

Schaft Creek 2007 Aquatic Resources Baseline Report



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Vancouver, British Columbia

March 2008



EXECUTIVE SUMMARY



Executive Summary

Copper Fox Metals Inc. (Copper Fox) is a Canadian mineral exploration and development company focused on developing the Schaft Creek deposit located in north-western British Columbia, approximately 60 km south of the village of Telegraph Creek. The Schaft Creek Project is located within the traditional territory of the Tahltan Nation and Copper Fox will work together with the Tahltan Nation as work on the Schaft Creek Project continues. The Schaft Creek deposit is a polymetallic (copper-gold-silver-molybdenum) deposit located in the Liard District of north-western British Columbia (Latitude 57° 22' 4.2"; Longitude 130°, 58' 48.9"). The property is comprised of 40 mineral claims covering an area totaling approximately 20,932 ha within the Cassiar Iskut-Stikine Land and Resource Management Plan.

This report presents the results from the field studies conducted in 2007 on the water quality, sediment quality, and primary and secondary producer communities of the Schaft Creek Project area. Twenty six stream sites, 12 wetland sites and six lake sites were characterized within the Schaft, Mess, Stikine, and Skeeter watersheds, including stream sites for tailings options B and C.

Throughout the Schaft Creek Project area many stream water quality variables (particularly total metals and total phosphorus) peaked in July coinciding with high concentrations of TSS and increased turbidity. Many metals naturally exceeded the aquatic life guidelines from July to September, reflecting the high mineralization of the Schaft Creek Project area. Metals that frequently exceeded the B.C. and CCME guidelines were total aluminum, cadmium, chromium, copper, iron, zinc, and dissolved aluminum. Many of these metals also exceeded guidelines in 2006. Arsenic, chromium, copper, iron, mercury, nickel, and zinc exceeded guidelines at several sites.

Stream productivity was generally low throughout the study area with periphyton biomass ranging between 0.02 to 0.83 $\mu\text{g}/\text{cm}^2$ chlorophyll *a*. Overall, Schaft Creek had the lowest average productivity (0.14 $\mu\text{g}/\text{cm}^2$ chlorophyll *a*), while Skeeter, Mess, and Hickman creeks had similar productivity levels (0.44 to 0.49 $\mu\text{g}/\text{cm}^2$). Diatoms dominated most periphyton communities. Skeeter sites had benthic invertebrate densities ten times greater than all other sites with an average of 9308 organisms/ m^2 . Genus richness ranged from 3 to 19 taxa, with a mean of 10 genera. Together, stoneflies and dipterans composed 57 to 98% of all stream benthos communities.

Nutrients were relatively low at all wetlands and lakes. Wetlands and lakes in the Mess Creek Watershed showed slightly higher concentrations of ammonia, hardness, TDS and total and dissolved arsenic, boron, and manganese. Variables that exceeded B.C. or CCME aquatic life guidelines included total cyanide, sulphate, dissolved cadmium, total zinc, and total and dissolved aluminum, boron, copper and iron. L1 and L5 had high concentrations of total metals and concentrations only exceeded guidelines at these two sites. Lower Schaft Creek wetland (WL1), Skeeter wetland (WL4), and upper Mess Creek wetlands (WL5 and WL6) often had the

highest concentrations of metals. Wetland and lake sediments were primarily composed of silt and clay with smaller proportions of sand.

Phytoplankton biomass varied widely between wetlands and ranged from 0.02 to 3.03 µg/L chlorophyll *a*. Productivity was generally low in all lakes ranging from 0.04 to 0.90 µg/L chlorophyll *a*. Genus richness ranged from 3 to 15 phytoplankton taxa in wetlands and from 4 to 10 in lakes. Chrysophyta (golden algae) dominated most wetland and lake communities.

Wetlands within Mess Creek Watershed had the highest densities of benthos. The average density of benthic invertebrates varied between wetlands, ranging from 1,718 to 53,630 organisms/m². Average benthos genus richness ranged from 6 to 21 taxa. Diptera (flies) were the dominant taxonomic group at most wetlands sampled accounting for over 50 percent of all organisms collected. Benthic densities were relatively low in lakes, ranging from 237 to 17,274 organisms/m². Average genus richness was also lower in lakes compared to wetlands and ranged from 1.7 to 16.3 taxa.

Zooplankton densities were similar to 2006 with the lowest densities occurring within the Mess Creek Watershed lakes and the highest at L2 in the Skeeter Watershed. Five of the six lakes were dominated by cyclopoid copepods except for L4 which was dominated by calanoid copepods. Both the Shannon and Simpson diversity indices resulted in L1 as the most diverse site, followed by L2.

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1. INTRODUCTION

1. Introduction

1.1 Schaft Creek Project Summary

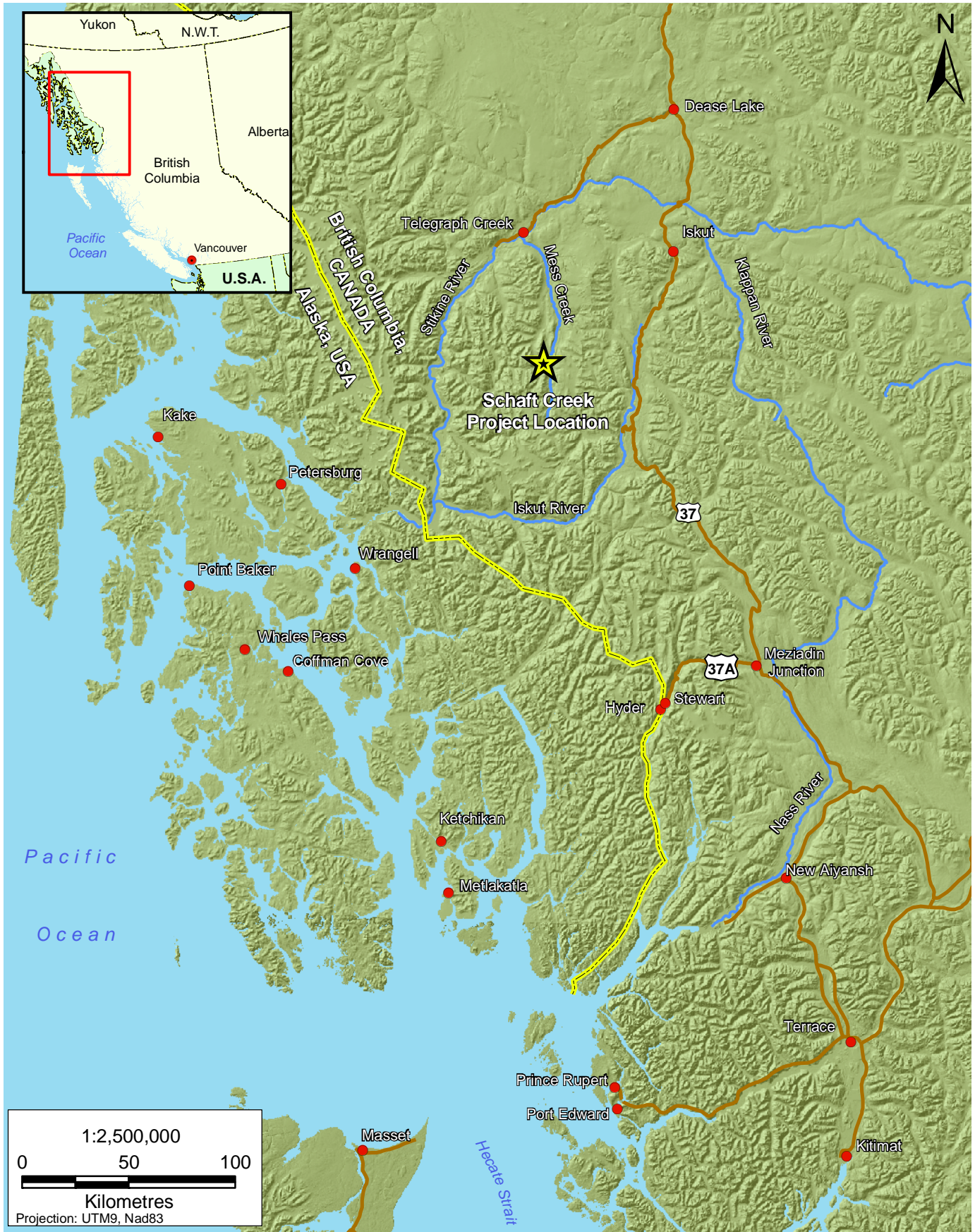
Copper Fox Metals Inc. (Copper Fox) is a Canadian mineral exploration and development company focused on developing the Schaft Creek deposit located in north-western British Columbia, approximately 60 km south of the village of Telegraph Creek Creek (Figure 1.1-1). The Schaft Creek deposit is a polymetallic (copper-gold-silver-molybdenum) deposit located in the Liard District of north-western British Columbia (Latitude 57° 22' 4.2"; Longitude 130°, 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).

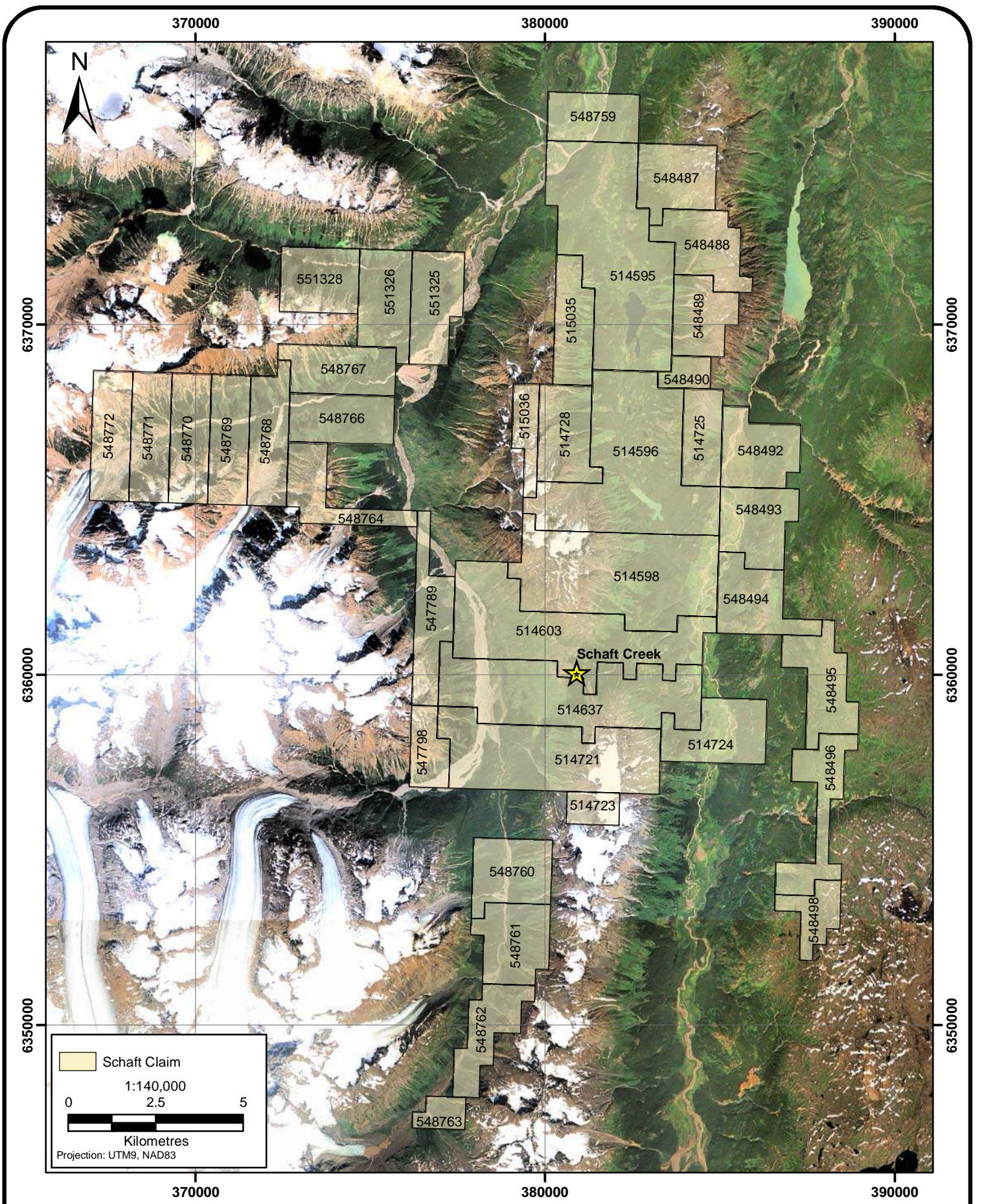
The Schaft Creek Project is located within the traditional territory of the Tahltan Nation. Copper Fox has been in discussions with the Tahltan Central Council (TCC) and the Tahltan Heritage Resources Environmental Assessment Team (THREAT) since initiating exploration activities in 2005. Copper Fox has engaged in numerous agreements with the TCC including a Communications Agreement, Traditional Knowledge Agreement, Letter of Understanding with the Tahltan Nation Development Corporation (TNDC) and a THREAT Agreement. Copper Fox will continue to work together with the Tahltan Nation as work on the Schaft Creek Project continues.

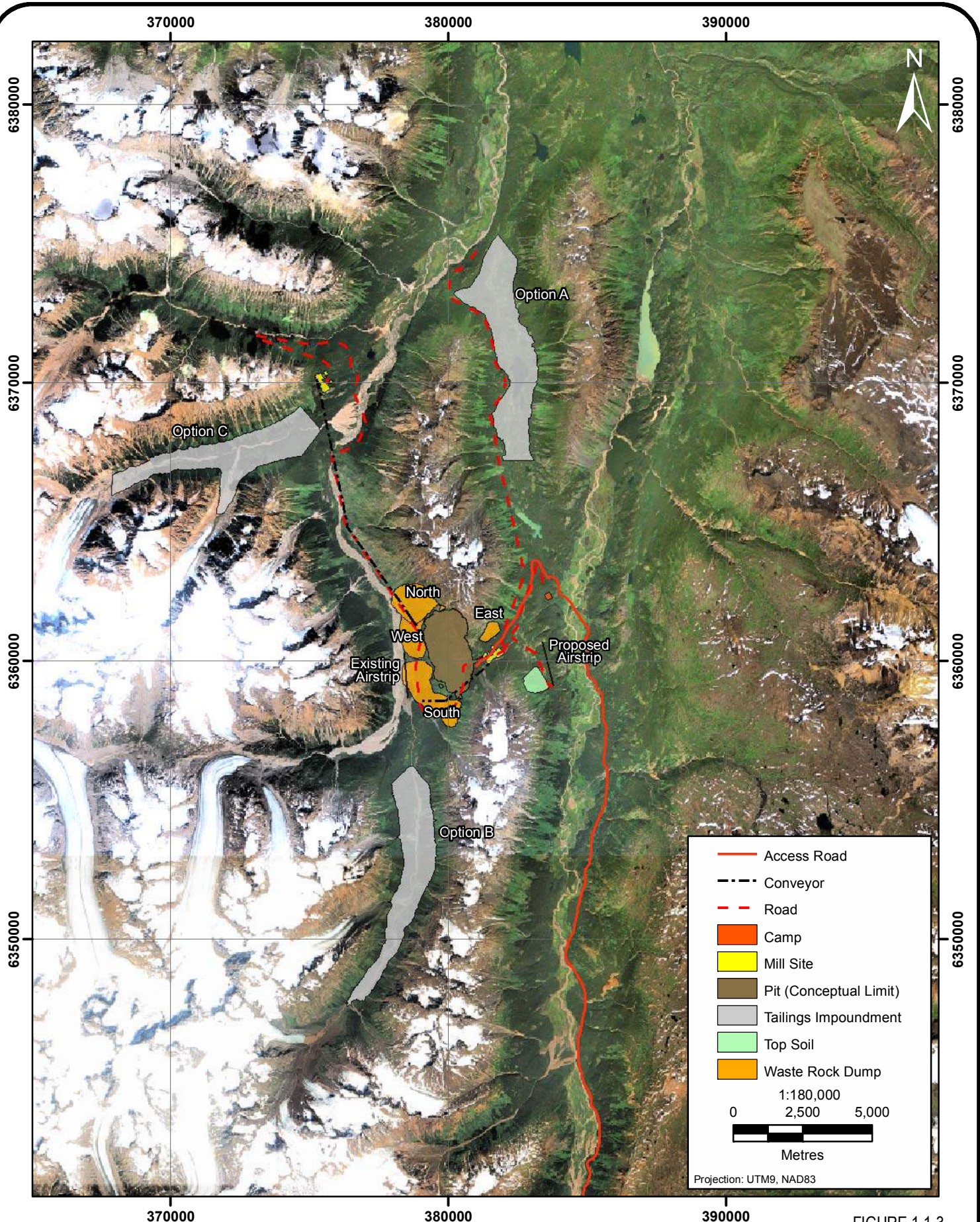
The Schaft Creek deposit was discovered in 1957 and has since been investigated by prospecting, geological mapping, geophysical surveys as well as diamond and percussion drilling. Over 65,000 meters of drilling has been completed on the property as of end of 2007. Additional drilling is planned for 2008 to support future economic assessments of the property and an environmental assessment application.

The Schaft Creek Project entered the British Columbia environmental assessment 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 end of 2008 for submission of their Schaft Creek Environmental Assessment Application.

Copper Fox has recently released a scoping level engineering and economic report for Schaft Creek. The mine and associated infrastructure are presented in Figure 1.1-3. The current mine plan has ore milled from an open pit at a rate of 65,000 tonnes/day. The Schaft deposit will be mined with large truck/shovel operations and typical drill and blast techniques. An explosives manufacturing facility will be constructed on-site to support blasting activities. The mine plan includes 719 million tonnes of minable ore over a 31 year mine life. The Project is estimated to generate up to 1,200 jobs during the construction phase of the project and approximately 500 permanent jobs during the life of the mine.







Ore will be crushed, milled and filtered on-site to produce copper and molybdenum concentrates. The mill 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 shipping. The mill includes a designated molybdenum circuit with thickener, filtration circuit, drying and bagging. The filter plant will be located at the plant site. A tailings thickener and water reclaim system will be used to recycle process water. The circuit will have a design capacity of 70,652 tonnes per day and a nominal capacity of 65,000 tonnes per day (23,400,000 tonnes per year). The copper and molybdenum concentrates will be shipped via truck from the mill to the port of Stewart, B.C..

Copper Fox will construct an access road from Highway 37 to the Schaft Creek property. Access to the property from Highway 37 will require approximately 105 km of new road. The first 65 km of the access road to the Schaft Creek property corresponds to the Galore Creek access road. NovaGold and Teck Cominco have currently put a hold on future construction efforts along their access road and the overall Galore Creek Project. Copper Fox will seek approval from the provincial government and NovaGold/Teck Cominco to construct the first 65 km of the Galore Creek access road should the status of the project not change.

