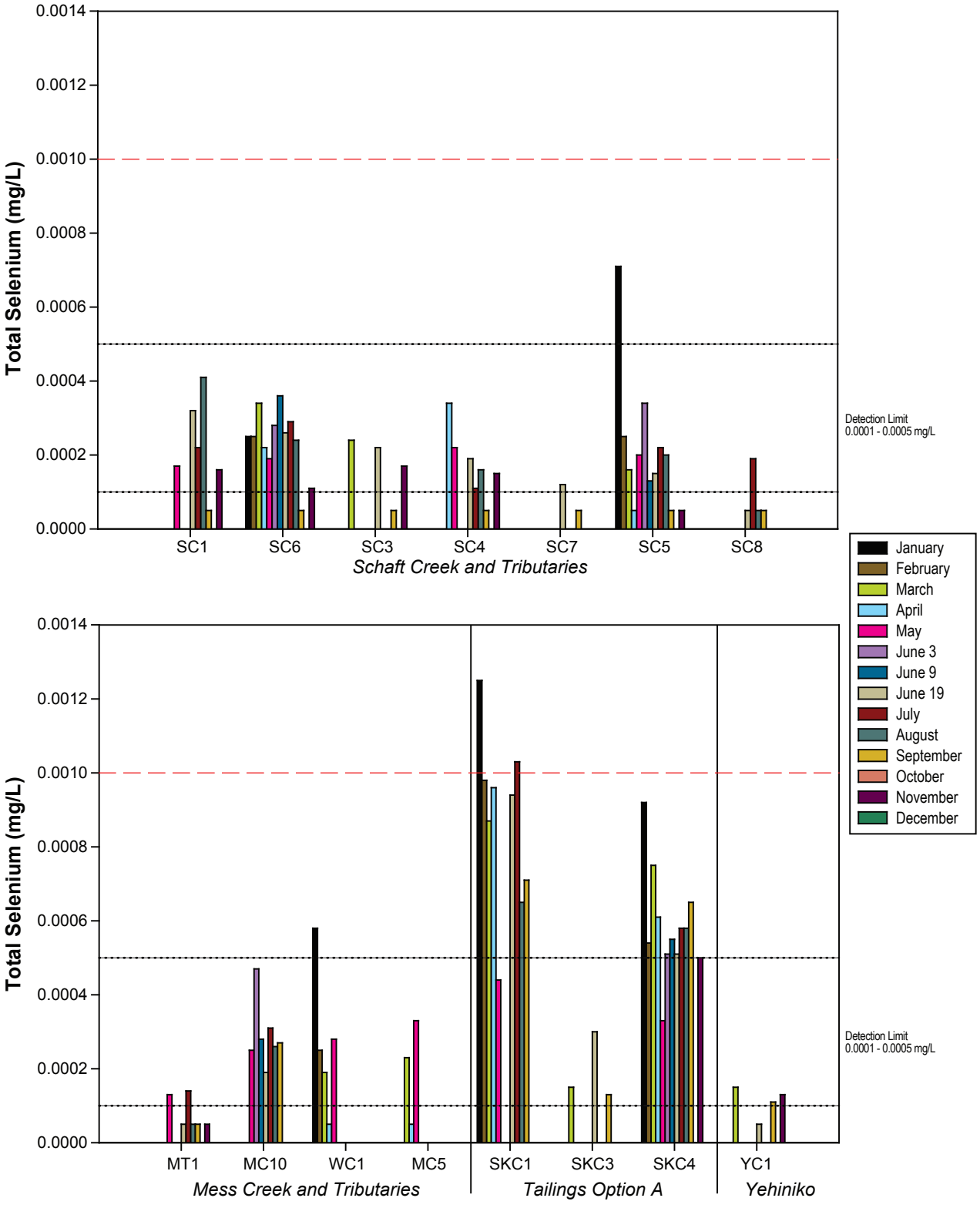
Smaller sediment particles (<63 µm) and sediments with high organic content tend to have a greater affinity for metals and are therefore considered more biologically relevant to aquatic organisms. Stream sites are primarily composed of sand but three sites have substantial portions (> 20%) of silt and clay (MC10 = 50%; SC8 = 21%; SKC4 = 37%). Since this size fraction is potentially more biologically relevant to benthic organisms, it should be noted that metal concentrations at these sites may be effectively greater.



Notes: BC and CCME guidelines depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.1-21

Total Nickel Concentrations in Schaft Creek Project Streams, 2008



Notes: BC guideline = 0.002 mg/L; CCME guideline = 0.001 mg/L.
Dotted line represents analytical detection limit.

FIGURE 3.1-22

Total Selenium Concentrations in Schaft Creek Project Streams, 2008

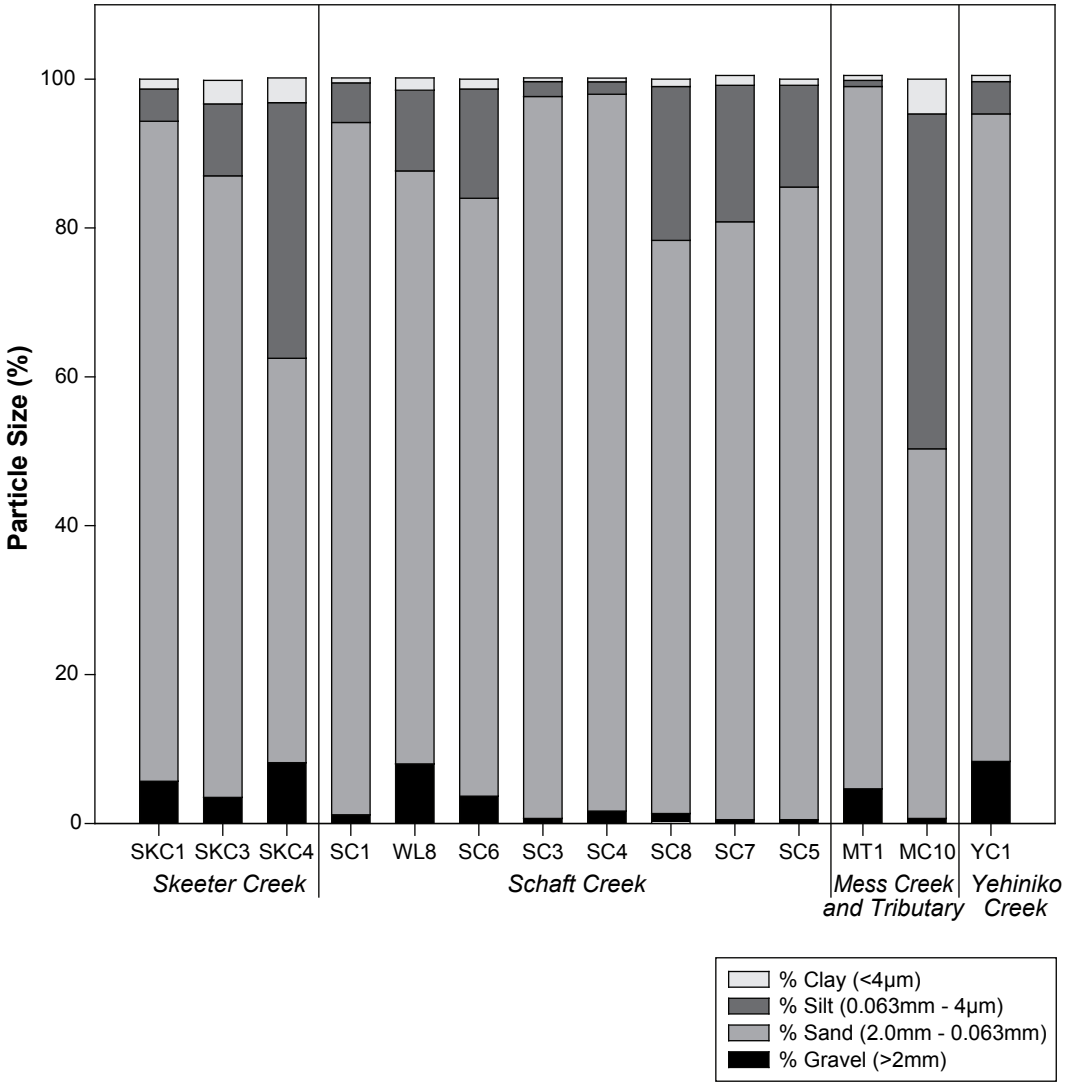


FIGURE 3.2-1

Average Particle Size Composition in Stream Sediments, 2008

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3.2.2 Nutrients and Total Organic Carbon (TOC)

Nutrient concentrations in stream sediments were generally low in many cases. Available phosphorus concentrations were either below or at the detection limit (1 mg/kg) in all of the samples and are not presented graphically for this reason.

Total nitrogen (TN) and TOC concentrations were close to or below the respective detection limits (0.02% and 0.1%) at most sites (Figure 3.2-2). The exceptions to this can be seen at SKC3, SKC4 and MC10 (in the case of TOC concentration only). Similar TN and TOC concentrations were also found in SKC3 sediment samples from 2007. TN concentrations at SKC3 and SKC4 are 1.5 to 2 times greater than other sites, while TOC concentrations at these sites are seven to eight times greater than other sites.

3.2.3 Total Metals

As has been the case in previous years, several metals analyzed were not detected in more than 80% of samples in stream sites (i.e. antimony, beryllium, bismuth, cadmium, lead, molybdenum, selenium, silver, thallium and tin) (Appendix 3.2-1).

Most metal concentrations at these stream sites are very similar to the concentrations found in 2007 (Rescan 2008) and the Schaft Creek sites generally had the lowest concentrations. For this reason the results discussed below focus on those metals with guidelines available. Of the metals that have guidelines, four had more than 80% of samples below detection limits (cadmium, lead, selenium and silver) and six exceeded guidelines at one or more sites. It should also be noted that the metal concentrations reported are from whole sediment samples and that sites identified above as having a considerable proportion of fines (MC10, SC8 and SKC4) may have a greater proportion of metals biologically available to benthic communities.

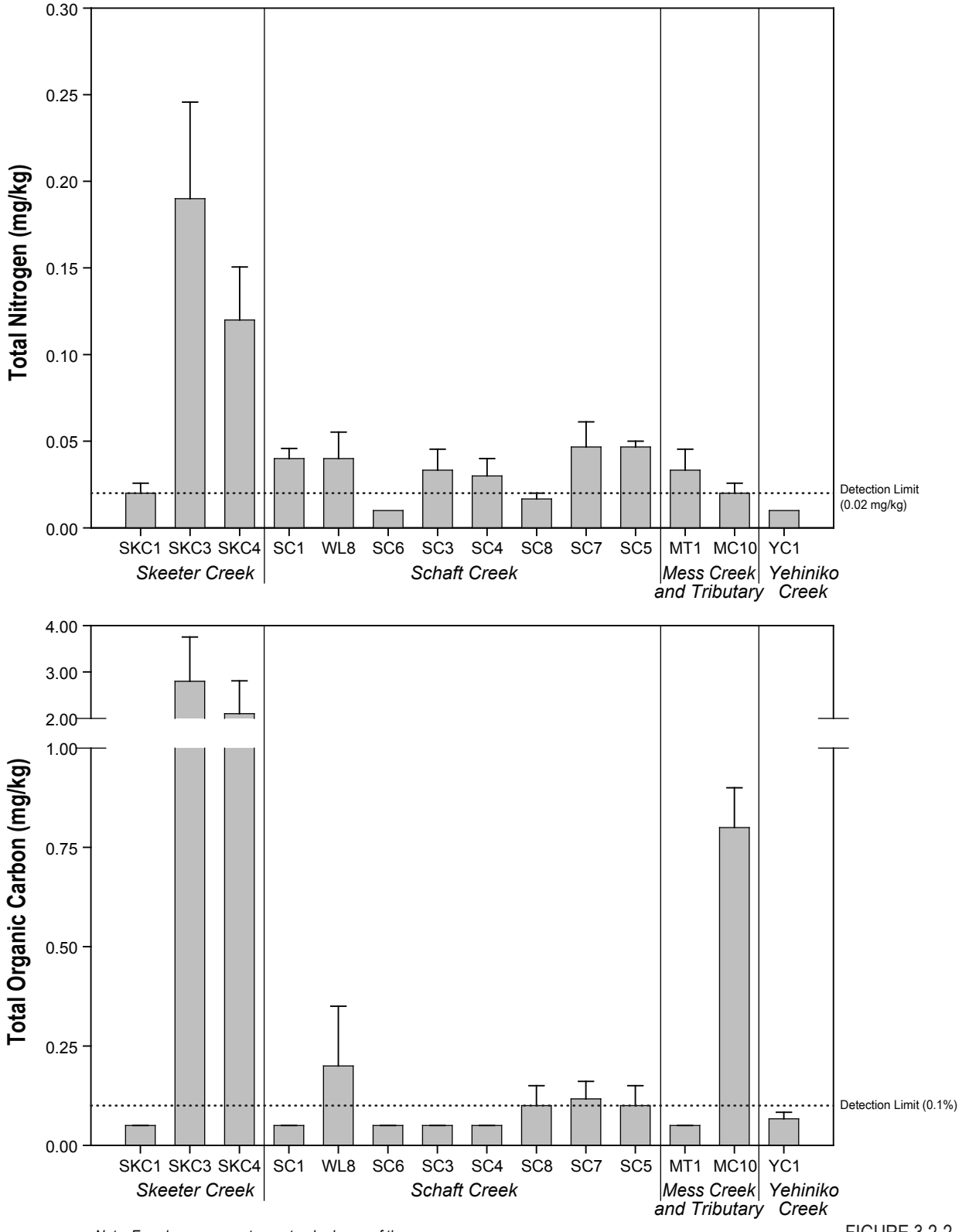
Average arsenic concentrations were below detection limits at all sites along Schaft Creek as well as MT1 and YC1 (Figure 3.2-3). Samples from all three Skeeter Creek sites and MC10 were the only sites above the detection limit, and also exceeded the Interim Sediment Quality Guideline (ISQG; 5.9 mg/kg) guideline value. SKC1 and MC10 had arsenic concentrations over five times that found at other stream sites and exceeded the Probable Effect Level (PEL; 17 mg/kg) guideline value. Similarly high arsenic concentrations were seen at both of these sites in 2007 (Rescan 2008).

Most average chromium concentrations were between 40 and 80 mg/kg (Figure 3.2-4). All stream sites, except SC1, exceeded the ISQG (37.3 mg/kg) guideline. Several sites (SKC4, SC6, SC3, SC8 and SC5) also had one or more samples exceed the PEL (90 mg/kg) guideline.

Average copper concentrations generally fell between 30 and 70 mg/kg at most sites (Figure 3.2-4). The ISQG (35.7 mg/kg) guideline was exceeded by most sites. The average concentration at SKC1 (98 mg/kg) was considerably higher than other sites.

Most average iron concentrations fell between 20,000 and 40,000 mg/kg (Figure 3.2-5). All stream sites had samples that exceeded the Lethal Effect Level (LEL; 21,200 mg/kg). Three sites (SKC1, WL8 and MC10) exceeded the Severe Effect Level (SEL; 43,766 mg/kg) guideline.

Most sites had average mercury concentrations below 0.02 mg/kg (Figure 3.2-5). Notable exceptions to this were SC7 (0.04 mg/kg) and MC10 (0.09 mg/kg). All sites were well below ISQG (0.17 mg/kg) and PEL (0.486 mg/kg) guidelines.



Note: Error bars represent one standard error of the mean.
Dotted line denotes detection limits.

FIGURE 3.2-2

Total Nitrogen and Total Organic Carbon Concentrations in Stream Sediments, 2008

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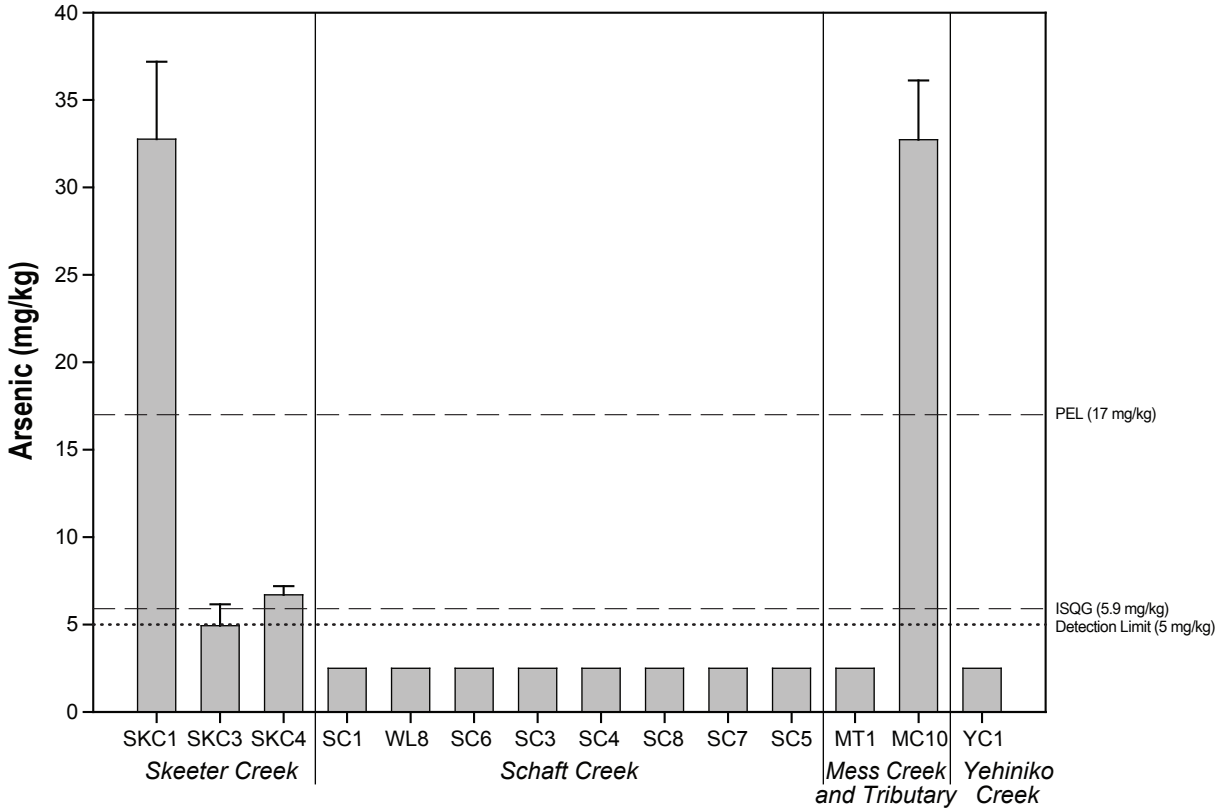

Note: Error bars represent one standard error of the mean.
Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.2-3

Arsenic Concentrations in Stream Sediments, 2008

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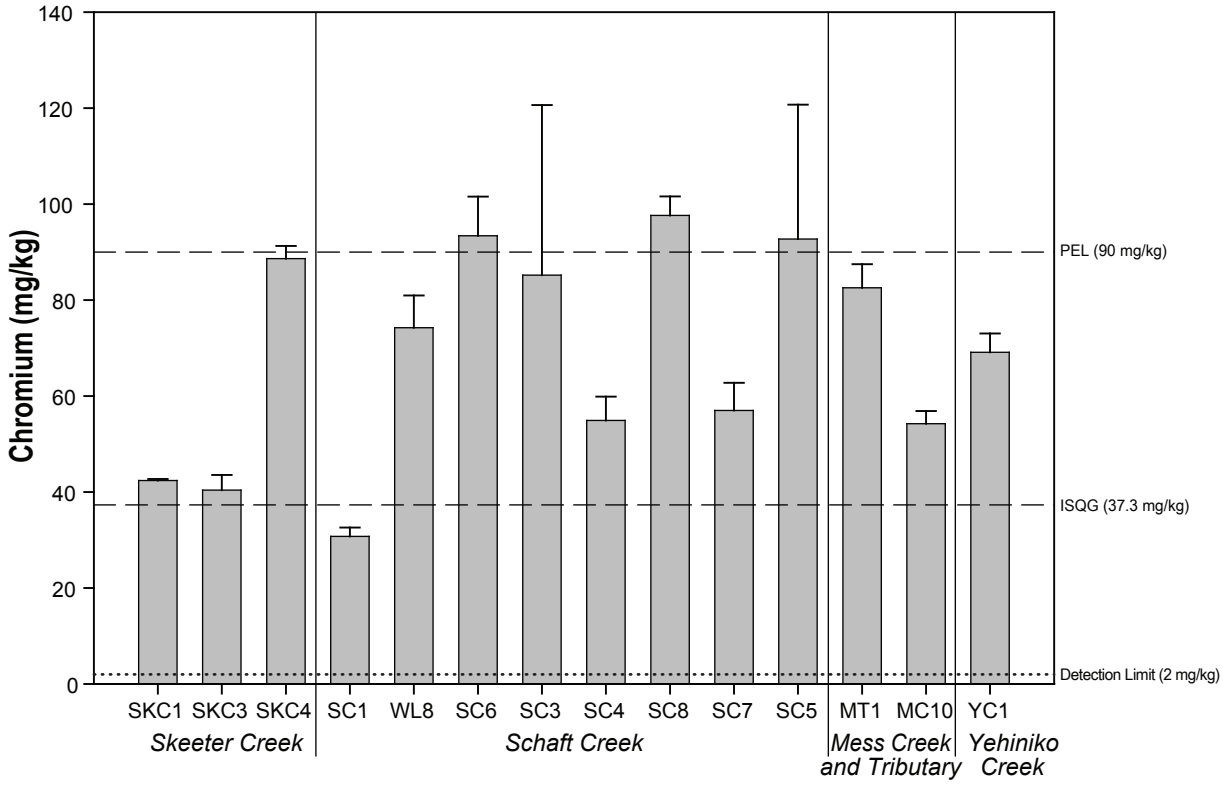

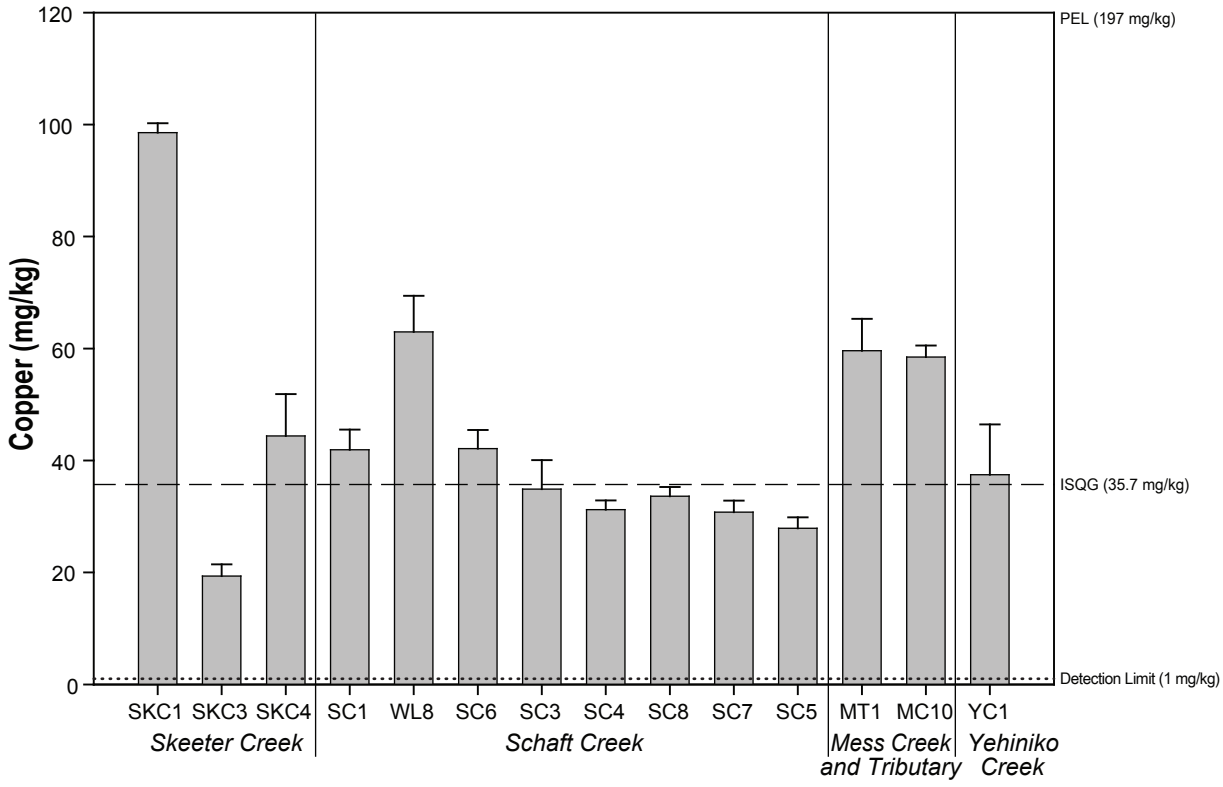

Note: Error bars represent one standard error of the mean.
Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.2-4

Chromium and Copper Concentrations in Stream Sediments, 2008

copper FOX metals inc.

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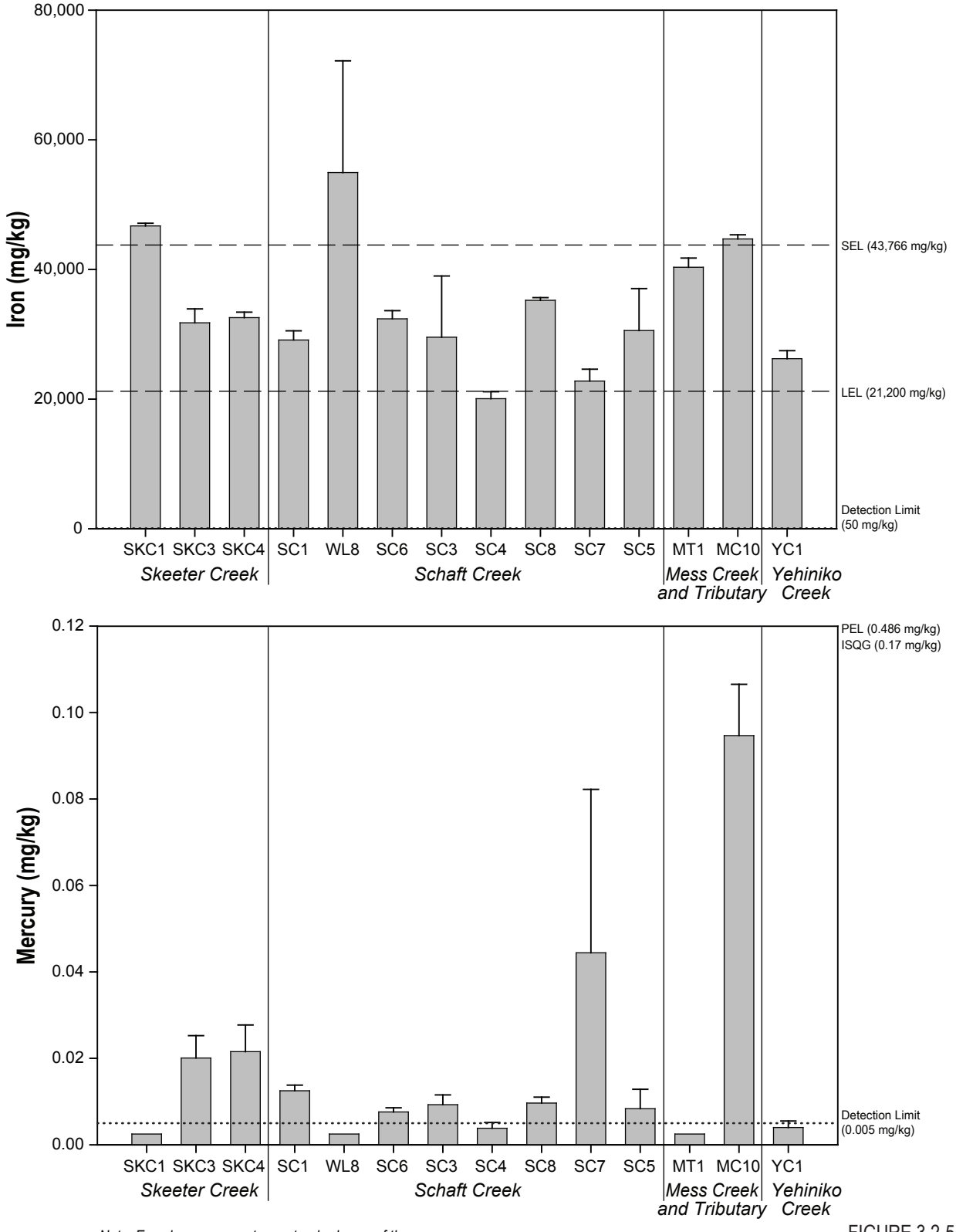

Note: Error bars represent one standard error of the mean.
Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.2-5

Iron and Mercury Concentrations in Stream Sediments, 2008

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Average nickel concentrations were lowest at the Schaft Creek sites with all concentrations below 30 mg/kg (Figure 3.2-6). All sites except SC1 exceeded the LEL guideline of 16 mg/kg and samples from SCK4 and YC1 exceeded the SEL guideline of 75 mg/kg.

Average zinc concentrations were lowest in the Schaft Creek sites (generally close to 30 mg/kg) with SCK1 have a considerably greater average concentration (122 mg/kg) than other sites (Figure 3.2-6). SKC1 was the only site with a sample that exceeded the ISQG (123 mg/kg) guideline.

3.2.4 Quality Assurance and Quality Control (QA/QC)

The RPD analysis of QA/QC field duplicate sediment data for receiving environment streams are reported in Appendix 3.2-2. In summary, three duplicate pairs of samples were compared for each variable, using the RPD between the replicates as a measure of the variability inherent in field sampling (environmental heterogeneity). Approximately 55% of analytical results were below or less than 5 times the method detection limit (MDL), and therefore RPD values were not calculated. Of the remaining results, only 4.6% (5 of 108 RPD calculations) were greater than the threshold of 20% indicated by provincial guidance.

3.3 STREAM PERIPHYTON

All stream periphyton taxonomic data can be found in Appendix 3.3-1. Chlorophyll α concentrations and sample area (7.06 cm^2) used to calculate biomass are in Appendix 3.3-2.

3.3.1 Biomass and Density

As was the case in 2007, average periphyton biomass (as measured by chlorophyll α concentrations) at stream sites was generally below 0.8 $\mu g/cm^2$ (Figure 3.3-1). The only exception to this was SC1. Average biomass ranged from 0.07 (SC8) to 1.27 $\mu g/cm^2$ (SC1).

Average periphyton density ranged from 0.3 (SC4) to 95.4 cells x $10^6/m^2$ (SKC3) (Figure 3.3-2). In the case of most sites, these densities are an order of magnitude lower than in previous years. The greatest contribution to the cell density found at SKC3 came from the diatom *Cocconeis placentula,* which were present in relatively high numbers compared to other taxa at this site and did not show much of a presence at other sites (1 or <1 cell x $10^6/m^2$).

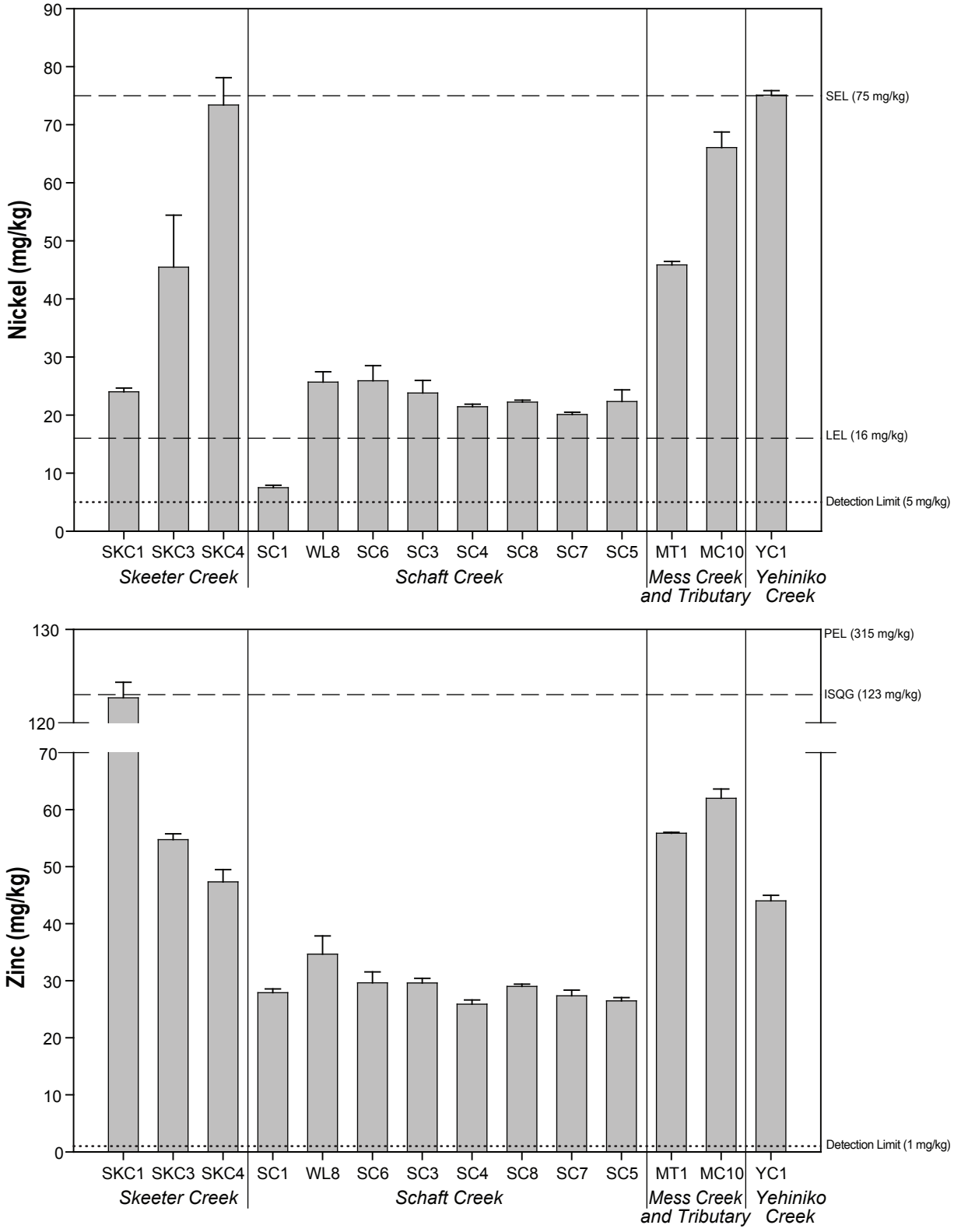
3.3.2 Relative Abundance

All periphyton communities were almost completely composed of diatoms (Figures 3.3-3a to 3.3-3c). Diatoms composed 91 to 100% of these stream periphyton communities. SC6 was the only site to have another taxonomic group measuring more than 1% of the community (cryptophyte: 8%). Smaller proportions (approximately 1% or less) of the communities were composed of cyanophytes, chlorophytes and cryptophytes.

3.3.3 Richness and Diversity Indices

Most stream sites had average periphyton genus richness between 5 and 12 taxa (Figure 3.3-4). Average genus richness ranged from 4 (SC1) to 15 (SKC4 and WL8) taxa among stream sites, which is similar to the richness levels seen previously.

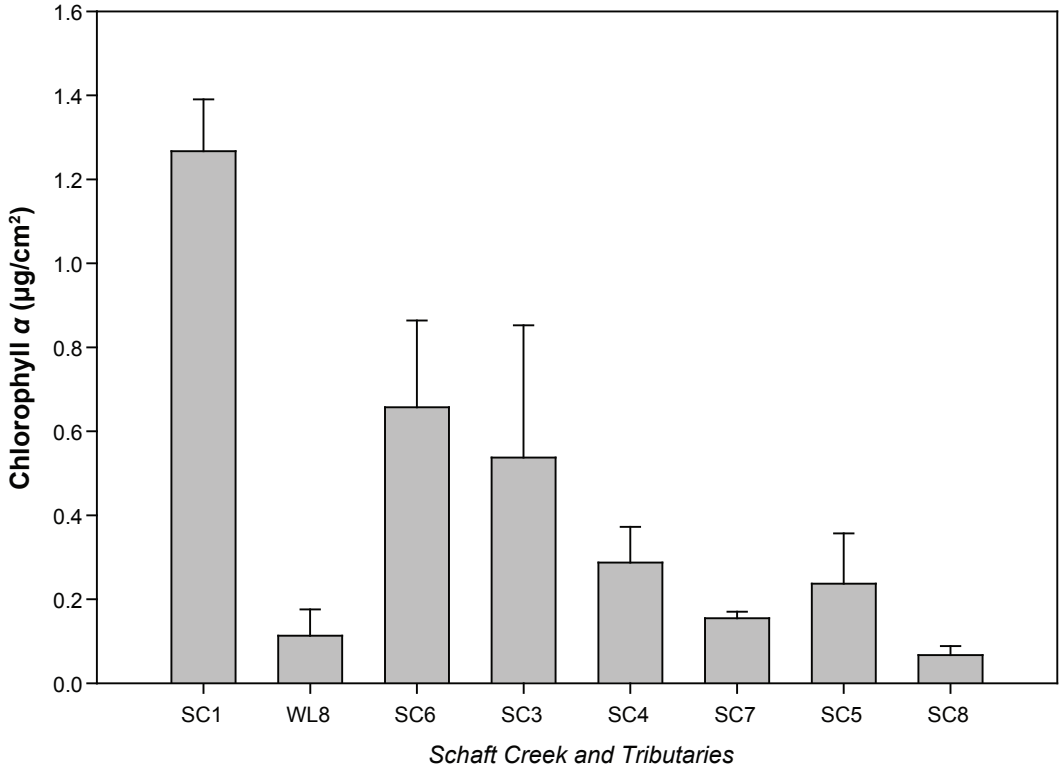
Simpson diversity ranged from 0.51 at SC1 to 0.89 at SC4 (Figure 3.3-5). Evenness, which ranges from 0 to 1 with 1 representing complete evenness, measures how evenly abundance is distributed among the genera within a community. Evenness values ranged from 0.5 at SC1 to 0.9 at SC4 (Figure 3.3-6).

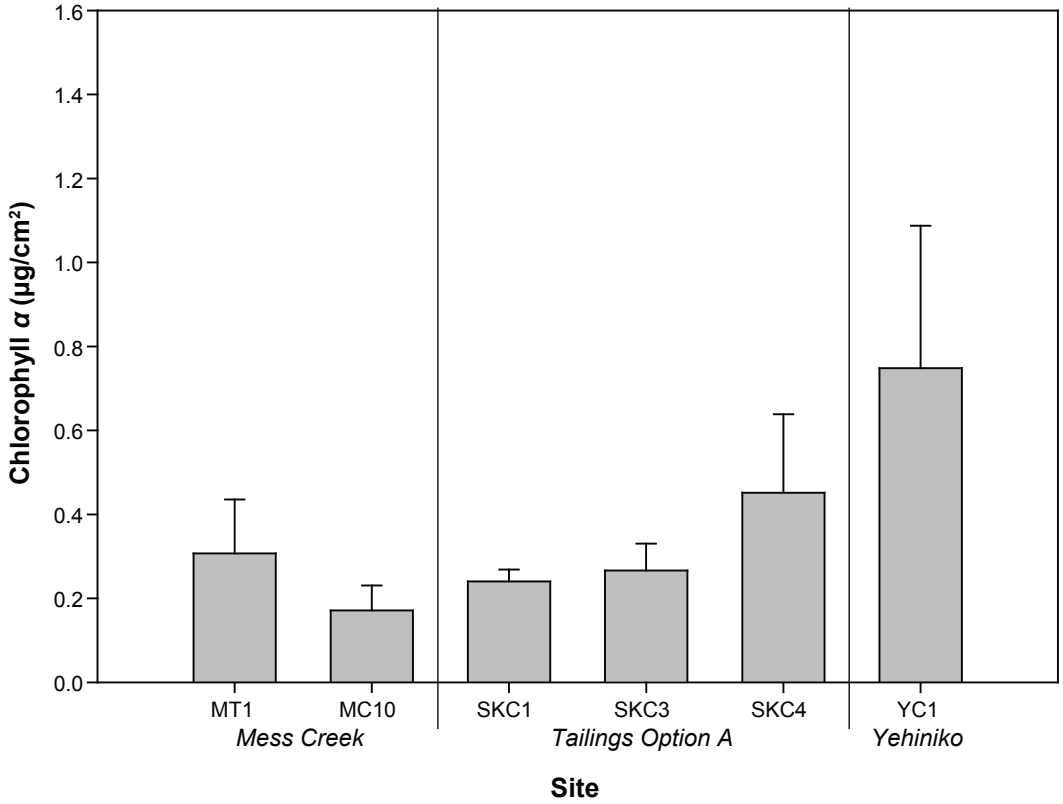


Note: Error bars represent one standard error of the mean.
Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.2-6

Nickel and Zinc Concentrations in Stream Sediments, 2008





Note: Error bars represent one standard error of the mean

FIGURE 3.3-1

Periphyton Biomass as Chlorophyll *a* in Streams, 2008

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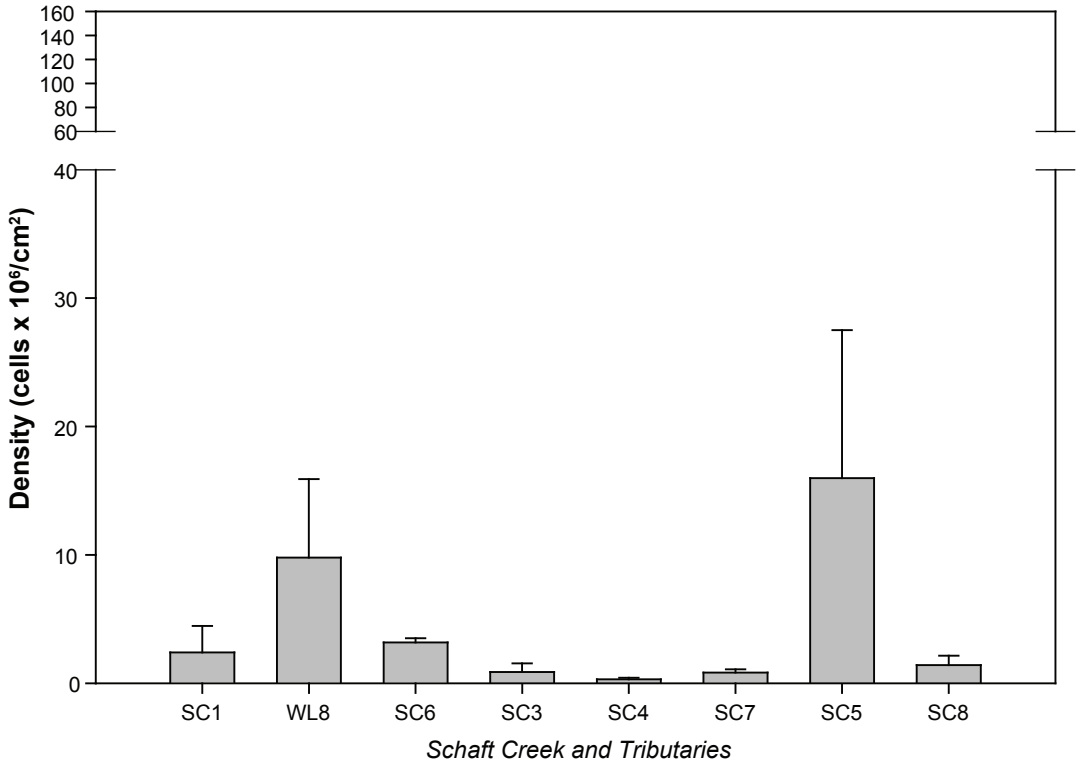
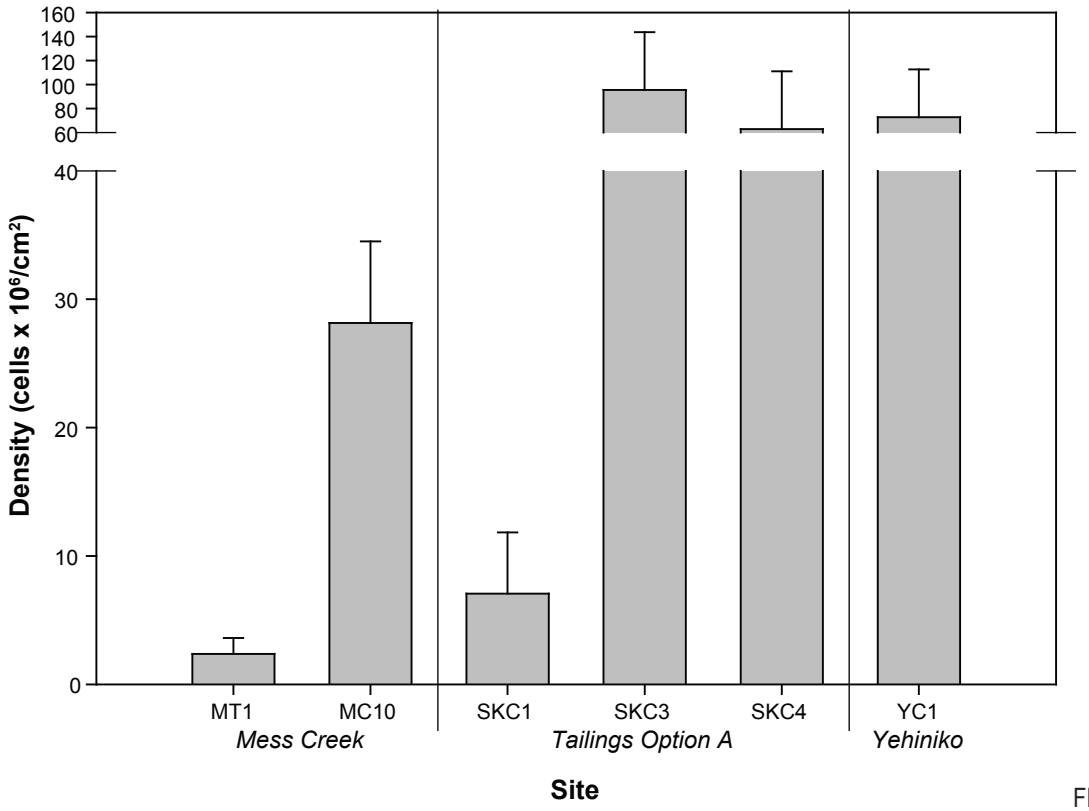




Note: Error bars represent one standard error of the mean

FIGURE 3.3-2

Periphyton Density in Streams, 2008

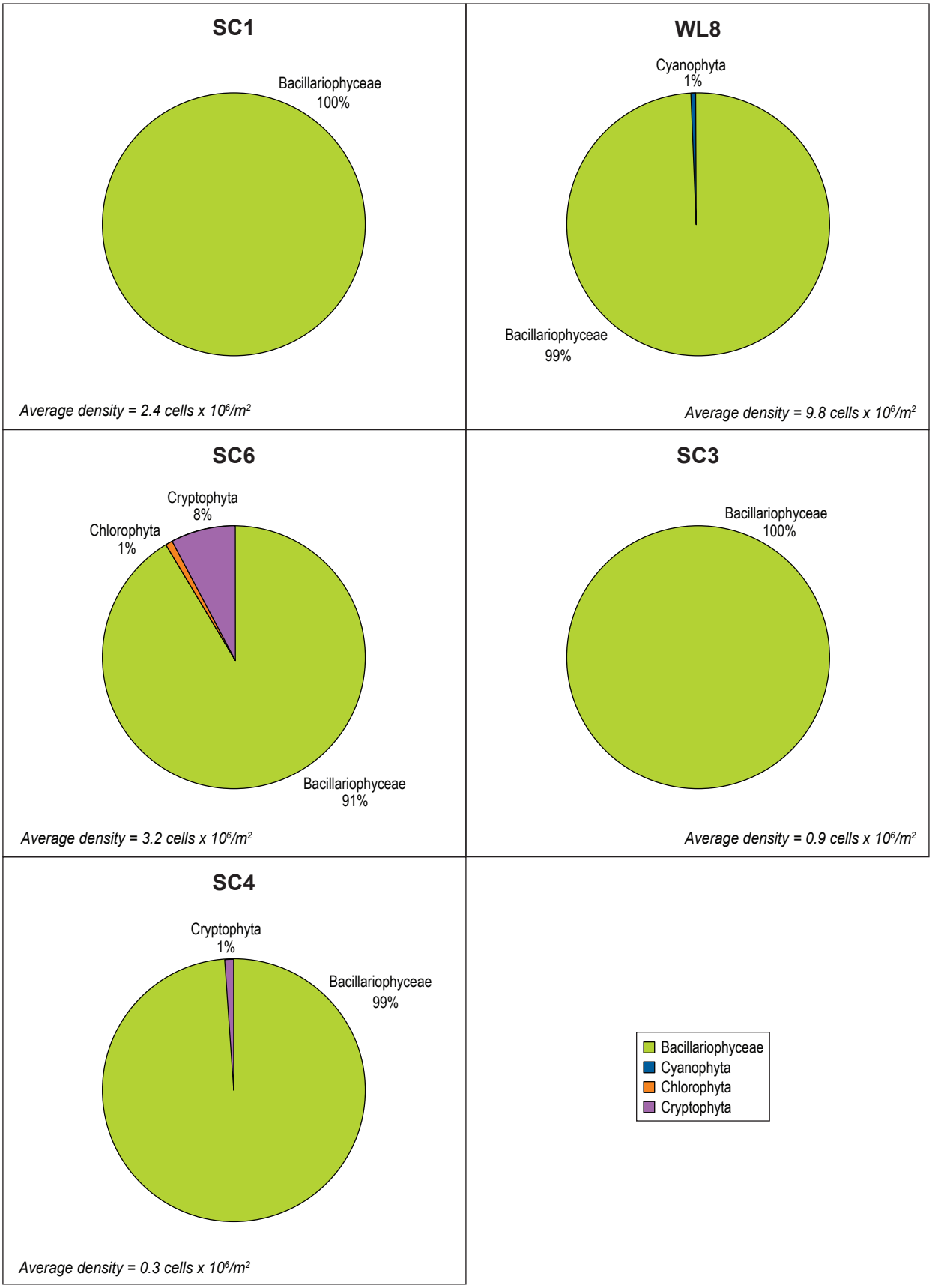


FIGURE 3.3-3a

Taxonomic Composition of Stream Periphyton Communities, 2008

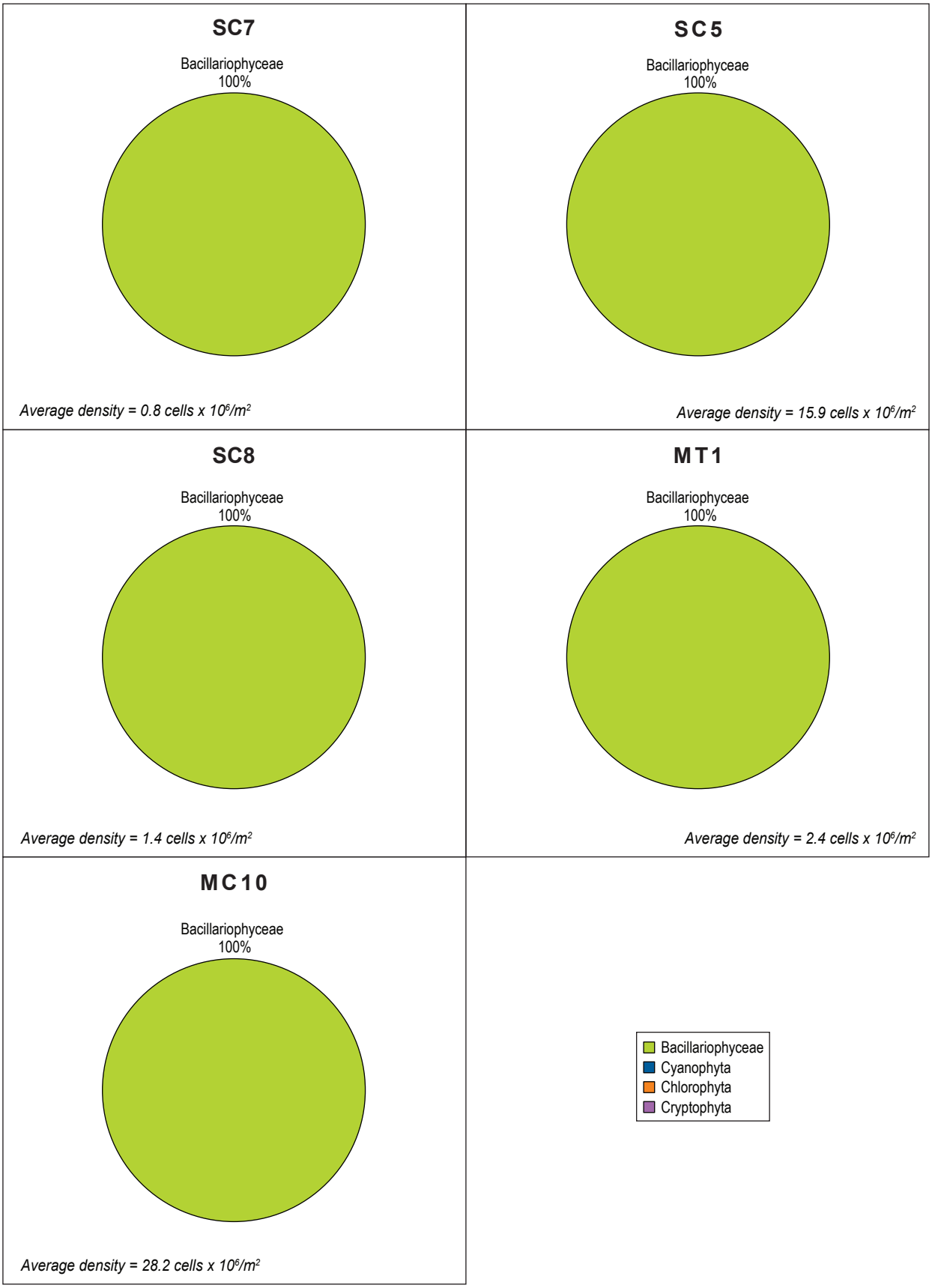
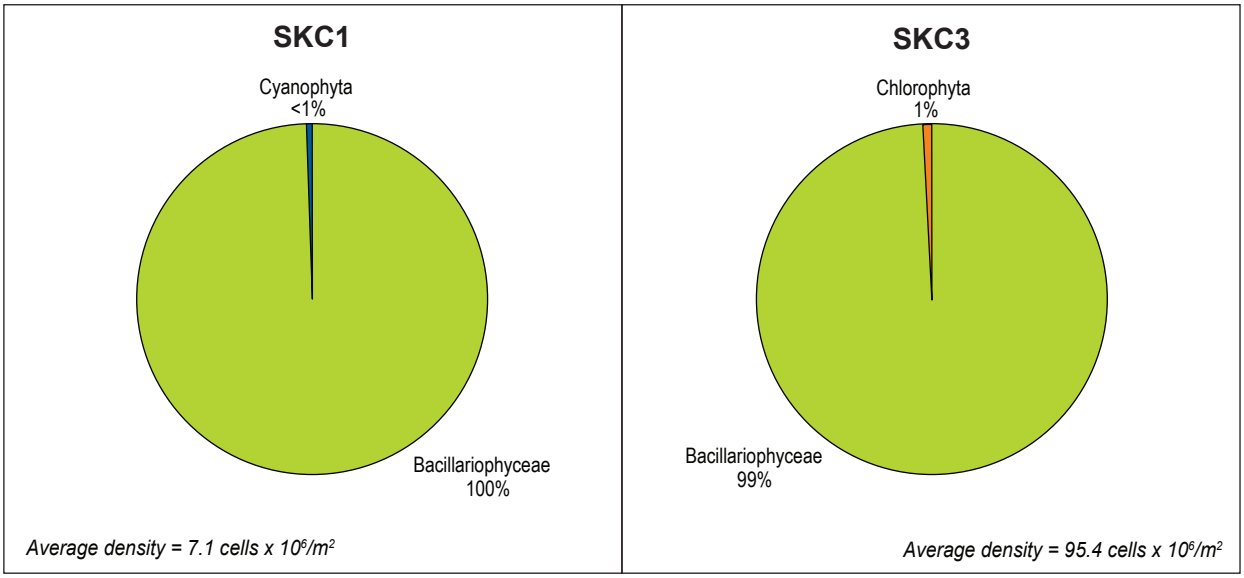


FIGURE 3.3-3b

Taxonomic Composition of Stream Periphyton Communities, 2008



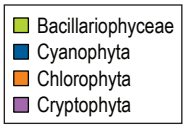
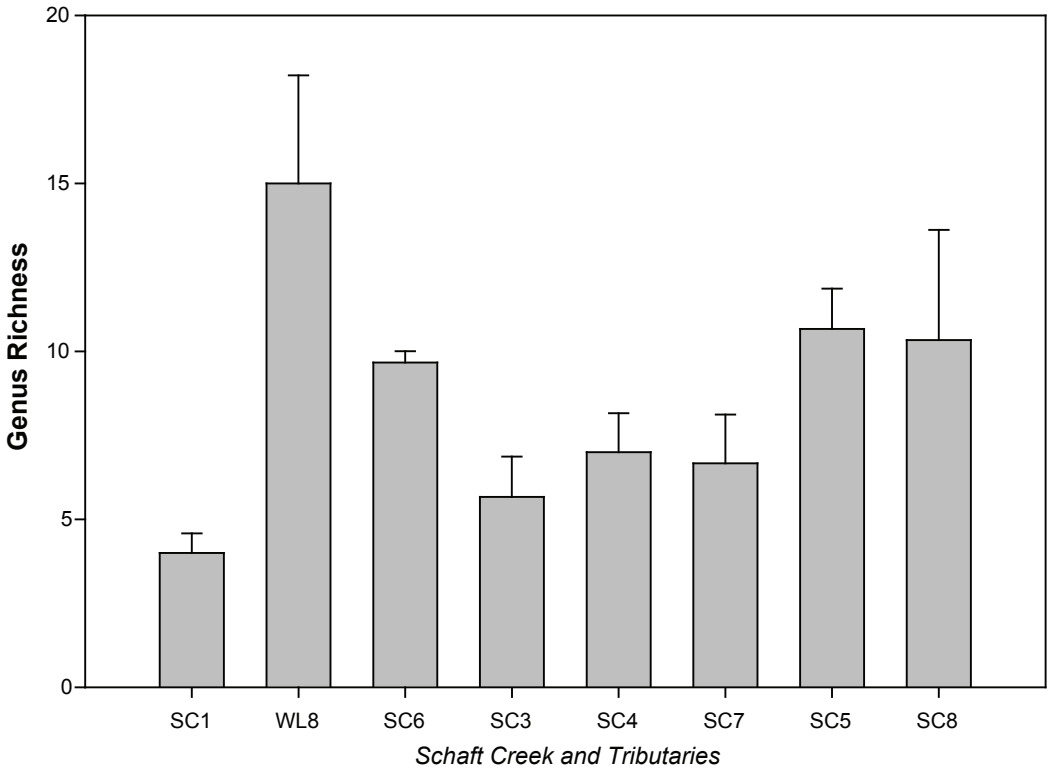
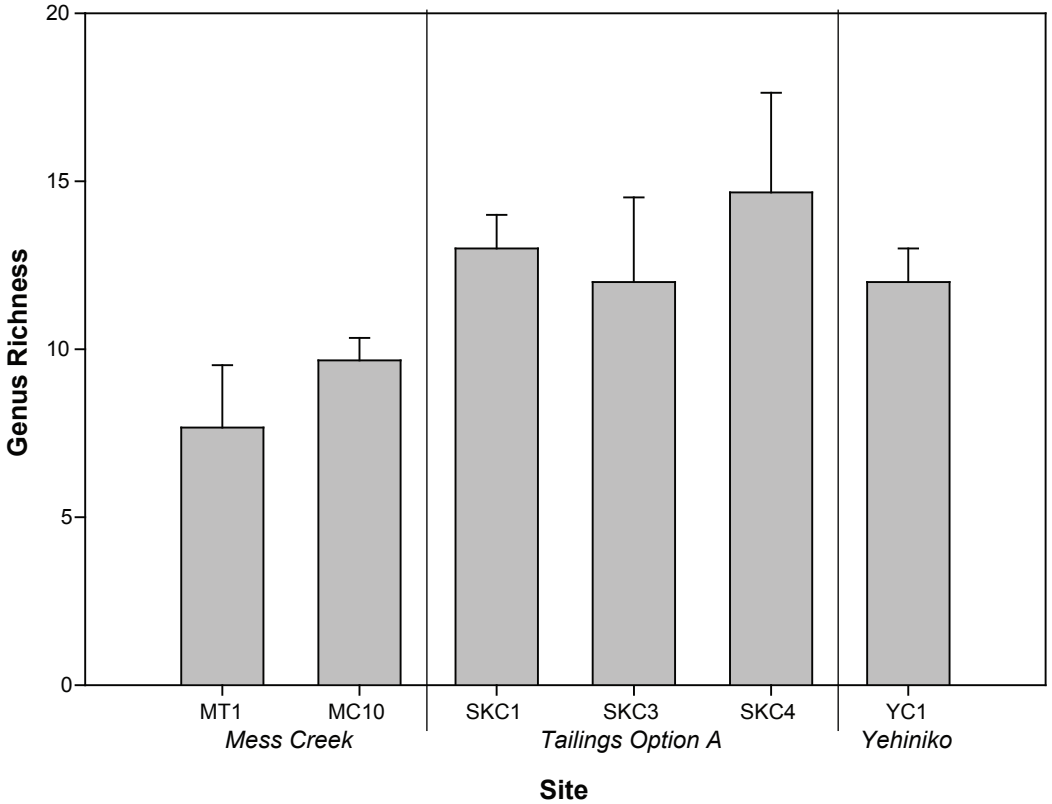


FIGURE 3.3-3c

Taxonomic Composition of Stream Periphyton Communities, 2008

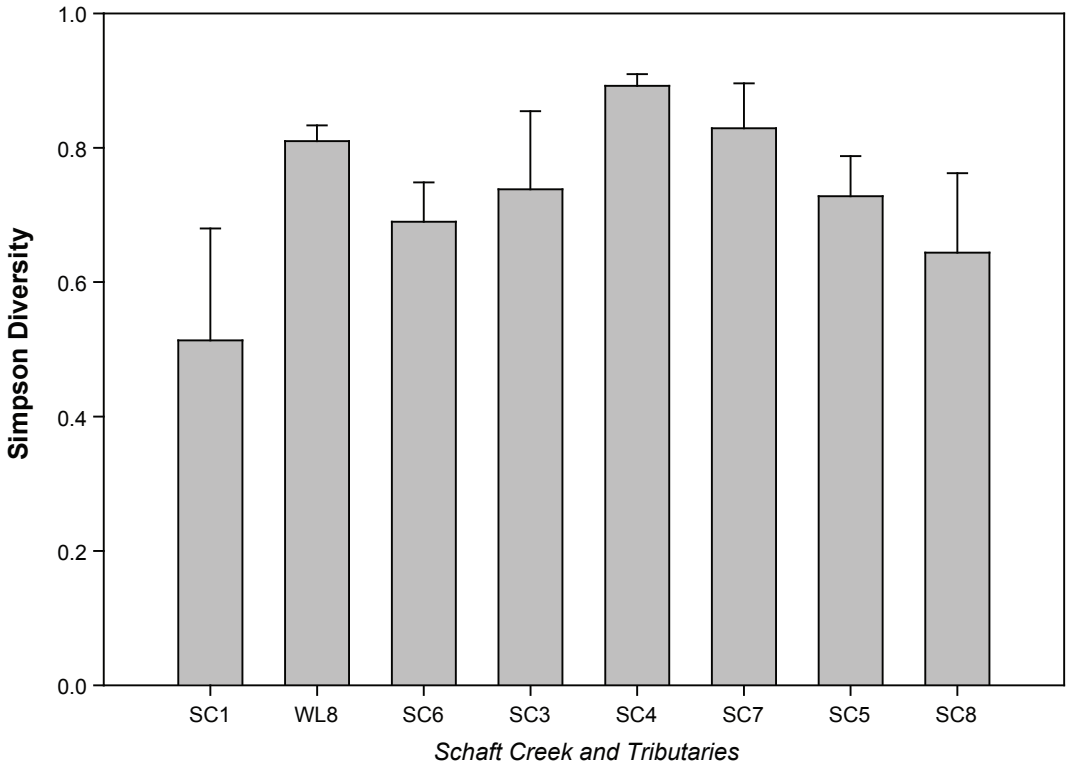


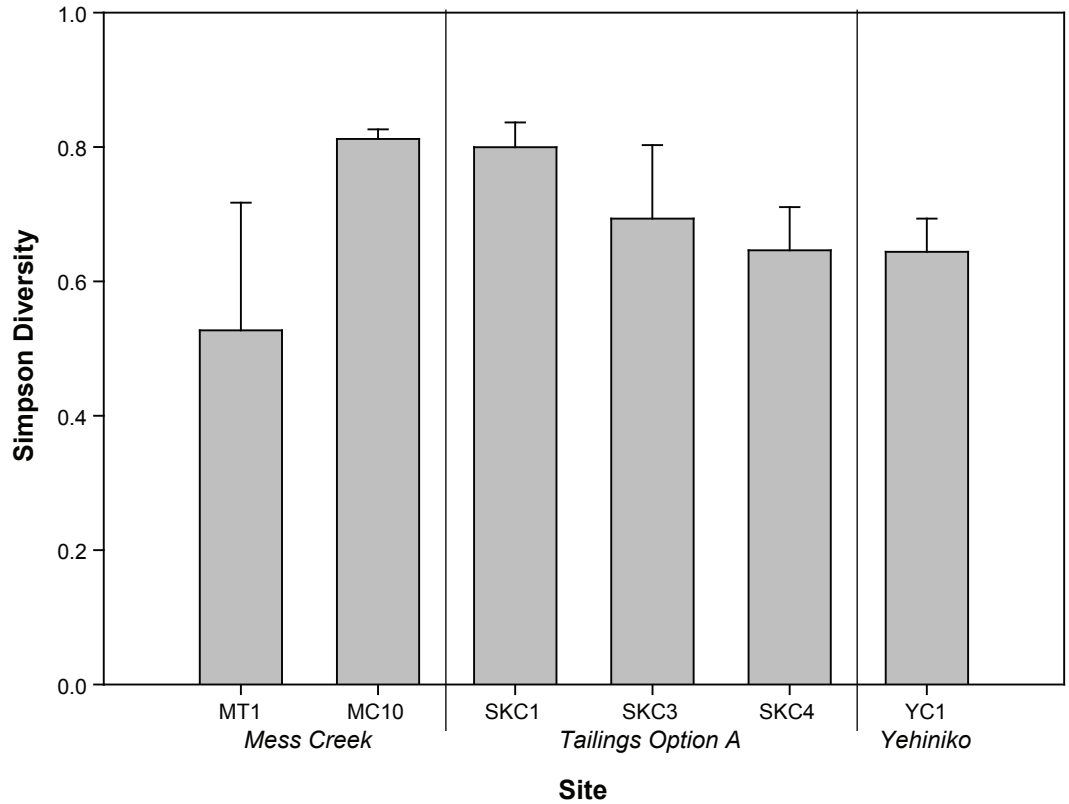


Note: Error bars represent one standard error of the mean

FIGURE 3.3-4

Periphyton Genus Richness in Streams, 2008

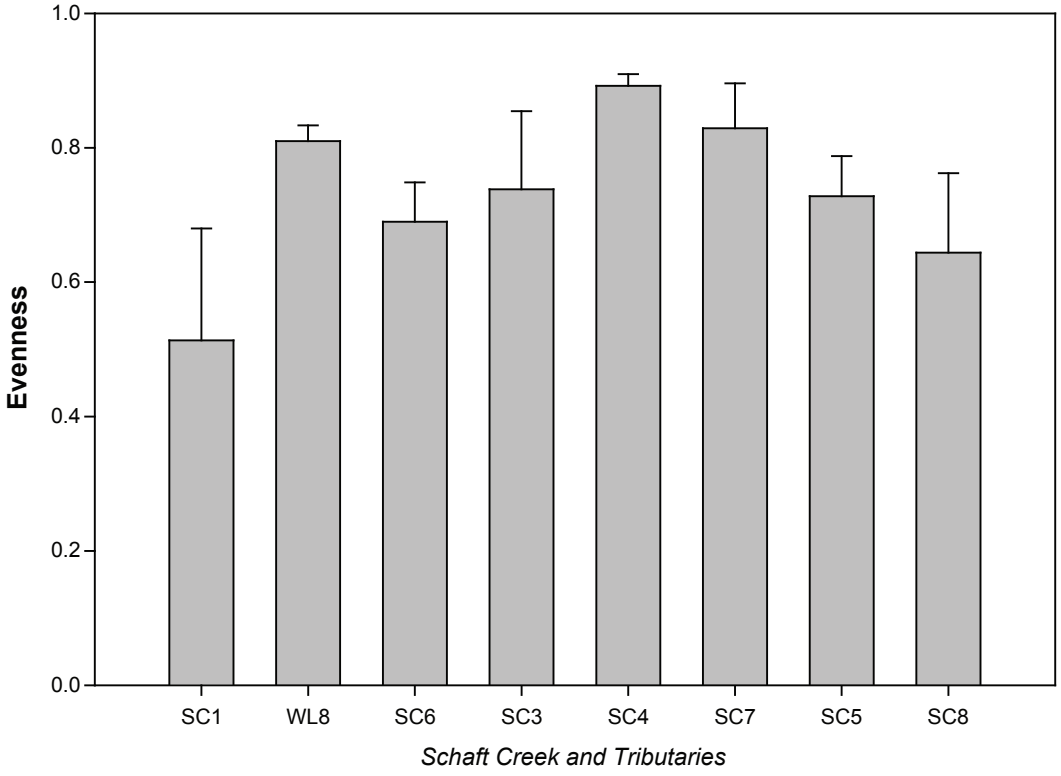


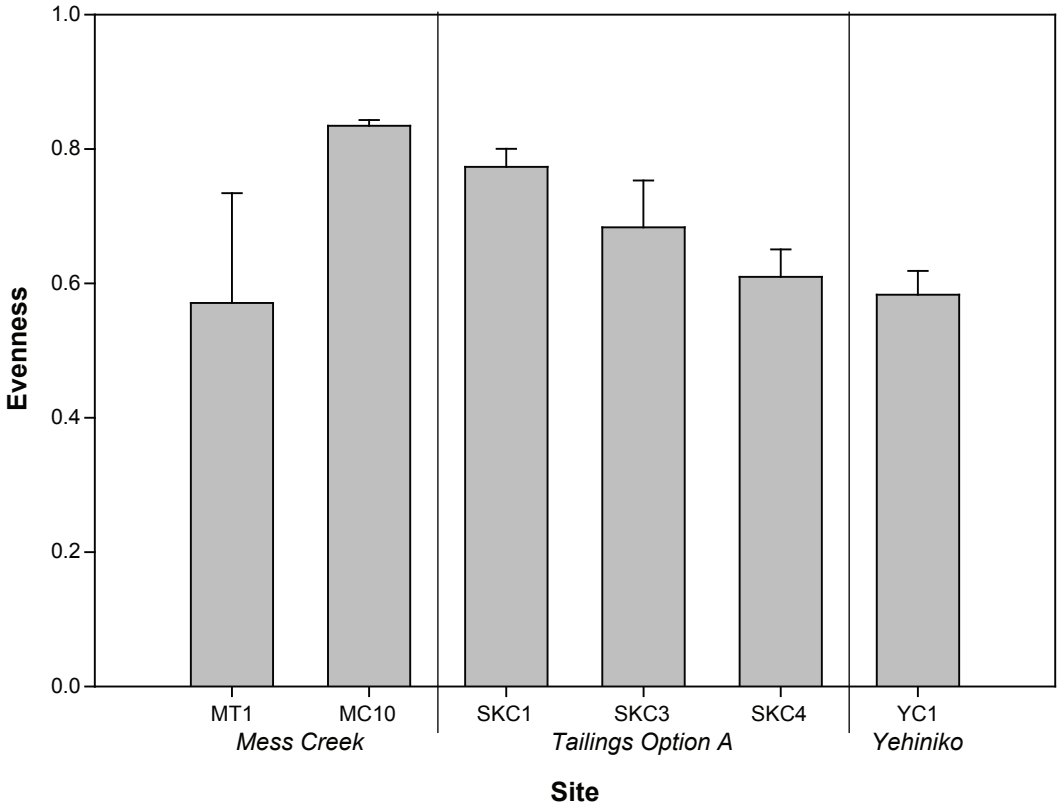


Note: Error bars represent one standard error of the mean

FIGURE 3.3-5

Periphyton Simpson Diversity Index Value in Streams, 2008





Note: Error bars represent one standard error of the mean

FIGURE 3.3-6

Periphyton Evenness in Streams, 2008

3.4 STREAM BENTHIC INVERTEBRATES

In 2008, benthic invertebrate (benthos) communities were sampled in 14 streams. All benthos taxonomic data can be found in Appendix 3.4-1.

3.4.1 Density and Relative Abundance

Density of secondary producers is often related to the degree of primary productivity available to the community and can give a relative indication of energy transfer between these two trophic levels.

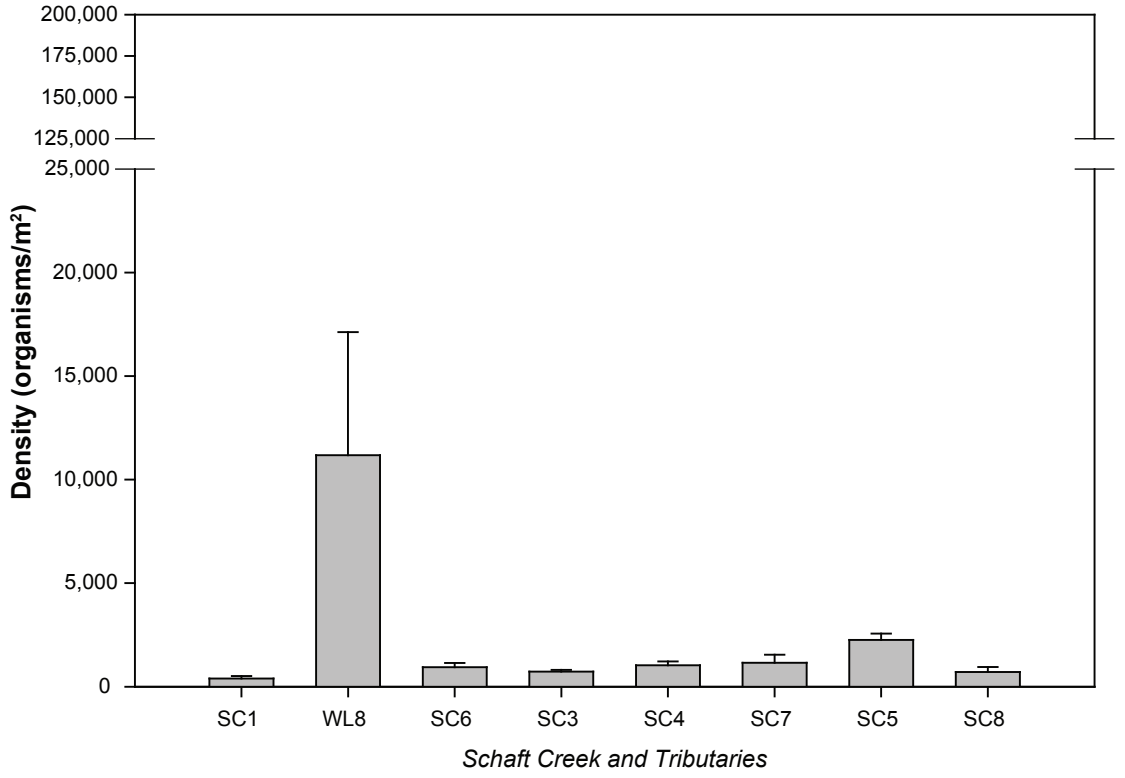
The average density of benthic invertebrates across all stream sites was 13,717 organisms/m^2. Density ranged from 394 organisms/m^2 at SC1 to 145,763 organisms/m^2 at SKC3 (Figure 3.4-1). Similar to 2006 and 2007, the average density for the Skeeter Creek Watershed sites (53,317 organisms/m^2), known as 'Tailings Option A', was greater than other watersheds. The average density of sites in the Schaft watershed was 1,832 organisms/m^2.

As was the case in 2006 and 2007, the most dominant taxonomic groups at all stream sites were stoneflies (Plecoptera), dipterans, and mayflies (Ephemeroptera) (Figures 3.4-2a to 3.4-2c). The relative abundance of stoneflies and dipterans ranged from 3 (SC1) to 73% (YC1) and 9 (MT1) to 84% (SC1), respectively. Mayflies were less abundant, ranging from 3 (SC3 and WL8) to 35% (SC5). While stoneflies, dipterans and mayflies comprised 90% of all organisms collected, 11 taxonomic groups composed the remaining 10% of these communities. These included individuals from platyhelminthes (<1%), amphipoda (<1%), hemiptera (<1), trichoptera (up to 2%), mollusca (up to 3%), arachnida (up to 4%), copepoda (up to 5%), nematoda (up to 6%), oligochaeta (up to 7%), cladocera (up to 15%), and ostracoda (up to 18%). Ostrocads were noticeably present at WL8 (11%), SKC1 (15%), and SKC3 (18%), while cladocera (water fleas) were fairly abundant at SKC1 (15%).

Ephemeropteran, plectopteran, and trichopteran (EPT) taxa are known to be sensitive to environmental stress. For this reason having a high proportion of these groups indicates relatively good environmental conditions. EPT generally composed between 50% and 70% of the community at most sites. All sites were composed of more than 40% EPT except SC1 (10%) and SKC3 (27%). These two sites had similarly low proportions of EPT in previous years (Rescan 2007 and 2008). It should be noted that although SC1 is an appropriate reference site for water quality since it is upstream from project activities, it is a low order stream with relatively low richness. For biological community purposes the community at YC1 is a better reference site since stream order and general morphology is more similar to receiving environment streams.

3.4.2 Bray-Curtis Similarity

The Bray-Curtis similarity coefficient is useful in determining site similarities based on the type and relative abundance of organisms present. The coefficient ranges from 0 to 100 with 0 being least similar, and 100 being most similar. The resulting similarity matrix showed the similarities in the benthic community for all site combinations and to the median of the reference sites. This similarity matrix is available in Appendix 3.4-2. Benthic invertebrate communities of each stream were compared to each reference site (SC1 and YC1) to determine percent similarity (Environment Canada 2003).