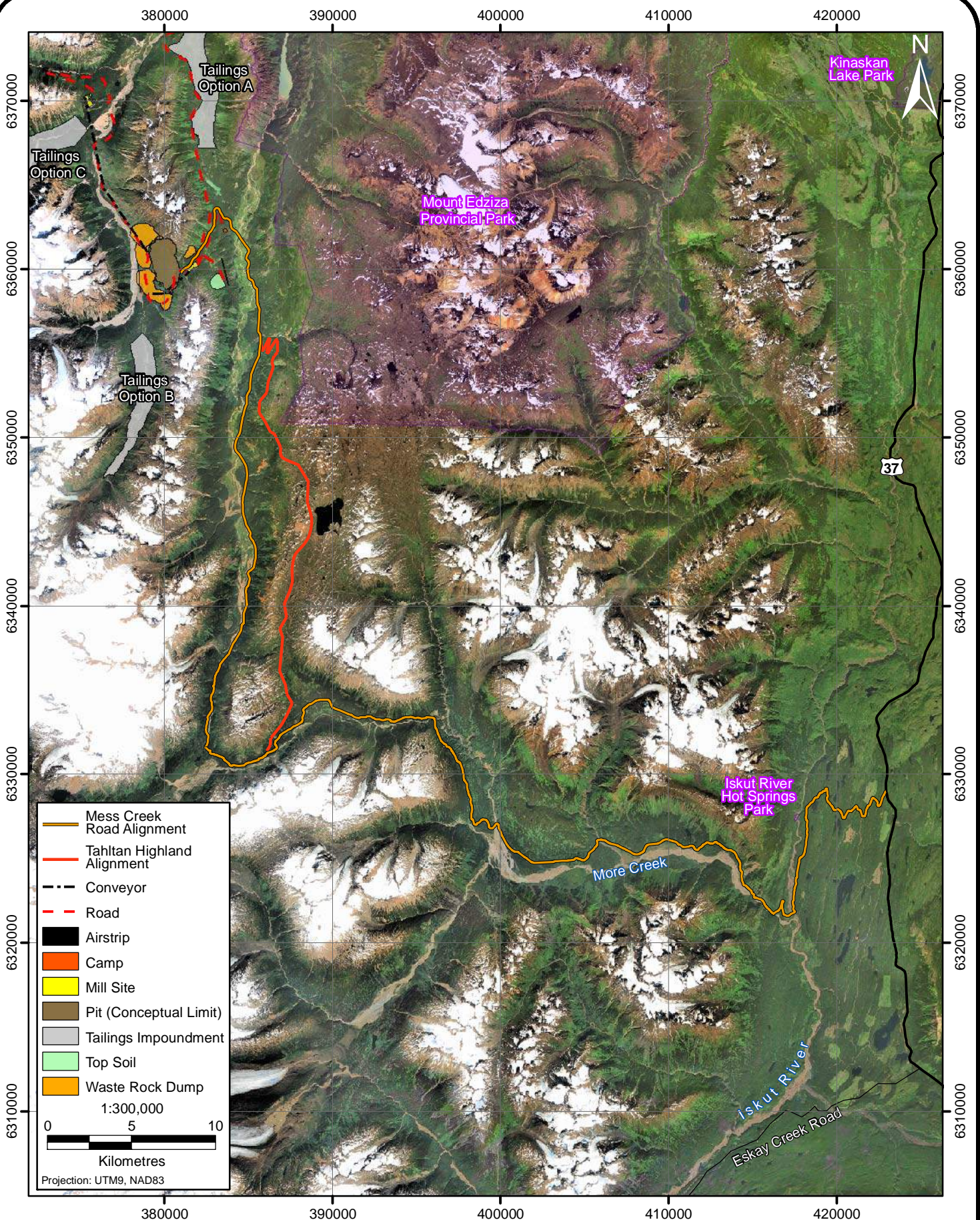
The route of the final 40 km of access road has not been finalized. Copper Fox has completed initial investigations of a route along Mess Creek. An alternative route is also being considered that utilizes the plateau to the east of Mess Creek. Copper Fox is currently investigating the feasibility, as it relates to geohazards, of the two alignments. Both alignments include a 30 m bridge on Mess Creek. Mess Creek is considered navigable as per Transportation Canada criteria. Figure 1.1-4 presents the access road alignment that follows the Galore Creek road (65 km from Highway 37) and the Mess Creek alignment (40 km) to the Schaft Creek property.

Over the life of the mine, the Schaft Creek Project will generate over 700 million tonnes of tailings. There are three tailings facilities being considered (Figure 1.1-3). The three options will undergo an alternatives assessment that will include engineering, construction and operating costs, geotechnical, geohazards, environmental and social considerations.

The Project will generate over a billion tonnes of waste rock. Waste rock dumps are proposed around the perimeter of the pit (Figure 1.1-3). This includes the flat area between the proposed pit and Schaft Creek.

A detailed water management plan has yet to be developed for the Project. A water management plan will be included in the next level of economic assessment (pre-feasibility) and the next project description update. A waste water discharge is expected from the tailings facility, waste rock dumps and domestic waste water treatment plant. The management plan will detail the plans to minimize natural drainage into the tailings facility, the pit and the waste rock dumps. Pit water will be pumped to the tailings facility.

A new airfield will be constructed to the east of the pit (Figure 1.1-3). The Project will be a fly-in, fly-out operation. The new landing strip will be capable of handling a Boeing 737. Other facilities include a terminal building, fuelling, maintenance and control facilities.



	Mess Creek Road Alignment
	Tahltan Highland Alignment
	Conveyor
	Road
	Airstrip
	Camp
	Mill Site
	Pit (Conceptual Limit)
	Tailings Impoundment
	Top Soil
	Waste Rock Dump

1:300,000

0 5 10

Kilometres

Projection: UTM9, NAD83

FIGURE 1.1-4

Proposed Access Road Alignment for the Schaft Creek Project



A permanent camp will be constructed to support a staff of approximately 500 employees. Other facilities include truck shop, warehouse, administration, maintenance laboratory, explosives storage, water treatment facilities and potable water storage.

Copper Fox has targeted the end of 2008 for submission of their Environmental Assessment Application and full Feasibility Report. Screening of the EA Application plus the 180 day review period will result in project approval as early as July 2009. Copper Fox will likely seek concurrent permitting for strategic permits to facilitate the timely construction of key project components. Construction is estimated to take two and half years. Thus, production could begin by early 2012.

1.2 Objectives

This report presents the results of the 2007 baseline aquatic assessment. Aquatic components (water quality, sediment quality, primary producers and secondary producers) were assessed in streams, rivers, wetlands and lakes. The objectives of this assessment were to determine the baseline conditions (adding to 2006 data) and characterize these aquatic components in the proposed mine receiving environment as well as along the most likely proposed access corridor. Baseline data should provide an understanding of the natural variation in each component of the freshwater environment so monitoring programs can identify any significant changes resulting from project activities.

2. MATERIALS AND METHODS

2. Materials and Methods

2.1 Streams

In this report, the streams sampled include those that are downstream from project activities (pit, infrastructure, roads, etc.) and consider all three tailings options (A, B and C).

2.1.1 Study Design

The Schaft Creek and Mess Creek watersheds were surveyed for aquatic communities in the area surrounding Schaft Creek Project. The confluence of Schaft Creek and Mess Creek is approximately 40 kilometres downstream of the proposed mine site. Further north, Mess Creek enters the Stikine River. In 2007, 21 stream sites were assessed for water quality, sediment quality, periphyton, and benthic invertebrates (Figure 2.1-1).

2.1.2 Water Quality

One water sample was collected per site per sampling period 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 general method detection limits (MDL) in Table 2.1-1.

All raw data are presented in appendices (listed in Section 3.1) and variables identified to be most relevant to potential water quality issues within the Schaft Creek Project area have been presented graphically. 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 of interest is presented in Section 3.1 with all available CCME and B.C. water quality guidelines (CCME, 1999; BCMOE, 2006).

2.1.2.1 Monthly Water Quality Data

Where possible, water quality samples were collected on a monthly basis during 2007. Data for each site were compared to the CCME and B.C. water quality guidelines. Results are plotted with sites grouped from upstream to downstream as follows: Mess Creek and tributaries (MC1, MC7, MC2, MC1, MC10, WC1, MC5 and MC9); Schaft (SC1, SC6, SC2, SC3, SC4, SC7, and SC5); Stikine (ST1 and ST2) and Yehiniko Creek (YC1); Tailings Option B (HC2, HC1 and

HC3), Tailings Option A (SKC1, SKC3 and SKC4) and Tailings Option C Creek (JC1 and JC2). SC1 in the Schaft Creek Watershed and WC1 in the Mess Creek Watershed are considered reference sites since there are upstream of project activities. Water samples for October 2007 are not available as a result of logistical and weather issues preventing the completion of the work.

**Table 2.1-1
Water Quality Variables and Method Detection Limits, 2007**

Parameter	Units	Detection Limit
Physical/Dissolved Anions		
Colour	Cu	5
Conductivity	uS/cm	2
pH	pH	0.01
Total Suspended Solids	mg/L	3
Turbidity	NTU	0.1
Total Dissolved Solids	mg/L	1
Hardness	mg/L	0.5
Alkalinity, Bicarbonate (as CaCO ₃)	mg/L	1
Alkalinity, Carbonate (as CaCO ₃)	mg/L	1
Alkalinity, Hydroxide (as CaCO ₃)	mg/L	1
Total Alkalinity (as CaCO ₃)	mg/L	1
Acidity	mg/L	1
Bromide	mg/L	0.05
Chloride	mg/L	0.5
Fluoride	mg/L	0.02
Sulphate	mg/L	0.5
Nutrients		
Ammonia Nitrogen	mg/L	0.005
Nitrate	mg/L	0.005
Nitrite	mg/L	0.001
Total Kjeldahl Nitrogen	mg/L	0.05
Total Nitrogen	mg/L	0.02
Total Phosphorus	mg/L	0.002
Cyanides		
Total Cyanide	mg/L	0.005
Total and Dissolved Metals		
Aluminium	mg/L	0.001
Antimony	mg/L	0.0001
Arsenic	mg/L	0.0001
Barium	mg/L	0.00005
Beryllium	mg/L	0.0005
Bismuth	mg/L	0.0005
Boron	mg/L	0.01
Cadmium	mg/L	0.00002
Calcium	mg/L	0.02
Chromium	mg/L	0.0005
Cobalt	mg/L	0.0001
Copper	mg/L	0.0005
Iron	mg/L	0.03
Lead	mg/L	0.00005
Lithium	mg/L	0.005
Magnesium	mg/L	0.005
Manganese	mg/L	0.00005

(continued)

**Table 2.1-1
Water Quality Variables and Method Detection Limits, 2007
(completed)**

Parameter	Units	Detection Limit
Mercury	mg/L	0.00001
Molybdenum	mg/L	0.00005
Nickel	mg/L	0.0005
Phosphorous	mg/L	0.3
Potassium	mg/L	0.05
Selenium	mg/L	0.001
Silicon	mg/L	0.05
Silver	mg/L	0.00001
Sodium	mg/L	2
Strontium	mg/L	0.0001
Thallium	mg/L	0.0001
Tin	mg/L	0.0001
Titanium	mg/L	0.01
Uranium	mg/L	0.00001
Vanadium	mg/L	0.001
Zinc	mg/L	0.001
Dissolved Metals		
Aluminium	mg/L	0.001
Antimony	mg/L	0.0001
Arsenic	mg/L	0.0001
Barium	mg/L	0.00005
Beryllium	mg/L	0.0005
Bismuth	mg/L	0.0005
Boron	mg/L	0.01
Cadmium	mg/L	0.00005
Calcium	mg/L	0.02
Chromium	mg/L	0.0005
Cobalt	mg/L	0.0001
Copper	mg/L	0.0001
Iron	mg/L	0.03
Lead	mg/L	0.00005
Lithium	mg/L	0.005
Magnesium	mg/L	0.005
Manganese	mg/L	0.00005
Mercury	mg/L	0.00001
Molybdenum	mg/L	0.00005
Nickel	mg/L	0.0005
Phosphorous	mg/L	0.3
Potassium	mg/L	0.05
Selenium	mg/L	0.001
Silicon	mg/L	0.05
Silver	mg/L	0.00001
Sodium	mg/L	2
Strontium	mg/L	0.0001
Thallium	mg/L	0.0001
Tin	mg/L	0.0001
Titanium	mg/L	0.01
Uranium	mg/L	0.00001
Vanadium	mg/L	0.001
Zinc	mg/L	0.002
Organic		
Total Organic Carbon	mg/L	0.5

2.1.2.2 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 lab and remained closed throughout the field trip. This allowed assessment of contamination associated with the lab procedures. The field blank bottles were also filled with distilled deionised water, but were opened in the field 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.

For quality assurance/quality control (QA/QC) purposes, 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 duplicate water samples, the relative percent differences (RPD) were calculated,

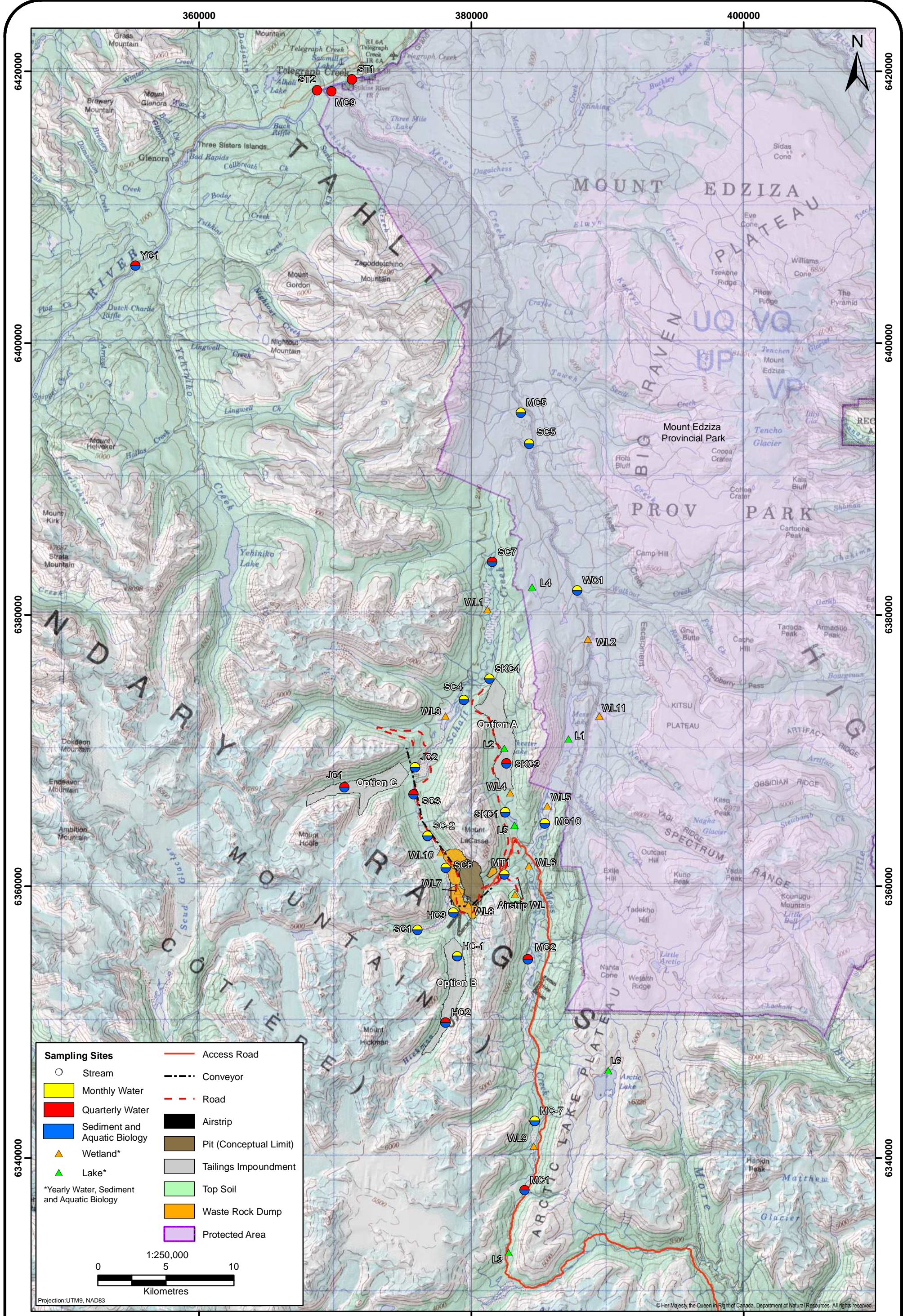
$$\text{where: } RPD = 100 | \text{rep1} - \text{rep2} | / [(\text{rep1} + \text{rep2}) / 2]$$

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 near 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 B.C. 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 must be diluted resulting in higher detection limits.

2.1.3 Sediment Quality

Sediment was collected at 21 stream sites in September, 2007 (Figure 2.1-1). Three composite samples were collected at each site. Methods for stream sediment sampling were standardized (RISC 1998) and involved the use of a stainless steel bowl and spoon to collect multiple grab samples within or alongside streams stations. Sediment was spooned from the top 5 cm at three to four points along the river. It was pooled (excess water drained off) and manually homogenized for one minute in the mixing bowl. Sediment was then carefully spooned into clean, pre-labelled 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.



Schaft Creek Aquatics Sampling Sites, 2007

FIGURE 2.1-1

Whole sediment samples were analyzed for moisture, particle size, nutrients, TOC, and total metals using the lowest feasible detection limit. A list of sediment test variables 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 CCME and B.C. sediment quality guidelines (BC Environmental Protection Branch, 2006; CCME, 1999). B.C. guidelines consist of both the Lowest Effect Level (LEL) and Severe Effect Level (SEL), whereas the CCME guidelines consist of the Interim Sediment Quality Guideline (ISQG) and the Probable Effect Level (PEL). Whole sediment samples were analysed for particle size distribution. Where relevant (*i.e.*, a considerable proportion of fines were present) sediment data was normalised to percent fines in order to better assess the bioavailability of metals. The following equation (ESP 1996) was used to normalize this data:

$$\text{Metal}_{\text{NF}} = \text{Metal}/\text{Fines}$$

**Table 2.1-2
Sediment Quality Variables and Detection Limits, 2007**

Parameter	Units	Detection Limit (mg/kg dry weight)
Physical Tests		
Moisture	%	0.10%
Particle Size	%	0.10%
Nutrients		
Available Phosphate	mg/kg	1
Total Nitrogen	%	0.01
Total Metals		
Aluminum	mg/kg	50
Antimony	mg/kg	20
Arsenic	mg/kg	5
Barium	mg/kg	1
Beryllium	mg/kg	0.5
Bismuth	mg/kg	20
Cadmium	mg/kg	0.5
Calcium	mg/kg	50
Chromium	mg/kg	2
Cobalt	mg/kg	2
Copper	mg/kg	1
Iron	mg/kg	50
Lead	mg/kg	2
Lithium	mg/kg	2
Magnesium	mg/kg	50
Manganese	mg/kg	1
Mercury	mg/kg	0.005
Molybdenum	mg/kg	4
Nickel	mg/kg	5
Phosphorus	mg/kg	50
Potassium	mg/kg	200
Selenium	mg/kg	2

(continued)

**Table 2.1-2
Sediment Quality Variables and Detection Limits, 2007 (completed)**

Parameter	Units	Detection Limit (mg/kg dry weight)
Silver	mg/kg	2
Sodium	mg/kg	200
Strontium	mg/kg	0.5
Thallium	mg/kg	1
Tin	mg/kg	5
Titanium	mg/kg	1
Vanadium	mg/kg	2
Zinc	mg/kg	1
Organic Parameters		
Total Organic Carbon	%	0.01

2.1.4 Primary and Secondary Producers

2.1.4.1 Periphyton

Periphyton sampling was conducted at the 21 stream sites in early September 2007 when sediment and biological surveys were scheduled (Figure 2.1-1). Since WL8 had the features of a stream, it was sampled as a stream as opposed to a wetland. Samples were collected from three separate rocks or macrophytes per site using a razor to gently scrape a known surface area, assisted by a brush and rinse bottle. Multiple areas were scraped from each rock to accurately characterize the periphyton coverage and community composition. When discrete samples were not available from rocks or woody debris, qualitative samples for taxonomic identification and determination of dominant taxa were scooped from the sediment bottom using a stainless steel spoon.

For each sample, half was used for a taxonomic identification and enumeration, and the other half for measurement of chlorophyll *a* biomass. Taxonomic samples were stored in 250 mL plastic bottles and preserved in Lugol's iodine solution. Taxonomic identification and enumeration was conducted by Biologica Environmental Services (Victoria, B.C.). For each sample, genus richness, and diversity (as Shannon-Weiner and Simpson diversity indices) were calculated and mean and standard error by site was determined and graphed. It should be noted that the three Cyanophyta species that were identified in these streams were counted as mm/cm² because of their filamentous nature. This differs from cells/m² but for the sake of comparison 1 mm/m² was made equivalent to the cell counts used for all other species. This is not expected to impact analyses significantly since these species were generally rare across sites.

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

2.1.4.2 Benthic Invertebrates

Benthic macroinvertebrate communities were sampled at all stream sites and WL8 concurrently with primary producer surveys in September, 2007. Stream benthic samples were collected

using a Hess sampler with a surface area of 0.096 m² 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 associated with potential mine effects. Each composite was comprised 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 sediment 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 raised up and dropped inside the Hess sampler for one minute, 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, B.C.). 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), three important taxonomic groups usually associated with pristine stream environments, was also calculated for stream sites. 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).

2.2 Wetlands and Lakes

2.2.1 Study Design

In 2007, a total of six lake and eleven wetland sites were assessed for water quality, sediment quality, phytoplankton, benthic invertebrates, and zooplankton (Figure 2.1-1). Sampling occurred in August, with the objective to quantify aquatic communities and habitat in the receiving environment that will be directly impacted, or potentially receive discharge during mine operations.

2.2.2 Water Quality

Water samples from wetlands and lakes were collected once (in August) at each site during 2007. Preservation and analyses of water samples was identical to methods described for stream water samples. All raw data are presented in appendices (listed in Section 3.1) and variables identified to be most relevant to potential water quality issues within the Schaft Creek Project area have been presented graphically. As with stream water quality samples, field and travel blanks were collected and RPD duplicate samples were analyzed. Water samples from WL8 are not available for 2007 due to damage during shipping.

2.2.3 Physical Limnology

Physical limnology parameters were measured at six lakes (L1, L2, L3, L4, L5 and L6). These parameters included Secchi depth, surface pH and conductivity and dissolved oxygen and temperature depth profiles 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.

Dissolved oxygen and temperature 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 1 m intervals. The probe was lowered to a depth of 1 m above the sediment-water interface (as indicated by the depth sounder).

2.2.4 Sediment Quality

Sediment was collected at six lake and eleven wetland sites in August, 2007 (Figure 2.1-1). Three composite samples were collected at each site. At lake and wetland sites, an Ekman sampler was used to collect bottom sediment. Three distinct zones were sampled at each lake or wetland, encompassing shallow, medium and deep zones. At each zone, three separate grabs were collected a minimum of 5 m apart from an inflatable zodiac boat, and sediment was then pooled into one composite. Sediment was first photographed and physical appearance (organics, homogeneity, and organisms) noted. Sediment was then spooned off the top 4 cm of the Ekman grab sample and deposited into a clean stainless steel bowl. The top layer contents of three separate grabs were then homogenized using a stainless steel spoon for one minute, and sediment was then spooned into clean, pre-labelled 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 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 (see Section 2.1.1.3).

2.2.5 Primary and Secondary Producers

2.2.5.1 Phytoplankton

At six lakes and 11 wetland phytoplankton communities were sampled for biomass (chlorophyll *a*) as well as taxonomic composition and enumeration in August, 2007 (Figure 2.1-1). Phytoplankton was sampled as opposed to periphyton communities since it was shown in 2006 that finding hard substrates (*i.e.*, rocks and logs) for quantitative sampling proved difficult in most wetlands. A replicate consisting of a pair of 1 L pre-labelled plastic bottles were filled by immersing the sample bottles just below surface. One bottle from each replicate pair

was used for determination of chlorophyll *a* 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, labelled 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 Biologica Environmental Services (Victoria, B.C.).

2.2.5.2 Benthic Invertebrates

Benthic macroinvertebrate communities were sampled at six lake and eleven wetland sites concurrently with primary producer surveys (Figure 2.1-1). A sample replicate was collected with a standard Ekman grab at each zone within the site. Each replicate was composed of three grabs pooled together to form a composite sample. Each Ekman grab was 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. Residual contents containing benthos from three successful grabs were rinsed into a clean, pre-labeled 500 ml jar. Procedures for sample handling, preservation, transport and analysis were identical to those described for receiving environment stream samples.

2.2.5.3 Zooplankton

Zooplankton communities were sampled for taxonomic composition and enumeration at the six lake sites (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-labelled, clean, 500 ml wide mouth plastic jar. Buffered formalin was added to a final concentration of 5% by volume. Sample jars were closed, agitated gently, and kept cool and dark during storage and transport to Biologica Environmental Services (Victoria, B.C.), for taxonomic identification and enumeration. Data were analyzed for density, relative abundance, genus richness, and diversity. Zooplankton densities were normalized to number of organisms/m³ by calculating the volume of water the zooplankton net screened.

2.2.6 Data Analysis

The number of organisms per sample was converted to density (organisms/m² for benthos and cells/L for phytoplankton) by dividing the each sample by the area 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). Means and standard errors were graphically represented. Generic richness and diversity (Shannon-Weiner and

Simpson's diversity indices) were calculated using COMM statistics software (Piepenburg and Piatkowski, 1992) for phytoplankton, zooplankton and wetland benthos communities. Measures of diversity, including Bray-Curtis Similarity, for the stream benthos communities 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. The Shannon-Wiener diversity index uses richness and abundance to calculate a measure of diversity that can be compared among samples. This index ranges from 1 to 3.5 in typical communities. Simpson's Index ranges from 0 (no diversity) to 1 (maximum diversity). The formula used to calculate this statistic is:

$$H = \sum_{i=1} [p_i * \ln(p_i)],$$

where p_i is the proportion of the total number of invertebrates in the sample made up by species i .

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.

2.2.7 Quality Assurance and Quality Control

For wetland and lake water samples, the same QA/QC measures used for stream water sampling were applied, including the use of field and travel blanks to monitor for contamination during sampling and transport (see Section 2.1.1.2). Triplicate samples for phytoplankton were collected at each lake station, and three replicates (composites) were taken for sediment, zooplankton and benthos sampling. Additionally, at 20% of the wetland and lake sites, one sediment sample was split for QA/QC purposes to ensure that sample homogenization was thorough. The Relative Percent Difference (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 (BCMWLAP, 2003).

3. RESULTS AND DISCUSSIONS

3. Results and Discussion

3.1 Streams

3.1.1 Water Quality

3.1.1.1 General Variables and Nutrients

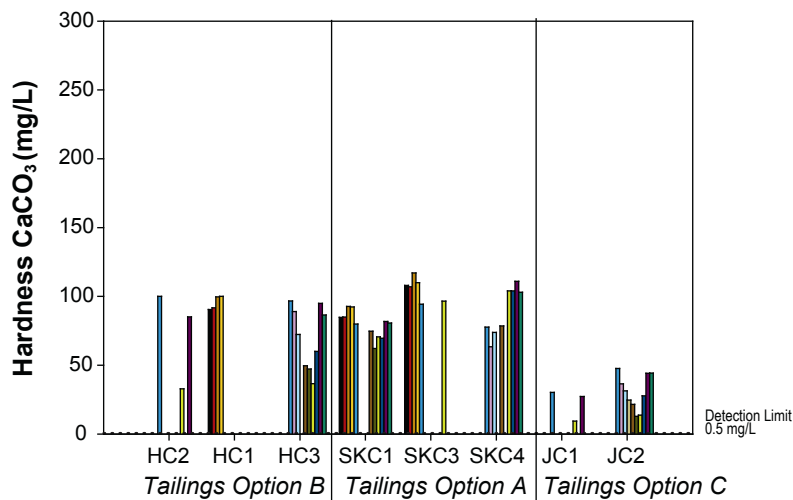
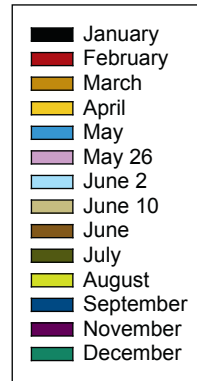
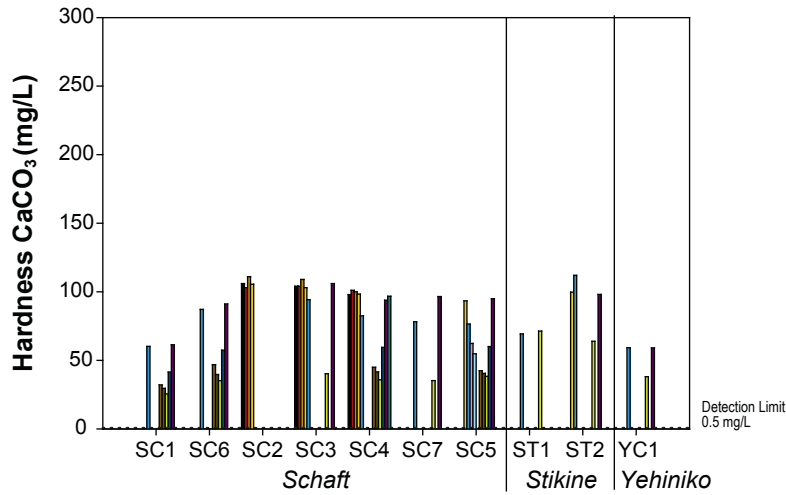
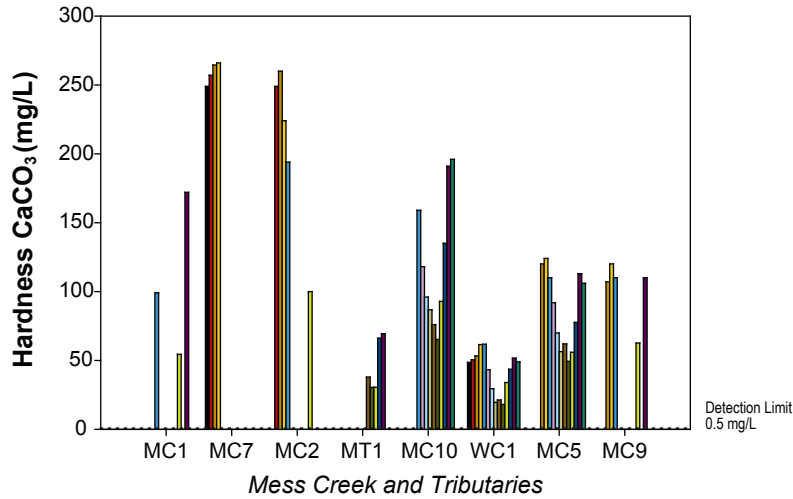
All data for receiving environment stream water quality are provided in Appendix 3.1-1. All detection limits are in presented Appendix 3.1-2. Key variables (hardness, pH, turbidity, total suspended solids, total dissolved solids, sulphate, total nitrogen, total phosphate, total cyanide, and total organic carbon) are presented graphically and discussed below. Fluoride is also discussed due to exceedances but was not supported with a figure since it is generally not a variable of interest. Within each figure, sites are shown from upstream to downstream, and are grouped by watersheds. If available, CCME and B.C. guidelines are indicated. SC1 within Schaft Creek and WC1 (a tributary to Mess Creek) are upstream from the potential mine and road activities and are considered reference stream sites for monitoring changes in water quality due to project activities. YC1 is considered an external reference site since it is located in an adjacent watershed.

Moderate levels of hardness were observed throughout the study sites, with lowest concentrations at Tailings Option C, and highest concentrations within the Mess Creek Watershed (Figure 3.1-1). Hardness ranged from 9.36 mg/L (JC1, Aug) to 266 mg/L (MC7, April). Concentrations were highest during the winter months and early spring, gradually decreasing during late spring/summer. No B.C. or CCME aquatic life guidelines exist for hardness.

Total dissolved solids (TDS) followed similar trends and concentrations as hardness (Figure 3.1-2). Tailings Option C streams had the lowest concentrations, and the Mess Creek Watershed had the highest. Concentrations were highest during the winter, with freshet diluting TDS during the late spring/summer months. TDS ranged from 15 mg/L (JC1, Aug) to 280 mg/L (MC2, Feb). No B.C. or CCME aquatic life guidelines exist for TDS.

Sulphate, being a dissolved anion, followed similar spatial and temporal patterns as total dissolved solids (Figure 3.1-3). Concentrations were highest during the winter months and decreased in late spring/summer, likely due to freshet. Sulphate tended to be highest at upstream Mess Creek sites (MC1, MC7, and MC2) and lowest at Tailings Option C sites. Sulphate ranged from below the detection limit 0.5 mg/L (MT1 July, and JC1 Aug) to 37.4 mg/L (MC7, Jan). All concentrations were below the B.C. Max guideline of 100 mg/L. No CCME or B.C. 30-d Mean aquatic life guidelines exist for sulphate.

Water pH values were consistent along all sites; ranging between pH 7.36 (MC10, Sept) and 8.32 (MC5, Apr) (Figure 3.1-4). No seasonal or spatial trends were observed. All values were within CCME guideline range of pH 6.5 to 9.0. No B.C. guidelines exist for pH.

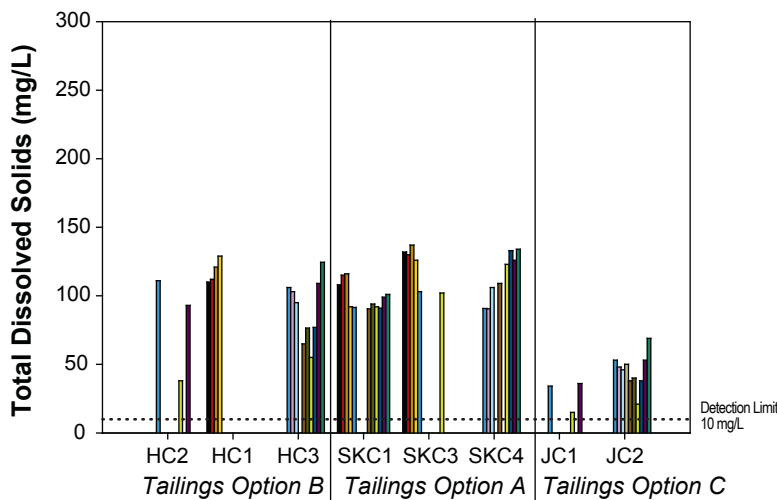
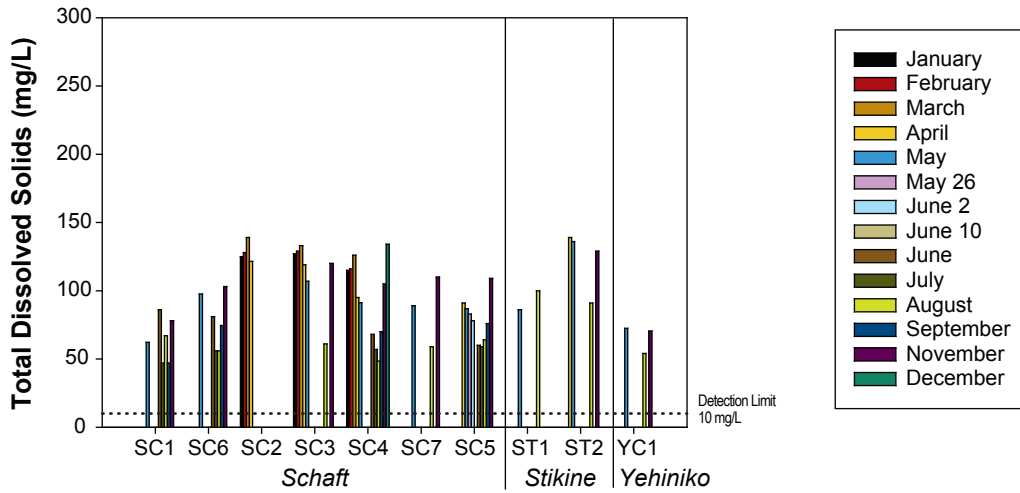
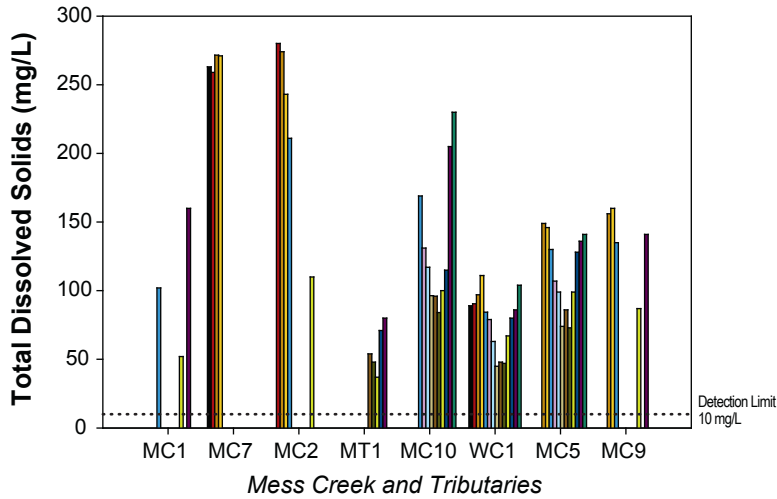


Notes: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-1



Hardness Concentrations in Schaft Creek Project Streams, 2007



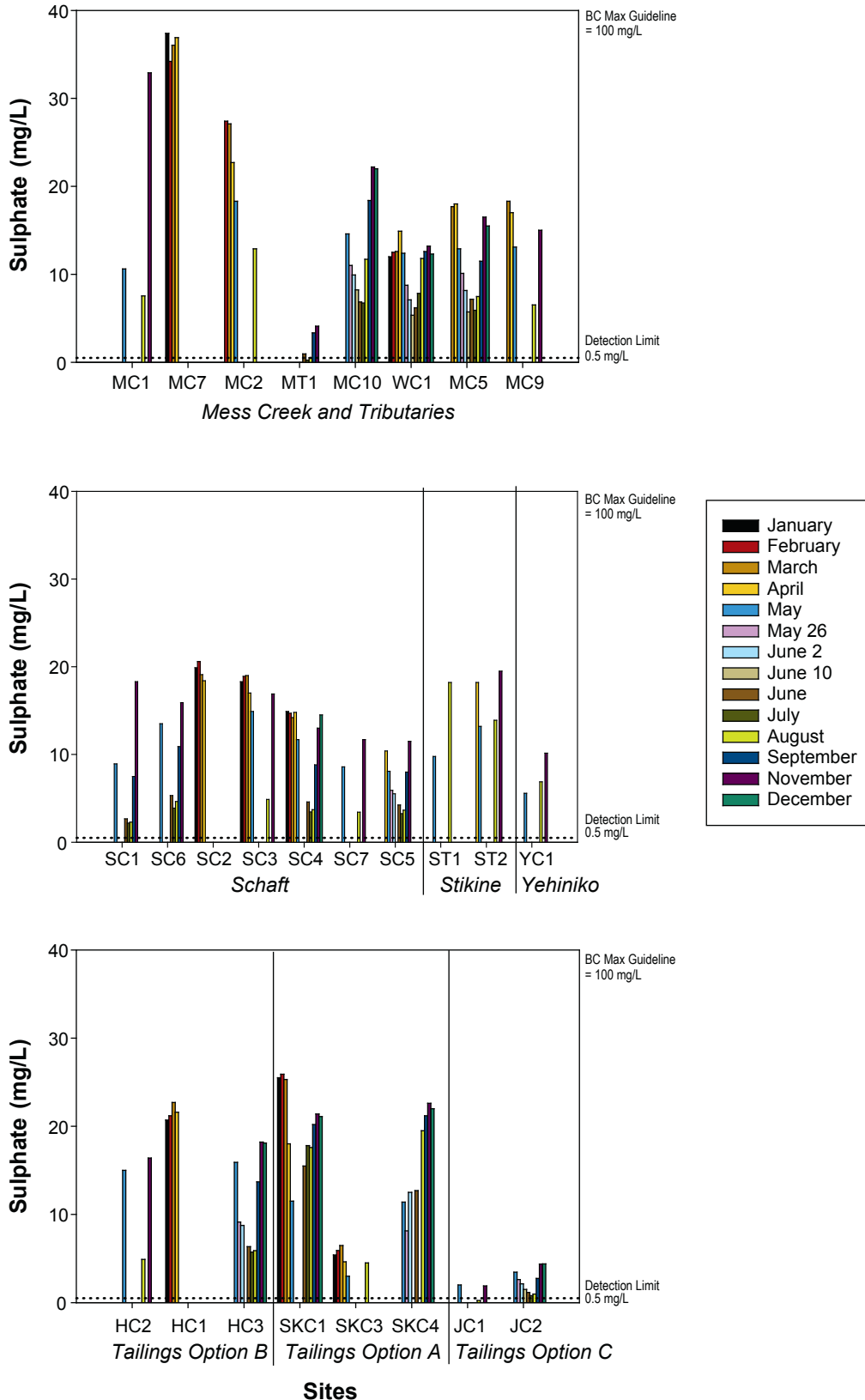
Sites

Notes: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-2



**Total Dissolved Solids (TDS) Concentrations
 in Schaft Creek Project Streams, 2007**

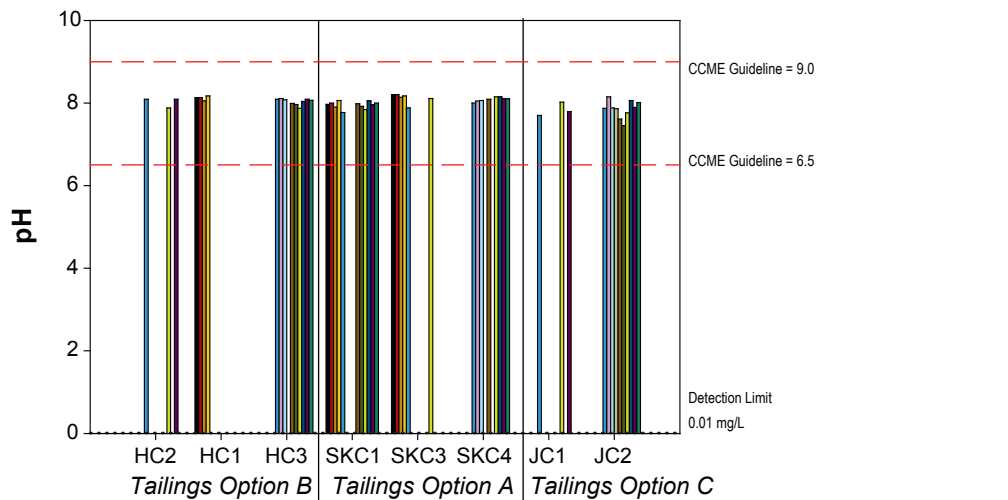
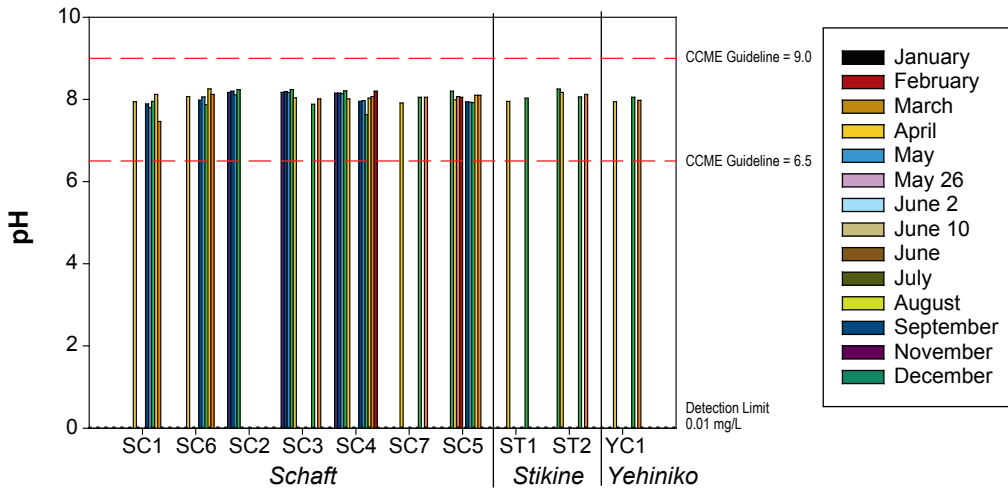
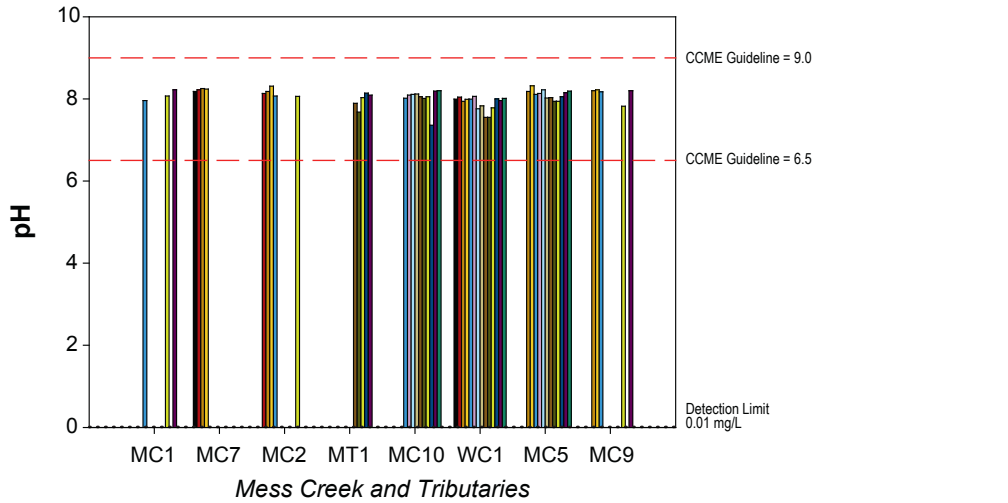