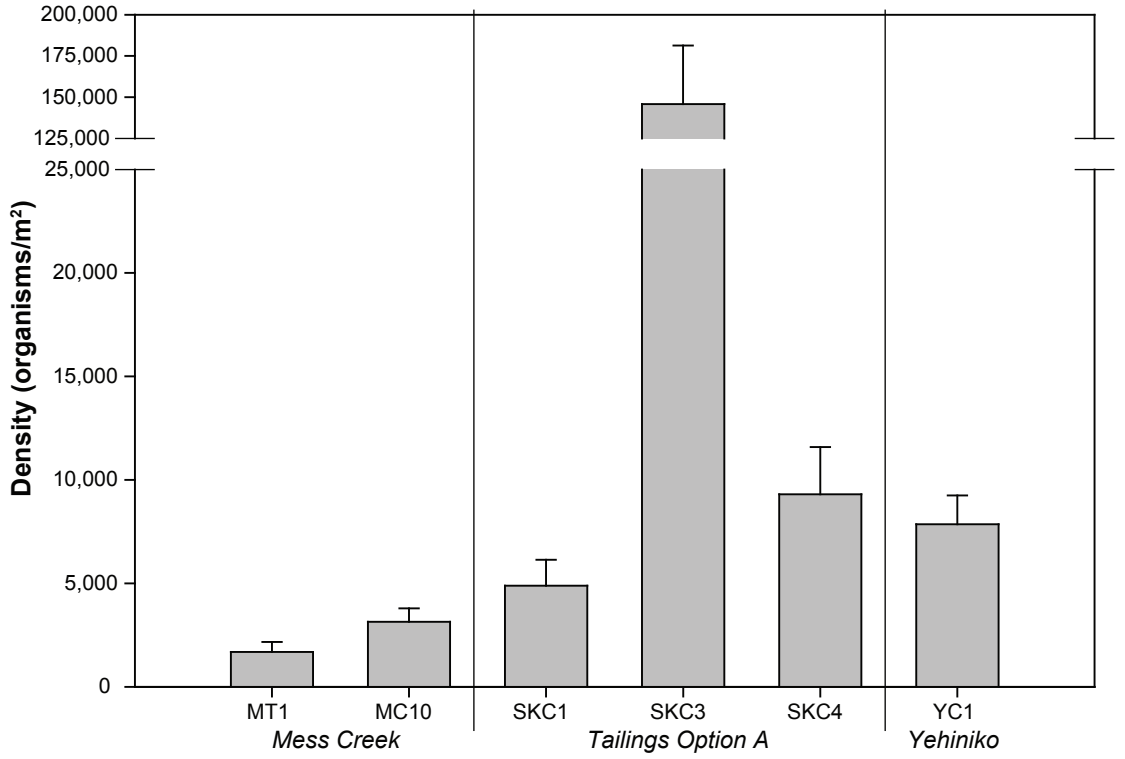


FIGURE 3.4-1

Note: Error bars represent one standard error of the mean

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Benthic Invertebrate Density in Streams, 2008

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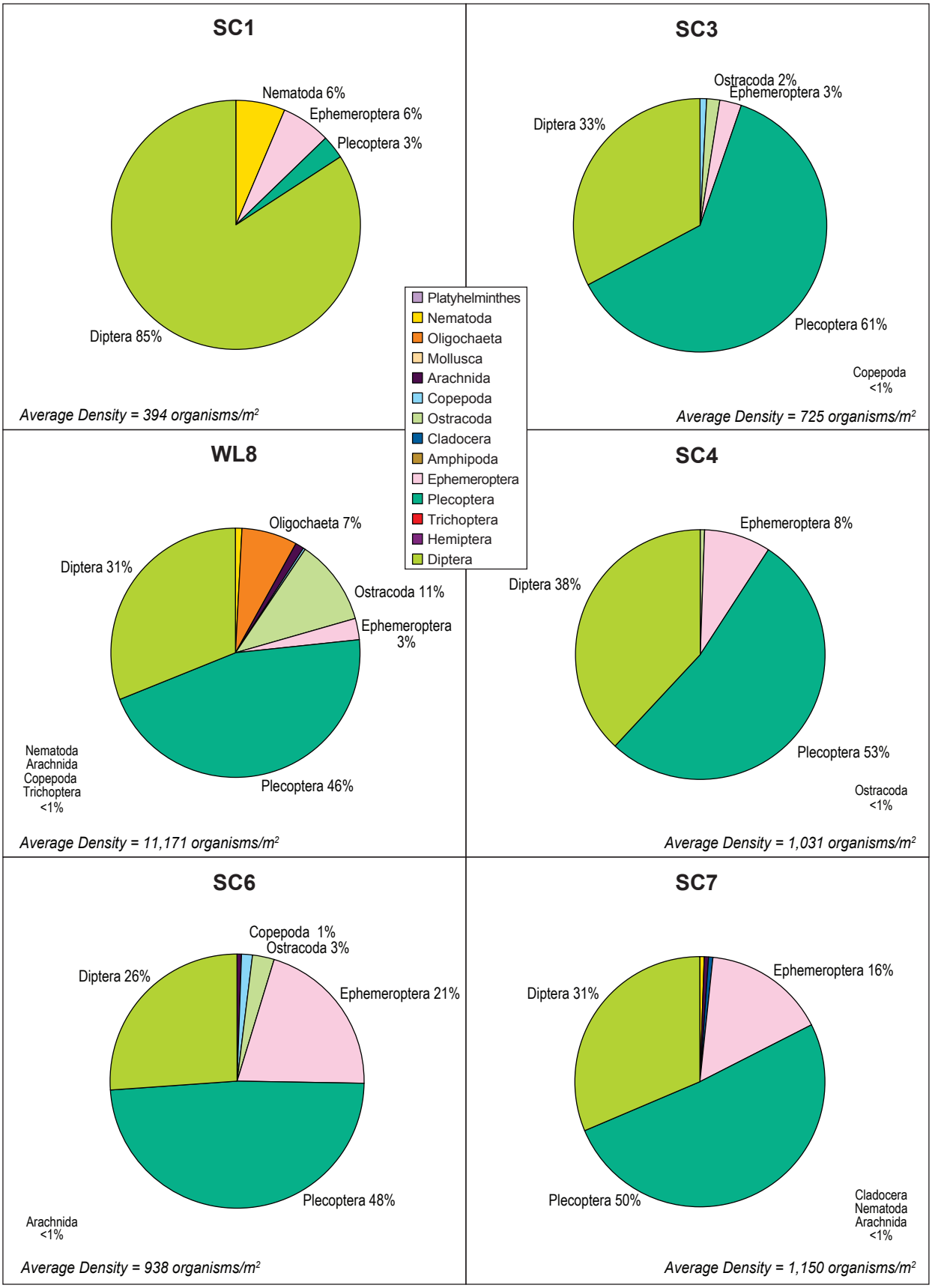
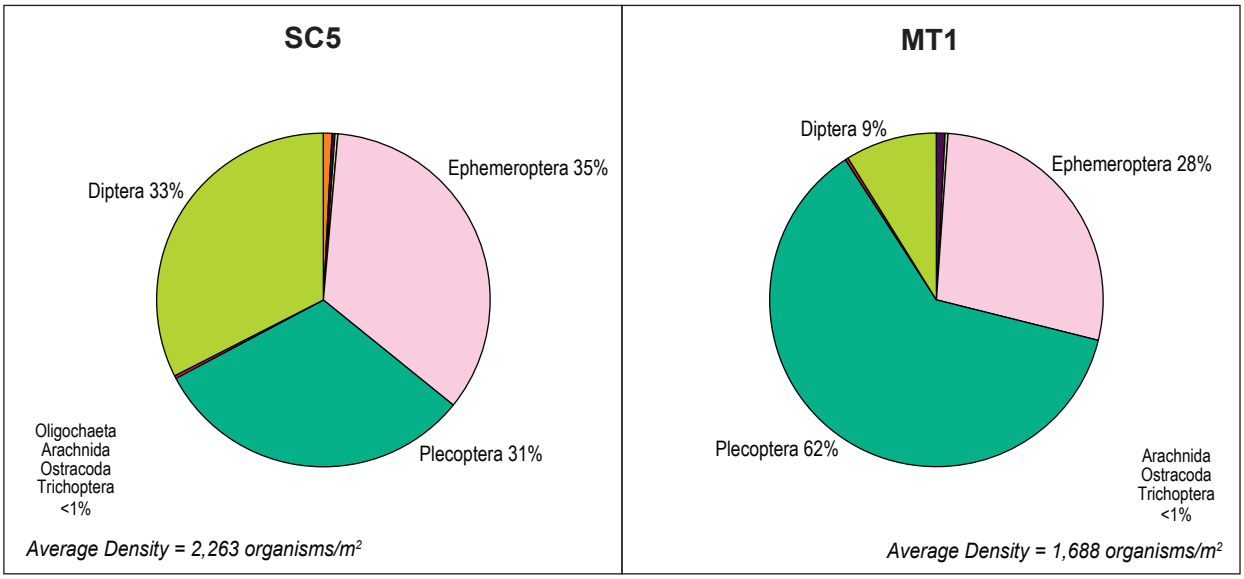
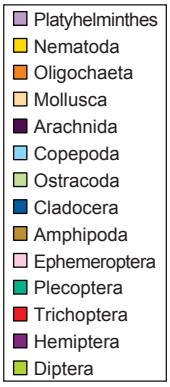


FIGURE 3.4-2a

Taxonomic Composition of Benthic Invertebrate Communities in Streams, 2008





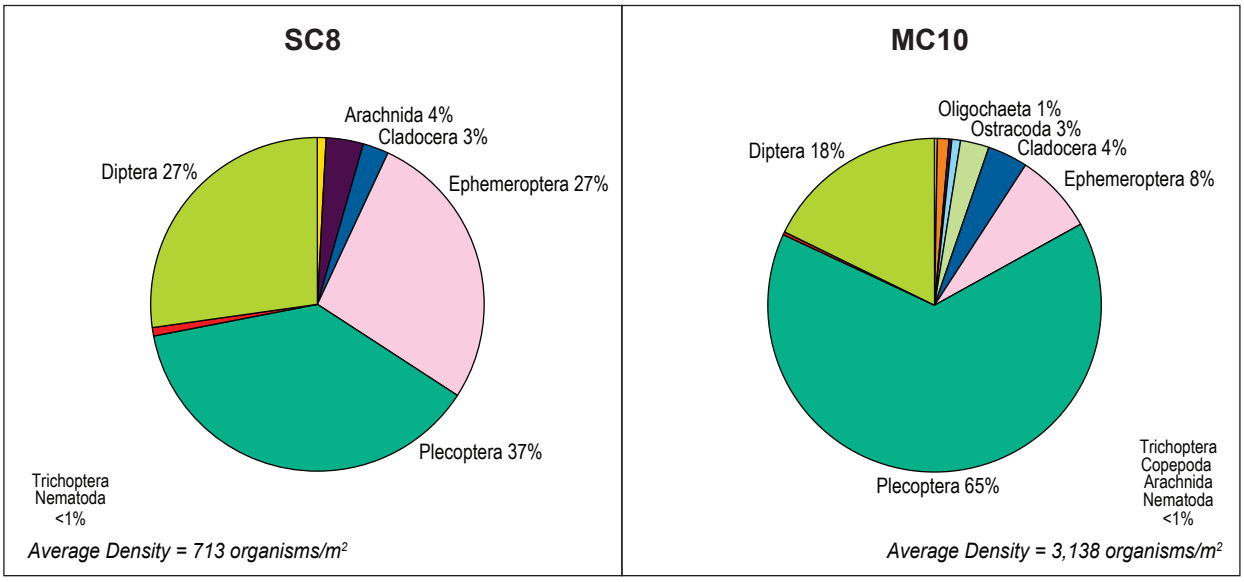


FIGURE 3.4-2b

Taxonomic Composition of Benthic Invertebrate Communities in Streams, 2008

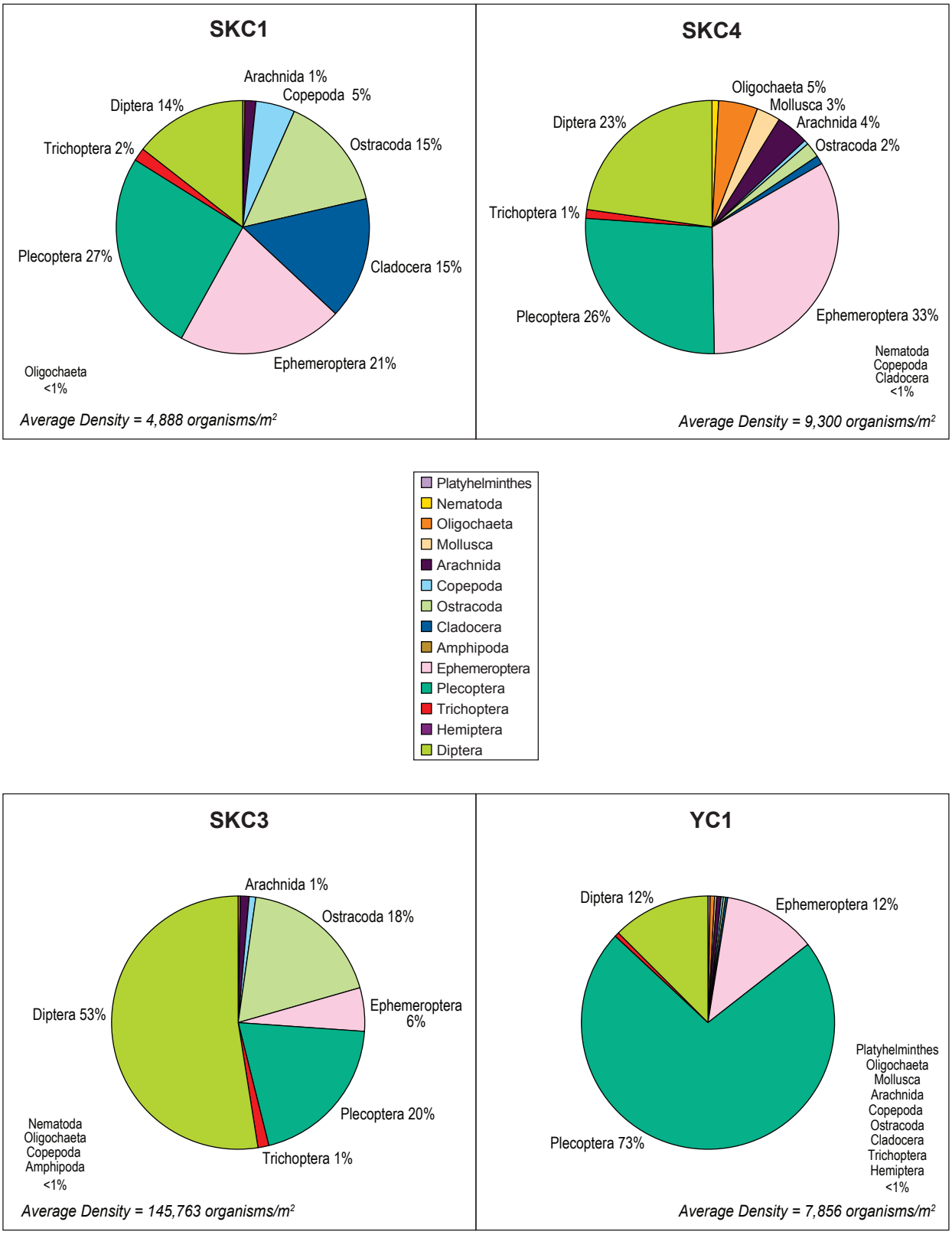


FIGURE 3.4-2c

Taxonomic Composition of Benthic Invertebrate Communities in Streams, 2008

Figure 3.4-3 illustrates these comparisons along with the mean percent similarity of all sites to each reference site median. As would be expected both SC1 and YC1 are most similar to their own median percent similarity. Similarity to the SC1 reference stream benthic community ranged from <1% (SKC3) to 45% (SC8) with an average similarity of 24.8%. This was similar to the average percent similarity to SC1 in 2007 (27.8%). Most Schaft Creek communities showed an above average similarity to SC1 in 2008.

Similarity to the YC1 reference stream ranged from 14% (SC1) to 47% (SC5) with an average of 33.6%. The average similarity of sites from within each watershed to the YC1 reference stream revealed that the Mess Creek watershed (37%) had a slightly stronger percent similarity, in comparison to the Schaft Creek (31%) and the Tailings Option A (26%) watersheds.

3.4.3 Richness and Diversity Indices

Genus richness across stream sites ranged from 4 (SC1) to 28 (SKC4) taxa (Figure 3.4-4). As was the case in 2006 and 2007, the Skeeter Lake Watershed had the greatest average richness (26 taxa) and the Schaft Creek Watershed had the lowest average richness (10 taxa) (Rescan 2008). Average Simpson Diversity Index values were very similar at most sites and ranged from 0.55 at SC3 to 0.91 at SKC1 (Figure 3.4-5). Evenness, which ranges from 0 to 1 with 1 representing complete evenness, measures how evenly taxa are distributed among the genera within a community. Evenness values were very similar between sites and ranged from 0.56 at SKC3 to 0.88 at SC7 (Figure 3.4-6).

3.5 LAKE AND WETLAND WATER QUALITY

All data for lake and wetland water quality are provided in Appendix 3.5-1. Seven wetlands and two lakes were sampled once in 2008 for water quality (Figure 2.1-1). Samples for each lake were collected just below the surface and at mid-depth.

3.5.1 General Variables and Nutrients

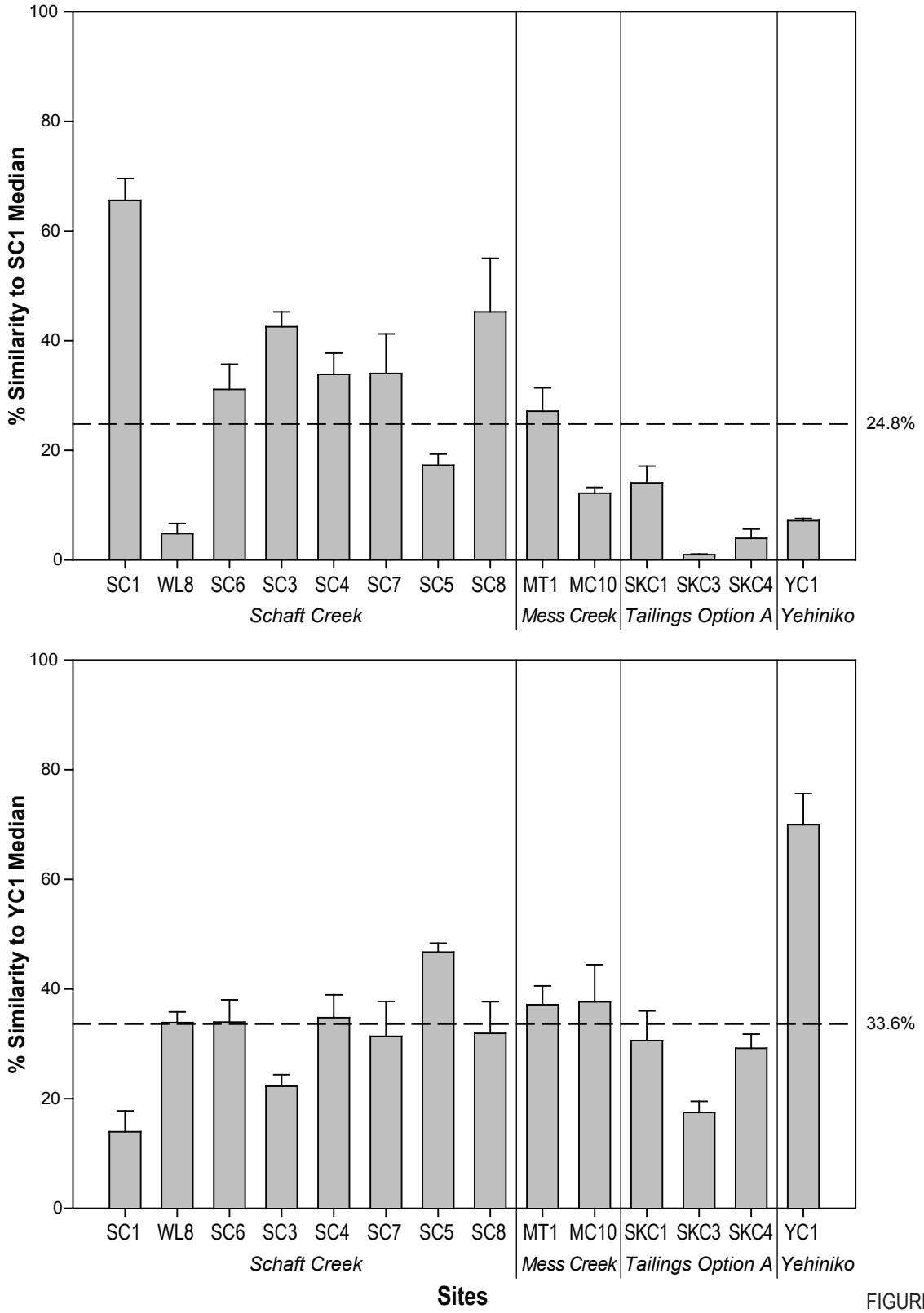
Key general variables are presented graphically and/or discussed below. Within each figure, sites are shown from upstream to downstream, and are grouped by watersheds (Schaft, Skeeter and Mess). If available, CCME and BC Max guidelines are indicated.

Water samples from lakes and wetlands were relatively clear, as indicated by eight of the eleven sample locations having total suspended solid (TSS) concentrations below analytical detection (3 mg/L). The three sites with measurable TSS (WL10, L5 and WL11) all had concentrations below 4 mg/L (no figure). Guidelines for TSS are based on changes from background values. This year represents the third year of collecting background TSS data for several sites.

Lake and wetland water hardness ranged from 15 mg/L (Airstrip WL) to 120 mg/L (WL9) (Figure 3.5-1). Most sites were between 70 and 100 mg/L. There are no guidelines for water hardness.

All lakes and wetlands showed little variability between sites and were slightly alkaline with pH values in ranging from 7.53 to 8.22 (Figures 3.5-1). All samples were within the CCME guidelines for the protection of aquatic life (6.5 to 9.0).

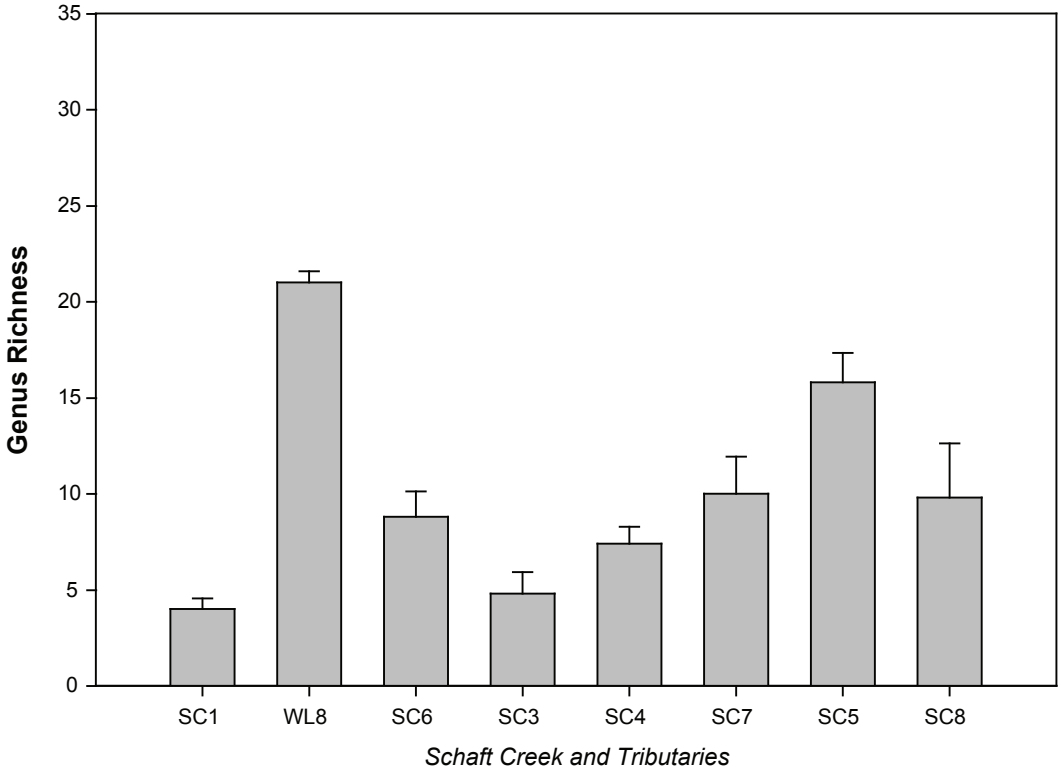
Wetland and lake total nitrogen (TN) concentrations ranged from below detection (0.05 mg/L) at WL4 and WL9 to 0.53 mg/L at WL7 and the Airstrip WL (Figure 3.5-2). WL7 and the Airstrip WL were two times greater in TN than most other lake and wetland sites. There are no guidelines available for TN.

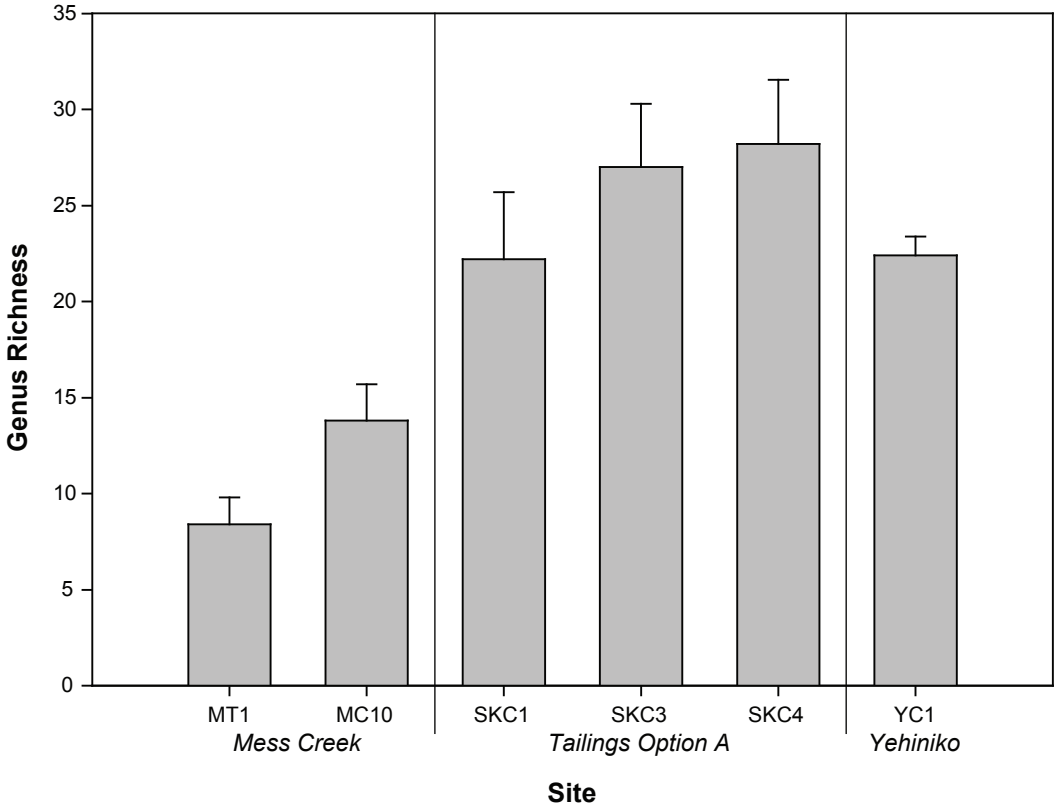


Note: Error bars represent the standard error of the mean
Dashed line denotes mean similarity for all sites

FIGURE 3.4-3

Bray-Curtis Similarity Comparisons for Stream Benthic Invertebrates, 2008

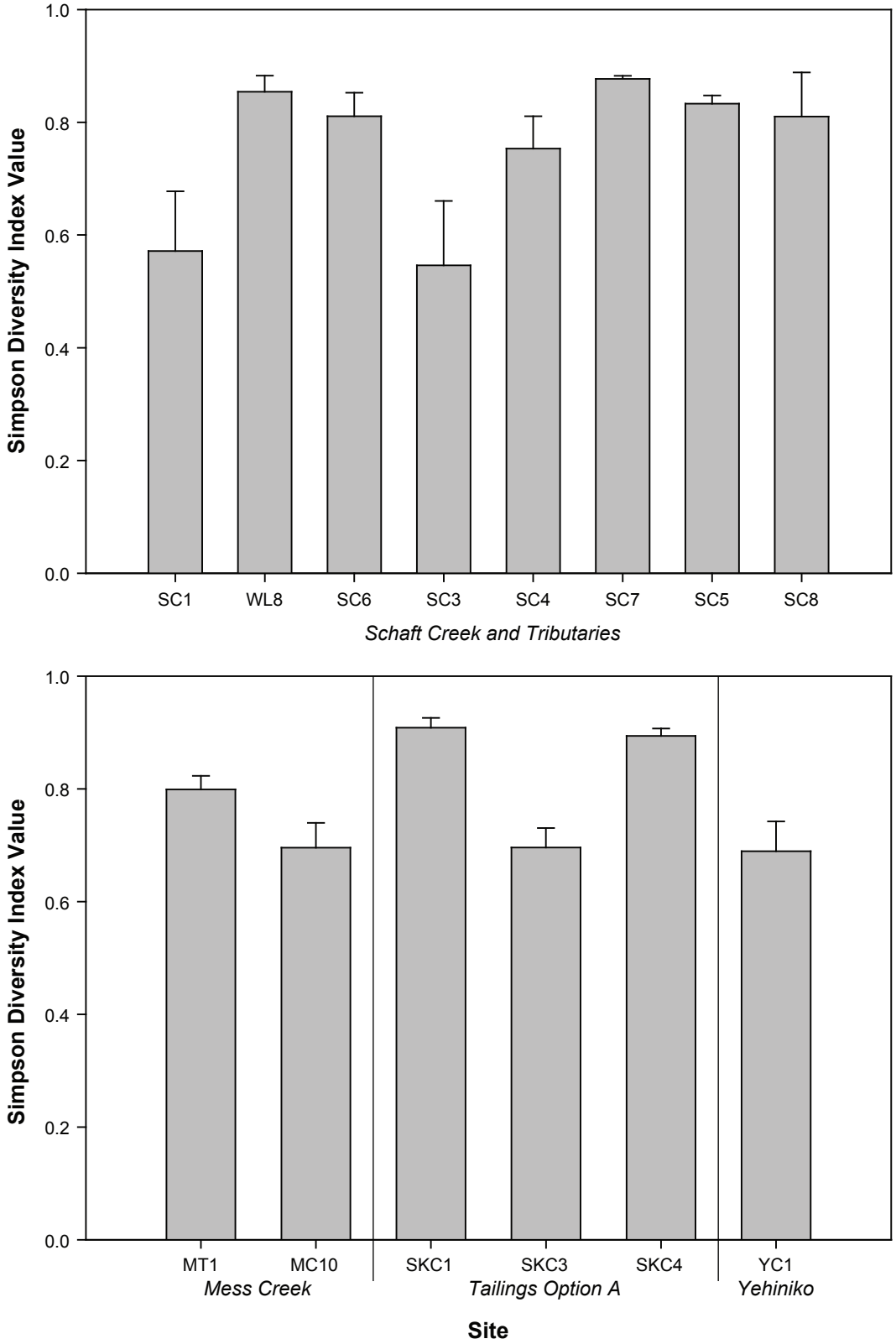




Note: Error bars represent the standard error of the mean

FIGURE 3.4-4

Benthic Invertebrate Genus Richness in Streams, 2008



Note: Error bars represent one standard error of the mean

FIGURE 3.4-5

Benthic Invertebrate Simpson Diversity in Streams, 2008

copper FOX metals inc.

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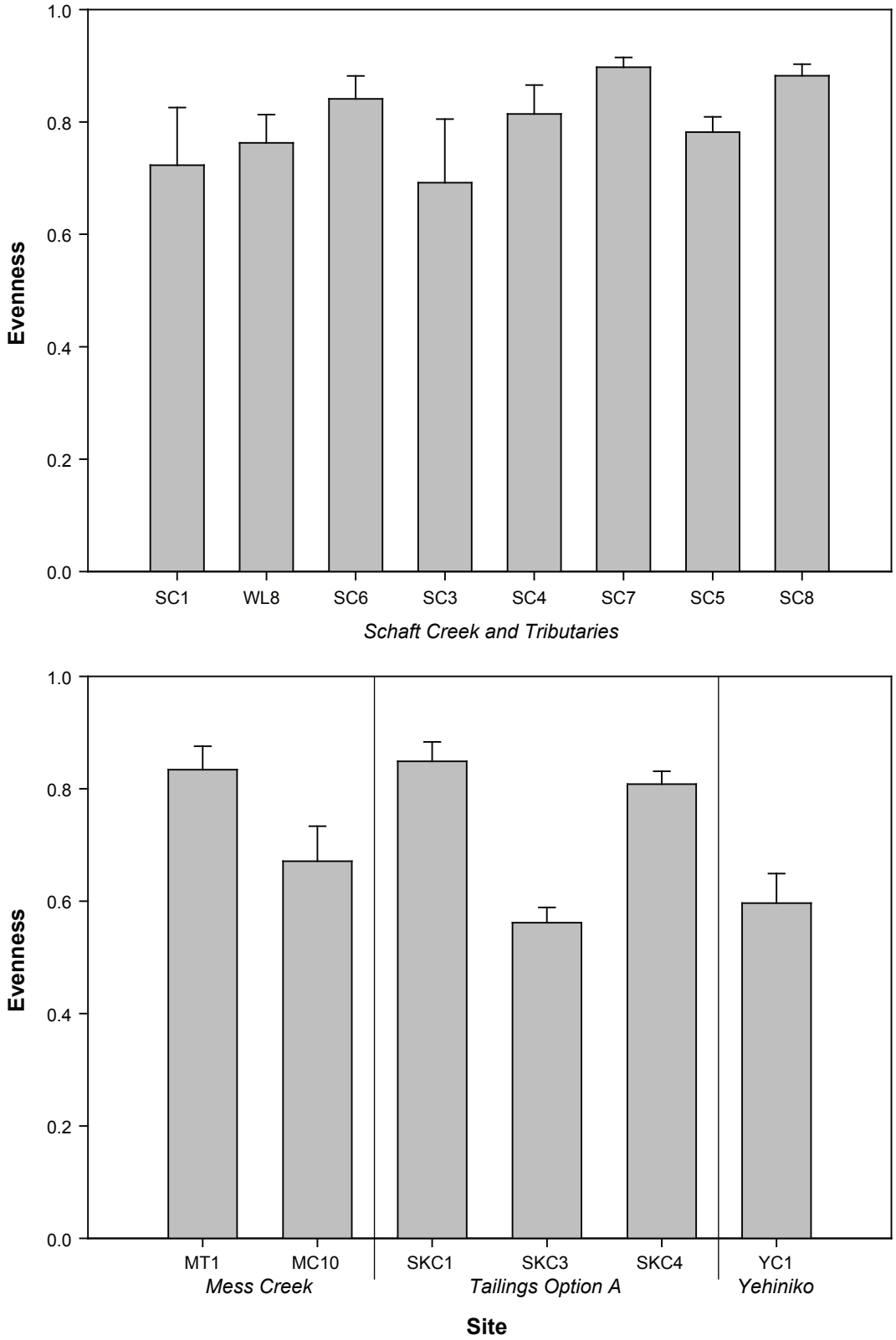

FIGURE 3.4-6

Note: Error bars represent one standard error of the mean

Benthic Invertebrate Evenness in Streams, 2008

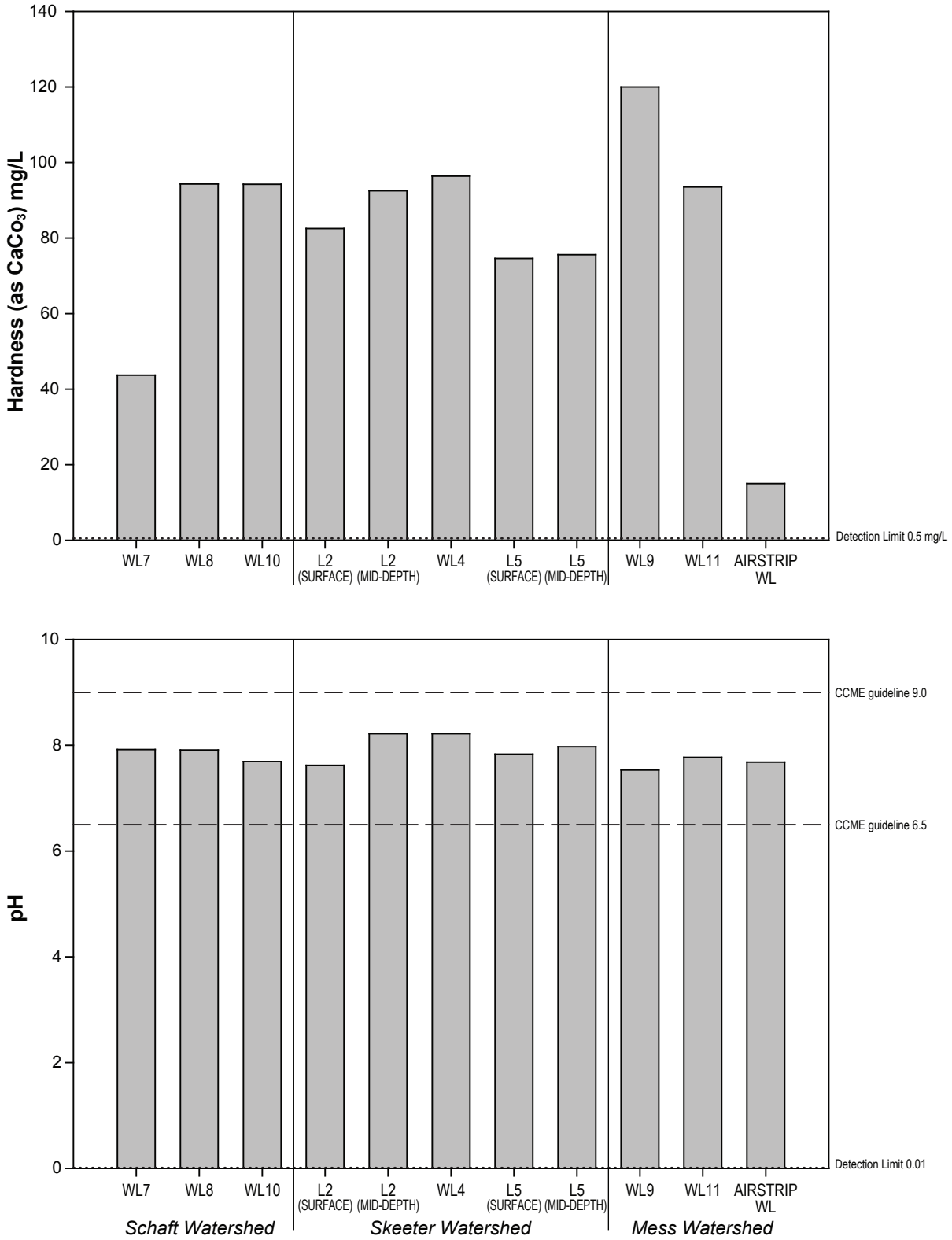

FIGURE 3.5-1

Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

Hardness Concentrations and pH in Lakes and Wetlands, 2008

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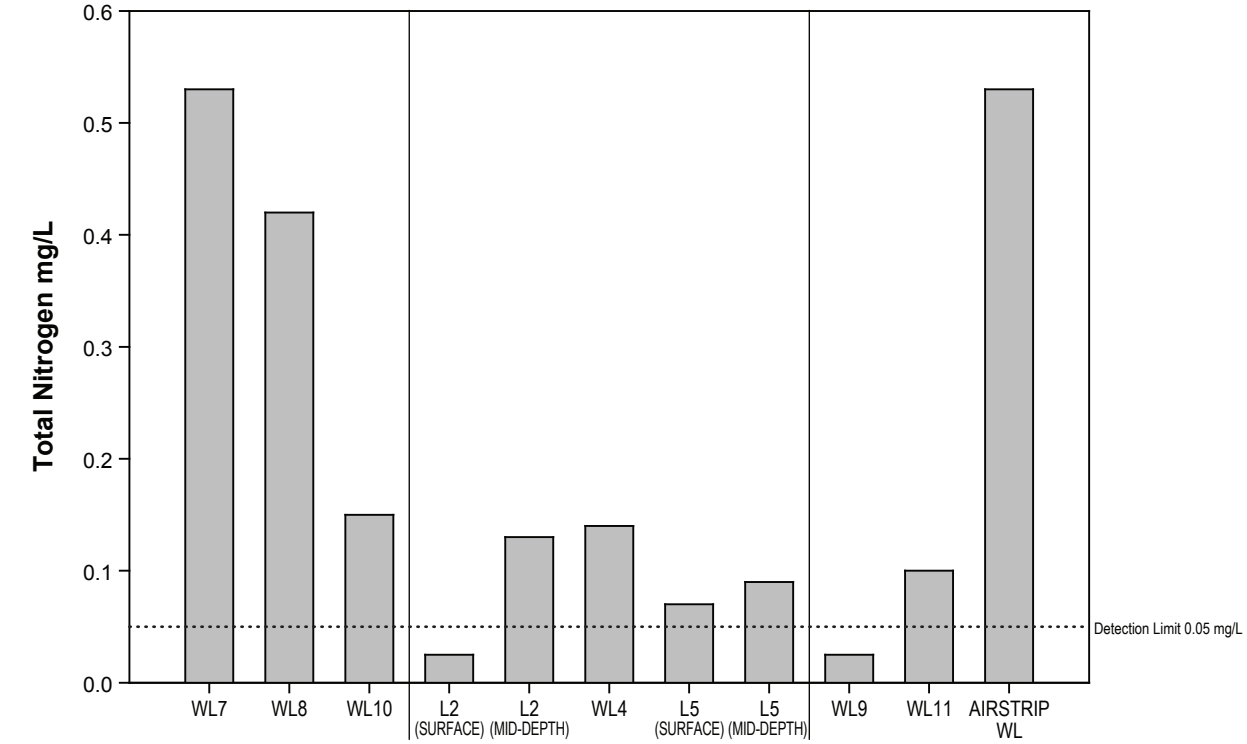

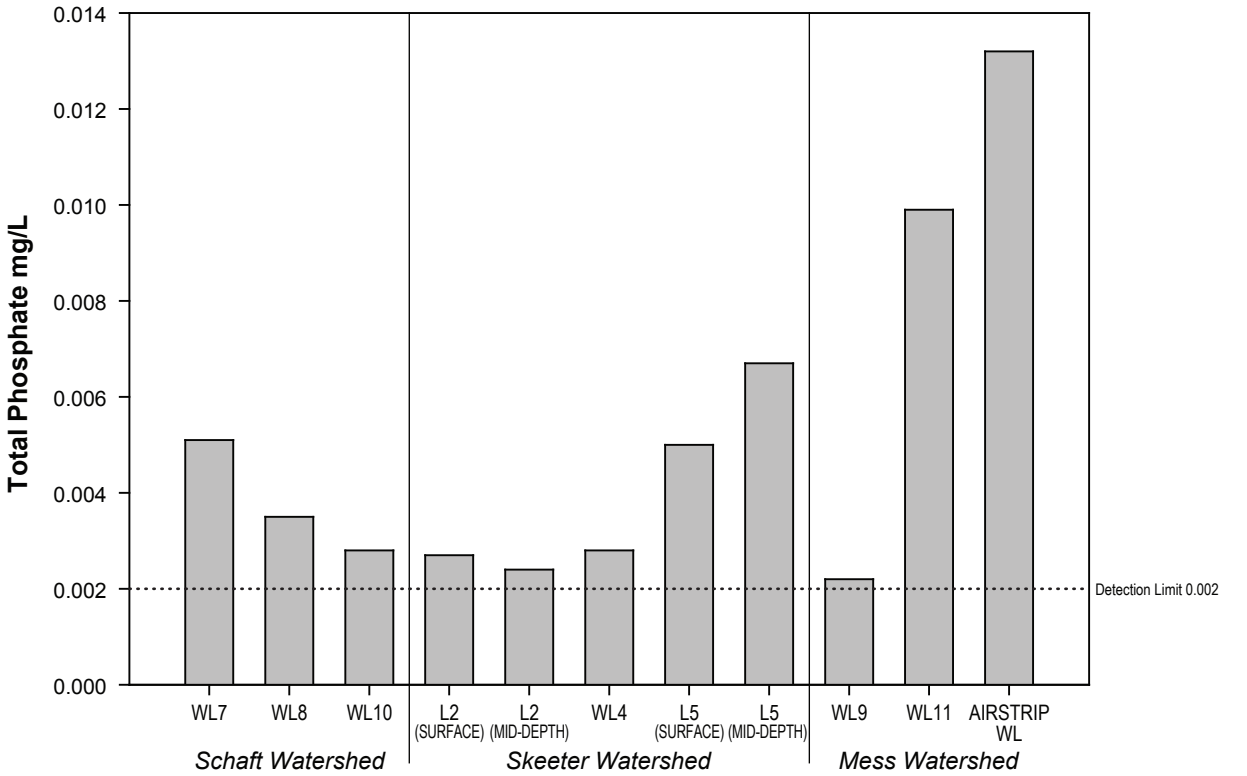

Note: Dotted line denotes detection limits.

FIGURE 3.5-2

Total Nitrogen and Phosphate Concentrations in Lakes and Wetlands, 2008

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Total phosphate (TP) concentrations were also greatest at the Airstrip WL (0.013 mg/L) (Figure 3.5-2). Most other sites had TP concentrations ranging from just above detection (0.002 mg/L) to 0.006 mg/L. There are no guidelines available for TP. As was observed with the TN, TP concentrations were slightly greater in the mid-depth lake samples than the surface samples. This is likely related to primary producer consumption of nutrients in the shallower photic zone where they are most productive.

Total cyanide concentrations ranged from below detection (0.001 mg/L) at several sites to 0.011 mg/L at WL7 (Figure 3.5-3). Most sites were below 0.004 mg/L and the CCME guideline of 0.005 mg/L. However, WL7 and the Airstrip WL exceeded this CCME guideline. The BC Max guideline of 0.01 mg/L was only exceeded by WL7.

Total organic carbon (TOC) was also greatest at WL7 with a concentration of 14 mg/L (Figure 3.5-3). This TOC concentration was double the next greatest at the Airstrip WL. Most other sites were between 1 and 2 mg/L. There are no guidelines available for TOC.

3.5.2 Total and Dissolved Metals

Concentrations of total and dissolved antimony, beryllium, bismuth, boron, cadmium, chromium, cobalt, lead, mercury, nickel, silver, thallium, tin, titanium, vanadium and zinc were below detection limits in more than 60% of samples. No guidelines were found to be exceeded by the samples with measurable concentrations for these metals. Although these results are not discussed in detail below, all data are available in Appendix 3.5-1.

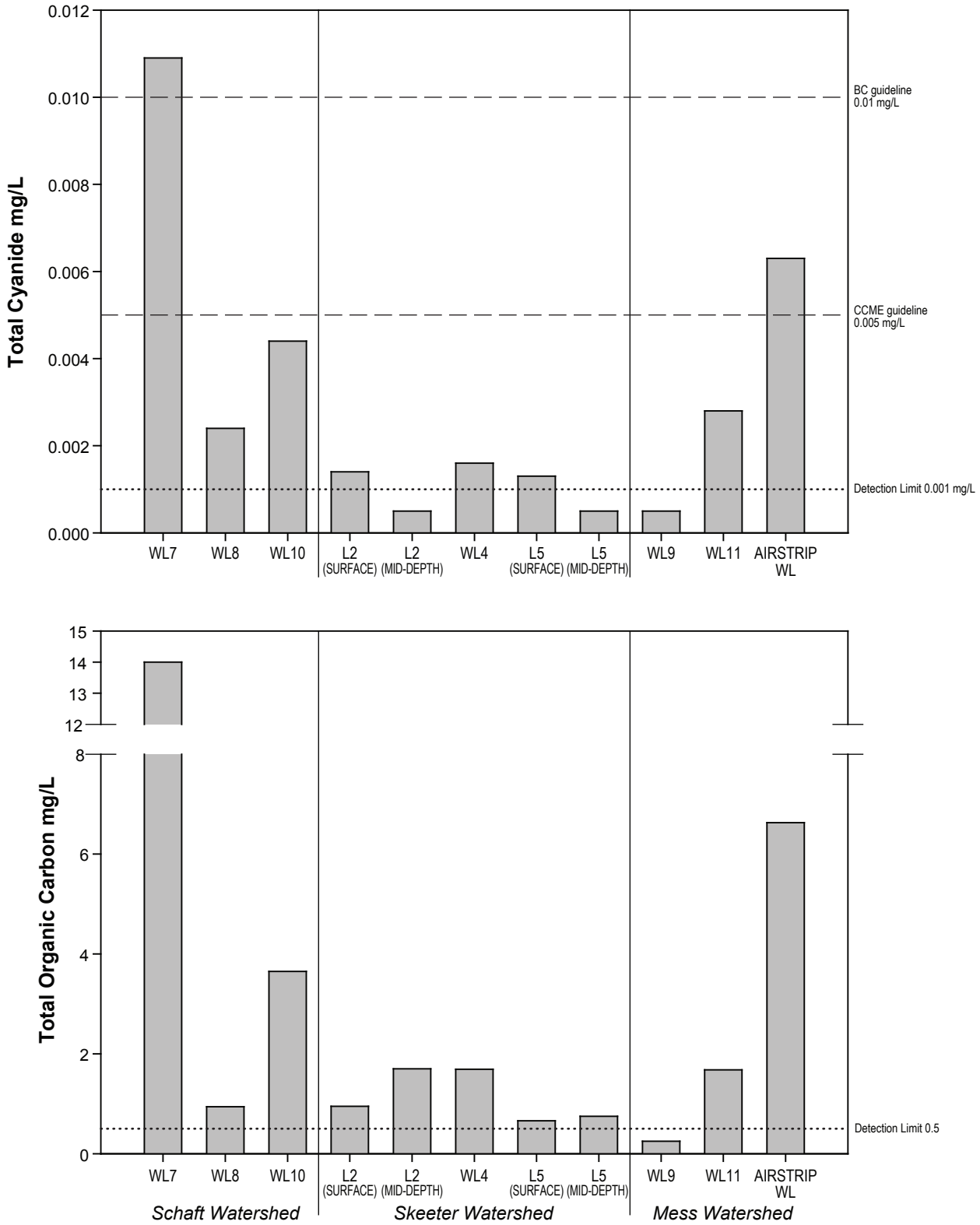
All remaining metals with guidelines available are discussed below. CCME and BC guidelines for total metals were used to screen both total and dissolved metal concentrations, except for dissolved aluminum which has specific BC guidelines.

Most total (T-Al) and dissolved (D-Al) aluminum concentrations were below 0.02 mg/L (Figure 3.5-4). T-Al concentrations were highest at L5 (surface – 0.106 mg/L; mid- 0.102 mg/L) and the Airstrip WL (0.09 mg/L). Both samples from L5 exceeded the CCME guideline (0.1 mg/L) for T-Al. This guideline was also exceeded at this site in 2007 (Rescan 2008). D-Al was twice the concentration at the Airstrip WL than other sites (0.056 mg/L). D-Al did not exceed any guideline value.

Concentrations of total arsenic (T-As) and dissolved arsenic (D-As) ranged from below the detection limits (0.0001 mg/L) at WL10 to 0.0013 mg/L at WL11 and 0.0007 mg/L at WL9, respectively (Figure 3.5-5). The CCME and BC Max guidelines of 0.005 mg/L were not exceeded at any site.

At all sites except L5 concentrations of total copper (T-Cu) were only marginally greater than concentrations of dissolved copper (D-Cu) indicating that copper primarily exists in the dissolved form at these sites (Figure 3.5-6). WL7 had the highest concentrations with T-Cu at 0.0022 mg/L and D-Cu at 0.0021 mg/L. WL7 also had the highest wetland concentrations (similar values) in 2007 (Rescan 2008). T-Cu guidelines are hardness dependent. The CCME guideline for copper was exceeded at WL7 (both T-Cu and D-Cu). This was also the case for this site in 2007 (Rescan 2008).

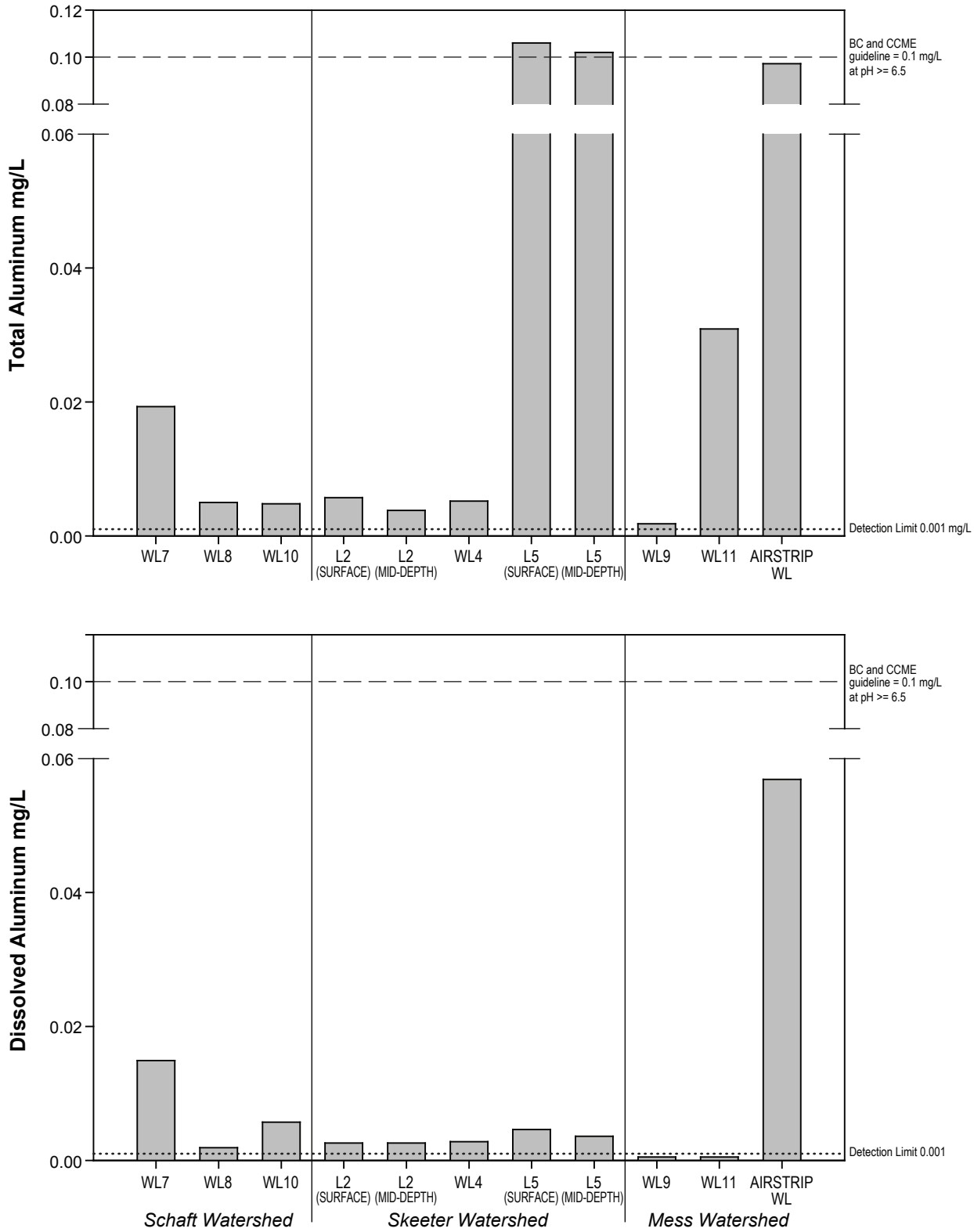
Total iron (T-Fe) ranged from below the detection limit (L2 and WL4) to 2.61 mg/L (WL10) (Figure 3.5-7). Dissolved iron (D-Fe) concentrations were below or close to the detection limit (0.03 mg/L) to 0.66 mg/L at WL10 (Figure 3.5-7). The CCME guideline (0.3 mg/L) was exceeded by WL8 (T-Fe), WL10 (T-Fe and D-Fe), WL11 (T-Fe) and the Airstrip WL (T-Fe and D-Fe). This guideline was also exceeded in WL10 and Airstrip WL samples from 2006 and 2007 (Rescan 2008). The BC guideline (1.0 mg/L) was exceeded by T-Fe concentrations at WL10 and WL11.



Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.5-3

Total Cyanide and Total Organic Carbon Concentrations in Lakes and Wetlands, 2008



Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.5-4

Total and Dissolved Aluminum Concentrations in Wetlands and Lakes, 2008

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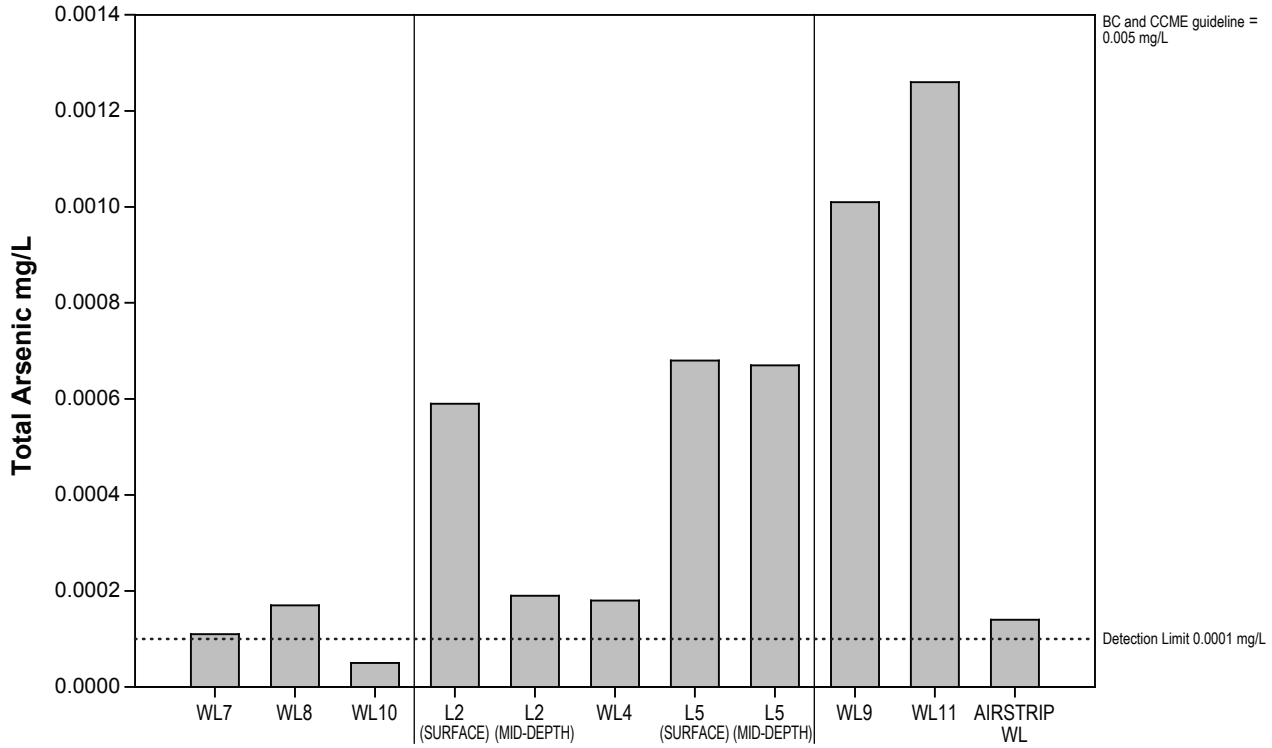

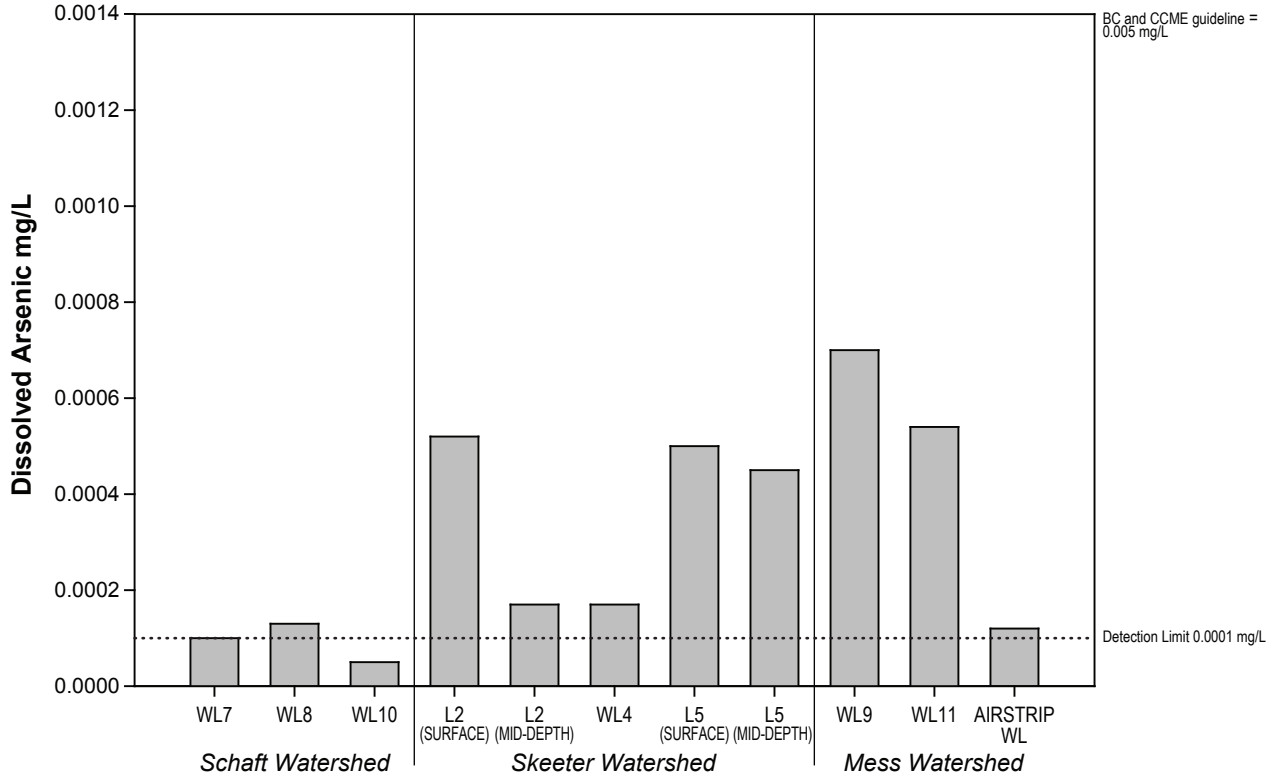

Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.5-5

Total and Dissolved Arsenic Concentrations in Wetlands and Lakes, 2008

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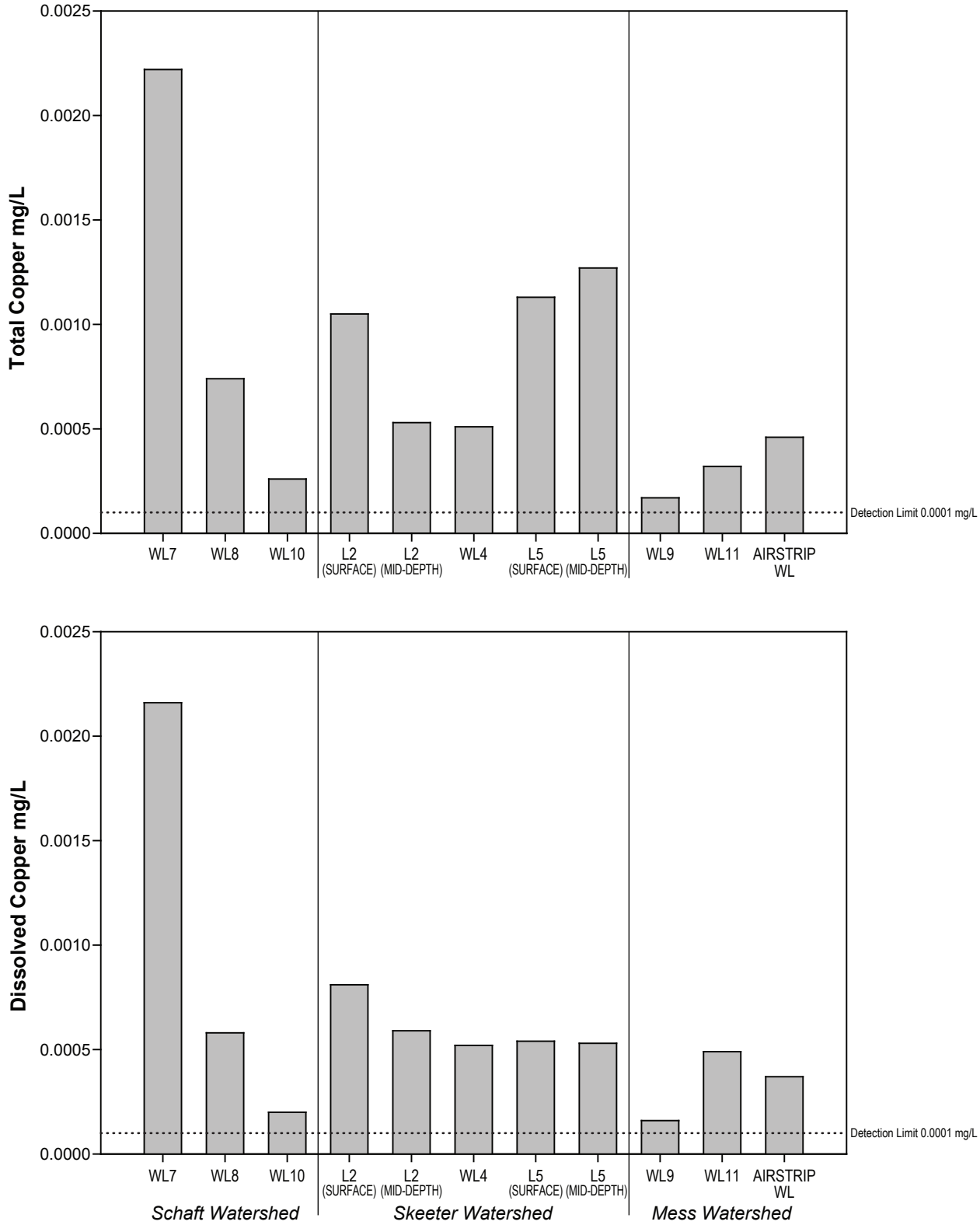

Note: Dotted line denotes detection limits.
BC and CCME guidelines depend on hardness.

FIGURE 3.5-6

Total and Dissolved Copper Concentrations in Wetlands and Lakes, 2008

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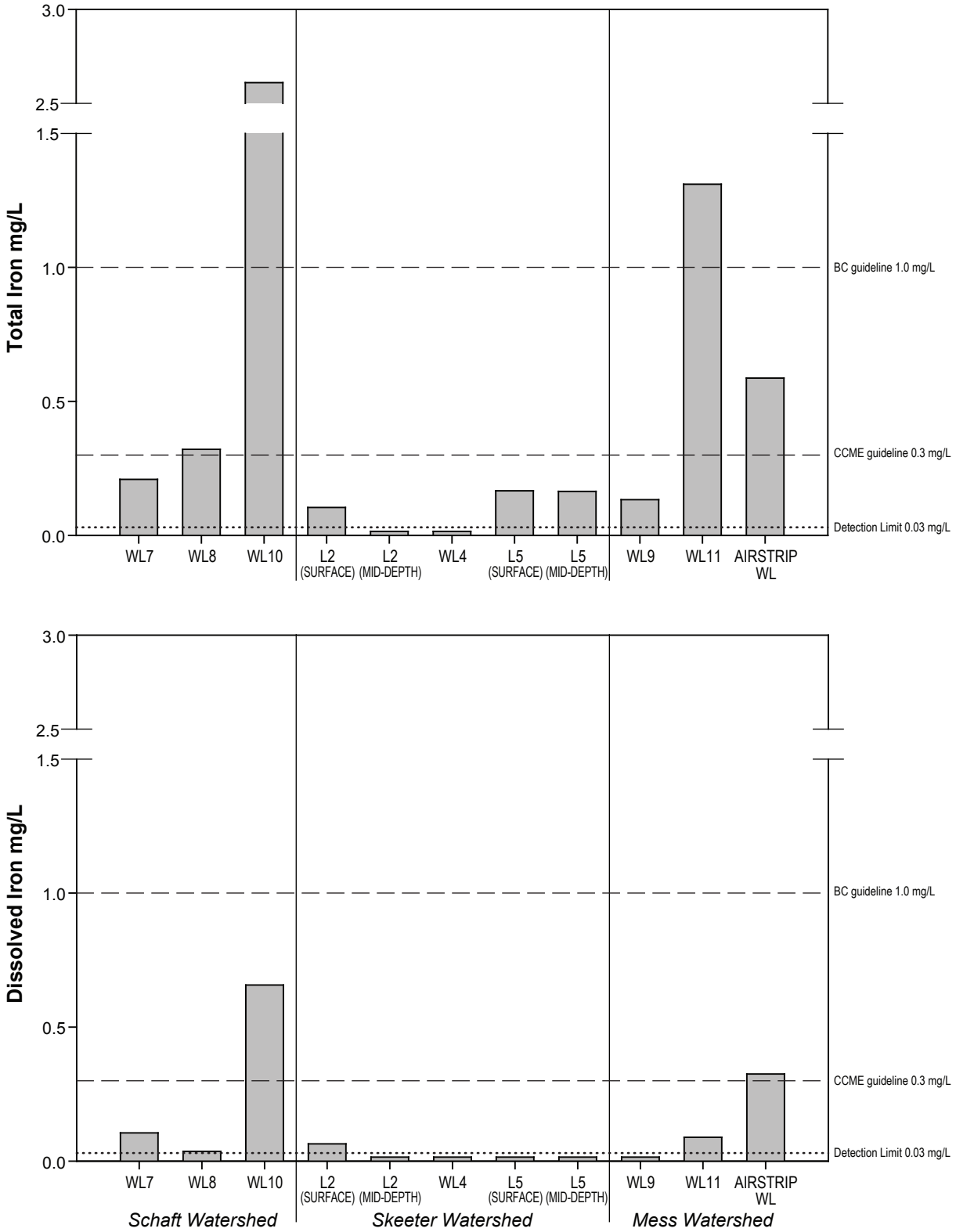

Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.5-7

Total and Dissolved Iron Concentrations in Wetlands and Lakes, 2008

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By comparing total and dissolved concentrations of manganese (Figure 3.5-8) it can be seen that most manganese is bound to particulates. Concentrations of total manganese (T-Mn) ranged from 0.0029 mg/L at L2 to 0.160 mg/L at WL11. Dissolved manganese (D-Mn) concentrations ranged from 0.0001 mg/L at L5 to 0.055 mg/L at WL11. No sites exceeded BC Max guideline (hardness dependent).

Concentrations of total molybdenum (T-Mo) and dissolved molybdenum (D-Mo) were very similar at each site, indicating a lack of particulate-bound molybdenum (Figure 3.5-9). Molybdenum concentrations ranged from just above the detection limit (0.00005 mg/L) at the Airstrip WL to 0.0025 mg/L (WL10). All sites were well below the BC (2 mg/L) and CCME (0.073 mg/L) guidelines.

Concentrations of total selenium (T-Se) were below detection limits (0.0005 mg/L) at all wetland sites except WL4 and WL9. L2 (surface) had the greatest concentration with 0.0007 mg/L (Figure 3.5-10). Dissolved selenium (D-Se) data ranged from below the detection limit at several sites to 0.00067 mg/L at L5 (surface). All sites were well below the BC (0.002 mg/L) and CCME (0.001 mg/L) guidelines.

3.5.3 Quality Assurance and Quality Control (QA/QC)

Field, travel and equipment blank data are presented in Appendix 3.5-1. All QA/QC blank data were below detection limits with the exceptions of total and dissolved barium and dissolved copper concentrations. However, these results were <2 times the associated detection limit.

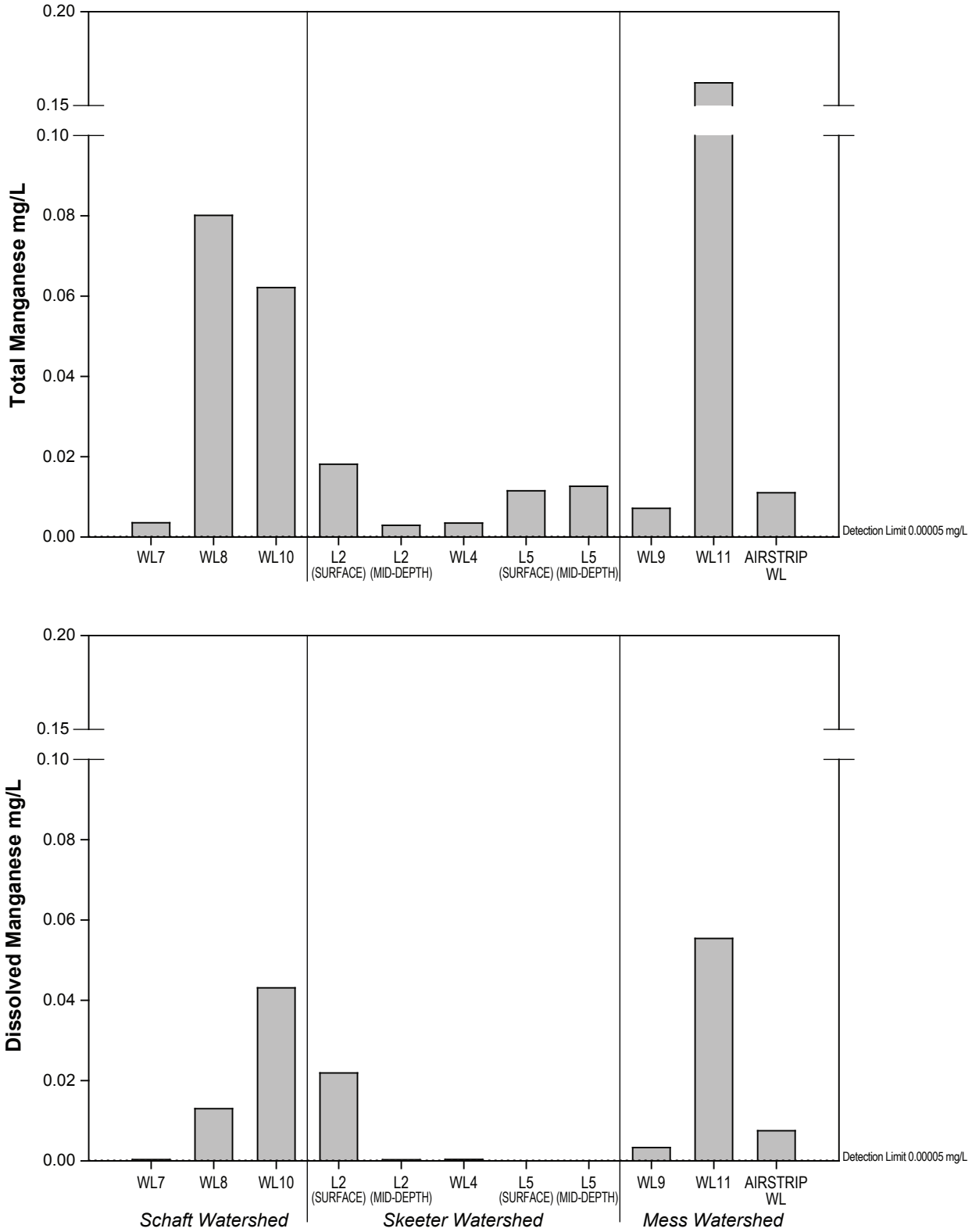
The Relative Percent Difference (RPD)S analysis of QA/QC field duplicate data for wetlands and lakes are reported in Appendix 3.5-2. Each variable from a duplicate pair of samples obtained from WL9 were compared, using the RPD between the replicates as a measure of the variability inherent in field sampling (environmental heterogeneity and sampler handling leading to contamination). Of the 79 parameters examined, 98.7% of analytical results were below or five times less than the detection limit, and therefore RPD values were not calculated. Of the remaining results, 1.3% (1 of 79 RPD calculations) was greater than the threshold of 20% indicated by provincial guidance.

3.6 LIMNOLOGY

Basic physical limnological variables were measured at both of the lakes sampled in 2008 (Figure 3.6-1).

Surface pH, conductivity, Secchi depth and depth profiles of temperature and dissolved oxygen were measured at each site. By using a hand held depth sounder, the maximum depth found at each site was 13 (L5) and 29 (L2) meters. Secchi depth (a measure of surface water transparency) was 0.9 and 9.5 meters while surface pH was 7.40 and 8.40, at L5 and L2 respectively.

L2 appeared to be stratified as indicated by the presence of a thermocline at approximately 11 m, where as L5 is a relatively well mixed lake since it is relatively shallow, exposed and generally windier. Temperatures in these lakes ranged from 12.3ºC at the surface to 9.9 ºC at depth (L5) and 13.1ºC at the surface to 4.4ºC at depth (L2). Dissolved oxygen (DO) concentrations fell between 10.0 and 0.4 mg/L at L5 and 6.7 and 10.1 mg/L at L2.



Note: Dotted line denotes detection limits.
BC guideline depends on hardness.

FIGURE 3.5-8

Total and Dissolved Manganese Concentrations in Wetlands and Lakes, 2008

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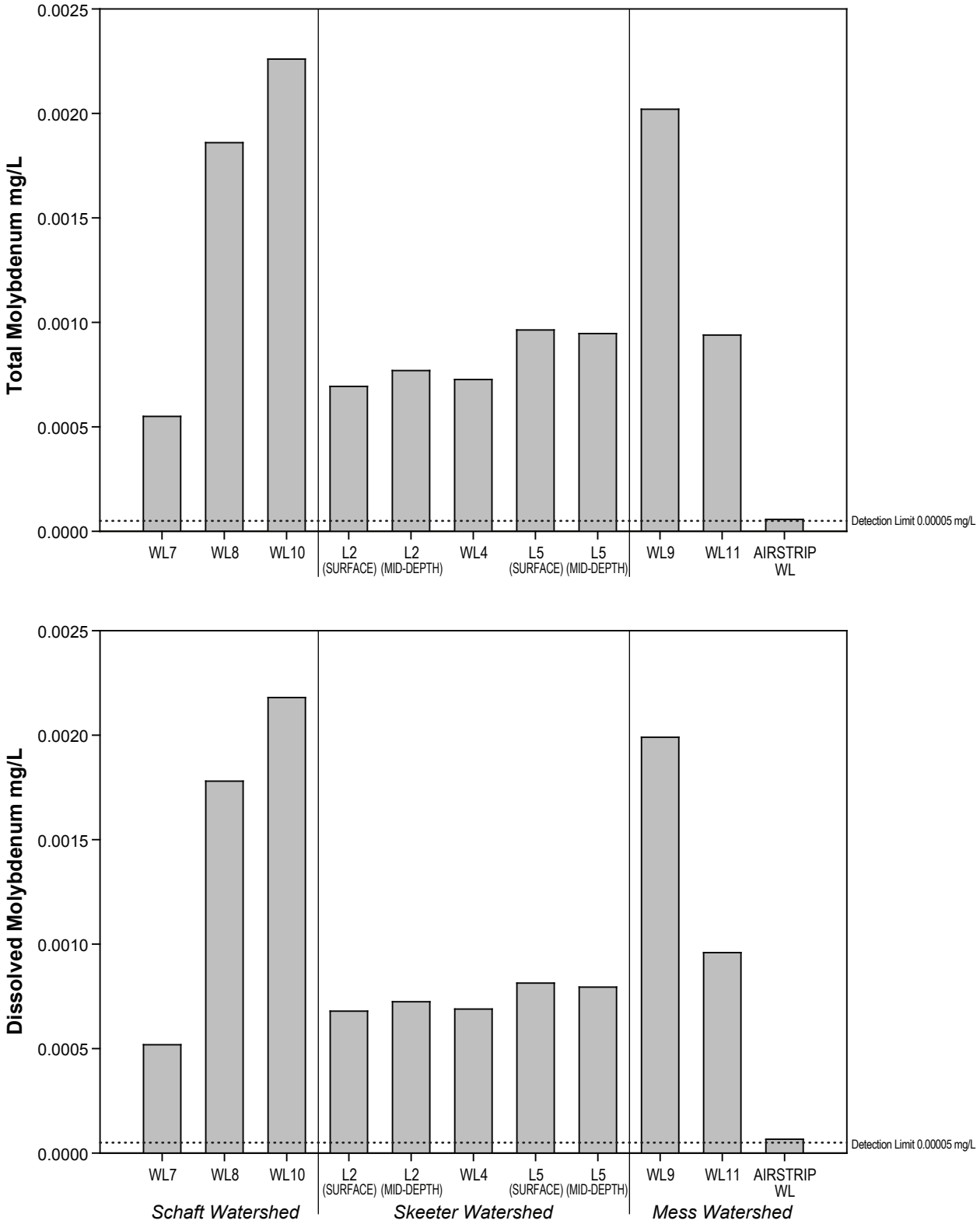

FIGURE 3.5-9

Note: Dotted line denotes detection limits.
BC guideline = 2 mg/L; CCME guideline = 0.073 mg/L.

copper FOX metals inc.

Total and Dissolved Molybdenum Concentrations in Wetlands and Lakes, 2008

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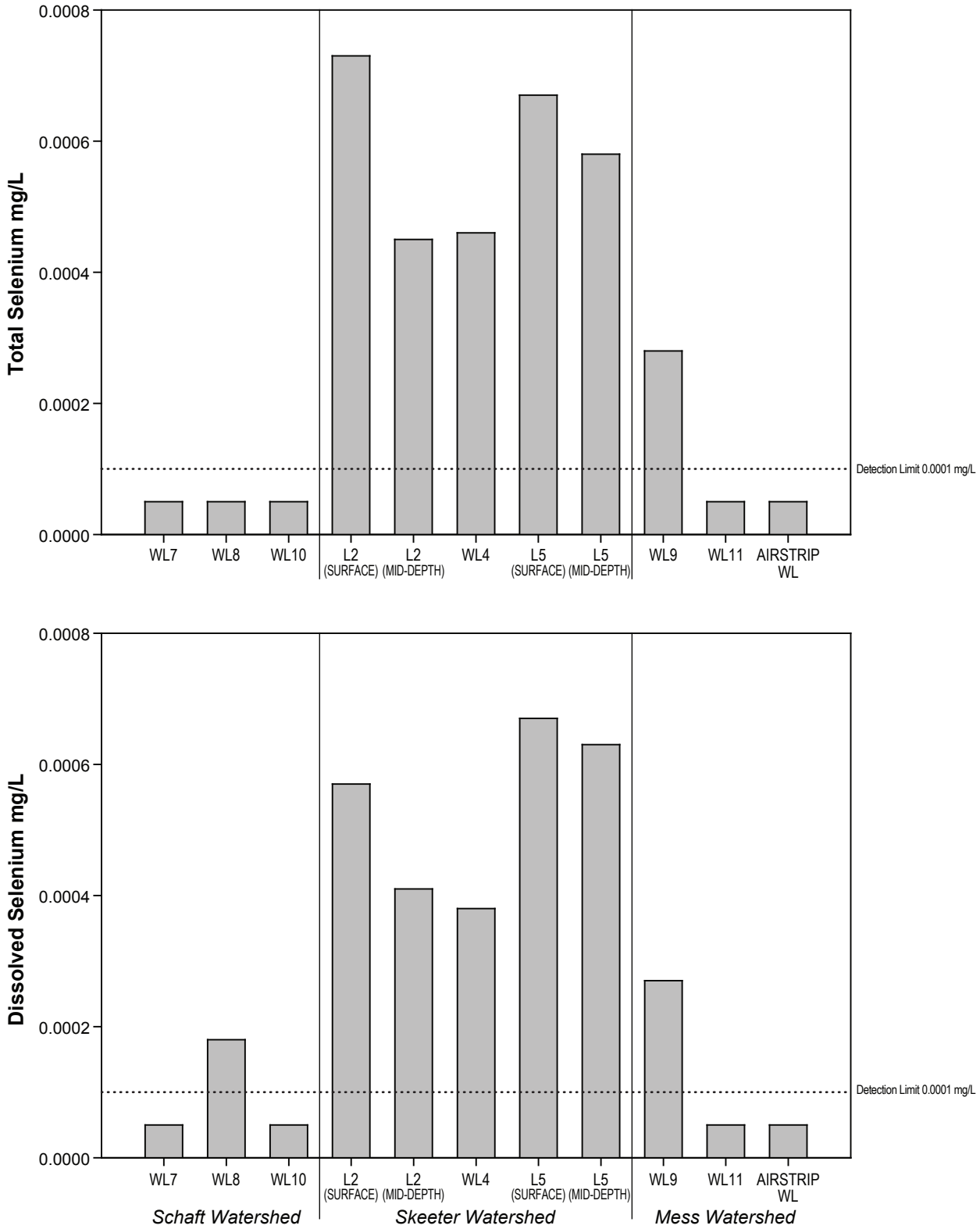

FIGURE 3.5-10

Note: Dotted line denotes detection limits.
BC guideline = 0.002 mg/L; CCME guideline = 0.001 mg/L

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Total and Dissolved Selenium Concentrations in Wetlands and Lakes, 2008

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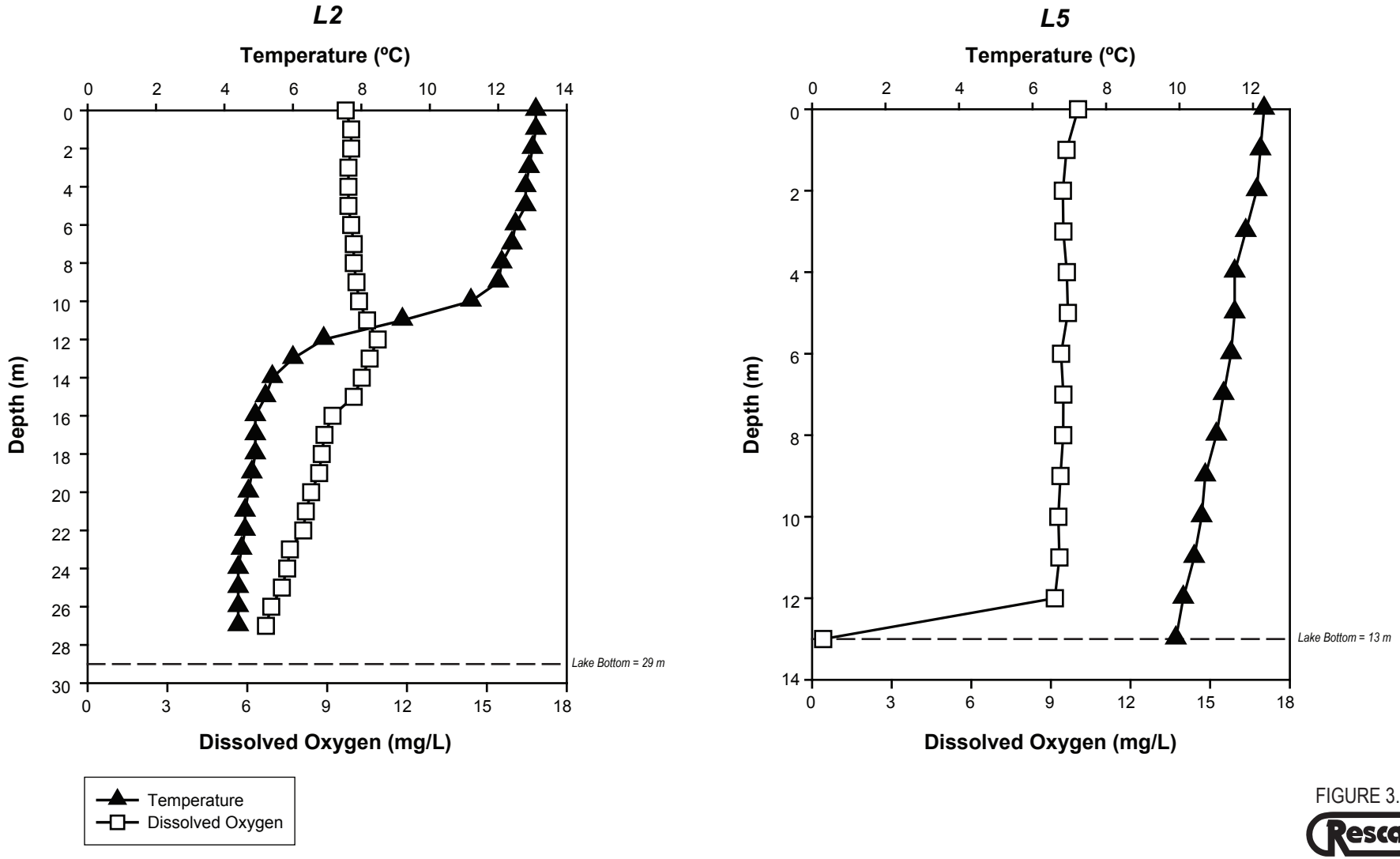

FIGURE 3.6-1

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Dissolved Oxygen and Temperature Profiles at L2 and L5, 2008

3.7 LAKE AND WETLAND SEDIMENT QUALITY

Sediment quality was assessed at six wetland and two lake sites by collecting triplicate sediment samples at each site in 2008. All wetland and lake sediment data are shown in Appendix 3.7-1.

3.7.1 Particle Size

Analysis of the particle size in wetland and lake sediments generally result in higher proportion of fines (silt and clay) than sand and gravel. This was the case for all eight 2008 sites except WL9, WL11 and Airstrip WL (Figure 3.7-1). Silt composed 17 to 70% of sediments and clay 3 to 33%. Sand and gravel, respectively less than 10% or not present at most sites and collectively composed 50 to 80% at WL9, WL11 and Airstrip WL. This may be a result of the sampling locations for these sites having recently been covered with flowing water, which carried away the fines.

3.7.2 Nutrients

Nutrient concentrations were greatest WL7, Airstrip WL and L2 (in the case of available phosphorus) (Figure 3.7-2). TN concentrations ranged from less than 0.1% (L5) to 1.3% (WL7). TOC concentrations ranged from less than 1% (L5 and WL11) to 14% (Airstrip WL), while available phosphate ranged from close to or below detection at several sites to 8 mg/kg (L2 and WL7).

3.7.3 Total Metals

Of the metals analyzed antimony, bismuth, cadmium, lead, silver, thallium and tin were not detected in more than 85% of samples across all wetland and lake sites (Appendix 3.7-1).

Metals for which guidelines exist are discussed and presented graphically below, including arsenic and selenium, which had samples below detection limits at 37% of sites. Seven of the nine metals for which guidelines are available exceeded those guidelines at wetland and lake sites. No site in particular was consistently found to have relatively high metal concentrations. It can be noted, however, that L5 had the greatest concentrations of copper and zinc, which was also the case in 2007 (Rescan 2008).

Arsenic concentrations ranged from below the detection limit (5 mg/kg) at several sites to 337 mg/kg at WL9 (Figure 3.7-3). The ISQG (5.9 mg/kg) was exceeded by all sites that had measurable concentrations of arsenic. The PEL guideline (17 mg/kg) was exceeded WL4, L5, WL9 and WL11. L5, WL9 and WL11 had concentrations two to six times greater than WL4.

Average chromium concentrations ranged from 3.1 mg/kg at WL10 to 78.8 mg/kg at L5 (Figure 3.7-3). WL4, L2 and L5 exceeded the ISQG (37.3 mg/kg) for chromium. These three sites had concentrations approximately three times greater than most other sites. All sites were below the PEL guideline (90 mg/kg).

Average copper concentrations ranged from 5.4 at WL11 to 268 mg/kg at WL4 (Figure 3.7-4). The ISQG (35.7 mg/kg) was exceeded by WL7, WL4, L2 and L5. The PEL guideline (197 mg/kg) was also exceeded by WL4 and L5. These sites also exceeded these guidelines in 2007 (Rescan 2008).

All sites, except Airstrip WL, exceeded the LEL guideline (21,200 mg/kg) for iron and all but WL7 and the Airstrip WL exceeded the SEL (43,766 mg/kg) guideline (Figure 3.7-4). Iron concentrations ranged from 13,000 mg/kg at the Airstrip WL to 247,000 mg/kg at WL11. The iron concentration at WL11 was more than twice that of the next highest concentrations.

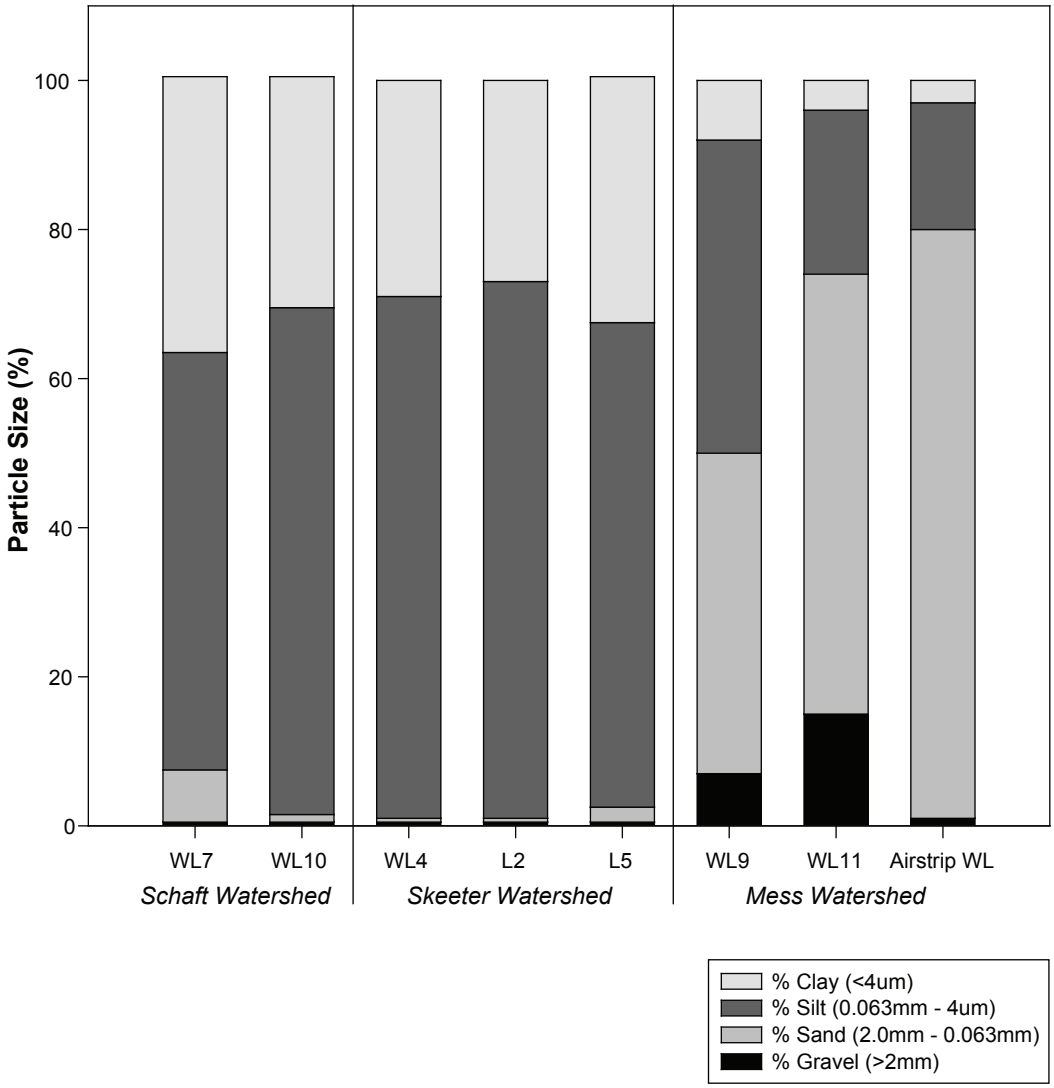

FIGURE 3.7-1

Particle Size of Sediments in Wetlands and Lakes, 2008

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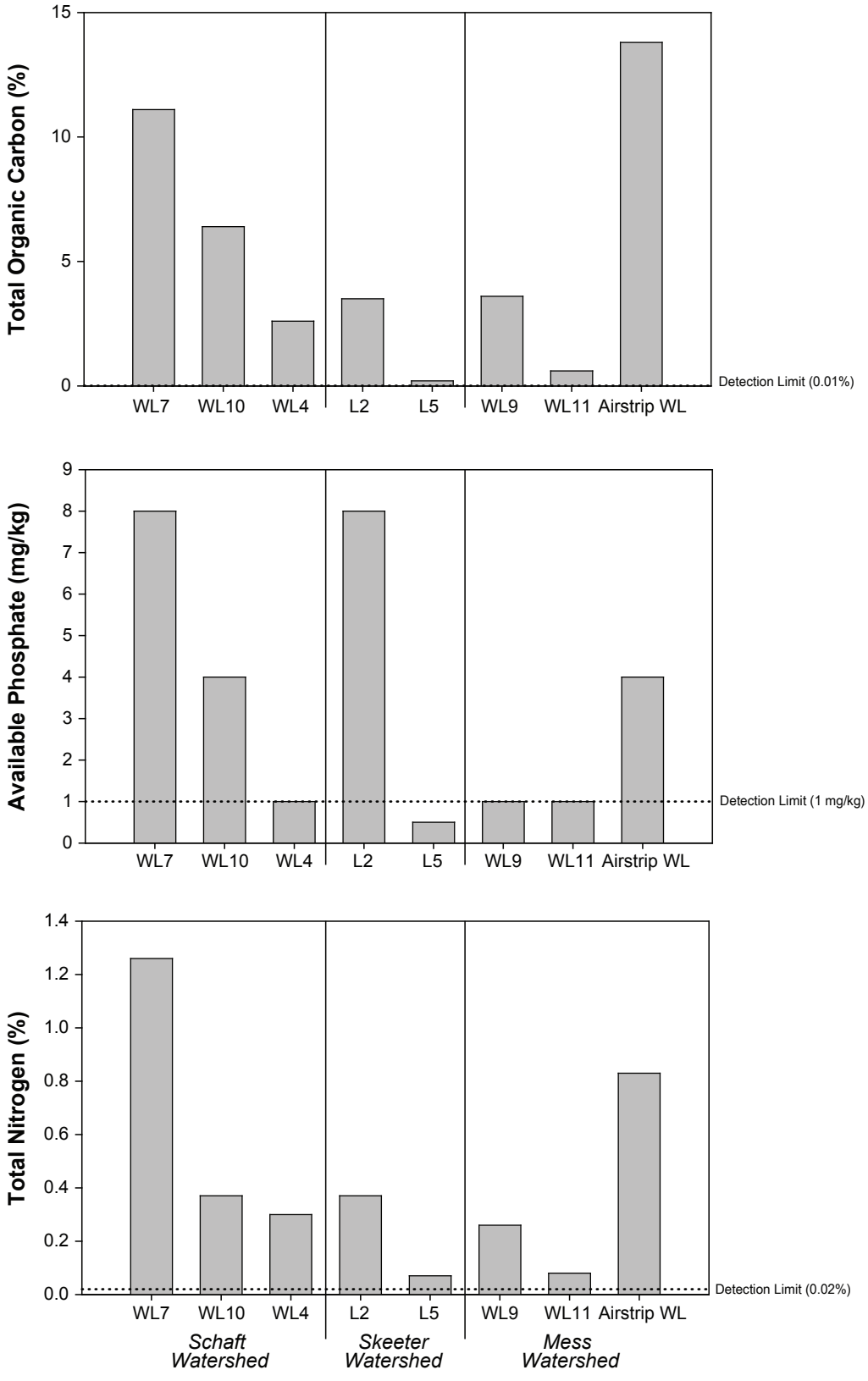
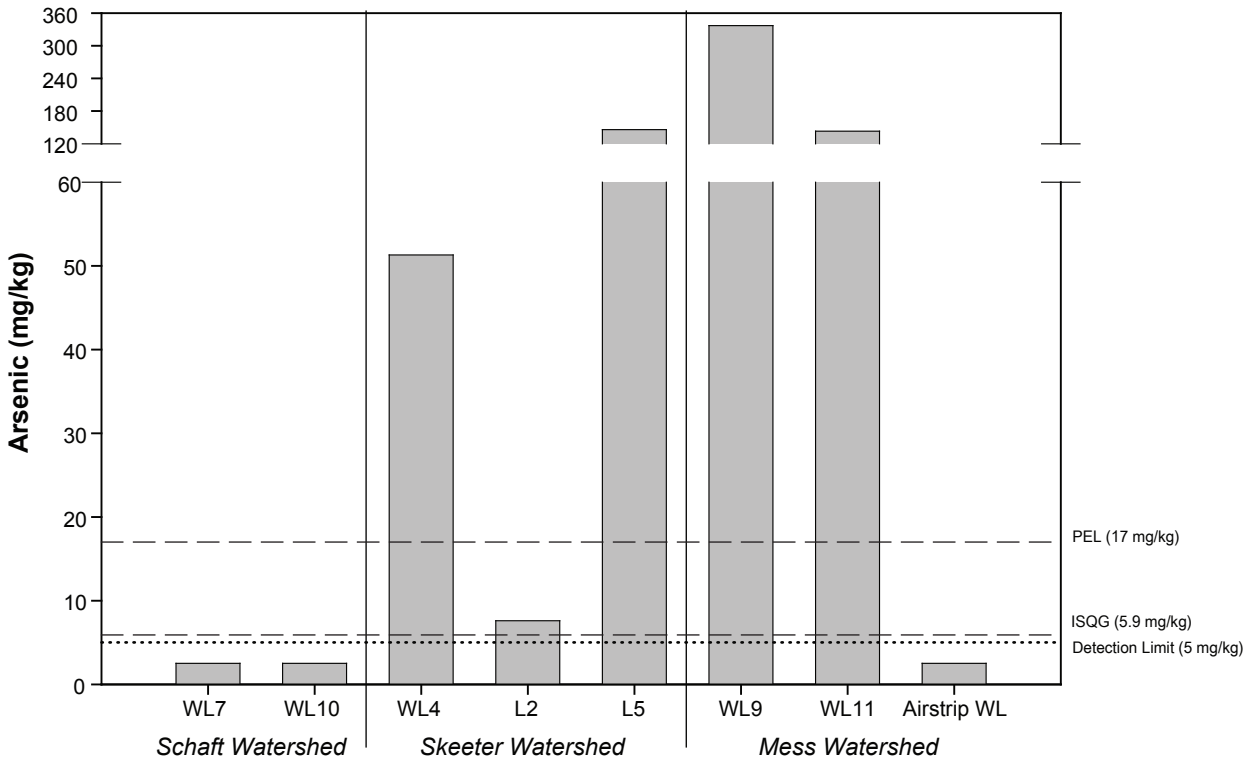
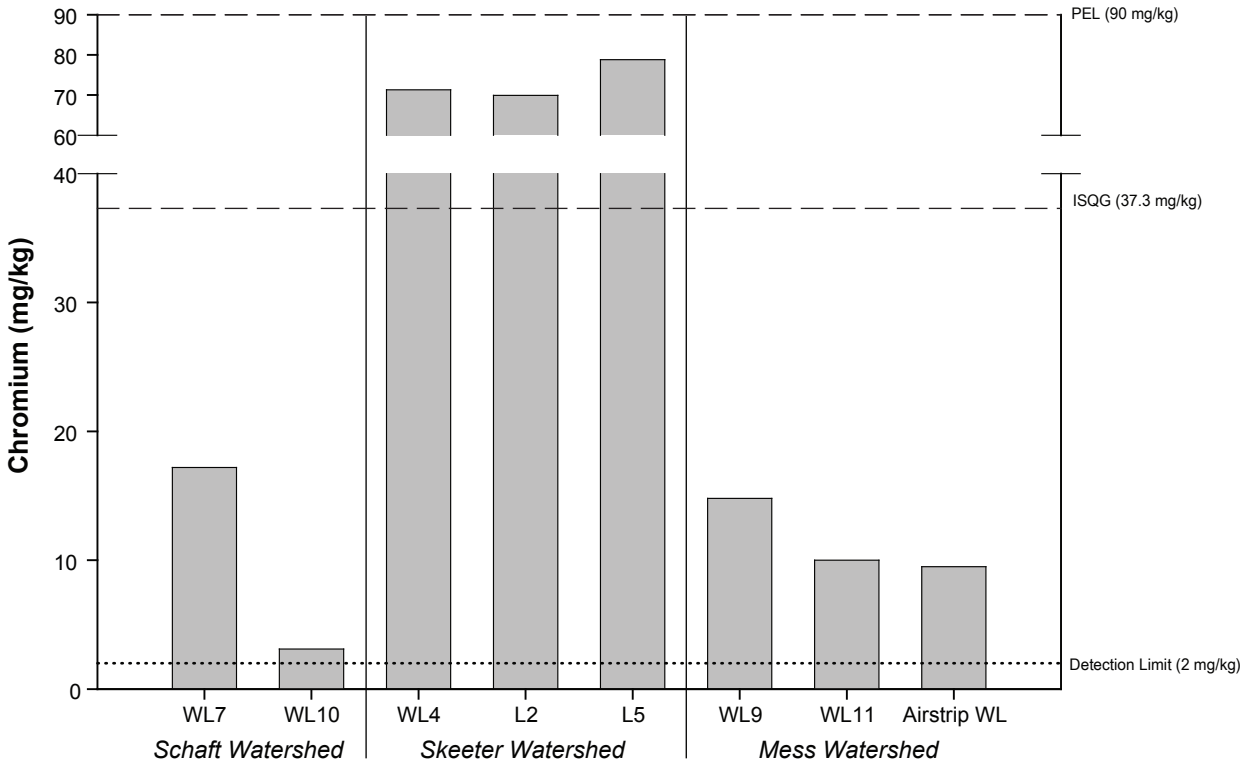


Note: Dotted line denotes detection limits

FIGURE 3.7-2

Total Organic Carbon, Available Phosphate and Total Nitrogen Concentrations in Wetland and Lake Sediments, 2008





Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.7-3

Arsenic and Chromium Concentrations in Wetland and Lake Sediments, 2008

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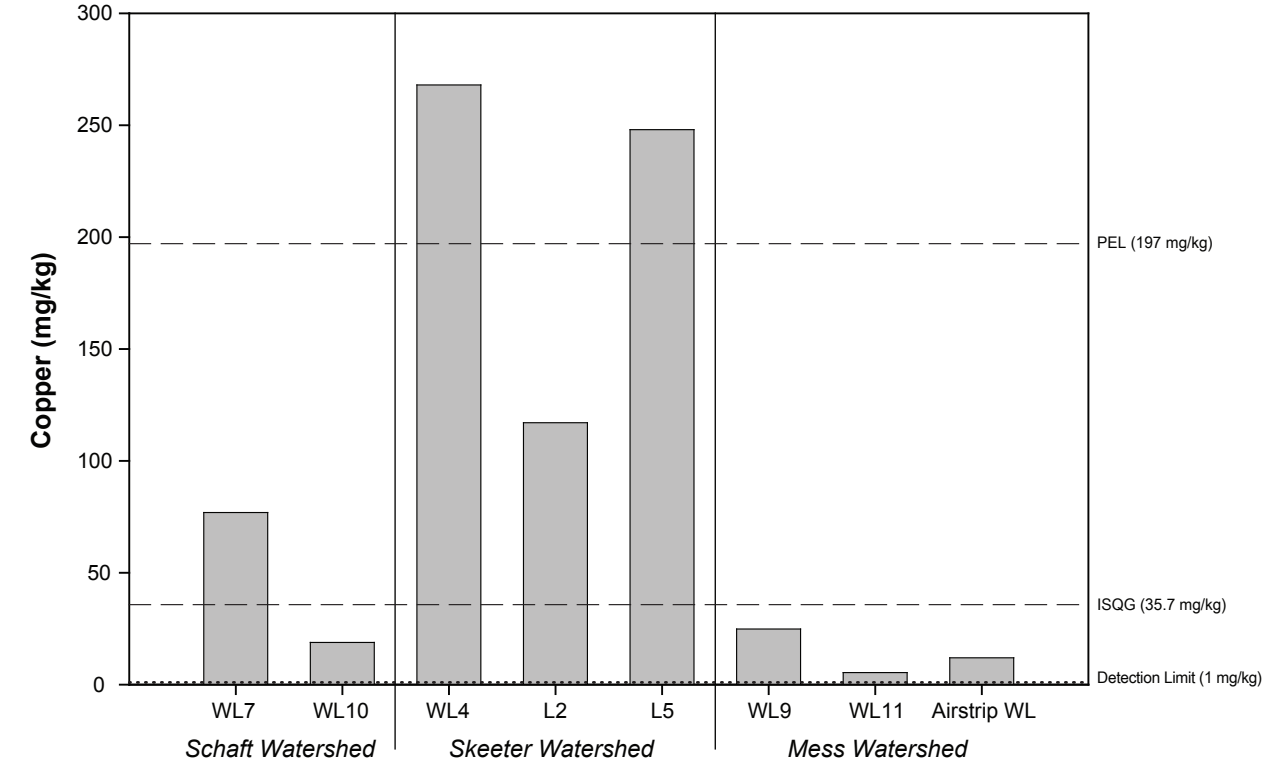

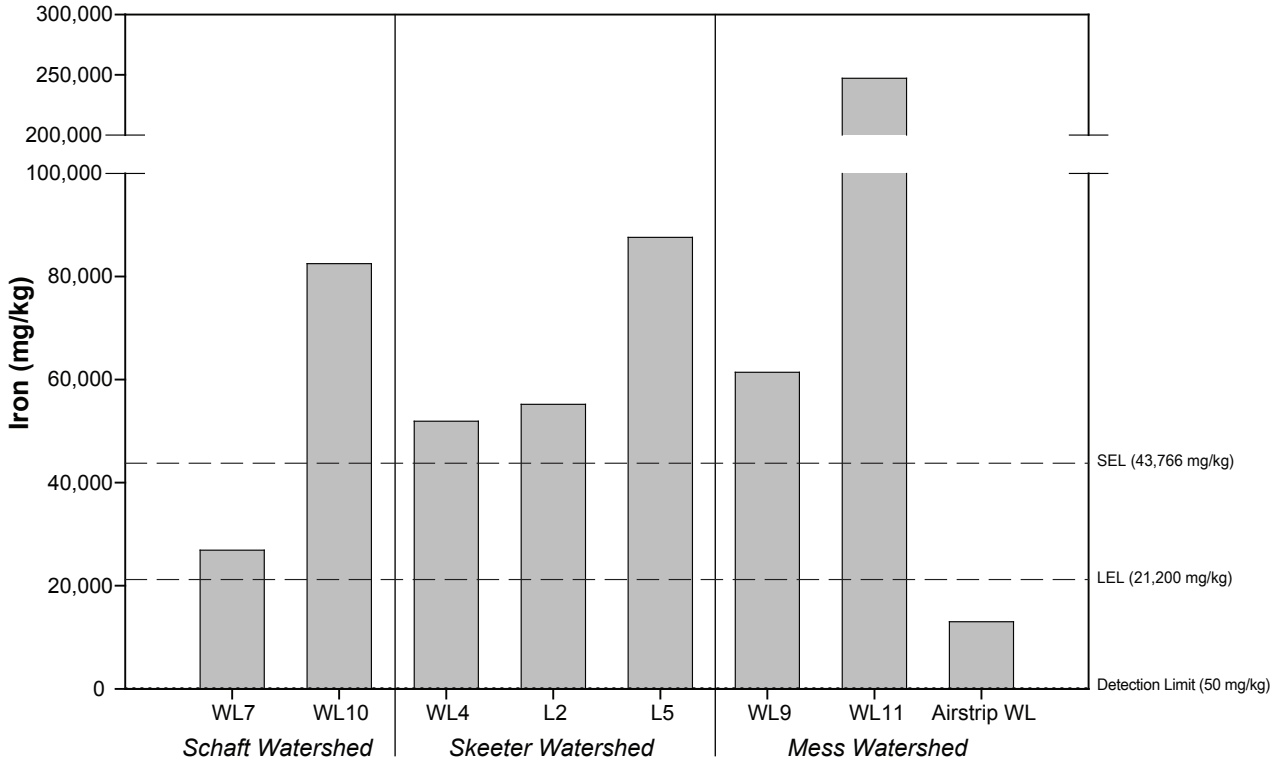

Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.7-4

Copper and Iron Concentrations in Wetland and Lake Sediments, 2008

copper FOX metals inc.

Rescan™

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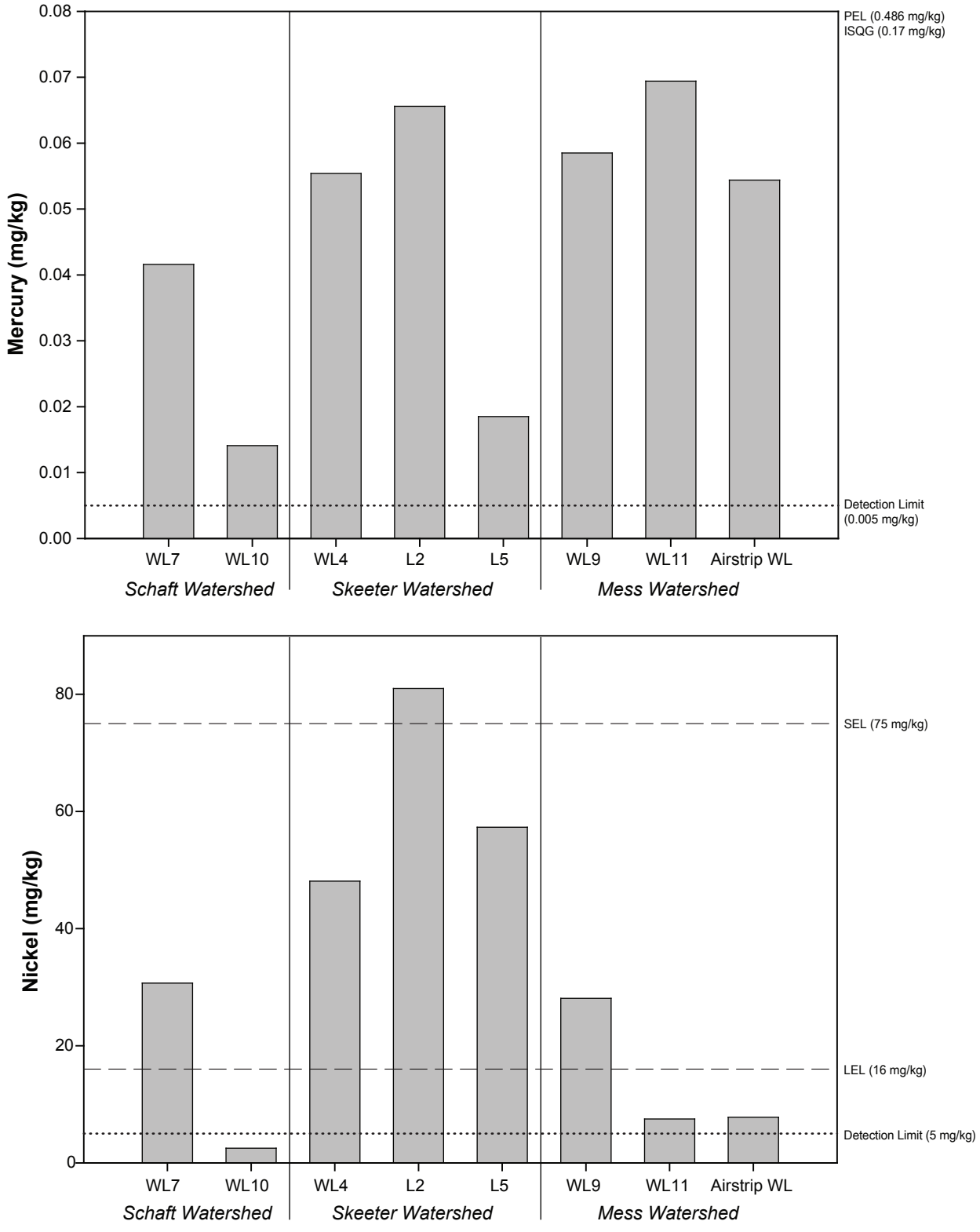

Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.7-5

Mercury and Nickel Concentrations in Wetland and Lake Sediments, 2008

copper FOX metals inc.

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All mercury concentrations were well below PEL (0.486 mg/kg) and ISQG (0.17 mg/kg) guidelines with concentrations ranging from 0.014 mg/kg at WL10 to 0.069 mg/kg at WL11 (Figure 3.7-5).

Nickel sediment concentrations ranged from below the analytical detection limit (5 mg/kg) at WL10 to 81 mg/kg at L2 (Figure 3.7-5). The LEL guideline (16 mg/kg) was exceeded at sites except WL10, WL11 and Airstrip WL. L2 was the only site to exceed the SEL guideline of 75 mg/kg.

Four (WL7, WL10, WL11 and the Airstrip WL) sites were below or close to the detection limit for selenium (Figure 3.7-6). Of the remaining four sites, only L2 exceeded the ISQG (5 mg/kg) for selenium.

Concentrations of zinc ranged from 22 (WL10) to 267 mg/kg (L5) (Figure 3.7-6). Similar to 2007, WL4 and L5 exceeded the ISQG (123 mg/kg). All sites were well below the PEL guideline of 315 mg/kg.

3.8 LAKE AND WETLAND PHYTOPLANKTON

In August of 2008, phytoplankton samples were collected at six wetlands and two lakes. All phytoplankton taxonomy data can be found in Appendix 3.8-1, while biomass data are in Appendix 3.8-2.

3.8.1 Biomass

Mean wetland and lake biomass ranged from 0.06 (WL9) to 1.33 µg/L chlorophyll α (L5) (Figure 3.8-1). The Skeeter watershed had the highest average biomass of 0.643 µg/L chlorophyll α. Wetland phytoplankton biomass averaged 0.32 µg/L. Lake phytoplankton biomass averaged 0.931 µg/L, which was more than double the wetland average biomass.

3.8.2 Density and Relative Abundance

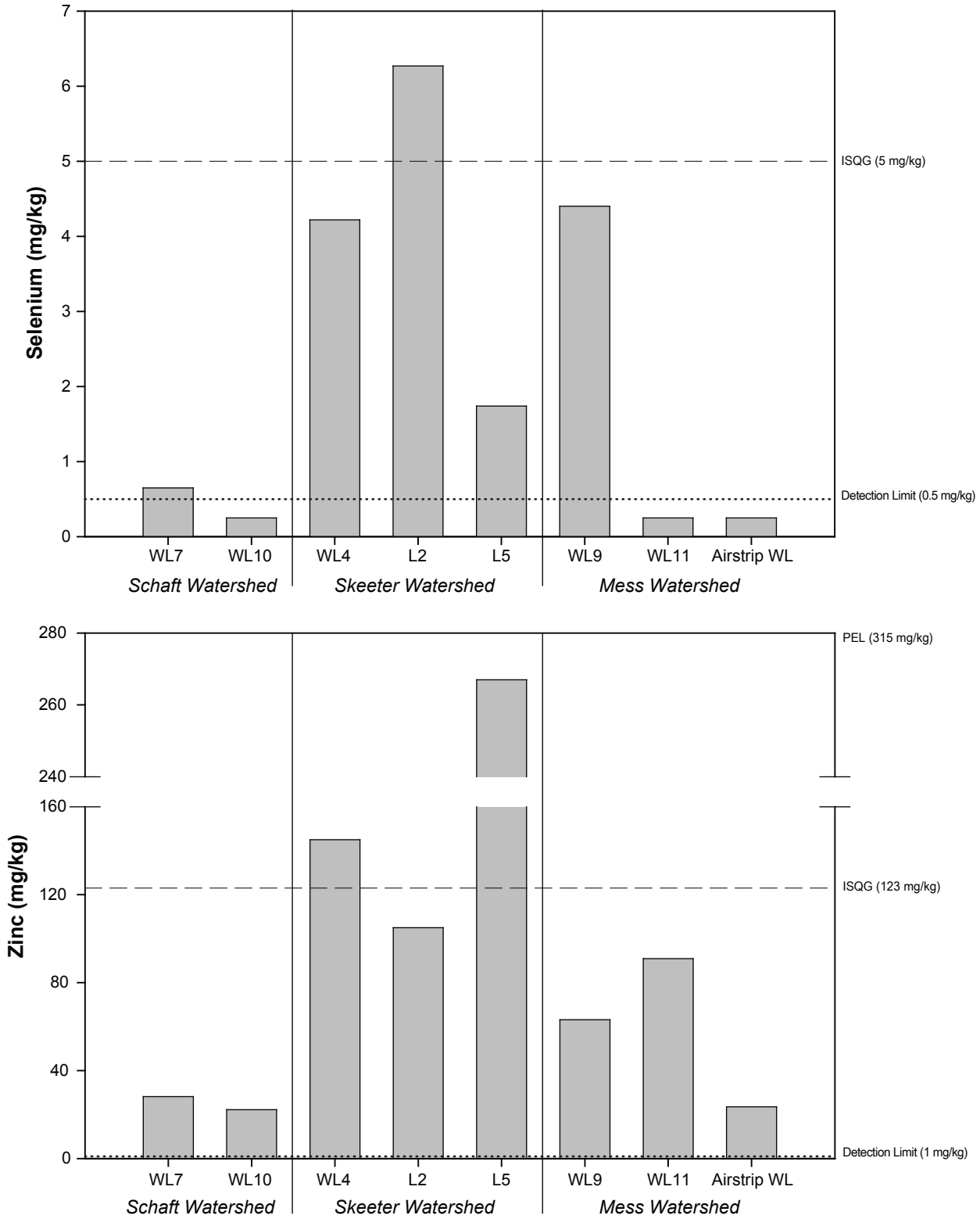
Wetland and Lake average densities ranged from 0.8 (WL9) to 1,348.7 cells/ml (Airstrip WL) (Figure 3.8-1). Of the eight wetlands sampled, six had an average density of 70 cells/ml or less. The average density of WL7 and Airstrip WL were notably higher, with WL7 being 9 times greater than L2 (the next highest average density).

Wetland and lake communities were often composed of large proportions of bacillariophycae, chlorophytes and cyanophytes (Figure 3.8-2). In 2007, the most dominant taxa were cyanophytes and chrysophytes, for both wetlands and lakes.

Baciliariophycae were the dominant taxa at WL9 (51%), WL4 (95%), and L5 (97%); chlorophyta were the dominant taxa at L2 (60%) and Airstrip WL (71%); cyanophyta were the dominant taxa at WL7 (53%) and WL10 (86%); and cryptophyta were the dominant taxa at WL11 (46%). These 4 taxa contributed to approximately 96% of the total phytoplankton community sampled in 2008. The remaining 4% of the community was composed of euglenophyts (<1 to 3%), pyrrhophyts (<1 to 5%), and chrysophyts (<1 to 14%).

3.8.3 Richness and Diversity

Average wetland phytoplankton richness ranged from 10 at WL9 to 51 at WL7, with a mean of 26 taxa (Figure 3.8-3). The lake phytoplankton richness had a mean of 15 taxa at L5 and 27 taxa at L2.



Note: Dotted line denotes detection limits.
Dashed line denotes guideline values.

FIGURE 3.7-6

Selenium and Zinc Concentrations in Wetland and Lake Sediments, 2008

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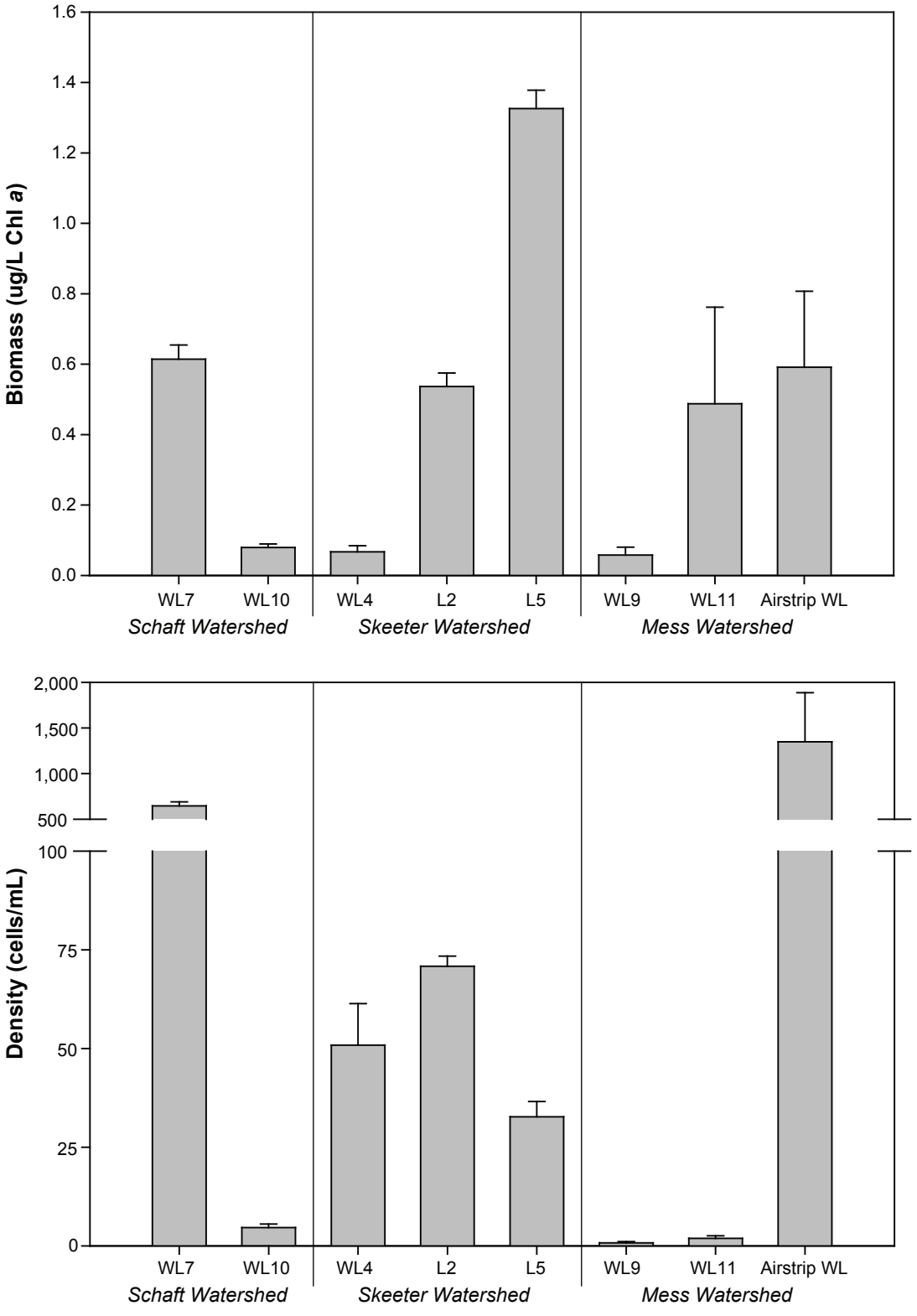

Note: Error bars represent one standard error of the mean

FIGURE 3.8-1

Phytoplankton Biomass and Density in Wetlands and Lakes, 2008

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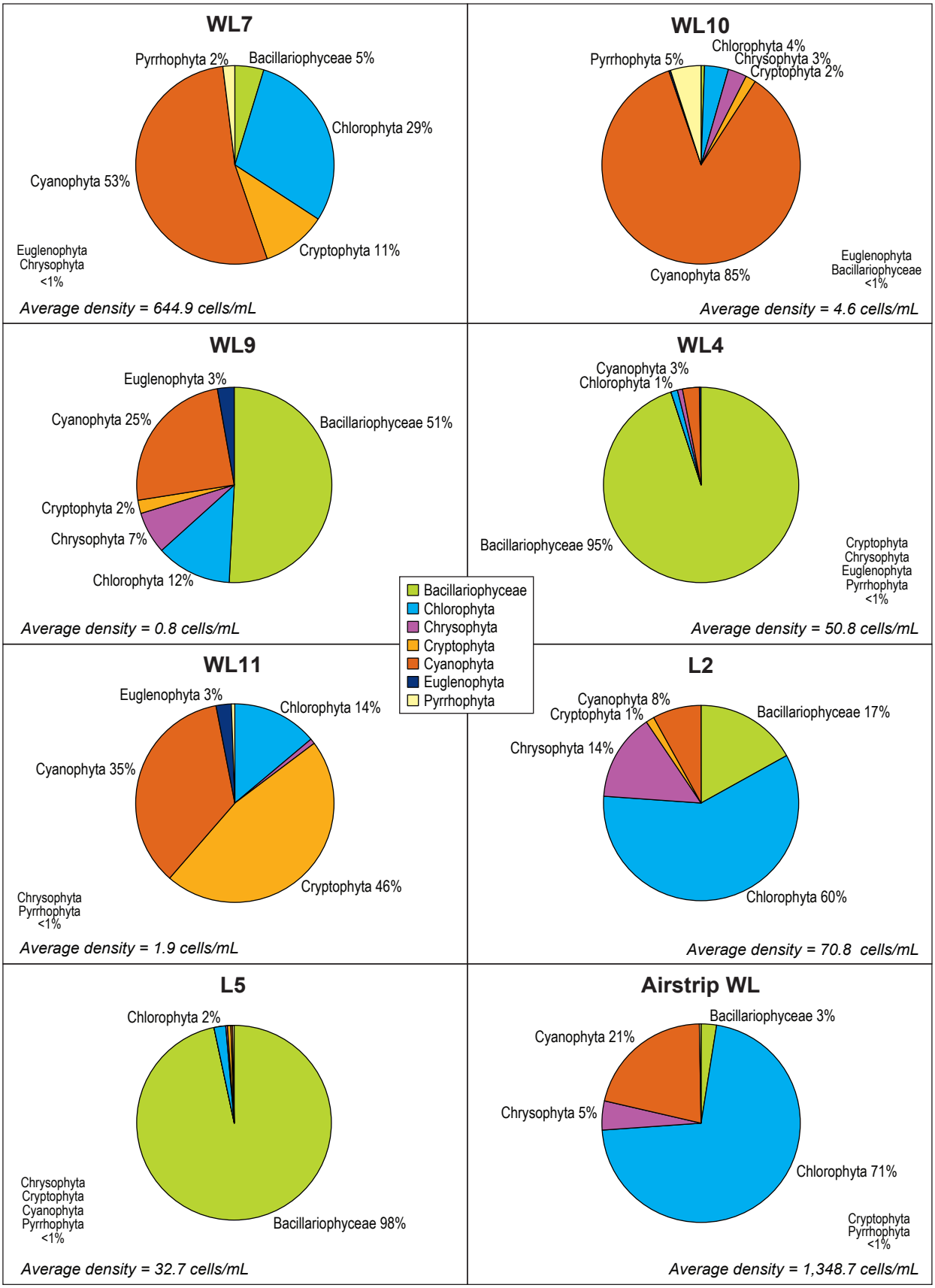
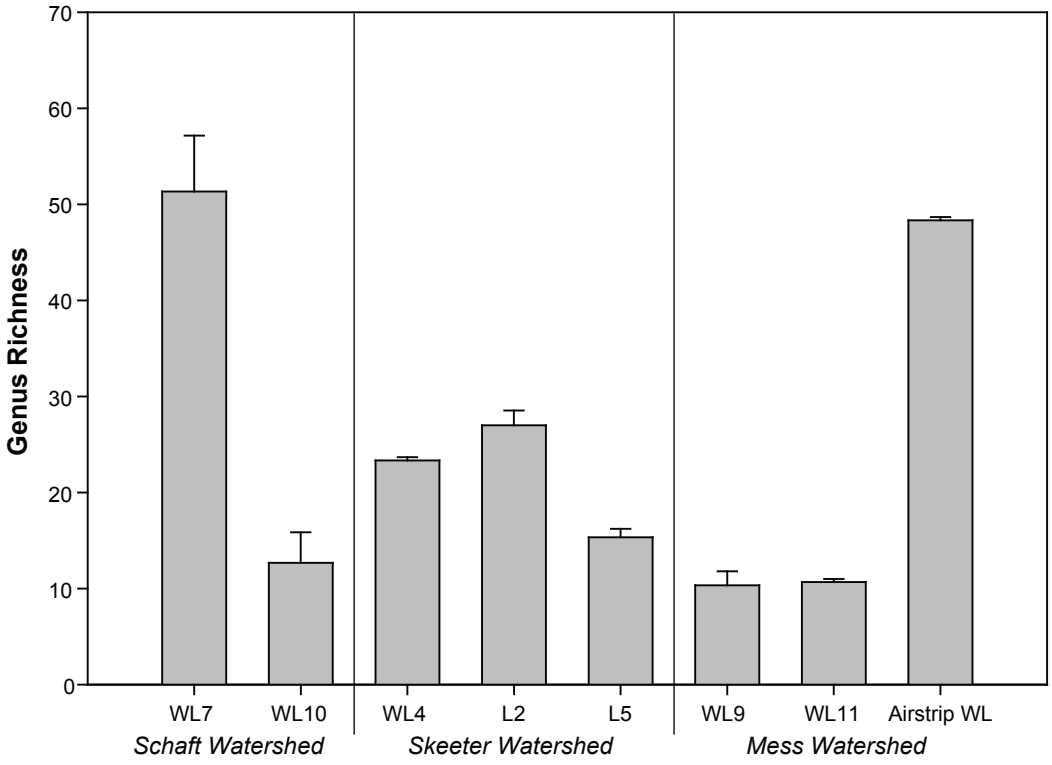


FIGURE 3.8-2

Taxonomic Composition of Phytoplankton Communities in Wetlands and Lakes, 2008



Note: Error bars represent the standard error of the mean

FIGURE 3.8-3

Phytoplankton Genus Richness in Wetlands and Lakes, 2008

Genus diversity calculations using the Simpson diversity index resulted in WL7and L2 as being the most diverse sites (Figure 3.8-4). Average Simpson diversity ranged from 0.23 (L5) to 0.85(L2). The phytoplankton community at WL9 had the highest evenness values. Evenness ranged from 0.23 (L5) to 0.81 (WL9).

3.9 LAKE AND WETLAND BENTHIC INVERTEBRATES

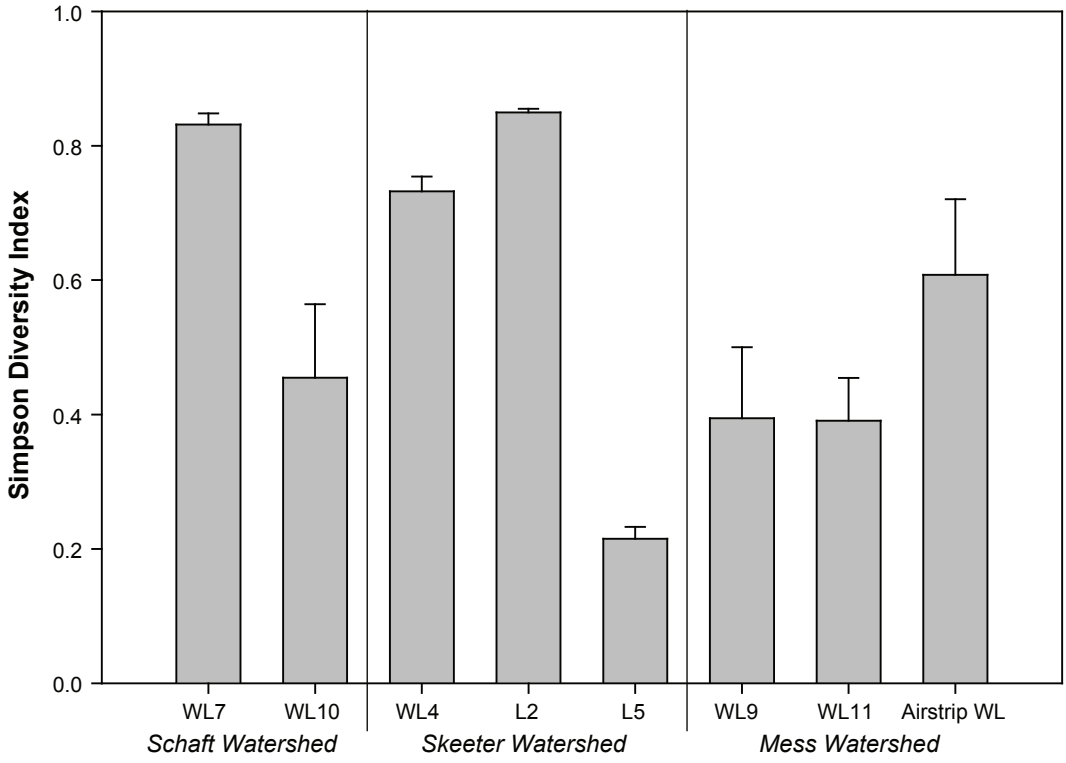
In 2008, benthic invertebrate communities were sampled in two lakes and six wetlands. All benthos taxonomic data can be found in Appendix 3.9-1.

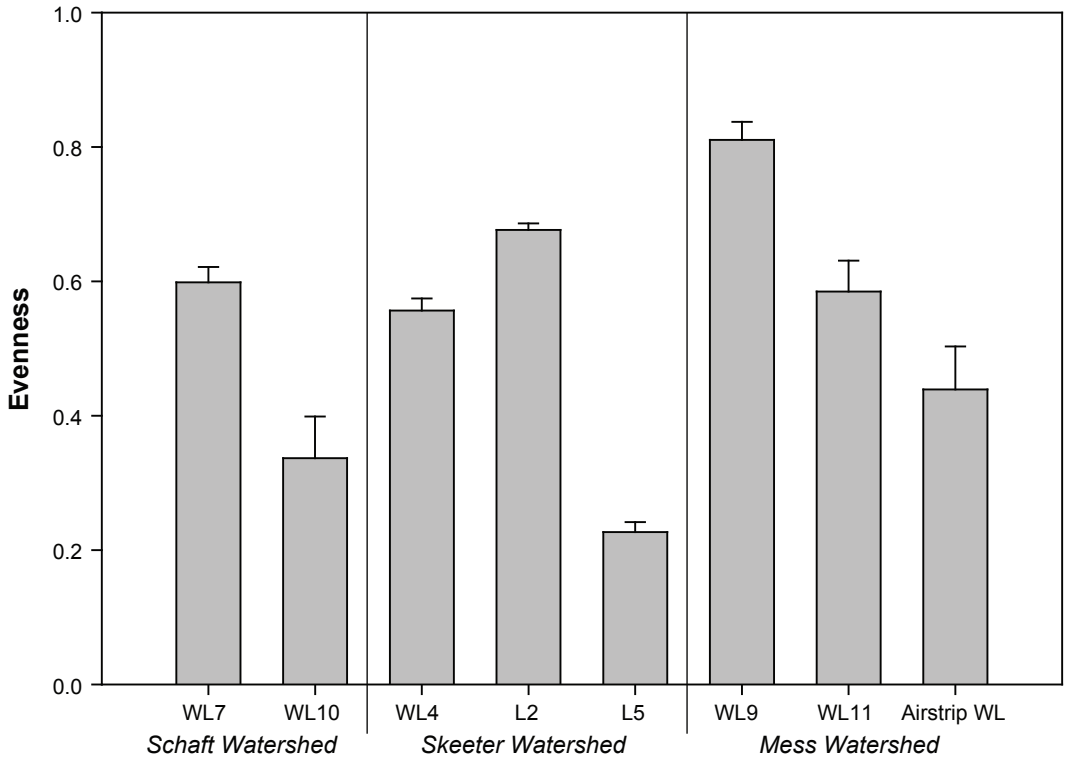
3.9.1 Density and Relative Abundance

The average density of benthic invertebrates across all wetland and lake sites was 70,174 organisms/m^2. Density ranged from 7,484 organisms/m^2 at WL10 to 123,867 organisms/m^2 at Airstrip WL (Figure 3.9-1).

Similar to 2007, diptera (flies) were the dominant taxonomic group. Of the 8 sites sampled, five (WL7, WL10, WL4, WL9, and WL11) were dominated by dipterans (Plate 3.9-1). The relative abundance of dipteran taxa ranged from 28 (L2) to 80% (WL4) (Figure 3.9-2a and b). Of all organisms collected dipterans accounted for 48%, while a total of eleven taxonomic groups composed the remaining 52%. Oligochaeta were the second most predominant taxonomic group followed by molluscs, cladocerans (water fleas), and ostracods. Other taxa include individuals from coleoptera (0 to <1), hirudinea (0 to 1%), arachnida (0 to 1%), odonata (0 to 6%), nematoda (<1 to 7%), amphipoda (0 to 9%), copepoda (0 to 14%), oligochaeta (<1 to 30%), cladocera (0 to 30%), ostracoda (0 to 38%), and mollusca (<1 to 44%). The remaining taxonomic groups (nematoda, hirudinea, arachnida, amphipoda, odonata, and coleopteran) contributed less than 5% to the total number of organisms sampled.

Plate 3.9-1. Chironomids: Example of Dipterans Collected from L5 (Start Lake).

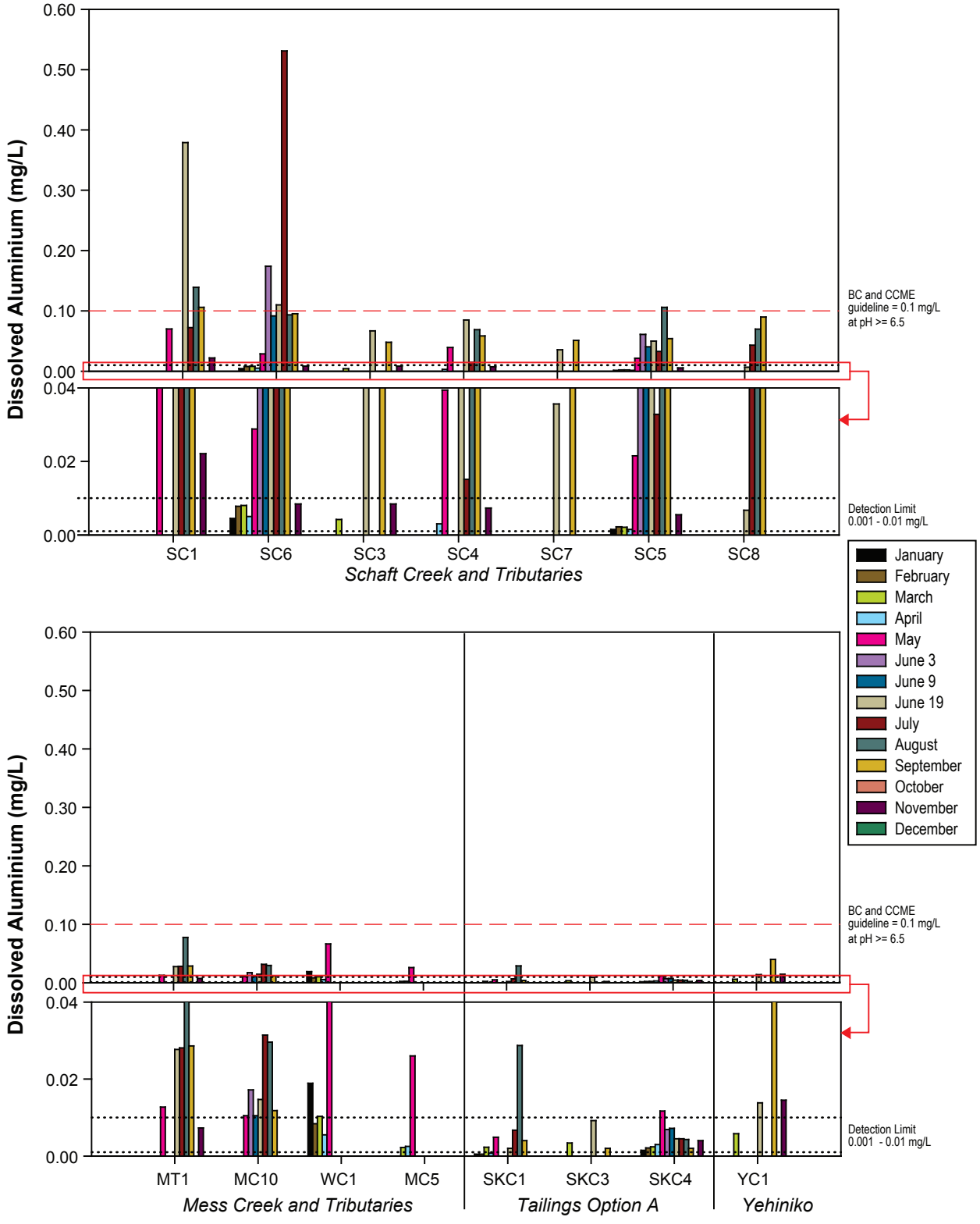




Note: Error bars represent one standard error of the mean

FIGURE 3.8-4

Phytoplankton Simpson Diversity Indices and Evenness in Wetlands and Lakes, 2008



Notes: Dashed red line represents BC and CCME guidelines.
Dotted line represents analytical detection limit.

FIGURE 3.1-9

Dissolved Aluminum Concentrations in Schaft Creek Project Streams, 2008

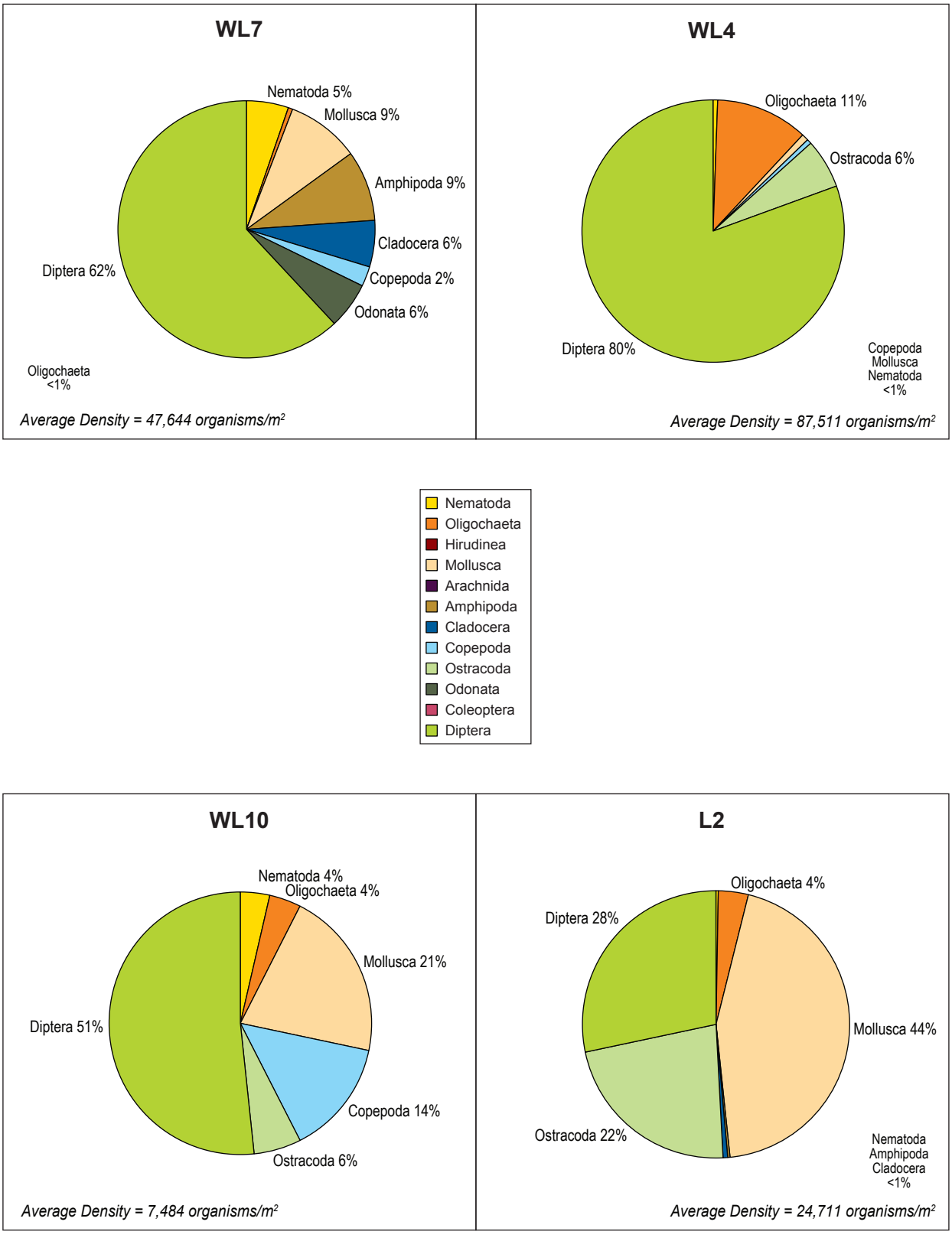
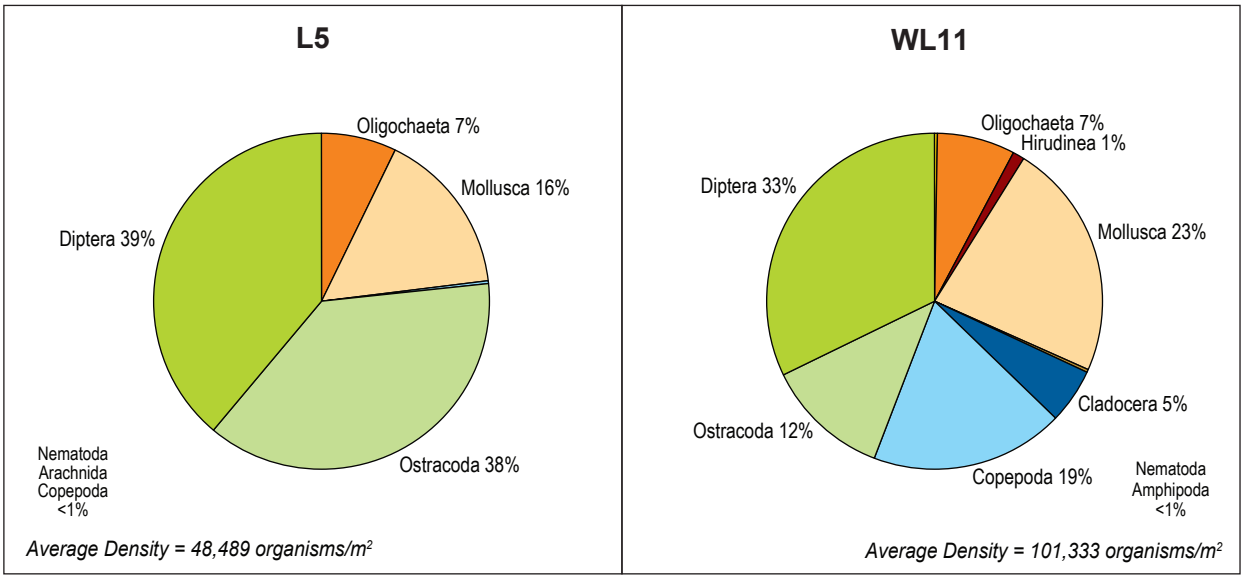
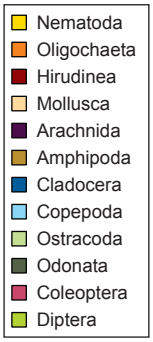


FIGURE 3.9-2a

Taxonomic Composition of Benthic Invertebrate Communities in Wetlands and Lakes, 2008





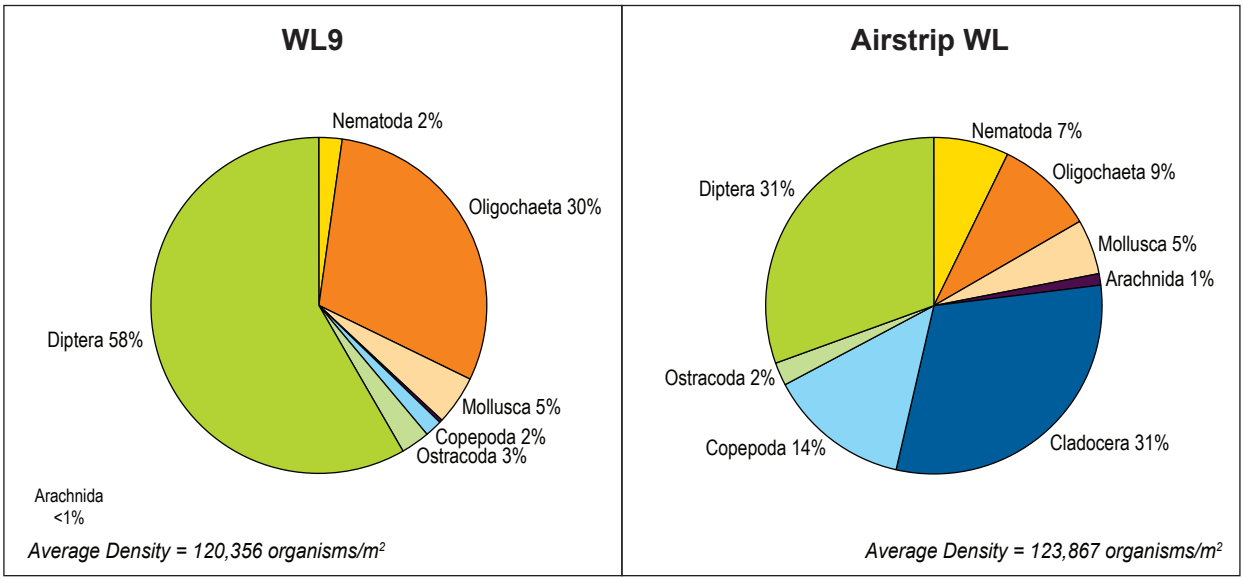


FIGURE 3.2-9b

Taxonomic Composition of Benthic Invertebrate Communities in Wetlands and Lakes, 2008

3.9.2 Richness and Diversity Indices

Genus richness across wetland and lake sites ranged from 5 (WL10) to 11 (Airstrip WL) taxa (Figure 3.9-1). As was the case in 2007, the Schaft (6 taxa), Skeeter (8 taxa), and Mess (10 taxa) watersheds had a similar average richness.

Benthic invertebrate communities sampled from wetlands and lakes were measured for their diversity using the Simpson Diversity Index. Average Simpson Diversity Index values were similar and ranged from 0.64 at L2 to 0.83 at WL3 (Figure 3.9-3). Evenness, which measures how evenly individuals are distributed among the taxa within a community, ranged from 0.61 at L5 to 0.97 at WL10 (Figure 3.9 -3).

3.10 LAKE ZOOPLANKTON

In August of 2008, zooplankton samples were collected at 2 lakes (Plate 3.10-1a and 3.10-1b). All zooplankton taxonomy data can be found in Appendix 3.10-1, while additional notes on haul depth and quality are in Appendix 3.10-2.

3.10.1 Density and Relative Abundance

Similar to 2007, L2 had the highest mean zooplankton density with 33,564 organisms/m^3 (Table 3.10-1). In comparison, L5 had an average density of 11,219 organisms/m^3. These densities are greater than what was found in these communities in 2007 (ten times greater in the case of L5).

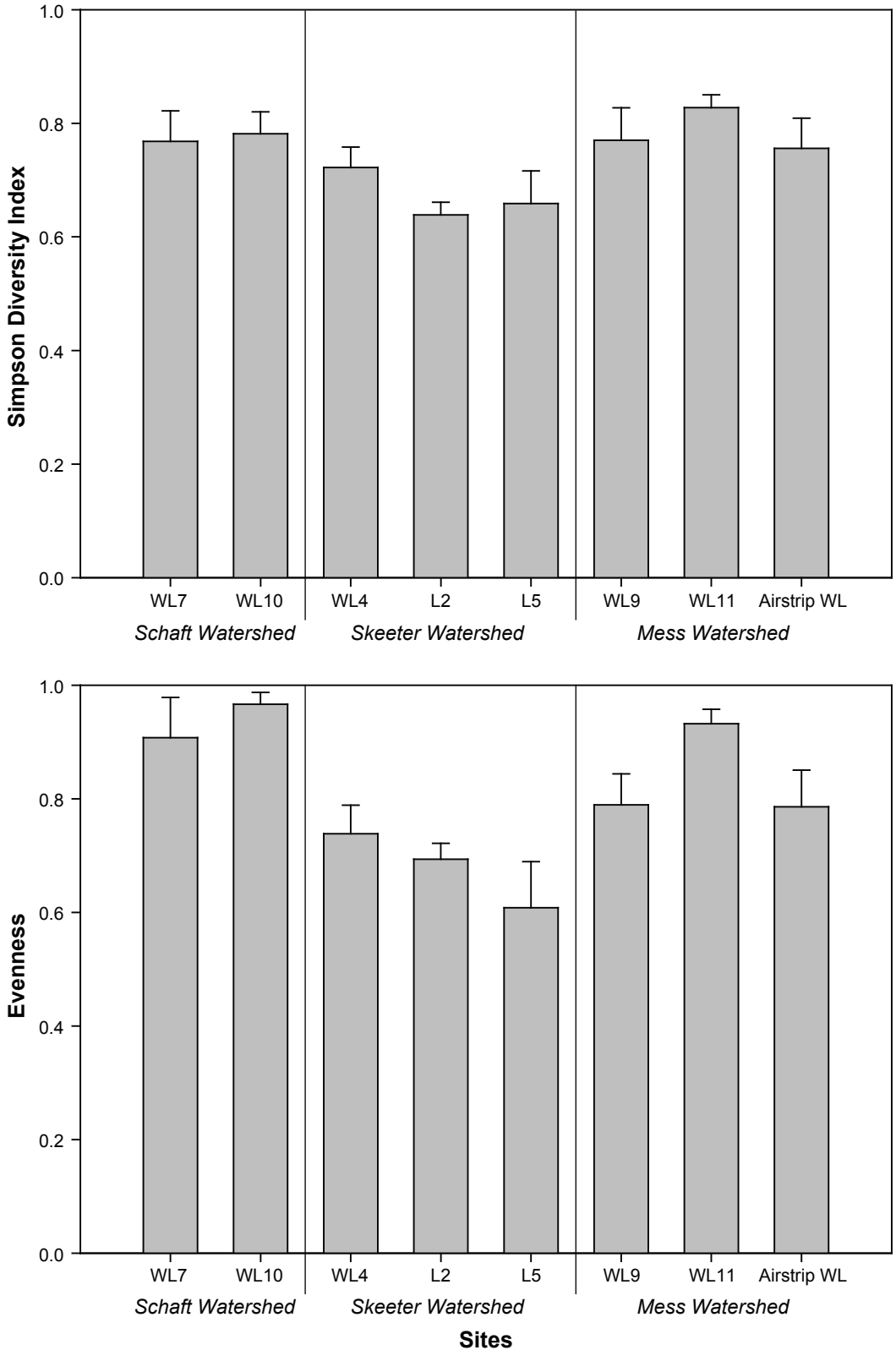
Also similar to 2007, zooplankton communities from L2 and L5 were dominated by the cyclopoid and calanoid copepods. The relative abundance of copepods from L2 was 80.6% while L5 was 99.3% (Figure 3.10-1). The relative abundance of calanoid copepods was <1% at L5 and 38% at L2. The abundance of cyclopoid copepods was 99% at L5 and 42% at L2. Rotifers were noticeably abundant at L2 (18%), similar to the proportion they made up in 2007. Amphipoda, Bosminidae, Insecta, and Daphnidae composed the remaining proportions of these communities contributing <1% of the total number of organisms collected.

Table 3.10-1. Mean Density, Genus Richness, Simpson Diversity Index, and Evenness of Zooplankton in Lakes, 2008

		Density (organisms/m^3)		Genus Richness		Simpson Diversity Index		Evenness	
Site	n	Mean	SE	Mean	SE	Mean	SE	Mean	SE
L2	3	33,564	6,929	8.0	0.0	0.77	0.01	0.80	0.01
L5	3	11,219	5,531	5.3	1.3	0.32	0.09	0.42	0.12

3.10.2 Richness and Diversity Indices

Genus richness of zooplankton communities collected in 2008 was similar to 2006 and 2007 (Table 3.10-1). In 2008, the average genus richness was 5.3 at L5 and 8.0 at L2. In previous years the genus richness at site L2 was 6.6 and 7.6 (Rescan 2007 and 2008). The genus richness at L5 was 5.0 and 4.3, in 2006 and 2007 respectively. The Simpson diversity index was 0.32 at L5 and 0.77 at L2 and mean evenness values were 0.42 at L5 and 0.80 at L2 (Table 3.10-1).