Notes: No CCME or BC 30-d Mean aquatic life guidelines exist.
 BC Max guideline is 100 mg/L.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

Sulphate Concentrations in Schaft Creek Project Streams, 2007

FIGURE 3.1-3





Sites

Notes: No BC aquatic life guidelines exist.
 CCME guideline is within 6.5 to 9.0 pH.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-4



**pH Values
 in Schaft Creek Project Streams, 2007**

Turbidity ranged from relatively clear 0.21 NTU (SC2, March) to cloudy 453 NTU (SC1, July) (Figure 3.1-5). Turbidity was highest in July for all sites sampled within this month. Sites with no July-sampling had the highest turbidity units in August with the exception of site MC9, Stikine River sites, and Yehiniko Creek which peaked in May. High rainfall and the completion of freshet in July resulted in increased sediment loadings causing reduced clarity in July (Rescan, 2008). Water was generally clear for all sites during the winter months. CCME and B.C. guidelines depend on background levels.

Total suspended solids (TSS) mirrored the seasonal and spatial patterns of turbidity, with concentrations highest during July and lowest during the winter months (Figure 3.1-6). Concentrations of suspended solids ranged from below the detection limit (3.0 mg/L, at several sites) to 736 mg/L (SC1, July). No CCME or B.C. aquatic life guidelines exist for TSS.

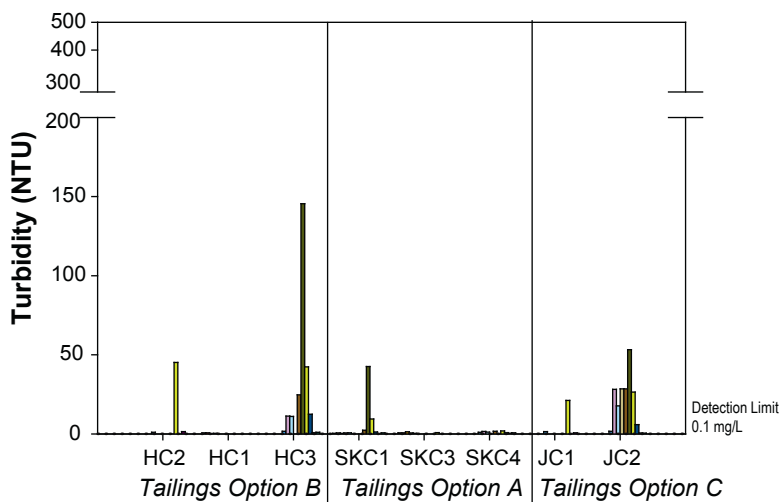
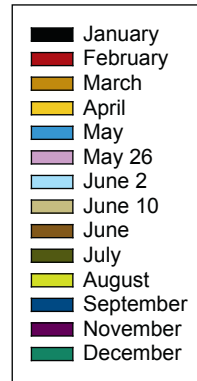
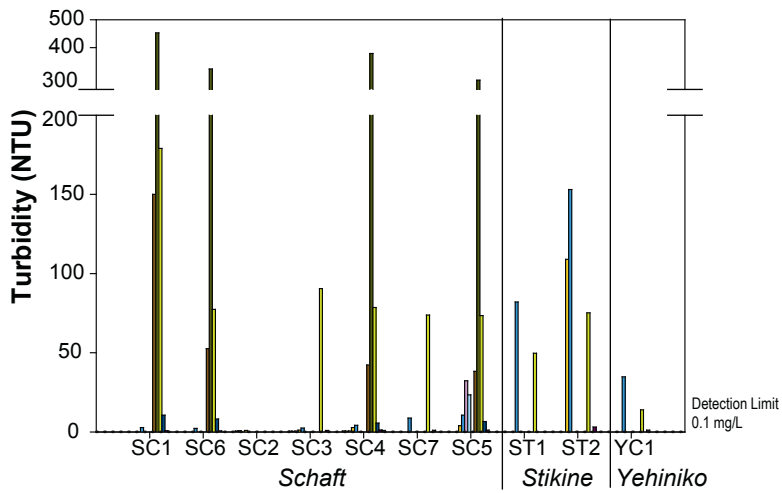
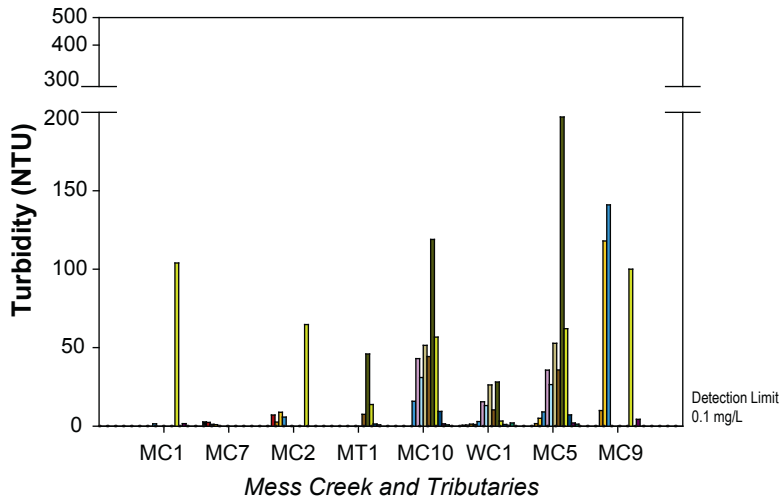
Total nitrogen (TN) had similar concentrations throughout the study area and consistently peaked in May, likely due to nitrogen compounds being leached from the soil as a result of freshet (Figure 3.1-7). Biological uptake may have resulted in reduced concentrations of TN observed during the summer months, which were often below the detection limit 0.05 mg/L. The highest TN concentration observed was 0.47 mg/L at SKC3 (May). No CCME or B.C. aquatic life guidelines exist for TN.

Total phosphate (TP) concentrations within the Schaft Creek Project area reflected the temporal and spatial patterns exhibited by total suspended solids and turbidity (Figure 3.1-8). The similar pattern observed between TSS and TP concentrations suggest that phosphate was primarily particulate bound. TP concentrations peaked in July for all sites that were sampled in July. TP concentrations were lowest at the Tailing Options sites and highest within the Schaft Creek Watershed. TP ranged from below the detection limit of 0.0020 mg/L to 0.9200 mg/L (SC1, July). No CCME or B.C. aquatic life guidelines exist for TP.

Total organic carbon (TOC) was highest in the Stikine River, Yehiniko Creek, and at site SKC4 (Figure 3.1-9). TOC concentrations tended to increase gradually downstream in Mess and Schaft Creeks. Peaks were often observed in May or spring months, likely due to increased organic carbon loadings from the terrestrial environment during freshet. TOC concentrations ranged from below the detection limit of 0.50 mg/L to 7.68 mg/L (ST1 and YC1, May). No CCME or B.C. aquatic life guidelines exist for TOC.

Total cyanide concentrations ranged from below the detection limit of 0.0010 mg/L at several sites to 0.0132 mg/L (HC2, Aug) (Figure 3.1-10). Concentrations were generally highest in May or spring due to freshet and, like TOC, gradually increased downstream in Mess and Schaft Creeks. Exceedances to the B.C. 30-d Mean and CCME guideline of 0.005 mg/L occurred in May at ST1, YC1, and SKC4 (May 26). Site HC2 (Aug) exceeded all guidelines including the B.C. Max guideline of 0.010 mg/L.

Fluoride ranged from below the detection limit 0.020 mg/L to 0.211 mg/L (WC1, March). The B.C. Max guideline which depends on hardness exceeded at site WC1 (Feb) and JC1 (Nov). These exceedances were just above guideline values. A figure was not provided for fluoride because it is not a variable of interest, but was discussed due to its exceedances.



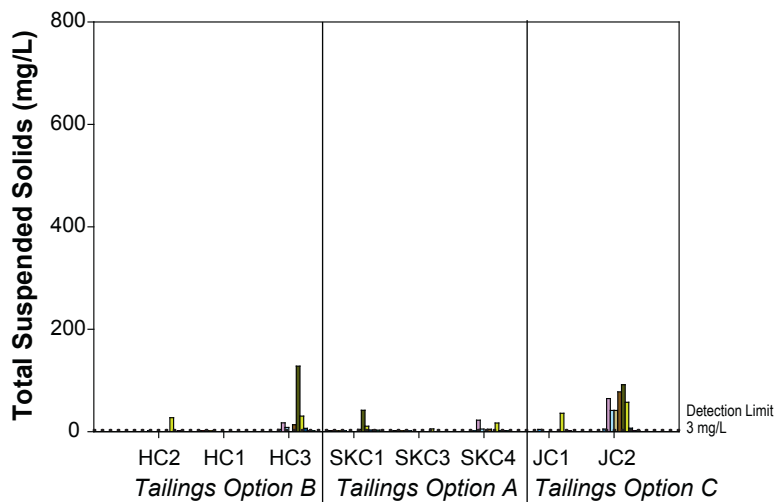
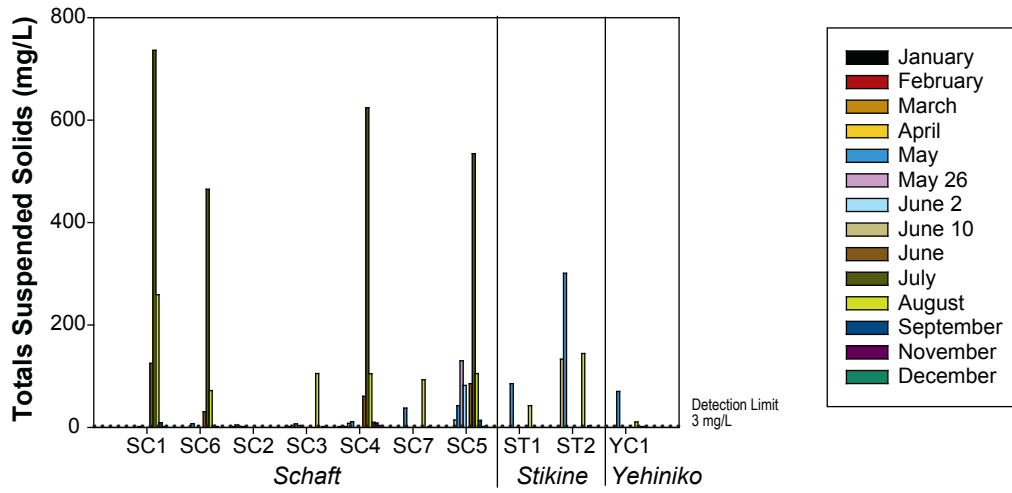
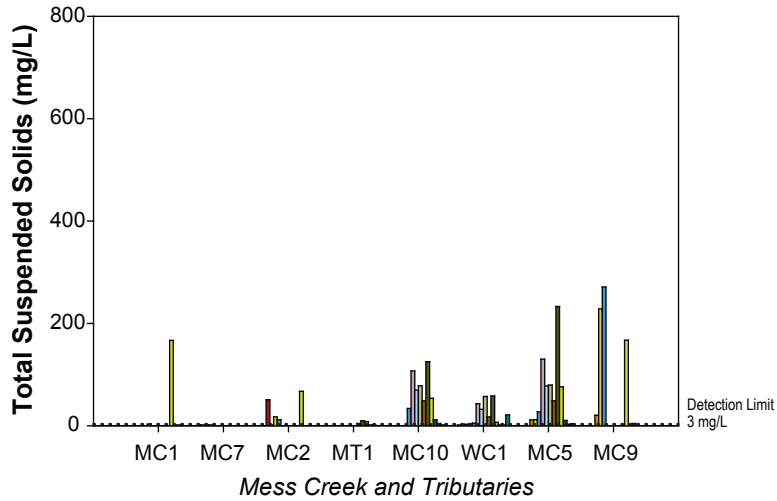
Sites

Notes: CCME, BC Max and 30-d Mean guidelines depend on background levels.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-5



Turbidity Concentrations in Schaft Creek Project Streams, 2007



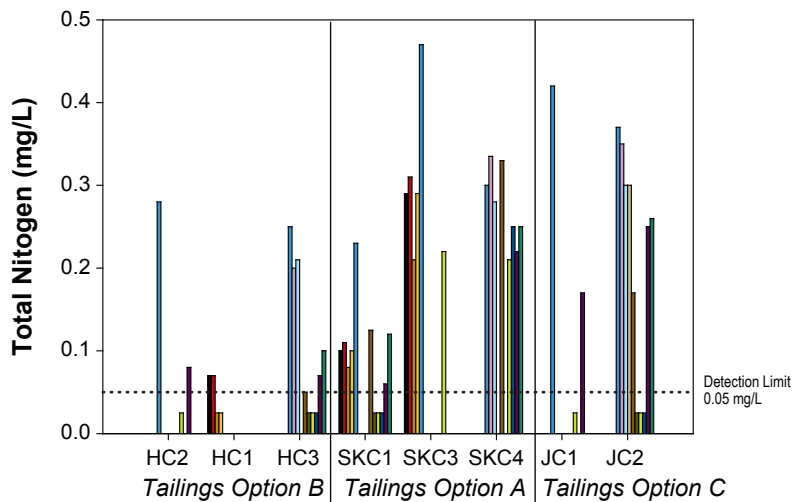
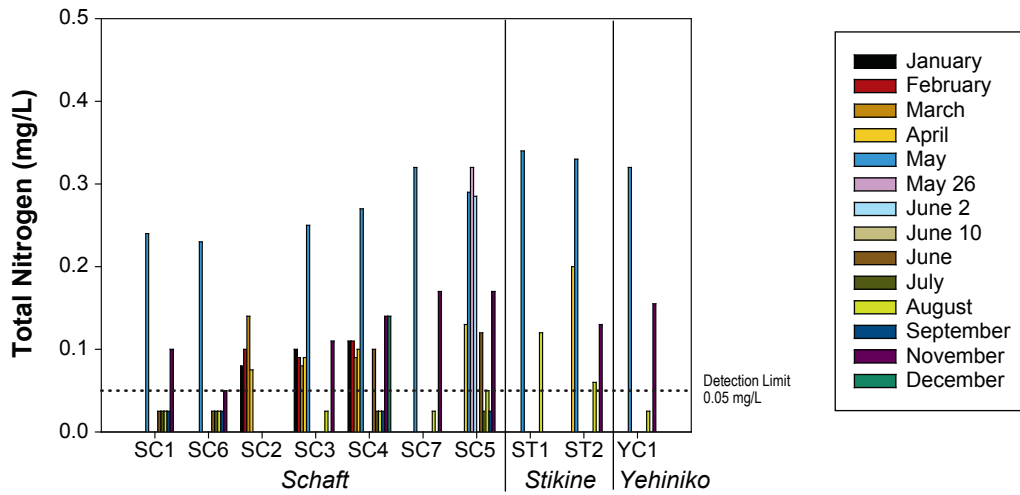
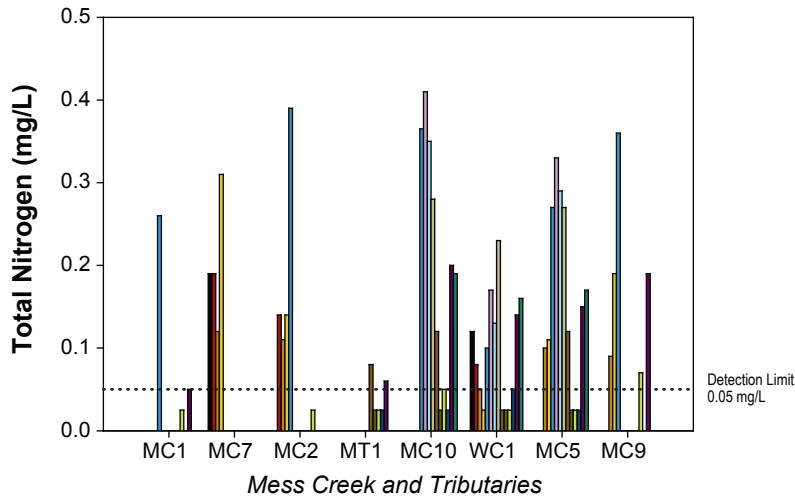
Sites

Notes: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-6



Total Suspended Solids (TSS) Concentrations in Schaft Creek Project Streams, 2007