Note: Error bars represent one standard error of the mean

FIGURE 3.9-3

Benthic Invertebrate Simpson Diversity and Evenness in Wetlands and Lakes, 2008

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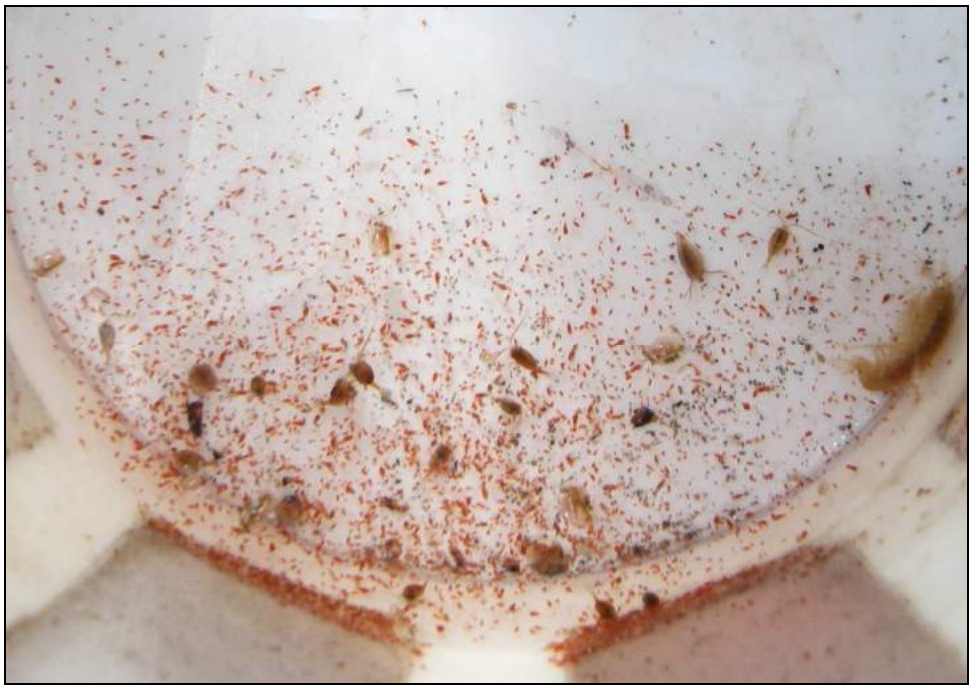
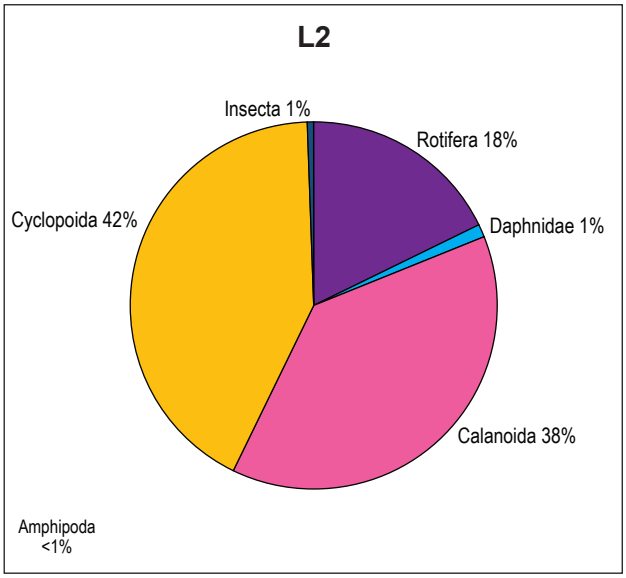
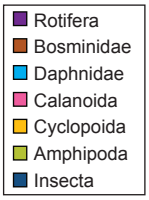


Plate 3.10-1a. A typical haul of zooplankton from Skeeter Lake (L2).

Plate 3.10-1b. A composite sample of zooplankton from Start Lake (L5).





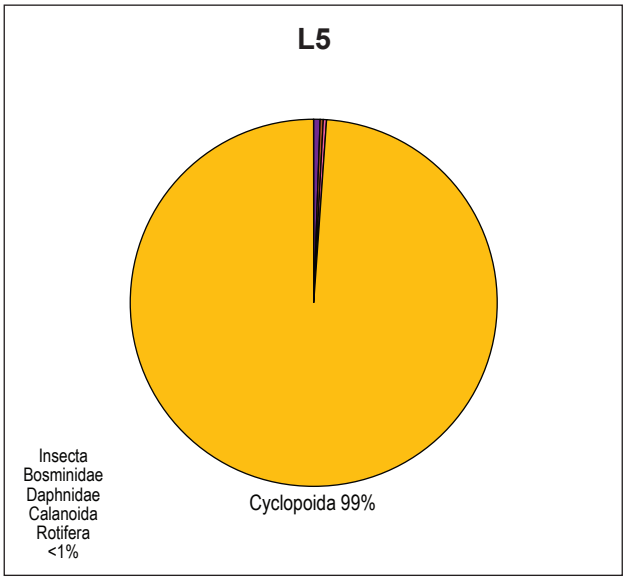


FIGURE 3.10-1

Taxonomic Composition of Zooplankton Communities in Lakes, 2008

4. Summary

4. Summary

4.1 STREAM WATER QUALITY

Similar to 2007, stream water hardness levels in 2008 were greatest at each site during winter months and pH values were slightly alkaline with most readings falling between 7.70 and 8.00. The range of TSS concentrations was also similar to what was seen in 2007, although no seasonal pattern was visible. Nutrient (TN, TP and TOC) peaked from May to July and the Skeeter Creek Watershed generally had the highest concentrations. Although total cyanide was below detection most of the time a spike was seen in the spring for all sites, corresponded to the pattern seen for TOC concentrations. One sample from SKC3 exceeded the CCME guideline.

Metals that most frequently exceeded the BC Maximum and CCME aquatic life guidelines included aluminum, cadmium, chromium, copper and iron (Appendix 3.1-3). Other metals that exceeded guidelines were total arsenic, lead and selenium and dissolved aluminum, cadmium, copper and iron (guidelines for total concentrations used in the case of cadmium, copper and iron). Although the Schaft Creek streams most often exceeded available guidelines, the specific sites with the greatest number of exceedances included SC1, SC6 and MC10.

4.2 STREAM SEDIMENT QUALITY

Stream substrates were primarily composed of sand but three sites have substantial portions (> 20%) of silt and clay. This size fraction is potentially more biologically relevant to benthic organisms, therefore metal concentrations at these sites may be effectively greater.

Nutrient concentrations in stream sediments were generally low in many cases. Available phosphorus concentrations were either below or at the detection limit (1 mg/kg) at all sites. Total nitrogen (TN) and total organic carbon (TOC) concentrations were close to detection limits at most sites. TN and TOC concentrations at SKC3 and SKC4 were considerably greater than at other sites.

As was the case in previous years, several metals analyzed were not detected in more than 80% of samples (i.e. antimony, beryllium, bismuth, cadmium, lead, molybdenum, selenium, silver, thallium and tin). Most metal concentrations were very similar to the concentrations observed in 2007 and the Schaft Creek sites generally had the lowest concentrations. Several metals exceeded the available guidelines including arsenic, chromium, copper, iron, nickel and zinc. SKC1 and MC10 were most often among the sites with the highest metal concentrations and in some cases (i.e. copper and zinc) SKC1 had concentration considerably greater than other sites.

4.3 STREAM PERIPHYTON

Average periphyton biomass (chlorophyll *a*) was generally low with the exception of SC1. Average cell density was greatest at SKC3, which was considerably lower than previous years. Periphyton communities were almost completely composed of diatoms.

Most stream sites had average periphyton genus richness between 5 and 12 taxa with SKC4 and WL8 have the greatest richness among stream sites. Simpson diversity and evenness was greatest at SC4.

4.4 STREAM BENTHIC INVERTEBRATES

The average density of benthic invertebrates across all stream sites was greatest at SKC3. Similar to 2006 and 2007, the Skeeter Creek Watershed sites ('Tailings Option A') had the most dense benthos communities.

As in previous years, the most dominant taxonomic groups at all stream sites were stoneflies (Plecoptera), dipterans, and mayflies (Ephemeroptera). Stoneflies, dipterans and mayflies comprised 90% of all organisms collected. Ephemeropteran, plectopteran, and trichopteran (EPT) taxa are known to be sensitive to environmental stress and composed between 50% and 70% of the community at most sites.

4.5 LAKE AND WETLAND WATER QUALITY AND LIMNOLOGY

Water samples from lakes and wetlands were relatively clear, as indicated by eight of the eleven sample locations having total suspended solid (TSS) concentrations below analytical detection (3 mg/L). Water hardness at most sites was between 70 and 100 mg/L. All lakes and wetlands were slightly alkaline with pH values in ranging from 7.53 to 8.22.

Nutrient concentrations were generally greatest at WL7 and the Airstrip WL than other wetland and lake sites. Total cyanide concentrations exceeded this CCME guideline of 0.011 mg/L and the BC Max guideline of 0.01 mg/L was exceeded at WL7.

Concentrations of total and dissolved antimony, beryllium, bismuth, boron, cadmium, chromium, cobalt, lead, mercury, nickel, silver, thallium, tin, titanium, vanadium and zinc were below detection limits in more than 60% of samples and no guidelines were exceeded for these metals. Metals that exceeded BC Maximum or CCME aquatic life guidelines include total aluminum (at L5), total and dissolved copper (at WL7) and total and dissolved iron (at WL10, WL11 and the Airstrip WL).

Limnology data indicated that L2 appeared to be stratified with the thermocline at approximately 11 m, where as L5 was relatively well mixed since it is shallow, exposed and generally a windier lake.

4.6 LAKE AND WETLAND SEDIMENT QUALITY

Analysis of the particle size in wetland and lake sediments generally resulted in higher proportion of fines (silt and clay) than sand and gravel. However, sand and gravel collectively composed 50 to 80% at WL9, WL11 and Airstrip WL. Nutrient concentrations were greatest WL7, Airstrip WL and L2.

Of the metals analyzed antimony, bismuth, cadmium, lead, silver, thallium and tin were not detected in more than 85% of samples across all wetland and lake sites. Seven of the nine metals for which guidelines are available exceeded those guidelines. No site in particular was consistently found to have relatively high metal concentrations. It can be noted, however, that L5 had the greatest concentrations of copper and zinc, which was also the case in 2007 (Rescan 2008). The ISQG was exceeded for arsenic, chromium, copper, selenium and zinc, while the PEL was exceeded for arsenic and copper. The LEL and SEL guidelines were exceeded for both iron and nickel.

4.7 LAKE AND WETLAND PHYTOPLANKTON

Mean wetland and lake biomass ranged from 0.06 (WL9) to 1.33 µg/L chlorophyll α (L5). Lake phytoplankton biomass averaged 0.931 µg/L, which was more than double the wetland average

biomass. Average cell densities ranged from 0.8 (WL9) to 1,348.7 cells/ml (Airstrip WL). The average density of WL7 and Airstrip WL was notably greater than L2 (the next highest average density).

Wetland and lake communities were often composed of large proportions of bacillariophycae, chlorophytes and cyanophytes. In 2007, the most dominant taxa were cyanophytes and chrysophytes, for both wetlands and lakes. Average wetland genus richness ranged from 10 at WL9 to 51 at WL7, with a mean of 26 taxa, while lake phytoplankton richness had a mean of 15 taxa at L5 and 27 taxa at L2. Simpson diversity index values indicated WL9, WL10, and WL11 as being the most diverse sites. The phytoplankton communities at WL9, WL10, and WL11 also had the highest evenness values.

4.8 LAKE AND WETLAND BENTHIC INVERTEBRATES

The average density of benthic invertebrates across all wetland and lake sites was 70,174 organisms/m^2. Density ranged from 7,484 organisms/m^2 at WL10 to 123,867 organisms/m^2 at Airstrip WL. Similar to 2007, diptera (flies) were the dominant taxonomic group. Of all organisms collected dipterans accounted for 48% of the benthos community while a total of eleven taxonomic groups composed the remaining 52%. Oligochaetes were the second most dominant taxonomic group followed by molluscs, cladocerans (water fleas), and ostracods.

Genus richness across wetland and lake sites ranged from 5 (WL10) to 11 (Airstrip WL) taxa. Average Simpson Diversity Index values were similar and ranged from 0.77 at L2 to 0.87 at Airstrip WL. Evenness, which measures how evenly taxa are distributed among the genera within a community ranged from 0.84 at L5 to 0.99 at WL10.

4.9 LAKE ZOOPLANKTON

Similar to 2007, L2 had the highest mean zooplankton density with 33,564 organisms/m^3. Densities at both lakes are greater than what was found in for these communities in 2007 (ten times greater in the case of L5).

Zooplankton communities from L2 and L5 were dominated by the cyclopoid and calanoid copepods. Rotifers were noticeably abundant at L2 (18%), similar to the proportion they made up in 2007. Amphipoda, Bosminidae, Insecta, and Daphnidae composed the remaining proportions of these communities. In 2008, the average genus richness was 5.3 at L5 and 8.0 at L2, which is similar to previous years. The Simpson diversity index was 0.32 at L5 and 0.77 at L2 and mean evenness values were 0.42 at L5 and 0.80 at L2.

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Appendix 3.1-1

Stream Water Quality, 2008

Appendix 3.1-1 Stream Water Quality, 2008

Sample ID	SKC-1	SKC-4-1	SC-5	JC-2	HC-3	SC-6	WC-1	JC-2	HC-3	SC-6	WC-1	SKC-1	SKC-4	SC-5	HC-2	HC-3	JC-2
Date Sampled	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	17-MAR-08	17-MAR-08	17-MAR-08
month Sampled	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3
ALS Sample ID	L593696-1	L593696-2	L593696-4	L593696-6	L593696-7	L593696-8	L593696-9	L603123-1	L603123-2	L603123-3	L603123-4	L603123-6	L603123-7	L603123-8	L612194-1	L612194-2	L612194-3
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	85.3	106	94.3	48.8	95.3	93.5	52.1	47.8	42.4	88.6	50	56.2	95.5	91.8	102	102	52.1
Colour, True	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity	172	223	195	107	197	190	137	106	201	195	144	181	225	198	208	211	116
pH	7.62	8	7.98	7.83	8.02	8.05	7.9	7.84	8.08	8.12	7.98	7.89	8.09	8.11	8.14	8.11	7.94
Total Dissolved Solids	107	130	112	61	110	101	91	67	119	109	100	113	139	114	114	120	67
Total Suspended Solids	<3.0	<3.0	3.2	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	0.5	0.5	1.75	0.43	0.77	0.4	1.01	0.47	0.57	0.46	0.75	0.43	0.45	1.19	0.29	0.34	0.25
Anions and Nutrients																	
Ammonia as N	0.005	0.0098	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0075	0.0075	0.0069	<0.0050	<0.0050
Acidity (as CaCO3)	3	1.9	1.8	1.5	1.6	1.4	1.7	1.3	1	<1.0	1.2	1.4	1.1	<1.0	1.2	1.2	1.4
Alkalinity, Bicarbonate (as CaCO3)	69.3	92.5	93.8	48.4	84.4	86.3	83.1	48.1	83.4	82.8	61.6	70.2	98.1	91.5	100	85.7	54.5
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total (as CaCO3)	69.3	92.5	93.8	48.4	84.4	86.3	83.1	48.1	83.4	82.8	61.6	70.2	98.1	91.5	100	85.7	54.5
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	0.86	<0.50	<0.50	<0.50	1.01	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.99
Fluoride (F)	0.023	0.036	0.05	0.154	<0.020	<0.020	0.198	0.157	<0.020	<0.020	0.203	0.027	0.037	0.053	<0.020	<0.020	0.15
Sulfate (SO4)	21.4	22.7	12.3	4.96	19.6	16.9	12.7	5.52	21.5	17.7	13.3	22.4	23.8	12.9	16.5	21.5	5.4
Nitrate (as N)	0.0388	0.0817	0.0622	0.155	0.041	0.0447	0.0638	0.179	0.0519	0.0576	0.0747	0.0555	0.0998	0.0774	0.0463	0.0533	0.193
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	<0.050	0.068	0.048	0.065	<0.050	<0.050	0.126	0.071	<0.050	<0.050	0.055	<0.050	0.059	0.053	<0.050	<0.050	<0.050
Total Nitrogen	0.07	0.15	0.11	0.22	0.07	0.07	0.19	0.25	0.09	0.09	0.13	0.09	0.16	0.13	0.05	<0.05	0.18
Total Phosphate as P	0.0027	0.0031	0.0044	0.0021	0.0026	0.0021	0.0224	<0.0020	<0.0020	<0.0020	0.0221	<0.0020	<0.0020	0.0027	<0.0020	<0.0020	0.0038
Cyanides																	
Cyanide, Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals																	
Aluminum (Al)-Total	0.0056	0.0069	0.0225	0.0136	0.023	0.0169	0.0454	0.0138	0.0092	0.0127	0.0337	0.0053	0.0057	0.0432	0.0088	0.0142	0.0119
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	<0.00010
Arsenic (As)-Total	0.00031	0.00024	0.00038	0.00013	0.00129	0.0005	0.00017	0.00019	0.00095	0.00053	0.00019	0.00023	0.00025	0.0004	0.00199	0.00137	0.00017
Barium (Ba)-Total	0.00978	0.0147	0.0894	0.0753	0.037	0.0887	0.00487	0.0844	0.0271	0.1	0.00515	0.0108	0.0149	0.0879	0.0544	0.0384	0.0818
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	<0.010	<0.010	<0.010	<0.010	0.012	0.011	0.01	<0.010	<0.010	0.01	0.011	<0.010	<0.010	<0.010	0.013	0.013	<0.010
Cadmium (Cd)-Total	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Total	29.5	34.6	30.1	15.5	28	27.5	12.5	16.2	21.1	29.9	12.9	30.4	33.5	30.7	31.1	30.2	16.3
Chromium (Cr)-Total	<0.00050	<0.00050	<0.00050	<0.00050	0.00077	<0.00050	<0.00050	<0.00050	0.00054	0.00072	<0.00050	<0.00050	<0.00050	<0.00050	0.00161	0.00109	<0.00050
Cobalt (Co)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total	0.00053	0.00044	0.00045	0.00015	0.00055	0.00029	0.00018	0.00016	0.00043	0.00028	0.00022	0.00049	0.00054	0.00097	0.00029	0.00049	0.00016
Iron (Fe)-Total	0.076	0.087	0.208	<0.030	<0.030	<0.030	0.055	<0.030	<0.030	<0.030	0.063	0.049	0.082	0.22	<0.030	<0.030	<0.030
Lead (Pb)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	2.03	5.35	4.33	2.1	5.01	5.02	5.06	2.21	3.7	5.51	5.19	1.99	5.24	4.44	6.47	5.81	2.4
Manganese (Mn)-Total	0.0077	0.0114	0.0641	0.000898	0.000693	0.000152	0.00571	0.00083	0.000486	0.000102	0.00577	0.00402	0.00869	0.0613	0.00103	0.000453	0.000661
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.000768	0.000762	0.00515	0.00608	0.00119	0.00387	0.000925	0.00572	0.000898	0.00397	0.00095	0.000694	0.000714	0.0053	0.000374	0.00126	0.00542
Nickel (Ni)-Total	<0.00050	0.00058	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00059	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	0.321	0.433	0.576	0.533	0.618	0.613	1.74	0.517	0.452	0.637	1.74	0.301	0.409	0.56	0.449	0.663	0.531
Selenium (Se)-Total	0.00125	0.00092	0.00071	<0.00050	<0.00050	<0.00050	0.00058	<0.00050	<0.00050	<0.00050	<0.00050	0.00098	0.00054	<0.00050	0.0003	0.00037	<0.00010
Silicon (Si)-Total	2.78	3.89	3.17	2.9	2.68	1.88	11.3	2.94	1.92	1.74	11.2	2.76	3.84	3.2	2.13	2.69	3
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	SKC-1	SKC-4-1	SC-5	JC-2	HC-3	SC-6	WC-1	JC-2	HC-3	SC-6	WC-1	SKC-1	SKC-4	SC-5	HC-2	HC-3	JC-2
Date Sampled	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	17-MAR-08	17-MAR-08	17-MAR-08
month Sampled	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3
ALS Sample ID	L593696-1	L593696-2	L593696-4	L593696-6	L593696-7	L593696-8	L593696-9	L603123-1	L603123-2	L603123-3	L603123-4	L603123-6	L603123-7	L603123-8	L612194-1	L612194-2	L612194-3
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	5.8	2.5	<2.0	<2.0	6.6	<2.0	2	2.2	2.3	2	2.6
Strontium (Sr)-Total	0.0459	0.0768	0.141	0.101	0.117	0.152	0.0572	0.111	0.0868	0.162	0.0579	0.0458	0.0752	0.151	0.142	0.126	0.113
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	0.000145	0.000161	0.0011	0.00263	0.000045	0.000502	0.000148	0.00263	0.000032	0.000532	0.000153	0.000138	0.000156	0.00113	0.000047	0.000045	0.00264
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals																	
Aluminum (Al)-Dissolved	<0.0010	<0.0030	<0.0030	<0.0060	<0.0060	<0.0090	0.0189	0.0045	0.0025	0.0078	0.0084	<0.0010	0.0021	0.0022	0.0032	0.0031	0.0042
Antimony (Sb)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	<0.00010
Arsenic (As)-Dissolved	0.00022	0.00022	0.00021	0.00015	0.00126	0.0005	0.00017	0.00016	0.00059	0.00048	0.00017	0.00011	0.00018	0.00024	0.00166	0.00132	0.00016
Barium (Ba)-Dissolved	0.00984	0.014	0.0885	0.0758	0.0378	0.0942	0.00466	0.0774	0.0206	0.0884	0.00435	0.00688	0.0131	0.0849	0.0539	0.0383	0.0847
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	<0.010	<0.010	<0.010	<0.010	0.013	0.011	0.01	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	<0.010	0.013	0.013	<0.010
Cadmium (Cd)-Dissolved	<0.000020	<0.000020	<0.000020	0.000023	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000017	<0.000017	0.000017
Calcium (Ca)-Dissolved	30.7	33.7	30.6	16.1	29.5	28.8	12.6	15.7	13.5	27.4	12	20.7	30.6	29.8	30.5	31	16.8
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	0.00086	0.00058	<0.00050	<0.00050	<0.00050	0.00074	<0.00050	<0.00050	<0.00050	<0.00050	0.00112	0.00102	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	0.0004	0.00041	0.00027	0.00024	0.00042	0.00032	0.00016	<0.00030	<0.00030	<0.00050	<0.00020	<0.00050	<0.00040	<0.00040	<0.00030	<0.00050	<0.00020
Iron (Fe)-Dissolved	<0.030	0.039	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	2.12	5.28	4.34	2.12	5.26	5.25	5.02	2.1	2.14	4.91	4.85	1.12	4.65	4.23	6.33	5.91	2.43
Manganese (Mn)-Dissolved	0.00655	0.00939	0.0593	0.000572	0.000112	<0.000050	0.00138	0.000183	0.000075	<0.000050	0.000901	0.00149	0.00586	0.0495	0.00085	0.000066	0.000246
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.000775	0.000685	0.00523	0.00636	0.00125	0.0042	0.000997	0.00588	0.000601	0.00406	0.000938	0.000387	0.00069	0.00541	0.000355	0.00128	0.00577
Nickel (Ni)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	0.328	0.583	0.575	0.557	0.642	0.654	1.76	0.528	0.273	0.626	1.6	0.166	0.383	0.571	0.442	0.673	0.548
Selenium (Se)-Dissolved	0.0009	0.00065	0.00051	<0.00050	<0.00050	<0.00050	0.00056	0.00053	0.00087	0.00058	<0.00050	<0.00050	0.00093	<0.00050	0.00021	0.00026	<0.00010
Silicon (Si)-Dissolved	2.69	3.82	3.11	2.82	2.61	1.88	11.2	2.86	1.14	1.71	9.93	2.31	3.57	3.1	2.06	2.71	2.96
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	<2.0	<2.0	2	2.1	<2.0	<2.0	5.8	2.4	<2.0	<2.0	5.8	<2.0	<2.0	2.2	2.3	2	2.5
Strontium (Sr)-Dissolved	0.0467	0.0749	0.14	0.104	0.12	0.159	0.0565	0.104	0.0528	0.149	0.053	0.0315	0.0675	0.137	0.137	0.129	0.116
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000154	0.000155	0.0011	0.00271	0.00004	0.000519	0.000142	0.00268	0.000022	0.000557	0.000131	0.000098	0.000145	0.00115	0.000053	0.000043	0.00277
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Organic Parameters																	
COD	<20	<20	30	<20	<20	<20	<20	20	30	20	<20	30	30	<20	<20	<20	<20
Total Organic Carbon	<0.50	1.84	0.65	0.65	<0.50	<0.50	<0.50	0.58	0.67	0.52	0.85	0.72	1.95	0.85	<0.50	0.66	<0.50

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC-2	MC-5	MC-9	SC-3	SC-5	SC-6	SC-3	SKC-3	SKC-4	WC-1	YC-1	SKC-1	SKC-1	SKC-4	SC-4	SC-5	SC-6
Date Sampled	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-APR-08	17-APR-08	17-APR-08	17-APR-08	17-APR-08
month Sampled	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
ALS Sample ID	L612194-4	L612194-5	L612194-6	L612194-7	L612194-8	L612194-9	L612194-10	L612194-11	L612194-12	L612194-13	L612194-14	L612194-17	L624366-1	L624366-2	L624366-3	L624366-4	L624366-6
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	275	124	119	115	97.3	98.5	114	109	109	57	66.4	87.9	89	105	87.2	93.1	96.3
Colour, True	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity	544	266	276	238	203	204	236	226	230	149	140	190	191	225	211	196	200
pH	8.13	8.19	8.24	8.18	8.16	8.18	8.17	8.11	8.1	8.01	7.92	7.84	7.79	8.01	8.19	8.04	7.55
Total Dissolved Solids	291	154	158	132	116	118	135	128	135	100	83	110	110	133	114	110	109
Total Suspended Solids	<3.0	<3.0	32	<3.0	<3.0	<3.0	3.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	6	<3.0	4
Turbidity	1.52	1.96	21.8	0.32	1.87	0.39	0.38	0.52	0.47	0.61	1.09	0.24	0.21	0.44	0.99	1.7	0.25
Anions and Nutrients																	
Ammonia as N	0.0175	0.005	<0.0050	<0.0050	0.0088	<0.0050	<0.0050	0.0235	0.005	<0.0050	<0.0050	<0.0050	0.0078	<0.0050	<0.0050	0.0068	<0.0050
Acidity (as CaCO3)	2.9	<1.0	<1.0	1.1	1.1	<1.0	1	1.6	1.4	1.5	1.8	2.4	4.8	3.7	1.5	3.7	4.9
Alkalinity, Bicarbonate (as CaCO3)	287	130	128	97.2	91	86.1	105	113	105	65.1	71.7	78.6	79.5	98.2	94.1	87.3	88.1
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total (as CaCO3)	287	130	128	97.2	91	86.1	105	113	105	65.1	71.7	78.6	79.5	98.2	94.1	87.3	88.1
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	5.23	1.17	1.19	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.036	0.095	0.143	0.022	0.05	<0.020	0.022	0.038	0.037	0.199	0.039	0.028	0.027	0.035	0.046	0.045	<0.020
Sulfate (SO4)	28.4	17.6	17.1	18.8	12.7	18.5	18.8	6.51	23.6	13.6	11.5	22.8	22.5	22	15.4	12.1	18.1
Nitrate (as N)	0.102	0.0737	0.0776	0.0524	0.0787	0.0643	0.0549	0.191	0.116	0.0641	0.0907	0.0758	0.0806	0.107	0.0766	0.0737	0.0561
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.057	<0.050	<0.050	<0.050	<0.050	0.149	0.113	<0.050	<0.050	<0.050
Total Nitrogen	0.09	<0.05	0.07	<0.05	0.05	<0.05	<0.05	0.25	0.14	<0.05	0.08	0.05	0.23	0.22	0.12	0.12	0.09
Total Phosphate as P	0.0039	0.0063	0.0422	0.0025	0.0035	<0.0020	<0.0020	<0.0020	<0.0020	0.0203	0.0022	<0.0020	<0.0020	0.0027	0.0056	0.0033	<0.0020
Cyanides																	
Cyanide, Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	0.0021	<0.0010	<0.0010	<0.0010
Total Metals																	
Aluminum (Al)-Total	0.0085	0.0468	0.735	0.0133	0.0287	0.0124	-	0.0151	0.0059	0.0293	0.0637	0.0053	0.0053	0.0088	0.0505	0.0237	0.0137
Antimony (Sb)-Total	0.00028	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	0.00094	0.00042	0.00059	0.00053	0.00041	0.00049	-	0.0001	0.00024	0.00019	0.00045	0.00016	0.0002	0.00026	0.00047	0.00041	0.00048
Barium (Ba)-Total	0.162	0.0805	0.0661	0.0989	0.0926	0.0963	-	0.00901	0.014	0.0049	0.0314	0.0106	0.0109	0.014	0.0968	0.088	0.0863
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	0.086	0.023	0.03	0.012	<0.010	0.01	-	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013
Cadmium (Cd)-Total	<0.000017	<0.000017	0.000017	<0.000017	<0.000017	0.000018	-	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000037	0.000019	<0.000017
Calcium (Ca)-Total	57.9	33.3	31.4	34.8	30.4	29	-	35.7	34	13.2	20.7	30.7	31.5	33	30.2	32	29.3
Chromium (Cr)-Total	<0.00050	<0.00050	0.0025	<0.00050	<0.00050	0.00064	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00051	<0.00050	<0.00050
Cobalt (Co)-Total	0.00023	<0.00010	0.0009	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total	0.00037	0.00048	0.00424	0.00045	0.00049	0.00028	-	0.00021	0.00052	0.00019	0.00075	0.00047	0.00057	0.00059	0.00079	0.00046	0.00028
Iron (Fe)-Total	0.352	0.222	1.16	0.031	0.293	<0.030	-	0.137	0.1	0.045	0.075	0.032	0.042	0.163	0.102	0.381	<0.030
Lead (Pb)-Total	<0.000050	0.000057	0.000289	<0.000050	<0.000050	<0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000066	<0.000050	<0.000050
Lithium (Li)-Total	0.0098	<0.0050	0.0067	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	31.6	9.92	10.8	5.92	4.55	5.69	-	5.03	5.45	5.49	3.34	2.05	2.24	5.25	4.82	4.3	5.36
Manganese (Mn)-Total	0.0975	0.0416	0.048	0.0215	0.0593	0.000209	-	0.00371	0.00803	0.00454	0.00236	0.00332	0.00352	0.0128	0.0193	0.0538	0.00051
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.00108	0.00287	0.00214	0.0104	0.00488	0.00409	-	0.000405	0.000739	0.00103	0.00123	0.000749	0.000763	0.000739	0.00958	0.00466	0.00364
Nickel (Ni)-Total	0.00516	<0.00050	0.00289	<0.00050	<0.00050	<0.00050	-	<0.00050	0.00061	<0.00050	0.00095	<0.00050	<0.00050	0.00053	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	1.03	0.947	1.64	0.605	0.566	0.624	-	0.294	0.431	1.77	0.856	0.306	0.329	0.473	0.597	0.675	0.664
Selenium (Se)-Total	0.0004	0.00023	0.00036	0.00024	0.00016	0.00034	-	0.00015	0.00075	0.00019	0.00015	0.00087	0.00096	0.00061	0.00034	<0.00010	0.00022
Silicon (Si)-Total	3.9	4.62	7.53	2.72	3.22	1.7	-	3.97	3.94	11	2.77	2.72	2.77	4.05	2.63	3.17	1.97
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC-2	MC-5	MC-9	SC-3	SC-5	SC-6	SC-3	SKC-3	SKC-4	WC-1	YC-1	SKC-1	SKC-1	SKC-4	SC-4	SC-5	SC-6
Date Sampled	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-APR-08	17-APR-08	17-APR-08	17-APR-08	17-APR-08
month Sampled	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
ALS Sample ID	L612194-4	L612194-5	L612194-6	L612194-7	L612194-8	L612194-9	L612194-10	L612194-11	L612194-12	L612194-13	L612194-14	L612194-17	L624366-1	L624366-2	L624366-3	L624366-4	L624366-6
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	12.4	5.7	9.8	2.2	2.2	<2.0	-	<2.0	2.2	6.8	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Total	0.308	0.161	0.159	0.182	0.146	0.167	-	0.0656	0.0804	0.0612	0.102	0.0456	0.0456	0.0755	0.156	0.123	0.134
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	0.00023	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	0.028	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	0.000169	0.000655	0.000717	0.000491	0.00111	0.000545	-	0.000152	0.000158	0.000168	0.000533	0.000159	0.000187	0.000181	0.00124	0.00102	0.000512
Vanadium (V)-Total	<0.0010	<0.0010	0.0044	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0010	<0.0010	0.0047	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals																	
Aluminum (Al)-Dissolved	<0.0010	0.0022	0.0059	0.0042	0.0021	0.008	0.0042	0.0034	0.0024	0.0103	0.0058	0.0023	<0.0015	<0.0060	<0.0060	<0.0030	<0.010
Antimony (Sb)-Dissolved	0.00028	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	0.00058	0.00027	0.00038	0.00049	0.00023	0.00046	0.00049	<0.00010	0.00022	0.00018	0.00039	0.00015	<0.00020	<0.00040	<0.00050	<0.00030	<0.00060
Barium (Ba)-Dissolved	0.16	0.0769	0.0587	0.0995	0.0928	0.0959	0.0979	0.00877	0.014	0.00483	0.0314	0.0109	0.011	0.0138	0.0911	0.0841	0.0877
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	0.086	0.024	0.029	0.013	<0.010	0.011	0.013	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000035	<0.000017	<0.000017
Calcium (Ca)-Dissolved	57.8	33.4	30.7	36	31.3	29.9	35.8	35.5	34.8	13.7	21.1	31.8	32	33.3	27.7	30.5	29.6
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00061	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	0.00019	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	<0.00030	<0.00030	<0.00060	<0.00050	<0.00030	<0.00030	<0.00040	<0.00030	<0.00050	<0.00020	<0.00050	<0.00050	<0.00060	<0.00060	<0.00040	<0.00040	<0.00030
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.048	<0.030	<0.030	<0.030	<0.030	0.086	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	0.0093	<0.0050	0.0059	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	31.8	9.86	10.2	6.11	4.65	5.81	6.07	4.97	5.46	5.56	3.32	2.09	2.25	5.23	4.4	4.11	5.42
Manganese (Mn)-Dissolved	0.0893	0.025	0.00558	0.0191	0.0505	<0.000050	0.019	0.000743	0.00529	0.000736	0.000264	0.00196	0.00193	0.00247	0.00847	0.0448	0.000088
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.00113	0.00305	0.00254	0.0119	0.00579	0.00421	0.011	0.000451	0.000777	0.00108	0.00133	0.000796	0.000845	0.000793	0.00926	0.00463	0.00377
Nickel (Ni)-Dissolved	0.00494	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	1.03	0.941	1.53	0.633	0.579	0.642	0.626	0.294	0.433	1.81	0.865	0.315	0.333	0.469	0.553	0.645	0.678
Selenium (Se)-Dissolved	0.00034	0.00015	0.00032	0.00023	0.00017	0.0003	0.00031	<0.00010	0.0006	0.00016	0.00012	0.00077	0.00084	0.00064	0.00014	0.00012	0.0002
Silicon (Si)-Dissolved	3.79	4.5	6.17	2.62	3.1	1.66	2.59	3.87	3.96	10.8	2.64	2.74	2.75	4	2.54	3.03	1.93
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	12.3	5.7	9.9	2.1	2.2	<2.0	2.1	<2.0	2.2	6.8	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Dissolved	0.306	0.159	0.156	0.187	0.15	0.17	0.187	0.0648	0.0806	0.0631	0.103	0.0465	0.0456	0.0763	0.144	0.117	0.135
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000169	0.000672	0.000665	0.000515	0.00115	0.000567	0.000518	0.00015	0.000163	0.000173	0.000557	0.000168	0.000187	0.000179	0.00117	0.001	0.000529
Vanadium (V)-Dissolved	<0.0010	<0.0010	0.0015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010
Organic Parameters																	
COD	<20	<20	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Organic Carbon	0.66	0.8	1.01	0.53	0.83	<0.50	0.55	1.7	1.82	0.8	0.94	0.76	1.31	1.98	<0.50	0.78	<0.50

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC-5	WC-1	JC-2	HC-3	SC-1	SC-4	SC-5	SC-6	WC-1	JC-2	HC-3	MC-5	MC-10	MT-1	SKC-1	SKC-4	SC-5
Date Sampled	17-APR-08	17-APR-08	17-APR-08	17-APR-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	03-JUN-08
month Sampled	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	6
ALS Sample ID	L624366-7	L624366-8	L624366-9	L624366-10	L631534-1	L631534-2	L631534-3	L631534-4	L631534-6	L631534-8	L631534-9	L631534-11	L631534-12	L631534-13	L631534-14	L631534-15	L638555-1
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	123	58	55.1	99.5	48.9	75.1	68.7	71.7	44.4	36.7	74.7	97.5	118	62.5	61.3	69.2	47
Colour, True	<5.0	<5.0	<5.0	<5.0	5	8.2	11	5.9	10	8.8	8.3	6.6	9.2	12	9.8	16.9	5.6
Conductivity	267	153	121	216	102	160	143	151	118	83.8	162	221	255	127	129	148	98.4
pH	7.98	7.96	7.9	8.05	7.51	8.08	7.67	7.93	7.9	7.88	8.02	8.12	7.93	7.92	7.89	7.99	7.99
Total Dissolved Solids	151	102	62	120	68	102	93	89	90	55	75	131	141	80	83	90	65
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	30.5	46.5	187	29	23.5	27	6.5	126	91.5	19.5	9.5	6.5	42.9
Turbidity	1.73	0.53	0.56	0.51	24.4	20.9	37.4	9.98	11.1	9.27	5.7	50.9	41.8	1.98	1.28	1.25	31.5
Anions and Nutrients																	
Ammonia as N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0087	0.105	0.0112
Acidity (as CaCO3)	4.4	3.5	3.6	3.1	2.9	1.3	3.2	2	1.9	1.4	1.5	1.5	3.1	1.9	1.7	1.6	3.7
Alkalinity, Bicarbonate (as CaCO3)	123	63.5	53.6	89.3	43.9	71.5	57.4	64.8	48.9	36.3	68.9	99.2	122	60.1	49.5	63	47.3
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Alkalinity, Total (as CaCO3)	123	63.5	53.6	89.3	43.9	71.5	57.4	64.8	48.9	36.3	68.9	99.2	122	60.1	49.5	63	47.3
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	1.32	<0.50	1.01	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.25	1.14	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.087	0.191	0.137	<0.020	0.027	0.053	0.05	0.022	0.191	0.136	<0.020	0.077	0.032	<0.020	0.028	0.029	0.037
Sulfate (SO4)	17.3	13.9	5.4	22.3	6.63	10.8	8.62	11.4	9.63	3.17	13.2	13.9	12.2	2.52	11.7	11.6	4.92
Nitrate (as N)	0.0659	0.0338	0.196	0.0462	0.106	0.128	0.134	0.0757	0.0061	0.192	0.0741	0.109	0.154	0.0369	0.0292	0.087	0.0847
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0012	0.002	<0.0010	<0.0010	0.0013	<0.0010	0.0015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.084	0.066	0.114	<0.050	<0.050	0.051	0.064	<0.050	0.124	0.057	0.066	<0.050	0.066	<0.050	<0.050	0.103	0.065
Total Nitrogen	0.15	0.1	0.31	0.05	0.15	0.18	0.2	0.1	0.13	0.25	0.14	0.16	0.22	0.07	0.07	0.19	0.15
Total Phosphate as P	0.0037	0.0176	<0.0020	<0.0020	0.056	0.0722	0.13	0.0318	0.0574	0.0169	0.0138	0.184	0.134	0.0102	0.0073	0.0125	0.0737
Cyanides																	
Cyanide, Total	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	0.0038	0.0047	0.0024	0.0043	0.0031	0.0033	0.0034	0.0046	0.0046	0.0039	0.004	0.0015
Total Metals																	
Aluminum (Al)-Total	0.0284	0.0309	0.0155	0.0181	1.14	0.983	2.07	0.392	0.786	0.299	0.174	2.67	1.99	0.0683	0.0389	0.117	1.71
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00016	0.00053	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	0.00037	0.00016	0.00014	0.00116	0.00043	0.00099	0.00182	0.00091	0.00035	0.00025	0.00116	0.0023	0.00768	0.00036	0.00038	0.00035	0.0008
Barium (Ba)-Total	0.0764	0.00519	0.0837	0.0384	0.0912	0.0894	0.111	0.0647	0.0102	0.0693	0.0315	0.113	0.16	0.00957	0.00802	0.012	0.0709
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00067	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	0.025	0.012	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	0.027	0.025	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	<0.000017	<0.000017	<0.000017	<0.000017	0.000018	0.00004	0.00004	<0.000017	0.000035	0.000023	<0.000017	0.000066	0.000047	<0.000017	<0.000017	<0.000017	0.000029
Calcium (Ca)-Total	33.6	14.2	17.2	30.9	16.9	25.5	26.2	23.5	11.5	13.1	23.9	29.1	31.5	22	20	23.8	16.6
Chromium (Cr)-Total	<0.00050	<0.00050	<0.00050	0.00063	<0.00050	0.00194	0.00385	0.00112	<0.00050	<0.00050	0.00117	0.00382	0.0058	<0.00050	<0.00050	<0.00050	0.00258
Cobalt (Co)-Total	<0.00010	<0.00010	<0.00010	<0.00010	0.00055	0.00073	0.00163	0.00039	0.00046	<0.00010	0.00031	0.00203	0.0027	<0.00010	<0.00010	0.00015	0.001
Copper (Cu)-Total	0.00036	0.00021	0.00022	0.00054	0.00502	0.00688	0.00905	0.00411	<0.0013	0.00132	0.00393	0.0243	0.0077	0.0032	0.00123	0.00141	0.00462
Iron (Fe)-Total	0.244	0.045	<0.030	<0.030	0.951	1.09	2.98	0.436	1.37	0.253	0.217	4.53	5.22	0.076	0.175	0.29	1.5
Lead (Pb)-Total	<0.000050	<0.000050	<0.000050	<0.000050	0.000379	0.000371	0.000888	0.000194	0.000277	0.000195	0.000089	0.0016	0.000949	<0.000050	<0.000050	0.000059	0.000509
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	9.7	5.68	2.32	5.61	3.33	4.48	4.71	4.54	4.73	1.69	4.67	8.9	14.5	1.44	2.04	3.85	3.05
Manganese (Mn)-Total	0.032	0.00374	0.000866	0.000705	0.0389	0.0666	0.194	0.0257	0.0602	0.0147	0.0108	0.217	0.199	0.00548	0.0143	0.0362	0.0572
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	0.000016	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.00266	0.000944	0.00458	0.00124	0.00386	0.00698	0.0045	0.00243	0.000996	0.00528	0.000927	0.00301	0.000944	0.000673	0.000462	0.000695	0.00272
Nickel (Ni)-Total	<0.00050	<0.00050	<0.00050	<0.00050	0.00067	0.00215	0.00382	0.00123	0.00113	<0.00050	0.00156	0.00466	0.0119	<0.00050	<0.00050	0.00196	0.002
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	1.03	1.91	0.551	0.723	0.768	0.839	1.07	0.693	1.99	0.703	0.601	1.39	1.49	0.279	0.45	0.59	0.857
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	0.00017	0.00017	0.00022	0.0002	0.00019	0.00028	<0.00010	0.00023	0.00033	0.00025	0.00013	0.00044	0.00033	0.00034
Silicon (Si)-Total	4.48	11.2	3.05	2.89	3.24	4.08	6.43	2.58	11.3	2.64	2.49	9	6.3	3.06	2.14	3.55	5.42
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	<0.000010	0.000032	<0.000010	<0.000010	0.000068	0.000027	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC-5	WC-1	JC-2	HC-3	SC-1	SC-4	SC-5	SC-6	WC-1	JC-2	HC-3	MC-5	MC-10	MT-1	SKC-1	SKC-4	SC-5
Date Sampled	17-APR-08	17-APR-08	17-APR-08	17-APR-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	03-JUN-08
month Sampled	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	6
ALS Sample ID	L624366-7	L624366-8	L624366-9	L624366-10	L631534-1	L631534-2	L631534-3	L631534-4	L631534-6	L631534-8	L631534-9	L631534-11	L631534-12	L631534-13	L631534-14	L631534-15	L638555-1
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	5.6	6.5	2.3	<2.0	<2.0	<2.0	2	<2.0	5.6	<2.0	<2.0	5.5	3.8	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Total	0.134	0.0539	0.0996	0.108	0.122	0.132	0.128	0.118	0.0493	0.0754	0.0958	0.145	0.139	0.0429	0.0346	0.0541	0.0861
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	<0.00010	0.00016	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	<0.010	<0.010	0.055	0.051	0.108	0.021	0.043	0.014	<0.010	0.168	0.088	<0.010	<0.010	<0.010	0.079
Uranium (U)-Total	0.000629	0.000181	0.00266	0.00005	0.000614	0.000953	0.00102	0.000345	0.000186	0.00236	0.000038	0.000801	0.000119	0.000028	0.000087	0.000084	0.000861
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	0.0029	0.0032	0.0064	0.0017	0.0021	<0.0010	0.0012	0.0071	0.0069	<0.0010	<0.0010	<0.0010	0.0042
Zinc (Zn)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0060	<0.0080	<0.0040	<0.010	<0.0030	<0.0040	0.0168	<0.010	<0.0010	<0.0010	<0.0040	<0.0060
Dissolved Metals																	
Aluminum (Al)-Dissolved	<0.0050	<0.011	<0.0070	<0.0050	0.0701	0.0394	0.0215	0.0288	0.0665	0.0296	0.0151	0.026	0.0105	0.0127	0.0049	0.0117	0.0611
Antimony (Sb)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00026	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	<0.00030	<0.00030	<0.00030	<0.0012	0.00021	0.00048	0.00038	0.00066	0.00018	0.00018	0.00098	0.00041	0.00086	0.00032	0.00025	0.00024	0.00035
Barium (Ba)-Dissolved	0.0745	0.00513	0.0842	0.0383	0.0742	0.0749	0.0729	0.0574	0.00457	0.0597	0.0291	0.0717	0.112	0.00912	0.00772	0.0106	0.0491
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	0.025	0.012	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.026	0.023	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	0.000017	<0.000017	<0.000017	0.000026	0.000018	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Dissolved	33.6	14	18	30.6	15.2	24	22.3	22	10.7	12.1	22.9	26.6	27.8	22.7	21	21.9	15.4
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	0.00078	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	<0.00030	<0.00030	<0.00020	<0.00050	0.00126	0.00166	0.00151	0.0016	0.00046	0.00065	0.00209	0.00098	0.00084	0.00254	0.00084	0.00085	0.00078
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	0.046	0.043	0.112	<0.030	0.111	<0.030	<0.030	0.076	0.104	<0.030	0.038	0.071	0.044
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	9.63	5.58	2.47	5.58	2.68	3.72	3.16	4.09	4.28	1.57	4.23	7.55	11.8	1.44	2.12	3.53	2.08
Manganese (Mn)-Dissolved	0.0244	0.000449	0.000218	0.000084	0.00267	0.00787	0.0093	0.00286	0.00433	0.0018	0.00131	0.00555	0.0169	0.00069	0.00185	0.00715	0.00759
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011
Molybdenum (Mo)-Dissolved	0.00278	0.00097	0.0055	0.00129	0.00362	0.00706	0.0046	0.00245	0.000865	0.00544	0.000911	0.00312	0.000856	0.000766	0.000493	0.000548	0.00266
Nickel (Ni)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0007	<0.00050	0.0016	<0.00050	<0.00050	0.00108	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	1.02	1.89	0.579	0.735	0.515	0.632	0.605	0.586	1.79	0.562	0.548	0.858	0.842	0.293	0.467	0.524	0.432
Selenium (Se)-Dissolved	<0.00010	<0.00010	<0.00010	0.00012	0.00011	0.00018	0.0002	0.00014	0.00012	<0.00010	0.00015	0.00012	0.00017	0.00011	0.00034	0.00022	0.00017
Silicon (Si)-Dissolved	4.37	11	3.03	2.82	1.28	2.38	2.6	1.91	9.59	2.13	2.2	3.39	2.41	2.89	2.11	3.37	1.9
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	5.4	6.5	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	5	<2.0	<2.0	4.5	3.2	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Dissolved	0.133	0.0537	0.104	0.107	0.115	0.125	0.109	0.112	0.0453	0.0733	0.0935	0.134	0.126	0.0431	0.0348	0.0509	0.0765
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000625	0.000183	0.00283	0.000049	0.000533	0.00089	0.0008	0.000326	0.000114	0.00216	0.000036	0.000592	0.000069	0.000026	0.000086	0.000083	0.000711
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Organic Parameters																	
COD	<20	<20	<20	<20	20	30	30	20	20	20	<20	40	30	30	20	30	30
Total Organic Carbon	0.84	0.61	<0.50	0.55	1.57	2.17	2.96	1.82	3.02	2.34	2.56	2.28	2.56	4.47	2.99	4.69	1.12

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC-10	SC-6	SKC-4	SC-6	SC-5	SC-6	MC-10	SKC-4-1	SC1	SC3	SC4	SC5	SC6-1	SC7	SC8	MT1	YC1
Date Sampled	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08
month Sampled	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
ALS Sample ID	L638555-2	L638555-3	L638555-4	L638555-5	L641482-1	L641482-2	L641482-3	L641482-4	L646096-1	L646096-2	L646096-3	L646096-4	L646096-5	L646096-7	L646096-8	L646096-9	L646096-10
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	82.6	55.6	87.1	53	54.2	62.1	97.1	94.6	7.3	5.4	<5.0	<5.0	6.7	<5.0	<5.0	<5.0	<5.0
Colour, True	5.5	<5.0	8.5	<5.0	<5.0	<5.0	<5.0	6.6	84.7	118	106	95.6	108	97.8	87.2	86.2	92.7
Conductivity	162	111	180	111	116	125	193	193	39.3	57.6	51.1	46.5	51.9	45.7	42	42.5	41.2
pH	7.99	8.02	8.07	8.05	7.97	8.02	8.06	8.11	7.79	7.89	7.88	7.19	7.78	7.81	7.67	7.8	7.77
Total Dissolved Solids	89	88	112	85	76	81	107	119	315	55.5	30.5	33.5	16	35	<3.0	3	6
Total Suspended Solids	83.4	27.9	5.9	27.9	15.7	540	47.7	5.2	81	85	77	71	160	62	51	52	51
Turbidity	48.2	52.9	0.66	48.8	11.9	195	23	1.03	303	71.8	44.3	25.1	119	28.5	1.02	8.3	2.57
Anions and Nutrients																	
Ammonia as N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.3	2.6	2.4	3.9	2.8	2.6	2.8	2.4	2.4
Acidity (as CaCO3)	4	3.8	3.5	3.6	1.8	1.7	1.8	1.6	48.4	62.6	46.6	44.5	58	44.3	37.6	43.9	39.5
Alkalinity, Bicarbonate (as CaCO3)	79.4	53.1	76.2	53.1	50.3	51.6	98.5	74	<1.0	<1.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Carbonate (as CaCO3)	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	48.4	62.6	46.6	44.5	58	44.3	37.6	43.9	39.5
Alkalinity, Total (as CaCO3)	79.4	53.1	76.2	53.1	50.3	51.6	98.5	74	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.021	<0.020	0.027	<0.020	0.048	<0.020	0.029	0.036	<0.020	<0.020	0.043	0.044	<0.020	0.045	<0.020	<0.020	0.028
Sulfate (SO4)	7.72	6.47	16.3	6.48	6.73	8.43	10.4	18.8	0.0294	0.0176	0.0339	0.034	0.0133	0.0386	<0.0050	<0.0050	0.0328
Nitrate (as N)	0.105	0.0493	0.168	0.0493	0.0603	0.0286	0.0835	0.129	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Kjeldahl Nitrogen	0.125	0.061	0.182	0.051	0.06	<0.050	<0.050	0.062	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Total Nitrogen	0.23	0.11	0.35	0.1	0.12	<0.05	0.11	0.19	0.5	0.079	0.053	0.041	0.134	0.043	0.0028	0.0096	0.0073
Total Phosphate as P	0.0936	0.0467	0.0053	0.0462	0.0445	0.873	0.0379	0.0039	4.29	7.22	6	5.36	6.97	5.15	6.31	0.79	7.15
Cyanides																	
Cyanide, Total	0.0013	<0.0010	0.0029	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals																	
Aluminum (Al)-Total	1.25	1.98	0.0339	2.6	0.316	2.16	0.844	0.0177	9.41	4.1	1.99	1.41	6.36	1.8	0.0327	0.121	0.0879
Antimony (Sb)-Total	0.00047	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	0.00037	<0.00010	0.00015	0.00013	<0.00010	<0.00010	0.00016	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	0.00358	0.00125	0.00028	0.00133	0.00054	0.00298	0.00294	0.00028	0.00244	0.00163	0.00108	0.00077	0.00231	0.00085	<0.00010	0.00028	0.00025
Barium (Ba)-Total	0.0856	0.0679	0.0106	0.0739	0.065	0.169	0.0999	0.0117	0.258	0.113	0.0839	0.0733	0.124	0.0749	0.0413	0.00721	0.0249
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.011	0.011	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	0.000044	0.00002	<0.000017	0.000024	<0.000017	0.000048	0.000023	<0.000017	0.000069	0.000029	0.000026	<0.000017	0.000036	0.000019	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Total	21.7	17.5	29.1	18.5	17.1	25.8	24.1	30	18.9	20.6	18.5	17	20	17	12.8	15.5	12.8
Chromium (Cr)-Total	0.00358	0.00321	<0.00050	0.0043	0.00077	0.00245	0.00221	<0.00050	0.00495	0.00361	0.00175	0.00189	0.00518	0.00173	<0.00050	0.00056	<0.00050
Cobalt (Co)-Total	0.00173	0.00128	<0.00010	0.00159	0.00021	0.00249	0.00129	<0.00010	0.0041	0.00172	0.00088	0.00067	0.00262	0.00077	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total	0.00526	0.00653	0.00095	0.00729	0.00172	0.0228	0.00362	0.00071	0.0338	0.0102	0.00582	0.00377	0.015	0.00394	0.00032	0.00197	0.00084
Iron (Fe)-Total	2.58	1.65	0.099	2.09	0.335	3.53	2.16	0.075	6.39	2.8	1.33	1.04	4.27	1.16	0.137	0.078	0.087
Lead (Pb)-Total	0.000649	0.000437	<0.000050	0.000499	0.000147	0.00213	0.000517	<0.000050	0.00261	0.000745	0.000489	0.00036	0.0011	0.000372	<0.000050	<0.000050	0.00006
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	9.52	4.11	4.22	4.56	2.72	5.22	11.9	4.79	5.68	4.91	3.58	3.06	5.68	3.21	1.02	0.799	2.03
Manganese (Mn)-Total	0.101	0.0498	0.00853	0.0591	0.0231	0.242	0.0863	0.00731	0.296	0.0967	0.055	0.045	0.139	0.0469	0.0336	0.00539	0.00398
Mercury (Hg)-Total	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000019	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.000732	0.00182	0.000692	0.00198	0.00279	0.000862	0.00079	0.000723	0.00199	0.00298	0.00386	0.00266	0.00181	0.00317	0.000553	0.000286	0.000969
Nickel (Ni)-Total	0.00694	0.00232	0.00089	0.00279	<0.00050	0.00287	0.00462	0.00071	0.00396	0.00246	0.00138	0.00118	0.00396	0.00134	<0.00050	<0.00050	0.00061
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	0.98	<0.30	<0.30	0.35	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	1.03	0.978	0.428	1.14	0.499	0.844	0.85	0.426	2.57	1.57	1.05	0.822	2.2	0.997	0.154	0.178	0.645
Selenium (Se)-Total	0.00047	0.00028	0.00051	0.00039	0.00013	0.00036	0.00028	0.00055	0.00032	0.00022	0.00019	0.00015	0.00026	0.00012	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	4.13	5.58	3.28	6.92	2.58	6.36	3.47	3.5	15.9	8.9	5.09	4.44	12.9	4.68	2.09	1.97	2.16
Silver (Ag)-Total	0.000022	0.000012	<0.000010	0.000011	<0.000010	0.00002	0.000019	<0.000010	0.000026	<0.000010	<0.000010	<0.000010	0.000025	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC-10	SC-6	SKC-4	SC-6	SC-5	SC-6	MC-10	SKC-4-1	SC1	SC3	SC4	SC5	SC6-1	SC7	SC8	MT1	YC1
Date Sampled	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08
month Sampled	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
ALS Sample ID	L638555-2	L638555-3	L638555-4	L638555-5	L641482-1	L641482-2	L641482-3	L641482-4	L646096-1	L646096-2	L646096-3	L646096-4	L646096-5	L646096-7	L646096-8	L646096-9	L646096-10
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.6	<2.0	2.5	<2.0	<2.0	<2.0	2.3	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Total	0.102	0.0988	0.0612	0.105	0.0914	0.13	0.119	0.0667	0.133	0.121	0.107	0.0922	0.12	0.0924	0.0603	0.0293	0.0639
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	0.042	0.079	<0.010	0.107	0.012	0.069	0.031	<0.010	0.332	0.167	0.072	0.06	0.266	0.066	<0.010	<0.010	<0.010
Uranium (U)-Total	0.00009	0.000276	0.000133	0.0003	0.000824	0.00066	0.000097	0.000144	0.000764	0.000393	0.000864	0.000792	0.000375	0.000839	0.000051	0.00002	0.000311
Vanadium (V)-Total	0.0047	0.0055	<0.0010	0.0071	0.001	0.0076	0.0033	<0.0010	0.0199	0.0092	0.0043	0.0032	0.0145	0.0036	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0070	<0.0060	<0.0020	<0.0080	<0.0010	0.0088	<0.0060	<0.0010	0.0204	0.0099	<0.0060	<0.0050	0.016	<0.0050	<0.0010	<0.0010	<0.0010
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.0172	0.174	0.0069	0.134	0.0406	0.0918	0.0105	0.0072	0.379	0.0668	0.085	0.05	0.11	0.0356	0.0067	0.0277	0.0138
Antimony (Sb)-Dissolved	0.00023	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00022	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	0.00052	0.00079	0.00024	0.00077	0.00037	0.0008	0.00054	0.00022	0.00038	0.00077	0.00066	0.00039	0.00091	0.00045	<0.00010	0.00021	0.00022
Barium (Ba)-Dissolved	0.0556	0.0474	0.0104	0.0454	0.0596	0.0687	0.0622	0.0113	0.0687	0.062	0.0561	0.0524	0.0522	0.0523	0.0429	0.00634	0.0237
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Dissolved	19.6	17.1	28	16.2	17.4	18.9	21.7	30	12.3	18.1	16.2	15	16	14.7	15	15.8	13.2
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	0.00086	0.00108	0.00086	0.00102	0.00059	0.00096	0.00063	0.00063	<0.00090	<0.00070	0.00177	<0.00060	0.00111	<0.00050	<0.00040	<0.0010	<0.00070
Iron (Fe)-Dissolved	<0.030	0.105	<0.030	0.084	0.043	0.048	<0.030	<0.030	0.25	<0.030	<0.030	0.03	0.056	<0.030	0.047	<0.030	<0.030
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.00007	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	8.18	3.14	4.17	3.03	2.6	3.63	10.4	4.79	2.1	3.04	2.58	2.22	2.92	2.16	1.13	0.725	2.01
Manganese (Mn)-Dissolved	0.0085	0.00823	0.00313	0.00734	0.0102	0.00463	0.00861	0.00375	0.021	0.0116	0.00878	0.00611	0.0114	0.00817	0.0347	0.000924	0.000976
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.000743	0.00187	0.000705	0.00185	0.00323	0.00227	0.000831	0.00074	0.00263	0.00308	0.00399	0.00262	0.00191	0.00303	0.000582	0.000339	0.00109
Nickel (Ni)-Dissolved	0.00108	<0.00050	0.00059	<0.00050	<0.00050	<0.00050	0.00096	<0.00050	<0.00050	<0.00050	0.00079	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	0.545	0.539	0.421	0.515	0.442	0.567	0.548	0.419	0.581	0.485	0.485	0.38	0.465	0.398	0.172	0.18	0.688
Selenium (Se)-Dissolved	0.00038	0.0003	0.0005	<0.00010	0.00014	0.00023	0.00016	0.00051	<0.00010	0.00012	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Dissolved	2.02	1.79	3.39	1.71	2.09	1.66	2.12	3.42	1.9	1.48	1.57	1.72	1.45	1.61	1.98	1.77	1.86
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Dissolved	0.0958	0.0948	0.0595	0.0908	0.0919	0.11	0.113	0.0655	0.0926	0.106	0.0956	0.0812	0.0942	0.0842	0.0665	0.0296	0.0657
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000065	0.000241	0.000127	0.000208	0.000824	0.00029	0.000078	0.000143	0.000204	0.00029	0.000746	0.000688	0.000217	0.00072	0.000049	0.00002	0.00031
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Organic Parameters																	
COD	30	30	20	20	20	60	30	30	150	50	30	20	40	20	<20	<20	50
Total Organic Carbon	1.44	0.77	3.21	0.72	1.05	1.29	1	2.98	<0.50	0.61	0.61	0.78	<0.50	0.69	0.85	1.34	1.22

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC10	SKC1	SKC3	SKC4	MC 10	SC 1	SC 4	SC 5	SC 6	SC 8	MT 1	SKC 1	SKC 4	MC10	MT1	SC1	SC4
Date Sampled	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08
month Sampled	6	6	6	6	7	7	7	7	7	7	7	7	7	8	8	8	8
ALS Sample ID	L646096-11	L646096-12	L646096-13	L646096-14	L655085-1	L655085-2	L655085-3	L655085-4	L655085-5	L655085-6	L655085-7	L655085-8	L655085-9	L664786-15	L664786-16	L664786-17	L664786-18
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	<5.0	<5.0	6.8	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.2	<5.0	<5.0	10.1	7.2
Colour, True	157	172	188	205	169	63.9	87.9	86.6	81.9	61.6	64.4	160	202	163	45.9	53.2	73.6
Conductivity	76	80.1	93.1	105	76.7	28.4	29.0	43.5	47.5	41.4	33.7	72.0	98.9	81.6	22.4	25.6	36.5
pH	7.97	7.88	8.04	8.08	8.15	7.88	7.93	7.96	7.69	7.57	7.82	7.91	8.11	8.04	7.91	8.10	7.96
Total Dissolved Solids	67.5	<3.0	55	<3.0	137	102	88.8	93.3	52.3	<3.0	9.5	6.8	<3.0	162	19.5	484	190
Total Suspended Solids	87	98	108	124	104	76	77	71	84	41	44	95	120	90	35	45	63
Turbidity	42.5	0.59	14	0.7	144	138	81.2	75.8	88.1	2.57	14.6	3.69	0.71	144	23.9	229	120
Anions and Nutrients																	
Ammonia as N	2.5	2.9	2.6	2.3	<1.0	1.2	1.1	1.0	1.5	1.6	1.4	1.7	1.2	<0.0050	<0.0050	<0.0050	<0.0050
Acidity (as CaCO3)	74.8	64.6	96.4	83.7	79.8	27.2	37.3	38.0	36.6	26.3	33.8	66.3	87.1	2.7	2.1	1.4	2.2
Alkalinity, Bicarbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	77.7	22.5	28.7	36.3
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	74.8	64.6	96.4	83.7	79.8	27.2	37.3	38.0	36.6	26.3	33.8	66.3	87.1	<2.0	<2.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	77.7	22.5	28.7	36.3
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.027	0.025	0.034	0.036	<0.020	<0.020	0.022	0.025	<0.020	<0.020	<0.020	0.022	0.027	0.024	<0.020	<0.020	0.028
Sulfate (SO4)	0.0382	0.107	0.166	0.1	0.0308	0.0254	0.0279	0.0274	0.0238	<0.0050	<0.0050	0.0409	0.0830	9.97	<0.50	1.58	3.46
Nitrate (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0203	<0.0050	0.0111	0.0066
Nitrite (as N)	0.059	<0.050	0.698	0.087	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.098	0.107	0.864	0.188	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.105	<0.050	<0.050	<0.050
Total Nitrogen	0.059	0.0023	0.0619	0.0032	0.122	0.158	0.160	0.184	0.0877	0.0290	0.0234	0.0087	0.0119	0.13	<0.05	<0.05	<0.05
Total Phosphate as P	7.99	19.6	4.11	19.6	9.42	3.20	4.34	4.23	4.97	4.47	<0.50	19.4	20.3	0.142	0.0420	0.554	0.245
Cyanides																	
Cyanide, Total	<0.0010	<0.0010	0.0061	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	0.0011	<0.0010	<0.0010	<0.0010
Total Metals																	
Aluminum (Al)-Total	1.55	0.0182	0.282	0.014	5.05	7.38	0.0803	4.02	5.32	3.83	0.794	0.114	0.0122	4.60	1.34	11.1	6.56
Antimony (Sb)-Total	0.00042	<0.00010	<0.00010	<0.00010	0.00057	0.00016	<0.00010	<0.00010	0.00020	<0.00010	<0.00010	<0.00010	<0.00010	0.00085	<0.00010	0.00017	0.00011
Arsenic (As)-Total	0.00364	0.00033	0.00035	0.00028	0.00412	0.00217	<0.00010	0.00166	0.00293	0.00183	0.00042	0.00058	0.00029	0.00587	0.00051	0.00366	0.00229
Barium (Ba)-Total	0.0765	0.00849	0.0122	0.0119	0.113	0.132	0.0324	0.0866	0.0950	0.0827	0.00988	0.0106	0.0121	0.147	0.0125	0.244	0.121
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	0.014	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	0.000079	0.000076	0.00002	<0.000017	0.000040	0.000042	<0.000017	0.000034	0.000043	0.000036	<0.000017	<0.000017	<0.000017	<0.000060	<0.000017	<0.000070	<0.000050
Calcium (Ca)-Total	20.2	28.3	35.4	32.4	21.4	11.8	10.0	15.8	17.6	15.5	13.7	26.7	30.8	22.6	9.73	25.1	16.1
Chromium (Cr)-Total	0.00365	<0.00050	0.00155	<0.00050	0.0151	0.00452	<0.00050	0.00537	0.00834	0.00533	0.00227	<0.00050	<0.00050	0.00992	0.00325	0.00758	0.00833
Cobalt (Co)-Total	0.00145	<0.00010	0.00023	<0.00010	0.00432	0.00306	0.00015	0.00232	0.00360	0.00227	0.00072	0.00012	<0.00010	0.00409	0.00112	0.00614	0.00375
Copper (Cu)-Total	0.00417	0.00109	0.00175	0.00071	0.00953	0.0179	0.00034	0.0109	0.0168	0.0115	0.00327	0.00159	0.00057	0.00996	0.00457	0.0366	0.0174
Iron (Fe)-Total	2.23	0.038	0.7	0.064	5.66	5.97	0.168	3.58	4.57	3.23	0.552	0.195	0.076	6.24	0.878	11.4	5.61
Lead (Pb)-Total	0.000498	<0.000050	0.000084	<0.000050	0.00104	0.00150	<0.000050	0.00103	0.00124	0.000907	0.000114	0.000076	<0.000050	0.00146	<0.00020	0.00346	0.00156
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0054	<0.0050
Magnesium (Mg)-Total	10.5	2.11	4.86	4.97	14.7	4.19	0.759	3.86	5.28	3.88	1.30	1.94	4.42	12.8	1.63	6.53	4.97
Manganese (Mn)-Total	0.0814	0.0067	0.155	0.00737	0.131	0.146	0.0285	0.112	0.140	0.100	0.0285	0.0122	0.00811	0.170	0.0440	0.470	0.187
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000017	<0.000010	0.000012	<0.000010
Molybdenum (Mo)-Total	0.000698	0.000914	0.000486	0.00074	0.000782	0.00233	0.000591	0.00236	0.00169	0.00303	0.000203	0.000747	0.000752	0.000849	0.000094	0.00136	0.00230
Nickel (Ni)-Total	0.00567	<0.00050	0.00097	0.00054	0.0369	0.00316	<0.00050	0.00433	0.00633	0.00408	0.00204	<0.00050	<0.00050	0.0177	0.00306	0.00649	0.00664
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	1.12	<0.30
Potassium (K)-Total	1.09	0.291	0.337	0.41	2.05	2.32	0.136	1.42	1.69	1.38	0.255	0.272	0.359	2.39	0.306	2.67	1.92
Selenium (Se)-Total	0.00019	0.00094	0.0003	0.00051	0.00031	0.00022	0.00011	0.00022	0.00029	0.00019	0.00014	0.00103	0.00058	0.00026	<0.00010	0.00041	0.00016
Silicon (Si)-Total	4.07	2.4	3.35	3.48	12.2	15.6	1.92	9.63	11.6	9.02	2.57	2.26	3.41	8.60	3.07	19.4	13.2
Silver (Ag)-Total	0.000012	<0.000010	<0.000010	<0.000010	0.000051	0.000032	<0.000010	0.000025	0.000032	0.000023	0.000013	<0.000010	<0.000010	0.000060	<0.000010	0.000034	0.000022

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	MC10	SKC1	SKC3	SKC4	MC 10	SC 1	SC 4	SC 5	SC 6	SC 8	MT 1	SKC 1	SKC 4	MC10	MT1	SC1	SC4
Date Sampled	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08
month Sampled	6	6	6	6	7	7	7	7	7	7	7	7	7	8	8	8	8
ALS Sample ID	L646096-11	L646096-12	L646096-13	L646096-14	L655085-1	L655085-2	L655085-3	L655085-4	L655085-5	L655085-6	L655085-7	L655085-8	L655085-9	L664786-15	L664786-16	L664786-17	L664786-18
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	2.1	<2.0	<2.0	<2.0	2.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	2.2	<2.0
Strontium (Sr)-Total	0.102	0.0498	0.0609	0.0692	0.0995	0.0868	0.0422	0.0759	0.0880	0.0804	0.0258	0.0421	0.0606	0.112	0.0200	0.116	0.0889
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	0.00011	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	0.054	<0.010	0.016	<0.010	0.158	0.362	<0.010	0.212	0.254	0.181	0.037	<0.010	<0.010	0.138	0.066	0.564	0.335
Uranium (U)-Total	0.000084	0.0002	0.000216	0.000146	0.000138	0.000461	0.000040	0.000815	0.000345	0.000718	0.000029	0.000237	0.000143	0.000165	0.000029	0.000846	0.000753
Vanadium (V)-Total	0.0048	<0.0010	0.0033	<0.0010	0.0138	0.0179	<0.0010	0.0102	0.0150	0.0099	0.0025	<0.0010	<0.0010	0.0133	0.0036	0.0291	0.0167
Zinc (Zn)-Total	<0.0070	<0.0010	<0.0040	<0.0010	0.0119	0.0165	<0.0010	<0.010	0.0134	<0.010	<0.0040	0.0012	<0.0010	0.0136	0.0041	0.0261	0.0225
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.0147	0.002	0.0092	0.0045	0.0314	0.0724	0.0151	0.0328	0.531	0.0431	0.0281	0.0067	0.0045	0.0296	0.0775	0.139	0.0689
Antimony (Sb)-Dissolved	0.0002	<0.00010	<0.00010	<0.00010	0.00024	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00027	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	0.00046	0.00028	0.00011	0.00027	0.00041	0.00027	<0.00010	0.00037	0.00175	0.00059	0.00021	0.00033	0.00028	0.00040	0.00016	0.00021	0.00045
Barium (Ba)-Dissolved	0.0511	0.00827	0.0081	0.0115	0.0548	0.0468	0.0313	0.0448	0.0687	0.0453	0.00484	0.00977	0.0122	0.0727	0.00380	0.0453	0.0407
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	0.01	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000026	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Dissolved	16.7	28.5	30.4	33.7	17.9	9.06	10.4	14.3	15.1	13.5	12.7	25.8	32.0	18.9	8.48	8.73	12.2
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00073	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00096	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	<0.00050	<0.00080	<0.00040	<0.00080	0.00049	0.00032	0.00025	0.00041	0.00974	0.00035	0.00049	0.00049	0.00056	0.00028	0.00034	0.00028	0.00036
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	0.030	0.038	0.057	<0.030	0.735	0.034	<0.030	<0.030	<0.030	<0.030	0.041	0.031	<0.030
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000792	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	8.33	2.15	4.21	5.16	7.78	1.39	0.745	1.88	2.37	1.84	0.455	1.84	4.61	8.37	0.289	0.910	1.48
Manganese (Mn)-Dissolved	0.00632	0.00442	0.000892	0.00405	0.00832	0.0167	0.0203	0.00112	0.0627	0.00905	0.00173	0.00274	0.00419	0.00227	0.00358	0.00976	0.0103
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.000674	0.000944	0.00049	0.00078	0.000655	0.00217	0.000653	0.00229	0.00129	0.00312	0.000201	0.000828	0.000757	0.000636	0.000081	0.00111	0.00222
Nickel (Ni)-Dissolved	0.00067	<0.00050	<0.00050	<0.00050	0.00107	<0.00050	<0.00050	<0.00050	0.00125	<0.00050	<0.00050	<0.00050	<0.00050	0.00080	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	0.447	0.292	0.285	0.434	0.484	0.383	0.139	0.402	0.461	0.400	0.132	0.248	0.384	0.497	0.103	0.317	0.358
Selenium (Se)-Dissolved	0.00012	0.00086	0.00016	0.00053	0.00024	0.00013	<0.00010	<0.00010	0.00029	<0.00010	0.00015	0.00081	0.00049	0.00012	<0.00010	<0.00010	<0.00010
Silicon (Si)-Dissolved	1.81	2.32	3.04	3.36	1.68	0.667	1.72	1.37	1.72	1.17	1.09	2.07	3.28	1.32	0.770	0.587	0.922
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Dissolved	0.0905	0.0497	0.0559	0.0709	0.0870	0.0647	0.0428	0.0686	0.0724	0.0689	0.0230	0.0413	0.0632	0.0959	0.0157	0.0523	0.0614
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000058	0.000205	0.000155	0.000148	0.000075	0.000193	0.000031	0.000605	0.000240	0.000535	0.000018	0.000228	0.000156	0.000074	0.000012	0.000118	0.000396
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0022	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0047	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Organic Parameters																	
COD	20	<20	70	<20	30	60	30	30	30	<20	20	<20	<20	30	<20	70	50
Total Organic Carbon	0.75	0.92	7.86	2.51	0.91	<0.50	0.55	0.82	<0.50	0.77	0.92	0.79	2.34	0.61	<0.50	<0.50	<0.50

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	SC5	SC6	SKC1	SKC4	SC8	YC1	SKC4	SC8	SC4	SC6	MC10	SKC1	SC3	SC1	MT1	WL8	SKC3
Date Sampled	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	07-SEP-08
month Sampled	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9
ALS Sample ID	L664786-19	L664786-20	L664786-21	L664786-22	L664786-24	L683164-1	L683164-2	L683164-3	L683164-4	L683164-5	L683164-6	L683164-7	L683164-8	L683164-9	L683164-10	L683164-11	L683164-12
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	8.7	7.5	<5.0	7.2	6.4	<5.0	<5.0	<5.0	6.3	<5.0	<5.0	<5.0	<5.0	6.6	<5.0	<5.0	<5.0
Colour, True	74.5	74.2	138	212	34.6	98.8	219	78.8	84.2	88.3	237	139	96.1	60.5	94.3	159	191
Conductivity	36.4	36.1	64.7	105	17.1	42.3	102	35.8	38.6	40.9	112	65.6	49.0	30.3	47.4	79.8	98.9
pH	7.90	8.00	7.91	8.09	6.80	7.88	8.20	7.81	7.83	7.83	8.24	7.83	7.93	7.96	7.94	7.99	8.12
Total Dissolved Solids	188	221	46.5	3.0	58.0	3.4	<3.0	60.4	109	43.4	35.4	19.9	36.4	186	<3.0	4.4	<3.0
Total Suspended Solids	55	64	96	130	33	47	135	68	66	77	132	86	80	45	59	93	111
Turbidity	142	128	40.2	0.46	44.2	8.69	0.55	72.2	107	79.8	41.4	8.74	81.3	260	11.7	4.57	0.52
Anions and Nutrients																	
Ammonia as N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acidity (as CaCO3)	2.3	1.9	<1.0	<1.0	3.9	3.7	3.6	3.8	3.7	3.6	3.5	2.0	1.3	1.0	1.3	1.6	1.5
Alkalinity, Bicarbonate (as CaCO3)	36.9	35.8	51.5	86.1	16.1	40.7	85.9	34.8	35.9	36.5	112	56.0	43.7	27.6	50.6	75.9	99.0
Alkalinity, Carbonate (as CaCO3)	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total (as CaCO3)	36.9	35.8	51.5	86.1	16.1	40.7	85.9	34.8	35.9	36.5	112	56.0	43.7	27.6	50.6	75.9	99.0
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.88	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.030	<0.020	0.025	0.040	<0.020	0.032	0.043	0.047	0.040	<0.020	0.027	0.030	<0.020	<0.020	<0.020	0.025	0.043
Sulfate (SO4)	3.29	4.21	18.9	22.6	3.01	8.43	24.0	4.01	5.05	6.12	16.5	20.3	6.61	1.97	0.71	6.42	6.11
Nitrate (as N)	0.0092	<0.0050	0.0129	0.0656	<0.0050	0.0343	0.0522	0.0136	0.0095	<0.0050	0.0408	0.0119	<0.0050	0.0106	<0.0050	0.149	0.0706
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	<0.050	<0.050	<0.050	0.114	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.061	<0.050
Total Nitrogen	0.06	<0.05	0.05	0.18	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.11
Total Phosphate as P	0.306	0.342	0.0761	0.0032	0.0824	0.0048	0.0025	0.0644	0.0787	0.0890	0.0389	0.0256	0.0736	0.538	0.0080	0.0051	0.0037
Cyanides																	
Cyanide, Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	0.0017
Total Metals																	
Aluminum (Al)-Total	5.40	6.92	1.18	0.0096	1.72	0.351	0.0062	0.887	4.47	3.91	1.13	0.247	3.32	9.51	0.538	0.0539	0.0135
Antimony (Sb)-Total	<0.00010	0.00017	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00040	<0.00010	<0.00010	0.00013	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	0.00224	0.00301	0.00267	0.00032	0.00015	0.00031	0.00028	0.00070	0.00126	0.00145	0.00203	0.00090	0.00123	0.00225	0.00033	0.00016	0.00010
Barium (Ba)-Total	0.127	0.115	0.0224	0.0136	0.0333	0.0307	0.0138	0.0719	0.101	0.0801	0.0896	0.0111	0.0848	0.184	0.00923	0.0251	0.00895
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	<0.000050	<0.000050	<0.00010	<0.000017	<0.000017	<0.000017	0.000138	0.000021	0.000043	0.000021	0.000019	0.000028	0.000022	0.000045	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Total	16.9	17.0	25.5	31.8	6.87	14.0	31.1	12.5	13.9	14.1	25.9	24.3	17.0	18.4	18.5	29.3	33.0
Chromium (Cr)-Total	0.00605	0.0100	0.00273	<0.00050	0.00142	<0.00050	<0.00050	0.00068	0.00338	0.00346	0.00221	0.00062	0.00284	0.00653	0.00170	<0.00050	<0.00050
Cobalt (Co)-Total	0.00322	0.00454	0.00124	<0.00010	0.00074	0.00019	<0.00010	0.00051	0.00175	0.00207	0.00089	0.00029	0.00165	0.00538	0.00053	<0.00010	<0.00010
Copper (Cu)-Total	0.0181	0.0203	0.00764	0.00043	0.00150	<0.0010	0.00020	0.00428	0.00890	0.00932	0.00309	0.00205	0.00761	0.0319	0.00253	<0.0010	<0.00030
Iron (Fe)-Total	4.75	6.38	1.95	0.096	1.55	0.320	0.099	0.851	3.54	3.39	1.58	0.442	2.68	9.44	0.365	0.514	<0.030
Lead (Pb)-Total	0.00185	0.00162	0.00101	<0.000050	<0.00020	0.000154	<0.000050	0.000781	0.00139	0.000996	0.000397	0.000218	0.000874	0.00303	0.000056	<0.000050	<0.000050
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	4.18	5.90	2.22	4.62	1.25	2.03	4.90	1.87	3.45	3.99	13.3	1.79	4.03	5.87	1.31	2.48	4.52
Manganese (Mn)-Total	0.198	0.212	0.123	0.00988	0.0442	0.0102	0.00896	0.0546	0.109	0.0993	0.0521	0.0286	0.0843	0.355	0.0188	0.0664	0.00378
Mercury (Hg)-Total	0.000016	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	0.000013	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.00155	0.000957	0.000647	0.000727	0.000492	0.00111	0.000738	0.00175	0.00288	0.00126	0.000820	0.000843	0.00240	0.00153	0.000224	0.00182	0.000511
Nickel (Ni)-Total	0.00541	0.00763	0.00210	<0.00050	0.00092	0.00101	0.00052	0.00073	0.00281	0.00309	0.00451	0.00065	0.00244	0.00564	0.00153	<0.00050	<0.00050
Phosphorus (P)-Total	0.35	0.33	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.70	<0.30	<0.30	<0.30
Potassium (K)-Total	1.60	1.82	0.415	0.346	0.237	0.774	0.367	0.575	1.65	1.21	1.02	0.298	1.17	2.22	0.235	0.326	0.277
Selenium (Se)-Total	0.00020	0.00024	0.00065	0.00058	<0.00010	0.00011	0.00065	<0.00010	<0.00010	<0.00010	0.00027	0.00071	<0.00010	<0.00010	<0.00010	<0.00010	0.00013
Silicon (Si)-Total	10.9	13.6	3.42	3.29	4.07	2.24	3.34	2.74	12.0	9.09	3.87	2.31	7.83	18.2	2.28	3.24	3.18
Silver (Ag)-Total	0.000023	0.000024	0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	0.000015	0.000012	<0.000010	0.000012	0.000029	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	SC5	SC6	SKC1	SKC4	SC8	YC1	SKC4	SC8	SC4	SC6	MC10	SKC1	SC3	SC1	MT1	WL8	SKC3
Date Sampled	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	07-SEP-08
month Sampled	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9
ALS Sample ID	L664786-19	L664786-20	L664786-21	L664786-22	L664786-24	L683164-1	L683164-2	L683164-3	L683164-4	L683164-5	L683164-6	L683164-7	L683164-8	L683164-9	L683164-10	L683164-11	L683164-12
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.4	<2.0	<2.0	2.2	<2.0	<2.0	<2.0
Strontium (Sr)-Total	0.0859	0.0861	0.0407	0.0678	0.0382	0.0648	0.0685	0.0667	0.0792	0.0774	0.130	0.0412	0.0924	0.0962	0.0328	0.0914	0.0597
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	0.244	0.376	0.028	<0.010	0.077	0.017	<0.010	0.035	0.226	0.206	0.037	<0.010	0.152	0.520	0.017	<0.010	<0.010
Uranium (U)-Total	0.000817	0.000331	0.000248	0.000145	0.000098	0.000366	0.000150	0.000932	0.000967	0.000267	0.000128	0.000179	0.000311	0.000786	0.000026	0.000011	0.000153
Vanadium (V)-Total	0.0130	0.0195	0.0057	<0.0010	0.0041	0.0010	<0.0010	0.0017	0.0076	0.0093	0.0033	0.0014	0.0075	0.0239	0.0016	<0.0010	<0.0010
Zinc (Zn)-Total	0.0131	0.0165	0.0149	<0.0010	0.0039	0.0019	<0.0010	0.0032	0.0099	0.0094	0.0039	0.0035	0.0080	0.0291	0.0022	0.0010	0.0012
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.106	0.0934	0.0287	0.0043	0.0697	0.0399	<0.0040	0.0899	0.0586	0.0953	0.0118	<0.0080	0.0479	0.106	0.0286	<0.0030	<0.0040
Antimony (Sb)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00031	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	0.00032	0.00071	0.00043	0.00027	<0.00010	0.00026	0.00026	0.00035	0.00041	0.00061	0.00056	0.00037	0.00059	0.00019	0.00023	0.00010	0.00010
Barium (Ba)-Dissolved	0.0419	0.0372	0.0122	0.0138	0.0172	0.0258	0.0137	0.0439	0.0391	0.0419	0.0727	0.00929	0.0506	0.0447	0.00662	0.0235	0.00871
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	0.000033	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Dissolved	12.2	11.9	23.6	33.9	6.09	13.8	32.6	11.8	12.5	13.0	25.1	23.6	15.8	10.3	17.9	28.1	32.3
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	0.00040	0.00038	0.00042	0.00046	0.00019	0.00014	0.00017	0.00039	<0.00010	0.00061	0.00012	0.00021	0.00016	0.00020	0.00018	0.00042	<0.00010
Iron (Fe)-Dissolved	0.047	0.032	<0.030	0.038	0.053	<0.030	0.037	0.046	<0.030	0.058	<0.030	<0.030	<0.030	0.042	<0.030	0.124	<0.030
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	1.42	1.53	1.38	4.99	0.464	1.91	5.02	1.54	1.76	2.07	12.0	1.63	2.35	1.12	0.671	2.36	4.46
Manganese (Mn)-Dissolved	0.00675	0.0130	0.0248	0.000342	0.00156	0.000676	0.00157	0.0110	0.00857	0.0122	0.00762	0.00809	0.0100	0.00745	0.000806	0.0294	0.000223
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	0.00169	0.000789	0.000837	0.000802	0.000485	0.00115	0.000711	0.00237	0.00297	0.00142	0.000867	0.000914	0.00243	0.00150	0.000232	0.00184	0.000480
Nickel (Ni)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00125	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	0.337	0.333	0.238	0.379	0.096	0.703	0.376	0.373	0.376	0.360	0.577	0.271	0.408	0.332	0.177	0.313	0.274
Selenium (Se)-Dissolved	<0.00010	<0.00010	0.00054	0.00051	<0.00010	<0.00010	0.00054	<0.00010	<0.00010	<0.00010	0.00022	0.00061	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Dissolved	1.13	0.834	1.68	3.19	0.926	1.64	3.30	1.29	1.09	1.02	1.85	2.00	1.17	0.641	1.36	3.14	3.24
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Dissolved	0.0584	0.0576	0.0365	0.0712	0.0293	0.0635	0.0693	0.0619	0.0658	0.0688	0.127	0.0397	0.0818	0.0587	0.0320	0.0893	0.0588
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	0.000421	0.000083	0.000213	0.000151	0.000027	0.000352	0.000154	0.000741	0.000601	0.000157	0.000099	0.000173	0.000212	0.000197	0.000021	0.000011	0.000149
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Organic Parameters																	
COD	50	50	<20	<20	<20	20	<20	60	70	50	20	<20	40	100	<20	<20	<20
Total Organic Carbon	0.51	<0.50	<0.50	1.75	<0.50	0.59	1.69	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	<0.50	<0.50	0.85	1.67

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	SC7	SC5	SC-1	SC-3	SC-4	SC-5	SC-6	MT-1	SKC-4-1	SKC-4-2	YC-1	FIELD BLANK	TRAVEL BLANK	TRAVEL BLANK	FIELD BLANK	FIELD BLANK	TRAVEL BLANK
Date Sampled	07-SEP-08	07-SEP-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	10-JAN-08	10-JAN-08	14-FEB-08	14-FEB-08	17-MAR-08	17-MAR-08
month Sampled	9	9	10	10	10	10	10	10	10	10	10	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683164-13	L683164-14	L713908-1	L713908-2	L713908-3	L713908-4	L713908-5	L713908-6	L713908-7	L713908-8	L713908-9	L593696-5	L593696-10	L603123-5	L603123-9	L612194-15	L612194-16
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.2	5.1	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	-
Colour, True	97.1	96.5	128	188	173	164	168	140	201	201	112	<5.0	<5.0	<5.0	<5.0	-	-
Conductivity	45.7	46.0	59.3	94.0	85.4	78.8	81.0	65.9	98.2	99.3	53.7	<2.0	<2.0	<2.0	<2.0	-	-
pH	7.87	7.85	7.02	8.09	8.10	8.11	8.15	8.01	8.06	8.11	8.05	5.55	5.52	5.42	5.48	-	-
Total Dissolved Solids	21.4	31.4	<3.0	<3.0	7.3	5.3	<3.0	<3.0	<3.0	<3.0	<3.0	<10	<10	<10	<10	-	-
Total Suspended Solids	58	61	69	111	99	99	99	80	124	132	72	<3.0	<3.0	<3.0	<3.0	-	-
Turbidity	15.8	21.2	0.60	0.68	1.28	1.96	0.64	0.87	0.31	0.36	1.81	<0.10	<0.10	<0.10	<0.10	-	-
Anions and Nutrients																	
Ammonia as N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.020
Acidity (as CaCO3)	1.4	1.4	<1.0	2.5	2.5	2.2	2.0	1.4	2.7	2.2	2.3	1.5	1.5	1	<1.0	-	-
Alkalinity, Bicarbonate (as CaCO3)	44.1	43.9	47.6	90.5	80.7	73.6	74.9	68.6	84.4	82.6	49.1	<2.0	<2.0	<2.0	<2.0	-	-
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-
Alkalinity, Total (as CaCO3)	44.1	43.9	47.6	90.5	80.7	73.6	74.9	68.6	84.4	82.6	49.1	<2.0	<2.0	<2.0	<2.0	-	-
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	-
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-
Fluoride (F)	0.045	0.043	0.029	<0.020	0.041	0.041	<0.020	<0.020	0.032	0.032	0.029	<0.020	<0.020	<0.020	<0.020	-	-
Sulfate (SO4)	6.44	6.42	18.7	16.2	13.5	11.2	16.2	3.14	23.4	23.3	9.53	<0.50	<0.50	<0.50	<0.50	-	-
Nitrate (as N)	0.0167	0.0134	0.0529	0.0523	0.0639	0.0674	0.0425	0.0163	0.0851	0.0829	0.0709	<0.0050	<0.0050	<0.0050	<0.0050	-	-
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-
Total Kjeldahl Nitrogen	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Nitrogen	<0.05	<0.05	0.05	0.06	0.10	0.10	<0.05	<0.05	0.12	0.11	0.08	<0.05	<0.05	<0.05	0.22	-	-
Total Phosphate as P	0.0212	0.0302	0.0058	0.0044	0.0108	0.0069	0.0045	0.0077	0.0039	0.0050	0.0051	<0.0020	<0.0020	<0.0020	<0.0020	-	-
Cyanides																	
Cyanide, Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-
Total Metals																	
Aluminum (Al)-Total	0.857	1.13	0.0441	0.0373	0.0478	0.0554	0.0355	0.0284	0.0058	0.0059	0.0755	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Arsenic (As)-Total	0.00072	0.00072	0.00029	0.00057	0.00048	0.00033	0.00074	0.00040	0.00025	0.00024	0.00031	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Barium (Ba)-Total	0.0611	0.0618	0.0831	0.0798	0.0789	0.0740	0.0630	0.00934	0.0126	0.0127	0.0291	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Boron (B)-Total	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-
Cadmium (Cd)-Total	0.000019	0.000022	0.000027	0.000021	0.000024	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000020	<0.000020	<0.000020	<0.000020	<0.000017	-
Calcium (Ca)-Total	15.7	16.0	18.0	28.8	26.7	24.9	24.4	23.6	30.4	31.0	18.0	<0.020	<0.020	<0.020	<0.020	<0.020	-
Chromium (Cr)-Total	0.00128	0.00145	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Cobalt (Co)-Total	0.00053	0.00063	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Copper (Cu)-Total	0.00249	0.00321	0.00022	0.00062	0.00067	0.00062	0.00051	0.00083	0.00042	0.00043	<0.00080	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Iron (Fe)-Total	0.780	1.08	<0.030	0.059	0.077	0.150	<0.030	<0.030	0.083	0.080	0.061	<0.030	<0.030	<0.030	<0.030	<0.030	-
Lead (Pb)-Total	0.000327	0.000325	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000058	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-
Magnesium (Mg)-Total	2.54	2.70	3.25	4.80	4.04	3.53	4.45	1.30	4.72	4.72	2.68	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-
Manganese (Mn)-Total	0.0359	0.0415	0.00176	0.0232	0.0189	0.0542	0.00219	0.000943	0.00984	0.00882	0.00315	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-
Molybdenum (Mo)-Total	0.00315	0.00293	0.00937	0.00675	0.00754	0.00401	0.00332	0.000752	0.000704	0.000715	0.00128	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-
Nickel (Ni)-Total	0.00113	0.00134	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00053	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-
Potassium (K)-Total	0.603	0.672	0.588	0.558	0.552	0.498	0.562	0.210	0.378	0.381	0.774	<0.050	<0.050	<0.050	<0.050	<0.050	-
Selenium (Se)-Total	<0.00010	<0.00010	0.00016	0.00017	0.00015	<0.00010	0.00011	<0.00010	0.00050	0.00053	0.00013	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	-
Silicon (Si)-Total	3.04	3.69	1.14	2.42	2.40	2.92	2.03	3.12	3.86	3.83	2.35	<0.050	<0.050	<0.050	<0.050	<0.050	-
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	SC7	SC5	SC-1	SC-3	SC-4	SC-5	SC-6	MT-1	SKC-4-1	SKC-4-2	YC-1	FIELD BLANK	TRAVEL BLANK	TRAVEL BLANK	FIELD BLANK	FIELD BLANK	TRAVEL BLANK
Date Sampled	07-SEP-08	07-SEP-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	10-JAN-08	10-JAN-08	14-FEB-08	14-FEB-08	17-MAR-08	17-MAR-08
month Sampled	9	9	10	10	10	10	10	10	10	10	10	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683164-13	L683164-14	L713908-1	L713908-2	L713908-3	L713908-4	L713908-5	L713908-6	L713908-7	L713908-8	L713908-9	L593696-5	L593696-10	L603123-5	L603123-9	L612194-15	L612194-16
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-
Strontium (Sr)-Total	0.0819	0.0812	0.157	0.147	0.138	0.112	0.126	0.0432	0.0660	0.0669	0.0780	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Titanium (Ti)-Total	0.040	0.057	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-
Uranium (U)-Total	0.000795	0.000769	0.000816	0.000410	0.00103	0.000947	0.000379	0.000033	0.000152	0.000147	0.000442	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-
Vanadium (V)-Total	0.0022	0.0028	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Zinc (Zn)-Total	0.0027	0.0052	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.0511	0.0541	0.0221	0.0084	0.0073	0.0055	0.0084	0.0073	0.0040	0.0034	0.0145	-	-	-	-	-	-
Antimony (Sb)-Dissolved	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	-	-
Arsenic (As)-Dissolved	0.00045	0.00042	0.00026	0.00049	0.00040	0.00024	0.00069	0.00038	0.00021	0.00021	0.00030	-	-	-	-	-	-
Barium (Ba)-Dissolved	0.0504	0.0489	0.0822	0.0803	0.0790	0.0727	0.0637	0.00921	0.0127	0.0126	0.0274	-	-	-	-	-	-
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-
Boron (B)-Dissolved	<0.010	<0.010	0.010	0.011	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	-	-	-	-	-	-
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	0.000029	0.000027	0.000025	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	-	-	-	-	-	-
Calcium (Ca)-Dissolved	14.9	15.0	18.3	29.6	27.3	25.6	24.9	24.2	31.4	31.7	17.3	-	-	-	-	-	-
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.00017	0.00020	0.00016	0.00041	0.00039	0.00034	0.00037	0.00065	0.00046	0.00041	0.00044	-	-	-	-	-	-
Iron (Fe)-Dissolved	0.040	0.047	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.042	0.041	<0.030	-	-	-	-	-	-
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	-	-
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	-	-	-
Magnesium (Mg)-Dissolved	2.08	2.08	3.32	4.91	4.17	3.58	4.56	1.30	4.84	4.86	2.55	-	-	-	-	-	-
Manganese (Mn)-Dissolved	0.0104	0.00571	0.000990	0.0216	0.0162	0.0527	0.00103	0.000069	0.00776	0.00689	0.000350	-	-	-	-	-	-
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-
Molybdenum (Mo)-Dissolved	0.00320	0.00296	0.00958	0.00711	0.00793	0.00431	0.00351	0.000782	0.000754	0.000727	0.00125	-	-	-	-	-	-
Nickel (Ni)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00061	0.00058	<0.00050	-	-	-	-	-	-
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	-	-	-	-	-
Potassium (K)-Dissolved	0.394	0.397	0.597	0.572	0.570	0.507	0.588	0.213	0.390	0.392	0.737	-	-	-	-	-	-
Selenium (Se)-Dissolved	<0.00010	<0.00010	0.00018	0.00023	<0.00010	<0.00010	0.00021	<0.00010	0.00055	0.00055	<0.00010	-	-	-	-	-	-
Silicon (Si)-Dissolved	1.48	1.54	1.04	2.29	2.30	2.74	1.95	2.95	3.75	3.72	2.27	-	-	-	-	-	-
Silver (Ag)-Dissolved	<0.000010	0.000016	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-
Sodium (Na)-Dissolved	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-	-	-	-	-
Strontium (Sr)-Dissolved	0.0777	0.0758	0.155	0.149	0.138	0.115	0.128	0.0431	0.0666	0.0673	0.0757	-	-	-	-	-	-
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	-	-
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	-	-
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-	-	-	-	-	-
Uranium (U)-Dissolved	0.000695	0.000685	0.000816	0.000435	0.00107	0.000974	0.000388	0.000030	0.000148	0.000152	0.000430	-	-	-	-	-	-
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-	-	-	-	-
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-	-	-	-	-
Organic Parameters																	
COD	30	20	<20	<20	<20	<20	<20	30	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Organic Carbon	<0.50	<0.50	<0.50	<0.50	0.71	0.62	<0.50	0.87	1.88	1.85	0.86	<0.50	<0.50	<0.50	2.44	<0.50	<0.50

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (continued)

Sample ID	FIELD BLANK	TRAVEL BLANK	FIELD BLANK	TRAVEL BLANK	FIELD BLANK	TRAVEL BLANK	TRAVEL BLANK	FIELD BLANK	TRAVEL BLANK	FIELD BLANK	FIELD BLANK	TRAVEL BLANK	TRAVEL BLANK	FIELD BLANK	FIELD BLANK	TRAVEL BLANK
Date Sampled	15-MAY-08	15-MAY-08	03-JUN-08	03-JUN-08	09-JUN-08	09-JUN-08	19-JUN-08	19-JUN-08	09-JUL-08	09-JUL-08	06-AUG-08	06-AUG-08	08-SEP-08	08-SEP-08	28-NOV-08	28-NOV-08
month Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	10	10
ALS Sample ID	L631534-5	L631534-10	L638555-6	L638555-7	L641482-6	L641482-7	L646096-15	L646096-16	L655085-10	L655085-11	L664786-12	L664786-25	L683164-16	L683164-17	L713908-10	L713908-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																
Hardness (as CaCO3)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Colour, True	<5.0	<5.0	<5.0	-	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Conductivity	<2.0	<2.0	<2.0	-	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
pH	5.48	5.54	5.51	-	5.57	5.55	5.63	5.57	5.51	5.49	5.54	5.54	5.63	5.61	5.58	5.64
Total Dissolved Solids	<10	<10	<10	-	<10	<10	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Suspended Solids	<3.0	<3.0	<3.0	-	<3.0	<3.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Turbidity	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Anions and Nutrients																
Ammonia as N	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	1.1	1.5	1.1	1.1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0081
Acidity (as CaCO3)	1.7	1.5	2.8	-	2	2.2	<2.0	<2.0	<2.0	<2.0	<1.0	1.2	1.5	1.5	<1.0	1.6
Alkalinity, Bicarbonate (as CaCO3)	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total (as CaCO3)	<2.0	<2.0	<2.0	-	<2.0	<2.0	<0.0050	<0.0050	<0.0050	<0.0050	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromide (Br)	<0.050	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Sulfate (SO4)	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nitrate (as N)	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	0.0021	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.050	<0.050	<0.050	<0.050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	<0.050	<0.050	<0.050	-	<0.050	<0.050	<0.060	<0.060	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Nitrogen	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.05	<0.05	0.10	<0.05	<0.05	<0.05
Total Phosphate as P	<0.0020	<0.0020	<0.0020	-	<0.0020	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.0020	<0.0020	<0.0020	<0.0020	0.0057	0.0036
Cyanides																
Cyanide, Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals																
Aluminum (Al)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium (Ba)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Total	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.022	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chromium (Cr)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Iron (Fe)-Total	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese (Mn)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000243	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.1-1 Stream Water Quality, 2008 (completed)

Sample ID	FIELD BLANK	TRAVEL BLANK	FIELD BLANK	TRAVEL BLANK	FIELD BLANK	TRAVEL BLANK	TRAVEL BLANK	FIELD BLANK	TRAVEL BLANK	FIELD BLANK	FIELD BLANK	TRAVEL BLANK	TRAVEL BLANK	FIELD BLANK	FIELD BLANK	TRAVEL BLANK
Date Sampled	15-MAY-08	15-MAY-08	03-JUN-08	03-JUN-08	09-JUN-08	09-JUN-08	19-JUN-08	19-JUN-08	09-JUL-08	09-JUL-08	06-AUG-08	06-AUG-08	08-SEP-08	08-SEP-08	28-NOV-08	28-NOV-08
month Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	10	10
ALS Sample ID	L631534-5	L631534-10	L638555-6	L638555-7	L641482-6	L641482-7	L646096-15	L646096-16	L655085-10	L655085-11	L664786-12	L664786-25	L683164-16	L683164-17	L713908-10	L713908-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sodium (Na)-Total	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals																
Aluminum (Al)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony (Sb)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic (As)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium (Ba)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium (Be)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth (Bi)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron (B)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (Cd)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calcium (Ca)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (Cr)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt (Co)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron (Fe)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (Pb)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithium (Li)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese (Mn)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (Hg)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum (Mo)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel (Ni)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus (P)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium (K)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium (Se)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silicon (Si)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver (Ag)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium (Na)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium (Sr)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin (Sn)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium (V)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (Zn)-Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Parameters																
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-	<20	<20	<20
Total Organic Carbon	<0.50	0.5	0.63	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.71	<0.50	0.57	<0.50

Appendix 3.1-2

Detection Limits for Stream Water Quality Data

Appendix 3.1-2. Detection Limits for Stream Water Quality Data

Sample ID	SKC-1	SKC-4-1	SKC-4-2	SC-5	FIELD BLANK	JC-2	HC-3	SC-6	WC-1	TRAVEL BLANK	JC-2	HC-3	SC-6	WC-1	TRAVEL BLANK	SKC-1	SKC-4
Date Sampled	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L593696-1	L593696-2	L593696-3	L593696-4	L593696-5	L593696-6	L593696-7	L593696-8	L593696-9	L593696-10	L603123-1	L603123-2	L603123-3	L603123-4	L603123-5	L603123-6	L603123-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour, True	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anions and Nutrients																	
Ammonia as N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Acidity (as CaCO3)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate (SO4)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nitrate (as N)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite (as N)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate as P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides																	
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals																	
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SKC-1	SKC-4-1	SKC-4-2	SC-5	FIELD BLANK	JC-2	HC-3	SC-6	WC-1	TRAVEL BLANK	JC-2	HC-3	SC-6	WC-1	TRAVEL BLANK	SKC-1	SKC-4
Date Sampled	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	10-JAN-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08	14-FEB-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L593696-1	L593696-2	L593696-3	L593696-4	L593696-5	L593696-6	L593696-7	L593696-8	L593696-9	L593696-10	L603123-1	L603123-2	L603123-3	L603123-4	L603123-5	L603123-6	L603123-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.001	0.003	0.003	0.003	-	0.006	0.006	0.009	0.001	-	0.001	0.001	0.001	0.001	-	0.001	0.001
Antimony (Sb)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001
Arsenic (As)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001
Barium (Ba)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005
Beryllium (Be)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005
Bismuth (Bi)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005
Boron (B)-Dissolved	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	-	0.01	0.01
Cadmium (Cd)-Dissolved	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002
Calcium (Ca)-Dissolved	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02	0.02	-	0.02	0.02
Chromium (Cr)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005
Cobalt (Co)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001
Copper (Cu)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0003	0.0003	0.0005	0.0002	-	0.0005	0.0004
Iron (Fe)-Dissolved	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03	0.03	-	0.03	0.03
Lead (Pb)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005
Lithium (Li)-Dissolved	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	-	0.005	0.005
Magnesium (Mg)-Dissolved	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	-	0.005	0.005
Manganese (Mn)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005
Mercury (Hg)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001
Molybdenum (Mo)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005
Nickel (Ni)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005
Phosphorus (P)-Dissolved	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	0.3	-	0.3	0.3
Potassium (K)-Dissolved	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	-	0.05	0.05
Selenium (Se)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005
Silicon (Si)-Dissolved	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	-	0.05	0.05
Silver (Ag)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001
Sodium (Na)-Dissolved	2	2	2	2	-	2	2	2	2	-	2	2	2	2	-	2	2
Strontium (Sr)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001
Thallium (Tl)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001
Tin (Sn)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001
Titanium (Ti)-Dissolved	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	-	0.01	0.01
Uranium (U)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001
Vanadium (V)-Dissolved	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	-	0.001	0.001
Zinc (Zn)-Dissolved	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	-	0.001	0.001	0.002	0.001	-	0.001	0.001
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SC-5	FIELD BLANK	HC-2	HC-3	JC-2	MC-2	MC-5	MC-9	SC-3	SC-5	SC-6	SC-3	SKC-3	SKC-4	WC-1	YC-1	FIELD BLANK
Date Sampled	14-FEB-08	14-FEB-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L603123-8	L603123-9	L612194-1	L612194-2	L612194-3	L612194-4	L612194-5	L612194-6	L612194-7	L612194-8	L612194-9	L612194-10	L612194-11	L612194-12	L612194-13	L612194-14	L612194-15
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour, True	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	-
Conductivity	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Total Dissolved Solids	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	-
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-
Anions and Nutrients																	
Ammonia as N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.02
Acidity (as CaCO3)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-
Sulfate (SO4)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-
Nitrate (as N)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Nitrite (as N)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Total Phosphate as P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	-
Cyanides																	
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Total Metals																	
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.00002	0.00002	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SC-5	FIELD BLANK	HC-2	HC-3	JC-2	MC-2	MC-5	MC-9	SC-3	SC-5	SC-6	SC-3	SKC-3	SKC-4	WC-1	YC-1	FIELD BLANK
Date Sampled	14-FEB-08	14-FEB-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08	17-MAR-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L603123-8	L603123-9	L612194-1	L612194-2	L612194-3	L612194-4	L612194-5	L612194-6	L612194-7	L612194-8	L612194-9	L612194-10	L612194-11	L612194-12	L612194-13	L612194-14	L612194-15
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0005	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	-	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Antimony (Sb)-Dissolved	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Arsenic (As)-Dissolved	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Barium (Ba)-Dissolved	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Beryllium (Be)-Dissolved	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Bismuth (Bi)-Dissolved	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Boron (B)-Dissolved	0.01	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Cadmium (Cd)-Dissolved	0.00002	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-
Calcium (Ca)-Dissolved	0.02	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-
Chromium (Cr)-Dissolved	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Cobalt (Co)-Dissolved	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Copper (Cu)-Dissolved	0.0004	-	0.0003	0.0005	0.0002	0.0003	0.0003	0.0006	0.0005	0.0003	0.0003	0.0004	0.0003	0.0005	0.0002	0.0005	-
Iron (Fe)-Dissolved	0.03	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-
Lead (Pb)-Dissolved	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Lithium (Li)-Dissolved	0.005	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Magnesium (Mg)-Dissolved	0.005	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Manganese (Mn)-Dissolved	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Mercury (Hg)-Dissolved	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Molybdenum (Mo)-Dissolved	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Nickel (Ni)-Dissolved	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Phosphorus (P)-Dissolved	0.3	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-
Potassium (K)-Dissolved	0.05	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Selenium (Se)-Dissolved	0.0005	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Silicon (Si)-Dissolved	0.05	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Silver (Ag)-Dissolved	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Sodium (Na)-Dissolved	2	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Strontium (Sr)-Dissolved	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Thallium (Tl)-Dissolved	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Tin (Sn)-Dissolved	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Titanium (Ti)-Dissolved	0.01	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Uranium (U)-Dissolved	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Vanadium (V)-Dissolved	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Zinc (Zn)-Dissolved	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	TRAVEL BLANK	SKC-1	SKC-1	SKC-4	SC-4	SC-5	SC-5 DUP	SC-6	MC-5	WC-1	JC-2	HC-3	SC-1	SC-4	SC-5	SC-6	FIELD BLANK
Date Sampled	**17-MAR-08**	**17-MAR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**15-MAY-08**	**15-MAY-08**	**15-MAY-08**	**15-MAY-08**	**15-MAY-08**
Time Sampled	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**
ALS Sample ID	**L612194-16**	**L612194-17**	**L624366-1**	**L624366-2**	**L624366-3**	**L624366-4**	**L624366-5**	**L624366-6**	**L624366-7**	**L624366-8**	**L624366-9**	**L624366-10**	**L631534-1**	**L631534-2**	**L631534-3**	**L631534-4**	**L631534-5**
Matrix	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**
Physical Tests																	
Hardness (as CaCO3)	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour, True	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
pH	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Suspended Solids	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Turbidity	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anions and Nutrients																	
Ammonia as N	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Acidity (as CaCO3)	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate (as CaCO3)	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate (as CaCO3)	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide (as CaCO3)	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total (as CaCO3)	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Bromide (Br)	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Chloride (Cl)	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluoride (F)	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate (SO4)	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nitrate (as N)	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite (as N)	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Nitrogen	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate as P	-	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.02	0.002	0.002
Cyanides																	
Cyanide, Total	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals																	
Aluminum (Al)-Total	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	TRAVEL BLANK	SKC-1	SKC-1	SKC-4	SC-4	SC-5	SC-5 DUP	SC-6	MC-5	WC-1	JC-2	HC-3	SC-1	SC-4	SC-5	SC-6	FIELD BLANK
Date Sampled	**17-MAR-08**	**17-MAR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**17-APR-08**	**15-MAY-08**	**15-MAY-08**	**15-MAY-08**	**15-MAY-08**	**15-MAY-08**
Time Sampled	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**	**00:00**
ALS Sample ID	**L612194-16**	**L612194-17**	**L624366-1**	**L624366-2**	**L624366-3**	**L624366-4**	**L624366-5**	**L624366-6**	**L624366-7**	**L624366-8**	**L624366-9**	**L624366-10**	**L631534-1**	**L631534-2**	**L631534-3**	**L631534-4**	**L631534-5**
Matrix	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**
Selenium (Se)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.006	0.008	0.004	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	-	0.001	0.0015	0.006	0.006	0.003	0.007	0.01	0.005	0.011	0.007	0.005	0.001	0.001	0.001	0.001	-
Antimony (Sb)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Arsenic (As)-Dissolved	-	0.0001	0.0002	0.0004	0.0005	0.0003	0.0003	0.0006	0.0003	0.0003	0.0003	0.0012	0.0001	0.0001	0.0001	0.0001	-
Barium (Ba)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Beryllium (Be)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Bismuth (Bi)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Boron (B)-Dissolved	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Cadmium (Cd)-Dissolved	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-
Calcium (Ca)-Dissolved	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-
Chromium (Cr)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Cobalt (Co)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Copper (Cu)-Dissolved	-	0.0005	0.0006	0.0006	0.0004	0.0004	0.0004	0.0003	0.0003	0.0003	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	-
Iron (Fe)-Dissolved	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-
Lead (Pb)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Lithium (Li)-Dissolved	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Magnesium (Mg)-Dissolved	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Manganese (Mn)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Mercury (Hg)-Dissolved	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Molybdenum (Mo)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Nickel (Ni)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Phosphorus (P)-Dissolved	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-
Potassium (K)-Dissolved	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Selenium (Se)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Silicon (Si)-Dissolved	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Silver (Ag)-Dissolved	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Sodium (Na)-Dissolved	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Strontium (Sr)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Thallium (Tl)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Tin (Sn)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Titanium (Ti)-Dissolved	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Uranium (U)-Dissolved	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Vanadium (V)-Dissolved	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Zinc (Zn)-Dissolved	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	WC-1	WC-1 DUP	JC-2	HC-3	TRAVEL BLANK	MC-5	MC-10	MT-1	SKC-1	SKC-4	SC-5	MC-10	SC-6	SKC-4	SC-6	FIELD BLANK	TRAVEL BLANK
Date Sampled	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L631534-6	L631534-7	L631534-8	L631534-9	L631534-10	L631534-11	L631534-12	L631534-13	L631534-14	L631534-15	L638555-1	L638555-2	L638555-3	L638555-4	L638555-5	L638555-6	L638555-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour, True	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	-
Conductivity	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Total Dissolved Solids	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	-
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-
Anions and Nutrients																	
Ammonia as N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Acidity (as CaCO3)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1	2	-
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1	2	-
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1	2	-
Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	-
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-
Sulfate (SO4)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-
Nitrate (as N)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Nitrite (as N)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Total Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate as P	0.002	0.002	0.002	0.002	0.002	0.02	0.02	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	-
Cyanides																	
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals																	
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0013	0.0013	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	WC-1	WC-1 DUP	JC-2	HC-3	TRAVEL BLANK	MC-5	MC-10	MT-1	SKC-1	SKC-4	SC-5	MC-10	SC-6	SKC-4	SC-6	FIELD BLANK	TRAVEL BLANK
Date Sampled	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	15-MAY-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08	03-JUN-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L631534-6	L631534-7	L631534-8	L631534-9	L631534-10	L631534-11	L631534-12	L631534-13	L631534-14	L631534-15	L638555-1	L638555-2	L638555-3	L638555-4	L638555-5	L638555-6	L638555-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.01	0.01	0.003	0.004	0.001	0.001	0.01	0.001	0.001	0.004	0.006	0.007	0.006	0.002	0.008	0.001	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Antimony (Sb)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Arsenic (As)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Barium (Ba)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Beryllium (Be)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Bismuth (Bi)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Boron (B)-Dissolved	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Cadmium (Cd)-Dissolved	0.000017	0.000017	0.000017	0.000017	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-	-
Calcium (Ca)-Dissolved	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-
Chromium (Cr)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Cobalt (Co)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Copper (Cu)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Iron (Fe)-Dissolved	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	-
Lead (Pb)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Lithium (Li)-Dissolved	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Magnesium (Mg)-Dissolved	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Manganese (Mn)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Mercury (Hg)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Molybdenum (Mo)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Nickel (Ni)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Phosphorus (P)-Dissolved	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-
Potassium (K)-Dissolved	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Selenium (Se)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Silicon (Si)-Dissolved	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Silver (Ag)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Sodium (Na)-Dissolved	2	2	2	2	-	2	2	2	2	2	2	2	2	2	2	-	-
Strontium (Sr)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Thallium (Tl)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Tin (Sn)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Titanium (Ti)-Dissolved	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Uranium (U)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Vanadium (V)-Dissolved	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Zinc (Zn)-Dissolved	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SC-5	SC-6	MC-10	SKC-4-1	SKC-4-2	FIELD BLANK	TRAVEL BLANK	SC1	SC3	SC4	SC5	SC6-1	SC6-2	SC7	SC8	MT1	YC1
Date Sampled	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L641482-1	L641482-2	L641482-3	L641482-4	L641482-5	L641482-6	L641482-7	L646096-1	L646096-2	L646096-3	L646096-4	L646096-5	L646096-6	L646096-7	L646096-8	L646096-9	L646096-10
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	5	5	5	5	5	5	5	5
Colour, True	5	5	5	5	5	5	5	2	2	2	2	2	2	2	2	2	2
Conductivity	2	2	2	2	2	2	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	10	10	10	10	10	10	10	5	3	3	3	3	3	3	3	3	3
Total Suspended Solids	3	3	3	3	3	3	3	10	10	10	10	10	10	10	10	10	10
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anions and Nutrients																	
Ammonia as N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1	1	1
Acidity (as CaCO3)	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	2	2
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	1	1	2	2	1	1	2	2	2	2
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	1	1	2	2	1	1	2	2	2	2
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	1	1	2	2	1	1	2	2	2	2
Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate (SO4)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrate (as N)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nitrite (as N)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Total Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.02	0.02	0.02	0.02	0.02	0.02	0.002	0.002	0.002
Total Phosphate as P	0.002	0.02	0.002	0.002	0.002	0.002	0.002	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cyanides																	
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals																	
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SC-5	SC-6	MC-10	SKC-4-1	SKC-4-2	FIELD BLANK	TRAVEL BLANK	SC1	SC3	SC4	SC5	SC6-1	SC6-2	SC7	SC8	MT1	YC1
Date Sampled	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	09-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L641482-1	L641482-2	L641482-3	L641482-4	L641482-5	L641482-6	L641482-7	L646096-1	L646096-2	L646096-3	L646096-4	L646096-5	L646096-6	L646096-7	L646096-8	L646096-9	L646096-10
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.001	0.001	0.006	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.005	0.001	0.001	0.005	0.001	0.001	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.001	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Dissolved	0.01	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Dissolved	0.000017	0.000017	0.000017	0.000017	0.000017	-	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Dissolved	0.02	0.02	0.02	0.02	0.02	-	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0009	0.0007	0.0001	0.0006	0.0001	0.0008	0.0005	0.0004	0.001	0.0007
Iron (Fe)-Dissolved	0.03	0.03	0.03	0.03	0.03	-	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Dissolved	0.005	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Dissolved	0.005	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Dissolved	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Dissolved	0.3	0.3	0.3	0.3	0.3	-	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Dissolved	0.05	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium (Se)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Dissolved	0.05	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Dissolved	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Dissolved	2	2	2	2	2	-	-	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Dissolved	0.01	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Dissolved	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Dissolved	0.001	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Dissolved	0.001	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	MC10	SKC1	SKC3	SKC4	TRAVEL BLANK	FIELD BLANK	MC 10	SC 1	SC 4	SC 5-1	SC 6	SC 8	MT 1	SKC 1	SKC 4	TRAVEL BLANK	FIELD BLANK
Date Sampled	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L646096-11	L646096-12	L646096-13	L646096-14	L646096-15	L646096-16	L655085-1	L655085-2	L655085-3	L655085-4	L655085-5	L655085-6	L655085-7	L655085-8	L655085-9	L655085-10	L655085-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Colour, True	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Conductivity	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Suspended Solids	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anions and Nutrients																	
Ammonia as N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acidity (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total (as CaCO3)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate (SO4)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrate (as N)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nitrite (as N)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Kjeldahl Nitrogen	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Nitrogen	0.02	0.002	0.002	0.002	0.002	0.002	0.02	0.02	0.02	0.02	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Total Phosphate as P	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cyanides																	
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals																	
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	MC10	SKC1	SKC3	SKC4	TRAVEL BLANK	FIELD BLANK	MC 10	SC 1	SC 4	SC 5-1	SC 6	SC 8	MT 1	SKC 1	SKC 4	TRAVEL BLANK	FIELD BLANK
Date Sampled	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	19-JUN-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08	09-JUL-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L646096-11	L646096-12	L646096-13	L646096-14	L646096-15	L646096-16	L655085-1	L655085-2	L655085-3	L655085-4	L655085-5	L655085-6	L655085-7	L655085-8	L655085-9	L655085-10	L655085-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.007	0.001	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.001	0.01	0.004	0.001	0.001	0.001	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Antimony (Sb)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Arsenic (As)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Barium (Ba)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Beryllium (Be)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Bismuth (Bi)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Boron (B)-Dissolved	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Cadmium (Cd)-Dissolved	0.000017	0.000017	0.000017	0.000017	-	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-	-
Calcium (Ca)-Dissolved	0.02	0.02	0.02	0.02	-	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-
Chromium (Cr)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Cobalt (Co)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Copper (Cu)-Dissolved	0.0005	0.0008	0.0004	0.0008	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Iron (Fe)-Dissolved	0.03	0.03	0.03	0.03	-	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	-
Lead (Pb)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Lithium (Li)-Dissolved	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Magnesium (Mg)-Dissolved	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Manganese (Mn)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Mercury (Hg)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Molybdenum (Mo)-Dissolved	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Nickel (Ni)-Dissolved	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Phosphorus (P)-Dissolved	0.3	0.3	0.3	0.3	-	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-
Potassium (K)-Dissolved	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Selenium (Se)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Silicon (Si)-Dissolved	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Silver (Ag)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Sodium (Na)-Dissolved	2	2	2	2	-	-	2	2	2	2	2	2	2	2	2	-	-
Strontium (Sr)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Thallium (Tl)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Tin (Sn)-Dissolved	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Titanium (Ti)-Dissolved	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Uranium (U)-Dissolved	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Vanadium (V)-Dissolved	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Zinc (Zn)-Dissolved	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SC 5-2	YC1	SKC4	SC8	SC4	SC6	MC10	SKC1	SC3	SC1	MT1	WL8	SKC3	SC7	SC5	DUP E	TBLANK
Date Sampled	09-JUL-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	07-SEP-08	07-SEP-08	07-SEP-08	08-SEP-08	08-SEP-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L655085-12	L683164-1	L683164-2	L683164-3	L683164-4	L683164-5	L683164-6	L683164-7	L683164-8	L683164-9	L683164-10	L683164-11	L683164-12	L683164-13	L683164-14	L683164-15	L683164-16
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests																	
Hardness (as CaCO3)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Colour, True	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Conductivity	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Suspended Solids	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anions and Nutrients																	
Ammonia as N	1	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Acidity (as CaCO3)	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total (as CaCO3)	0.005	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate (SO4)	0.005	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nitrate (as N)	0.001	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite (as N)	0.05	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Nitrogen	0.02	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate as P	0.5	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.02	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides																	
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals																	
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001	0.0003	0.0001	0.0001	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	SC 5-2	YC1	SKC4	SC8	SC4	SC6	MC10	SKC1	SC3	SC1	MT1	WL8	SKC3	SC7	SC5	DUP E	TBLANK
Date Sampled	09-JUL-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	07-SEP-08	07-SEP-08	07-SEP-08	08-SEP-08	08-SEP-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L655085-12	L683164-1	L683164-2	L683164-3	L683164-4	L683164-5	L683164-6	L683164-7	L683164-8	L683164-9	L683164-10	L683164-11	L683164-12	L683164-13	L683164-14	L683164-15	L683164-16
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals																	
Aluminum (Al)-Dissolved	0.001	0.001	0.004	0.001	0.001	0.001	0.001	0.008	0.001	0.001	0.001	0.003	0.004	0.001	0.001	0.001	-
Antimony (Sb)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Arsenic (As)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Barium (Ba)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Beryllium (Be)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Bismuth (Bi)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Boron (B)-Dissolved	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Cadmium (Cd)-Dissolved	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-
Calcium (Ca)-Dissolved	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-
Chromium (Cr)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Cobalt (Co)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Copper (Cu)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Iron (Fe)-Dissolved	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-
Lead (Pb)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Lithium (Li)-Dissolved	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Magnesium (Mg)-Dissolved	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-
Manganese (Mn)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Mercury (Hg)-Dissolved	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Molybdenum (Mo)-Dissolved	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-
Nickel (Ni)-Dissolved	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Phosphorus (P)-Dissolved	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-
Potassium (K)-Dissolved	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Selenium (Se)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Silicon (Si)-Dissolved	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Silver (Ag)-Dissolved	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Sodium (Na)-Dissolved	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-
Strontium (Sr)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Thallium (Tl)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Tin (Sn)-Dissolved	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Titanium (Ti)-Dissolved	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-
Uranium (U)-Dissolved	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-
Vanadium (V)-Dissolved	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Zinc (Zn)-Dissolved	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Organic Parameters																	
COD	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	-
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (continued)

Sample ID	FBLANK	SC-1	SC-3	SC-4	SC-5	SC-6	MT-1	SKC-4-1	SKC-4-2	YC-1	FIELD BLANK	TRAVEL BLANK
Date Sampled	08-SEP-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683164-17	L713908-1	L713908-2	L713908-3	L713908-4	L713908-5	L713908-6	L713908-7	L713908-8	L713908-9	L713908-10	L713908-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness (as CaCO3)	5	5	5	5	5	5	5	5	5	5	5	5
Colour, True	2	2	2	2	2	2	2	2	2	2	2	2
Conductivity	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
pH	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	3	3	3	3	3	3	3	3	3	3	3	3
Total Suspended Solids	10	10	10	10	10	10	10	10	10	10	10	10
Turbidity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anions and Nutrients												
Ammonia as N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Acidity (as CaCO3)	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total (as CaCO3)	2	2	2	2	2	2	2	2	2	2	2	2
Bromide (Br)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Chloride (Cl)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluoride (F)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate (SO4)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nitrate (as N)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite (as N)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Kjeldahl Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Nitrogen	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate as P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides												
Cyanide, Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals												
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony (Sb)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic (As)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium (Ba)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium (Be)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth (Bi)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron (B)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium (Cd)-Total	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017
Calcium (Ca)-Total	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium (Cr)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt (Co)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper (Cu)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0008	0.0001	0.0001
Iron (Fe)-Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead (Pb)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium (Li)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium (Mg)-Total	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese (Mn)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury (Hg)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum (Mo)-Total	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Ni)-Total	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus (P)-Total	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium (K)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

(continued)

Appendix 3.1-2. Detection Limits for Stream Water Quality Data (completed)

Sample ID	FBLANK	SC-1	SC-3	SC-4	SC-5	SC-6	MT-1	SKC-4-1	SKC-4-2	YC-1	FIELD BLANK	TRAVEL BLANK
Date Sampled	08-SEP-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08	28-NOV-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683164-17	L713908-1	L713908-2	L713908-3	L713908-4	L713908-5	L713908-6	L713908-7	L713908-8	L713908-9	L713908-10	L713908-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Selenium (Se)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Silicon (Si)-Total	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver (Ag)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium (Na)-Total	2	2	2	2	2	2	2	2	2	2	2	2
Strontium (Sr)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium (Tl)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin (Sn)-Total	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium (Ti)-Total	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium (U)-Total	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium (V)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc (Zn)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001
Dissolved Metals												
Aluminum (Al)-Dissolved	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Antimony (Sb)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Arsenic (As)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Barium (Ba)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Beryllium (Be)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Bismuth (Bi)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Boron (B)-Dissolved	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Cadmium (Cd)-Dissolved	-	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	-	-
Calcium (Ca)-Dissolved	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-
Chromium (Cr)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Cobalt (Co)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Copper (Cu)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Iron (Fe)-Dissolved	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	-
Lead (Pb)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Lithium (Li)-Dissolved	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Magnesium (Mg)-Dissolved	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Manganese (Mn)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Mercury (Hg)-Dissolved	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Molybdenum (Mo)-Dissolved	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Nickel (Ni)-Dissolved	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Phosphorus (P)-Dissolved	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-
Potassium (K)-Dissolved	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Selenium (Se)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Silicon (Si)-Dissolved	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Silver (Ag)-Dissolved	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Sodium (Na)-Dissolved	-	2	2	2	2	2	2	2	2	2	-	-
Strontium (Sr)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Thallium (Tl)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Tin (Sn)-Dissolved	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Titanium (Ti)-Dissolved	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Uranium (U)-Dissolved	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Vanadium (V)-Dissolved	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Zinc (Zn)-Dissolved	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Organic Parameters												
COD	20	20	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

(continued)

Appendix 3.1-3

Summary of Metal Concentrations and Exceeded Guidelines

Appendix 3.1-3. Summary of Metal Concentrations and Exceeded Guidelines

	SC1 (n=6)					SC6 (n=12)					SC3 (n=4)				
	MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded	
				CCME	BC Max				CCME	BC Max				CCME	BC Max
Total Metals															
Aluminum	0.044	11.100	6.431	4	-	0.012	6.920	2.261	8		0.013	4.100	1.868	3	
Arsenic	0.00029	0.00366	0.00187	-	-	0.00048	0.00301	0.00147	-	-	0.00053	0.00163	0.00099	-	-
Cadmium	0.000018	0.000069	0.000039	5	4	**0.000009**	0.000048	0.000021	7	3	**0.000009**	0.000029	0.000020	4	4
Chromium	**0.00025**	0.00758	0.00401	4	4	**0.00025**	0.01000	0.00299	7	7	**0.00025**	0.00361	0.00174	2	2
Cobalt	0.00005	0.00614	0.00321	-	-	0.00005	0.00454	0.00144	-	-	0.00005	0.00172	0.00087	-	-
Copper	0.00022	0.03660	0.02091	6	4	0.00028	0.02280	0.00804	8	6	0.00045	0.01020	0.00472	2	2
Iron	**0.02**	11.40	5.69	5	4	**0.02**	6.38	2.03	7	8	0.03	2.80	1.39	2	2
Lead	**0.00003**	0.00346	0.00183	4	1	**0.00003**	0.00213	0.00065	4		**0.00003**	0.00087	0.00042	-	-
Manganese	0.00176	0.47000	0.21794	-	-	0.00010	0.24200	0.07591	-	-	0.02150	0.09670	0.05643	-	-
Mercury	**0.000005**	0.000019	0.000010	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00136	0.00937	0.00341	-	-	0.00086	0.00409	0.00248	-	-	0.00240	0.01040	0.00563	-	-
Nickel	0.00025	0.00649	0.00336	-	-	0.00025	0.00763	0.00239	-	-	0.00025	0.00246	0.00135	-	-
Selenium	**0.00005**	0.00041	0.00022	-	-	**0.00005**	0.00036	0.00024	-	-	**0.00005**	0.00024	0.00017	-	-
Silver	**0.000005**	0.000034	0.000022	-	-	**0.000005**	0.000032	0.000013	-	-	**0.000005**	0.000012	0.000007	-	-
Zinc	**0.0005**	0.0291	0.0159	-	-	**0.0005**	0.0165	0.0060	-	-	**0.0005**	0.0099	0.0047	-	-
Dissolved Metals															
Aluminum	0.022	0.379	0.131	3	3	**0.005**	0.531	0.097	4	4	0.004	0.067	0.032	-	-
Arsenic	0.0002	0.0004	0.0003	-	-	**0.0003**	0.0018	0.0007	-	-	0.0005	0.0008	0.0006	-	-
Cadmium	**0.00001**	0.00003	0.00001	1	1	**0.00001**	0.00003	0.00001	1	1	**0.00001**	0.00003	0.00001	1	1
Chromium	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	0.00074	0.00039	-	-	**0.00025**	**0.00025**	**0.00025**	-	-
Cobalt	0.00005	0.00005	0.00005	-	-	0.00005	0.00096	0.00013	-	-	0.00005	0.00005	0.00005	-	-
Copper	**0.00016**	0.00126	0.00045	-	-	**0.00015**	0.00974	0.00139	1	1	**0.00016**	0.00041	0.00029	-	-
Iron	**0.0150**	0.2500	0.0703	-	-	**0.0150**	0.7350	0.0937	1	1	**0.0150**	0.0150	0.0150	-	-
Lead	**0.000025**	0.000070	0.000033	-	-	**0.000025**	0.000792	0.000089	-	-	**0.000025**	**0.000025**	**0.000025**	-	-
Manganese	0.000990	0.021000	0.009762	-	-	**0.000025**	0.062700	0.009684	-	-	0.010000	0.021600	0.015575	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00111	0.00958	0.00344	-	-	0.00079	0.00421	0.00265	-	-	0.00243	0.01190	0.00613	-	-
Nickel	**0.000250**	**0.000250**	**0.000250**	-	-	**0.000250**	0.001250	0.000333	-	-	**0.000250**	**0.000250**	**0.000250**	-	-
Selenium	**0.000050**	0.000180	0.000095	-	-	**0.000050**	0.000580	0.000221	-	-	**0.000050**	0.000230	0.000158	-	-
Silver	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Zinc	**0.00050**	**0.00050**	**0.00050**	-	-	**0.00050**	0.00470	0.00089	-	-	**0.00050**	**0.00050**	**0.00050**	-	-

All results are expressed in mg/L

Bolded values indicate half the analytical detection limit

See figures and/or text in section 3.1.2 for guideline values

(continued)

Appendix 3.1-3. Summary of Metal Concentrations and Exceeded Guidelines (continued)

	SC4 (n=7)					SC7 (n=2)				SC5 (n=12)				
	MIN	MAX	MEAN	Number of samples exceeded				Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded	
				CCME	BC Max			CCME	BC Max				CCME	BC Max
Total Metals														
Aluminum	0.048	6.560	2.026	4		1.800	0.857	3		0.023	5.400	1.352	7	
Arsenic	**0.00005**	0.00229	0.00095	-	-	0.00085	0.00072	-	-	0.00033	0.00224	0.00087	-	-
Cadmium	**0.000009**	0.000043	0.000029	5	3	0.000019	0.000019	2	2	**0.000009**	0.000040	0.000019	5	2
Chromium	**0.00025**	0.00833	0.00234	4	4	0.00173	0.00128	2	2	**0.00025**	0.00605	0.00193	6	6
Cobalt	0.00005	0.00375	0.00105	-	-	0.00077	0.00053	-	-	0.00005	0.00322	0.00083	-	-
Copper	0.00034	0.01740	0.00583	5	3	0.00394	0.00249	1	1	0.00045	0.01810	0.00453	5	4
Iron	0.08	5.61	1.70	4	4	1.16	0.78	1	2	0.15	4.75	1.38	6	8
Lead	**0.00003**	0.00156	0.00056	2		0.00037	0.00033	-	-	**0.00003**	0.00185	0.00044	2	
Manganese	0.01890	0.18700	0.06919	-	-	0.04690	0.03590	-	-	0.02310	0.19800	0.08029	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	-	-	**0.000005**	0.000016	0.000006	-	-
Molybdenum	0.00059	0.00958	0.00482	-	-	0.00317	0.00315	-	-	0.00155	0.00530	0.00363	-	-
Nickel	0.00025	0.00664	0.00196	-	-	0.00134	0.00113	-	-	0.00025	0.00541	0.00163	-	-
Selenium	**0.00005**	0.00034	0.00017	-	-	0.00012	**0.00005**	-	-	**0.00005**	0.00071	0.00021	-	-
Silver	**0.000005**	0.000022	0.000009	-	-	**0.000005**	**0.000005**	-	-	**0.000005**	0.000025	0.000009	-	-
Zinc	**0.0005**	0.0225	0.0057	-	-	**0.0025**	0.0027	-	-	**0.0005**	0.0131	0.0030	-	-
Dissolved Metals														
Aluminum	**0.003**	0.085	0.040	-	-	0.036	0.051	-	-	**0.002**	0.106	0.032	1	1
Arsenic	**0.0001**	0.0007	0.0004	-	-	0.0005	0.0005	-	-	**0.0002**	0.0004	0.0003	-	-
Cadmium	**0.00001**	0.00004	0.00002	1	1	**0.00001**	**0.00001**	-	-	**0.00001**	0.00002	0.00001	1	-
Chromium	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-
Cobalt	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-
Copper	**0.00005**	0.00177	0.00067	-	-	**0.00025**	0.00017	-	-	**0.00015**	0.00151	0.00045	-	-
Iron	**0.0150**	0.0570	0.0250	-	-	**0.0150**	0.0400	-	-	**0.0150**	0.1120	0.0344	-	-
Lead	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-
Manganese	0.007870	0.020300	0.011499	-	-	0.008170	0.010400	-	-	0.001120	0.059300	0.025298	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	-	-	**0.000005**	0.000011	0.000006	-	-
Molybdenum	0.00065	0.00926	0.00487	-	-	0.00303	0.00320	-	-	0.00169	0.00579	0.00379	-	-
Nickel	**0.000250**	0.000790	0.000327	-	-	**0.000250**	**0.000250**	-	-	**0.000250**	**0.000250**	**0.000250**	-	-
Selenium	**0.000050**	0.000180	0.000081	-	-	**0.000050**	**0.000050**	-	-	**0.000050**	0.000510	0.000157	-	-
Silver	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	-	-	**0.000005**	0.000016	0.000006	-	-
Zinc	**0.00050**	**0.00050**	**0.00050**	-	-	**0.00050**	**0.00050**			**0.00050**	0.00110	0.00055		

All results are expressed in mg/L

Bolded values indicate half the analytical detection limit

See figures and/or text in section 3.1.2 for guideline values

(continued)

Appendix 3.1-3. Summary of Metal Concentrations and Exceeded Guidelines (continued)

	SC8 (n=4)					MT1 (n=6)					MC10 (n=7)				
	MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded	
				CCME	BC Max				CCME	BC Max				CCME	BC Max
Total Metals															
Aluminum	0.033	3.830	1.617	3		0.028	1.340	0.482	4		0.844	5.050	2.345	7	
Arsenic	**0.00005**	0.00183	0.00068	-	-	0.00028	0.00051	0.00038	-	-	0.00203	0.00768	0.00427	2	2
Cadmium	**0.000009**	0.000036	0.000019	2	2	**0.000009**	**0.000009**	**0.000009**	-	-	0.000019	0.000079	0.000040	6	3
Chromium	**0.00025**	0.00533	0.00192	2	2	**0.00025**	0.00325	0.00138	3	3	0.00221	0.01510	0.00607	7	7
Cobalt	0.00005	0.00227	0.00089	-	-	0.00005	0.00112	0.00042	-	-	0.00089	0.00432	0.00235	-	-
Copper	0.00032	0.01150	0.00440	2	2	0.00083	0.00457	0.00273	4	3	0.00309	0.00996	0.00619	4	4
Iron	0.14	3.23	1.44	2	3	**0.015**	0.878	0.327333333	3		1.58	6.24	3.67	7	7
Lead	**0.00003**	0.00091	0.00045	-	-	**0.00003**	0.00011	0.00006	-	-	0.00040	0.00146	0.00079	2	
Manganese	0.03360	0.10000	0.05810	-	-	0.00094	0.04400	0.01719	-	-	0.05210	0.19900	0.11726	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	0.000018	0.000011	-	-
Molybdenum	0.00049	0.00303	0.00146	-	-	0.00009	0.00075	0.00037	-	-	0.00070	0.00094	0.00080	-	-
Nickel	0.00025	0.00408	0.00150	-	-	0.00025	0.00306	0.00123	-	-	0.00451	0.03690	0.01261	-	-
Selenium	**0.00005**	0.00019	0.00009	-	-	**0.00005**	0.00014	0.00008	-	-	0.00019	0.00047	0.00029	-	-
Silver	**0.000005**	0.000023	0.000010	-	-	**0.000005**	0.000013	0.000006	-	-	0.000012	0.000060	0.000029	-	-
Zinc	**0.0005**	0.0050	0.0032	-	-	**0.0005**	0.0041	0.0016	-	-	**0.0030**	0.0136	0.0063	-	-
Dissolved Metals															
Aluminum	0.007	0.090	0.052	-	-	0.007	0.078	0.030	-	-	0.011	0.031	0.018	-	-
Arsenic	**0.0001**	0.0006	0.0003	-	-	0.0002	0.0004	0.0003	-	-	0.0004	0.0009	0.0005	-	-
Cadmium	**0.00001**	**0.00001**	**0.00001**	-	-	**0.00001**	**0.00001**	**0.00001**	-	-	**0.00001**	**0.00001**	**0.00001**	-	-
Chromium	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-
Cobalt	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-
Copper	**0.00019**	0.00039	0.00028	-	-	**0.00018**	0.00254	0.00078	1		**0.00012**	0.00086	0.00050	-	-
Iron	0.0340	0.0530	0.0450	-	-	**0.0150**	0.0410	0.0193	-	-	**0.0150**	0.1040	0.0299	-	-
Lead	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-
Manganese	0.001560	0.034700	0.014078	-	-	0.000069	0.003580	0.001300	-	-	0.002270	0.016900	0.008363	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00049	0.00312	0.00164	-	-	0.00008	0.00078	0.00040	-	-	0.00064	0.00087	0.00075	-	-
Nickel	**0.000250**	**0.000250**	**0.000250**	-	-	**0.000250**	**0.000250**	**0.000250**	-	-	0.000670	0.001600	0.001061	-	-
Selenium	**0.000050**	0.000050	0.000050	-	-	**0.000050**	0.000150	0.000077	-	-	0.000120	0.000380	0.000201	-	-
Silver	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Zinc	**0.00050**	**0.00050**	**0.00050**			**0.00050**	**0.00050**	**0.00050**			**0.00050**	0.00170	0.00079		

All results are expressed in mg/L

Bolded values indicate half the analytical detection limit

See figures and/or text in section 3.1.2 for guideline values

(continued)

Appendix 3.1-3. Summary of Metal Concentrations and Exceeded Guidelines (completed)

	WC1 (n=5)					MC5 (n=3)					SKC1 (n=9)				
	MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded	
				CCME	BC Max				CCME	BC Max				CCME	BC Max
Total Metals															
Aluminum	0.029	0.786	0.185	1		0.028	2.670	0.915	1		0.005	1.180	0.180	3	
Arsenic	0.00016	0.00035	0.00021	-	-	0.00037	0.00230	0.00103	-	-	0.00016	0.00267	0.00064	-	-
Cadmium	**0.000009**	0.000035	0.000014	1		**0.000009**	0.000066	0.000028	1		**0.000009**	0.000076	0.000023	2	2
Chromium	**0.00025**	**0.00025**	**0.00025**			**0.00025**	0.00382	0.00144	1	1	**0.00025**	0.00273	0.00057	1	1
Cobalt	0.00005	0.00046	0.00013	-	-	0.00005	0.00203	0.00071	-	-	0.00005	0.00124	0.00022	-	-
Copper	0.00018	0.00065	0.00029	-	-	0.00036	0.02430	0.00838	1	1	0.00047	0.00764	0.00174	4	1
Iron	0.045	1.37	0.3156	1	1	0.222	4.53	1.67	1	1	0.032	1.95	0.333222222	2	1
Lead	**0.00003**	0.00028	0.00008	-	-	**0.00003**	0.00160	0.00056	-	-	**0.00003**	0.00101	0.00016	1	
Manganese	0.00374	0.06020	0.01599	-	-	0.03200	0.21700	0.09687	-	-	0.00332	0.12300	0.02260	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	0.000011	0.000007	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00093	0.00103	0.00097	-	-	0.00266	0.00301	0.00285	-	-	0.00046	0.00091	0.00073	-	-
Nickel	0.00025	0.00113	0.00043	-	-	0.00025	0.00466	0.00172	-	-	0.00025	0.00210	0.00050	-	-
Selenium	**0.00005**	0.00058	0.00027	-	-	**0.00005**	0.00033	0.00020	-	-	0.00044	0.00125	0.00087	2	-
Silver	**0.000005**	0.000032	0.000010	-	-	**0.000005**	0.000068	0.000026	-	-	**0.000005**	0.000020	0.000007	-	-
Zinc	**0.0005**	0.0050	0.0016	-	-	**0.0005**	0.0168	0.0059	-	-	**0.0005**	0.0149	0.0025	-	-
Dissolved Metals															
Aluminum	**0.006**	0.067	0.022	-	-	**0.002**	0.026	0.010	-	-	**0.001**	0.029	0.006	-	-
Arsenic	**0.0002**	0.0002	0.0002	-	-	**0.0002**	0.0004	0.0003	-	-	**0.0001**	0.0004	0.0002	-	-
Cadmium	**0.00001**	**0.00001**	**0.00001**	-	-	**0.00001**	**0.00001**	**0.00001**	-	-	**0.00001**	0.00003	0.00001	1	1
Chromium	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-
Cobalt	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-
Copper	**0.00010**	0.00046	0.00019	-	-	**0.00015**	0.00098	0.00043	-	-	**0.00021**	0.00084	0.00040	-	-
Iron	**0.0150**	0.1110	0.0342	-	-	**0.0150**	0.0760	0.0353	-	-	**0.0150**	0.0380	0.0176	-	-
Lead	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-
Manganese	0.000449	0.004330	0.001559	-	-	0.005550	0.025000	0.018317	-	-	0.001490	0.024800	0.005981	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00087	0.00108	0.00097	-	-	0.00278	0.00312	0.00298	-	-	0.00039	0.00094	0.00076	-	-
Nickel	**0.000250**	**0.000250**	**0.000250**	-	-	**0.000250**	**0.000250**	**0.000250**	-	-	**0.000250**	**0.000250**	**0.000250**	-	-
Selenium	**0.000050**	0.000560	0.000228	-	-	**0.000050**	0.000150	0.000107	-	-	0.000250	0.000900	0.000658	-	-
Silver	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Zinc	**0.00050**	0.00130	0.00076			**0.00050**	**0.00050**	**0.00050**			**0.00050**	**0.00050**	**0.00050**		

All results are expressed in mg/L

Bolded values indicate half the analytical detection limit

See figures and/or text in section 3.1.2 for guideline values

Appendix 3.1-3. Summary of Metal Concentrations and Exceeded Guidelines

	SKC3 (n=3)					SKC4 (n=12)					YC1 (n=4)				
	MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded		MIN	MAX	MEAN	Number of samples exceeded	
				CCME	BC Max				CCME	BC Max				CCME	BC Max
Total Metals															
Aluminum	0.014	0.282	0.104	1		0.006	0.117	0.020	1		0.064	0.351	0.145	1	
Arsenic	0.00010	0.00035	0.00018	-	-	0.00024	0.00035	0.00028	-	-	0.00025	0.00045	0.00033	-	-
Cadmium	**0.000009**	0.000020	0.000012	1	1	**0.000009**	0.000138	0.000020	1	1	**0.000009**	**0.000009**	**0.000009**	-	-
Chromium	**0.00025**	0.00155	0.00068	1	1	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-
Cobalt	0.00005	0.00023	0.00011	-	-	0.00005	0.00015	0.00006	-	-	0.00005	0.00019	0.00009	-	-
Copper	0.00015	0.00175	0.00070	-	-	0.00020	0.00141	0.00062	2		0.00040	0.00084	0.00062	-	-
Iron	**0.015**	0.7	0.28	1		0.064	0.29	0.11	-	-	0.061	0.32	0.14	1	-
Lead	**0.00003**	0.00008	0.00004	-	-	**0.00003**	0.00006	0.00003	-	-	**0.00003**	0.00015	0.00007	-	-
Manganese	0.00371	0.15500	0.05416	-	-	0.00731	0.03620	0.01143	-	-	0.00236	0.01020	0.00492	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00041	0.00051	0.00047	-	-	0.00069	0.00076	0.00073	-	-	0.00097	0.00128	0.00115	-	-
Nickel	0.00025	0.00097	0.00049	-	-	0.00025	0.00196	0.00066	-	-	0.00054	0.00101	0.00078	-	-
Selenium	0.00013	0.00030	0.00019	-	-	0.00033	0.00092	0.00059	-	-	**0.00005**	0.00015	0.00011	-	-
Silver	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Zinc	**0.0005**	0.0020	0.0012	-	-	**0.0005**	**0.0020**	**0.0007**	-	-	**0.0005**	0.0019	0.0010	-	-
Dissolved Metals															
Aluminum	**0.002**	0.009	0.005	-	-	**0.002**	0.012	0.005	-	-	0.006	0.040	0.019	-	-
Arsenic	**0.0001**	0.0001	0.0001	-	-	**0.0002**	0.0003	0.0002	-	-	0.0002	0.0004	0.0003	-	-
Cadmium	**0.00001**	**0.00001**	**0.00001**	-	-	**0.00001**	**0.00001**	**0.00001**	-	-	**0.00001**	**0.00001**	**0.00001**	-	-
Chromium	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-	**0.00025**	**0.00025**	**0.00025**	-	-
Cobalt	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	-	-
Copper	**0.00005**	**0.00020**	**0.00013**	-	-	**0.00017**	0.00086	0.00046	-	-	**0.00014**	0.00044	0.00030	-	-
Iron	**0.0150**	**0.0150**	**0.0150**	-	-	**0.0150**	0.0860	0.0363	-	-	**0.0150**	**0.0150**	**0.0150**	-	-
Lead	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-	**0.000025**	**0.000025**	**0.000025**	-	-
Manganese	0.000223	0.000892	0.000619	-	-	0.000342	0.009390	0.004579	-	-	0.000264	0.000976	0.000567	-	-
Mercury	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Molybdenum	0.00045	0.00049	0.00047	-	-	0.00055	0.00080	0.00073	-	-	0.00109	0.00133	0.00121	-	-
Nickel	**0.000250**	**0.000250**	**0.000250**	-	-	**0.000250**	0.001080	0.000378	-	-	**0.000250**	**0.000250**	**0.000250**	-	-
Selenium	**0.000050**	0.000160	0.000087	-	-	0.000220	0.000930	0.000556	-	-	**0.000050**	0.000120	0.000068	-	-
Silver	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-	**0.000005**	**0.000005**	**0.000005**	-	-
Zinc	**0.00050**	**0.00050**	**0.00050**			**0.00050**	**0.00100**	**0.00054**			**0.00050**	0.00130	0.00070		

All results are expressed in mg/L

Bolded values indicate half the analytical detection limit

See figures and/or text in section 3.1.2 for guideline values

Appendix 3.1-4

Relative Percent Difference (RPD) Calculations for Stream Water Quality Data

Appendix 3.1-4. Relative Percent Difference (RPD) Calculations for Stream Water Quality Data

Sample ID	SKC-4-1	SKC-4-2	RPD	SC-5	SC-5	RPD	WC-1	WC-1	RPD	SKC-4-1	SKC-4-2	RPD
Date Sampled	**10-JAN-08**	**10-JAN-08**		**17-APR-08**	**17-APR-08**		**15-MAY-08**	**15-MAY-08**		**09-JUN-08**	**09-JUN-08**	
Physical Tests												
Hardness (as CaCO3)	106	104	1.9	93.1	95.9	3.0	44.4	44.1	0.7	94.6	96.2	1.7
Colour, True	**<5.0**	**<5.0**	*	**<5.0**	**<5.0**	*	10	9.3	7.3	6.6	6.7	1.5
Conductivity	223	224	0.4	196	197	0.5	118	118	0.0	193	193	0.0
pH	8	7.99	0.1	8.04	8.05	0.1	7.9	7.9	0.0	8.11	8.07	0.5
Total Dissolved Solids	130	120	8.0	110	114	3.6	90	89	1.1	119	122	2.5
Total Suspended Solids	**<3.0**	**<3.0**	*	**<3.0**	**<3.0**	*	23.5	31.5	29.1	5.2	**<3.0**	*
Turbidity	0.5	0.55	9.5	1.7	1.32	25.2	11.1	13	15.8	1.03	0.9	13.5
Anions and Nutrients												
Ammonia as N	0.0098	0.0101	3.0	0.0068	0.007	2.9	**<0.0050**	0.0077	*	**<0.0050**	**<0.0050**	*
Acidity (as CaCO3)	1.9	1.9	0.0	3.7	3.4	8.5	1.9	1.8	5.4	1.6	2.5	43.9
Alkalinity, Bicarbonate (as CaCO3)	92.5	94.9	2.6	87.3	90.4	3.5	48.9	49	0.2	74	76.1	2.8
Alkalinity, Carbonate (as CaCO3)	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*
Alkalinity, Hydroxide (as CaCO3)	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*
Alkalinity, Total (as CaCO3)	92.5	94.9	2.6	87.3	90.4	3.5	48.9	49	0.2	74	76.1	2.8
Bromide (Br)	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*
Chloride (Cl)	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*
Fluoride (F)	0.036	0.037	2.7	0.045	0.044	2.2	0.191	0.19	0.5	0.036	0.036	0.0
Sulfate (SO4)	22.7	22.7	0.0	12.1	12	0.8	9.63	9.62	0.1	18.8	18.8	0.0
Nitrate (as N)	0.0817	0.0816	0.1	0.0737	0.0736	0.1	0.0061	0.0071	15.2	0.129	0.129	0.0
Nitrite (as N)	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*
Total Kjeldahl Nitrogen	0.068	0.078	13.7	**<0.050**	0.066	*	0.124	0.103	18.5	0.062	0.071	13.5
Total Nitrogen	0.15	0.16	6.5	0.12	0.14	15.4	0.13	0.11	16.7	0.19	0.2	5.1
Total Phosphate as P	0.0031	0.0029	6.7	0.0033	0.0024	*	0.0574	0.0576	0.3	0.0039	0.0041	5.0
Cyanides												
Cyanide, Total	**<0.0010**	**<0.0010**	*	**<0.0010**	0.001	*	0.0043	0.0045	4.5	**<0.0010**	**<0.0010**	*
Total Metals												
Aluminum (Al)-Total	0.0069	0.0061	12.3	0.0237	0.0254	6.9	0.786	0.902	13.7	0.0177	0.0195	9.7
Antimony (Sb)-Total	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Arsenic (As)-Total	0.00024	0.00025	4.1	0.00041	0.00036	13.0	0.00035	0.00037	5.6	0.00028	0.00027	3.6
Barium (Ba)-Total	0.0147	0.0144	2.1	0.088	0.0871	1.0	0.0102	0.0103	1.0	0.0117	0.0115	1.7
Beryllium (Be)-Total	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Bismuth (Bi)-Total	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Boron (B)-Total	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	0.01	0.01	0.0	**<0.010**	**<0.010**	*
Cadmium (Cd)-Total	**<0.000020**	**<0.000020**	*	0.000019	0.000018	5.4	0.000035	0.000031	12.1	**<0.000017**	**<0.000017**	*
Calcium (Ca)-Total	34.6	34.8	0.6	32	30.3	5.5	11.5	11.7	1.7	30	30.1	0.3
Chromium (Cr)-Total	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Cobalt (Co)-Total	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	0.00046	0.00048	4.3	**<0.00010**	**<0.00010**	*
Copper (Cu)-Total	0.00044	0.00044	0.0	0.00046	0.00048	4.3	**<0.0013**	**<0.0013**	*	0.00071	0.00073	2.8
Iron (Fe)-Total	0.087	0.087	0.0	0.381	0.38	0.3	1.37	1.51	9.7	0.075	0.077	2.6
Lead (Pb)-Total	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*	0.000277	0.000286	3.2	**<0.000050**	**<0.000050**	*
Lithium (Li)-Total	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*
Magnesium (Mg)-Total	5.35	5.25	1.9	4.3	4.15	3.6	4.73	4.73	0.0	4.79	4.69	2.1
Manganese (Mn)-Total	0.0114	0.0112	1.8	0.0538	0.0502	6.9	0.0602	0.0611	1.5	0.00731	0.00755	3.2
Mercury (Hg)-Total	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*
Molybdenum (Mo)-Total	0.000762	0.00073	4.3	0.00466	0.00446	4.4	0.000996	0.000968	2.9	0.000723	0.000739	2.2
Nickel (Ni)-Total	0.00058	**<0.00050**	*	**<0.00050**	**<0.00050**	*	0.00113	0.00116	2.6	0.00071	0.00064	10.4
Phosphorus (P)-Total	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*
Potassium (K)-Total	0.433	0.438	1.1	0.675	0.637	5.8	1.99	2.02	1.5	0.426	0.418	1.9
Selenium (Se)-Total	0.00092	**<0.00050**	*	**<0.00010**	**<0.00010**	*	0.00028	0.00021	*	0.00055	0.00052	5.6
Silicon (Si)-Total	3.89	3.87	0.5	3.17	3.17	0.0	11.3	11.5	1.8	3.5	3.54	1.1
Silver (Ag)-Total	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	0.000032	0.000038	17.1	**<0.000010**	**<0.000010**	*
Sodium (Na)-Total	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	5.6	5.7	1.8	**<2.0**	**<2.0**	*
Strontium (Sr)-Total	0.0768	0.076	1.0	0.123	0.118	4.1	0.0493	0.0496	0.6	0.0667	0.0657	1.5
Thallium (Tl)-Total	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*

Results are expressed as milligrams per litre except where noted. *(continued)*

Values in bold are half the detection limit.

RPD = Relative Percent Difference relative to mean (in %).

** Denotes that RPD was not calculated due to one or more values being <5 times the detection limit.*

Highlighted values indicate a greater than 20% difference.

Appendix 3.1-4. Relative Percent Difference (RPD) Calculations for Stream Water Quality Data (continued)

Sample ID	SKC-4-1	SKC-4-2	RPD	SC-5	SC-5	RPD	WC-1	WC-1	RPD	SKC-4-1	SKC-4-2	RPD
Date Sampled	**10-JAN-08**	**10-JAN-08**		**17-APR-08**	**17-APR-08**		**15-MAY-08**	**15-MAY-08**		**09-JUN-08**	**09-JUN-08**	
Tin (Sn)-Total	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	0.00013	0.00013	0.0	**<0.00010**	**<0.00010**	*
Titanium (Ti)-Total	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	0.043	0.048	11.0	**<0.010**	**<0.010**	*
Uranium (U)-Total	0.000161	0.000161	0.0	0.00102	0.00101	1.0	0.000186	0.000184	1.1	0.000144	0.000139	3.5
Vanadium (V)-Total	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	0.0021	0.0022	4.7	**<0.0010**	**<0.0010**	*
Zinc (Zn)-Total	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.010**	**<0.010**	*	**<0.0010**	**<0.0010**	*
Dissolved Metals												
Aluminum (Al)-Dissolved	**<0.0030**	**<0.0030**	*	**<0.0030**	**<0.0070**	*	0.0665	0.0789	17.1	0.0072	0.0063	13.3
Antimony (Sb)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Arsenic (As)-Dissolved	0.00022	0.00021	4.7	**<0.00030**	**<0.00030**	*	0.00018	0.00018	0.0	0.00022	0.00023	4.4
Barium (Ba)-Dissolved	0.014	0.0137	2.2	0.0841	0.0868	3.2	0.00457	0.00471	3.0	0.0113	0.0115	1.8
Beryllium (Be)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Bismuth (Bi)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Boron (B)-Dissolved	**<0.010**	**<0.010**	*	**<0.010**	0.011	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*
Cadmium (Cd)-Dissolved	**<0.000020**	**<0.000020**	*	**<0.000017**	0.000019	*	**<0.000017**	**<0.000017**	*	**<0.000017**	**<0.000017**	*
Calcium (Ca)-Dissolved	33.7	33.1	1.8	30.5	31.4	2.9	10.7	10.7	0.0	30	30.6	2.0
Chromium (Cr)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Cobalt (Co)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Copper (Cu)-Dissolved	0.00041	0.00039	5.0	**<0.00040**	**<0.00040**	*	0.00046	0.00051	10.3	0.00063	0.00068	7.6
Iron (Fe)-Dissolved	0.039	0.045	14.3	**<0.030**	**<0.030**	*	0.111	0.142	24.5	**<0.030**	**<0.030**	*
Lead (Pb)-Dissolved	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*
Lithium (Li)-Dissolved	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*
Magnesium (Mg)-Dissolved	5.28	5.11	3.3	4.11	4.27	3.8	4.28	4.21	1.6	4.79	4.83	0.8
Manganese (Mn)-Dissolved	0.00939	0.00951	1.3	0.0448	0.0464	3.5	0.00433	0.00436	0.7	0.00375	0.00392	4.4
Mercury (Hg)-Dissolved	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*
Molybdenum (Mo)-Dissolved	0.000685	0.000726	5.8	0.00463	0.00524	12.4	0.000865	0.000879	1.6	0.00074	0.000756	2.1
Nickel (Ni)-Dissolved	**<0.00050**	0.0005	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	0.00056	*
Phosphorus (P)-Dissolved	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*
Potassium (K)-Dissolved	0.583	0.426	31.1	0.645	0.664	2.9	1.79	1.8	0.6	0.419	0.427	1.9
Selenium (Se)-Dissolved	0.00065	0.00095	37.5	0.00012	**<0.00010**	*	0.00012	0.00013	8.0	0.00051	0.0005	2.0
Silicon (Si)-Dissolved	3.82	3.91	2.3	3.03	3.07	1.3	9.59	9.72	1.3	3.42	3.45	0.9
Silver (Ag)-Dissolved	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*
Sodium (Na)-Dissolved	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	5	4.8	4.1	**<2.0**	**<2.0**	*
Strontium (Sr)-Dissolved	0.0749	0.0735	1.9	0.117	0.121	3.4	0.0453	0.0459	1.3	0.0655	0.0667	1.8
Thallium (Tl)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Tin (Sn)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Titanium (Ti)-Dissolved	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*
Uranium (U)-Dissolved	0.000155	0.000158	1.9	0.001	0.00104	3.9	0.000114	0.000119	4.3	0.000143	0.000147	2.8
Vanadium (V)-Dissolved	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*
Zinc (Zn)-Dissolved	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	0.0013	0.0017	*	**<0.0010**	**<0.0010**	*
Organic Parameters												
COD	**<20**	**<20**	*	**<20**	**<20**	*	20	**<20**	*	30	30	0.0
Total Organic Carbon	1.84	1.84	0.0	0.78	0.75	3.9	3.02	2.74	9.7	2.98	3.01	1.0

Results are expressed as milligrams per litre except where noted.