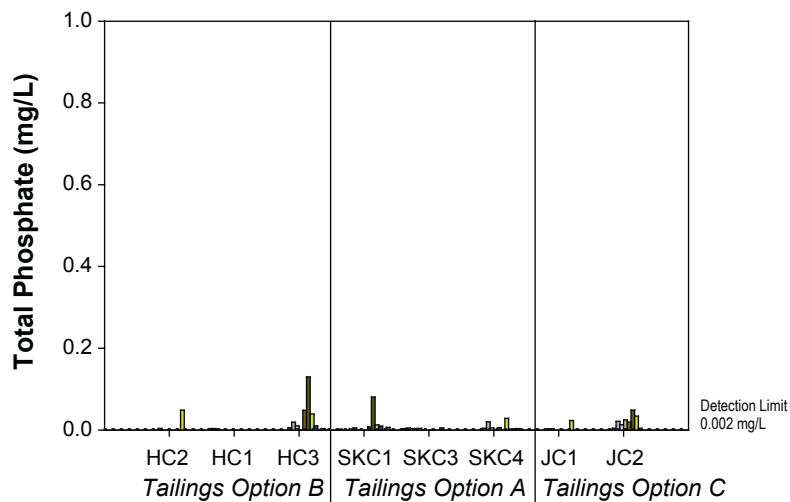
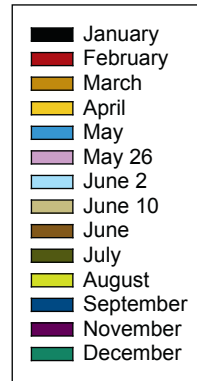
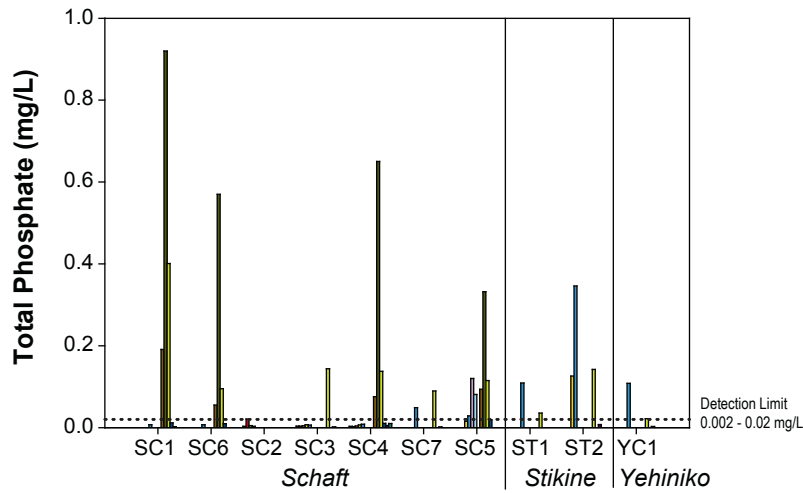
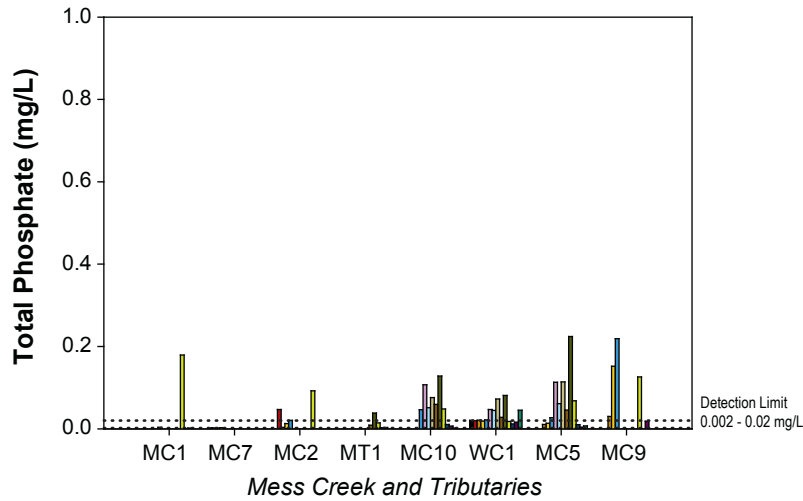
Sites

Notes: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-7



**Total Nitrogen Concentrations
 in Schaft Creek Project Streams, 2007**



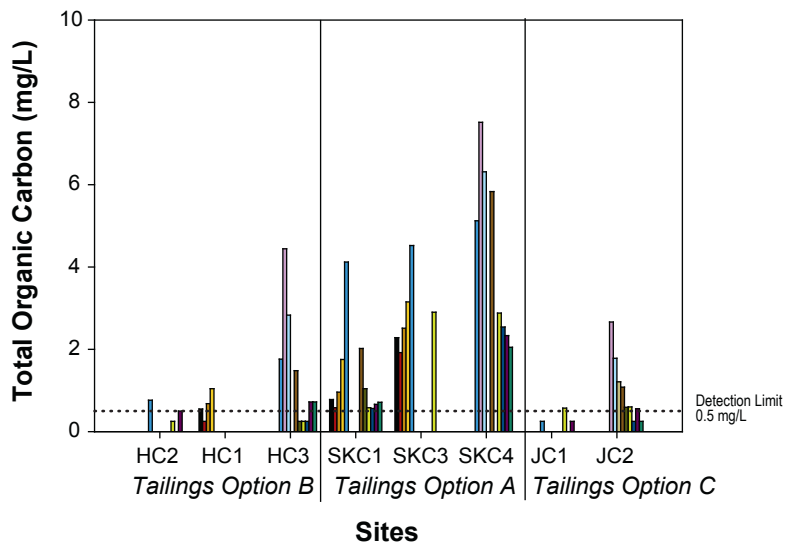
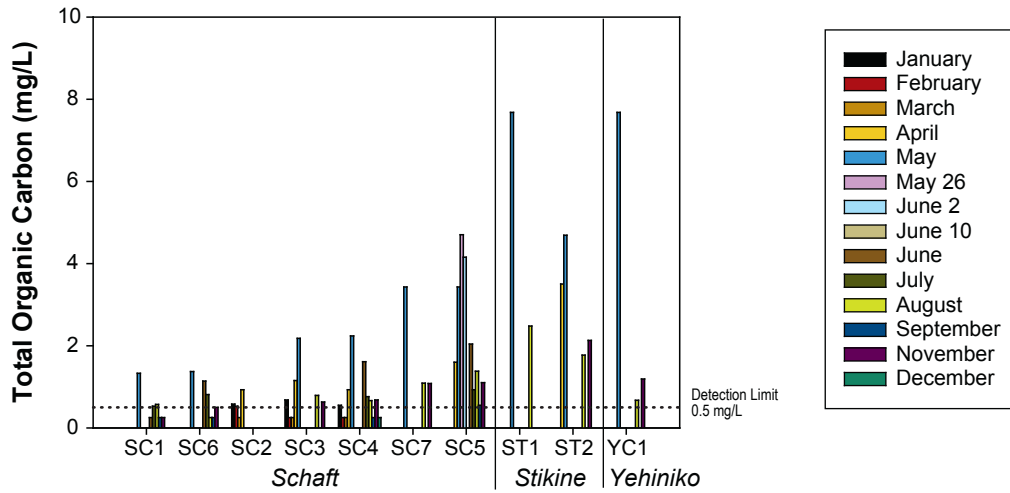
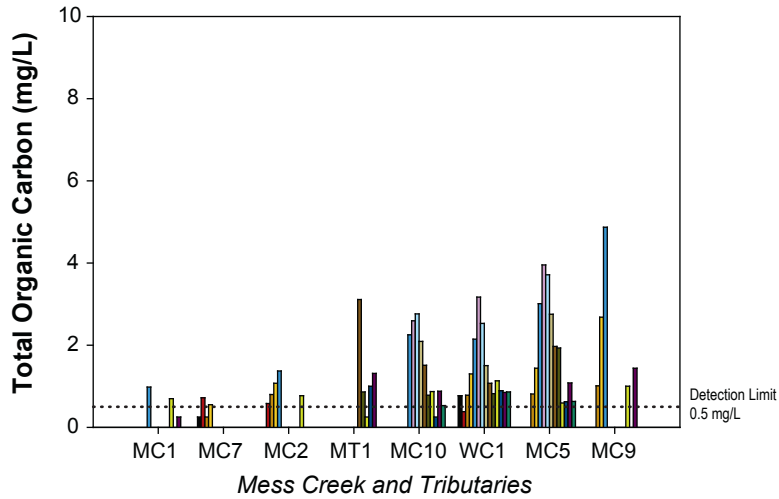
Sites

Notes: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-8



**Total Phosphate Concentrations
 in Schaft Creek Project Streams, 2007**

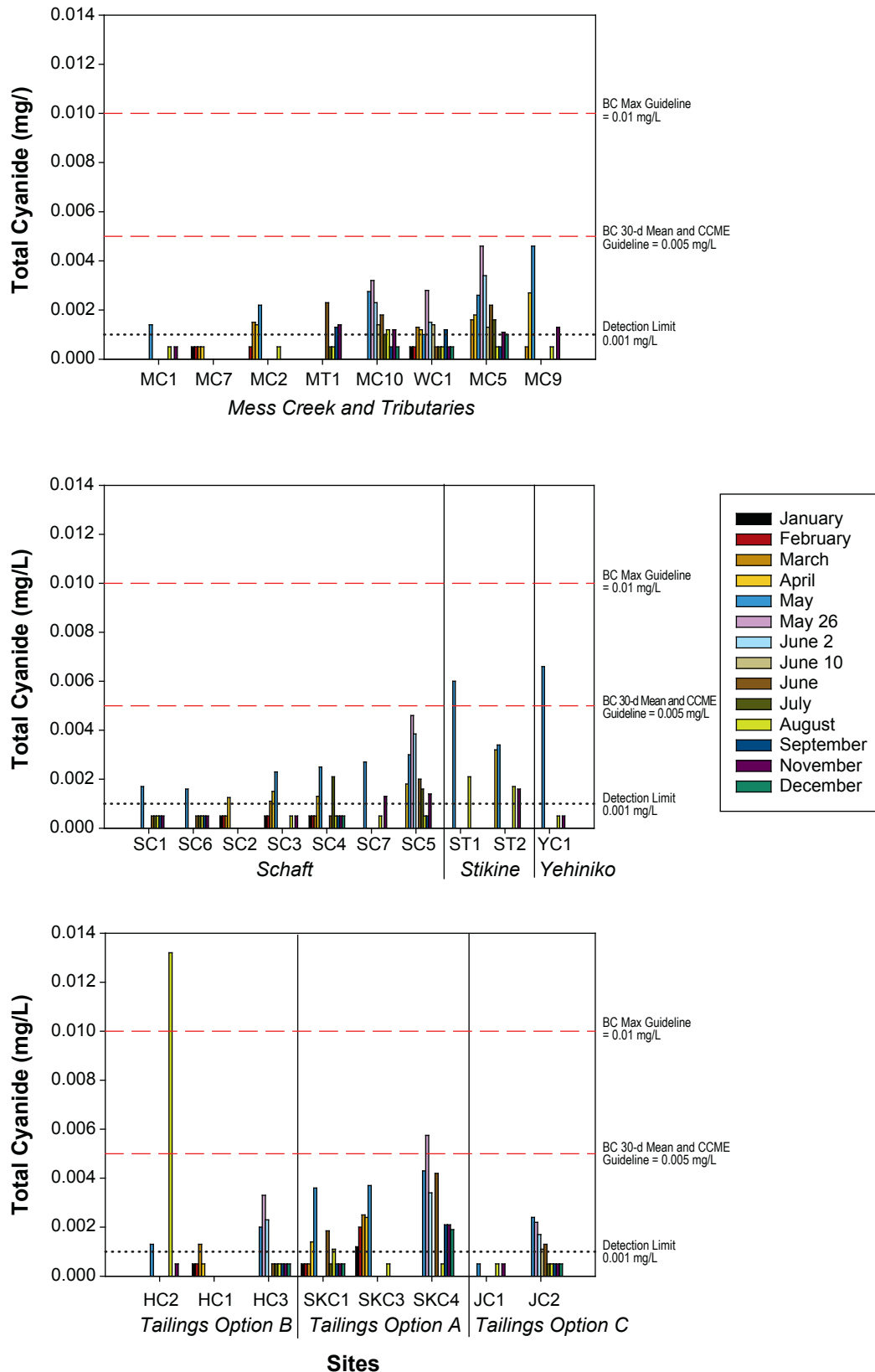


Notes: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-9



Total Organic Carbon (TOC) Concentrations in Schaft Creek Project Streams, 2007



Notes: Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-10



3.1.1.2 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. Analysis of Relative Percent Difference (RPD) can be found in Appendix 3.1-3. RPD results are discussed in the Quality Assurance and Quality Control (QA/QA) section. Metals discussed in this report either exceeded aquatic life guidelines or had greater than 50% of values above their respective detection limits. Metals supported with a figure are: aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, molybdenum, nickel, and zinc. Cobalt, mercury, selenium, silver, and titanium were not provided with a figure but are discussed due to some samples exceeding guidelines. Within each figure, sites are shown from upstream to downstream, and are grouped by watersheds. CCME and B.C. guidelines for total metals were used to screen both total and dissolved metal concentrations, except for dissolved aluminium which has specific B.C. guidelines. Appendices 3.1-4, 3.1-5, and 3.1-6 summarize the proportion of sites that exceeded various guidelines. Total and dissolved metals data were also summarized (mean, minimum, maximum) by variable for each site in Table 3.1-1 and 3.1-2. These summary tables also indicate mean values that exceed CCME and B.C. guidelines (mean hardness and pH values for each site were used when required). Table 3.1-3 lists sites where variables exceeded the B.C. or CCME guidelines by two times or greater.

High rainfall in July and snowmelt from higher elevations contributed to large flow events that spiked concentrations of total suspended solids (TSS) and turbidity at many of the water quality study sites (Rescan, 2008). Consequently, this sediment loading increased the concentrations of many particulate bound metals in July and August for most sites. These metals included total arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, silver, titanium, zinc, and total and dissolved aluminum. Resulting exceedances caused by this event are highlighted below.

Total aluminum (T-Al) ranged from 0.0015 mg/L (MC7, March) to 16.4 mg/L (SC1, July) (Figure 3.1-11). Concentrations of dissolved aluminum (D-Al) ranged from below the detection limit of 0.0010 mg/L to 1.83 mg/L (MC9, Aug) (Figure 3.1-12). Total and dissolved aluminum were generally higher within the Schaft Creek Watershed, sites JC2 and HC3, and lower Mess Creek sites (MC10, WC1, MC5, and MC9). Dissolved aluminum concentrations were a tenth of T-Al concentrations suggesting that the majority of aluminum was particulate bound. All sites exceeded the T-Al CCME guideline of 0.10 mg/L except sites MC7, SC2, HC1, SKC3, and SKC4. Exceedances occurred throughout the year, but the summer months had the highest exceedances. For example site MC5 exceeded the CCME guideline by seventy times in July, and Schaft Creek sites (SC1, SC6, SC4, and SC5) exceeded the guideline by a hundred times in July (Table 3.1-3). Averaging over all samples taken within the Mess Creek Watershed there was an overall exceedance of 10 times the guideline, and 20 times the guideline for the Schaft Creek Watershed (Table 3.1-3). Dissolved aluminum concentrations exceeded the B.C. 30-d Mean guideline of 0.050 mg/L at all sites except MC7, MC2, MC10, SC2, HC1, and Tailing Option A sites. Unlike T-Al, this guideline was only exceeded by D-Al between May to September. The B.C. Max guideline of 0.1 mg/L was exceeded from June 10 to August at most sites. In summary Table 3.1-1, T-Al mean concentrations (averaged over the entire year) exceeded the CCME guideline at all sites except MC7, SC2, HC1, SKC3, and SKC4. Mean concentrations of D-Al exceeded the B.C.

**Table 3.1-1
Total Metal Summary Indicating Mean Concentrations that Exceed Guidelines**

Variable	MC-1 95.0 n=4			MC-7 260 n=5			MC-2 205 n=5			MT-1 46.9 n=5			BC guidelines		CCME
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	guideline
Aluminum	1.6330	0.0165	3.24	0.0029	0.0015	0.0052	0.4908	0.0042	2.14	0.5498	0.0248	2.03			0.1A
Arsenic	0.00250	0.00013	0.00468	0.00054	0.00049	0.00063	0.00165	0.00082	0.00282	0.00034	0.00022	0.00054	0.005		0.005
Cadmium	0.000034	0.00001	0.000058	0.00001	0.00001	0.00001	0.000023	0.00001	0.000062	0.00001	0.00001	0.00001	A		A
Chromium	0.00360	0.00025	0.00700	0.00025	0.00025	0.00025	0.00115	0.00025	0.00420	0.00188	0.00025	0.00608	0.001C,B		0.001C,B
Cobalt	0.00155	0.00005	0.0030	0.00020	0.00018	0.00024	0.00077	0.00039	0.00156	0.00058	0.00005	0.00215	0.11	0.004	
Copper	0.00317	0.00034	0.00598	0.00018	0.00017	0.00019	0.00173	0.00033	0.00493	0.00305	0.00093	0.00837	D		A
Iron	2.499	0.042	4.95	0.285	0.241	0.351	1.276	0.523	2.57	0.381	0.015	1.36	0.3B		0.3
Lead	0.000366	0.000025	0.000706	0.000025	0.000025	0.000025	0.000239	0.000025	0.000729	0.000075	0.000025	0.000191	E		A
Manganese	0.05791	0.00348	0.112	0.0365	0.0333	0.0439	0.1398	0.0967	0.188	0.019833	0.000886	0.0673	F		
Mercury	0.000013	0.000005	0.00002	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.0001	0.00002	0.000026
Molybdenum	0.000799	0.000621	0.001	0.000375	0.000338	0.000418	0.001289	0.000826	0.00162	0.000530	0.000158	0.00109	2	1	0.073
Nickel	0.00706	0.00025	0.0135	0.00074	0.0007	0.00078	0.00509	0.00347	0.00818	0.00172	0.00025	0.00611	A,B		A
Selenium	0.00046	0.00025	0.00066	0.00082	0.00068	0.00101	0.00067	0.00025	0.00102	0.00033	0.00025	0.00066		0.002	0.001
Silver	0.000019	0.000005	0.000032	0.000005	0.000005	0.000005	0.000012	0.000005	0.000023	0.000024	0.000005	0.000099	A	A	0.0001
Titanium	0.052	0.005	0.1	0.005	0.005	0.005	0.017	0.005	0.065	0.018	0.005	0.064	0.1B		
Zinc	0.0069	0.0005	0.0133	0.0005	0.0005	0.0005	0.0029	0.0005	0.0102	0.0021	0.0011	0.004	G	G	0.03

Variable	MC-10 125 n=11			WC-1 43.9 n=17			MC-5 86.3 n=12			MC-9 102 n=5			BC guidelines		CCME
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	guideline
Aluminum	0.9556	0.0121	4.69	0.3247	0.0414	1.54	1.4462	0.0371	7.68	2.871	0.126	5.18			0.1A
Arsenic	0.00256	0.00077	0.00579	0.00020	0.00012	0.00043	0.00128	0.00038	0.00448	0.00132	0.00048	0.00202	0.005		0.005
Cadmium	0.000019	0.00001	0.000049	0.000023	0.00001	0.000058	0.000046	0.00001	0.000171	0.000060	0.00001	0.000095	A		A
Chromium	0.00225	0.00025	0.00885	0.00038	0.00025	0.00083	0.00198	0.00025	0.00931	0.00659	0.0006	0.0144	0.001C,B		0.001C,B
Cobalt	0.00108	0.00016	0.0033	0.00024	0.00005	0.00099	0.00090	0.00005	0.00425	0.00235	0.00011	0.00476	0.11	0.004	
Copper	0.00306	0.00039	0.00974	0.00054	0.00018	0.00144	0.00386	0.0004	0.0152	0.00870	0.00083	0.0176	D		A
Iron	2.123	0.156	5.29	0.522	0.032	2.58	1.774	0.112	8.13	3.683	0.176	7.23	0.3B		0.3
Lead	0.000343	0.000025	0.00129	0.000125	0.000025	0.000555	0.000709	0.000025	0.0034	0.001154	0.000076	0.00211	E		A
Manganese	0.0992	0.0364	0.207	0.04329	0.00607	0.134	0.0956	0.0287	0.285	0.1329	0.027	0.263	F		
Mercury	0.000007	0.000005	0.000011	0.000005	0.000005	0.000005	0.000007	0.000005	0.000021	0.000007	0.000005	0.000013	0.0001	0.00002	0.000026
Molybdenum	0.000912	0.000684	0.0013	0.000693	0.000213	0.00106	0.002278	0.000971	0.003	0.00218	0.0016	0.00248	2	1	0.073
Nickel	0.00528	0.00149	0.0147	0.00060	0.00025	0.00181	0.00258	0.00025	0.012	0.00744	0.00054	0.0154	A,B		A
Selenium	0.00047	0.00025	0.00081	0.00033	0.00025	0.00078	0.00044	0.00025	0.00117	0.00073	0.00025	0.00098		0.002	0.001
Silver	0.000015	0.000005	0.000078	0.000013	0.000005	0.00009	0.000022	0.000005	0.000135	0.000026	0.000005	0.000041	A	A	0.0001
Titanium	0.036	0.005	0.147	0.018	0.005	0.097	0.069	0.005	0.327	0.119	0.005	0.224	0.1B		
Zinc	0.0036	0.0005	0.0177	0.0042	0.0012	0.0131	0.0064	0.0005	0.0326	0.0152	0.0011	0.0351	G	G	0.03

Results are expressed as milligrams per liter.

Outline - BC Max; Grey - BC 30-d; Bold - CCME indicates guidelines exceeded

A: CCME guideline:

for aluminum: pH>6.5

for cadmium guideline = $0.001 \cdot 10^{(0.86[\log(\text{hardness})] - 3.2)}$ mg/L

for copper: CCME = 0.002 mg/L at 0-120 mg/L [CaCO₃], 0.003mg/L at 120 - 180 mg/L [CaCO₃], 0.004 mg/L at >180 mg/L [CaCO₃]

for lead: CCME guideline = 0.001 mg/L for [CaCO₃]=0-60 mg/L, 0.002 mg/L for [CaCO₃]=60-120 mg/L, 0.004 mg/L for [CaCO₃]=120-180 mg/L, 0.007 mg/L for [CaCO₃]=180 mg/L.

for nickel: both BC and CCME guideline = 0.025 mg/L at 0-60 mg/L [CaCO₃], 0.065mg/L at 60 - 120 mg/L [CaCO₃], 0.110 mg/L at 120 - 180 mg/L [CaCO₃], 0.150 mg/L at > 180 mg/L [CaCO₃]

for silver: BC Max guideline of 0.003 mg/L if hardness > 100 mg/L, or 0.0001 mg/L if hardness <= 100 mg/L.