Values in bold are half the detection limit.

RPD = Relative Percent Difference relative to mean (in %).

** Denotes that RPD was not calculated due to one or more values being <5 times the detection limit.*

Highlighted values indicate a greater than 20% difference.

Appendix 3.1-4. Relative Percent Difference (RPD) Calculations for Stream Water Quality Data (continued)

Sample ID	SC6-1	SC6-2	RPD	SC 5-1	SC 5-2	RPD	SC4	SC4	RPD	MT1	DUPE	RPD
Date Sampled	**19-JUN-08**	**19-JUN-08**		**09-JUL-08**	**09-JUL-08**		**06-AUG-08**	**06-AUG-08**		**08-SEP-08**	**08-SEP-08**	
Physical Tests												
Hardness (as CaCO3)	6.7	6.4	4.6	**<5.0**	**<5.0**	*	7.2	6.4	11.8	**<5.0**	**<5.0**	*
Colour, True	108	109	0.9	86.6	85.5	1.3	73.6	73.9	0.4	94.3	95.1	0.8
Conductivity	51.9	51.9	0.0	43.5	42.7	1.9	36.5	35.1	3.9	47.4	45.3	4.5
pH	7.78	7.85	0.9	7.96	7.80	2.0	7.96	7.95	0.1	7.94	7.94	0.0
Total Dissolved Solids	16	75.5	*	93.3	110	16.4	190	195	2.6	**<3.0**	**<3.0**	*
Total Suspended Solids	160	103	43.3	71	63	11.9	63	59	6.6	59	57	3.4
Turbidity	119	108	9.7	75.8	75.6	0.3	120	120	0.0	11.7	9.39	21.9
Anions and Nutrients												
Ammonia as N	2.8	2.7	3.6	1.0	1.5	40.0	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*
Acidity (as CaCO3)	58	51.8	11.3	38.0	38.2	0.5	2.2	**<1.0**	*	1.3	1.3	0.0
Alkalinity, Bicarbonate (as CaCO3)	**<1.0**	**<1.0**	*	**<2.0**	**<2.0**	*	36.3	32.9	9.8	50.6	49.2	2.8
Alkalinity, Carbonate (as CaCO3)	**<1.0**	**<1.0**	*	**<2.0**	**<2.0**	*	**<1.0**	**<2.0**	*	**<2.0**	**<2.0**	*
Alkalinity, Hydroxide (as CaCO3)	58	51.8	11.3	38.0	38.2	0.5	**<1.0**	**<2.0**	*	**<2.0**	**<2.0**	*
Alkalinity, Total (as CaCO3)	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	36.3	32.9	9.8	50.6	49.2	2.8
Bromide (Br)	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*
Chloride (Cl)	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*
Fluoride (F)	**<0.020**	**<0.020**	*	0.025	0.032	*	0.028	0.029	3.5	**<0.020**	**<0.020**	*
Sulfate (SO4)	0.0133	0.0131	1.5	0.0274	0.0275	0.4	3.46	3.47	0.3	0.71	0.70	1.4
Nitrate (as N)	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	0.0066	0.0077	15.4	**<0.0050**	**<0.0050**	*
Nitrite (as N)	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*
Total Kjeldahl Nitrogen	**<0.060**	**<0.060**	*	**<0.05**	**<0.05**	*	**<0.050**	**<0.050**	*	**<0.050**	**<0.050**	*
Total Nitrogen	0.134	0.115	15.3	0.184	0.206	11.3	**<0.05**	**<0.05**	*	**<0.05**	**<0.05**	*
Total Phosphate as P	6.97	6.93	0.6	4.23	4.27	0.9	0.245	0.244	0.4	0.0080	0.0077	3.8
Cyanides												
Cyanide, Total	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*
Total Metals												
Aluminum (Al)-Total	6.36	7.03	10.0	4.02	3.75	6.9	6.56	5.85	11.4	0.538	0.500	7.3
Antimony (Sb)-Total	0.00016	0.00016	0.0	**<0.00010**	**<0.00010**	*	0.00011	0.00011	0.0	**<0.00010**	**<0.00010**	*
Arsenic (As)-Total	0.00231	0.00236	2.1	0.00166	0.00170	2.4	0.00229	0.00220	4.0	0.00033	0.00032	3.1
Barium (Ba)-Total	0.124	0.127	2.4	0.0866	0.0875	1.0	0.121	0.110	9.5	0.00923	0.00933	1.1
Beryllium (Be)-Total	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Bismuth (Bi)-Total	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Boron (B)-Total	0.012	0.012	0.0	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*
Cadmium (Cd)-Total	0.000036	0.000033	8.7	0.000034	0.000034	0.0	**<0.000050**	**<0.000050**	*	**<0.000017**	**<0.000017**	*
Calcium (Ca)-Total	20	19.5	2.5	15.8	16.4	3.7	16.1	14.9	7.7	18.5	18.8	1.6
Chromium (Cr)-Total	0.00518	0.00555	6.9	0.00537	0.00508	5.6	0.00833	0.00737	12.2	0.00170	0.00155	9.2
Cobalt (Co)-Total	0.00262	0.00277	5.6	0.00232	0.00225	3.1	0.00375	0.00356	5.2	0.00053	0.00049	7.8
Copper (Cu)-Total	0.015	0.015	0.0	0.0109	0.0106	2.8	0.0174	0.0163	6.5	0.00253	0.00245	3.2
Iron (Fe)-Total	4.27	4.54	6.1	3.58	3.16	12.5	5.61	5.55	1.1	0.365	0.350	4.2
Lead (Pb)-Total	0.0011	0.00113	2.7	0.00103	0.000952	7.9	0.00156	0.00148	5.3	0.000056	0.000061	8.5
Lithium (Li)-Total	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*
Magnesium (Mg)-Total	5.68	5.83	2.6	3.86	3.81	1.3	4.97	4.74	4.7	1.31	1.27	3.1
Manganese (Mn)-Total	0.139	0.139	0.0	0.112	0.111	0.9	0.187	0.172	8.4	0.0188	0.0162	14.9
Mercury (Hg)-Total	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*
Molybdenum (Mo)-Total	0.00181	0.00195	7.4	0.00236	0.00235	0.4	0.00230	0.00236	2.6	0.000224	0.000234	4.4
Nickel (Ni)-Total	0.00396	0.00381	3.9	0.00433	0.00413	4.7	0.00664	0.00603	9.6	0.00153	0.00138	10.3
Phosphorus (P)-Total	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*
Potassium (K)-Total	2.2	2.35	6.6	1.42	1.38	2.9	1.92	1.70	12.2	0.235	0.233	0.9
Selenium (Se)-Total	0.00026	0.00032	*	0.00022	0.00014	*	0.00016	0.00019	17.1	**<0.00010**	**<0.00010**	*
Silicon (Si)-Total	12.9	14.1	8.9	9.63	8.76	9.5	13.2	12.1	8.7	2.28	2.23	2.2
Silver (Ag)-Total	0.000025	0.000023	8.3	0.000025	0.000023	8.3	0.000022	0.000024	8.7	**<0.000010**	**<0.000010**	*
Sodium (Na)-Total	2.3	2.3	0.0	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*
Strontium (Sr)-Total	0.12	0.121	0.8	0.0759	0.0786	3.5	0.0889	0.0824	7.6	0.0328	0.0341	3.9
Thallium (Tl)-Total	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*

Results are expressed as milligrams per litre except where noted. *(continued)*

Values in bold are half the detection limit.

RPD = Relative Percent Difference relative to mean (in %).

** Denotes that RPD was not calculated due to one or more values being <5 times the detection limit.*

Highlighted values indicate a greater than 20% difference.

Appendix 3.1-4. Relative Percent Difference (RPD) Calculations for Stream Water Quality Data (completed)

Sample ID	SC6-1	SC6-2	RPD	SC 5-1	SC 5-2	RPD	SC4	SC4	RPD	MT1	DUPE	RPD
Date Sampled	**19-JUN-08**	**19-JUN-08**		**09-JUL-08**	**09-JUL-08**		**06-AUG-08**	**06-AUG-08**		**08-SEP-08**	**08-SEP-08**	
Tin (Sn)-Total	0.0001	0.00013	*	0.00011	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Titanium (Ti)-Total	0.266	0.294	10.0	0.212	0.178	17.4	0.335	0.312	7.1	0.017	0.015	12.5
Uranium (U)-Total	0.000375	0.000368	1.9	0.000815	0.000802	1.6	0.000753	0.000717	4.9	0.000026	0.000026	0.0
Vanadium (V)-Total	0.0145	0.016	9.8	0.0102	0.0094	8.2	0.0167	0.0150	10.7	0.0016	0.0015	6.5
Zinc (Zn)-Total	0.016	0.0139	14.0	**<0.010**	0.0093	*	0.0225	0.0144	*	0.0022	0.0023	4.4
Dissolved Metals												
Aluminum (Al)-Dissolved	0.11	0.117	6.2	0.0328	0.0356	8.2	0.0689	0.0757	9.4	0.0286	0.0257	10.7
Antimony (Sb)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Arsenic (As)-Dissolved	0.00091	0.00095	4.3	0.00037	0.00038	2.7	0.00045	0.00043	4.5	0.00023	0.00024	4.3
Barium (Ba)-Dissolved	0.0522	0.0518	0.8	0.0448	0.0444	0.9	0.0407	0.0397	2.5	0.00662	0.00659	0.5
Beryllium (Be)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Bismuth (Bi)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Boron (B)-Dissolved	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*
Cadmium (Cd)-Dissolved	**<0.000017**	**<0.000017**	*	**<0.000017**	**<0.000017**	*	**<0.000017**	**<0.000017**	*	**<0.000017**	**<0.000017**	*
Calcium (Ca)-Dissolved	16	16.1	0.6	14.3	14.1	1.4	12.2	11.7	4.2	17.9	17.1	4.6
Chromium (Cr)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Cobalt (Co)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Copper (Cu)-Dissolved	0.00111	**<0.00080**	*	0.00041	0.00040	2.5	0.00036	0.00033	8.7	0.00018	0.00021	15.4
Iron (Fe)-Dissolved	0.056	0.053	5.5	**<0.030**	**<0.030**	*	**<0.030**	0.032	*	**<0.030**	**<0.030**	*
Lead (Pb)-Dissolved	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*	**<0.000050**	**<0.000050**	*
Lithium (Li)-Dissolved	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*	**<0.0050**	**<0.0050**	*
Magnesium (Mg)-Dissolved	2.92	2.85	2.4	1.88	1.84	2.2	1.48	1.41	4.8	0.671	0.658	2.0
Manganese (Mn)-Dissolved	0.0114	0.0117	2.6	0.00112	0.00134	17.9	0.0103	0.00998	3.2	0.000806	0.00113	33.5
Mercury (Hg)-Dissolved	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*
Molybdenum (Mo)-Dissolved	0.00191	0.00172	10.5	0.00229	0.00225	1.8	0.00222	0.00213	4.1	0.000232	0.000222	4.4
Nickel (Ni)-Dissolved	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*	**<0.00050**	**<0.00050**	*
Phosphorus (P)-Dissolved	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*	**<0.30**	**<0.30**	*
Potassium (K)-Dissolved	0.465	0.49	5.2	0.402	0.392	2.5	0.358	0.346	3.4	0.177	0.169	4.6
Selenium (Se)-Dissolved	**<0.00010**	0.00014	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Silicon (Si)-Dissolved	1.45	1.46	0.7	1.37	1.36	0.7	0.922	0.939	1.8	1.36	1.42	4.3
Silver (Ag)-Dissolved	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*	**<0.000010**	**<0.000010**	*
Sodium (Na)-Dissolved	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*	**<2.0**	**<2.0**	*
Strontium (Sr)-Dissolved	0.0942	0.094	0.2	0.0686	0.0676	1.5	0.0614	0.0590	4.0	0.0320	0.0316	1.3
Thallium (Tl)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Tin (Sn)-Dissolved	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*	**<0.00010**	**<0.00010**	*
Titanium (Ti)-Dissolved	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*	**<0.010**	**<0.010**	*
Uranium (U)-Dissolved	0.000217	0.000208	4.2	0.000605	0.000594	1.8	0.000396	0.000391	1.3	0.000021	0.000021	0.0
Vanadium (V)-Dissolved	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*
Zinc (Zn)-Dissolved	**<0.0010**	**<0.0010**	*	0.0011	**<0.0010**	*	**<0.0010**	**<0.0010**	*	**<0.0010**	**<0.0010**	*
Organic Parameters												
COD	40	50	*	30	30	0.0	50	40	*	**<20**	20	*
Total Organic Carbon	**<0.50**	0.53	*	0.82	0.83	1.2	**<0.50**	**<0.50**	*	**<0.50**	**<0.50**	*

Results are expressed as milligrams per litre except where noted.

Values in bold are half the detection limit.

RPD = Relative Percent Difference relative to mean (in %).

** Denotes that RPD was not calculated due to one or more values being <5 times the detection limit.*

Highlighted values indicate a greater than 20% difference.

Appendix 3.2-1

Stream Sediment Data, 2008

Appendix 3.2-1. Stream Sediment Data, 2008

Sample ID	YC1 A	YC1 B	YC1 C	SC8 A	SC8 B	SC8 C	SKC4 A	SKC4 B	SKC4 C	SC6 A	SC6 B
Date Sampled	04-SEP-08	04-SEP-08	04-SEP-08	04-SEP-08	04-SEP-08	04-SEP-08	04-SEP-08	04-SEP-08	04-SEP-08	05-SEP-08	05-SEP-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683121-1	L683121-2	L683121-3	L683121-4	L683121-5	L683121-6	L683121-7	L683121-8	L683121-9	L683121-10	L683121-11
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Physical Tests											
pH	6.96	6.83	6.81	7.91	8.00	7.94	8.16	8.16	8.35	7.57	7.54
Particle Size											
% Gravel (>2mm)	1	23	1	3	<1	<1	<1	23	1	10	<1
% Sand (2.0mm - 0.063mm)	93	72	96	67	81	83	46	39	78	51	94
% Silt (0.063mm - 4um)	5	5	3	29	18	15	48	36	19	37	5
% Clay (<4um)	<1	1	1	1	1	1	6	3	1	2	1
Leachable Anions & Nutrients											
Total Nitrogen by LECO	<0.02	<0.02	<0.02	0.02	<0.02	0.02	0.16	0.14	0.06	<0.02	<0.02
Organic / Inorganic Carbon											
CaCO3 Equivalent	0.8	1.2	1.0	1.7	1.6	2.3	0.8	1.2	<0.7	2.3	2.3
Inorganic Carbon	<0.09	0.13	0.10	0.19	0.17	0.26	<0.09	0.12	<0.09	0.26	0.26
Total Carbon by Combustion	0.2	0.2	0.2	0.3	0.2	0.2	3.1	2.7	0.8	0.3	0.3
Total Organic Carbon	0.1	<0.1	<0.1	0.2	<0.1	<0.1	3.0	2.6	0.7	<0.1	<0.1
Plant Available Nutrients											
Cation Exchange Capacity	14.2	3.3	2.9	2.0	1.3	1.3	13.5	12.6	3.7	1.7	1.4
Available Phosphate-P	1	1	<1	1	1	<1	<1	<1	1	1	<1
Metals											
Aluminum (Al)	11400	11400	11700	8900	7860	8050	14900	13900	12000	10100	7880
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic (As)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.6	6.6	5.9	<5.0	<5.0
Barium (Ba)	102	97.0	76.0	92.5	71.8	89.2	91.5	84.8	57.3	98.2	68.6
Beryllium (Be)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	7740	7540	8080	12600	11800	12400	12300	12100	8570	16800	14200
Chromium (Cr)	76.9	64.4	66.0	89.9	100	103	90.6	83.4	91.9	104	77.3
Cobalt (Co)	12.9	12.4	12.3	10.4	10.1	10.5	15.0	14.4	12.8	14.2	10.6
Copper (Cu)	28.8	55.4	28.2	36.8	32.7	31.4	53.5	50.1	29.6	48.5	40.6
Iron (Fe)	28700	25000	25000	34600	35100	36000	34200	32100	31400	34700	30300
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium (Li)	6.7	7.2	7.6	7.4	6.4	6.3	10.1	9.8	8.2	8.0	7.1
Magnesium (Mg)	16200	16700	16600	9860	8930	9140	17000	16100	15400	13800	10000
Manganese (Mn)	413	414	440	403	362	375	736	735	604	448	389
Mercury (Hg)	0.0070	<0.0050	<0.0050	0.0120	0.0097	0.0073	0.0305	0.0244	0.0097	0.0092	0.0059
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel (Ni)	76.3	73.7	75.3	22.9	21.8	22.0	81.0	74.4	64.8	30.2	21.2
Phosphorus (P)	701	677	713	911	753	788	943	915	717	898	656
Potassium (K)	800	780	850	570	480	510	730	710	530	570	400
Selenium (Se)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	0.82	<0.50	<0.50	<0.50
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium (Na)	280	270	270	210	<200	<200	380	380	340	230	<200
Strontium (Sr)	37.5	34.6	34.4	31.2	28.0	29.6	40.1	37.0	25.1	38.6	27.3
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium (Ti)	581	489	526	669	623	649	1100	1020	884	687	465
Vanadium (V)	71.0	58.5	59.8	109	114	116	87.1	82.0	84.3	105	94.6
Zinc (Zn)	45.9	43.3	42.8	29.8	28.6	28.6	50.4	48.4	43.2	33.4	28.3

(continued)

Appendix 3.2-1. Stream Sediment Data, 2008 (continued)

Sample ID	SC6 C	MC10 A	MC10 B	MC10 C	SKC1 A	SKC1 B	SKC1 C	SC4 A	SC4 B	SC4 C	SC3 A
Date Sampled	05-SEP-08	05-SEP-08	05-SEP-08	05-SEP-08	05-SEP-08	05-SEP-08	05-SEP-08	06-SEP-08	06-SEP-08	06-SEP-08	06-SEP-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683121-12	L683121-13	L683121-14	L683121-15	L683121-16	L683121-17	L683121-18	L683121-19	L683121-20	L683121-21	L683121-22
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Physical Tests											
pH	7.93	8.41	8.56	8.57	8.14	8.05	8.19	8.43	8.35	8.32	8.35
Particle Size											
% Gravel (>2mm)	<1	<1	<1	1	11	4	2	<1	<1	4	<1
% Sand (2.0mm - 0.063mm)	96	58	25	66	87	85	94	99	97	96	99
% Silt (0.063mm - 4um)	2	39	68	28	1	9	3	1	3	1	1
% Clay (<4um)	1	2	8	4	1	2	1	<1	<1	<1	<1
Leachable Anions & Nutrients											
Total Nitrogen by LECO	<0.02	0.02	0.03	<0.02	<0.02	0.02	0.03	0.04	<0.02	0.04	0.04
Organic / Inorganic Carbon											
CaCO3 Equivalent	2.2	8.4	8.9	9.1	4.7	5.0	4.2	1.4	1.5	1.2	2.2
Inorganic Carbon	0.25	0.99	1.04	1.07	0.54	0.59	0.49	0.15	0.16	0.13	0.24
Total Carbon by Combustion	0.3	1.9	1.9	1.7	0.6	0.7	0.5	0.2	0.2	0.2	0.3
Total Organic Carbon	<0.1	0.9	0.9	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Plant Available Nutrients											
Cation Exchange Capacity	1.3	3.2	3.6	3.1	2.6	3.0	2.7	1.0	0.9	0.8	0.7
Available Phosphate-P	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1
Metals											
Aluminum (Al)	8300	10200	11300	9710	22000	20700	21300	8010	7840	7530	8250
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic (As)	<5.0	31.8	39.0	27.4	27.2	41.5	29.6	<5.0	<5.0	<5.0	<5.0
Barium (Ba)	68.9	282	382	277	47.2	71.8	49.6	44.0	50.5	45.0	46.4
Beryllium (Be)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	14700	29200	29000	28700	25900	29100	25700	11000	11300	9670	12600
Chromium (Cr)	98.8	50.1	53.5	59.1	42.7	42.7	41.7	45.8	62.8	56.1	46.4
Cobalt (Co)	11.9	19.9	22.1	19.3	16.9	18.9	17.9	8.6	8.9	8.7	9.3
Copper (Cu)	37.3	58.4	62.1	54.9	101	99.3	95.4	29.4	29.8	34.5	26.7
Iron (Fe)	32100	43600	45800	44700	46100	47500	46500	18500	22100	19600	18900
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium (Li)	6.7	8.1	8.7	7.8	13.2	12.8	13.5	6.8	6.3	6.5	7.4
Magnesium (Mg)	11400	23800	24400	23200	19900	18900	19700	9570	9540	9210	10700
Manganese (Mn)	384	1010	1030	991	1250	1310	1260	362	364	340	389
Mercury (Hg)	0.0077	0.105	0.108	0.0710	<0.0050	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	0.0069
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel (Ni)	26.3	63.9	71.4	62.9	22.8	25.0	24.2	21.7	22.0	20.6	21.7
Phosphorus (P)	624	1190	1360	1200	1210	1210	1230	573	580	569	655
Potassium (K)	410	1040	1230	920	610	600	530	440	410	380	400
Selenium (Se)	<0.50	<0.50	<0.50	<0.50	<0.50	0.82	0.65	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium (Na)	<200	230	250	220	<200	<200	<200	<200	<200	<200	<200
Strontium (Sr)	30.7	71.7	75.3	67.0	30.0	31.6	29.4	22.3	25.7	20.7	24.4
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium (Ti)	555	275	309	276	682	596	570	490	534	506	477
Vanadium (V)	99.6	64.7	68.1	69.7	115	107	109	50.9	65.3	56.8	53.5
Zinc (Zn)	27.2	60.0	65.2	60.7	121	126	121	26.9	26.3	24.5	28.1

(continued)

Appendix 3.2-1. Stream Sediment Data, 2008 (continued)

Sample ID	SC3 B	SC3 C	SC1 A	SC1 B	SC1 C	SC5 A	SC5 B	SC5 C	SC7 A	SC7 B	SC7 C
Date Sampled	06-SEP-08	06-SEP-08	06-SEP-08	06-SEP-08	06-SEP-08	07-SEP-08	07-SEP-08	07-SEP-08	07-SEP-08	07-SEP-08	07-SEP-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L683121-23	L683121-24	L683121-25	L683121-26	L683121-27	L683121-28	L683121-29	L683121-30	L683121-31	L683121-32	L683121-33
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Physical Tests											
pH	8.46	7.54	7.73	8.15	8.25	8.54	8.48	8.57	8.04	8.12	8.21
Particle Size											
% Gravel (>2mm)	<1	1	<1	1	2	<1	<1	<1	<1	<1	<1
% Sand (2.0mm - 0.063mm)	97	97	95	93	91	94	78	85	63	96	82
% Silt (0.063mm - 4um)	3	2	4	6	6	6	21	14	35	3	17
% Clay (<4um)	<1	<1	<1	<1	1	<1	1	1	2	1	1
Leachable Anions & Nutrients											
Total Nitrogen by LECO	<0.02	0.05	0.05	0.04	0.03	0.04	0.05	0.05	0.05	0.07	0.02
Organic / Inorganic Carbon											
CaCO3 Equivalent	1.9	1.8	3.7	3.8	3.4	1.1	1.3	1.0	1.5	1.5	1.3
Inorganic Carbon	0.21	0.20	0.42	0.44	0.39	0.11	0.14	0.11	0.17	0.16	0.14
Total Carbon by Combustion	0.3	0.3	0.5	0.5	0.4	0.1	0.3	0.2	0.4	0.3	0.2
Total Organic Carbon	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2	0.1	<0.1
Plant Available Nutrients											
Cation Exchange Capacity	1.0	0.9	1.1	1.1	1.0	1.1	1.7	1.3	2.0	1.1	1.5
Available Phosphate-P	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Metals											
Aluminum (Al)	8780	8290	8470	8180	7820	7230	7970	7450	8200	7290	7390
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic (As)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium (Ba)	57.6	60.8	124	96.1	93.0	48.9	59.9	58.4	72.6	51.7	56.2
Beryllium (Be)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	14400	12800	19300	18200	17400	8980	9900	8780	11300	9940	10200
Chromium (Cr)	53.1	156	34.2	30.2	27.8	83.8	49.3	145	65.0	60.1	45.8
Cobalt (Co)	9.8	12.9	8.6	7.9	7.4	8.7	8.6	11.0	9.4	8.6	8.4
Copper (Cu)	33.6	44.4	48.5	41.2	36.0	25.4	31.7	26.6	34.9	28.7	28.7
Iron (Fe)	21300	48400	31800	28500	27000	28100	20800	42800	26100	22400	19800
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium (Li)	7.5	6.8	8.6	8.2	7.5	5.9	7.1	6.2	7.2	6.4	6.6
Magnesium (Mg)	10600	10000	7640	7470	6780	8380	8950	8530	9240	8630	8820
Manganese (Mn)	403	403	426	405	380	340	374	372	379	346	353
Mercury (Hg)	0.0138	0.0071	0.0132	0.0100	0.0143	0.0172	0.0053	<0.0050	0.0075	0.0058	0.120
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel (Ni)	21.6	28.1	8.3	7.3	6.9	20.7	20.0	26.3	20.8	20.0	19.5
Phosphorus (P)	627	675	810	768	799	614	642	654	803	557	628
Potassium (K)	490	420	550	510	500	410	510	440	540	430	450
Selenium (Se)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium (Na)	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Strontium (Sr)	28.4	26.4	42.0	38.6	38.8	23.2	25.5	22.8	27.2	22.2	23.0
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium (Ti)	533	640	435	405	401	528	523	656	572	483	473
Vanadium (V)	60.5	165	104	91.8	87.4	86.2	57.4	144	75.4	63.9	53.9
Zinc (Zn)	29.8	30.9	29.0	28.0	26.7	25.3	27.1	27.0	29.3	26.2	26.6

(continued)

Appendix 3.2-1. Stream Sediment Data, 2008 (completed)

Sample ID	SKC3 A	SKC3 B	SKC3 C	MT1 A	MT1 B	MT1 C	WL8 A	WL8 B	WL8 C	DUP-E A	DUP-E B	DUP-E C
Date Sampled	07-SEP-08	07-SEP-08	07-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08	08-SEP-08			
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00			
ALS Sample ID	L683121-34	L683121-35	L683121-36	L683121-37	L683121-38	L683121-39	L683121-40	L683121-41	L683121-42	L683121-43	L683121-44	L683121-45
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Physical Tests												
pH	8.16	8.12	8.25	7.21	7.67	7.21	8.08	8.18	8.22	8.20	8.20	8.10
Particle Size												
% Gravel (>2mm)	8	2	<1	3	6	5	11	12	1	4	<1	6
% Sand (2.0mm - 0.063mm)	75	90	88	96	93	94	88	86	65	95	94	92
% Silt (0.063mm - 4um)	10	9	10	<1	1	1	<1	2	30	1	4	1
% Clay (<4um)	7	<1	2	1	<1	<1	<1	<1	4	<1	1	1
Leachable Anions & Nutrients												
Total Nitrogen by LECO	0.23	0.08	0.26	0.04	0.05	<0.02	<0.02	0.05	0.06	0.04	0.04	0.03
Organic / Inorganic Carbon												
CaCO3 Equivalent	<0.7	<0.7	0.7	1.8	2.0	1.6	2.0	1.6	2.4	1.8	1.9	2.0
Inorganic Carbon	<0.09	<0.09	<0.09	0.19	0.22	0.18	0.22	0.18	0.27	0.19	0.21	0.23
Total Carbon by Combustion	3.7	0.9	3.9	0.2	0.3	0.2	0.3	0.2	0.7	0.2	0.2	0.2
Total Organic Carbon	3.7	0.9	3.8	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1
Plant Available Nutrients												
Cation Exchange Capacity	17.0	9.2	15.5	2.9	2.1	2.6	1.0	1.6	6.6	3.2	3.2	2.8
Available Phosphate-P	1	1	1	1	<1	1	<1	<1	<1	<1	1	<1
Metals												
Aluminum (Al)	12500	13500	11400	16200	16000	16100	15900	16600	15800	15400	15600	16600
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic (As)	6.3	6.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium (Ba)	106	141	117	33.1	28.2	31.0	22.9	27.9	147	31.2	37.1	40.5
Beryllium (Be)	0.72	0.64	0.78	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	9120	7140	7140	14300	13800	12900	18000	19000	22000	12500	14200	13300
Chromium (Cr)	40.8	45.6	34.7	87.1	87.8	72.7	66.8	68.3	87.6	85.6	96.3	90.3
Cobalt (Co)	11.3	13.2	8.1	20.4	20.3	20.6	16.0	16.2	15.0	19.0	19.0	20.8
Copper (Cu)	21.6	21.3	15.2	58.9	50.1	69.8	55.6	57.5	75.8	59.7	59.4	57.8
Iron (Fe)	33400	34400	27500	41500	42000	37500	37100	38300	89400	39400	41200	42100
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium (Li)	9.4	10.0	9.0	15.2	14.4	15.4	15.3	15.1	13.0	14.9	14.9	15.9
Magnesium (Mg)	10400	13600	8160	24400	24400	25500	16100	16100	13000	23200	23000	25200
Manganese (Mn)	1920	3240	1130	679	691	690	483	501	1260	640	674	707
Mercury (Hg)	0.0278	0.0102	0.0222	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel (Ni)	42.9	62.1	31.4	46.9	44.9	45.8	27.4	27.5	22.1	43.7	44.9	47.8
Phosphorus (P)	605	587	462	1200	1220	1270	1240	1250	961	1130	1080	1250
Potassium (K)	630	640	900	360	320	270	300	300	420	370	390	340
Selenium (Se)	1.00	0.65	0.71	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium (Na)	760	750	1190	<200	<200	<200	<200	<200	<200	210	210	200
Strontium (Sr)	27.6	23.4	25.0	33.9	29.5	31.2	42.1	48.5	88.1	35.0	37.5	32.4
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium (Ti)	1100	974	1150	1150	1180	831	904	1040	1560	1160	1220	1150
Vanadium (V)	78.1	82.0	61.0	122	125	105	103	110	129	120	126	125
Zinc (Zn)	54.2	56.7	53.3	55.9	55.6	56.1	37.8	37.9	28.3	51.2	56.0	58.8

Appendix 3.2-2

Relative Percent Difference Results for Stream Sediment Data, 2008

Appendix 3.2-2. Relative Percent Difference Results for Stream Sediment Data, 2008

Sample ID	MT1 A	DUP-E A	RPD	MT1 B	DUP-E B	RPD	MT1 C	DUP-E C	RPD
Date Sampled	08-SEP-08			08-SEP-08			08-SEP-08		
pH	7.21	8.2	13	7.67	8.2	7	7.21	8.1	12
Total Nitrogen by LECO	0.04	0.04	0	0.05	0.04	*	**0.01**	0.03	*
CaCO3 Equivalent	1.8	1.8	0	2	1.9	5	1.6	2	*
Inorganic Carbon	0.19	0.19	0	0.22	0.21	5	0.18	0.23	*
Total Carbon by Combustion	0.2	0.2	0	0.3	0.2	*	0.2	0.2	0
Total Organic Carbon	**0.05**	**0.05**	*	**0.05**	**0.05**	*	**0.05**	**0.05**	*
Cation Exchange Capacity	2.9	3.2	10	2.1	3.2	*	2.6	2.8	7
Available Phosphate-P	1	**0.5**	*	**0.5**	1	*	1	**0.5**	*
Aluminum (Al)	16200	15400	5	16000	15600	3	16100	16600	3
Antimony (Sb)	**5**	**5**	*	**5**	**5**	*	**5**	**5**	*
Arsenic (As)	**2.5**	**2.5**	*	**2.5**	**2.5**	*	**2.5**	**2.5**	*
Barium (Ba)	33.1	31.2	6	28.2	37.1	27	31	40.5	27
Beryllium (Be)	**0.25**	**0.25**	*	**0.25**	**0.25**	*	**0.25**	**0.25**	*
Bismuth (Bi)	**10**	**10**	*	**10**	**10**	*	**10**	**10**	*
Cadmium (Cd)	**0.25**	**0.25**	*	**0.25**	**0.25**	*	**0.25**	**0.25**	*
Calcium (Ca)	14300	12500	13	13800	14200	3	12900	13300	3
Chromium (Cr)	87.1	85.6	2	87.8	96.3	9	72.7	90.3	22
Cobalt (Co)	20.4	19	7	20.3	19	7	20.6	20.8	1
Copper (Cu)	58.9	59.7	1	50.1	59.4	17	69.8	57.8	19
Iron (Fe)	41500	39400	5	42000	41200	2	37500	42100	12
Lead (Pb)	**15**	**15**	*	**15**	**15**	*	**15**	**15**	*
Lithium (Li)	15.2	14.9	2	14.4	14.9	3	15.4	15.9	3
Magnesium (Mg)	24400	23200	5	24400	23000	6	25500	25200	1
Manganese (Mn)	679	640	6	691	674	2	690	707	2
Mercury (Hg)	**0.0025**	**0.0025**	*	**0.0025**	**0.0025**	*	**0.0025**	**0.0025**	*
Molybdenum (Mo)	**2**	**2**	*	**2**	**2**	*	**2**	**2**	*
Nickel (Ni)	46.9	43.7	7	44.9	44.9	0	45.8	47.8	4
Phosphorus (P)	1200	1130	6	1220	1080	12	1270	1250	2
Potassium (K)	360	370	3	320	390	19	270	340	*
Selenium (Se)	**0.25**	**0.25**	*	**0.25**	**0.25**	*	**0.25**	**0.25**	*
Silver (Ag)	**1**	**1**	*	**1**	**1**	*	**1**	**1**	*
Sodium (Na)	**100**	210	*	**100**	210	*	**100**	200	*
Strontium (Sr)	33.9	35	3	29.5	37.5	24	31.2	32.4	4
Thallium (Tl)	**0.5**	**0.5**	*	**0.5**	**0.5**	*	**0.5**	**0.5**	*
Tin (Sn)	**2.5**	**2.5**	*	**2.5**	**2.5**	*	**2.5**	**2.5**	*
Titanium (Ti)	1150	1160	1	1180	1220	3	831	1150	32
Vanadium (V)	122	120	2	125	126	1	105	125	17
Zinc (Zn)	55.9	51.2	9	55.6	56	1	56.1	58.8	5

Results are expressed as milligrams per kilogram except where noted.

Values in bold are half the detection limit.

RPD = Relative Percent Difference relative to mean (in %).

** Denotes that RPD was not calculated due to one or more values being <5 times the detection limit.*

Highlighted values indicate a greater than 20% difference.

Appendix 3.3-1

Stream Periphyton Data, 2008

Appendix 3.3-1. Stream Periphyton Data, 2008

Rescan Schaft Creek Periphyton Samples	Sample ID					SKC3				
	Date		7-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom				4.75E+01	6.16E+03	1.16			
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	3.21E+02	2.12E+04	8.23	2.10E+03	2.38E+05	51.24	3.09E+01	2.18E+03	0.54
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom				5.94E+01	6.31E+04	1.45			
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom	4.52E+03	3.28E+06	115.94	9.27E+02	4.80E+05	22.58	2.97E+01	1.85E+04	0.52
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom							7.43E+00	4.20E+02	0.13
Cymatopleura solea	diatom									
Cymbella affinis	diatom	6.11E+01	2.85E+04	1.57	3.56E+01	3.52E+04	0.87			
Cymbella cistula	diatom	3.06E+01	2.79E+05	0.78	4.75E+01	8.92E+04	1.16			
Cymbella designata	diatom									
Cymbella minuta	diatom	7.64E+01	9.63E+03	1.96	2.14E+02	1.18E+05	5.21			
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom							1.49E+00	1.20E+04	0.03
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom							3.86E+00	3.35E+03	0.07
Didymosphaenia germinata	diatom				2.38E+01	1.26E+06	0.58			
Diploneis parma	diatom									
Encyonema minutum	diatom							3.56E+00	1.25E+03	0.06
Eunotia sp.	diatom									
Fragilaria capucina	diatom	3.51E+02	1.99E+05	9.01	3.92E+02	1.54E+05	9.55	5.64E+00	2.07E+03	0.10
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom				2.38E+01	6.48E+03	0.58	4.75E+00	8.03E+02	0.08
Gomphonema clevei	diatom				3.56E+01	6.36E+03	0.87			
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom	3.51E+02	1.04E+05	9.01	4.75E+01	1.09E+04	1.16			
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom							4.75E+00	4.11E+02	0.08
Hannaea arcus	diatom							8.91E-01	1.81E+03	0.02
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom							8.91E-01	1.57E+03	0.02

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SKC3				
	Date		7-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom				3.56E+01	2.72E+04	0.87			
Navicula cryptotenella	diatom									
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom				2.38E+01	3.92E+03	0.58			
Nitzschia perminuta	diatom							1.19E+00	2.89E+02	0.02
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom							8.91E-01	4.62E+02	0.02
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom				5.94E+01	1.81E+04	1.45	8.32E+00	9.15E+02	0.14
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green	9.17E+01	4.32E+03	2.35						
Sellaphora pupula	diatom				1.54E+02	1.60E+05	3.76			
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom				3.56E+01	4.70E+04	0.87			
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom									
Synedra ulna	diatom	5.65E+02	1.04E+06	14.49	2.73E+02	4.44E+05	6.66	1.57E+01	5.66E+04	0.27
Tabellaria flocculosa	diatom				4.16E+02	3.31E+05	10.13			
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	4.61E+04	4.97E+06	163.34	4.47E+04	3.50E+06	120.72	3.98E+04	1.03E+05	2.09

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SKC4				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	8.79E+03	6.83E+05	79.68	4.38E+01	2.68E+03	0.48	1.01E+03	2.28E+05	11.13
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria							6.24E+01	5.51E+02	0.69
Cocconeis placentula	diatom	117	134,699	1.1	4.86E+00	2.65E+03	0.05	8.91E+00	4.62E+03	0.10
Cyclotella bodanica	diatom	2.72E+02	5.40E+05	2.47						
Cyclotella bodanica var. lemanica	diatom				1.13E+01	4.11E+04	0.13			
Cyclotella meneghiniana	diatom				1.62E+00	7.70E+02	0.02			
Cyclotella ocellata	diatom				3.24E+00	3.99E+03	0.04			
Cyclotella sp.	diatom	4.67E+02	9.38E+04	4.23				1.34E+01	6.30E+03	0.15
Cymatopleura solea	diatom									
Cymbella affinis	diatom				9.72E+00	8.30E+03	0.11			
Cymbella cistula	diatom									
Cymbella designata	diatom	4.28E+02	4.72E+05	3.88				1.34E+01	1.41E+04	0.15
Cymbella minuta	diatom				8.10E+00	2.97E+03	0.09			
Cymbella silesiaca	diatom				8.10E+00	8.27E+03	0.09			
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom				4.52E+02	2.41E+05	4.99			
Diatoma tenuis	diatom	3.11E+02	2.79E+05	2.82				5.35E+01	2.02E+04	0.59
Diatoma vulgaris	diatom	7.78E+01	1.56E+02	0.71						
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom	1.01E+03	2.69E+05	9.17				1.02E+02	2.58E+04	1.13
Eunotia sp.	diatom									
Fragilaria capucina	diatom	7.39E+02	5.38E+05	6.70	6.81E+01	3.37E+04	0.75	7.58E+01	3.86E+04	0.84
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom	4.28E+02	7.11E+04	3.88				2.14E+02	2.98E+04	2.36
Gomphonema clevei	diatom									
Gomphonema gracile	diatom	1.56E+02	3.99E+04	1.41						
Gomphonema olivaceum	diatom				3.24E+00	1.16E+03	0.04			
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom							2.41E+02	1.79E+04	2.66
Hannaea arcus	diatom	3.11E+02	7.48E+05	2.82				2.23E+01	6.54E+04	0.25
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom	2.72E+02	1.26E+05	2.47				4.46E+00	2.84E+03	0.05
Meridion circulare	diatom									

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SKC4				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom							4.46E+00	3.59E+03	0.05
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom							8.91E+00	7.84E+02	0.10
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom	1.52E+03	2.96E+05	13.75				1.34E+01	2.41E+03	0.15
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom							4.46E+00	1.21E+04	0.05
Planktolyngbya limnetica	bluegreen							5.35E+01	5.67E+02	0.59
Planothidium lanceolatum	diatom	1.94E+02	3.30E+04	1.76						
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom									
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom							5.79E+01	1.71E+04	0.64
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom	3.89E+01	7.15E+03	0.35				1.34E+01	2.87E+03	0.15
Staurosirella pinnata	diatom	2.33E+02	2.57E+04	2.12				2.67E+01	2.20E+03	0.30
Surirella sp.	diatom									
Synedra acus	diatom				6.48E+00	9.94E+04	0.07			
Synedra tenera	diatom	1.56E+02	7.58E+04	1.41						
Synedra ulna	diatom	5.44E+02	3.63E+06	4.94	1.94E+01	3.99E+04	0.21	3.56E+01	1.84E+05	0.39
Tabellaria flocculosa	diatom	1.44E+03	6.66E+05	13.04	2.43E+01	8.94E+03	0.27			
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	5.72E+04	8.72E+06	158.65	4.04E+04	4.95E+05	7.34	4.17E+04	6.80E+05	22.50

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					WL8				
	Date		8-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom							1.05E+01	2.88E+03	0.16
Achnanthidium minutissimum	diatom	1.64E+01	3.54E+03	0.35	4.49E+01	3.18E+03	0.26	6.29E+01	5.78E+03	0.99
Amphipleura pellucida	diatom	4.99E+00	1.43E+04	0.11						
Amphora inariensis	diatom	2.85E+00	1.28E+03	0.06						
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom	8.56E+00	6.49E+04	0.18						
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom				2.14E+00	1.57E+03	0.01			
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom							2.10E+01	6.83E+05	0.33
Cymbella affinis	diatom									
Cymbella cistula	diatom	2.85E+00	1.14E+04	0.06						
Cymbella designata	diatom									
Cymbella minuta	diatom							1.63E+02	5.69E+04	2.56
Cymbella silesiaca	diatom	8.56E+00	9.04E+03	0.18						
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom	1.43E+00	4.44E+02	0.03						
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom									
Diploneis parma	diatom	1.43E+00	9.61E+02	0.03						
Encyonema minutum	diatom	1.14E+01	5.52E+03	0.24	3.42E+01	8.62E+03	0.20			
Eunotia sp.	diatom	2.85E+00	2.96E+02	0.06						
Fragilaria capucina	diatom	1.01E+02	2.49E+04	2.15	6.42E+01	2.96E+04	0.37	1.94E+02	1.23E+05	3.05
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom	4.99E+00	2.37E+03	0.11						
Gomphonema angustum	diatom									
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom							2.10E+01	9.96E+03	0.33
Gomphonema parvulum	diatom							2.62E+01	7.26E+03	0.41
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom									
Hannaea arcus	diatom									
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom	3.64E+01	1.17E+04	0.78	1.71E+01	6.07E+03	0.10	1.68E+02	8.78E+04	2.64

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					WL8				
	Date		8-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom							1.05E+01	6.18E+03	0.16
Navicula cuspidata	diatom	1.43E+00	3.85E+03	0.03						
Navicula elginensis	diatom	1.43E+00	2.87E+03	0.03						
Navicula gregaria	diatom				2.14E+00	2.54E+03	0.01			
Navicula halophila	diatom									
Navicula phyllepta	diatom							2.10E+01	1.24E+04	0.33
Navicula radiosa	diatom							1.42E+02	6.16E+05	2.23
Navicula sp.	diatom	2.85E+00	9.52E+02	0.06				5.24E+01	1.09E+05	0.82
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom	1.43E+00	1.30E+03	0.03						
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom							2.10E+01	2.55E+03	0.33
Nitzschia inconspicua	diatom				1.71E+01	3.85E+02	0.10			
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom	7.13E+00	1.31E+04	0.15						
Nitzschia palea	diatom	1.78E+01	1.68E+03	0.38	2.14E+00	7.32E+02	0.01	5.24E+01	1.18E+04	0.82
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom	1.43E+00	5.12E+03	0.03	2.14E+00	2.90E+03	0.01	6.82E+01	1.10E+05	1.07
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom	6.42E+00	1.59E+03	0.14				1.05E+01	8.70E+03	0.16
Pseudanabaena limnetica	cyanobacteria				3.21E+01	5.54E+02	0.19			
Reimeria sinuata	diatom									
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom							2.25E+02	2.20E+06	3.54
Rhopalodia gibberula	diatom							7.86E+01	1.64E+05	1.24
Scenedesmus sp.	green									
Sellaphora pupula	diatom							1.57E+01	1.43E+04	0.25
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom	1.43E+00	6.99E+02	0.03						
Staurosirella pinnata	diatom	6.42E+00	1.39E+03	0.14	1.28E+01	1.51E+03	0.07			
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom	6.42E+00	6.27E+03	0.14						
Synedra ulna	diatom	8.56E+00	6.79E+04	0.18				1.57E+01	3.16E+04	0.25
Tabellaria flocculosa	diatom	2.99E+01	7.20E+03	0.64						
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta							1.05E+01	1.48E+04	0.16
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta							1.57E+01	1.98E+03	0.25
Trachelomonas volvocina	Euglenophyta	7.13E-01	8.96E+01	0.02				5.24E+00	1.10E+03	0.08
Trachelomonas sp.	Euglenophyta									
	Total:	4.00E+04	2.65E+05	6.34	3.99E+04	5.77E+04	1.34	4.11E+04	4.28E+06	22.17

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					YC1				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	1.03E+03	8.04E+04	11.14	4.21E+03	3.28E+05	97.30	6.23E+03	4.41E+05	22.07
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom							3.06E+01	1.51E+04	0.11
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom				4.44E+02	1.89E+05	10.24			
Cymbella cistula	diatom									
Cymbella designata	diatom	2.98E+01	2.87E+04	0.32				2.44E+02	2.55E+05	0.87
Cymbella minuta	diatom				5.39E+02	3.46E+05	12.44			
Cymbella silesiaca	diatom									
Cymbella sp.	diatom				2.06E+02	3.39E+05	4.76			
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom	9.95E+00	2.58E+03	0.11						
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom				1.58E+02	4.03E+06	3.66	9.17E+01	2.73E+06	0.32
Diploneis parma	diatom									
Encyonema minutum	diatom	3.08E+02	7.40E+04	3.32				2.14E+03	8.90E+05	7.57
Eunotia sp.	diatom							3.06E+01	6.85E+04	0.11
Fragilaria capucina	diatom	2.93E+02	1.80E+05	3.16	5.55E+02	6.27E+04	12.80	1.80E+03	1.49E+06	6.38
Fragilaria parasitica	diatom				3.17E+01	8.21E+03	0.73			
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom	3.98E+01	1.14E+04	0.43				4.28E+02	1.01E+05	1.51
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom				6.34E+01	6.31E+03	1.46			
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom	5.97E+01	7.05E+03	0.64				6.72E+02	6.44E+05	2.38
Hannaea arcus	diatom	1.29E+02	3.36E+05	1.39	9.51E+01	9.63E+04	2.19	1.53E+02	4.20E+05	0.54
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom	4.97E+00	6.66E+03	0.05						
Meridion anceps	diatom									
Meridion circulare	diatom							9.17E+01	1.15E+05	0.32

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					YC1				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom	9.95E+00	1.20E+04	0.11	7.92E+01	5.04E+04	1.83			
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom				3.17E+01	2.02E+04	0.73			
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom	4.97E+00	1.04E+03	0.05						
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom							9.17E+01	2.89E+03	0.32
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom				7.92E+01	1.43E+05	1.83			
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom	5.97E+01	1.40E+04	0.64	3.17E+01	7.99E+03	0.73	3.06E+02	7.82E+04	1.08
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom				3.17E+01	1.19E+04	0.73			
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom									
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom	1.49E+01	1.07E+04	0.16						
Synedra ulna	diatom	2.49E+01	7.31E+04	0.27				2.44E+02	1.23E+06	0.87
Tabellaria flocculosa	diatom	1.99E+01	2.11E+04	0.21						
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta				3.17E+01	1.46E+04	0.73			
Trachelomonas sp.	Euglenophyta									
	Total:	4.17E+04	8.59E+05	22.01	4.63E+04	5.66E+06	152.18	5.23E+04	8.47E+06	44.47

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					MC10				
	Date	4-Aug-08			5-Aug-08			5-Aug-08		
	Replicate	A			B			C		
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	4.68E+02	3.97E+04	5.90	6.10E+02	6.03E+04	7.86	4.49E+02	3.18E+04	4.64
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom	2.23E+01	1.39E+04	0.28						
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom				7.49E+01	1.64E+05	0.96			
Cymbella designata	diatom	7.80E+01	8.58E+04	0.98						
Cymbella minuta	diatom				1.82E+02	5.45E+04	2.34	2.67E+02	4.64E+04	2.76
Cymbella silesiaca	diatom									
Cymbella sp.	diatom							4.28E+01	6.38E+04	0.44
Cymbella tumida	diatom	1.11E+01	6.81E+04	0.14						
Diatoma mesodon	diatom							5.35E+01	1.02E+05	0.55
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom	4.46E+01	1.83E+04	0.56	1.60E+02	4.31E+04	2.07	3.21E+01	1.22E+04	0.33
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom	5.74E+02	1.61E+05	7.23						
Eunotia sp.	diatom									
Fragilaria capucina	diatom	2.23E+02	1.26E+05	2.81	1.02E+03	5.27E+05	13.10	3.10E+02	6.97E+04	3.21
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom							2.00E+00	5.78E+03	0.02
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom	1.78E+02	4.45E+04	2.25						
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom				1.39E+02	4.82E+04	1.79	1.28E+02	1.16E+05	1.33
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom									
Hannaea arcus	diatom	1.11E+02	2.98E+05	1.40	1.82E+02	3.60E+05	2.34			
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom									

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					MC10				
	Date		4-Aug-08			5-Aug-08			5-Aug-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom				2.14E+01	1.21E+04	0.28			
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom				3.21E+01	1.07E+04	0.41			
Navicula radiosa	diatom							3.21E+01	1.57E+05	0.33
Navicula sp.	diatom							2.14E+01	1.06E+04	0.22
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom				9.63E+01	1.39E+04	1.24	2.14E+01	3.88E+04	0.22
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom	9.47E+01	1.97E+04	1.19						
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom	1.56E+02	1.29E+04	1.97						
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom	4.57E+02	1.25E+05	5.76	1.28E+02	1.48E+05	1.65	7.49E+01	5.56E+04	0.77
Synedra ulna	diatom	1.67E+02	8.31E+05	2.11	1.71E+02	5.47E+05	2.21	7.49E+01	9.31E+05	0.77
Tabellaria flocculosa	diatom									
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta							2.14E+01	2.38E+04	0.22
	Total:	4.22E+04	1.84E+06	32.58	4.25E+04	1.99E+06	36.25	4.12E+04	1.66E+06	15.83

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC1				18-Aug-08	
	Date		6-Aug-08			6-Aug-08					
	Replicate		A			B				C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	1.07E+01	8.32E+02	0.02	3.45E+00	2.60E+02	0.05	2.14E+00	1.08E+02	0.03
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom									
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom				1.15E+01	4.45E+03	0.16			
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom									
Eunotia sp.	diatom									
Fragilaria capucina	diatom	6.20E+01	2.19E+04	0.10	4.32E+02	4.08E+05	6.12	2.67E+01	1.31E+04	0.37
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom									
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom									
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom									
Hannaea arcus	diatom	8.56E+00	1.43E+04	0.01	1.03E+01	1.11E+04	0.15	8.02E+00	9.98E+03	0.11
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom							4.81E+00	3.15E+03	0.07

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC1				
	Date		6-Aug-08			6-Aug-08			18-Aug-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom									
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom									
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom				2.30E+00	5.20E+02	0.03			
Staurosira construens	diatom									
Staurosirella pinnata	diatom									
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom									
Synedra ulna	diatom									
Tabellaria flocculosa	diatom									
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
Total:		3.97E+04	3.70E+04	0.13	4.01E+04	4.24E+05	6.52	3.97E+04	2.64E+04	0.58

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC4				
	Date		6-Sep-08			6-Sep-08			6-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	3.21E+00	2.27E+02	0.03	7.49E+00	3.53E+02	0.14	4.07E+00	1.41E+02	0.06
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom							1.02E+00	5.85E+02	0.01
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom									
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom				2.14E+00	1.21E+03	0.04			
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom							1.36E+00	5.43E+02	0.02
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom									
Eunotia sp.	diatom									
Fragilaria capucina	diatom	9.63E+00	3.33E+03	0.08	4.28E+00	2.62E+03	0.08	2.38E+00	1.35E+03	0.03
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom									
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom									
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom				1.07E+00	8.52E+01	0.02			
Hannaea arcus	diatom	2.14E+00	4.23E+03	0.02	7.75E+00	1.69E+04	0.14	6.79E-01	5.12E+02	0.01
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom									

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC4				
	Date		6-Sep-08			6-Sep-08			6-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom							3.40E-01	3.71E+02	0.00
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom									
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom							6.79E-01	2.53E+02	0.01
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom				1.07E+00	3.99E+02	0.02			
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom	2.14E+00	7.70E+01	0.02						
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom							3.40E-01	3.36E+01	0.00
Nitzschia perminuta	diatom	1.07E+00	4.43E+02	0.01						
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom				4.28E+00	2.74E+02	0.08			
Rhodomonas sp.	cryptophyte				5.35E-01	4.54E+01	0.01			
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom							1.70E+00	2.40E+02	0.02
Staurosira construens	diatom									
Staurosirella pinnata	diatom				1.87E+00	1.76E+02	0.03			
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom									
Synedra ulna	diatom									
Tabellaria flocculosa	diatom	6.42E+00	5.27E+03	0.05						
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	3.97E+04	1.36E+04	0.20	3.97E+04	2.20E+04	0.55	3.97E+04	4.03E+03	0.18

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC5				
	Date		7-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	8.56E+02	7.26E+04	18.54	2.73E+01	3.53E+03	0.88	4.92E+01	4.52E+03	1.28
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom	1.28E+01	6.65E+03	0.28						
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom							1.07E+00	1.12E+04	0.03
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom							1.07E+00	5.83E+03	0.03
Cymbella designata	diatom									
Cymbella minuta	diatom									
Cymbella silesiaca	diatom							1.07E+00	7.02E+02	0.03
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom				4.28E+00	4.68E+03	0.14			
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom	9.41E+01	1.45E+04	2.04	2.35E+01	8.24E+03	0.76	2.67E+00	8.56E+02	0.07
Eunotia sp.	diatom									
Fragilaria capucina	diatom	3.42E+01	2.45E+04	0.74	1.50E+01	5.93E+03	0.48	4.12E+01	3.78E+03	1.07
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom							6.95E+00	2.27E+03	0.18
Gomphonema angustum	diatom	2.01E+02	4.55E+04	4.36	8.56E+00	2.02E+03	0.28			
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom							2.30E+01	1.27E+04	0.60
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom							4.81E+00	4.96E+02	0.13
Gomphonema tenellum	diatom	3.94E+02	6.72E+04	8.53	2.35E+01	2.71E+03	0.76			
Hannaea arcus	diatom	1.71E+01	3.90E+04	0.37	1.07E+00	2.45E+03	0.03	5.35E+00	4.20E+03	0.14
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom									

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC5				
	Date		7-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom							3.74E+00	1.54E+03	0.10
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom							1.07E+00	6.10E+02	0.03
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom				1.60E+00	7.22E+01	0.05	3.74E+00	2.70E+02	0.10
Nitzschia levidensis	diatom							5.35E-01	1.03E+02	0.01
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom							1.07E+00	5.48E+02	0.03
Pinnularia sp.	diatom							5.35E-01	1.27E+03	0.01
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom				6.42E+00	2.90E+03	0.21	9.63E+00	4.16E+03	0.25
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom	9.84E+01	6.20E+03	2.13	2.62E+01	3.25E+03	0.85	1.07E+01	1.69E+03	0.28
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom	1.71E+01	1.41E+03	0.37	2.14E+00	2.27E+02	0.07			
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom							5.35E-01	1.40E+02	0.01
Synedra ulna	diatom									
Tabellaria flocculosa	diatom	7.70E+01	6.90E+04	1.67						
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	4.15E+04	3.47E+05	39.03	3.98E+04	3.60E+04	4.51	3.99E+04	5.69E+04	4.38

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC8				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom	4.46E+00	8.40E+02	0.04	2.14E+00	2.02E+02	0.01	2.53E+00	4.65E+02	0.03
Achnanthidium minutissimum	diatom				3.53E+01	3.49E+03	0.18	1.40E+02	1.45E+04	1.88
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom				3.21E+00	2.08E+03	0.02	1.52E+00	2.53E+03	0.02
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom				2.25E+01	6.74E+02	0.12			
Cymbella silesiaca	diatom							1.01E+00	6.47E+02	0.01
Cymbella sp.	diatom				5.35E+00	4.71E+03	0.03	1.01E+00	6.20E+02	0.01
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom				2.14E+00	4.68E+04	0.01			
Diploneis parma	diatom									
Encyonema minutum	diatom							1.16E+01	1.21E+03	0.16
Eunotia sp.	diatom									
Fragilaria capucina	diatom	8.91E+00	4.62E+03	0.08	1.64E+02	9.64E+04	0.86	8.09E+00	3.97E+03	0.11
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom							5.06E-01	1.36E+03	0.01
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom									
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom							8.60E+00	1.36E+03	0.12
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom									
Hannaea arcus	diatom	1.78E+00	1.82E+03	0.02	4.28E+00	5.44E+03	0.02	2.02E+00	2.34E+03	0.03
Hantzschia amphioxys	diatom							1.52E+00	2.86E+03	0.02
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom	1.78E+00	5.15E+02	0.02						

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC8				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom				2.14E+00	1.26E+03	0.01	1.01E+00	7.63E+02	0.01
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom				2.14E+00	5.51E+03	0.01			
Navicula phyllepta	diatom				2.14E+00	5.54E+02	0.01			
Navicula radiosa	diatom				2.14E+00	1.92E+04	0.01			
Navicula sp.	diatom				2.14E+00	1.11E+03	0.01	1.01E+00	3.81E+03	0.01
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom							5.06E-01	2.18E+02	0.01
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom				3.21E+00	2.02E+02	0.02			
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom							1.01E+00	1.27E+02	0.01
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom							4.05E+00	6.20E+02	0.05
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom				9.63E+00	1.01E+03	0.05	7.58E+00	1.21E+03	0.10
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom				2.14E+00	3.02E+02	0.01			
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom				3.21E+00	2.04E+03	0.02			
Synedra ulna	diatom				3.21E+00	7.56E+03	0.02			
Tabellaria flocculosa	diatom							6.57E+00	2.53E+03	0.09
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta				3.21E+00	4.03E+02	0.02			
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
Total:		3.97E+04	7.80E+03	0.15	4.00E+04	1.99E+05	1.43	3.99E+04	4.12E+04	2.69

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID				SKC1					
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	1.47E+02	1.67E+04	2.09	6.95E+01	4.91E+03	0.36	5.08E+01	2.39E+03	1.11
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom	8.67E+00	9.30E+03	0.12						
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom	1.13E+02	2.56E+04	1.60						
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom				1.07E+00	4.76E+03	0.01			
Diatoma mesodon	diatom	2.60E+01	5.05E+04	0.37						
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom							5.08E+00	1.72E+03	0.11
Diatoma vulgaris	diatom				1.18E+01	1.28E+04	0.06	8.02E-01	8.39E+02	0.02
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom				4.06E+01	1.76E+04	0.21	1.07E+01	2.70E+03	0.23
Eunotia sp.	diatom									
Fragilaria capucina	diatom	5.61E+02	4.23E+05	7.94	5.35E+01	3.34E+04	0.28	2.14E+01	1.49E+04	0.47
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom				1.28E+01	2.18E+03	0.07			
Gomphonema clevei	diatom									
Gomphonema gracile	diatom	5.78E+00	8.28E+03	0.08						
Gomphonema olivaceum	diatom	4.91E+01	2.57E+04	0.70						
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom							4.28E+00	4.18E+02	0.09
Hannaea arcus	diatom	1.19E+02	1.84E+05	1.68	1.50E+01	2.84E+04	0.08	1.42E+01	3.03E+04	0.31
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom				4.28E+00	2.32E+03	0.02	1.28E+01	1.97E+04	0.28

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SKC1				
	Date		4-Sep-08			4-Sep-08			4-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom							5.35E-01	5.73E+02	0.01
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom				3.21E+00	1.75E+03	0.02			
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom				4.28E+00	1.35E+03	0.02			
Nitzschia perminuta	diatom							8.02E-01	3.10E+02	0.02
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen				1.93E+01	2.04E+02	0.10			
Planothidium lanceolatum	diatom							8.02E-01	1.97E+02	0.02
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom							1.07E+00	4.87E+01	0.02
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom	2.89E+01	6.81E+03	0.41	1.28E+01	1.81E+03	0.07	1.63E+01	1.35E+03	0.36
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom	2.02E+01	3.42E+04	0.29						
Synedra ulna	diatom	2.31E+01	1.76E+05	0.33	1.07E+00	7.69E+03	0.01	3.21E+00	1.15E+04	0.07
Tabellaria flocculosa	diatom	6.07E+01	1.99E+04	0.86	8.56E+00	4.96E+03	0.04	8.56E+00	6.15E+03	0.19
Tetracyclus rupestris	diatom	5.78E+00	1.01E+04	0.08						
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	4.09E+04	9.89E+05	16.54	4.00E+04	1.24E+05	1.35	3.98E+04	9.31E+04	3.30

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					MT1				
	Date		8-Sep-08			8-Sep-08			8-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	1.43E+00	9.07E+01	0.05	4.81E+00	2.55E+02	0.16			
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom									
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom									
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom	1.07E+00	3.70E+02	0.03						
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom	2.85E+00	5.59E+02	0.09	3.21E+01	5.84E+03	1.09			
Eunotia sp.	diatom									
Fragilaria capucina	diatom	2.50E+00	1.41E+03	0.08	2.14E+00	1.46E+03	0.07			
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom				1.60E+00	6.63E+02	0.05			
Gomphonema angustum	diatom	1.43E+00	3.28E+02	0.05	2.14E+00	3.79E+02	0.07	5.35E-01	9.32E+01	0.01
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom									
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom				6.95E+00	8.02E+02	0.24			
Hannaea arcus	diatom	4.63E+00	8.79E+03	0.15	9.09E+00	1.55E+04	0.31	1.60E+00	2.22E+03	0.04
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom	1.71E+01	1.80E+04	0.55	7.11E+01	5.70E+04	2.41	3.42E+01	3.24E+04	0.94

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					MT1				
	Date		8-Sep-08			8-Sep-08			8-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom									
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom				1.60E+00	5.44E+02	0.05	1.07E+00	5.85E+02	0.03
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom				1.07E+00	3.23E+02	0.04			
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom	1.78E+00	1.28E+02	0.06	1.07E+01	6.95E+02	0.36			
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom	4.28E+00	5.29E+02	0.14						
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom									
Synedra ulna	diatom				5.35E-01	1.94E+03	0.02			
Tabellaria flocculosa	diatom									
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	3.97E+04	3.02E+04	1.20	3.98E+04	8.54E+04	4.87	3.97E+04	3.53E+04	1.03

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC3				6-Sep-08	
	Date		6-Sep-08			6-Sep-08				C	
	Replicate		A			B					
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	
Achnanthes saccula	diatom										
Achnanthes sp.	diatom										
Achnanthidium minutissimum	diatom	1.07E+00	1.06E+02	0.02				4.81E+00	3.74E+02	0.10	
Amphipleura pellucida	diatom										
Amphora inariensis	diatom										
Asterionella formosa	diatom				2.32E+00	2.31E+03	0.04				
Aulacoseira granulata	diatom										
Caloneis sp.	diatom										
Chamaesiphon minutus	cyanobacteria										
Cocconeis placentula	diatom										
Cyclotella bodanica	diatom										
Cyclotella bodanica var. lemanica	diatom										
Cyclotella meneghiniana	diatom										
Cyclotella ocellata	diatom										
Cyclotella sp.	diatom										
Cymatopleura solea	diatom	2.67E-01	9.50E+04	0.00							
Cymbella affinis	diatom										
Cymbella cistula	diatom										
Cymbella designata	diatom										
Cymbella minuta	diatom	1.07E+00	5.17E+02	0.02							
Cymbella silesiaca	diatom										
Cymbella sp.	diatom										
Cymbella tumida	diatom										
Diatoma mesodon	diatom										
Diatoma monoliformis	diatom										
Diatoma tenuis	diatom										
Diatoma vulgaris	diatom										
Didymosphaenia germinata	diatom										
Diploneis parma	diatom										
Encyonema minutum	diatom							2.19E+01	6.05E+03	0.45	
Eunotia sp.	diatom										
Fragilaria capucina	diatom	1.34E+01	2.68E+03	0.25	3.03E+00	2.14E+03	0.05	3.85E+01	2.68E+04	0.80	
Fragilaria parasitica	diatom										
Frustulia rhomboides	diatom										
Frustulia sp.	diatom										
Gomphonema acuminatum	diatom										
Gomphonema angustatum	diatom										
Gomphonema angustum	diatom							2.14E+00	6.78E+02	0.04	
Gomphonema clevei	diatom										
Gomphonema gracile	diatom										
Gomphonema olivaceum	diatom										
Gomphonema parvulum	diatom										
Gomphonema sp.	diatom										
Gomphonema tenellum	diatom							6.42E+00	6.94E+02	0.13	
Hannaea arcus	diatom	1.07E+00	1.44E+03	0.02	8.91E-01	9.97E+02	0.02	1.02E+01	2.12E+04	0.21	
Hantzschia amphioxys	diatom										
Kirchneriella contorta	green										
Melosira circulare	diatom										
Meridion anceps	diatom										
Meridion circulare	diatom										

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC3				
	Date		6-Sep-08			6-Sep-08			6-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom									
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom				3.56E-01	1.54E+02	0.01			
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom							1.60E+00	4.64E+02	0.03
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom							1.60E+00	1.54E+03	0.03
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom							1.93E+01	1.64E+03	0.40
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom									
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom	5.35E-01	2.76E+02	0.01						
Synedra ulna	diatom									
Tabellaria flocculosa	diatom									
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	3.97E+04	1.00E+05	0.32	3.97E+04	5.61E+03	0.12	3.98E+04	5.94E+04	2.20

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC6				
	Date		5-Sep-08			5-Sep-08			5-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm3/mL	Cells x 106 per m2
Achnanthes saccula	diatom				1.02E+00	2.00E+02	0.03			
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	8.74E+00	7.41E+02	0.16	6.11E+00	2.50E+02	0.17	1.55E+00	7.30E+01	0.03
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom	1.03E+00	3.93E+02	0.02						
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom									
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom				4.07E+00	5.70E+02	0.12			
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom							1.55E+00	6.35E+02	0.03
Diatoma vulgaris	diatom									
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom	4.11E+01	1.15E+04	0.75				1.39E+01	2.93E+03	0.24
Eunotia sp.	diatom									
Fragilaria capucina	diatom	3.70E+01	2.14E+04	0.68	5.45E+01	1.35E+04	1.56	8.06E+01	2.91E+04	1.38
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom				1.02E+00	3.76E+02	0.03			
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom	3.09E+00	6.97E+02	0.06						
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom				2.55E+00	3.35E+02	0.07			
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom	4.11E+00	5.74E+02	0.08				3.10E+00	2.62E+02	0.05
Hannaea arcus	diatom	4.06E+01	5.93E+04	0.74	2.04E+00	2.68E+03	0.06	3.72E+01	5.38E+04	0.64
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green				2.55E+00	2.67E+01	0.07			
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom				1.02E+00	3.33E+02	0.03			

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC6				
	Date		5-Sep-08			5-Sep-08			5-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm3/mL	Cells x 106 per m2
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom	1.54E+00	9.39E+02	0.03						
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom									
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom	1.54E+00	4.16E+01	0.03				1.55E+00	8.37E+01	0.03
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom	5.55E+01	5.78E+03	1.01				7.75E+00	4.03E+02	0.13
Rhodomonas sp.	cryptophyte				2.60E+01	1.36E+03	0.74			
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom	1.65E+01	1.36E+03	0.30				1.39E+01	1.64E+03	0.24
Surirella sp.	diatom				5.09E-01	4.22E+02	0.01			
Synedra acus	diatom									
Synedra tenera	diatom									
Synedra ulna	diatom									
Tabellaria flocculosa	diatom									
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	3.99E+04	1.03E+05	3.85	3.98E+04	2.00E+04	2.90	3.99E+04	8.88E+04	2.76

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (continued)

Rescan Schaft Creek Periphyton Samples	Sample ID					SC7				
	Date		7-Sep-08			7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Achnanthes saccula	diatom									
Achnanthes sp.	diatom									
Achnanthidium minutissimum	diatom	6.42E+00	6.80E+02	0.14	1.12E+01	9.52E+02	0.21			
Amphipleura pellucida	diatom									
Amphora inariensis	diatom									
Asterionella formosa	diatom									
Aulacoseira granulata	diatom									
Caloneis sp.	diatom									
Chamaesiphon minutus	cyanobacteria									
Cocconeis placentula	diatom	1.07E+00	5.29E+02	0.02						
Cyclotella bodanica	diatom									
Cyclotella bodanica var. lemanica	diatom									
Cyclotella meneghiniana	diatom									
Cyclotella ocellata	diatom									
Cyclotella sp.	diatom							1.60E+00	1.06E+03	0.03
Cymatopleura solea	diatom									
Cymbella affinis	diatom									
Cymbella cistula	diatom									
Cymbella designata	diatom									
Cymbella minuta	diatom									
Cymbella silesiaca	diatom									
Cymbella sp.	diatom									
Cymbella tumida	diatom									
Diatoma mesodon	diatom									
Diatoma monoliformis	diatom									
Diatoma tenuis	diatom									
Diatoma vulgaris	diatom	8.02E-01	2.12E+02	0.02	1.60E+00	6.80E+02	0.03			
Didymosphaenia germinata	diatom									
Diploneis parma	diatom									
Encyonema minutum	diatom	1.07E+01	1.95E+03	0.23	3.74E+00	8.76E+02	0.07	3.21E+00	1.93E+03	0.06
Eunotia sp.	diatom									
Fragilaria capucina	diatom	1.36E+01	6.36E+03	0.29	4.28E+00	2.62E+03	0.08	1.28E+01	9.68E+03	0.22
Fragilaria parasitica	diatom									
Frustulia rhomboides	diatom									
Frustulia sp.	diatom									
Gomphonema acuminatum	diatom									
Gomphonema angustatum	diatom									
Gomphonema angustum	diatom	1.87E+00	3.69E+02	0.04	8.56E+00	1.91E+03	0.16			
Gomphonema clevei	diatom									
Gomphonema gracile	diatom									
Gomphonema olivaceum	diatom									
Gomphonema parvulum	diatom									
Gomphonema sp.	diatom									
Gomphonema tenellum	diatom	1.07E+00	9.81E+01	0.02	3.74E+00	2.43E+02	0.07			
Hannaea arcus	diatom	6.15E+00	1.23E+04	0.13	1.02E+01	2.01E+04	0.19			
Hantzschia amphioxys	diatom									
Kirchneriella contorta	green									
Melosira circulare	diatom									
Meridion anceps	diatom									
Meridion circulare	diatom							1.07E+00	4.98E+02	0.02

(continued)

Appendix 3.3-1. Stream Periphyton Data, 2008 (completed)

Rescan Schaft Creek Periphyton Samples	Sample ID									
	Date		7-Sep-08			SC7 7-Sep-08			7-Sep-08	
	Replicate		A			B			C	
Taxa	Group	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²	Density cells/mL	Biovolume µm³/mL	Cells x 106 per m²
Navicula capitatoradiata	diatom									
Navicula cryptocephala	diatom									
Navicula cryptotenella	diatom									
Navicula cuspidata	diatom									
Navicula elginensis	diatom									
Navicula gregaria	diatom	2.14E+00	2.12E+03	0.05						
Navicula halophila	diatom									
Navicula phyllepta	diatom									
Navicula radiosa	diatom									
Navicula sp.	diatom									
Navicula subminuscula	diatom									
Navicula suchlandtii	diatom									
Navicula veneta	diatom									
Neidium binodeformis	diatom									
Nitzschia acicularis	diatom									
Nitzschia amphibia	diatom									
Nitzschia constrictum	diatom									
Nitzschia fruticosa	diatom									
Nitzschia inconspicua	diatom									
Nitzschia levidensis	diatom									
Nitzschia linearis	diatom									
Nitzschia palea	diatom									
Nitzschia perminuta	diatom									
Nitzschia sp.	diatom									
Pinnularia sp.	diatom									
Planktolyngbya limnetica	bluegreen									
Planothidium lanceolatum	diatom									
Pseudanabaena limnetica	cyanobacteria									
Reimeria sinuata	diatom	1.07E+01	4.17E+02	0.23	1.07E+01	1.21E+03	0.20			
Rhodomonas sp.	cryptophyte									
Rhoicosphenia curvata	diatom									
Rhopalodia gibba	diatom									
Rhopalodia gibberula	diatom									
Scenedesmus sp.	green									
Sellaphora pupula	diatom									
Staurosira construens var. elliptica	diatom									
Staurosira construens	diatom									
Staurosirella pinnata	diatom									
Surirella sp.	diatom									
Synedra acus	diatom									
Synedra tenera	diatom									
Synedra ulna	diatom									
Tabellaria flocculosa	diatom									
Tetracyclus rupestris	diatom									
Trachelomonas charkowiensis	Euglenophyta									
Trachelomonas pulchella	Euglenophyta									
Trachelomonas pulcherrima	Euglenophyta									
Trachelomonas volvocina	Euglenophyta									
Trachelomonas sp.	Euglenophyta									
	Total:	3.98E+04	2.51E+04	1.17	3.98E+04	2.86E+04	0.99	3.97E+04	1.32E+04	0.33

Appendix 3.3-2

Chlorophyll α Stream Data, 2008

Appendix 3.3-2. Chlorophyll *a* Stream Data, 2008

Site	Chl a (µg)	Area sampled (cm^2)	Chlorophyll a (µg/cm^2)
YC1 A	0.907	7.06	0.128
YC1 B	9.16	7.06	1.297
YC1 C	5.78	7.06	0.819
SC8 A	0.755	7.06	0.107
SC8 B	0.428	7.06	0.061
SC8 C	0.234	7.06	0.033
SKC4 A	5.79	7.06	0.820
SKC4 B	2.26	7.06	0.320
SKC4 C	1.51	7.06	0.214
SC6 A	2.72	7.06	0.385
SC6 B	7.50	7.06	1.062
SC6 C	3.70	7.06	0.524
MC10 A	0.416	7.06	0.059
MC10 B	1.37	7.06	0.194
MC10 C	1.84	7.06	0.261
SKC1 A	1.93	7.06	0.273
SKC1 B	1.86	7.06	0.263
SKC1 C	1.30	7.06	0.184
SC4 A	2.17	7.06	0.307
SC4 B	2.99	7.06	0.424
SC4 C	0.922	7.06	0.131
SC3 A	0.917	7.06	0.130
SC3 B	2.29	7.06	0.324
SC3 C	8.17	7.06	1.157
SC1 A	7.21	7.06	1.021
SC1 B	9.62	7.06	1.363
SC1 C	10.0	7.06	1.416
SC5 A	3.20	7.06	0.453
SC5 B	0.284	7.06	0.040
SC5 C	1.54	7.06	0.218
SC7 A	1.31	7.06	0.186
SC7 B	1.01	7.06	0.143
SC7 C	0.959	7.06	0.136
SKC3 A	1.72	7.06	0.244
SKC3 B	1.19	7.06	0.169
SKC3 C	2.73	7.06	0.387
MT1 A	1.57	7.06	0.222
MT1 B	3.95	7.06	0.559
MT1 C	0.978	7.06	0.139
WL8 A	0.506	7.06	0.072
WL8 B	1.67	7.06	0.237
WL8 C	0.217	7.06	0.031

Appendix 3.4-1

Schaft Creek Project Stream Benthic Invertebrate Data, 2008

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008

TAXON	STAGE	Total No. of individuals	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E	WL8-A	WL8-B	WL8-C	SC6-A	SC6-B	SC6-C
PLATYHELMINTHES													
Polycelis sp.	A	*128*											
NEMATODA													
Nematoda indet.	A	*1,120*		1		3		6	1	1			
ANNELIDA													
Oligochaeta													
Enchytraeidae													
Enchytraeidae indet.	J	*830*						18	26	18			
Enchytraeidae indet.	A	*1,856*						12					
Henlea sp.	A	*1,056*											
Lumbriculidae													
Rhynchelmis sp.	A	*40*											
Naididae													
Naididae indet. Group 1													
Amphichaeta raptisae	A	*16*											
Naididae indet. Group 2													
Pristina jenkinae	A	*1,184*											
Pristina sp.	A	*32*											
Naididae indet. Group 5													
Nais communis	A	*1*							1				
Tubificoid Naididae													
Tubificoid Naididae Group 2	A	*192*											
Rhyacodrilus sp.	A	*17*								1			
Tubificoid Naididae Group 5													
Limnodrilus sp.	J	*2*								2			
Limnodrilus sp.	A	*1*								1			
MOLLUSCA													
Gastropoda													
Gastropoda indet.	A	*224*											
Bivalvia													
Sphaeriidae													
Pisidium casertanum	J	*192*											
Pisidium casertanum	A	*256*											
Pisidium spp.	J	*1,184*											
ARTHROPODA													
ARACHNIDA													
Acari													
Acari indet.	A	*1,882*							1			1	
Oribatei indet.	A	*689*							1				
Aturidae													
Aturus sp.	A	*1,856*											
Hydryphantidae													
Wandesia sp.	A	*7*						6	1				
Hygrobatidae													
Atractides sp.	A	*64*											
Hygrobates sp.	A	*769*								1			