30-d Mean guideline of 0.0015 mg/L if hardness > 100 mg/L, or 0.00005 mg/L if hardness <= 100 mg/L

B: Working BC guideline

C: CCME and BC chromium guideline = 0.001 mg/L (Cr VI).

D: Max. Cu guideline of (0.094(hardness)+2) µg/L. The 30-d mean Cu guideline is ≤2 µg/L for hardness ≤ 50 mg/L, and guideline is ≤ 0.04*(mean hardness) µg/L for hardness > 50mg/L.

E: BC Max Pb guideline of $e(1.273 \ln(\text{hardness}) - 1.460)$ ug/L if hardness > 8 mg/L; 0.003 mg/L if hardness <= 8 mg/L.

BC 30-day mean Pb Guideline of $\leq 3.31 + e(1.273 \ln(\text{mean hardness}) - 4.704)$ ug/L for hardness > 8 mg/L only; otherwise no 30-d mean guideline.

F: BC Max Mn guideline 0.01102(hardness)+0.54 mg/L; 30-day mean Mn guideline 0.0044(mean hardness)+0.605 mg/L.

G: BC Max Zn guideline = $[33 + 0.75 \cdot (\text{hardness} - 90)]$ ug/L, minimum of 33 ug/L if hardness < 90 mg/L.

BC 30-day mean Zn guideline = $[7.5 + 0.75 \cdot (\text{hardness} - 90)]$ ug/L, minimum of 7.5 ug/L if hardness < 90 mg/L

(continued)

**Table 3.1-1
Total Metal Summary Indicating Mean Concentrations that Exceed Guidelines**

Variable	SC-1 41.7 n=6			SC-6 59.2 n=7			SC-2 106 n=5			SC-3 94.3 n=7			SC-4 74.0 n=12			BC guidelines max 30-d mean	CCME guideline
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max		
Aluminum	5.1871	0.046	16.4	2.4299	0.0286	10.8	0.0226	0.0069	0.0437	0.7018	0.0137	4.57	1.9301	0.0121	14.1	A,B	0.1A
Arsenic	0.00174	0.00023	0.00587	0.00172	0.00069	0.00536	0.00057	0.00054	0.00059	0.00080	0.00047	0.00244	0.00120	0.0004	0.00618	0.005	0.005
Cadmium	0.000051	0.00001	0.000137	0.000029	0.00001	0.000102	0.000018	0.00001	0.000031	0.000024	0.00001	0.000062	0.000038	0.00001	0.000127	A,B	A
Chromium	0.00367	0.00025	0.0126	0.00369	0.00025	0.0166	0.00074	0.00025	0.00094	0.00109	0.00025	0.00536	0.00287	0.00025	0.0217	0.001C,B	0.001C,B
Cobalt	0.00272	0.00005	0.00954	0.00168	0.00005	0.00804	0.00005	0.00005	0.00005	0.00044	0.00005	0.00255	0.00127	0.00005	0.00997	0.11	0.004
Copper	0.01519	0.00024	0.0505	0.00809	0.00045	0.0347	0.00065	0.00032	0.00083	0.00299	0.00046	0.0139	0.00687	0.00038	0.0467	D	A
Iron	5.366	0.035	18.6	2.317	0.015	11	0.059	0.015	0.094	0.653	0.015	3.97	1.871	0.054	14	0.3B	0.3
Lead	0.001389	0.000025	0.00456	0.000664	0.000025	0.00305	0.000025	0.000025	0.000025	0.000210	0.000025	0.00116	0.000594	0.000025	0.00423	E	A
Manganese	0.16071	0.00126	0.555	0.07373	0.00213	0.342	0.01814	0.00478	0.0222	0.0469	0.0191	0.127	0.0775	0.0199	0.442	F	0.00026
Mercury	0.000007	0.000005	0.000015	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.0001	0.000026
Molybdenum	0.00396	0.00146	0.00955	0.002340	0.000939	0.0045	0.01167	0.00873	0.013	0.00890	0.00236	0.0123	0.00656	0.00228	0.0105	2	0.073
Nickel	0.00273	0.00025	0.0107	0.00287	0.00025	0.0143	0.00025	0.00025	0.00025	0.00059	0.00025	0.0025	0.00239	0.00025	0.0206	A,B	A
Selenium	0.00037	0.00025	0.00065	0.00043	0.00025	0.00095	0.00037	0.00025	0.00061	0.00033	0.00025	0.00079	0.00043	0.00025	0.00095		0.001
Silver	0.000026	0.000005	0.000079	0.000013	0.000005	0.000052	0.000005	0.000005	0.000005	0.000008	0.000005	0.000023	0.000012	0.000005	0.000062	A	0.0001
Titanium	0.265	0.005	0.817	0.114	0.005	0.517	0.005	0.005	0.005	0.039	0.005	0.231	0.090	0.005	0.611	0.1B	0.001
Zinc	0.0141	0.0005	0.0442	0.0071	0.0005	0.0285	0.0005	0.0005	0.0005	0.0028	0.0005	0.0158	0.0058	0.0005	0.0351	G	0.03

Variable	SC-7 70.0 n=3			SC-5 61.8 n=10			ST-1 70.3 n=2			ST-2 93.4 n=4			YC-1 53.9 n=4			BC guidelines max 30-d mean	CCME guideline
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max		
Aluminum	1.4337	0.0302	3.73	2.0326	0.0273	11.4	2.52	2.37	2.67	3.2862	0.0749	6.37	0.5303	0.0537	1.81	A,B	0.1A
Arsenic	0.00088	0.00047	0.00148	0.00114	0.00041	0.00429	0.00099	0.00093	0.00105	0.00130	0.00026	0.00219	0.00046	0.00034	0.00083	0.005	0.005
Cadmium	0.000025	0.00001	0.000038	0.000029	0.00001	0.000094	0.000043	0.000031	0.000054	0.000058	0.00001	0.000103	0.00001	0.00001	0.00001	A,B	A
Chromium	0.00187	0.00025	0.00407	0.00297	0.00025	0.0155	0.00542	0.005	0.00584	0.00812	0.00025	0.0181	0.00161	0.00025	0.00569	0.001C,B	0.001C,B
Cobalt	0.00085	0.00011	0.00193	0.00134	0.00005	0.00712	0.00145	0.00117	0.00173	0.00241	0.00005	0.00515	0.00047	0.00005	0.00162	0.11	0.004
Copper	0.00427	0.00063	0.00908	0.00701	0.00058	0.0317	0.00592	0.00477	0.00706	0.00857	0.00093	0.0168	0.00294	0.00066	0.00899	D	A
Iron	1.425	0.238	3.15	2.162	0.17	10.9	2.90	2.37	3.42	4.23	0.1	8.32	0.519	0.036	1.77	0.3B	0.3
Lead	0.000470	0.000025	0.00106	0.000678	0.000025	0.00334	0.000844	0.000752	0.000936	0.001114	0.000025	0.00201	0.000187	0.000025	0.000502	E	A
Manganese	0.112	0.104	0.122	0.1172	0.0352	0.355	0.0718	0.0528	0.0907	0.11761	0.00842	0.241	0.01567	0.00174	0.0473	F	0.00026
Mercury	0.000007	0.000005	0.00001	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000007	0.000005	0.000014	0.000005	0.000005	0.000005	0.0001	0.000026
Molybdenum	0.00452	0.00208	0.00607	0.00342	0.00181	0.00533	0.000727	0.000598	0.000856	0.001494	0.000965	0.00267	0.00094	0.0005	0.00118	2	0.073
Nickel	0.00179	0.00025	0.00382	0.00286	0.00025	0.0145	0.00678	0.00566	0.0079	0.00890	0.0005	0.0179	0.00325	0.00025	0.0115	A,B	A
Selenium	0.00035	0.00025	0.00056	0.00039	0.00025	0.00099	0.00061	0.00056	0.00065	0.00044	0.00025	0.00071	0.00025	0.00025	0.00025		0.001
Silver	0.000009	0.000005	0.000016	0.000012	0.000005	0.000058	0.000023	0.000022	0.000024	0.000025	0.000005	0.00005	0.000005	0.000005	0.000005	A	0.0001
Titanium	0.070	0.005	0.176	0.090	0.005	0.454	0.091	0.087	0.094	0.144	0.005	0.244	0.020	0.005	0.064	0.1B	0.001
Zinc	0.0043	0.0005	0.0098	0.0056	0.0005	0.0278	0.0082	0.005	0.0113	0.0128	0.0005	0.0217	0.0019	0.0005	0.0048	G	0.03

Results are expressed as milligrams per litre. (continued)

Outline - BC Max; Grey - BC 30-d; Bold - CCME indicates guidelines exceeded

A: CCME guideline:

for aluminum: pH>6.5

for cadmium guideline = $0.001 \cdot 10^{(0.86[\log(\text{hardness})] - 3.2)}$ mg/L

for copper: CCME = 0.002 mg/L at 0-120 mg/L [CaCO₃], 0.003mg/L at 120 - 180 mg/L [CaCO₃], 0.004 mg/L at >180 mg/L [CaCO₃]

for lead: CCME guideline = 0.001 mg/L for [CaCO₃]=0-60 mg/L, 0.002 mg/L for [CaCO₃]=60-120 mg/L, 0.004 mg/L for [CaCO₃]=120-180 mg/L, 0.007 mg/L for [CaCO₃]=180 mg/L.

for nickel: both BC and CCME guideline = 0.025 mg/L at 0-60 mg/L [CaCO₃], 0.065mg/L at 60 - 120 mg/L [CaCO₃], 0.110 mg/L at 120 - 180 mg/L [CaCO₃], 0.150 mg/L at > 180 mg/L [CaCO₃]

for silver: BC Max guideline of 0.003 mg/L if hardness > 100 mg/L, or 0.0001 mg/L if hardness <= 100 mg/L.

30-d Mean guideline of 0.0015 mg/L if hardness > 100 mg/L, or 0.00005 mg/L if hardness <= 100 mg/L.

B: Working BC guideline

C: CCME and BC chromium guideline = 0.001 mg/L (Cr VI).

D: Max. Cu guideline of $(0.094(\text{hardness})+2)$ µg/L. The 30-d mean Cu guideline is ≤2 µg/L for hardness ≤ 50 mg/L, and guideline is ≤ 0.04*(mean hardness) µg/L for hardness > 50mg/L.

E: BC Max Pb guideline of $e(1.273 \ln(\text{hardness}) - 1.460)$ ug/L if hardness > 8 mg/L; 0.003 mg/L if hardness <= 8 mg/L.

BC 30-day mean Pb Guideline of $\leq 3.31 + e(1.273 \ln(\text{mean hardness}) - 4.704)$ ug/L for hardness > 8 mg/L only; otherwise no 30-d mean guideline.

F: BC Max Mn guideline $0.01102(\text{hardness})+0.54$ mg/L; 30-day mean Mn guideline $0.0044(\text{mean hardness})+0.605$ mg/L.

G: BC Max Zn guideline = $[33 + 0.75*(\text{hardness} - 90)]$ ug/L, minimum of 33 ug/L if hardness < 90 mg/L.

BC 30-day mean Zn guideline = $[7.5 + 0.75*(\text{hardness} - 90)]$ ug/L, minimum of 7.5 ug/L if hardness < 90 mg/L.

(continued)

**Table 3.1-1
Total Metal Summary Indicating Mean Concentrations that Exceed Guidelines (completed)**

Mean Hardness	HC-2			HC-1			HC-3			SKC-1			BC guidelines	CCME
	mean	min	max	mean	min	max	mean	min	max	mean	min	max		
Aluminum	0.7159	0.0359	2.06	0.0214	0.0121	0.0342	1.0949	0.0291	4.23	0.2274	0.0035	2.23		0.1A
Arsenic	0.00189	0.00145	0.00264	0.00105	0.00079	0.00127	0.00188	0.0008	0.00407	0.00062	0.00018	0.00359	0.005	0.005
Cadmium	0.000027	0.00001	0.00006	0.00001	0.00001	0.00001	0.000021	0.00001	0.000062	0.000019	0.00001	0.000093	A,B	A
Chromium	0.00182	0.00071	0.00386	0.00109	0.00089	0.0013	0.00422	0.00078	0.0152	0.00061	0.00025	0.00412	0.001C,B	0.001C,B
Cobalt	0.00052	0.00005	0.00147	0.00005	0.00005	0.00005	0.00134	0.00005	0.00523	0.00021	0.00005	0.00176	0.11	0.004
Copper	0.00281	0.00058	0.00704	0.00066	0.00044	0.00086	0.0054	0.0007	0.0159	0.00191	0.00044	0.0123	D	A
Iron	0.492	0.032	1.4	0.023	0.015	0.045	1.164	0.015	4.57	0.397	0.015	3.51	0.3B	0.3
Lead	0.000205	0.000025	0.000564	0.000025	0.000025	0.000025	0.000356	0.000025	0.0013	0.000109	0.000025	0.000871	E	A
Manganese	0.01926	0.00205	0.0528	0.001088	0.000477	0.00228	0.03710	0.0012	0.14	0.02668	0.00684	0.176	F	0.00026
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000007	0.000005	0.000027	0.000005	0.000005	0.000005	0.0001	0.00002
Molybdenum	0.000295	0.000177	0.000378	0.001059	0.000767	0.00134	0.000751	0.000387	0.00108	0.000746	0.000537	0.000941	2	0.073
Nickel	0.00083	0.00025	0.002	0.00120	0.00025	0.00222	0.00380	0.00025	0.0130	0.00049	0.00025	0.00307	A,B	A
Selenium	0.00041	0.00025	0.00074	0.00025	0.00025	0.00025	0.00048	0.00025	0.00082	0.00070	0.00025	0.00101		0.001
Silver	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000010	0.000005	0.000029	0.000007	0.000005	0.000029	A	0.0001
Titanium	0.024	0.005	0.063	0.005	0.005	0.005	0.048	0.005	0.186	0.012	0.005	0.086	0.1B	
Zinc	0.0037	0.0005	0.0101	0.0005	0.0005	0.0005	0.0040	0.0005	0.0139	0.0020	0.0005	0.0144	G	0.03

Mean Hardness	SKC-3			SKC-4			JC-1			JC-2			BC guidelines	CCME
	mean	min	max	mean	min	max	mean	min	max	mean	min	max		
Aluminum	0.0087	0.005	0.0113	0.0360	0.0062	0.0822	0.2358	0.0285	0.631	0.5903	0.0184	1.62		0.1A
Arsenic	0.00006	0.00005	0.00012	0.00028	0.00023	0.00034	0.00029	0.00026	0.00032	0.00030	0.00017	0.00046	0.005	0.005
Cadmium	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000021	0.00001	0.00003	0.000018	0.00001	0.000029	A,B	A
Chromium	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00049	0.00025	0.00125	0.001C,B	0.001C,B
Cobalt	0.00005	0.00005	0.00005	0.00007	0.00005	0.00014	0.00009	0.00005	0.00017	0.00019	0.00005	0.00049	0.11	0.004
Copper	0.00029	0.00017	0.00041	0.00094	0.0003	0.00165	0.00043	0.00011	0.00093	0.00127	0.00015	0.00325	D	A
Iron	0.097	0.038	0.2	0.126	0.076	0.211	0.169	0.015	0.438	0.481	0.015	1.29	0.3B	0.3
Lead	0.000025	0.000025	0.000025	0.000038	0.000025	0.000086	0.000133	0.000025	0.000349	0.000275	0.000025	0.000792	E	A
Manganese	0.00656	0.00206	0.0133	0.01420	0.00525	0.0222	0.01041	0.00386	0.022	0.02005	0.00152	0.0526	F	
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.0001	0.00002
Molybdenum	0.000342	0.000199	0.000442	0.000622	0.000429	0.000793	0.00594	0.00207	0.00855	0.00455	0.002	0.00642	2	0.073
Nickel	0.00025	0.00025	0.00025	0.00082	0.00025	0.00138	0.00025	0.00025	0.00025	0.00032	0.00025	0.00067	A,B	A
Selenium	0.00030	0.00025	0.00053	0.00048	0.00025	0.00096	0.00025	0.00025	0.00025	0.00031	0.00025	0.00061		0.001
Silver	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000006	0.000005	0.000012	A	0.0001
Titanium	0.005	0.005	0.005	0.005	0.005	0.005	0.013	0.005	0.029	0.029	0.005	0.079	0.1B	
Zinc	0.0005	0.0005	0.0005	0.0007	0.0005	0.0019	0.0008	0.0005	0.0014	0.0016	0.0005	0.0042	G	0.03

Results are expressed as milligrams per litre.

Outline - BC Max; Grey - BC 30-d; Bold - CCME indicates guidelines exceeded

A: CCME guideline:

for aluminum: pH>6.5

for cadmium guideline = $0.001 \cdot 10^{(0.66[\ln(\text{hardness})] - 3.2)}$ mg/L

for copper: CCME = 0.002 mg/L at 0-120 mg/L [CaCO₃], 0.003mg/L at 120 - 180 mg/L [CaCO₃], 0.004 mg/L at >180 mg/L [CaCO₃]

for lead: CCME guideline = 0.001 mg/L for [CaCO₃]=0-60 mg/L, 0.002 mg/L for [CaCO₃]=60-120 mg/L, 0.004 mg/L for [CaCO₃]=120-180 mg/L, 0.007 mg/L for [CaCO₃]=180 mg/L.

for nickel: both BC and CCME guideline = 0.025 mg/L at 0-60 mg/L [CaCO₃], 0.065mg/L at 60 - 120 mg/L [CaCO₃], 0.110 mg/L at 120 - 180 mg/L [CaCO₃], 0.150 mg/L at > 180 mg/L [CaCO₃]

for silver: BC Max guideline of 0.003 mg/L if hardness > 100 mg/L, or 0.0001 mg/L if hardness <= 100 mg/L.

30-d Mean guideline of 0.0015 mg/L if hardness > 100 mg/L, or 0.00005 mg/L if hardness <= 100 mg/L

B: Working BC guideline

C: CCME and BC chromium guideline = 0.001 mg/L (Cr VI).

D: Max. Cu guideline of (0.094(hardness)+2) µg/L. The 30-d mean Cu guideline is ≤2 µg/L for hardness ≤ 50 mg/L, and guideline is ≤ 0.04*(mean hardness) µg/L for hardness > 50mg/L.

E: BC Max Pb guideline of $e(1.273 \ln(\text{hardness}) - 1.460)$ ug/L if hardness > 8 mg/L; 0.003 mg/L if hardness <= 8 mg/L.

BC 30-day mean Pb Guideline of $\leq 3.31 + e(1.273 \ln(\text{mean hardness}) - 4.704)$ ug/L for hardness > 8 mg/L only; otherwise no 30-d mean guideline.

F: BC Max Mn guideline 0.01102(hardness)+0.54 mg/L; 30-day mean Mn guideline 0.0044(mean hardness)+0.605 mg/L.

G: BC Max Zn guideline = $[33 + 0.75 \cdot (\text{hardness} - 90)]$ ug/L, minimum of 33 ug/L if hardness < 90 mg/L.