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E	WL8-A	WL8-B	WL8-C	SC6-A	SC6-B	SC6-C
Lebertiidae													
Lebertia sp.	A	*864*											
Sperchontidae													
Sperchon sp.	A	*984*											
Stygothrombiidae													
Stygothrombium sp.	A	*96*											
Torrenticolidae													
Testudacarus sp.	A	*2,280*											
CRUSTACEA													
Copepoda													
Cyclopoida													
Cyclopoida indet.	cpp	*736*								4		1	1
Harpacticoida													
Harpacticoida indet.	cpp	*5,472*											
Ostracoda													
Ostracoda indet.	A	*95,861*						42	60	9			
Cladocera													
Bosminidae													
Bosmina sp.	A	*2,076*											
Daphniidae													
Ceriodaphnia sp.	A	*72*											
Daphnia sp.	A	*16*											
Chydoridae													
Chydoridae indet.	A	*576*											
Chydorus sp.	A	*96*											
Amphipoda													
Gammaridae													
Gammarus sp.	A	*576*											
INSECTA													
Ephemeroptera													
Ephemeroptera indet.	N	*64*											
Ameletidae													
Ameletus sp.	N	*8,044*						6		4			
Baetidae													
Baetidae indet.	N	*596*	1				1						
Baetis bicaudatus	N	*1,136*									1		5
Baetis tricaudatus	N	*4,154*											
Baetis sp.	N	*15,362*											
Diphetor hageni	N	*1,056*											
Ephemerellidae													
Ephemerellidae indet.	N	*4,552*											
Drunella coloradensis/flavilinea	N	*48*											
Drunella doddsi	N	*1,146*											
Drunella grandis	N	*32*											
Ephemerella sp.	N	*1,720*											
Serratella tibialis	N	*96*											
Serratella sp.	N	*256*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E	WL8-A	WL8-B	WL8-C	SC6-A	SC6-B	SC6-C
Heptageniidae													
Heptageniidae indet.	N	*7,280*						12					
Cinygmula sp.	N	*3,588*											
Epeorus deceptivus/hesperus	N	*152*											
Epeorus grandis/permagnus	N	*58*						6					
Epeorus sp.	N	*423*							1				
Rhithrogena sp.	N	*9,279*		1	1							1	
Leptophlebiidae													
Paraleptophlebia sp.	N	*1,920*											
Siphlonuridae													
Siphlonuridae indet.	N	*16*											
Plecoptera													
Plecoptera indet.	N	*21,657*						66	11	20			
Capnidae													
Capniidae indet.	N	*38,593*				1		168	34	21			1
Capnia sp.	N	*227*			1								
Chloroperlidae													
Chloroperlidae indet.	N	*4,759*						30	1	1	4	16	1
Paraperla sp.	N	*64*											
Suwallia sp.	N	*24*											
Sweltsa sp.	N	*6,864*											
Leuctridae													
Leuctridae indet.	N	*18,624*											
Paraleuctra sp.	N	*5,254*						6					
Nemouridae													
Nemouridae indet.	N	*1,435*						60		10			3
Visoka cataractae	N	*2,400*											
Zapada cinctipes	N	*2,103*						42	5				
Zapada columbiana	N	*3,240*											
Zapada oregonensis Grp.	N	*2,274*						6		8			
Zapada sp.	N	*56,784*											
Perlidae													
Hesperoperla pacifica	N	*8,408*											
Perlodidae													
Perlodidae indet.	N	*580*											
Isoperla sp.	N	*1,574*											
Megarcys sp.	N	*210*											
Skwala sp.	N	*66*											
Pteronarcyidae													
Pteronarcys princeps	N	*2*									1	1	
Taeniopterygidae													
Taeniopterygidae indet.	N	*6,415*									3	2	4
Hemiptera													
Corixidae													
Callicorixa sp.	L	*32*											
Trichoptera													
Brachycentridae													
Micrasema sp.	L	*32*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E	WL8-A	WL8-B	WL8-C	SC6-A	SC6-B	SC6-C
Glossosomatidae													
Glossosomatidae indet.	L	*96*											
Anagapetus sp.	L	*16*											
Glossosoma sp.	L	*2,368*											
Hydropsychidae													
Arctopsychinae indet.	L	*84*											
Parapsyche elsis	L	*112*											
Parapsyche sp.	L	*64*											
Limnephilidae													
Limnephilidae indet.	L	*154*								2			
Ecclisomyia sp.	L	*32*											
Psychoglypha sp.	L	*64*											
Rhyacophilidae													
Rhyacophila betteni Grp.	L	*1,664*											
Rhyacophila brunnea Grp.	L	*256*											
Rhyacophila coloradensis Grp.	L	*776*											
Rhyacophila hyalinata Grp.	L	*1,296*											
Rhyacophila narvae	L	*768*											
Rhyacophila pellisa/valuma	L	*96*											
Rhyacophila sp.	L	*1,728*											
Diptera													
Blephariceridae													
Agathon sp.	L	*112*											
Bibiocephala sp.	L	*4*											
Ceratopogonidae													
Bezzia/Palpomyia sp.	L	*1,536*											
Chironominae													
Chironomini													
Chironomini indet.	L	*128*											
Phaenopsectra sp.	L	*16*											
Polypedilum sp.	L	*22*						6					
Tanytarsini													
Tanytarsini indet.	L	*95*				3							
Micropsectra sp.	L	*274,195*						90	7	2			
Micropsectra sp.	P	*32*											
Rheotanytarsus sp.	L	*580*											
Stempellinella sp.	L	*896*											
Diamesinae													
Diamesa sp.	L	*1,304*	23	4	2	3	3			1		5	5
Diamesa sp.	P	*19*	1										
Pagastia sp.	L	*11,512*							2				
Pseudodiamesa sp.	L	*3*								3			
Orthocladiinae													
Orthocladiinae indet.	L	*204*											
Orthocladiinae indet.	P	*16*											
Brillia sp.	L	*2,403*							2	1			
Chaetocladius sp.	L	*2,277*	1	1	9	1						1	4
Corynoneura sp.	L	*768*											
Corynoneura sp.	P	*384*											
Cricotopus sp.	L	*16*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E	WL8-A	WL8-B	WL8-C	SC6-A	SC6-B	SC6-C
Diplocladius sp.	L	*7*							3	4			
Eukiefferiella brevicalcar Grp.	L	*159*						72	2	17			
Eukiefferiella brevicalcar Grp.	P	*2*								2			
Eukiefferiella claripennis Grp.	L	*32*											
Eukiefferiella claripennis Grp.	P	*64*											
Eukiefferiella gracei Grp.	L	*963*	1										
Eukiefferiella gracei Grp.	P	*82*								2			
Eukiefferiella tirolensis	L	*96*											
Eukiefferiella sp.	L	*485*			1								
Heleniella sp.	L	*1,344*											
Heterotrissocladius marcidus Grp.	L	*4*											
Hydrobaenus sp.	L	*1,128*						18	1	4			1
Limnophyes sp.	L	*2*							2				
Orthocladius (Euorthocladius) sp.	L	*576*											
Orthocladius (Symp.) *lignicola*	L	*224*											
Orthocladius Complex	L	*7,808*											
Orthocladius sp.	L	*1,054*						6					
Parakiefferiella sp.	L	*1,451*										1	
Parametriocnemus sp.	L	*1,792*											
Paraphaenocladius "n. sp."	L	*992*											
Parorthocladius sp.	L	*64*											
Psilometriocnemus sp.	L	*384*											
Rheocricotopus sp.	L	*2,289*						12	1				
Rheocricotopus sp.	P	*38*						6					
Rheosmittia sp.	L	*128*											
Smittia sp.	L	*4*											
Thienemanniella sp.	L	*1,560*											
Thienemannimyia Grp. sp.	L	*256*											
Tvetenia bavarica Grp.	L	*2,218*							2				
Tvetenia bavarica Grp.	P	*128*											
Podonominae													
Trichotanypus sp.	L	*2*											
Tanypodinae													
Zavrelimyia sp.	L	*774*						6					
Empididae													
Empididae indet.	L												
Empididae indet.	P	*40*											
Chelifera/Metachela sp.	L	*1,133*						12	1				
Clinocera sp.	L	*40*											
Neoplasta sp.	L	*224*											
Oreogeton sp.	L	*448*											
Wiedemannia sp.	L	*608*											
Simuliidae													
Simuliidae indet.	L	*144*											
Simuliidae indet.	P	*10*						6					
Prosimulium sp.	L	*2*											
Simulium sp.	L	*374*						6					
Simulium sp.	P	*64*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E	WL8-A	WL8-B	WL8-C	SC6-A	SC6-B	SC6-C
Tipulidae													
Tipulidae indet.	L	*1*								1			
Dicranota sp.	L	*2,327*						12	12	7			
Hesperoconopa sp.	L	*140*											
Hexatoma sp.	L	*4*											
Ormosia sp.	L	*2*							1	1			
Rhabdomastix setigera Grp.	L	*32*											
Total Number of Organisms		*703,701*	27	7	14	11	4	738	179	148	9	29	25
Total Number of Taxa		*123*	4	4	5	5	2	21	21	22	4	9	9
MEMO													
Empheroptera indet.	A	*1*			1								
Diptera indet.	A	*2*			2								

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC6-D	SC6-E	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D
PLATYHELMINTHES													
Polycelis sp.	A	*64*											
NEMATODA													
Nematoda indet.	A	*554*											
ANNELIDA													
Oligochaeta													
Enchytraeidae													
Enchytraeidae indet.	J	*384*											
Enchytraeidae indet.	A	*922*											
Henlea sp.	A	*528*											
Lumbriculidae													
Rhynchelmis sp.	A	*20*											
Naididae													
Naididae indet. Group 1													
Amphichaeta raptisae	A	*8*											
Naididae indet. Group 2													
Pristina jenkinae	A	*592*											
Pristina sp.	A	*16*											
Naididae indet. Group 5													
Nais communis	A												
Tubificoid Naididae													
Tubificoid Naididae Group 2	A	*96*											
Rhyacodrilus sp.	A	*8*											
Tubificoid Naididae Group 5													
Limnodrilus sp.	J												
Limnodrilus sp.	A												
MOLLUSCA													
Gastropoda													
Gastropoda indet.	A	*112*											
Bivalvia													
Sphaeriidae													
Pisidium casertanum	J	*96*											
Pisidium casertanum	A	*128*											
Pisidium spp.	J	*592*											
ARTHROPODA													
ARACHNIDA													
Acari													
Acari indet.	A	*940*											
Oribatei indet.	A	*344*											
Aturidae													
Aturus sp.	A	*928*											
Hydryphantidae													
Wandesia sp.	A												
Hygrobatidae													
Atractides sp.	A	*32*											
Hygrobates sp.	A	*384*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC6-D	SC6-E	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D
Lebertiidae													
Lebertia sp.	A	*432*											
Sperchontidae													
Sperchon sp.	A	*492*											
Stygothrombiidae													
Stygothrombium sp.	A	*48*											
Torrenticolidae													
Testudacarus sp.	A	*1,140*											
CRUSTACEA													
Copepoda													
Cyclopoida													
Cyclopoida indet.	cpp	*365*					1						
Harpacticoida													
Harpacticoida indet.	cpp	*2,736*											
Ostracoda													
Ostracoda indet.	A	*47,875*								1			
Cladocera													
Bosminidae													
Bosmina sp.	A	*1,038*											
Daphniidae													
Ceriodaphnia sp.	A	*36*											
Daphnia sp.	A	*8*											
Chydoridae													
Chydoridae indet.	A	*288*											
Chydorus sp.	A	*48*											
Amphipoda													
Gammaridae													
Gammarus sp.	A	*288*											
INSECTA													
Ephemeroptera													
Ephemeroptera indet.	N	*32*											
Ameletidae													
Ameletus sp.	N	*4,017*		1									
Baetidae													
Baetidae indet.	N	*297*		1									
Baetis bicaudatus	N	*565*	1	5			1	1		2	1	2	
Baetis tricaudatus	N	*2,077*			1								
Baetis sp.	N	*7,681*											3
Diphetor hageni	N	*528*											
Ephemerellidae													
Ephemerellidae indet.	N	*2,276*											
Drunella coloradensis/flavilinea	N	*24*											
Drunella doddsi	N	*573*		1									
Drunella grandis	N	*16*											
Ephemerella sp.	N	*860*											
Serratella tibialis	N	*48*											
Serratella sp.	N	*128*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC6-D	SC6-E	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D
Heptageniidae													
Heptageniidae indet.	N	*3,634*											
Cinygmula sp.	N	*1,794*											
Epeorus deceptivus/hesperus	N	*76*											
Epeorus grandis/permagnus	N	*26*		2									
Epeorus sp.	N	*211*	1										
Rhithrogena sp.	N	*4,638*	4	8									6
Leptophlebiidae													
Paraleptophlebia sp.	N	*960*											
Siphlonuridae													
Siphlonuridae indet.	N	*8*											
Plecoptera													
Plecoptera indet.	N	*10,780*	3				1						
Capnidae													
Capniidae indet.	N	*19,184*	1	1	1		3					2	
Capnia sp.	N	*113*										2	3
Chloroperlidae													
Chloroperlidae indet.	N	*2,353*	6	11	22	6	2	24	9	7	13	18	3
Paraperla sp.	N	*32*											
Suwallia sp.	N	*12*											
Sweltsa sp.	N	*3,432*											
Leuctridae													
Leuctridae indet.	N	*9,312*											
Paraleuctra sp.	N	*2,624*											
Nemouridae													
Nemouridae indet.	N	*681*	1	1			1		1	2			9
Visoka cataractae	N	*1,200*											
Zapada cinctipes	N	*1,028*											
Zapada columbiana	N	*1,620*											
Zapada oregonensis Grp.	N	*1,130*							1				3
Zapada sp.	N	*28,392*											
Perlidae													
Hesperoperla pacifica	N	*4,204*											
Perlodidae													
Perlodidae indet.	N	*290*	2							4			6
Isoperla sp.	N	*787*		1								2	6
Megarcys sp.	N	*105*					1						
Skwala sp.	N	*33*		1									
Pteronarcyidae													
Pteronarcys princeps	N												
Taeniopterygidae													
Taeniopterygidae indet.	N	*3,203*	4	5						1		1	
Hemiptera													
Corixidae													
Callicorixa sp.	L	*16*											
Trichoptera													
Brachycentridae													
Micrasema sp.	L	*16*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC6-D	SC6-E	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D
Glossosomatidae													
Glossosomatidae indet.	L	*48*											
Anagapetus sp.	L	*8*											
Glossosoma sp.	L	*1,184*											
Hydropsychidae													
Arctopsychinae indet.	L	*42*											
Parapsyche elsis	L	*56*											
Parapsyche sp.	L	*32*											
Limnephilidae													
Limnephilidae indet.	L	*76*											
Ecclisomyia sp.	L	*16*											
Psychoglypha sp.	L	*32*											
Rhyacophilidae													
Rhyacophila betteni Grp.	L	*832*											
Rhyacophila brunnea Grp.	L	*128*											
Rhyacophila coloradensis Grp.	L	*388*											
Rhyacophila hyalinata Grp.	L	*648*											
Rhyacophila narvae	L	*384*											
Rhyacophila pellisa/valuma	L	*48*											
Rhyacophila sp.	L	*864*											
Diptera													
Blephariceridae													
Agathon sp.	L	*56*											
Bibiocephala sp.	L	*2*											
Ceratopogonidae													
Bezzia/Palpomyia sp.	L	*768*											
Chironominae													
Chironomini													
Chironomini indet.	L	*64*											
Phaenopsectra sp.	L	*8*											
Polypedilum sp.	L	*8*											
Tanytarsini													
Tanytarsini indet.	L	*46*					2						
Micropsectra sp.	L	*137,048*											
Micropsectra sp.	P	*16*											
Rheotanytarsus sp.	L	*290*											
Stempellinella sp.	L	*448*											
Diamesinae													
Diamesa sp.	L	*629*	4	11	4	6	7		1	1	2		3
Diamesa sp.	P	*9*		1									
Pagastia sp.	L	*5,755*							1				
Pseudodiamesa sp.	L												
Orthocladiinae													
Orthocladiinae indet.	L	*102*				6	6					2	
Orthocladiinae indet.	P	*8*											
Brillia sp.	L	*1,200*											
Chaetocladius sp.	L	*1,130*	6				1	2	2	8	5	2	6
Corynoneura sp.	L	*384*											
Corynoneura sp.	P	*192*											
Cricotopus sp.	L	*8*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC6-D	SC6-E	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D
Diplocladius sp.	L												
Eukiefferiella brevicalcar Grp.	L	*34*								4			
Eukiefferiella brevicalcar Grp.	P												
Eukiefferiella claripennis Grp.	L	*16*											
Eukiefferiella claripennis Grp.	P	*32*											
Eukiefferiella gracei Grp.	L	*481*								5			6
Eukiefferiella gracei Grp.	P	*40*											
Eukiefferiella tirolensis	L	*48*											
Eukiefferiella sp.	L	*242*											
Heleniella sp.	L	*672*											
Heterotrissocladius marcidus Grp.	L	*2*											
Hydrobaenus sp.	L	*552*											
Limnophyes sp.	L												
Orthocladius (Euorthocladius) sp.	L	*288*											
Orthocladius (Symp.) *lignicola*	L	*112*											
Orthocladius Complex	L	*3,904*											
Orthocladius sp.	L	*524*											
Parakiefferiella sp.	L	*725*									1		
Parametriocnemus sp.	L	*896*											
Paraphaenocladius "n. sp."	L	*496*											
Parorthocladius sp.	L	*32*											
Psilometriocnemus sp.	L	*192*											
Rheocricotopus sp.	L	*1,138*											
Rheocricotopus sp.	P	*16*											
Rheosmittia sp.	L	*64*											
Smittia sp.	L	*2*											
Thienemanniella sp.	L	*780*											
Thienemannimyia Grp. sp.	L	*128*											
Tvetenia bavarica Grp.	L	*1,108*											
Tvetenia bavarica Grp.	P	*64*											
Podonominae													
Trichotanypus sp.	L	*1*									1		
Tanypodinae													
Zavrelimyia sp.	L	*384*											
Empididae													
Empididae indet.	L												
Empididae indet.	P	*20*											
Chelifera/Metachela sp.	L	*560*											
Clinocera sp.	L	*20*											
Neoplasta sp.	L	*112*											
Oreogeton sp.	L	*224*											
Wiedemannia sp.	L	*304*											
Simuliidae													
Simuliidae indet.	L	*72*											
Simuliidae indet.	P	*2*											
Prosimulium sp.	L	*1*								1			
Simulium sp.	L	*184*											
Simulium sp.	P	*32*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC6-D	SC6-E	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D
Tipulidae													
Tipulidae indet.	L												
Dicranota sp.	L	*1,148*											
Hesperoconopa sp.	L	*70*											
Hexatoma sp.	L	*2*											
Ormosia sp.	L												
Rhabdomastix setigera Grp.	L	*16*											
Total Number of Organisms		*351,255*	33	50	28	18	26	27	15	36	23	31	54
Total Number of Taxa		*123*	10	12	4	3	9	3	5	11	6	6	9
MEMO													
Empheroptera indet.	A												
Diptera indet.	A												

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC4-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	SC5-A	SC5-B	SC5-C	SC5-D	SC5-E
PLATYHELMINTHES													
Polycelis sp.	A	*32*											
NEMATODA													
Nematoda indet.	A	*277*		1									
ANNELIDA													
Oligochaeta													
Enchytraeidae													
Enchytraeidae indet.	J	*192*											
Enchytraeidae indet.	A	*461*									1		
Henlea sp.	A	*264*											
Lumbriculidae													
Rhynchelmis sp.	A	*10*											2
Naididae													
Naididae indet. Group 1													
Amphichaeta raptisae	A	*4*											
Naididae indet. Group 2													
Pristina jenkinae	A	*296*											
Pristina sp.	A	*8*											
Naididae indet. Group 5													
Nais communis	A												
Tubificoid Naididae													
Tubificoid Naididae Group 2	A	*48*											
Rhyacodrilus sp.	A	*4*											
Tubificoid Naididae Group 5													
Limnodrilus sp.	J												
Limnodrilus sp.	A												
MOLLUSCA													
Gastropoda													
Gastropoda indet.	A	*56*											
Bivalvia													
Sphaeriidae													
Pisidium casertanum	J	*48*											
Pisidium casertanum	A	*64*											
Pisidium spp.	J	*296*											
ARTHROPODA													
ARACHNIDA													
Acari													
Acari indet.	A	*470*											
Oribatei indet.	A	*172*						1	1				
Aturidae													
Aturus sp.	A	*464*											
Hydryphantidae													
Wandesia sp.	A												
Hygrobatidae													
Atractides sp.	A	*16*											
Hygrobates sp.	A	*192*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC4-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	SC5-A	SC5-B	SC5-C	SC5-D	SC5-E
Lebertiidae													
Lebertia sp.	A	*216*											
Sperchontidae													
Sperchon sp.	A	*246*											
Stygothrombiidae													
Stygothrombium sp.	A	*24*											
Torrenticolidae													
Testudacarus sp.	A	*570*											
CRUSTACEA													
Copepoda													
Cyclopoida													
Cyclopoida indet.	cpp	*182*											
Harpacticoida													
Harpacticoida indet.	cpp	*1,368*											
Ostracoda													
Ostracoda indet.	A	*23,937*									1		
Cladocera													
Bosminidae													
Bosmina sp.	A	*519*			1								
Daphniidae													
Ceriodaphnia sp.	A	*18*											
Daphnia sp.	A	*4*											
Chydoridae													
Chydoridae indet.	A	*144*											
Chydorus sp.	A	*24*											
Amphipoda													
Gammaridae													
Gammarus sp.	A	*144*											
INSECTA													
Ephemeroptera													
Ephemeroptera indet.	N	*16*											
Ameletidae													
Ameletus sp.	N	*2,008*											
Baetidae													
Baetidae indet.	N	*148*		1			1						
Baetis bicaudatus	N	*276*		2		1							1
Baetis tricaudatus	N	*1,038*				1		1					
Baetis sp.	N	*3,839*				1		2	1				1
Diphetor hageni	N	*264*											
Ephemerellidae													
Ephemerellidae indet.	N	*1,138*											
Drunella coloradensis/flavilinea	N	*12*											
Drunella doddsi	N	*286*							1			1	
Drunella grandis	N	*8*											
Ephemerella sp.	N	*430*											
Serratella tibialis	N	*24*											
Serratella sp.	N	*64*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae *(continued)*

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC4-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	SC5-A	SC5-B	SC5-C	SC5-D	SC5-E
Heptageniidae													
Heptageniidae indet.	N	*1,817*		3									
Cinygmula sp.	N	*897*				1							
Epeorus deceptivus/hesperus	N	*38*								2	4		
Epeorus grandis/permagnus	N	*12*											
Epeorus sp.	N	*105*							1				
Rhithrogena sp.	N	*2,310*		7	1	4		3	33	27	16	16	21
Leptophlebiidae													
Paraleptophlebia sp.	N	*480*											
Siphlonuridae													
Siphlonuridae indet.	N	*4*											
Plecoptera													
Plecoptera indet.	N	*5,388*		8	1	2	1	1			1	2	
Capnidae													
Capniidae indet.	N	*9,588*		8		3		4	6	3	4	2	
Capnia sp.	N	*54*											
Chloroperlidae													
Chloroperlidae indet.	N	*1,116*	4	2	2	8	2			1	2	2	3
Paraperla sp.	N	*16*											
Suwallia sp.	N	*6*											
Sweltsa sp.	N	*1,716*											
Leuctridae													
Leuctridae indet.	N	*4,656*											
Paraleuctra sp.	N	*1,312*											
Nemouridae													
Nemouridae indet.	N	*333*	1	5		1		4	4			1	5
Visoka cataractae	N	*600*											
Zapada cinctipes	N	*514*											
Zapada columbiana	N	*810*											
Zapada oregonensis Grp.	N	*563*							2	2		1	
Zapada sp.	N	*14,196*											
Perlidae													
Hesperoperla pacifica	N	*2,102*											
Perlodidae													
Perlodidae indet.	N	*139*		15		6		7	1	1	7	2	2
Isoperla sp.	N	*389*		5		1				2	3		
Megarcys sp.	N	*52*		2					1		1	3	1
Skwala sp.	N	*16*											
Pteronarcyidae													
Pteronarcys princeps	N												
Taeniopterygidae													
Taeniopterygidae indet.	N	*1,596*		1		2		3	11	13	8	12	4
Hemiptera													
Corixidae													
Callicorixa sp.	L	*8*											
Trichoptera													
Brachycentridae													
Micrasema sp.	L	*8*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC4-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	SC5-A	SC5-B	SC5-C	SC5-D	SC5-E
Glossosomatidae													
Glossosomatidae indet.	L	*24*											
Anagapetus sp.	L	*4*											
Glossosoma sp.	L	*592*											
Hydropsychidae													
Arctopsychinae indet.	L	*21*							1				
Parapsyche elsis	L	*28*											
Parapsyche sp.	L	*16*											
Limnephilidae													
Limnephilidae indet.	L	*38*											
Ecclisomyia sp.	L	*8*											
Psychoglypha sp.	L	*16*											
Rhyacophilidae													
Rhyacophila betteni Grp.	L	*416*											
Rhyacophila brunnea Grp.	L	*64*											
Rhyacophila coloradensis Grp.	L	*194*											
Rhyacophila hyalinata Grp.	L	*324*											
Rhyacophila narvae	L	*192*											
Rhyacophila pellisa/valuma	L	*24*											
Rhyacophila sp.	L	*432*											
Diptera													
Blephariceridae													
Agathon sp.	L	*28*							1	10		3	6
Bibiocephala sp.	L	*1*										1	
Ceratopogonidae													
Bezzia/Palpomyia sp.	L	*384*											
Chironominae													
Chironomini													
Chironomini indet.	L	*32*											
Phaenopsectra sp.	L	*4*											
Polypedilum sp.	L	*4*											
Tanytarsini													
Tanytarsini indet.	L	*22*											
Micropsectra sp.	L	*68,524*							3	2	5	2	
Micropsectra sp.	P	*8*											
Rheotanytarsus sp.	L	*145*							1				
Stempellinella sp.	L	*224*											
Diamesinae													
Diamesa sp.	L	*295*	1	2	1		2	1		1	2		1
Diamesa sp.	P	*4*		1						1			
Pagastia sp.	L	*2,877*						1	1		1		
Pseudodiamesa sp.	L												
Orthocladiinae													
Orthocladiinae indet.	L	*44*											
Orthocladiinae indet.	P	*4*											
Brillia sp.	L	*600*		1			1	1	2	1			
Chaetocladius sp.	L	*549*	4	13	1	4	2	2	28	9	7	2	5
Corynoneura sp.	L	*192*											
Corynoneura sp.	P	*96*											
Cricotopus sp.	L	*4*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC4-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	SC5-A	SC5-B	SC5-C	SC5-D	SC5-E
Diplocladius sp.	L												
Eukiefferiella brevicalcar Grp.	L	*15*		1				1	2	1			
Eukiefferiella brevicalcar Grp.	P												
Eukiefferiella claripennis Grp.	L	*8*											
Eukiefferiella claripennis Grp.	P	*16*											
Eukiefferiella gracei Grp.	L	*235*											1
Eukiefferiella gracei Grp.	P	*20*											
Eukiefferiella tirolensis	L	*24*											
Eukiefferiella sp.	L	*121*								1	1		1
Heleniella sp.	L	*336*											
Heterotrissocladius marcidus Grp.	L	*1*										1	
Hydrobaenus sp.	L	*276*											
Limnophyes sp.	L												
Orthocladius (Euorthocladius) sp.	L	*144*											
Orthocladius (Symp.) *lignicola*	L	*56*											
Orthocladius Complex	L	*1,952*											
Orthocladius sp.	L	*262*											
Parakiefferiella sp.	L	*362*	9	1	3		4	13	1	3			
Parametriocnemus sp.	L	*448*											
Paraphaenocladius "n. sp."	L	*248*											
Parorthocladius sp.	L	*16*											
Psilometriocnemus sp.	L	*96*											
Rheocricotopus sp.	L	*569*							1				
Rheocricotopus sp.	P	*8*											
Rheosmittia sp.	L	*32*											
Smittia sp.	L	*1*								1			
Thienemanniella sp.	L	*390*							1		1		
Thienemannimyia Grp. sp.	L	*64*											
Tvetenia bavarica Grp.	L	*554*											
Tvetenia bavarica Grp.	P	*32*											
Podonominae													
Trichotanypus sp.	L												
Tanypodinae													
Zavrelimyia sp.	L	*192*											
Empididae													
Empididae indet.	L												
Empididae indet.	P	*10*											
Chelifera/Metachela sp.	L	*280*											
Clinocera sp.	L	*10*											
Neoplasta sp.	L	*56*											
Oreogeton sp.	L	*112*											
Wiedemannia sp.	L	*152*											
Simuliidae													
Simuliidae indet.	L	*36*											
Simuliidae indet.	P	*1*						1					
Prosimulium sp.	L												
Simulium sp.	L	*92*											
Simulium sp.	P	*16*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC4-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	SC5-A	SC5-B	SC5-C	SC5-D	SC5-E
Tipulidae													
Tipulidae indet.	L												
Dicranota sp.	L	*574*	2	1					1		1		1
Hesperoconopa sp.	L	*35*									1		2
Hexatoma sp.	L	*1*											1
Ormosia sp.	L												
Rhabdomastix setigera Grp.	L	*8*											
Total Number of Organisms		*175,457*	21	80	10	35	13	46	105	81	67	51	58
Total Number of Taxa		*123*	6	15	6	10	6	14	21	15	17	12	14
MEMO													
Empheroptera indet.	A												
Diptera indet.	A												

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC8-A	SC8-B	SC8-C	SC8-D	SC8-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	MC10-A
PLATYHELMINTHES													
Polycelis sp.	A	*16*											
NEMATODA													
Nematoda indet.	A	*138*			1								1
ANNELIDA													
Oligochaeta													
Enchytraeidae													
Enchytraeidae indet.	J	*96*											
Enchytraeidae indet.	A	*230*											
Henlea sp.	A	*132*											
Lumbriculidae													
Rhynchelmis sp.	A	*4*											
Naididae													
Naididae indet. Group 1													
Amphichaeta raptisae	A	*2*											
Naididae indet. Group 2													
Pristina jenkinae	A	*148*											
Pristina sp.	A	*4*											
Naididae indet. Group 5													
Nais communis	A												
Tubificoid Naididae													
Tubificoid Naididae Group 2	A	*24*											
Rhyacodrilus sp.	A	*2*											
Tubificoid Naididae Group 5													
Limnodrilus sp.	J												
Limnodrilus sp.	A												
MOLLUSCA													
Gastropoda													
Gastropoda indet.	A	*28*											
Bivalvia													
Sphaeriidae													
Pisidium casertanum	J	*24*											
Pisidium casertanum	A	*32*											
Pisidium spp.	J	*148*											
ARTHROPODA													
ARACHNIDA													
Acari													
Acari indet.	A	*235*	1								2		
Oribatei indet.	A	*85*			1								
Aturidae													
Aturus sp.	A	*232*											
Hydryphantidae													
Wandesia sp.	A												
Hygrobatidae													
Atractides sp.	A	*8*											
Hygrobates sp.	A	*96*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC8-A	SC8-B	SC8-C	SC8-D	SC8-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	MC10-A
Lebertiidae													
Lebertia sp.	A	*108*											
Sperchontidae													
Sperchon sp.	A	*123*	1										
Stygothrombiidae													
Stygothrombium sp.	A	*12*											
Torrenticolidae													
Testudacarus sp.	A	*285*	1										
CRUSTACEA													
Copepoda													
Cyclopoida													
Cyclopoida indet.	cpp	*91*											1
Harpacticoida													
Harpacticoida indet.	cpp	*684*											
Ostracoda													
Ostracoda indet.	A	*11,968*								1			1
Cladocera													
Bosminidae													
Bosmina sp.	A	*259*											3
Daphniidae													
Ceriodaphnia sp.	A	*9*											1
Daphnia sp.	A	*2*											
Chydoridae													
Chydoridae indet.	A	*72*	3										3
Chydorus sp.	A	*12*											
Amphipoda													
Gammaridae													
Gammarus sp.	A	*72*											
INSECTA													
Ephemeroptera													
Ephemeroptera indet.	N	*8*											
Ameletidae													
Ameletus sp.	N	*1,004*						1	1		2		
Baetidae													
Baetidae indet.	N	*73*							1				
Baetis bicaudatus	N	*136*	6	2	1						1		
Baetis tricaudatus	N	*518*	2										
Baetis sp.	N	*1,917*	4	2				1					
Diphetor hageni	N	*132*											
Ephemerellidae													
Ephemerellidae indet.	N	*569*	1										
Drunella coloradensis/flavilinea	N	*6*											
Drunella doddsi	N	*142*								2			
Drunella grandis	N	*4*											
Ephemerella sp.	N	*215*	1										
Serratella tibialis	N	*12*											
Serratella sp.	N	*32*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC8-A	SC8-B	SC8-C	SC8-D	SC8-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	MC10-A
Heptageniidae													
Heptageniidae indet.	N	*907*						2		1	6		
Cinygmula sp.	N	*448*											
Epeorus deceptivus/hesperus	N	*16*											
Epeorus grandis/permagnus	N	*6*						2		2			
Epeorus sp.	N	*52*											
Rhithrogena sp.	N	*1,091*	5	3	2	2		8	4	20	15	6	
Leptophlebiidae													
Paraleptophlebia sp.	N	*240*											
Siphlonuridae													
Siphlonuridae indet.	N	*2*											
Plecoptera													
Plecoptera indet.	N	*2,686*						1	2	6	13	14	
Capnidae													
Capniidae indet.	N	*4,779*	1	1	2					4	11	2	2
Capnia sp.	N	*27*		1									
Chloroperlidae													
Chloroperlidae indet.	N	*545*	4	5	7	5		16	2	20	23	6	1
Paraperla sp.	N	*8*											
Suwallia sp.	N	*3*									3		
Sweltsa sp.	N	*858*											
Leuctridae													
Leuctridae indet.	N	*2,328*											
Paraleuctra sp.	N	*656*											
Nemouridae													
Nemouridae indet.	N	*156*	2	1		1		2					
Visoka cataractae	N	*300*											
Zapada cinctipes	N	*257*	1										
Zapada columbiana	N	*405*								1			
Zapada oregonensis Grp.	N	*279*	1										
Zapada sp.	N	*7,098*											
Perlidae													
Hesperoperla pacifica	N	*1,051*	2		1								
Perlodidae													
Perlodidae indet.	N	*49*	1										
Isoperla sp.	N	*189*		1									
Megarcys sp.	N	*22*		1		1							
Skwala sp.	N	*8*											
Pteronarcyidae													
Pteronarcys princeps	N												
Taeniopterygidae													
Taeniopterygidae indet.	N	*771*			3	1		1	3	12	15	10	
Hemiptera													
Corixidae													
Callicorixa sp.	L	*4*											
Trichoptera													
Brachycentridae													
Micrasema sp.	L	*4*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC8-A	SC8-B	SC8-C	SC8-D	SC8-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	MC10-A
Glossosomatidae													
Glossosomatidae indet.	L	*12*											
Anagapetus sp.	L	*2*											
Glossosoma sp.	L	*296*											
Hydropsychidae													
Arctopsychinae indet.	L	*10*											
Parapsyche elsis	L	*14*											
Parapsyche sp.	L	*8*											
Limnephilidae													
Limnephilidae indet.	L	*19*	1										
Ecclisomyia sp.	L	*4*											
Psychoglypha sp.	L	*8*											
Rhyacophilidae													
Rhyacophila betteni Grp.	L	*208*											
Rhyacophila brunnea Grp.	L	*32*											
Rhyacophila coloradensis Grp.	L	*97*						1					
Rhyacophila hyalinata Grp.	L	*162*											
Rhyacophila narvae	L	*96*											
Rhyacophila pellisa/valuma	L	*12*											
Rhyacophila sp.	L	*216*											
Diptera													
Blephariceridae													
Agathon sp.	L	*4*											
Bibiocephala sp.	L												
Ceratopogonidae													
Bezzia/Palpomyia sp.	L	*192*											
Chironominae													
Chironomini													
Chironomini indet.	L	*16*											
Phaenopsectra sp.	L	*2*											
Polypedilum sp.	L	*2*											
Tanytarsini													
Tanytarsini indet.	L	*11*									1		
Micropsectra sp.	L	*34,256*	1										1
Micropsectra sp.	P	*4*											
Rheotanytarsus sp.	L	*72*											
Stempellinella sp.	L	*112*											
Diamesinae													
Diamesa sp.	L	*142*	5	3	2	2	1	2	3	2	4	4	
Diamesa sp.	P	*1*									1		
Pagastia sp.	L	*1,437*									1		
Pseudodiamesa sp.	L												
Orthocladiinae													
Orthocladiinae indet.	L	*22*											
Orthocladiinae indet.	P	*2*											
Brillia sp.	L	*297*											1
Chaetocladius sp.	L	*236*	2	3	1	1	3						
Corynoneura sp.	L	*96*											
Corynoneura sp.	P	*48*											
Cricotopus sp.	L	*2*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC8-A	SC8-B	SC8-C	SC8-D	SC8-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	MC10-A
Diplocladius sp.	L												
Eukiefferiella brevicalcar Grp.	L	*5*	1										
Eukiefferiella brevicalcar Grp.	P												
Eukiefferiella claripennis Grp.	L	*4*											
Eukiefferiella claripennis Grp.	P	*8*											
Eukiefferiella gracei Grp.	L	*117*	1										
Eukiefferiella gracei Grp.	P	*10*											
Eukiefferiella tirolensis	L	*12*											
Eukiefferiella sp.	L	*59*									1		
Heleniella sp.	L	*168*											
Heterotrissocladius marcidus Grp.	L												
Hydrobaenus sp.	L	*138*											
Limnophyes sp.	L												
Orthocladius (Euorthocladius) sp.	L	*72*											
Orthocladius (Symp.) *lignicola*	L	*28*											
Orthocladius Complex	L	*976*											
Orthocladius sp.	L	*131*			1								
Parakiefferiella sp.	L	*164*			2						2		
Parametriocnemus sp.	L	*224*											
Paraphaenocladius "n. sp."	L	*124*											
Parorthocladius sp.	L	*8*											
Psilometriocnemus sp.	L	*48*											
Rheocricotopus sp.	L	*284*											
Rheocricotopus sp.	P	*4*											
Rheosmittia sp.	L	*16*											16
Smittia sp.	L												
Thienemanniella sp.	L	*194*											
Thienemannimyia Grp. sp.	L	*32*											
Tvetenia bavarica Grp.	L	*277*									3		
Tvetenia bavarica Grp.	P	*16*											
Podonominae													
Trichotanypus sp.	L												
Tanypodinae													
Zavrelimyia sp.	L	*96*											
Empididae													
Empididae indet.	L												
Empididae indet.	P	*5*		1									
Chelifera/Metachela sp.	L	*140*											
Clinocera sp.	L	*5*	1										
Neoplasta sp.	L	*28*											
Oreogeton sp.	L	*56*											
Wiedemannia sp.	L	*76*											
Simuliidae													
Simuliidae indet.	L	*18*											
Simuliidae indet.	P												
Prosimulium sp.	L												
Simulium sp.	L	*46*											
Simulium sp.	P	*8*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SC8-A	SC8-B	SC8-C	SC8-D	SC8-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	MC10-A
Tipulidae													
Tipulidae indet.	L												
Dicranota sp.	L	*284*											
Hesperoconopa sp.	L	*16*											
Hexatoma sp.	L												
Ormosia sp.	L												
Rhabdomastix setigera Grp.	L	*4*											
Total Number of Organisms		*87,445*	49	24	24	13	4	37	16	71	104	42	31
Total Number of Taxa		*123*	20	10	12	7	2	9	6	9	13	5	11
MEMO													
Empheroptera indet.	A												
Diptera indet.	A												

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	MC10-B	MC10-C	MC10-D	MC10-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
PLATYHELMINTHES													
Polycelis sp.	A	*8*											
NEMATODA													
Nematoda indet.	A	*68*											
ANNELIDA													
Oligochaeta													
Enchytraeidae													
Enchytraeidae indet.	J	*48*					2						24
Enchytraeidae indet.	A	*115*			1	3	1					8	
Henlea sp.	A	*66*										4	
Lumbriculidae													
Rhynchelmis sp.	A	*2*											
Naididae													
Naididae indet. Group 1													
Amphichaeta raptisae	A	*1*			1								
Naididae indet. Group 2													
Pristina jenkinae	A	*74*											
Pristina sp.	A	*2*											
Naididae indet. Group 5													
Nais communis	A												
Tubificoid Naididae													
Tubificoid Naididae Group 2	A	*12*											
Rhyacodrilus sp.	A	*1*		1									
Tubificoid Naididae Group 5													
Limnodrilus sp.	J												
Limnodrilus sp.	A												
MOLLUSCA													
Gastropoda													
Gastropoda indet.	A	*14*											
Bivalvia													
Sphaeriidae													
Pisidium casertanum	J	*12*											
Pisidium casertanum	A	*16*											
Pisidium spp.	J	*74*											
ARTHROPODA													
ARACHNIDA													
Acari													
Acari indet.	A	*116*					1	1		1	1	4	48
Oribatei indet.	A	*42*					2		3	1			24
Aturidae													
Aturus sp.	A	*116*										4	48
Hydryphantidae													
Wandesia sp.	A												
Hygrobatidae													
Atractides sp.	A	*4*											
Hygrobates sp.	A	*48*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	MC10-B	MC10-C	MC10-D	MC10-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
Lebertiidae													
Lebertia sp.	A	*54*											
Sperchontidae													
Sperchon sp.	A	*61*		1									
Stygothrombiidae													
Stygothrombium sp.	A	*6*											
Torrenticolidae													
Testudacarus sp.	A	*142*											
CRUSTACEA													
Copepoda													
Cyclopoida													
Cyclopoida indet.	cpp	*45*			1	2	14	8	3	12	1		
Harpacticoida													
Harpacticoida indet.	cpp	*342*						1		1			48
Ostracoda													
Ostracoda indet.	A	*5,983*	2		3		11	5	6	12		704	1080
Cladocera													
Bosminidae													
Bosmina sp.	A	*128*			2	2	51	23	6	32	2		
Daphniidae													
Ceriodaphnia sp.	A	*4*				1	1	1		1			
Daphnia sp.	A	*1*			1								
Chydoridae													
Chydoridae indet.	A	*33*			6	1							
Chydorus sp.	A	*6*					1	2			1		
Amphipoda													
Gammaridae													
Gammarus sp.	A	*36*											
INSECTA													
Ephemeroptera													
Ephemeroptera indet.	N	*4*										4	
Ameletidae													
Ameletus sp.	N	*500*	12	14	2	1		1	3		1	8	72
Baetidae													
Baetidae indet.	N	*36*											
Baetis bicaudatus	N	*63*		2			14	12	12	3			
Baetis tricaudatus	N	*258*											
Baetis sp.	N	*955*			1	1	6	2		3		20	
Diphetor hageni	N	*66*											
Ephemerellidae													
Ephemerellidae indet.	N	*284*					2	19	18	13			
Drunella coloradensis/flavilinea	N	*3*					2			1			
Drunella doddsi	N	*70*										4	
Drunella grandis	N	*2*											
Ephemerella sp.	N	*107*		2	1	2	2						
Serratella tibialis	N	*6*											
Serratella sp.	N	*16*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	MC10-B	MC10-C	MC10-D	MC10-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
Heptageniidae													
Heptageniidae indet.	N	*449*				1	6	9	9	5	1	32	144
Cinygmula sp.	N	*224*					2	1	3				72
Epeorus deceptivus/hesperus	N	*8*										8	
Epeorus grandis/permagnus	N	*1*						1					
Epeorus sp.	N	*26*											
Rhithrogena sp.	N	*513*					4	1	3	5		28	144
Leptophlebiidae													
Paraleptophlebia sp.	N	*120*											
Siphlonuridae													
Siphlonuridae indet.	N	*1*									1		
Plecoptera													
Plecoptera indet.	N	*1,325*					2	2		5		20	144
Capnidae													
Capniidae indet.	N	*2,378*	14	78	66	73	6	3	3	13	2	80	192
Capnia sp.	N	*13*					1	1		1			
Chloroperlidae													
Chloroperlidae indet.	N	*228*		1	15	11	42	22	30	12	7		
Paraperla sp.	N	*4*										4	
Suwallia sp.	N												
Sweltsa sp.	N	*429*					11			1	1	64	48
Leuctridae													
Leuctridae indet.	N	*1,164*											216
Paraleuctra sp.	N	*328*										112	120
Nemouridae													
Nemouridae indet.	N	*75*					2	1					
Visoka cataractae	N	*150*										4	48
Zapada cinctipes	N	*128*					2						
Zapada columbiana	N	*202*						2				12	24
Zapada oregonensis Grp.	N	*139*					3	1		1			
Zapada sp.	N	*3,549*					1					76	216
Perlidae													
Hesperoperla pacifica	N	*524*											
Perlodidae													
Perlodidae indet.	N	*24*			10	10							
Isoperla sp.	N	*94*	12	14	6	3		1				4	
Megarcys sp.	N	*10*						3		6	1		
Skwala sp.	N	*4*				1	3						
Pteronarcyidae													
Pteronarcys princeps	N												
Taeniopterygidae													
Taeniopterygidae indet.	N	*363*	4		4	1	3	2		5			
Hemiptera													
Corixidae													
Callicorixa sp.	L	*2*											
Trichoptera													
Brachycentridae													
Micrasema sp.	L	*2*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	MC10-B	MC10-C	MC10-D	MC10-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
Glossosomatidae													
Glossosomatidae indet.	L	*6*										4	
Anagapetus sp.	L	*1*						1					
Glossosoma sp.	L	*148*								4			
Hydropsychidae													
Arctopsychinae indet.	L	*5*					1					4	
Parapsyche elsis	L	*7*					6	1					
Parapsyche sp.	L	*4*											
Limnephilidae													
Limnephilidae indet.	L	*9*	2				1					4	
Ecclisomyia sp.	L	*2*											
Psychoglypha sp.	L	*4*										4	
Rhyacophilidae													
Rhyacophila betteni Grp.	L	*104*										8	48
Rhyacophila brunnea Grp.	L	*16*										4	
Rhyacophila coloradensis Grp.	L	*48*											
Rhyacophila hyalinata Grp.	L	*81*								1			
Rhyacophila narvae	L	*48*											
Rhyacophila pellisa/valuma	L	*6*											
Rhyacophila sp.	L	*108*										4	24
Diptera													
Blephariceridae													
Agathon sp.	L	*2*											
Bibiocephala sp.	L												
Ceratopogonidae													
Bezzia/Palpomyia sp.	L	*96*											24
Chironominae													
Chironomini													
Chironomini indet.	L	*8*		2								4	
Phaenopsectra sp.	L	*1*					1						
Polypedilum sp.	L	*1*					1						
Tanytarsini													
Tanytarsini indet.	L	*5*				1		1	3				
Micropsectra sp.	L	*17,127*					3			2		176	4728
Micropsectra sp.	P	*2*											
Rheotanytarsus sp.	L	*36*											
Stempellinella sp.	L	*56*											
Diamesinae													
Diamesa sp.	L	*57*				1	12	12	12	14	2		
Diamesa sp.	P												
Pagastia sp.	L	*718*										40	96
Pseudodiamesa sp.	L												
Orthocladiinae													
Orthocladiinae indet.	L	*11*	2		1	1			3				
Orthocladiinae indet.	P	*1*				1							
Brillia sp.	L	*148*	2				1	1	3	1		4	48
Chaetocladius sp.	L	*113*	6	1	2	5				1			
Corynoneura sp.	L	*48*										12	24
Corynoneura sp.	P	*24*											24
Cricotopus sp.	L	*1*					1						

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	MC10-B	MC10-C	MC10-D	MC10-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
Diplocladius sp.	L												
Eukiefferiella brevicalcar Grp.	L	*2*											
Eukiefferiella brevicalcar Grp.	P												
Eukiefferiella claripennis Grp.	L	*2*											
Eukiefferiella claripennis Grp.	P	*4*											
Eukiefferiella gracei Grp.	L	*58*											
Eukiefferiella gracei Grp.	P	*5*					1						
Eukiefferiella tirolensis	L	*6*											
Eukiefferiella sp.	L	*29*								1			
Heleniella sp.	L	*84*										8	24
Heterotrissocladius marcidus Grp.	L												
Hydrobaenus sp.	L	*69*					4	3		3	1		
Limnophyes sp.	L												
Orthocladius (Euorthocladius) sp.	L	*36*											
Orthocladius (Symp.) *lignicola*	L	*14*											
Orthocladius Complex	L	*488*		2									24
Orthocladius sp.	L	*65*		6			4			1			
Parakiefferiella sp.	L	*80*	14	13		5							
Parametriocnemus sp.	L	*112*										4	
Paraphaenocladius "n. sp."	L	*62*										12	24
Parorthocladius sp.	L	*4*										4	
Psilometriocnemus sp.	L	*24*											24
Rheocricotopus sp.	L	*142*		1					3			12	48
Rheocricotopus sp.	P	*2*											
Rheosmittia sp.	L												
Smittia sp.	L												
Thienemanniella sp.	L	*97*				1							
Thienemannimyia Grp. sp.	L	*16*											
Tvetenia bavarica Grp.	L	*137*					5			1	1		
Tvetenia bavarica Grp.	P	*8*										4	
Podonominae													
Trichotanypus sp.	L												
Tanypodinae													
Zavrelimyia sp.	L	*48*											
Empididae													
Empididae indet.	L												
Empididae indet.	P	*2*											
Chelifera/Metachela sp.	L	*70*											
Clinocera sp.	L	*2*											
Neoplasta sp.	L	*14*											
Oreogeton sp.	L	*28*										4	24
Wiedemannia sp.	L	*38*											
Simuliidae													
Simuliidae indet.	L	*9*								1			
Simuliidae indet.	P												
Prosimulium sp.	L												
Simulium sp.	L	*23*					1						
Simulium sp.	P	*4*											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	MC10-B	MC10-C	MC10-D	MC10-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
Tipulidae													
Tipulidae indet.	L												
Dicranota sp.	L	*142*		2		2	1	5		2		40	
Hesperoconopa sp.	L	*8*											
Hexatoma sp.	L												
Ormosia sp.	L												
Rhabdomastix setigera Grp.	L	*2*											
Total Number of Organisms		*43,515*	70	140	123	130	241	149	123	166	23	1560	7896
Total Number of Taxa		*123*	9	14	15	20	32	27	15	26	13	33	24
MEMO													
Empheroptera indet.	A												
Diptera indet.	A												

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	YC1-A	YC1-B	YC1-C	YC1-D	YC1-E
PLATYHELMINTHES															
Polycelis sp.	A	*4*										2	1		1
NEMATODA															
Nematoda indet.	A	*34*			18		2	12		2					
ANNELIDA															
Oligochaeta															
Enchytraeidae															
Enchytraeidae indet.	J	*11*			6	4									1
Enchytraeidae indet.	A	*51*				4	19	24					4		
Henlea sp.	A	*31*		24	6		1								
Lumbriculidae															
Rhynchelmis sp.	A	*1*													1
Naididae															
Naididae indet. Group 1															
Amphichaeta raptisae	A														
Naididae indet. Group 2															
Pristina jenkinae	A	*37*					15	18		2					2
Pristina sp.	A	*1*					1								
Naididae indet. Group 5															
Nais communis	A														
Tubificoid Naididae															
Tubificoid Naididae Group 2	A	*6*			6										
Rhyacodrilus sp.	A														
Tubificoid Naididae Group 5															
Limnodrilus sp.	J														
Limnodrilus sp.	A														
MOLLUSCA															
Gastropoda															
Gastropoda indet.	A	*7*						6			1				
Bivalvia															
Sphaeriidae															
Pisidium casertanum	J	*6*						6							
Pisidium casertanum	A	*8*				4	3			1					
Pisidium spp.	J	*37*				12	1	24							
ARTHROPODA															
ARACHNIDA															
Acari															
Acari indet.	A	*30*		24			1		1		3				1
Oribatei indet.	A	*6*			6										
Aturidae															
Aturus sp.	A	*32*		24					1	6	1				
Hydryphantidae															
Wandesia sp.	A														
Hygrobatidae															
Atractides sp.	A	*2*					2								
Hygrobates sp.	A	*24*		24											

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	YC1-A	YC1-B	YC1-C	YC1-D	YC1-E
Lebertiidae															
Lebertia sp.	A	*27*		24						3					
Sperchontidae															
Sperchon sp.	A	*30*		24	6										
Stygothrombiidae															
Stygothrombium sp.	A	*3*													3
Torrenticolidae															
Testudacarus sp.	A	*71*						66	1	4					
CRUSTACEA															
Copepoda															
Cyclopoida															
Cyclopoida indet.	cpp	*2*					1							1	
Harpacticoida															
Harpacticoida indet.	cpp	*146*	96		42		7								1
Ostracoda															
Ostracoda indet.	A	*2,080*	672	960	432	12	1		1	1				1	
Cladocera															
Bosminidae															
Bosmina sp.	A	*5*					5								
Daphniidae															
Ceriodaphnia sp.	A														
Daphnia sp.	A														
Chydoridae															
Chydoridae indet.	A	*13*					9		1	1					2
Chydorus sp.	A	*1*								1					
Amphipoda															
Gammaridae															
Gammarus sp.	A	*18*			18										
INSECTA															
Ephemeroptera															
Ephemeroptera indet.	N														
Ameletidae															
Ameletus sp.	N	*193*		168	12			6			6		1		
Baetidae															
Baetidae indet.	N	*18*									18				
Baetis bicaudatus	N	*10*										3	2	5	
Baetis tricaudatus	N	*129*				20	30	60	11	4					4
Baetis sp.	N	*461*	96	96	42	40	41	66	26	27		7	11	6	3
Diphetor hageni	N	*33*				12	10	6	2	2					1
Ephemerellidae															
Ephemerellidae indet.	N	*116*	24	24			56	12							
Drunella coloradensis/flavilinea	N														
Drunella doddsi	N	*33*		24	6						1			2	
Drunella grandis	N	*1*									1				
Ephemerella sp.	N	*50*				8			11	17	3	1	9		1
Serratella tibialis	N	*3*										1		2	
Serratella sp.	N	*8*				8									

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	YC1-A	YC1-B	YC1-C	YC1-D	YC1-E
Heptageniidae															
Heptageniidae indet.	N	*121*	24	48	48							1			
Cinygmula sp.	N	*73*	24		48		1								
Epeorus deceptivus/hesperus	N														
Epeorus grandis/permagnus	N														
Epeorus sp.	N	*13*										1	6	6	
Rhithrogena sp.	N	*164*	48	48	12		6		1	1		12	20	11	5
Leptophlebiidae															
Paraleptophlebia sp.	N	*60*				12	26	18	1	3					
Siphlonuridae															
Siphlonuridae indet.	N														
Plecoptera															
Plecoptera indet.	N	*576*	72	312	168					2	2	2	9	5	4
Capnidae															
Capniidae indet.	N	*924*	24	120	90	20	15		1	2	131	146	117	223	35
Capnia sp.	N	*5*										5			
Chloroperlidae															
Chloroperlidae indet.	N	*44*							1			4	8	17	14
Paraperla sp.	N														
Suwallia sp.	N														
Sweltsa sp.	N	*152*	72	48	6	12	8	6							
Leuctridae															
Leuctridae indet.	N	*474*	72	168	234										
Paraleuctra sp.	N	*48*		24	24										
Nemouridae															
Nemouridae indet.	N	*36*									13	6	12	5	
Visoka cataractae	N	*49*		24	24									1	
Zapada cinctipes	N	*63*				12	12	18	6	11			3		1
Zapada columbiana	N	*82*		48	30								1	2	1
Zapada oregonensis Grp.	N	*67*	24	24		4	6	6		3					
Zapada sp.	N	*1,628*	528	576	516		8								
Perlidae															
Hesperoperla pacifica	N	*262*				20	89	108	15	26			1		3
Perlodidae															
Perlodidae indet.	N	*2*									1			1	
Isoperla sp.	N	*27*		24									2	1	
Megarcys sp.	N														
Skwala sp.	N														
Pteronarcyidae															
Pteronarcys princeps	N														
Taeniopterygidae															
Taeniopterygidae indet.	N	*172*					6	24	2	4	1	8	60	63	4
Hemiptera															
Corixidae															
Callicorixa sp.	L	*1*											1		
Trichoptera															
Brachycentridae															
Micrasema sp.	L	*1*								1					

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	YC1-A	YC1-B	YC1-C	YC1-D	YC1-E
Glossosomatidae															
Glossosomatidae indet.	L	*1*									1				
Anagapetus sp.	L														
Glossosoma sp.	L	*72*		72											
Hydropsychidae															
Arctopsychinae indet.	L														
Parapsyche elsis	L														
Parapsyche sp.	L	*2*											2		
Limnephilidae															
Limnephilidae indet.	L	*1*									1				
Ecclisomyia sp.	L	*1*										1			
Psychoglypha sp.	L														
Rhyacophilidae															
Rhyacophila betteni Grp.	L	*24*	24												
Rhyacophila brunnea Grp.	L	*6*			6										
Rhyacophila coloradensis Grp.	L	*24*		24											
Rhyacophila hyalinata Grp.	L	*40*	24				7	6	2				1		
Rhyacophila narvae	L	*24*	24												
Rhyacophila pellisa/valuma	L	*3*					3								
Rhyacophila sp.	L	*40*		24	12				1	1		1			1
Diptera															
Blephariceridae															
Agathon sp.	L	*1*								1					
Bibiocephala sp.	L														
Ceratopogonidae															
Bezzia/Palpomyia sp.	L	*36*		24	12										
Chironominae															
Chironomini															
Chironomini indet.	L	*1*												1	
Phaenopsectra sp.	L														
Polypedilum sp.	L														
Tanytarsini															
Tanytarsini indet.	L														
Micropsectra sp.	L	*6,109*	1584	2976	1362	32	11	120	3	16	1	2			2
Micropsectra sp.	P	*1*								1					
Rheotanytarsus sp.	L	*18*				4	4	6	1	3					
Stempellinella sp.	L	*28*			12	4	10			1					1
Diamesinae															
Diamesa sp.	L	*2*							2						
Diamesa sp.	P														
Pagastia sp.	L	*291*	24	72	192						2			1	
Pseudodiamesa sp.	L														
Orthocladiinae															
Orthocladiinae indet.	L	*2*							1					1	
Orthocladiinae indet.	P														
Brillia sp.	L	*44*	24		12		2			6					
Chaetocladius sp.	L	*49*									6	21	10	8	4
Corynoneura sp.	L	*6*				4			1						1
Corynoneura sp.	P														
Cricotopus sp.	L														

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (continued)

TAXON	STAGE	Total No. of individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	YC1-A	YC1-B	YC1-C	YC1-D	YC1-E
Diplocladius sp.	L														
Eukiefferiella brevicalcar Grp.	L	*1*											1		
Eukiefferiella brevicalcar Grp.	P														
Eukiefferiella claripennis Grp.	L	*1*					1								
Eukiefferiella claripennis Grp.	P	*2*					1			1					
Eukiefferiella gracei Grp.	L	*29*									14	4	5	4	2
Eukiefferiella gracei Grp.	P	*2*									1		1		
Eukiefferiella tirolensis	L	*3*									3				
Eukiefferiella sp.	L	*14*						12		2					
Heleniella sp.	L	*26*			12	4	10								
Heterotrissocladius marcidus Grp.	L														
Hydrobaenus sp.	L	*29*		24							5				
Limnophyes sp.	L														
Orthocladius (Euorthocladius) sp.	L	*18*									6	4	5	2	1
Orthocladius (Symp.) *lignicola*	L	*7*						6					1		
Orthocladius Complex	L	*231*		192	18		4	12		3	2				
Orthocladius sp.	L	*27*		24						1	2				
Parakiefferiella sp.	L	*24*		24											
Parametriocnemus sp.	L	*54*	24	24	6										
Paraphaenocladius "n. sp."	L	*13*			12		1								
Parorthocladius sp.	L														
Psilometriocnemus sp.	L														
Rheocricotopus sp.	L	*39*			18	4	1	12		3		1			
Rheocricotopus sp.	P	*1*									1				
Rheosmittia sp.	L														
Smittia sp.	L														
Thienemanniella sp.	L	*48*		24	24										
Thienemannimyia Grp. sp.	L	*8*				4	2			2					
Tvetenia bavarica Grp.	L	*65*		24	24	4			6	3		1	1	2	
Tvetenia bavarica Grp.	P	*2*							2						
Podonominae															
Trichotanypus sp.	L														
Tanypodinae															
Zavrelimyia sp.	L	*24*		24											
Empididae															
Empididae indet.	L														
Empididae indet.	P	*1*										1			
Chelifera/Metachela sp.	L	*35*		24			4	6		1					
Clinocera sp.	L	*1*							1						
Neoplasta sp.	L	*7*				4	2					1			
Oreogeton sp.	L														
Wiedemannia sp.	L	*19*					3	12		4					
Simuliidae															
Simuliidae indet.	L	*4*											3		1
Simuliidae indet.	P														
Prosimulium sp.	L														
Simulium sp.	L	*11*					1		7	3					
Simulium sp.	P	*2*					2								

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.4-1. Schaft Creek Project Stream Benthic Invertebrate Data, 2008 (completed)

TAXON	STAGE	Total No. of individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	YC1-A	YC1-B	YC1-C	YC1-D	YC1-E
Tipulidae															
Tipulidae indet.	L														
Dicranota sp.	L	*45*			12	4	6	6		1	1	5	6	1	3
Hesperoconopa sp.	L	*4*					1				1	2			
Hexatoma sp.	L														
Ormosia sp.	L														
Rhabdomastix setigera Grp.	L	*1*										1			
Total Number of Organisms		*16,447*	3504	6456	3534	272	458	684	109	177	229	244	304	372	104
Total Number of Taxa		*123*	17	30	31	23	40	26	22	33	24	22	25	20	26
MEMO															
Empheroptera indet.	A														
Diptera indet.	A														

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

Appendix 3.4-2

Schaft Creek Project Bray Curtis Similarity Values for Stream Benthic Invertebrate Data, 2008

Appendix 3.4-2. Schaft Creek Project Bray Curtis Similarity Values for Stream Benthic Invertebrate Data, 2008

Site	SC1	SC1	SC1	SC1	SC1	SC1_Median	SC3	SC3	SC3	SC3	SC3	SC4	SC4	SC4
SC1														
SC1	53.69495278													
SC1	50.9924836	61.24806662												
SC1	43.66214695	66.66666667	53.15010598											
SC1	59.09337118	56.14542837	39.75236318	45.80825385										
SC1_Median	59.09337118	76.69608146	56.21833114	62.57523846	73.20508076									
SC3	32.27646688	38.23990449	37.71647021	41.73020525	40.70862526	40.70862526								
SC3	40	41.8163074	28.80462027	33.02645253	45.23068211	45.23068211	60.41936346							
SC3	42.03309155	41.65315273	40.83370171	57.43533094	32.25889287	44.06646715	56.02754082	45.12893847						
SC3	23.23936733	27.94624502	28.86536591	24.2287013	16.60406401	33.20812802	74.32305191	41.40630971	41.02539095					
SC3	34.65565239	41.62558002	40.57674003	36.12202167	32.93193593	49.39790389	55.23449181	53.08803845	40.83370171	64.73464403				
SC4	29.41005087	24.68871078	43.63114559	22.64257066	18.1532216	27.2298324	40.33684858	33.39069646	40.71374649	45.53659999	45.36441891			
SC4	33.87988448	39.57170423	47.28287316	35.10401145	32.21553654	45.55964869	67.02646359	49.61873465	47.65278668	71.74363085	65.21808276	53.33041745		
SC4	18.70534608	21.63883751	32.67268968	29.01152821	12.33248464	24.66496928	65.32052312	33.11443828	47.84665613	73.62899888	51.81190817	48.55272109	59.13593424	
SC4	33.37460723	37.17504293	56.42639894	34.22281245	23.56205026	32.18635922	44.3526978	32.10812118	48.23786744	37.06160473	44.1028294	53.20458738	48.07137679	54.51339918
SC4	29.53745374	34.45461363	40.34611495	30.59606335	26.40915213	39.6137282	37.90637532	40.48033399	43.98144749	44.75209184	54.61062068	47.11136795	61.75549784	36.93980625
SC5	13.13604432	14.02627125	30.97956166	13.3413311	4.937183949	9.874367898	12.91230967	4.432099518	22.93595534	15.1439729	19.53577161	26.29887247	21.80209536	26.04114199
SC5	22.17510017	23.9166147	42.79039803	22.57360319	13.9366987	19.70946832	21.74287	17.392023	27.86183584	17.40766353	27.53392835	33.495797	31.54094452	34.84199936
SC5	23.12940955	25.0304673	42.77552423	23.56328546	14.630367	20.69046343	24.78586156	20.35358423	35.59802337	20.37268806	30.93239606	38.08842009	29.92849888	39.48002471
SC5	13.12162167	21.75090628	29.42880549	20.14693164	7.899796364	15.79959273	21.83316963	16.13049866	33.50509667	25.60970664	32.19029634	24.21012793	23.31500206	36.64560375
SC5	22.99373488	25.08379048	36.35415401	17.60085199	13.50203803	20.25305705	26.5968657	21.79835906	37.92501039	30.0895709	30.00096987	50.73234014	37.51449663	34.18839771
SC6	12.79506189	15.70838846	13.20457607	13.39745962	19.11296424	19.11296424	48.71375422	39.78642637	34.24782432	53.17295005	39.6137282	39.94462657	44.47438158	52.03635919
SC6	35.97622849	48.42548989	38.27713152	32.67075128	29.72474609	40.60475828	57.51684033	49.44231778	47.74669442	52.25690021	52.02801946	40.33486529	61.91406961	51.59281215
SC6	35.14947318	37.72839812	45.84741971	40.44429245	28.85526544	39.41702562	48.20321991	35.97104275	65.01888586	37.54001167	37.3794457	52.69634312	48.48230398	49.32147552
SC6	30.52017146	42.89416718	53.35713319	37.10052704	25.96359373	35.46692862	55.17403097	42.47183744	55.14005791	45.76301382	45.58332205	63.52907131	56.70316742	52.77923422
SC6	28.43876538	28.07460527	28.56198016	24.31964487	20.83343969	20.83343969	51.67865389	38.25045252	45.15167392	34.51379295	32.35228626	39.51146339	39.88487081	49.91791063
SC7	26.71547847	35.2453583	48.16272445	33.01614924	18.05800723	24.66769662	33.9413478	23.77784219	49.72374742	27.71792045	27.63778259	49.39225781	42.68917402	49.50730144
SC7	35.20043509	56.55203233	48.30778455	36.71427596	33.67480943	50.51221415	38.28306095	41.39761994	41.34611762	41.486344	53.31021943	33.37922243	55.81060141	33.09702147
SC7	16.25638148	27.64118133	41.45772687	25.10156225	10.2887046	20.57740919	45.8982624	28.67977061	49.43292915	51.97883005	43.46959313	53.27926257	50.65114957	73.70102392
SC7	48.66393983	44.79818993	43.36477008	39.15653498	52.62882071	52.62882071	40.44172303	43.5268399	43.01710634	43.61430146	54.69181607	35.05815182	60.90834702	35.23969861
SC7	24.41954135	26.79019754	39.74617044	24.95490882	14.49605233	21.74407849	23.84352615	12.41845044	36.32280871	21.222864	27.35301575	48.58445164	30.83484501	37.57359082
SC8	28.13266065	29.13316372	37.17227427	25.91392666	17.04485337	23.28370271	36.82702713	28.55496207	36.84097681	29.55490997	34.91739773	39.64437935	34.50358183	33.46413223
SC8	31.43386672	45.3991394	52.8468897	41.07221931	29.41091097	40.17605153	56.79717538	42.8380213	68.16092905	48.79423608	48.58232372	50.57360616	56.5646839	62.04300433
SC8	26.3303887	47.00928441	42.54973661	42.91747924	23.25080757	32.88160741	52.83401923	38.32233573	47.89965995	44.54619576	44.36936749	43.27302623	56.98003185	54.60692325
SC8	36.00831215	54.9561444	47.77621253	37.39422228	34.99736207	49.49374408	47.07975219	50.51094931	58.68684639	46.10011817	56.6713624	51.01732506	53.00370202	46.44008763
SC8	47.50206326	61.65195927	61.45182904	50.30095383	53.58983849	80.38475773	29.80078199	33.11115737	35.42272286	40.08575652	56.21833114	33.87437267	49.80090454	29.77325167
SKC1	14.82445385	11.29649455	14.78633942	10.22275475	7.970916634	7.970916634	13.42122536	9.429099267	18.91146277	5.469590139	8.193067698	15.43343049	8.976001794	14.00764212
SKC1	14.81244161	13.94310047	14.76566069	15.88677533	9.915242492	9.915242492	31.73727505	19.75396294	33.42098224	22.4174932	20.07015811	23.13467462	22.4159478	33.37498414
SKC1	18.98224907	18.12599578	18.96558596	23.58690266	13.05092057	13.05092057	40.52369658	25.38070131	39.75802199	29.7058027	21.48240643	25.01843045	28.42508412	33.14411115
SKC1	22.89228567	17.85715382	21.96115276	16.26242769	10.16917283	13.89134842	16.75311795	11.823761	29.67368037	10.28927284	13.69530499	21.70991057	14.41239417	20.53032954
SKC1	20.00042702	22.72988183	28.86447645	29.13301505	25.44666998	25.44666998	27.38704394	20.46714691	40.97475323	8.49046577	16.90841884	11.92419328	18.22152934	17.41359166
SKC3	1.220279177	2.484503814	3.67169749	2.451069093	1.26000132	1.26000132	3.643244791	1.224391763	4.437524693	2.449312479	3.67169749	3.940222484	2.405960415	6.960013094
SKC3	0.697426331	1.409097402	2.09582186	1.398279637	0.710222958	0.710222958	1.391013684	0.698767757	1.877208598	0.69885389	2.09582186	1.350565353	0.691741147	2.066436333
SKC3	1.108094863	2.252366611	3.333237108	2.224853295	1.140751423	1.140751423	3.309771466	1.11148499	4.039076962	2.223405867	3.333237108	3.595922951	2.187623551	4.79607035
SKC3	0.661885091	1.3365934	1.988845971	1.326856388	0.673399937	0.673399937	1.980468031	0.663093162	2.435472294	1.326341449	1.988845971	2.191612751	1.970287365	3.812499983
SKC3	0.919932256	2.797094127	2.765964202	3.444368759	0.942327732	0.942327732	2.749786613	0.922267586	3.366536469	1.844835272	2.765964202	3.010625127	1.820132948	3.994878823
SKC4	2.481766457	2.574374295	4.993571136	5.00720204	2.651787259	2.651787259	7.372891675	2.498836482	8.792155889	4.999876645	4.993571136	7.587867472	4.822495194	10.48829878
SKC4	3.469593475	5.338633903	6.968488411	5.95929627	1.816194688	1.816194688	5.168906161	1.743120341	7.913490281	3.487312867	3.484244205	9.348600044	3.400084503	9.109195506
SKC4	3.321893337	3.403841682	3.335320845	4.564432327	1.735413188	1.735413188	3.300202206	1.668575129	3.207171031	3.338132686	3.335320845	9.881940397	3.25812199	5.506815607
SKC4	9.504448398	14.25476133	17.54561689	13.62988519	10.58057391	10.58057391	20.98809102	13.58857158	19.64910465	11.94838913	15.89920075	21.30777299	16.60770751	19.90956585
SKC4	5.358479969	8.362479424	10.78701102	9.234441717	2.878480363	2.878480363	7.95339615	2.699145495	8.648473817	5.400862221	5.393505508	14.62496825	5.194475428	12.34349857
MC10	7.758766101	17.48380494	15.81494694	23.92872342	9.703854854	9.703854854	22.58293787	15.85616278	29.34539078	15.87836649	15.81494694	17.05469861	14.21759778	23.25473691
MC10	12.12024694	13.28742597	27.36643475	18.57596592	7.185017997	14.37003599	11.83639818	6.162926009	20.00569844	14.89481055	14.84853809	25.70134935	23.96001201	37.32509893
MC10	9.23683262	9.899542343	14.01210398	14.08382576	5.244119107	10.48823821	18.1421018	9.355767134	24.07810741	18.7269857	14.01210398	16.74952769	21.90017235	33.38975693
MC10	9.811214519	10.56225728	16.95033637	14.97497489	5.617544608	11.23508922	33.07410989	17.15346404	31.7069758	36.26924956	26.87961354	32.1285032	32.55427952	52.76137299
MC10	13.22964238	14.13303699	23.33991125	22.39648039	9.953771905	14.93065786	31.7120458	19.86282271	36.83557653	30.07059384	28.5915263	32.44125365	40.04519906	45.54670721
MT1	19.33687617	30.93836321	27.88788505	19.89691064	24.38215524	24.38215524	57.56045487	39.83452509	39.81533619	49.21207195	40.8408621	46.89615094	51.37622399	49.0258748
MT1	39.75067628	47.00814622	37.32904959	30.23105154	54.84129981	40.14661781	42.37642577	45.49638902	35.92242753	26.54220346	37.32904959	31.32767452	36.22977492	30.53367158
MT1	15.80500203	24.69503315	29.36424494	22.87797434	19.02223833	19.02223833	50.32539692	32.42524702	31.9042895	36.52448341	39.91321832	33.26733021	36.58670083	48.29253172
MT1	24.2724141	24.99578059	31.4600469	27.67155423	18.37447778	18.37447778	28.01448655	18.83961186	35.54108108	11.65548887	17.43192056	22.56928398	23.69332961	25.98031312
MT1	28.07089748	43.30065592	42.26213767	36.10796099	33.7133695	33.7133695	58.19293311	52.33870016	45.38972993	33.1862575	42.59987547	35.41150327	40.98976949	46.98338644
YC1	13.3277381	7.002039912	18.30517638	10.11422976	7.291518116	7.291518116	6.577148884	3.362775617	14.71124331	8.123276657	11.46855658	28.41386037	10.37499848	17.0227532
YC1	9.974603709	10.47965627	23.46316292	10.09252513	3.637300272	7.274600544	16.40845179	10.06673314	22.17270448	18.17857353	14.79591599	33.51770829	19.95234677	27.70177681
YC1	8.561070839	8.930470349	20.11496433	8.647793103	3.08082094	6.161641881	16.4467992	9.921709672	16.52400609	17.96471692	17.93864211	29.02097769	19.50398826	30.05543282
YC1	9.248589437	9.681201528	21.2095915	9.349882306	3.349644475	6.699288949	21.69489407	10.72531704	20.65931481	23.44824944	23.0290868	32.01036795	23.32717934	34.91483421
YC1	11.38395582	12.0465535	22.9792655	11.53781162	4.207087354	8.414174708	25.20378015	13.22777673	21.56092025	27.4592291	24.56565274	30.50804272	27.62510293	37.55444329
YC1_Median	12.1322535	12.88771306	27.88810023	12.30715616	4.515893696	9.031787392	23.1993879	14.10706146	22.86463093	25.54838318	25.49567946	36.99848883	27.26982863	36.41261756
WL8	3.896551901	4.009788571	5.872559775	7.321189396	2.051535938	2.051535938	12.935051	6.756792758	7.752772039	11.55879862	9.787599625	13.64600112	8.771499893	13.6343398
WL8	7.178241115	7.572175474	10.86185346	10.90490143	3.955928705	3.955928705	10.61657655	7.249864252	12.43370241	7.254502555	14.48247128	13.55558842	6.886956242	13.48839161
WL8	11.30508145	11.95826583	15.21238983	15.27573124	8.349588929	8.349588929	14.85196811	11.42377673	19.97901023	7.620834189	15.21238983	22.40820864	10.82439844	14.11936282

(continued)

Appendix 3.4-2. Schaft Creek Project Bray Curtis Similarity Values for Stream Benthic Invertebrate Data, 2008

Site	SC4	SC4	SC5	SC5	SC5	SC5	SC5	SC6	SC6	SC6	SC6	SC6	SC7	SC7
SC1														
SC1														
SC1														
SC1														
SC1														
SC1_Median														
SC3														
SC3														
SC3														
SC3														
SC3														
SC4														
SC4														
SC4														
SC4														
SC4	37.13378859													
SC5	40.75554455	20.75072605												
SC5	56.7299469	31.80928907	66.44228224											
SC5	54.14240056	31.53114588	61.18687303	66.00775695										
SC5	42.35593473	23.20310118	56.74680678	62.62585631	56.96611419									
SC5	49.59518615	41.45058292	48.61293328	55.21324158	56.74109761	52.91054621								
SC6	28.49952817	33.0646566	17.15533563	19.82738558	23.03302649	29.28451823	33.49624691							
SC6	37.9031775	46.0396411	21.05585576	34.3626019	32.98030426	32.16985011	35.2524282	50.64193629						
SC6	48.83736655	45.08159714	26.93288771	36.4902878	37.83802307	34.870048	49.37680113	43.14368672	51.25049599					
SC6	59.3591191	48.73395009	38.6373722	49.19987636	52.71311454	45.39241228	55.39987883	47.67721086	55.46145042	67.65612767				
SC6	50.74945996	29.49007246	33.96015501	44.5353845	47.54889977	43.00629825	45.36064007	39.22360958	48.27953659	55.55555501	67.57061176			
SC7	67.09863351	44.3544683	52.76425854	56.42845191	60.4043068	42.82793516	60.84096422	26.54478844	39.56721607	52.13573569	57.46270931	49.79892396		
SC7	39.22706804	62.84370342	17.80819589	34.47063389	28.93986795	29.6940283	31.81147848	32.45278156	56.27355642	34.26058004	42.53204201	28.8117425	36.99850938	
SC7	63.67789934	44.24622812	34.85379052	43.5274181	46.95897177	46.42765595	50.77171311	48.25761828	47.71640807	59.17819132	71.85782273	62.69103496	59.48139545	37.01180001
SC7	36.53299475	66.11294287	19.18409549	37.65552836	27.22504607	24.83758018	27.48441413	30.22547964	48.78789685	39.50146198	39.48390956	24.1250853	40.49652283	70.69179284
SC7	44.36930866	42.03559551	45.77390949	45.06584893	40.94795879	32.09264725	45.39274365	24.3974965	33.31025068	49.20084766	54.85156863	39.67520926	57.79317577	35.81643849
SC8	57.23692238	27.24862243	32.19165747	40.15267377	36.387016	36.32321683	37.66539734	22.81985298	38.32919924	40.82925072	50.0202884	42.14115657	40.87661646	29.69018203
SC8	70.39552169	51.27101913	30.52231986	40.61437805	48.53776949	43.77911076	52.08878587	37.0739655	47.24674369	62.98772795	71.09672259	62.66503845	64.96408766	47.09506891
SC8	49.18600071	45.0929234	35.5331965	43.3340309	40.55211257	41.29855299	41.36397797	48.23596946	59.80241125	50.53695219	64.108629	51.6376832	53.51941925	54.23492807
SC8	44.44360529	55.86928054	23.11723154	33.32739785	41.90972265	43.15022847	50.87249413	47.62884014	61.90856305	50.7680899	66.21811931	49.53621352	50.51858373	59.46169978
SC8	32.18635922	49.28014877	13.48863739	21.54426951	22.61658779	19.07179552	25.19514597	19.11296424	32.64003657	39.41702562	35.46692862	15.25113635	24.66769662	50.51221415
SKC1	25.93412111	7.870644098	32.14283503	26.54654599	29.50035079	22.1298429	20.16560364	10.43193786	16.73685524	25.50325714	21.26355371	30.7676451	28.00813966	10.96420694
SKC1	32.92263912	17.24539265	26.83615526	29.10384501	32.84109289	24.60130354	24.74591062	18.63497064	35.28980528	32.70144535	31.63145541	44.48534719	35.87734067	18.19221519
SKC1	33.54620664	16.14539907	23.70319957	22.81953379	24.60463571	18.62165253	21.4851295	17.83025537	34.99452548	31.76672184	33.11724411	45.35251961	31.00606142	23.39674343
SKC1	32.91828443	14.37522611	42.25975482	34.68554289	38.60333015	36.41156578	30.70183146	13.15677123	23.66667376	35.18836005	29.71187268	36.33966588	40.83544493	17.19801955
SKC1	22.06531954	15.00552152	13.1266651	16.58907491	21.69428045	18.54155287	14.58585395	9.101379196	29.53350314	35.56504251	20.9745116	23.39390932	23.11955878	25.65318892
SKC3	12.20437558	2.901487046	21.17219669	15.69033944	17.33134465	11.13179318	8.841553348	2.473258015	3.536730235	4.977690959	6.964146586	12.93423392	13.09838846	2.451818608
SKC3	4.650483181	0.691362424	10.64974736	7.614816513	7.967736325	5.896335316	3.675615523	0.702736465	1.367428142	1.364843724	2.710184526	3.880894222	4.910822159	1.39852353
SKC3	9.050697263	1.092865143	15.12184343	11.61123751	11.18786467	9.140292052	7.08592706	2.243120207	2.147751743	4.535521972	5.293689226	7.279739312	8.972847132	2.225470827
SKC3	7.095741721	2.62568422	10.50784537	8.577225282	8.66135187	6.243178102	4.38448364	1.333331889	2.59808961	3.394836585	3.219767133	6.374698956	6.957248141	2.476357529
SKC3	7.585009551	2.195512551	15.06333764	8.373994199	10.68232813	8.07718005	5.86883355	1.858387315	1.792447044	3.787063836	4.428275793	7.847917363	9.265340958	1.846256686
SKC4	13.59595566	5.810172267	19.53752901	10.83891166	16.31558708	10.3532292	6.997637907	5.100685524	2.316448602	9.750082433	6.741423531	8.995275665	12.71215031	2.505165493
SKC4	15.98749988	4.09874704	25.59723191	18.75238854	20.83908138	15.20223684	15.53947298	6.598371931	8.946260604	11.90216278	11.31756733	13.84444801	19.0981362	5.23859319
SKC4	10.55731821	3.927834009	17.36732465	12.42482397	12.87707484	10.33561155	9.938952144	6.312332609	3.827086716	8.264096254	6.209855626	9.659199309	9.293211713	1.671394721
SKC4	28.93797697	11.25344748	24.30228817	26.52393692	26.86527203	24.66118644	20.14407471	18.1524779	24.14874385	28.2434715	26.44025445	28.15135594	22.8803239	15.98432081
SKC4	20.21040256	5.183813556	31.97026464	24.11868909	22.41697794	20.21759156	19.26717341	10.29799626	8.493138599	15.40659226	14.44699634	16.40003214	21.30232863	5.413062707
MC10	18.79218369	14.13800808	16.45400511	22.6575572	23.46403573	22.95281593	9.352038926	16.94171112	19.03034269	24.93571111	17.54821683	15.2385526	24.94749216	23.97642681
MC10	35.03537287	33.7858174	33.88010843	41.17928018	38.15141994	25.51364504	20.94563133	17.72005095	22.78072735	30.52826476	31.14428581	25.75154186	45.48267071	23.14456371
MC10	31.91643679	32.36226035	23.74026356	24.12248287	24.28536337	15.76759215	17.95788401	14.58506968	16.30782991	21.82706385	19.33521608	22.54500692	37.67682328	22.2411713
MC10	36.34523193	20.39608695	22.91036373	27.26959146	37.81553809	27.09770477	24.74305524	29.69763432	35.62778742	35.74821074	36.04311926	37.95235125	37.30628496	22.06171524
MC10	37.3166148	40.32044314	29.18331664	32.99647952	40.72254215	21.51196466	28.76848508	23.15577499	36.46142942	34.84461722	36.0279477	38.39448304	45.12764958	32.04603954
MT1	42.75771385	36.38310943	25.84179152	36.84988347	40.01195092	33.15604374	47.53908147	43.85365075	54.77763015	43.66664456	65.08278467	72.46420269	46.42696397	36.45499454
MT1	41.90178423	32.06959215	20.28520799	35.03785308	38.62407877	39.06932951	39.95515998	49.92381714	53.49248478	43.56903174	57.94687895	54.84873681	39.25993369	48.97993377
MT1	45.38058996	24.19460121	47.19924613	58.96280305	59.19306072	61.48814275	42.92512563	33.34418467	48.63973553	34.80764393	55.76247571	64.37448705	39.33024503	29.62830012
MT1	39.21197821	18.2482558	46.63449463	49.32999611	47.45493202	40.98005642	38.04727221	22.79988524	37.63449987	35.11837044	41.5525944	46.59939077	46.47163172	25.85064837
MT1	52.15686981	33.48725713	32.59126628	48.12387571	50.402474	55.43187396	42.64708861	49.27289347	57.9796146	50.57866057	70.15749232	63.6816552	46.20256006	42.81127214
YC1	21.62242037	15.98965835	30.29061758	20.95514078	28.48240393	18.78230815	25.67238978	6.913446702	12.16240005	23.31374822	21.7695931	16.29953931	29.65505369	6.748495091
YC1	37.03793429	23.66188034	48.05830581	41.02127566	46.61116731	35.55625633	46.43331298	19.77052018	19.46530398	33.00768378	39.23022389	36.06967121	46.65503911	14.86265927
YC1	41.39403241	17.67002817	41.29935083	44.44472913	44.88924526	33.11976572	35.06864772	16.87938664	19.10080015	24.18138588	32.86410082	37.14860962	38.48742516	12.73355775
YC1	41.1203098	17.8067984	44.72021803	43.10157542	47.40374362	36.16094887	34.4774959	18.28177083	26.65931974	28.76109299	35.20032889	40.85928291	39.10442677	13.76816263
YC1	41.92096636	23.23107041	39.53208574	38.03729296	41.22881841	36.37433443	39.5884334	22.68375066	31.32511702	31.30288827	37.46562635	35.56064977	39.50593969	16.99309019
YC1_Median	48.35305396	24.68420528	49.78840878	49.06707696	49.27919507	43.08809448	42.47815371	24.24314043	26.23847956	33.12783999	44.57980212	41.64530753	45.11169458	18.12735493
WL8	15.27308429	8.394427126	16.86927963	15.06210272	20.56511482	10.82467449	8.60226967	5.970866118	9.224567654	7.342139197	9.812793859	13.30020847	13.70547632	4.738297714
WL8	20.75432734	11.72479732	34.50684745	25.66221826	32.15968224	17.03968465	12.14062119	7.468674266	6.506682614	12.89715907	12.47307168	11.54060088	24.07155392	7.276531974
WL8	28.01575178	15.88169014	23.94556229	26.56805246	28.35913093	17.72647936	15.45425595	7.857535023	13.59971069	20.20927172	13.01073386	14.99924952	27.80277304	11.46772253