BC 30-day mean Zn guideline = $[7.5 + 0.75 \cdot (\text{hardness} - 90)]$ ug/L, minimum of 7.5 ug/L if hardness < 90 mg/L

**Table 3.1-2
Dissolved Metal Summary Indicating Mean Concentrations that Exceed Guidelines**

Mean Hardness	MC-1			MC-7			MC-2			MT-1			BC guidelines		CCME guideline
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	
95.0 n=4															
Aluminum	0.1085	0.0013	0.2150	0.0010	0.0005	0.0029	0.0078	0.0005	0.0332	0.0726	0.0062	0.218	0.1A	0.05A	
Arsenic	0.00090	0.00005	0.00163	0.00032	0.00027	0.0004	0.00058	0.00051	0.00066	0.00023	0.00018	0.00032	0.005		0.005
Cadmium	0.000014	0.00001	0.000018	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	A,B		A
Chromium	0.00056	0.00025	0.00088	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.001C,B		0.001C,B
Cobalt	0.00049	0.00005	0.00092	0.00019	0.00017	0.00023	0.00025	0.00005	0.00034	0.00005	0.00005	0.00005	0.11	0.004	
Copper	0.00109	0.0001	0.00201	0.00015	0.00005	0.00032	0.00034	0.00025	0.00045	0.00069	0.00025	0.00136	D		A
Iron	0.760	0.015	1.51	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.3B		0.3
Lead	0.000159	0.000025	0.00029	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000041	0.000025	0.000103	E		A
Manganese	0.026206	0.000789	0.051550	0.0361	0.0332	0.0434	0.1007	0.0147	0.15	0.001631	0.000076	0.00302	F		
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.0001	0.00002	0.000026
Molybdenum	0.000719	0.000193	0.00111	0.000415	0.000371	0.000464	0.001315	0.000774	0.00166	0.000526	0.00013	0.00113	2	1	0.073
Nickel	0.00191	0.00025	0.00319	0.00071	0.0004	0.00086	0.00310	0.00116	0.00436	0.00025	0.00025	0.00025	A,B		A
Selenium	0.00044	0.00025	0.00062	0.00097	0.00067	0.00115	0.00041	0.00025	0.00076	0.00032	0.00025	0.00059		0.002	0.001
Silver	0.000007	0.000005	0.00001	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	A	A	0.0001
Titanium	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.1B		
Zinc	0.0015	0.0005	0.0024	0.0005	0.0005	0.0005	0.0010	0.0005	0.0029	0.0007	0.0005	0.0014	G	G	0.03

Mean Hardness	MC-10			WC-1			MC-5			MC-9			BC guidelines		CCME guideline
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	
125 n=11															
Aluminum	0.0145	0.0005	0.0408	0.0395	0.0163	0.0852	0.0463	0.0025	0.149	0.3782	0.0038	1.83	0.1A	0.05A	
Arsenic	0.00071	0.0004	0.0011	0.00014	0.00005	0.00019	0.00040	0.00023	0.00055	0.00057	0.00031	0.00127	0.005		0.005
Cadmium	0.00001	0.00001	0.00001	0.000011	0.00001	0.000022	0.000015	0.00001	0.000051	0.000020	0.00001	0.000059	A,B		A
Chromium	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00078	0.00025	0.00292	0.001C,B		0.001C,B
Cobalt	0.00014	0.00005	0.00038	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00045	0.00005	0.00205	0.11	0.004	
Copper	0.00048	0.0002	0.00094	0.00028	0.00015	0.00074	0.00070	0.0002	0.00148	0.00075	0.0003	0.00165	D	D	A
Iron	0.038	0.015	0.143	0.032	0.015	0.084	0.057	0.015	0.104	0.633	0.015	3.03	0.3B		0.3
Lead	0.000025	0.000025	0.000025	0.000030	0.000025	0.000073	0.000035	0.000025	0.00006	0.000304	0.000025	0.00142	E		A
Manganese	0.04722	0.00478	0.13950	0.011817	0.000356	0.0426	0.02869	0.00501	0.0878	0.04329	0.00474	0.136	F		
Mercury	0.000006	0.000005	0.000015	0.000006	0.000005	0.000015	0.000006	0.000005	0.000015	0.000005	0.000005	0.000005	0.0001	0.00002	0.000026
Molybdenum	0.000939	0.000519	0.001265	0.000773	0.0002	0.0011	0.002281	0.000941	0.0031	0.002094	0.000612	0.00264	2	1	0.073
Nickel	0.00164	0.00064	0.00346	0.00025	0.00025	0.00025	0.00036	0.00025	0.00067	0.00133	0.00025	0.0052	A,B		A
Selenium	0.00040	0.00025	0.00082	0.00030	0.00025	0.00054	0.00034	0.00025	0.00061	0.00043	0.00025	0.00091		0.002	0.001
Silver	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000006	0.000005	0.000012	A	A	0.0001
Titanium	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.018	0.005	0.072	0.1B		
Zinc	0.0005	0.0005	0.0005	0.0014	0.0005	0.0036	0.0006	0.0005	0.0013	0.0025	0.0005	0.0104	G	G	0.03

Results are expressed as milligrams per litre.

Outline - BC Max; Grey - BC 30-d; Bold - CCME indicates guidelines exceeded

A: CCME guideline:

for aluminum: pH>=6.5

for cadmium guideline = 0.001 * 10^{(0.88[log(hardness)] - 3.2)} mg/L

for copper: CCME = 0.002 mg/L at 0-120 mg/L [CaCO₃], 0.003mg/L at 120 - 180 mg/L [CaCO₃], 0.004 mg/L at >180 mg/L [CaCO₃]

for lead: CCME guideline = 0.001 mg/L for [CaCO₃]=0-60 mg/L, 0.002 mg/L for [CaCO₃]=60-120 mg/L, 0.004 mg/L for [CaCO₃]=120-180 mg/L, 0.007 mg/L for [CaCO₃]=180 mg/L.

for nickel: both BC and CCME guideline = 0.025 mg/L at 0-60 mg/L [CaCO₃], 0.065mg/L at 60 - 120 mg/L [CaCO₃], 0.110 mg/L at 120 - 180 mg/L [CaCO₃], 0.150 mg/L at > 180 mg/L [CaCO₃]

for silver: BC Max guideline of 0.003 mg/L if hardness > 100 mg/L, or 0.0001 mg/L if hardness <= 100 mg/L.

30-d Mean guideline of 0.0015 mg/L if hardness > 100 mg/L, or 0.00005 mg/L if hardness <= 100 mg/L

B: Working BC guideline

C: CCME and BC chromium guideline = 0.001 mg/L (Cr VI).

D: Max. Cu guideline of (0.094(hardness)+2) µg/L. The 30-d mean Cu guideline is ≤2 µg/L for hardness ≤ 50 mg/L, and guideline is ≤ 0.04*(mean hardness) µg/L for hardness > 50mg/L.

E: BC Max Pb guideline of e(1.273 ln (hardness) - 1.460) ug/L if hardness > 8 mg/L; 0.003 mg/L if hardness <= 8 mg/L.

BC 30-day mean Pb Guideline of <= 3.31 + e(1.273 ln (mean hardness) - 4.704) ug/L for hardness > 8 mg/L only; otherwise no 30-d mean guideline.

F: BC Max Mn guideline 0.01102(hardness)+0.54 mg/L; 30-day mean Mn guideline 0.0044(mean hardness)+0.605 mg/L.

G: BC Max Zn guideline = [33 + 0.75*(hardness - 90)] ug/L, minimum of 33 ug/L if hardness < 90 mg/L.

BC 30-day mean Zn guideline = [7.5 + 0.75*(hardness - 90)] ug/L, minimum of 7.5 ug/L if hardness < 90 mg/L

(continued)

Table 3.1-2

Dissolved Metal Summary Indicating Mean Concentrations that Exceed Guidelines (continued)

Mean Hardness	SC-1			SC-2			SC-6			SC-2			SC-3			SC-4			BC guidelines		CCME
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	guideline
Aluminum	0.1721	0.0203	0.386	0.1051	0.0072	0.278	0.0049	0.0046	0.0053	0.0220	0.0042	0.121	0.0761	0.0037	0.304	0.1A	0.05A				
Arsenic	0.00030	0.00021	0.00045	0.00079	0.00067	0.00090	0.00049	0.00046	0.00051	0.00045	0.0004	0.00057	0.00048	0.00032	0.00111	0.005					0.005
Cadmium	0.000015	0.00001	0.000028	0.00001	0.00001	0.00001	0.000020	0.00001	0.000032	0.000020	0.00001	0.000031	0.000019	0.00001	0.000035	A,B					A
Chromium	0.00029	0.00025	0.0005	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.001C,B					0.001C,B
Cobalt	0.00007	0.00005	0.00011	0.00006	0.00005	0.00013	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.11	0.004				
Copper	0.00058	0.00015	0.00133	0.00060	0.0002	0.00137	0.00054	0.0003	0.00074	0.00057	0.00025	0.00152	0.00073	0.00015	0.0017	D					A
Iron	0.084	0.015	0.204	0.065	0.015	0.162	0.015	0.015	0.015	0.023	0.015	0.07	0.047	0.015	0.138	0.3B					0.3
Lead	0.000037	0.000025	0.000072	0.000030	0.000025	0.000058	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000032	0.000025	0.000071	E					A
Manganese	0.009026	0.000384	0.0209	0.00740	0.00144	0.0152	0.01703	0.00615	0.0221	0.0235	0.0129	0.0308	0.01731	0.00798	0.032	F					
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.00001	0.000002				0.000026
Molybdenum	0.00411	0.00122	0.00971	0.002422	0.000911	0.00454	0.01169	0.00843	0.0131	0.00907	0.00218	0.0124	0.00670	0.00241	0.0107	2	1				0.073
Nickel	0.00029	0.00025	0.0005	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	A,B					A
Selenium	0.00032	0.00025	0.00066	0.00038	0.00025	0.00065	0.00033	0.00025	0.00064	0.00047	0.00025	0.00071	0.00041	0.00025	0.00091						0.001
Silver	0.000006	0.000005	0.00001	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	A	A				0.0001
Titanium	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	0.1B					
Zinc	0.0010	0.0005	0.0019	0.0006	0.0005	0.0008	0.0007	0.0005	0.0015	0.0007	0.0005	0.0017	0.0006	0.0005	0.0017	G	G				0.03

Mean Hardness	SC-7			SC-5			ST-1			ST-2			YC-1			BC guidelines		CCME			
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	guideline			
Aluminum	0.0811	0.0037	0.224	0.0824	0.0035	0.305	0.0817	0.0783	0.0851	0.0525	0.0074	0.11	0.0393	0.0083	0.0823	0.1A	0.05A				
Arsenic	0.00039	0.00033	0.00047	0.00039	0.00029	0.00063	0.00026	0.00025	0.00026	0.00033	0.00022	0.00048	0.00031	0.00026	0.00038	0.005					0.005
Cadmium	0.000015	0.00001	0.000026	0.000011	0.00001	0.000023	0.00001	0.00001	0.00001	0.000013	0.00001	0.000023	0.00001	0.00001	0.00001	A,B					A
Chromium	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.001C,B					0.001C,B
Cobalt	0.00005	0.00005	0.00005	0.00006	0.00005	0.00012	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.11	0.004				
Copper	0.00089	0.00035	0.00132	0.00105	0.0002	0.00192	0.00140	0.00097	0.00183	0.00109	0.00035	0.00178	0.00115	0.0003	0.00361	D	D				A
Iron	0.109	0.052	0.16	0.089	0.015	0.161	0.080	0.047	0.113	0.049	0.015	0.068	0.028	0.015	0.068	0.3B					0.3
Lead	0.000049	0.000025	0.000098	0.000032	0.000025	0.000062	0.000041	0.000025	0.000056	0.000025	0.000025	0.000025	0.000045	0.000025	0.000104	E					A
Manganese	0.06208	0.00254	0.107	0.04093	0.0053	0.171	0.004088	0.000795	0.00738	0.01124	0.00175	0.0303	0.001071	0.000347	0.00259	F					
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.00001	0.000002				0.000026
Molybdenum	0.00452	0.002	0.00605	0.00351	0.00196	0.00533	0.000655	0.000551	0.000758	0.00145	0.00102	0.00258	0.001099	0.000955	0.0012	2	1				0.073
Nickel	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00057	0.00025	0.00088	0.00035	0.00025	0.00066	0.00045	0.00025	0.00105	A,B					A
Selenium	0.00025	0.00025	0.00025	0.00035	0.00025	0.00061	0.00041	0.00025	0.00057	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025						0.002
Silver	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	A	A				0.0001
Titanium	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	0.1B					
Zinc	0.0007	0.0005	0.001	0.0005	0.0005	0.0005	0.0008	0.0005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	G	G				0.03

Results are expressed as milligrams per litre.

Outline - BC Max; Grey - BC 30-d; Bold - CCME indicates guidelines exceeded

A: CCME guideline:

for aluminum: pH>=6.5

for cadmium guideline = 0.001 * 10^[0.86(log(hardness)) - 3.2] mg/L

for copper: CCME = 0.002 mg/L at 0-120 mg/L [CaCO₃], 0.003mg/L at 120 - 180 mg/L [CaCO₃], 0.004 mg/L at >180 mg/L [CaCO₃]

for lead: CCME guideline = 0.001 mg/L for [CaCO₃]=0-60 mg/L, 0.002 mg/L for [CaCO₃]=60-120 mg/L, 0.004 mg/L for [CaCO₃]=120-180 mg/L, 0.007 mg/L for [CaCO₃]>180 mg/L.

for nickel: both BC and CCME guideline = 0.025 mg/L at 0-60 mg/L [CaCO₃], 0.065mg/L at 60 - 120 mg/L [CaCO₃], 0.110 mg/L at 120 - 180 mg/L [CaCO₃], 0.150 mg/L at > 180 mg/L [CaCO₃]

for silver: BC Max guideline of 0.003 mg/L if hardness > 100 mg/L, or 0.0001 mg/L if hardness <= 100 mg/L.

30-d Mean guideline of 0.0015 mg/L if hardness > 100 mg/L, or 0.00005 mg/L if hardness <= 100 mg/L

B: Working BC guideline

C: CCME and BC chromium guideline = 0.001 mg/L (Cr VI).

D: Max. Cu guideline of (0.094(hardness)+2) µg/L. The 30-d mean Cu guideline is ≤2 µg/L for hardness ≤ 50 mg/L, and guideline is ≤ 0.04*(mean hardness) µg/L for hardness > 50mg/L.

E: BC Max Pb guideline of e(1.273 ln (hardness) - 1.460) ug/L if hardness > 8 mg/L; 0.003 mg/L if hardness <= 8 mg/L.

BC 30-day mean Pb Guideline of <= 3.31 + e(1.273 ln (mean hardness) - 4.704) ug/L for hardness > 8 mg/L only; otherwise no 30-d mean guideline.

F: BC Max Mn guideline 0.01102(hardness)+0.54 mg/L; 30-day mean Mn guideline 0.0044(mean hardness)+0.605 mg/L.

G: BC Max Zn guideline = [33 + 0.75*(hardness - 90)] ug/L, minimum of 33 ug/L if hardness < 90 mg/L.

BC 30-day mean Zn guideline = [7.5 + 0.75*(hardness - 90)] ug/L, minimum of 7.5 ug/L if hardness < 90 mg/L

(continued)

Table 3.1-2

Dissolved Metal Summary Indicating Mean Concentrations that Exceed Guidelines (completed)

Mean Hardness	HC-2			HC-1			HC-3			SKC-1			BC guidelines		CCME guideline
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	
Aluminum	0.0472	0.0036	0.126	0.0030	0.0025	0.0037	0.0441	0.0037	0.131	0.0071	0.0005	0.0406	0.1A	0.05A	
Arsenic	0.0013	0.0011	0.0015	0.00102	0.00077	0.00124	0.00116	0.00067	0.00132	0.00027	0.00014	0.00053	0.005		0.005
Cadmium	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	A,B		A
Chromium	0.00058	0.00025	0.0008	0.00098	0.00093	0.00113	0.00059	0.00025	0.00095	0.00025	0.00025	0.00025	0.001C,B		0.001C,B
Cobalt	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00008	0.00005	0.00005	0.00005	0.11	0.004	
Copper	0.0003	0.0003	0.0003	0.00052	0.0002	0.00069	0.00104	0.00025	0.00298	0.00052	0.0002	0.00117	D		A
Iron	0.028	0.015	0.054	0.015	0.015	0.015	0.032	0.015	0.08	0.021	0.015	0.046	0.3B		0.3
Lead	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	E		A
Manganese	0.003265	0.000656	0.00775	0.000177	0.00015	0.000196	0.003570	0.000107	0.0096	0.00573	0.00197	0.0143	F		F
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.0001	0.00002	0.000026
Molybdenum	0.000291	0.000155	0.000379	0.001108	0.00082	0.00146	0.000764	0.000354	0.00111	0.000846	0.000536	0.0013	2	1	0.073
Nickel	0.00025	0.00025	0.00025	0.00119	0.00025	0.0022	0.00046	0.00025	0.00101	0.00025	0.00025	0.00025	A,B		A
Selenium	0.00025	0.00025	0.00025	0.00059	0.00025	0.0008	0.00032	0.00025	0.00074	0.00081	0.00025	0.00121		0.002	0.001
Silver	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	A	A	0.0001
Titanium	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.1B		
Zinc	0.0005	0.0005	0.0005	0.0007	0.0005	0.0014	0.0009	0.0005	0.0018	0.0006	0.0005	0.0013	G	G	0.03

Mean Hardness	SKC-3			SKC-4			JC-1			JC-2			BC guidelines		CCME guideline
	mean	min	max	mean	min	max	mean	min	max	mean	min	max	max	30-d mean	
Aluminum	0.0040	0.0027	0.0071	0.0120	0.0025	0.0303	0.0380	0.0084	0.0959	0.0633	0.0052	0.183	0.1A	0.05A	
Arsenic	0.00006	0.00005	0.00011	0.00023	0.00019	0.00032	0.00025	0.00023	0.00029	0.00022	0.00015	0.00045	0.005		0.005
Cadmium	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000018	0.00001	0.000024	0.000012	0.00001	0.000037	A,B		A
Chromium	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.001C,B		0.001C,B
Cobalt	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.11	0.004	
Copper	0.00017	0.0001	0.00022	0.00064	0.00025	0.00115	0.000125	0.000075	0.0002	0.00035	0.0001	0.00089	D	D	A
Iron	0.033	0.015	0.067	0.032	0.015	0.05	0.025	0.015	0.044	0.031	0.015	0.077	0.3B		0.3
Lead	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000025	0.000038	0.000025	0.000103	E	E	A
Manganese	0.001423	0.000199	0.00557	0.004122	0.000186	0.01	0.00350	0.00298	0.00434	0.003105	0.000625	0.00733	F	F	
Mercury	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000006	0.000005	0.000015	0.0001	0.00002	0.000026
Molybdenum	0.000360	0.000212	0.000489	0.000644	0.000443	0.000863	0.00607	0.00237	0.00865	0.00465	0.00204	0.00651	2	1	0.073
Nickel	0.00025	0.00025	0.00025	0.00064	0.00025	0.00099	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	A,B		A
Selenium	0.00025	0.00025	0.00025	0.00033	0.00025	0.00065	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025		0.002	0.001
Silver	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	A	A	0.0001
Titanium	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.1B		
Zinc	0.0005	0.0005	0.0005	0.0006	0.0005	0.001	0.0007	0.0005	0.001	0.0005	0.0005	0.0005	G	G	0.03

Results are expressed as milligrams per litre.

Outline - BC Max; Grey - BC 30-d; Bold - CCME indicates guidelines exceeded

A: CCME guideline:

for aluminum: pH>=6.5

for cadmium guideline = 0.001 * 10^{(0.88[log(hardness)] - 3.2)} mg/L

for copper: CCME = 0.002 mg/L at 0-120 mg/L [CaCO3], 0.003mg/L at 120 - 180 mg/L [CaCO3], 0.004 mg/L at >180 mg/L [CaCO3]

for lead: CCME guideline = 0.001 mg/L for [CaCO3]=0-60 mg/L, 0.002 mg/L for [CaCO3]=60-120 mg/L, 0.004 mg/L for [CaCO3]=120-180 mg/L, 0.007 mg/L for [CaCO3]>180 mg/L.

for nickel: both BC and CCME guideline = 0.025 mg/L at 0-60 mg/L [CaCO3], 0.065mg/L at 60 - 120 mg/L [CaCO3], 0.110 mg/L at 120 - 180 mg/L [CaCO3], 0.150 mg/L at > 180 mg/L [CaCO3]

for silver: BC Max guideline of 0.003 mg/L if hardness > 100 mg/L, or 0.0001 mg/L if hardness <= 100 mg/L.

30-d Mean guideline of 0.0015 mg/L if hardness > 100 mg/L, or 0.00005 mg/L if hardness <= 100 mg/L

B: Working BC guideline

C: CCME and BC chromium guideline = 0.001 mg/L (Cr VI).

D: Max. Cu guideline of (0.094(hardness)+2) µg/L. The 30-d mean Cu guideline is ≤2 µg/L for hardness ≤ 50 mg/L, and guideline is ≤ 0.04*(mean hardness) µg/L for hardness > 50mg/L.

E: BC Max Pb guideline of e(1.273 ln (hardness) - 1.460) ug/L if hardness > 8 mg/L; 0.003 mg/L if hardness <= 8 mg/L.

BC 30-day mean Pb Guideline of <= 3.31 + e(1.273 ln (mean hardness) - 4.704) ug/L for hardness > 8 mg/L only; otherwise no 30-d mean guideline.

F: BC Max Mn guideline 0.01102(hardness)+0.54 mg/L; 30-day mean Mn guideline 0.0044(mean hardness)+0.605 mg/L.

G: BC Max Zn guideline = [33 + 0.75*(hardness - 90)] ug/L, minimum of 33 ug/L if hardness < 90 mg/L.