(continued)

Appendix 3.4-2. Schaft Creek Project Bray Curtis Similarity Values for Stream Benthic Invertebrate Data, 2008

Site	SC7	SC7	SC7	SC8	SC8	SC8	SC8	SC8	SKC1	SKC1	SKC1	SKC1	SKC1	SKC3
SC1														
SC1														
SC1														
SC1														
SC1														
SC1_Median														
SC3														
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SC6														
SC6														
SC6														
SC6														
SC6														
SC7														
SC7														
SC7														
SC7	30.68955354													
SC7	50.66960904	38.75153239												
SC8	41.54382391	27.91030093	37.85751591											
SC8	77.54633338	43.52712392	48.01335189	50.3957281										
SC8	60.40299071	47.51356788	53.67079566	43.33540863	59.46288892									
SC8	59.37069625	50.01702145	37.8127844	35.57432437	72.77524719	59.51843261								
SC8	28.1092637	52.62882071	24.74630923	21.30076402	40.17605153	28.8923995	43.48914605							
SKC1	22.05103078	9.219995246	27.50595168	32.45394793	19.77864484	24.372182	12.89593634	5.835115959						
SKC1	34.90237146	15.93049022	24.31297707	35.41824926	34.37603676	28.90890281	24.90304015	7.258461273	54.98437036					
SKC1	37.23685328	20.38250728	29.66635964	37.41227512	38.18049364	35.84688364	25.16387939	9.553936942	42.449591	67.05484965				
SKC1	27.02407549	14.90215855	38.43985467	32.99484925	30.46681154	32.74335312	22.73699636	11.16652677	67.71604594	59.31668783	43.13523911			
SKC1	15.60104486	19.71971263	17.46208347	20.26365918	32.09422145	23.72210485	26.98222028	21.08071165	25.58706922	33.75221258	27.13710049	31.39862512		
SKC3	8.745046058	2.435451668	9.464519807	12.12545949	8.415073324	5.613386279	2.925212557	1.26000132	23.97172773	18.36068993	16.12754867	21.19021032	7.535469482	
SKC3	3.904980623	1.393183083	5.125122969	4.343823923	2.832959621	3.952758102	1.676920589	0.710222958	14.01917379	7.270022665	9.856703035	11.50215761	3.011960641	53.73514953
SKC3	7.970306755	2.211978018	8.661025121	11.11904618	6.593380748	5.119587292	2.6580135	1.140751423	19.75123644	17.10447959	17.24573311	17.42447553	3.65481705	52.13397313
SKC3	4.831524376	1.98339951	6.981146465	7.533974594	4.638703823	4.668109758	1.591792123	0.673399937	15.96426713	9.541330545	7.308150661	14.0051297	5.454726663	49.01926615
SKC3	6.657983711	1.836960782	8.145717199	9.38582107	5.503589144	6.941849203	2.209070155	0.942327732	22.34998922	13.81063691	15.43760187	19.12491314	4.83949943	58.89011597
SKC4	10.2158588	2.471228067	9.904821682	20.58219176	10.20212079	9.950501714	2.446385152	2.651787259	36.74376142	20.65541605	18.89872134	27.09153701	10.15562266	32.22890959
SKC4	14.54328506	3.459281662	15.65628364	24.75604587	10.13944447	15.49221968	5.863686651	1.816194688	35.15746547	32.60426916	27.42956428	32.90244026	11.22810852	28.99394247
SKC4	6.518206407	1.656219793	8.072485144	16.74312178	4.748311303	10.47391144	3.290047988	1.735413188	22.19357724	17.91155026	15.2252873	16.734109	4.733469408	25.95575328
SKC4	24.80931604	13.35100363	21.73291011	50.42650089	26.1297484	29.95863918	20.83701111	8.765234424	37.72892961	30.66534062	24.68397438	29.79699935	18.948897	19.69086456
SKC4	16.1080687	5.333923895	19.81529616	29.14027986	13.43552499	22.09677283	7.91415249	2.878480363	38.21197185	24.42198114	21.83657823	29.85410452	10.90041022	23.75136649
MC10	20.95570072	22.97006293	16.76099619	25.36111654	21.52397516	26.03259674	14.84626124	9.703854854	22.39076829	26.80052663	29.61533723	27.35197215	30.06403138	6.300129714
MC10	35.90150329	32.47266011	44.8316255	16.83889128	26.42492161	31.89474123	17.56021656	19.62983422	19.77465195	23.3928528	23.43389391	27.40992077	17.35469158	13.84522788
MC10	28.52079978	22.91026903	30.95980758	23.63809773	27.72833458	30.43678535	13.49211957	10.48823821	19.09648111	20.58341293	21.72087552	22.6763472	13.75352808	21.01628736
MC10	43.67156426	18.62377388	25.64493663	30.38836264	34.52479068	35.95523125	24.9721928	13.56195238	25.90584388	37.07883617	37.61241798	31.48361578	24.74215557	16.34335567
MC10	40.49227094	29.88608707	31.99940085	29.0656956	36.57818372	39.16431598	26.81129496	18.57399124	30.84844722	39.98477016	34.52804999	32.35095859	30.2861825	15.34619022
MT1	55.56347082	30.24785661	35.79150851	34.46366915	54.22386588	51.19464169	61.7128097	20.19883876	15.85920001	33.84640974	37.43554927	23.15774748	21.80651048	9.63662643
MT1	45.56118062	50.50403504	32.3894739	32.17648204	47.5500491	51.83144851	62.60542621	29.38936399	17.30758594	24.68551645	28.65139651	21.59080564	27.18219466	4.852123742
MT1	48.04727228	24.78455293	32.80009509	34.61763404	42.72378645	49.73646656	44.54915122	15.75853821	26.73887439	39.16510585	37.96993384	33.17847026	20.75385123	13.92656189
MT1	34.26467054	21.72277868	47.63991587	34.86854793	33.67444843	43.62868205	26.77261398	13.4510513	29.38858835	30.11130341	31.53801051	36.90483766	33.10909667	16.29813659
MT1	58.74568377	35.25561735	37.85831969	40.37227534	59.39837103	63.87082789	62.68416875	24.67989937	21.07867342	29.06091218	33.96794383	28.44749885	27.62401139	5.808328902
YC1	20.14590291	11.31117635	27.77572538	24.74074221	15.60120707	15.88657503	13.07388113	9.960398979	26.69235695	17.03777267	12.24287828	26.64732085	16.31552614	21.30195754
YC1	38.46539285	12.65670493	33.57595589	35.75512505	32.91461101	30.92903434	24.18271811	9.937289145	30.9364188	26.91723966	23.77550819	38.50071697	10.26886322	23.48676831
YC1	35.65172319	10.87183509	27.30328916	35.62207181	29.23601106	31.20984893	18.66740295	8.416959338	35.78268347	35.20966792	23.67395544	36.11525739	11.55124627	27.13910311
YC1	38.24291383	11.74032484	29.0850132	32.72878468	31.38671553	30.69760997	20.14007875	9.151398892	33.69578984	35.89721428	29.54764052	38.99625011	12.39626946	27.74720181
YC1	42.7020365	14.43343702	34.31545069	52.55062469	34.48876214	40.12472629	24.68952864	11.4939764	32.86894677	35.61122862	26.48574075	45.31794135	11.56391956	19.47476616
YC1_Median	45.169319	15.37563787	32.94242385	45.41444069	36.51243335	38.9168505	26.27507017	12.33765102	35.97513863	33.83191809	26.57163576	44.34275061	12.237629	24.10531027
WL8	10.15959175	4.687860511	6.80170594	12.82496944	8.563871683	12.7447071	6.233974549	2.051535938	26.32957022	24.29052409	21.41590563	21.93474154	8.099584119	37.88220851
WL8	11.93650458	10.70136414	19.8057211	18.17276433	11.07227312	16.95660693	7.031177841	3.955928705	34.17444844	26.89215657	22.58874638	35.18553289	14.22388576	28.90204967
WL8	12.46484111	14.97646637	17.6376777	24.35440202	14.95812866	17.69086179	11.062152	8.349588929	38.97776805	35.44979717	28.29702682	38.86857301	21.59044871	18.54771435

(continued)

Appendix 3.4-2. Schaft Creek Project Bray Curtis Similarity Values for Stream Benthic Invertebrate Data, 2008

Site	SKC3	SKC3	SKC3	SKC3	SKC4	SKC4	SKC4	SKC4	SKC4	MC10	MC10	MC10	MC10	MC10
SC1														
SC1														
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SC1_Median														
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SKC1														
SKC1														
SKC1														
SKC1														
SKC1														
SKC3														
SKC3														
SKC3	58.3277779													
SKC3	61.36277686	58.29577261												
SKC3	63.77140227	66.18521771	62.66945979											
SKC4	17.67122002	24.50114198	17.42843971	26.783518										
SKC4	18.19145896	29.58056125	18.59344956	31.17140257	54.68524477									
SKC4	18.9055675	24.73600846	20.10560435	27.68740241	48.10669131	59.28374404								
SKC4	7.451293378	14.98531254	12.42636003	15.03510021	46.44698372	38.34325644	29.58962241							
SKC4	12.75251079	17.94575483	15.46461968	22.00454541	53.70272904	55.24978992	48.17960918	59.88089531						
MC10	3.673791864	5.74545947	2.846533681	5.691742255	9.968066626	17.65005874	4.673166746	20.41472642	15.52563881					
MC10	7.308053941	7.736629734	10.60316328	9.487203566	12.85252082	14.0328517	8.036533015	13.37510176	15.1991578	21.54222577				
MC10	11.14518532	7.100294584	15.96907478	17.25112251	20.19851652	15.20149222	13.85187917	15.27591987	18.45668021	13.31486891	55.6333454			
MC10	8.568662537	8.484182855	9.669583853	11.04114862	19.70691126	19.87094824	8.946842196	22.81094578	15.18998707	35.12062419	47.99980683	51.26316512		
MC10	7.811098587	6.632208735	10.6223563	11.39622818	20.40384452	16.38370876	9.659202553	21.47674641	13.36250815	29.35731609	42.75563621	57.4108277	70.25641361	
MT1	3.965715927	6.211620418	4.414845576	6.081080529	4.55789301	10.53327279	7.837890695	25.57778618	12.22193221	12.13983279	14.93476634	15.84880993	32.84394756	31.6674282
MT1	2.780210704	3.306344417	2.638987303	3.663227604	2.451969117	8.139999112	6.148728994	22.51179499	9.869577048	14.94956557	21.96489202	13.5488432	24.65334928	23.37136066
MT1	6.324862874	9.803392745	6.913739439	8.583892223	10.713544	15.46240603	8.206495096	27.78253313	16.96615023	22.91352397	26.22683527	14.27120798	36.89337994	28.62632401
MT1	6.979066755	10.31355727	10.12567014	11.02450631	14.43008257	18.45345197	12.05237953	28.15707187	19.93639251	11.25934846	36.50059971	26.96532126	30.17079307	34.36115651
MT1	3.350290943	5.284725396	3.181555396	4.401864038	5.736909727	12.30516729	6.713906079	25.11455184	13.84275195	23.26250914	24.13515506	14.56532907	30.95511662	28.05565821
YC1	13.66066033	7.46524591	15.30963224	16.89068583	16.6171682	18.1408008	18.53888804	16.62288442	22.0377086	10.04113644	30.9468532	45.65277177	33.62165365	36.98172694
YC1	13.47003453	13.40805296	13.92946737	19.83622078	27.73429513	30.44711707	20.44748315	27.89004608	32.0039331	12.95780835	24.39347138	43.56818711	39.79153235	41.48854755
YC1	14.59247171	14.58622549	16.2266729	20.36045356	29.9622811	27.73845059	27.85091256	33.01971827	34.27243182	8.747213612	27.21408806	43.80740699	44.66300398	48.30669334
YC1	14.37878469	14.01473796	16.17468059	20.24842749	23.54827612	25.04399773	17.96408894	25.66295528	27.44802244	14.86316911	27.95011798	39.07912908	46.47024534	43.48546037
YC1	10.55754974	14.49339672	10.4583986	16.13726343	33.61240284	37.6709707	24.16505236	43.45009652	39.15605314	19.20876098	25.7446699	35.1464904	48.85513333	46.46599217
YC1_Median	13.30066391	14.88788332	14.88661624	20.16507328	26.33651501	29.25560543	21.22304547	33.93382598	35.22459126	15.37135335	28.42932625	47.11778328	47.95658979	49.40342441
WL8	28.71026964	21.70348333	27.0551222	33.67074788	30.73114401	26.27964964	38.44732576	15.67320503	27.44660166	11.59535417	14.60274036	28.31569958	27.29245147	26.12233269
WL8	17.97759564	19.55460815	14.28265035	23.6283155	35.5413546	24.8447387	22.28695839	21.14858411	29.38275033	23.27733226	21.34563979	25.22480296	26.84519404	26.362603
WL8	12.46279835	12.81503997	10.56488258	15.41138943	30.28259475	22.55447851	23.63545141	20.59475686	22.54094691	27.5637205	30.96183734	27.98862872	30.84702598	32.60162184

(continued)

Appendix 3.4-2. Schaft Creek Project Bray Curtis Similarity Values for Stream Benthic Invertebrate Data, 2008

Site	MT1	MT1	MT1	MT1	MT1	YC1	YC1	YC1	YC1	YC1	YC1_Median	WL8	WL8	WL8
SC1														
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SKC4														
SKC4														
MC10														
MC10														
MC10														
MC10														
MC10														
MC10														
MT1														
MT1	60.33613306													
MT1	61.80387521	47.95838084												
MT1	39.17933596	41.60160792	49.31675319											
MT1	58.24308991	70.48752473	69.68009919	52.10890669										
YC1	13.13807264	13.11378135	14.87886807	26.30582125	10.73623698									
YC1	33.39818808	20.10814033	33.72213809	35.22986426	30.41658069	53.41766698								
YC1	31.24921333	20.11218546	39.06209043	36.84456127	28.44230968	42.90450255	67.00457898							
YC1	31.20925144	18.66630923	48.26235515	38.83927133	30.60709878	42.43327399	64.9786766	71.91892396						
YC1	33.32693569	22.89747174	36.59679069	33.09649698	32.33620441	34.40383364	55.45596658	57.50278861	48.84217201					
YC1_Median	37.63874788	24.37335707	44.92575526	40.44891528	38.24757458	49.94430245	83.46243725	76.52144357	73.00838161	66.82286859				
WL8	13.5016287	6.588970858	18.86602927	11.24042441	9.156813182	37.02764197	34.39561979	38.25867632	36.54872139	27.08936959	36.3634539			
WL8	9.539550473	7.054264051	20.4451219	21.22970776	11.51496712	27.8901755	32.41363649	32.76463732	31.27135094	32.67208828	35.22834213	50.03646497		
WL8	13.27898531	14.80033942	21.2683491	22.03148833	15.58416912	35.30974024	25.63780157	31.65866262	25.9545746	30.81852825	30.04548417	43.9296746	59.92894583	

Appendix 3.5-1

Lake and Wetland Water Quality Data, 2008

Appendix 3.5-1 Lake and Wetland Water Quality Data, 2008

Sample ID	EQUIPMENT BLANK	L2(SURFACE)	L2(MID-DEPTH)	WL9	WL9 (DUPLICATE)	AIRSTRIP WL	WL4	WL11
Date Sampled	03-AUG-08	03-AUG-08	03-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L664786-1	L664786-2	L664786-3	L664786-4	L664786-5	L664786-6	L664786-7	L664786-8
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Colour, True	<5.0	<5.0	<5.0	<5.0	<5.0	37.5	<5.0	13.0
Conductivity	<2.0	204	206	238	232	30.7	164	191
Hardness (as CaCO3)	<0.50	92.5	96.4	120	122	15.0	82.5	93.5
pH	5.57	8.22	8.22	7.53	7.94	7.68	7.62	7.77
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.5
Total Dissolved Solids	<10	121	120	141	122	43	109	128
Turbidity	<0.10	0.25	0.89	0.40	0.77	1.84	0.34	4.64
Anions and Nutrients								
Acidity (as CaCO3)	1.0	<1.0	<1.0	5.8	3.9	3.3	4.6	5.0
Alkalinity, Bicarbonate (as CaCO3)	<2.0	81.2	82.7	118	122	14.7	66.4	96.6
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total (as CaCO3)	<2.0	81.2	82.7	118	122	14.7	66.4	96.6
Ammonia as N	0.0121	0.0077	0.0060	<0.0050	<0.0050	<0.020	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	<0.020	0.042	0.042	0.042	0.041	<0.020	0.031	0.158
Nitrate (as N)	<0.0050	0.0828	0.0778	0.0223	0.0225	<0.0050	0.0087	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	<0.050	<0.050	0.062	<0.050	<0.050	0.530	<0.050	0.100
Total Nitrogen	<0.05	0.13	0.14	<0.05	<0.05	0.53	<0.05	0.10
Total Phosphate as P	<0.0020	0.0024	0.0028	0.0022	0.0024	0.0132	0.0027	0.0099
Sulfate (SO4)	<0.50	20.0	20.3	14.8	14.5	<0.50	19.4	4.63
Cyanides								
Cyanide, Total	<0.0010	<0.0010	0.0016	<0.0010	0.0015	0.0063	0.0014	0.0028
Organic / Inorganic Carbon								
Total Organic Carbon	<0.50	1.70	1.69	<0.50	<0.50	6.63	0.95	1.68
Total Metals								
Aluminum (Al)-Total	<0.0010	0.0038	0.0052	0.0018	0.0014	0.0972	0.0057	0.0309
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	<0.00010	0.00019	0.00018	0.00101	0.00091	0.00014	0.00059	0.00126
Barium (Ba)-Total	0.00303	0.0114	0.0123	0.0565	0.0557	0.00164	0.0175	0.0358
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Total	<0.020	30.9	31.1	22.9	22.5	5.55	28.2	24.5
Chromium (Cr)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total	0.00016	0.00053	0.00051	0.00017	0.00014	0.00046	0.00105	0.00032
Iron (Fe)-Total	<0.030	<0.030	<0.030	0.133	0.109	0.587	0.104	1.31
Lead (Pb)-Total	<0.000050	<0.000050	0.000055	<0.000050	<0.000050	<0.000050	<0.000050	<0.000070
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	<0.0050	4.02	4.06	14.8	14.4	0.709	2.38	8.95
Manganese (Mn)-Total	<0.000050	0.00289	0.00347	0.00712	0.00664	0.0110	0.0181	0.162
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.5-1 Lake and Wetland Water Quality Data, 2008 (continued)

Sample ID	EQUIPMENT BLANK	L2(SURFACE)	L2(MID-DEPTH)	WL9	WL9 (DUPLICATE)	AIRSTRIP WL	WL4	WL11
Date Sampled	03-AUG-08	03-AUG-08	03-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L664786-1	L664786-2	L664786-3	L664786-4	L664786-5	L664786-6	L664786-7	L664786-8
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Molybdenum (Mo)-Total	<0.000050	0.000724	0.000689	0.00199	0.00198	0.000066	0.000679	0.000959
Nickel (Ni)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	<0.050	0.352	0.366	1.16	1.16	0.112	0.242	1.13
Selenium (Se)-Total	<0.00010	0.00045	0.00046	0.00028	0.00033	<0.00010	0.00073	<0.00010
Silicon (Si)-Total	<0.050	3.20	3.28	2.13	2.12	1.28	2.56	8.59
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.7
Strontium (Sr)-Total	<0.00010	0.0601	0.0603	0.120	0.122	0.0101	0.0568	0.0836
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	<0.000010	0.000162	0.000155	0.000102	0.000100	<0.000010	0.000088	0.000137
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	0.0013
Dissolved Metals								
Aluminum (Al)-Dissolved	<0.0010	0.0026	0.0028	<0.0010	<0.0010	0.0569	0.0026	<0.0010
Antimony (Sb)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	<0.00010	0.00017	0.00017	0.00070	0.00065	0.00012	0.00052	0.00054
Barium (Ba)-Dissolved	0.000606	0.0111	0.0115	0.0561	0.0560	0.00143	0.0179	0.0321
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Dissolved	<0.020	30.5	31.8	23.2	23.5	4.97	29.1	23.4
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	0.00021	0.00059	0.00052	0.00016	0.00016	0.00037	0.00081	0.00049
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	<0.030	0.325	0.064	0.089
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Dissolved	<0.0050	3.99	4.13	15.0	15.3	0.621	2.42	8.52
Manganese (Mn)-Dissolved	<0.000050	0.000275	0.000339	0.00332	0.00483	0.00750	0.0219	0.0554
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	<0.000050	0.000769	0.000726	0.00202	0.00204	0.000057	0.000693	0.000939
Nickel (Ni)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	<0.050	0.358	0.374	1.18	1.20	0.106	0.289	1.08
Selenium (Se)-Dissolved	<0.00010	0.00041	0.00038	0.00027	0.00022	<0.00010	0.00057	<0.00010
Silicon (Si)-Dissolved	<0.050	3.11	3.23	2.10	2.09	1.24	2.54	8.37
Silver (Ag)-Dissolved	<0.000010	0.000015	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.1
Strontium (Sr)-Dissolved	<0.00010	0.0585	0.0606	0.122	0.124	0.00921	0.0581	0.0784
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	<0.000010	0.000160	0.000157	0.000104	0.000106	<0.000010	0.000103	0.000119
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	<0.0010	0.0013	0.0017	<0.0010	<0.0010	0.0013	<0.0010	<0.0010
Aggregate Organics								
COD	<20	<20	<20	<20	<20	20	<20	<20

(continued)

Appendix 3.5-1 Lake and Wetland Water Quality Data, 2008 (continued)

Sample ID	WL10	WL7B	WL8	WL 7B (FIELD BLANK)	L5 (SURFACE)	L5 (MID-DEPTH)	TRAVEL BLANK
Date Sampled	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	05-AUG-08	05-AUG-08	06-AUG-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L664786-9	L664786-10	L664786-11	L664786-12	L664786-13	L664786-14	L664786-25
Matrix	Water	Water	Water	Water	Water	Water	Water
Physical Tests							
Colour, True	18.0	33.8	6.4	<5.0	<5.0	<5.0	<5.0
Conductivity	231	86.4	183	<2.0	157	158	<2.0
Hardness (as CaCO3)	94.2	43.7	94.3	<0.50	74.6	75.6	<0.50
pH	7.69	7.92	7.91	5.54	7.83	7.97	5.54
Total Suspended Solids	4.0	<3.0	<3.0	<3.0	<3.0	3.5	<3.0
Total Dissolved Solids	153	77	111	<10	95	97	<10
Turbidity	11.5	0.61	1.15	<0.10	2.44	3.02	<0.10
Anions and Nutrients							
Acidity (as CaCO3)	6.5	2.6	3.6	<1.0	3.3	2.8	1.2
Alkalinity, Bicarbonate (as CaCO3)	128	41.1	90.0	<2.0	60.2	62.8	<2.0
Alkalinity, Carbonate (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide (as CaCO3)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total (as CaCO3)	128	41.1	90.0	<2.0	60.2	62.8	<2.0
Ammonia as N	0.021	0.0285	<0.0050	<0.0050	0.0127	0.0094	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	1.09	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.062	0.045	0.024	<0.020	0.026	0.026	<0.020
Nitrate (as N)	<0.0050	<0.0050	0.175	<0.0050	0.0171	0.0197	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.150	0.530	0.245	<0.050	0.053	0.070	<0.050
Total Nitrogen	0.15	0.53	0.42	<0.05	0.07	0.09	<0.05
Total Phosphate as P	0.0028	0.0051	0.0035	<0.0020	0.0050	0.0067	<0.0020
Sulfate (SO4)	0.53	2.48	6.62	<0.50	20.0	20.2	<0.50
Cyanides							
Cyanide, Total	0.0044	0.0109	0.0024	<0.0010	0.0013	<0.0010	<0.0010
Organic / Inorganic Carbon							
Total Organic Carbon	3.65	14.0	0.94	<0.50	0.66	0.75	<0.50
Total Metals							
Aluminum (Al)-Total	0.0048	0.0193	0.0050	<0.0010	0.106	0.102	<0.0010
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	<0.00010	0.00011	0.00017	<0.00010	0.00068	0.00067	<0.00010
Barium (Ba)-Total	0.261	0.0201	0.0328	<0.000050	0.0105	0.0107	<0.000050
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	0.013	0.024	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)-Total	33.5	10.8	32.0	<0.020	26.2	25.5	<0.020
Chromium (Cr)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Total	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	0.00010	<0.00010
Copper (Cu)-Total	0.00026	0.00222	0.00074	<0.00010	0.00113	0.00127	<0.00010
Iron (Fe)-Total	2.61	0.209	0.321	<0.030	0.166	0.164	<0.030
Lead (Pb)-Total	<0.000050	<0.000050	<0.000050	<0.000050	0.000070	0.000110	<0.000050
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	4.76	3.75	2.55	<0.0050	1.75	1.74	<0.0050
Manganese (Mn)-Total	0.0621	0.00355	0.0801	<0.000050	0.0115	0.0126	<0.000050
Mercury (Hg)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

(continued)

Appendix 3.5-1 Lake and Wetland Water Quality Data, 2008 (completed)

Sample ID	WL10	WL7B	WL8	WL 7B (FIELD BLANK)	L5 (SURFACE)	L5 (MID-DEPTH)	TRAVEL BLANK
Date Sampled	06-AUG-08	06-AUG-08	06-AUG-08	06-AUG-08	05-AUG-08	05-AUG-08	06-AUG-08
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L664786-9	L664786-10	L664786-11	L664786-12	L664786-13	L664786-14	L664786-25
Matrix	Water	Water	Water	Water	Water	Water	Water
Molybdenum (Mo)-Total	0.00218	0.000518	0.00178	<0.000050	0.000813	0.000794	<0.000050
Nickel (Ni)-Total	<0.00050	0.00209	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)-Total	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	1.21	0.785	0.385	<0.050	0.258	0.259	<0.050
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	0.00067	0.00058	<0.00010
Silicon (Si)-Total	4.38	1.36	3.16	<0.050	2.13	2.12	<0.050
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	3.4	2.2	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium (Sr)-Total	0.458	0.0521	0.107	<0.00010	0.0415	0.0404	<0.00010
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	0.000325	<0.000010	0.000016	<0.000010	0.000191	0.000189	<0.000010
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	0.0018	<0.0010
Dissolved Metals							
Aluminum (Al)-Dissolved	0.0057	0.0149	0.0019	-	0.0046	0.0036	-
Antimony (Sb)-Dissolved	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Arsenic (As)-Dissolved	<0.00010	0.00010	0.00013	-	0.00050	0.00045	-
Barium (Ba)-Dissolved	0.239	0.0202	0.0322	-	0.0101	0.0109	-
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Boron (B)-Dissolved	0.013	0.024	<0.010	-	<0.010	<0.010	-
Cadmium (Cd)-Dissolved	<0.000017	<0.000017	<0.000017	-	<0.000017	<0.000017	-
Calcium (Ca)-Dissolved	30.6	11.1	33.4	-	27.0	27.3	-
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Copper (Cu)-Dissolved	0.00020	0.00216	0.00058	-	0.00054	0.00053	-
Iron (Fe)-Dissolved	0.657	0.105	0.036	-	<0.030	<0.030	-
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	-
Magnesium (Mg)-Dissolved	4.35	3.89	2.62	-	1.76	1.78	-
Manganese (Mn)-Dissolved	0.0431	0.000336	0.0130	-	0.000130	0.000086	-
Mercury (Hg)-Dissolved	<0.000010	0.000011	<0.000010	-	<0.000010	<0.000010	-
Molybdenum (Mo)-Dissolved	0.00226	0.000550	0.00186	-	0.000963	0.000946	-
Nickel (Ni)-Dissolved	<0.00050	0.00204	<0.00050	-	<0.00050	<0.00050	-
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	-	<0.30	<0.30	-
Potassium (K)-Dissolved	1.10	0.832	0.401	-	0.263	0.261	-
Selenium (Se)-Dissolved	<0.00010	<0.00010	0.00018	-	0.00067	0.00063	-
Silicon (Si)-Dissolved	4.28	1.26	3.06	-	1.96	1.96	-
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium (Na)-Dissolved	3.2	2.3	<2.0	-	<2.0	<2.0	-
Strontium (Sr)-Dissolved	0.446	0.0533	0.111	-	0.0420	0.0426	-
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium (Ti)-Dissolved	<0.010	<0.010	<0.010	-	<0.010	<0.010	-
Uranium (U)-Dissolved	0.000304	<0.000010	0.000015	-	0.000193	0.000198	-
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Zinc (Zn)-Dissolved	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Aggregate Organics							
COD	<20	40	<20	<20	<20	<20	<20

Appendix 3.5-2

Relative Percent Difference Results for Lake and Wetland Water Quality Data, 2008

Appendix 3.5-2. Relative Percent Difference Results for Lake and Wetland Water Quality Data, 2008

Sample ID	WL9	WL9 (DUPLICATE)	
Date Sampled	06-AUG-08	06-AUG-08	
Time Sampled	00:00	00:00	
ALS Sample ID	L664786-4	L664786-5	
Matrix	Water	Water	
Physical Tests			
Colour, True	**<5.0**	**<5.0**	*
Conductivity	238	232	3
Hardness (as CaCO3)	120	122	2
pH	7.53	7.94	5
Total Suspended Solids	**<3.0**	**<3.0**	*
Total Dissolved Solids	141	122	14
Turbidity	0.40	0.77	*
Anions and Nutrients			
Acidity (as CaCO3)	5.8	3.9	*
Alkalinity, Bicarbonate (as CaCO3)	118	122	3
Alkalinity, Carbonate (as CaCO3)	**<2.0**	**<2.0**	*
Alkalinity, Hydroxide (as CaCO3)	**<2.0**	**<2.0**	*
Alkalinity, Total (as CaCO3)	118	122	3
Ammonia as N	**<0.0050**	**<0.0050**	*
Bromide (Br)	**<0.050**	**<0.050**	*
Chloride (Cl)	**<0.50**	**<0.50**	*
Fluoride (F)	0.042	0.041	2
Nitrate (as N)	0.0223	0.0225	1
Nitrite (as N)	**<0.0010**	**<0.0010**	*
Total Kjeldahl Nitrogen	**<0.050**	**<0.050**	*
Total Nitrogen	**<0.05**	**<0.05**	*
Total Phosphate as P	0.0022	0.0024	9
Sulfate (SO4)	14.8	14.5	2
Cyanides			
Cyanide, Total	**<0.0010**	0.0015	*
Organic / Inorganic Carbon			
Total Organic Carbon	**<0.50**	**<0.50**	*
Total Metals			
Aluminum (Al)-Total	0.0018	0.0014	*
Antimony (Sb)-Total	**<0.00010**	**<0.00010**	*
Arsenic (As)-Total	0.00101	0.00091	10
Barium (Ba)-Total	0.0565	0.0557	1
Beryllium (Be)-Total	**<0.00050**	**<0.00050**	*
Bismuth (Bi)-Total	**<0.00050**	**<0.00050**	*
Boron (B)-Total	**<0.010**	**<0.010**	*
Cadmium (Cd)-Total	**<0.000017**	**<0.000017**	*
Calcium (Ca)-Total	22.9	22.5	2
Chromium (Cr)-Total	**<0.00050**	**<0.00050**	*
Cobalt (Co)-Total	**<0.00010**	**<0.00010**	*
Copper (Cu)-Total	0.00017	0.00014	19
Iron (Fe)-Total	0.133	0.109	*
Lead (Pb)-Total	**<0.000050**	**<0.000050**	*
Lithium (Li)-Total	**<0.0050**	**<0.0050**	*
Magnesium (Mg)-Total	14.8	14.4	3
Manganese (Mn)-Total	0.00712	0.00664	7
Mercury (Hg)-Total	**<0.000010**	**<0.000010**	*
Molybdenum (Mo)-Total	0.00199	0.00198	1
Nickel (Ni)-Total	**<0.00050**	**<0.00050**	*

(continued)

Appendix 3.5-2. Relative Percent Difference Results for Lake and Wetland Water Quality Data, 2008 (completed)

Sample ID	WL9	WL9 (DUPLICATE)	
Date Sampled	06-AUG-08	06-AUG-08	
Time Sampled	00:00	00:00	
ALS Sample ID	L664786-4	L664786-5	
Matrix	Water	Water	
Phosphorus (P)-Total	**<0.30**	**<0.30**	*
Potassium (K)-Total	1.16	1.16	0
Selenium (Se)-Total	0.00028	0.00033	16
Silicon (Si)-Total	2.13	2.12	0
Silver (Ag)-Total	**<0.000010**	**<0.000010**	*
Sodium (Na)-Total	**<2.0**	**<2.0**	*
Strontium (Sr)-Total	0.120	0.122	2
Thallium (Tl)-Total	**<0.00010**	**<0.00010**	*
Tin (Sn)-Total	**<0.00010**	**<0.00010**	*
Titanium (Ti)-Total	**<0.010**	**<0.010**	*
Uranium (U)-Total	0.000102	0.000100	2
Vanadium (V)-Total	**<0.0010**	**<0.0010**	*
Zinc (Zn)-Total	**<0.0010**	**<0.0010**	*
Dissolved Metals			
Aluminum (Al)-Dissolved	**<0.0010**	**<0.0010**	*
Antimony (Sb)-Dissolved	**<0.00010**	**<0.00010**	*
Arsenic (As)-Dissolved	0.00070	0.00065	7
Barium (Ba)-Dissolved	0.0561	0.0560	0
Beryllium (Be)-Dissolved	**<0.00050**	**<0.00050**	*
Bismuth (Bi)-Dissolved	**<0.00050**	**<0.00050**	*
Boron (B)-Dissolved	**<0.010**	**<0.010**	*
Cadmium (Cd)-Dissolved	**<0.000017**	**<0.000017**	*
Calcium (Ca)-Dissolved	23.2	23.5	1
Chromium (Cr)-Dissolved	**<0.00050**	**<0.00050**	*
Cobalt (Co)-Dissolved	**<0.00010**	**<0.00010**	*
Copper (Cu)-Dissolved	0.00016	0.00016	0
Iron (Fe)-Dissolved	**<0.030**	**<0.030**	*
Lead (Pb)-Dissolved	**<0.000050**	**<0.000050**	*
Lithium (Li)-Dissolved	**<0.0050**	**<0.0050**	*
Magnesium (Mg)-Dissolved	15.0	15.3	2
Manganese (Mn)-Dissolved	0.00332	0.00483	37
Mercury (Hg)-Dissolved	**<0.000010**	**<0.000010**	*
Molybdenum (Mo)-Dissolved	0.00202	0.00204	1
Nickel (Ni)-Dissolved	**<0.00050**	**<0.00050**	*
Phosphorus (P)-Dissolved	**<0.30**	**<0.30**	*
Potassium (K)-Dissolved	1.18	1.20	2
Selenium (Se)-Dissolved	0.00027	0.00022	*
Silicon (Si)-Dissolved	2.10	2.09	0
Silver (Ag)-Dissolved	**<0.000010**	**<0.000010**	*
Sodium (Na)-Dissolved	**<2.0**	**<2.0**	*
Strontium (Sr)-Dissolved	0.122	0.124	2
Thallium (Tl)-Dissolved	**<0.00010**	**<0.00010**	*
Tin (Sn)-Dissolved	**<0.00010**	**<0.00010**	*
Titanium (Ti)-Dissolved	**<0.010**	**<0.010**	*
Uranium (U)-Dissolved	0.000104	0.000106	2
Vanadium (V)-Dissolved	**<0.0010**	**<0.0010**	*
Zinc (Zn)-Dissolved	**<0.0010**	**<0.0010**	*
Aggregate Organics			
COD	**<20**	**<20**	*

Results are expressed as milligrams per litre except where noted.

Values in bold are half the detection limit.

RPD = Relative Percent Difference relative to mean (in %).

** Denotes that RPD was not calculated due to one or more values being <5 times the detection limit.*

Highlighted values indicate a greater than 20% difference.

Appendix 3.7-1

Lake and Wetland Sediment Data

Appendix 3.7-1 Lake and Wetland Sediment Data

Sample ID	WL4	WL7	WL10	WL9	WL11	AIRSTRIP WL	L2	L5
Date Sampled	03-AUG-08		05-AUG-08	02-AUG-08	04-AUG-08	02-AUG-08	03-AUG-08	05-AUG-08
Time Sampled	00:00		00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L664786-26	L664786-27	L664786-28	L664786-29	L664786-30	L664786-31	L664786-32	L664786-33
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Physical Tests								
pH	6.52	6.23	7.43	6.98	5.54	5.71	6.61	7.01
Particle Size								
% Gravel (>2mm)	<1	<1	<1	7	15	1	<1	<1
% Sand (2.0mm - 0.063mm)	<1	7	1	43	59	79	<1	2
% Silt (0.063mm - 4um)	71	56	67	41	23	17	73	65
% Clay (<4um)	29	37	31	8	4	3	27	33
Leachable Anions & Nutrients								
Total Nitrogen by LECO	0.30	1.26	0.37	0.26	0.08	0.83	0.37	0.07
Organic / Inorganic Carbon								
Total Organic Carbon	2.6	11.1	6.4	3.6	0.6	13.8	3.5	0.2
Plant Available Nutrients								
Available Phosphate-P	1	8	4	1	1	4	8	<1
Metals								
Aluminum (Al)	31300	5810	3880	6500	5790	8450	24900	47600
Antimony (Sb)	<10	<10	<10	<10	<30	<10	<10	<10
Arsenic (As)	51.3	<5.0	<5.0	337	143	<5.0	7.6	146
Barium (Ba)	83.9	103	319	247	199	58.7	121	180
Beryllium (Be)	1.45	0.55	<0.50	<0.50	1.8	1.01	1.40	1.67
Bismuth (Bi)	<20	<20	<20	<20	<60	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	0.62
Calcium (Ca)	13100	12000	38300	12300	6150	6880	15900	12300
Chromium (Cr)	71.3	17.2	3.1	14.8	<20	9.5	69.9	78.8
Cobalt (Co)	26.2	3.8	3.4	10.8	<6.0	2.2	17.5	37.2
Copper (Cu)	268	76.9	18.8	24.8	5.4	12.0	117	248
Iron (Fe)	51900	26900	82500	61400	247000	13000	55200	87600
Lead (Pb)	<30	<30	<30	<30	<90	<30	<30	<30
Lithium (Li)	22.0	3.5	7.4	6.9	<6.0	3.3	15.2	29.5
Magnesium (Mg)	21400	1980	3180	8180	1610	1240	13300	36500
Manganese (Mn)	924	735	1340	271	3630	111	886	2710
Mercury (Hg)	0.0554	0.0416	0.0141	0.0585	0.0694	0.0544	0.0656	0.0185
Molybdenum (Mo)	6.3	9.7	5.1	5.3	<12	<4.0	7.3	5.7
Nickel (Ni)	48.1	30.7	<5.0	28.1	<15	7.8	81.0	57.3
Phosphorus (P)	1230	482	469	919	770	535	898	1280
Phosphorus, Total	1330	310	190	1240	680	380	2410	1270
Potassium (K)	1520	410	580	1440	620	710	1350	2220
Selenium (Se)	4.22	0.65	<0.50	4.40	<0.50	<0.50	6.27	1.74
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<6.0	<2.0	<2.0	<2.0
Sodium (Na)	380	510	<200	<200	<600	1140	350	520
Strontium (Sr)	43.1	106	56.0	50.8	26.9	32.4	50.4	42.8
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<15	<5.0	<5.0	<5.0
Titanium (Ti)	1410	302	207	52.0	328	559	801	1080
Vanadium (V)	163	14.5	32.1	30.2	30.6	20.0	115	209
Zinc (Zn)	145	28.2	22.2	63.1	90.9	23.5	105	267

Appendix 3.8-1

Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008

	WL-4			WL-7B			WL-9			WL-10		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		3-Aug-08			6-Aug-08			2-Aug-08			5-Aug-08	
BACILLARIOPHYCAE												
Centrales												
Cylotella cf. bodanica												
Cyclotella glomerata												
Cyclotella	0.38		<0.19	<1.4	<1.4	<1.4						
Melosira		<0.19	<0.19									
UID												
Pennales												
Achnanthes minutissima	7.79	2.28	3.42	9.8	11.2	2.8		0.01				
Achnanthes flexella	0.38	0.57	0.57	<1.4								
Achnanthes			<0.19		<1.4	<1.4						
Amphipleura pellucida					1.4	<1.4						
Amphora ovalis												
Ceratoneis arcus		<0.19		<1.4								
Ceratoneis			<0.19		<1.4	<1.4						
Cocconeis		<0.19										
Cymbella minuta	0.76	0.95	0.95	4.2	<1.4	<1.4						
Cymbella	0.38	0.19	0.38	<1.4	1.4	<1.4	0.04	0.03	0.06			
Diatoma elongatum	5.13	3.23	3.99									
Diatoma hiemale	1.71	2.28	1.52									
Diatoma	<0.19	<0.19	<0.19		<1.4							
Diatoma ?								0.43	0.18			
Epithemia sorex				<1.4								
Epithemia turgida				<1.4	<1.4							
Eunotia pectinalis				<1.4	<1.4							
Eunotia	<0.19	<0.19	<0.19	1.4	<1.4	1.4						0.01
Fragilaria crotonensis	10.83	2.85	6.08	5.6	2.8	1.4						
Fragilaria vaucheriae		<0.19										
Fragilaria	2.85	<0.19	0.57	<1.4	<1.4	<1.4					0.01	0.01
Frustulia					<1.4							
Frustulia ?												
Gomphonema acuminatum				<1.4	<1.4							
Gomphonema olivaceum	0.76	0.95	0.95	<1.4								
Gomphonema	1.33	0.19	0.38	1.4	1.4	<1.4						
Meridion circulare	1.14	0.76	1.52									
Navicula	0.95	0.19	0.38	<1.4	<1.4	2.8		0.01		0.01	0.01	0.01
Navicula ?							0.05	0.05	0.07			
Nitzschia		<0.19			<1.4							
Pinnularia				<1.4	<1.4	<1.4						
Pleurosigma / Gyrosigma	<0.19	<0.19	<0.19	<1.4	<1.4	<1.4						
Rhopalodia gibba				<1.4	<1.4							
Stauroneis		<0.19			<1.4	<1.4						
Synedra ulna	0.57	0.19	0.57		<1.4	<1.4						
Synedra	<0.19	<0.19	<0.19		<1.4	<1.4						
Tabellaria fenestrata	21.28	18.24	13.68									
Tabellaria flocculosa	7.60	<0.19	9.12	<1.4	<1.4	<1.4						
UID	0.95	0.19	0.57	2.8	4.2	1.4	0.04	0.14	0.04		0.01	0.01

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (continued)

	WL-4			WL-7B			WL-9			WL-10		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		3-Aug-08			6-Aug-08			2-Aug-08			5-Aug-08	
CHLOROPHYTA												
Chlorococcales												
Ankistrodesmus falcatus												
Ankistrodesmus				<1.4	<1.4		0.01	0.01	0.02			0.03
Botryococcus braunii	<0.19		<0.19	112.0	67.2	22.4						
Closteriopsis					<1.4	<1.4						
Closteriopsis ?												
Coelastrum				<1.4	22.4	<1.4						
Crucigenia quadrata												
Crucigenia rectangularis				11.2	11.2	<1.4						
Dictyosphaerium					<1.4							
Elakatothrix gelatinosa				5.6	5.6	2.8						0.01
Lagerheimia ?						<1.4						
Nephrocytium limneticum					<1.4							
Nephrocytium ?												
Oocystis				8.4	5.6	5.6						
Pediastrum					<1.4	<1.4						
Pediastrum tetras					<1.4	<1.4						
Quadrigula cf. closterioides				11.2	11.2	<1.4						
Quadrigula lacustris					<1.4	<1.4						
Quadrigula				<1.4	<1.4							
Scenedesmus cf denticulatus				25.2	16.8	19.6						
Scenedesmus quadricauda					<1.4	<1.4						
Scenedesmus	<0.19	<0.19	<0.19	<1.4	<1.4							
Selenastrum minutum												
Selenastrum					<1.4							
Sphaerocystis schroeteri				<1.4	22.4	22.4						
Tetraedron caudatum					1.4							
Tetraedron minimum				1.4	4.2	5.6						
Tetraedron				<1.4	<1.4	<1.4						
Oedogoniales												
Bulbochaete					<1.4							
Oedogonium				<1.4	<1.4							
Oedogonium ?		<0.19				<1.4	0.09	0.08	0.03			
Tetrasporales												
Gloeocystis cf ampla				<1.4	<1.4	<1.4						
Gloeocystis						<1.4						
Ulothricales												
Geminella ?												
Ulothrix ?	<0.19		<0.19			<1.4						
Volvocales												
Eudorina							0.01					
Eudorina ?												
Pandorina morum						<1.4						
UID				<1.4	5.6	5.6						

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (continued)

	WL-4			WL-7B			WL-9			WL-10		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		3-Aug-08			6-Aug-08			2-Aug-08			5-Aug-08	
Zygnematales												
Arthrodesmus					<1.4							0.01
Bambusina					<1.4							
Closterium				<1.4	<1.4	<1.4				0.02	0.01	
Cosmarium	<0.19		<0.19		<1.4	4.2	0.01				0.06	0.10
Cosmarium spp.				1.4								
Cylindrocystis ?												0.01
Euastrum				7.0	8.4	4.2						
Gonatozygon				<1.4		<1.4						
Hyalotheca												
Mougeotia	<0.19	<0.19	<0.19	<1.4	2.8	<1.4					0.02	0.07
Mougeotia ?											0.03	0.05
Netrium?				18.2	18.2	22.4						
Spirogyra sp.?												
Spondylosium planum	<0.19			<1.4	2.8	1.4						0.02
Staurastrum				1.4	1.4	<1.4						
Xanthidium					<1.4	<1.4						
Xanthidium ?					<1.4							
Zygnema					<1.4			0.02				
Zygnema ?											0.02	0.06
UID	<0.19	<0.19	<0.19	<1.4	<1.4	<1.4					0.01	0.02
CHRYSOPHYTA												
Ochromonadales												
Dinobryon cf. bavaricum												
Dinobryon elegantissimum												
Dinobryon sertularia	0.76	<0.19	0.38					0.05				
Dinobryon					<1.4	<1.4		0.05	0.06			
Dinobryon ?										0.23	0.09	0.05
Mallomonas akrokomos												
Mallomonas ?					<1.4							
UID										0.03		
Rhizochrysidales												
Diceras phaseolus					<1.4							
CRYPTOPHYTA												
Cryptomonadales												
Chroomonas acuta				56.0	50.4	44.8						
Chroomonas												
Cryptomonas ovata / erosa				11.2	18.2	22.4	0.01	0.01				
Cryptomonas	0.19					1.4		0.01	0.02	0.05	0.05	0.06
UID												0.07
CYANOPHYTA												
Chroococcales												
Agmenellum tenuissima				61.6	201.6	224.0						
Agmenellum					<1.4							
Anacystis elachista				168.0	126.0	154.0						
Anacystis cf limneticus				2.8	<1.4	5.6						
Anacystis					<1.4							
Gomphosphaeria aponina					<1.4	<1.4						
Gomphosphaeria												
Gomphosphaeria ?												

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (continued)

	WL-4			WL-7B			WL-9			WL-10		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		3-Aug-08			6-Aug-08			2-Aug-08			5-Aug-08	
Nostocales												
Anabaena	<0.19				28.0							0.14
Anabaena ?		<0.19	<0.19	<1.4	<1.4			0.08			0.18	
*Anabaena ? **												0.77
Oscillatoriales												
Lyngbya limnetica	3.80	<0.19	<0.19	<1.4	8.4	42.0		0.30	0.12			
Lyngbya cf. limnetica										2.73	3.80	3.90
Lyngbya						<1.4						
Lyngbya ?				<1.4		<1.4						
Oscillatoria cf tenuis					<1.4							
Oscillatoria					<1.4	<1.4						
Oscillatoria ?								0.06			0.11	0.30
UID												
EUGLENOPHYTA												
Euglenales												
Euglena	<0.19		<0.19			<1.4						
Euglena ?								0.02	0.01			
Trachelomonas		<0.19	<0.19				0.02		0.01			0.01
PYRRHOPHYTA												
Dinokontae												
Ceratium sp.				<1.4								
Gymnodinium ?					1.4	<1.4				0.02	0.01	
Peridinium cf inconspicuum				8.4	11.2	9.8				0.01	0.19	0.46
Peridinium / Glenodinium				<1.4	<1.4							
UID				1.4		1.4						0.01
UID ?										0.01		
UID branched filamentous algae												
UID filamentous algae	<0.19	<0.19	<0.19	<1.4		<1.4		0.05				0.02
UID unicellular algae							0.03	0.01	0.02	0.02	0.05	0.03

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (continued)

	WL-11			L-2			L-5			Airstrip WL		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		4-Aug-08			3-Aug-08			5-Aug-08			2-Aug-08	
BACILLARIOPHYCAE												
Centrales												
Cylotella cf. bodanica				6.08	8.17	11.59	<0.19	<0.19	<0.19			
Cyclotella glomerata				0.19	0.38	0.38	<0.19	<0.19	<0.19			
Cyclotella				0.95	0.57	0.38	23.56	35.15	27.36			
Melosira				<0.19						<2.8	<2.8	<2.8
UID										<2.8	<2.8	<2.8
Pennales												
Achnanthes minutissima				0.57	0.57	0.76	0.19	0.38	0.38	8.4	2.8	<2.8
Achnanthes flexella				<0.19	<0.19	<0.19						<2.8
Achnanthes							<0.19				<2.8	
Amphipleura pellucida												
Amphora ovalis				<0.19	<0.19			<0.19				
Ceratoneis arcus												
Ceratoneis										<2.8	<2.8	<2.8
Cocconeis					<0.19							
Cymbella minuta				0.76	0.38	0.57		<0.19	<0.19		<2.8	<2.8
Cymbella				<0.19	0.38	0.19	<0.19	<0.19	<0.19	5.6	5.6	<2.8
Diatoma elongatum				<0.19			0.19	<0.19	<0.19			
Diatoma hiemale												
Diatoma					<0.19	<0.19	<0.19	0.19	0.19	<2.8		
Diatoma ?												
Epithemia sorex												
Epithemia turgida							<0.19					
Eunotia pectinalis										<2.8	<2.8	
Eunotia										<2.8	<2.8	<2.8
Fragilaria crotonensis				0.19	<0.19	<0.19	<0.19	1.14	0.76	5.6	<2.8	<2.8
Fragilaria vaucheriae												
Fragilaria					<0.19	<0.19	0.19	<0.19	0.19	2.8	<2.8	<2.8
Frustulia										<2.8		
Frustulia ?											<2.8	
Gomphonema acuminatum				<0.19								
Gomphonema olivaceum							<0.19		<0.19			
Gomphonema				<0.19	<0.19	<0.19	<0.19	0.19	<0.19	<2.8	<2.8	<2.8
Meridion circulare												
Navicula				0.38	<0.19	<0.19	<0.19	<0.19	<0.19	<2.8	2.8	<2.8
Navicula ?												
Nitzschia												
Pinnularia												
Pleurosigma / Gyrosigma							<0.19			<2.8	<2.8	<2.8
Rhopalodia gibba												
Stauroneis										<2.8	<2.8	<2.8
Synedra ulna						<0.19	0.19	0.38	0.57			
Synedra					<0.19		<0.19		<0.19		<2.8	<2.8
Tabellaria fenestrata						<0.19	<0.19			<2.8	<2.8	<2.8
Tabellaria flocculosa							<0.19	<0.19	<0.19	<2.8	<2.8	<2.8
UID				<0.19	<0.19	<0.19	0.19	<0.19	<0.19	<2.8	<2.8	<2.8

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (continued)

	WL-11			L-2			L-5			Airstrip WL		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		**4-Aug-08**			**3-Aug-08**			**5-Aug-08**			**2-Aug-08**	
CHLOROPHYTA												
Chlorococcales												
Ankistrodesmus falcatus										<2.8	<2.8	<2.8
Ankistrodesmus				0.38	0.57	0.57				5.6	5.6	<2.8
Botryococcus braunii				9.12	4.56	4.56				134.4	44.8	<2.8
Closteriopsis												<2.8
Closteriopsis ?										<2.8	<2.8	
Coelastrum				<0.19								
Crucigenia quadrata				5.32	3.04	1.52				67.2	44.8	<2.8
Crucigenia rectangularis				1.52	3.04	3.04				78.4	44.8	
Dictyosphaerium												
Elakatothrix gelatinosa				1.14	1.52	1.14	0.38	0.76	0.76	44.8	22.4	<2.8
Lagerheimia ?				<0.19		<0.19						
Nephrocytium limneticum												
Nephrocytium ?				0.76	<0.19	0.76				112.0	89.6	<2.8
Oocystis				2.66	0.76	0.38				44.8	<2.8	<2.8
Pediastrum										<2.8	<2.8	<2.8
Pediastrum tetras										<2.8		<2.8
Quadrigula cf. closterioides						<0.19				56.0	67.2	<2.8
Quadrigula lacustris				1.52								
Quadrigula				<0.19						11.2	<2.8	<2.8
Scenedesmus cf denticulatus										<2.8		<2.8
Scenedesmus quadricauda												
Scenedesmus										<2.8	<2.8	
Selenastrum minutum										<2.8	<2.8	
Selenastrum												
Sphaerocystis schroeteri				<0.19	<0.19	<0.19				1,444.8	403.2	<2.8
Tetraedron caudatum										<2.8		
Tetraedron minimum								<0.19	<0.19		<2.8	2.8
Tetraedron										<2.8	<2.8	
Oedogoniales												
Bulbochaete												
Oedogonium										<2.8		
Oedogonium ?										<2.8	<2.8	<2.8
Tetrasporales												
Gloeocystis cf ampla				22.42	21.28	21.66						
Gloeocystis		0.04								33.6		
Ulothricales												
Geminella ?				3.80	5.32	2.28						
Ulothrix ?				<0.19								
Volvocales												
Eudorina						<0.19						
Eudorina ?					<0.19							
Pandorina morum												
UID				<0.19								<2.8

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (continued)

	WL-11			L-2			L-5			Airstrip WL		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		**4-Aug-08**			**3-Aug-08**			**5-Aug-08**			**2-Aug-08**	
Zygnematales												
Arthrodesmus										<2.8	<2.8	<2.8
Bambusina										<2.8		
Closterium		0.01	0.01									
Cosmarium	0.01		0.01							5.6	8.4	5.6
Cosmarium spp.												
Cylindrocystis ?												
Euastrum										<2.8	<2.8	<2.8
Gonatozygon		0.05	0.01									
Hyalotheca											<2.8	<2.8
Mougeotia										<2.8	<2.8	
Mougeotia ?	0.05	0.44	0.13									<2.8
Netrium?	0.01									<2.8	<2.8	<2.8
Spirogyra sp.?		0.01										
Spondylosium planum										5.6	11.2	2.8
Staurastrum										<2.8	<2.8	<2.8
Xanthidium												<2.8
Xanthidium ?											<2.8	
Zygnema										<2.8		
Zygnema ?											<2.8	
UID	0.01	0.01		<0.19						<2.8	<2.8	2.8
CHRYSOPHYTA												
Ochromonadales												
Dinobryon cf. bavaricum				10.45	5.89	7.41				100.8	58.8	<2.8
Dinobryon elegantissimum				<0.19	<0.19							
Dinobryon sertularia		0.01								<2.8		<2.8
Dinobryon	0.01	0.02	0.01	1.71	3.04	1.52		<0.19	<0.19	2.8	11.2	<2.8
Dinobryon ?												
Mallomonas akrokomos											<2.8	2.8
Mallomonas ?										<2.8		
UID												
Rhizochrysidales												
Diceras phaseolus				<0.19	<0.19					<2.8	<2.8	<2.8
CRYPTOPHYTA												
Cryptomonadales												
Chroomonas acuta				0.57	0.38	0.38		<0.19	<0.19			
Chroomonas	0.09			0.19	0.19	0.38						
Cryptomonas ovata / erosa	1.94		0.54	0.38	0.38	0.19		<0.19		<2.8		<2.8
Cryptomonas	0.06	0.02	0.02					<0.19	<0.19		<2.8	<2.8
UID												
CYANOPHYTA												
Chroococcales												
Agmenellum tenuissima										134.4	246.4	403.2
Agmenellum				<0.19								<2.8
Anacystis elachista				<0.19						<2.8	<2.8	<2.8
Anacystis cf limneticus				3.04	6.08	7.60						
Anacystis					<0.19					<2.8	<2.8	<2.8
Gomphosphaeria aponina												
Gomphosphaeria												<2.8
Gomphosphaeria ?											<2.8	

Note: *(continued)*

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-1. Schaft Creek Project Wetland and Lake Phytoplankton Data, 2008 (completed)

	WL-11			L-2			L-5			Airstrip WL		
	1	2	3	1	2	3	1	2	3	1	2	3
TAXON		4-Aug-08			3-Aug-08			5-Aug-08			2-Aug-08	
Nostocales												
Anabaena												
Anabaena ?	0.27									<2.8	<2.8	<2.8
*Anabaena ? **												
Oscillatoriales												
Lyngbya limnetica			0.12			<0.19		<0.19		<2.8		42.0
Lyngbya cf. limnetica	0.10	0.15										
Lyngbya										<2.8	<2.8	<2.8
Lyngbya ?												
Oscillatoria cf tenuis	0.40											
Oscillatoria	0.15		0.20									<2.8
Oscillatoria ?		0.65									<2.8	
UID								<0.19				
EUGLENOPHYTA												
Euglenales												
Euglena												
Euglena ?		0.01										
Trachelomonas	0.08	0.01	0.05									
PYRRHOPHYTA												
Dinokontae												
Ceratium sp.												
Gymnodinium ?							<0.19			<2.8		<2.8
Peridinium cf inconspicuum	0.02		0.01				<0.19		<0.19	<2.8	<2.8	<2.8
Peridinium / Glenodinium										<2.8	<2.8	<2.8
UID									<0.19		<2.8	
UID ?												
UID branched filamentous algae												<2.8
UID filamentous algae	0.18									<2.8	<2.8	<2.8
UID unicellular algae		0.03	0.04		<0.19	0.19				<2.8	<2.8	

Note:

Units = cells/mL, Unidentified flagellates observed but not counted, and UID = unidentified due to lack of size and / or missing morphological characters

** No gonidia observed therefore id. Tentative*

Appendix 3.8-2

Schaft Creek Project Wetland and Lake Phytoplankton Biomass Data, 2008

Appendix 3.8-2. Schaft Creek Project Wetland and Lake Phytoplankton Biomass Data, 2008

Site	Rep	Chlorophyll a (µg)	Volume Filtered (L)	Chlorophyll a (µg/L)
WL7	1	0.274	0.50	0.548
WL7	2	0.172	0.25	0.688
WL7	3	0.303	0.50	0.606
WL10	1	0.0213	0.25	0.085
WL10	2	0.0233	0.25	0.093
WL10	3	0.0150	0.25	0.060
WL4	1	0.0370	0.50	0.074
WL4	2	0.0167	0.50	0.033
WL4	3	0.0325	0.35	0.093
L2	1	0.350	0.75	0.467
L2	2	0.449	0.75	0.599
L2	3	0.408	0.75	0.544
L5	1	0.712	0.50	1.424
L5	2	0.623	0.50	1.246
L5	3	0.654	0.50	1.308
WL9	1	0.00860	0.50	0.017
WL9	2	0.0300	0.50	0.060
WL9	3	0.0479	0.50	0.096
WL11	1	0.0799	0.45	0.178
WL11	2	0.362	0.35	1.034
WL11	3	0.0880	0.35	0.251
AIRSTRIP WL	1	0.253	0.25	1.012
AIRSTRIP WL	2	0.116	0.25	0.464
AIRSTRIP WL	3	0.0745	0.25	0.298

Appendix 3.9-1

Schaft Creek Project Wetland Benthic Invertebrate Data, 2008

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008

TAXON	Stage	No. of individuals	WL4-1	WL4-2	WL4-3	WL7B-1	WL7B-2	WL7B-3	WL9-1	WL9-2	WL9-3
NEMATODA											
Nematoda indet.	A	*994*	12			72		12	36	24	
ANNELIDA											
Oligochaeta											
Enchytraeidae											
Enchytraeidae indet.	J	*340*						12	12		16
Enchytraeidae indet.	A	*276*									272
Lumbriculidae											
Lumbriculus sp.	J	*12*									
Lumbriculus sp.	A	*111*	12	18	9						24
Naididae											
Nais communis	J	*8*									8
Nais communis	A	*112*							96		16
Nais variabilis	A	*24*									
Tubificidae											
Tubificidae indet. Group 2	J	*197*		1							
Tubificidae indet. Group 2	A	*431*	36	49	6					96	32
Ilyodrilus templetoni	A	*40*									
Rhyacodrilus coccineus	A	*211*	84	7							
Rhyacodrilus sodalis	A	*12*							12		
Rhyacodrilus sp.	A	*36*									
Tubificidae indet. Group 5	A	*96*							96		
Limnodrilus hoffmeisteri	J	*24*									
Limnodrilus hoffmeisteri	A	*287*			3				84		
Limnodrilus udekimianus	A	*490*									
Limnodrilus sp.	J	*24*							24		
Limnodrilus sp.	A	*72*								24	
Hirudinea											
Hirudinea indet.	A	*48*									
MOLLUSCA											
Gastropoda											
Gastropoda indet.	A	*12*									
Valvatidae											
Valvatidae indet.	J	*4*									
Valvata sincera sincera	J	*16*									
Valvata sincera sincera	A	*128*									
Bivalvia											
Sphaeriidae											
Pisidium casertanum	J	*152*									
Pisidium casertanum	A	*1292*								96	8
Pisidium spp.	J	*826*								24	
Pisidium spp.	A	*870*	12			24	96	24			

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	WL4-1	WL4-2	WL4-3	WL7B-1	WL7B-2	WL7B-3	WL9-1	WL9-2	WL9-3
ARTHROPODA											
ARACHNIDA											
Acari											
Acari indet.	A	*200*									8
Hydrachnida											
Sperchontidae											
Sperchon sp.	A	*4*									
CRUSTACEA											
Amphipoda											
Hyalellidae											
Hyalella azteca	A	*166*						144			
Cladocera											
Chydoridae											
Chydoridae indet.	A	*3318*				96					
Daphniidae											
Daphnia sp.	A	*408*									
Copepoda											
Calanoida											
Calanoida indet.	cpp	*2034*	12	2				12			
Cyclopoida											
Cyclopoida indet.	cpp	*724*				24					
Harpacticoida											
Harpacticoida indet.	cpp	*48*							48		
Ostracoda											
Podocopina											
Podocopina indet.	A	*2945*	108	8	3				24	48	
INSECTA											
Odonata											
Odonata indet.	N	*12*									
Corduliidae											
Corduliidae indet.	N	*96*					96				
Coleoptera											
Dytiscidae											
Rhantus sp.	A	*12*									
Diptera											
Ceratopogonidae											
Bezzia /Palpomyia sp.	L	*316*				72					
Probezzia sp.	L	*96*						24			
Chironomidae											
Chironomidae indet.	L	*4203*	480	29	12	168	96	108	216	120	24
Chironomidae indet.	P	*32*									
Chironominae											
Chironomini											
Chironomus sp.	L	*114*									
Sergentia sp.	L	*2227*		13	24	48		12	132	312	16
Stictochironomus sp.	L	*1178*							12		

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	WL4-1	WL4-2	WL4-3	WL7B-1	WL7B-2	WL7B-3	WL9-1	WL9-2	WL9-3
Tanytarsini											
Corynocera sp.	L	*1415*	480	35	54	48		12	84	144	64
Pagastiella sp.	L	*156*						156			
Diamesinae											
Diamesa sp.	L	*48*							24	24	
Orthocladiinae											
Corynoneura sp.	L	*12*									
Orthocladius sp.	L	*211*	36	1	12				12		144
Paracladius sp.	L	*252*							156	96	
Tanypodinae											
Procladius sp.	L	*1203*	300	12	99	48	96	108			
Total Number of Organisms		*28574*	1572	175	222	600	384	624	1068	1008	632
Total Number of Taxa		*441*	10	9	8	8	3	10	13	9	9
MEMO											
Post end of Tubificidae indet. Grp 2	A	*4*									

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	WL10-1	WL10-2	WL10-3	WL11-1	WL11-2	WL11-3	L2-1	L2-2	L2-3
NEMATODA											
Nematoda indet.	A	*419*		6			8				1
ANNELIDA											
Oligochaeta											
Enchytraeidae											
Enchytraeidae indet.	J	*150*									
Enchytraeidae indet.	A	*2*		2							
Lumbriculidae											
Lumbriculus sp.	J	*6*									
Lumbriculus sp.	A	*24*									
Naididae											
Nais communis	J										
Nais communis	A										
Nais variabilis	A	*12*									
Tubificidae											
Tubificidae indet. Group 2	J	*98*									
Tubificidae indet. Group 2	A	*106*									
Ilyodrilus templetoni	A	*20*							9		11
Rhyacodrilus coccineus	A	*60*									
Rhyacodrilus sodalis	A										
Rhyacodrilus sp.	A	*18*									
Tubificidae indet. Group 5	A										
Limnodrilus hoffmeisteri	J	*12*									
Limnodrilus hoffmeisteri	A	*100*				48					
Limnodrilus udekimianus	A	*245*	5					96			
Limnodrilus sp.	J										
Limnodrilus sp.	A	*24*					24				
Hirudinea											
Hirudinea indet.	A	*24*				24					
MOLLUSCA											
Gastropoda											
Gastropoda indet.	A	*6*									
Valvatidae											
Valvatidae indet.	J	*2*									
Valvata sincera sincera	J	*8*					8				
Valvata sincera sincera	A	*64*					64				
Bivalvia											
Sphaeriidae											
Pisidium casertanum	J	*76*								6	18
Pisidium casertanum	A	*594*		4		48	16	192	21	28	61
Pisidium spp.	J	*401*		2				192	30	12	31
Pisidium spp.	A	*357*	5		24				36	4	

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	WL10-1	WL10-2	WL10-3	WL11-1	WL11-2	WL11-3	L2-1	L2-2	L2-3
ARTHROPODA											
ARACHNIDA											
Acari											
Acari indet.	A	*96*									
Hydrachnida											
Sperchontidae											
Sperchon sp.	A	*2*									
CRUSTACEA											
Amphipoda											
Hyalellidae											
Hyalella azteca	A	*11*					8				3
Cladocera											
Chydoridae											
Chydoridae indet.	A	*1611*									3
Daphniidae											
Daphnia sp.	A	*204*					24	96			
Copepoda											
Calanoida											
Calanoida indet.	cpp	*1004*			24		40	384			
Cyclopoida											
Cyclopoida indet.	cpp	*350*									
Harpacticoida											
Harpacticoida indet.	cpp										
Ostracoda											
Podocopina											
Podocopina indet.	A	*1377*		10		48	32	192	12	58	55
INSECTA											
Odonata											
Odonata indet.	N	*6*									
Corduliidae											
Corduliidae indet.	N										
Coleoptera											
Dytiscidae											
Rhantus sp.	A	*6*									
Diptera											
Ceratopogonidae											
Bezzia /Palpomyia sp.	L	*122*			12		8	96			
Probezzia sp.	L	*36*			12						
Chironomidae											
Chironomidae indet.	L	*1475*		6	12	24	80	192	6	1	
Chironomidae indet.	P	*16*					8				
Chironominae											
Chironomini											
Chironomus sp.	L	*57*									57
Sergentia sp.	L	*835*	5		12	48	40				
Stictochironomus sp.	L	*583*							3		

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	WL10-1	WL10-2	WL10-3	WL11-1	WL11-2	WL11-3	L2-1	L2-2	L2-3
Tanytarsini											
Corynocera sp.	L	*247*			12	24		96	72	3	
Pagastiella sp.	L										
Diamesinae											
Diamesa sp.	L										
Orthocladiinae											
Corynoneura sp.	L	*6*									
Orthocladius sp.	L	*3*							3		
Paracladius sp.	L										
Tanypodinae											
Procladius sp.	L	*270*		4	12		24	96		12	
Total Number of Organisms		*11144*	14	34	120	264	384	1632	192	124	240
Total Number of Taxa		*181*	3	5	7	6	11	8	6	4	7
MEMO											
Post end of Tubificidae indet. Grp 2	A	*2*		2							

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	L5-1	L5-2	L5-3	Airstrip WL-1	Airstrip WL-2	Airstrip WL-3
NEMATODA								
Nematoda indet.	A	*202*		1		144		57
ANNELIDA								
Oligochaeta								
Enchytraeidae								
Enchytraeidae indet.	J	*75*				72		3
Enchytraeidae indet.	A							
Lumbriculidae								
Lumbriculus sp.	J	*3*						3
Lumbriculus sp.	A	*12*	4	5				3
Naididae								
Nais communis	J							
Nais communis	A							
Nais variabilis	A	*6*						6
Tubificidae								
Tubificidae indet. Group 2	J	*49*	1			48		
Tubificidae indet. Group 2	A	*53*	2	22	5	24		
Ilyodrilus templetoni	A							
Rhyacodrilus coccineus	A	*30*	2	1	3	24		
Rhyacodrilus sodalis	A							
Rhyacodrilus sp.	A	*9*						9
Tubificidae indet. Group 5	A							
Limnodrilus hoffmeisteri	J	*6*			6			
Limnodrilus hoffmeisteri	A	*26*	1	1	24			
Limnodrilus udekimianus	A	*72*				72		
Limnodrilus sp.	J							
Limnodrilus sp.	A							
Hirudinea								
Hirudinea indet.	A							
MOLLUSCA								
Gastropoda								
Gastropoda indet.	A	*3*						3
Valvatidae								
Valvatidae indet.	J	*1*		1				
Valvata sincera sincera	J							
Valvata sincera sincera	A							
Bivalvia								
Sphaeriidae								
Pisidium casertanum	J	*26*	17	3	6			
Pisidium casertanum	A	*112*	35	28	31			18
Pisidium spp.	J	*67*	26	13	13			15
Pisidium spp.	A	*144*				48	96	

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (continued)

TAXON	Stage	No. of individuals	L5-1	L5-2	L5-3	Airstrip WL-1	Airstrip WL-2	Airstrip WL-3
ARTHROPODA								
ARACHNIDA								
Acari								
Acari indet.	A	*48*					48	
Hydrachnida								
Sperchontidae								
Sperchon sp.	A	*1*		1				
CRUSTACEA								
Amphipoda								
Hyalellidae								
Hyalella azteca	A							
Cladocera								
Chydoridae								
Chydoridae indet.	A	*804*				768		36
Daphniidae								
Daphnia sp.	A	*42*						42
Copepoda								
Calanoida								
Calanoida indet.	cpp	*278*	2			96	144	36
Cyclopoida								
Cyclopoida indet.	cpp	*175*			1	24	48	102
Harpacticoida								
Harpacticoida indet.	cpp							
Ostracoda								
Podocopina								
Podocopina indet.	A	*485*	170	221	22		48	24
INSECTA								
Odonata								
Odonata indet.	N	*3*						3
Corduliidae								
Corduliidae indet.	N							
Coleoptera								
Dytiscidae								
Rhantus sp.	A	*3*						3
Diptera								
Ceratopogonidae								
Bezzia /Palpomyia sp.	L	*3*						3
Probezzia sp.	L	*12*						12
Chironomidae								
Chironomidae indet.	L	*577*	9	8	8	192	192	168
Chironomidae indet.	P	*4*	4					
Chironominae								
Chironomini								
Chironomus sp.	L							
Sergentia sp.	L	*365*			44	120		201
Stictochironomus sp.	L	*290*	10	275	5			

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph, L = larvae, and P = pupae

(continued)

Appendix 3.9-1. Schaft Creek Project Wetland Benthic Invertebrate Data, 2008 (completed)

TAXON	Stage	No. of individuals	L5-1	L5-2	L5-3	Airstrip WL-1	Airstrip WL-2	Airstrip WL-3
Tanytarsini								
Corynocera sp.	L	*20*	4	13	3			
Pagastiella sp.	L							
Diamesinae								
Diamesa sp.	L							
Orthocladiinae								
Corynoneura sp.	L	*3*						3
Orthocladius sp.	L							
Paracladius sp.	L							
Tanypodinae								
Procladius sp.	L	*61*	18	22				21
Total Number of Organisms		*4070*	305	615	171	1632	576	771
Total Number of Taxa		*62*	9	11	9	9	5	19
MEMO								
Post end of Tubificidae indet. Grp 2	A							

Note: A = adult, J = juvenile, cpp = copepodite, N = nymph,
L = larvae, and P = pupae

Appendix 3.10-1

Schaft Creek Project Lake Zooplankton Data, 2008

Appendix 3.10-1. Schaft Creek Project Lake Zooplankton Data, 2008

Site			L2			L5		
Replicate			1	2	3	1	2	3
TAXON	STAGE	No. of individuals						
ROTIFERA								
Kellicottia longispina		23,690	5,100	3,500	14,100	600	190	200
CLADOCERA								
Bosminidae		0						
Bosmina longirostris		2						2
***Chydoridae**		2					1	1
Chydorus sphaericus		0						
Daphnidae		0						
Daphnia middendorffiana	juvenile	1,288	790	137	360			1
COPEPODA		0						
Calanoida		0						
Diaptomidae								
Leptodiaptomus pribilofensis	M	960	590	220	150			
Leptodiaptomus pribilofensis	F	2,475	1,090	230	1,150	1		4
Leptodiaptomus sp.	CV	190	20	110	60			
Leptodiaptomus sp.	CIV	7,600	2,100	2,700	2,800			
Leptodiaptomus sp.	CIII	11,000	3,100	3,900	4,000			
Leptodiaptomus sp.	CII	9,600	4,100	2,000	3,500			
Leptodiaptomus sp.	CI	7,800	3,100	2,200	2,500			
Temoridae		0						
Heterocope septentrionalis	M	502	220	18	80	80		104
Heterocope septentrionalis	F	762	280	32	170	210		70
Unidentified Calanoida	nauplius	8,410	3,400	2,400	2,600		10	
Cyclopoida		0						
Cyclops scutifer	M	120	100		20			
Cyclops scutifer	F	1,870	1,000	60	630	40		140
Unidentified Cyclopoida	copepodite	4,210	100	90	20	1,800		2,200
Unidentified Cyclopoida	nauplius	189,030	30,000	2,500	19,300	61,100	1,130	75,000
AMPHIPODA		0						
Gammarus lacustris		18	5	4	9			
INSECTA		0						
Chaoborus sp.	larvae	697	310	6	380			1
TOTALS		270,226	55,405	20,107	51,829	63,831	1,331	77,723

Note: C stands for copepodite stages I through V

** Chydoridae - Meiobenthic habitus*

Appendix 3.10-2

Schaft Creek Project Zooplankton Field Notes, 2008

Appendix 3.10-2. Schaft Creek Project Zooplankton Field Notes, 2008

Site	Rep	# of Hauls Composited	Haul Depth (m)	Hor/Vert	Position in Lake
L2	1	3	10	Vert	centre
	2	3	2	Vert	S end
	3	3	9	Vert	N end
L5	1	3	25	Vert	NW end
	2	3	5	Vert	NE end
	3	3	18	Vert	SW end

Note: Hor = horizontal, and Vert = vertical