BC 30-day mean Zn guideline = [7.5 + 0.75*(hardness - 90)] ug/L, minimum of 7.5 ug/L if hardness < 90 mg/L

**Table 3.1-3
Variables that Exceeded by at Least 2x the Aquatic Life Guideline**

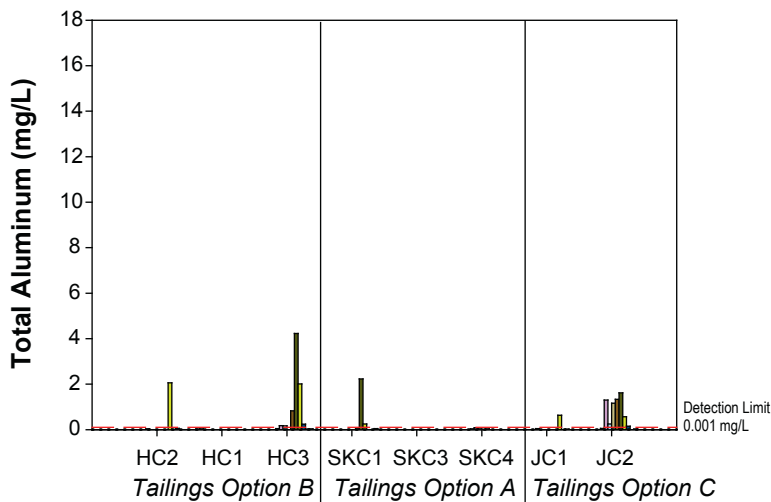
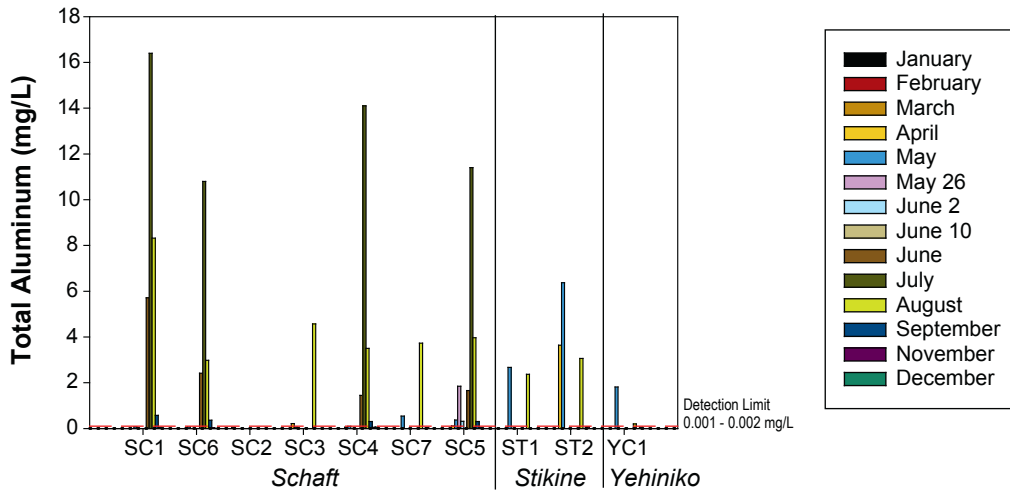
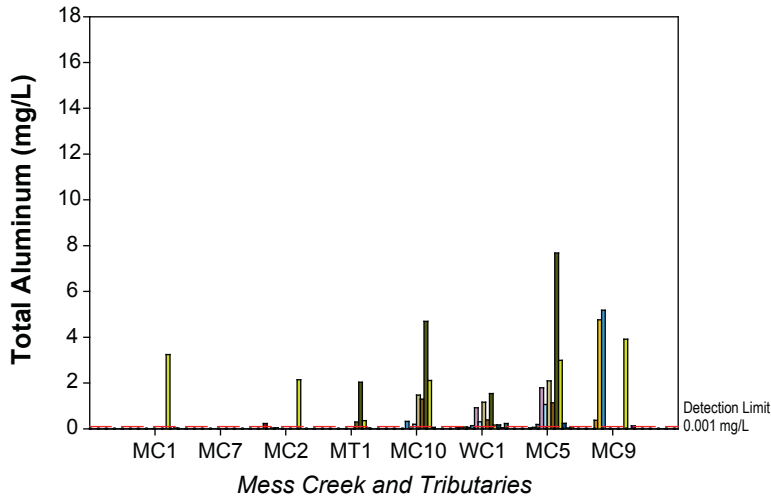
Location	Parameter	Guideline	Maximum Factor of Exceedance at a Site	Mean Factor of Exceedance	
Mess Creek and Tributaries	T-Al	CCME	0.1 mg/L	70x	10x
	D-Al	BC Max	0.1 mg/L	15x	Just Below Guideline
		BC Mean	0.05 mg/L	30x	Just Above Guideline
	T-Cr	BC Max/CCME	0.001 mg/L	10x	2x
	T-Fe	BC Max/CCME	0.3 mg/L	20x	4x
	D-Fe	BC Max/CCME	0.3 mg/L	10x	Below Guideline
		BC Max	0.1 mg/L	3x	Below Guideline
	T-Cu	BC Max		2x	*
		BC Mean		7x	*
	T-Zn	BC Mean	Hardness Dependant	7x	*
		BC Max		4x	*
	T-Cd	BC Max		2x	*
		CCME		2x	*
T-Pb	CCME		3x	*	
T-Ag	BC Mean		2x	*	
Schaft Creek	T-Al	CCME	0.1 mg/L	100x	20x
	D-Al	BC Max	0.1 mg/L	3x	Just Below Guideline
		BC Mean	0.05 mg/L	5x	Just Above Guideline
	T-Cr	BC Max/CCME	0.001 mg/L	20x	2x
	T-Co	BC Mean	0.004 mg/L	2x	Below Guideline
	T-Fe	BC Max/CCME	0.3 mg/L	60x	6x
	T-Ti	BC Max	0.1 mg/L	8x	Below Guideline
		BC Mean		4x	*
	T-Cd	BC Max		4x	*
		CCME		10x	*
	T-Cu	BC Mean	Hardness Dependant	25x	*
		CCME		25x	*
	T-Pb	CCME		4x	*
T-Zn	BC Mean		5x	*	
Stikine River	T-Al	CCME	0.1 mg/L	50x	30x
	D-Al	BC Mean	0.05 mg/L	2x	Just Above Guideline
	T-Cr	BC Max/CCME	0.001 mg/L	10x	7x
	T-Fe	BC Max/CCME	0.3 mg/L	20x	10x
	T-Ti	BC Max	0.1 mg/L	2x	Just Above Guideline
	T-Cu	BC Mean	Hardness Dependant	3x	*
CCME		8x		*	
Yehiniko Creek	T-Al	CCME	0.1 mg/L	10x	5x
	T-Cr	BC Max/CCME	0.001 mg/L	5x	Just Above Guidelines
	T-Fe	BC Max/CCME	0.3 mg/L	5x	Just Above Guidelines
	T-Cu	BC Mean	Hardness Dependant	3x	*
CCME		4x		*	

(continued)

**Table 3.1-3
Variables that Exceeded by at Least 2x the Aquatic Life Guideline
(completed)**

Location	Parameter	Guideline	Maximum Factor of Exceedance at a Site	Mean Factor of Exceedance	
Tailings Option B	TCN	BC Mean/CCME	0.005 mg/L	2x	Below Guideline
	T-Al	CCME	0.1 mg/L	40x	8x
	D-Al	BC Mean	0.05 mg/L	2x	Just Below Guideline
	T-Cr	BC Max/CCME	0.001 mg/L	10x	3x
	T-Fe	BC Max/CCME	0.3 mg/L	10x	2x
	T-Ti	BC Max	0.1 mg/L	2x	Below Guideline
	T-Cu	BC Max	Hardness Dependant	2x	*
Tailings Option A	T-Al	CCME	0.1 mg/L	20x	Just Above Guideline
	T-Cr	BC Max/CCME	0.001 mg/L	2x	Below Guideline
	T-Fe	BC Max/CCME	0.3 mg/L	10x	Just Below Guideline
	T-Cu	BC Mean	Hardness Dependant	4x	*
		CCME		6x	*
Tailings Option C	T-Al	CCME	0.1 mg/L	10x	5x
	D-Al	BC Mean	0.05 mg/L	3x	Just Above Guideline
	T-Fe	BC Max/CCME	0.3 mg/L	2x	Just Above Guideline

* Denotes parameters with guidelines dependant on hardness, mean factor not calculated.



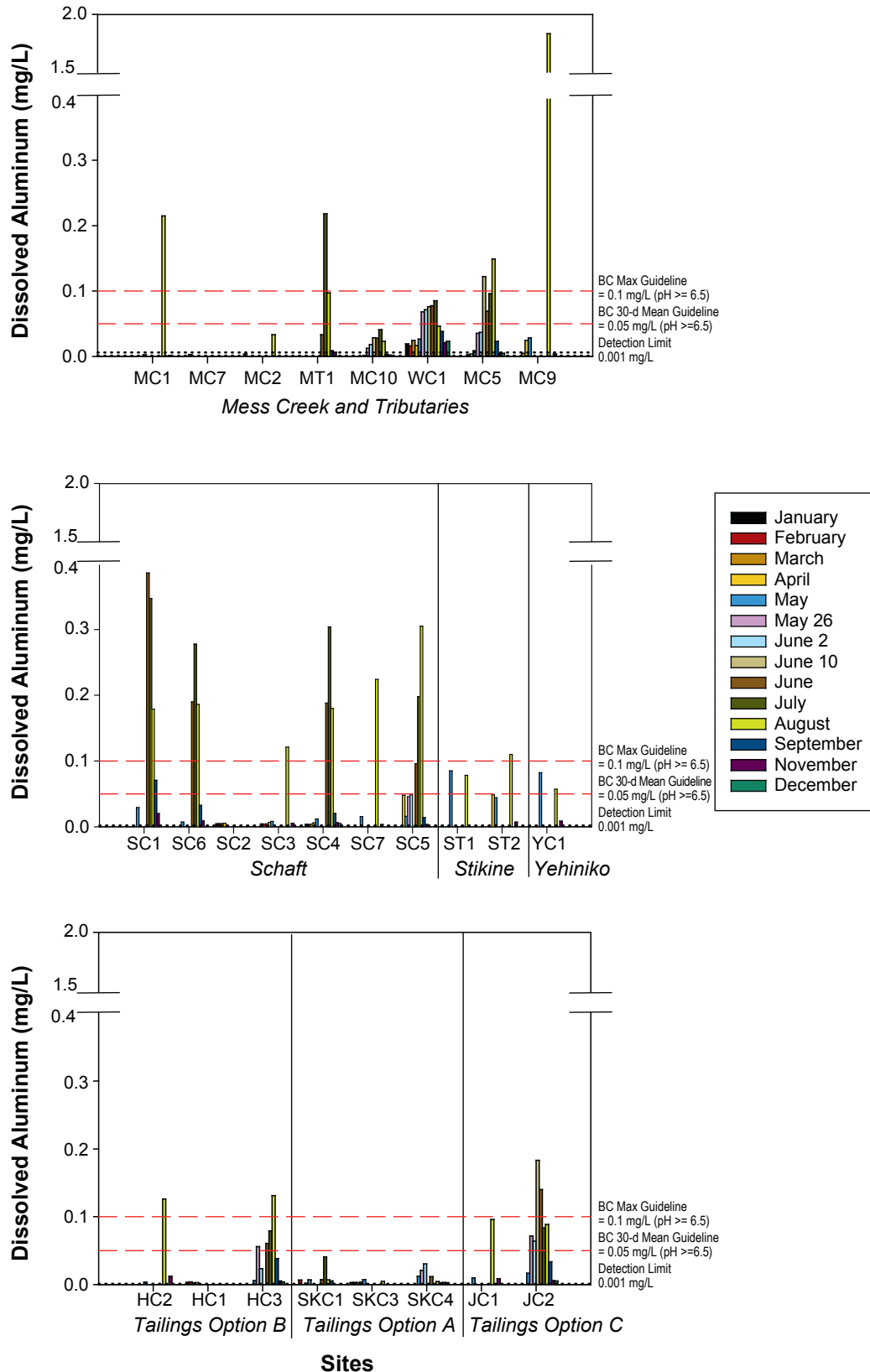
Sites

Notes: No BC aquatic life guidelines exist.
 CCME Guideline is 0.10 mg/L for all samples with pH >= 6.5.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-11



**Total Aluminum Concentrations
 in Schaft Creek Project Streams, 2007**



Notes: No CCME aquatic life guideline exists.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-12



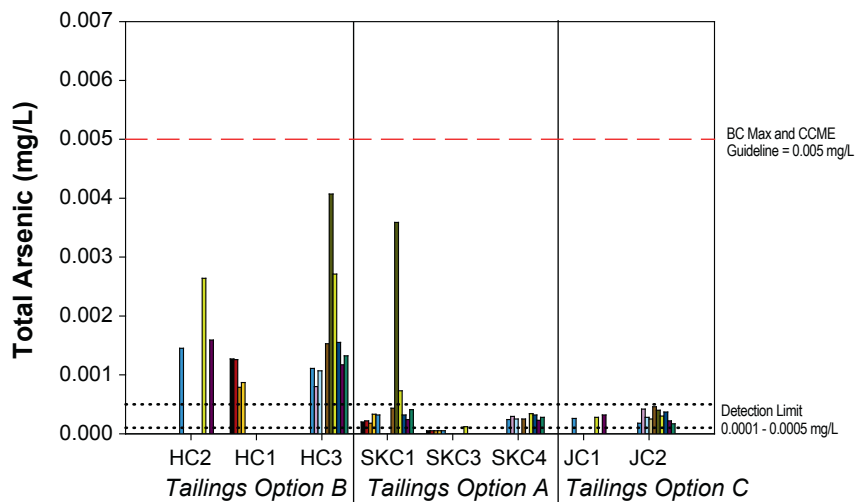
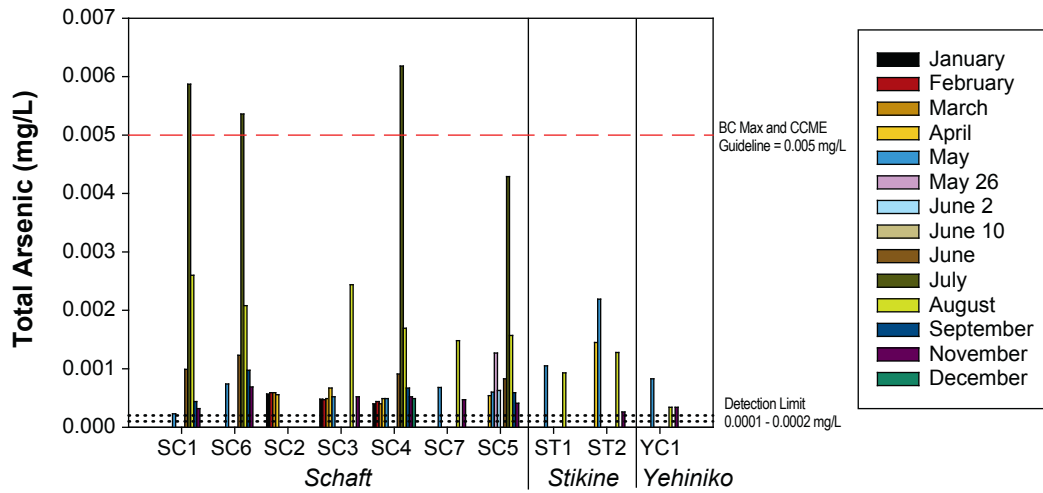
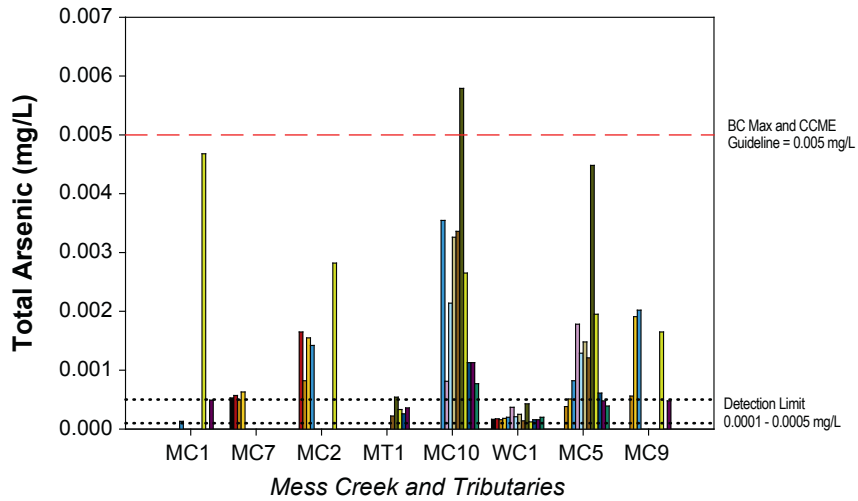
Dissolved Aluminum Concentrations in Schaft Creek Project Streams, 2007

30-d Mean guideline at all Schaft Creek Watershed sites except SC2, SC3, YC1 and at Mess Creek site MT1 (Table 3.1-2). Both the B.C. Max and B.C. 30-d Mean guidelines were exceeded by mean concentrations of D-Al at MC1, MC9, SC1, and SC6.

Total arsenic (T-As) ranged from below the detection limit of 0.00010 mg/L (SKC3 Jan to May, WC1 and JC2 June-10) to 0.00618 mg/L (SC4, July) (Figure 3.1-13). Dissolved arsenic (D-As) concentrations ranged from below the detection limit of 0.00010 mg/L to 0.00163 mg/L (MC1, Aug) (Figure 3.1-14). Arsenic was primarily particulate bound in July and summer months, corresponding to peaks of TSS. Throughout the rest of the year arsenic was primarily in the dissolved form and stayed relatively consistent throughout the year at all sites. Tailings Option B sites tended to have slightly higher T-As and D-As compared to the other sites. Lower Mess Creek sites had higher T-As concentrations than most sites. The B.C. Max and CCME guideline of 0.005 mg/L for T-As was exceeded in July at sites MC10, SC1, SC6, and SC4. Dissolved arsenic did not exceed the B.C. Max or CCME guidelines at any sites.

Total cadmium (T-Cd) ranged from below the detection limit of 0.000020 mg/L to 0.000171 mg/L (MC5, May) (Figure 3.1-15). Concentrations of dissolved cadmium (D-Cd) ranged from below the detection limit to 0.000059 mg/L (MC9, Aug). A figure was not provided for D-Cd since 87% of samples were below the detection limit and no exceedances occurred. Total cadmium concentrations were highest in July for most sites, though peaks were also observed in May for sites MC5, ST1, and ST2. With the exception of summer peaks of T-Cd, concentrations were fairly low or below the detection limit across all watersheds. CCME and B.C. Max aquatic life guidelines for cadmium depend on hardness. Mess Creek exceeded both guidelines at sites MC1 (Aug), WC1 (June 2 to July), MC5 (May, June 2, July) and MC9 (Aug). All sites in Schaft Creek exceeded the B.C. Max and CCME guidelines for either July and/or August except for site SC2. Stikine River site ST2 exceeded both guidelines in May, and Tailings Options B site HC2 exceeded both in August. Sites HC3, SKC1, and JC2 exceeded both guidelines in July. The maximum exceedance of T-Cd in Mess Creek Watershed was two times the guideline, and in Schaft Creek four times the guideline (Table 3.1-3). In summary Table 3.1-1, the T-Cd mean concentration at SC1 (averaged over the entire year) exceeded the B.C. Max and CCME guidelines.

Total chromium (T-Cr) ranged from below the detection limit of 0.00050 mg/L to 0.02170 mg/L (SC4, July) (Figure 3.1-16). Dissolved chromium (D-Cr) ranged from below the detection limit to 0.00292 mg/L (MC9, Aug). Chromium within the Schaft Creek Project area was largely particulate bound since T-Cr concentrations coincided with TSS concentrations and 91% of the D-Cr concentrations were below the detection limit. Though D-Cr was primarily below the detection limit, exceedances did occur at sites MC9 (Aug) and HC1 (Feb). Many sites in the Mess Creek and Schaft Creek watersheds exceeded the B.C. Max and CCME guideline for T-Cr (VI) of 0.001 mg/L. In the Mess Creek watershed, all sites exceeded the guidelines (primarily in the summer months) except for reference site WC1. Mess Creek maximum exceedance (MC9) was 10 times over the guidelines and on average was two times over the guidelines (Table 3.1-3). Schaft Creek Watershed also exceeded these guidelines at all sites except SC2, primarily in the summer months. SC4 (July) exceeded the T-Cr guidelines by twenty times, and on average Schaft Creek exceeded the guideline two times. All of the Tailing Option B sites, and SKC1 and JC2 exceeded the B.C. Max and CCME guideline.



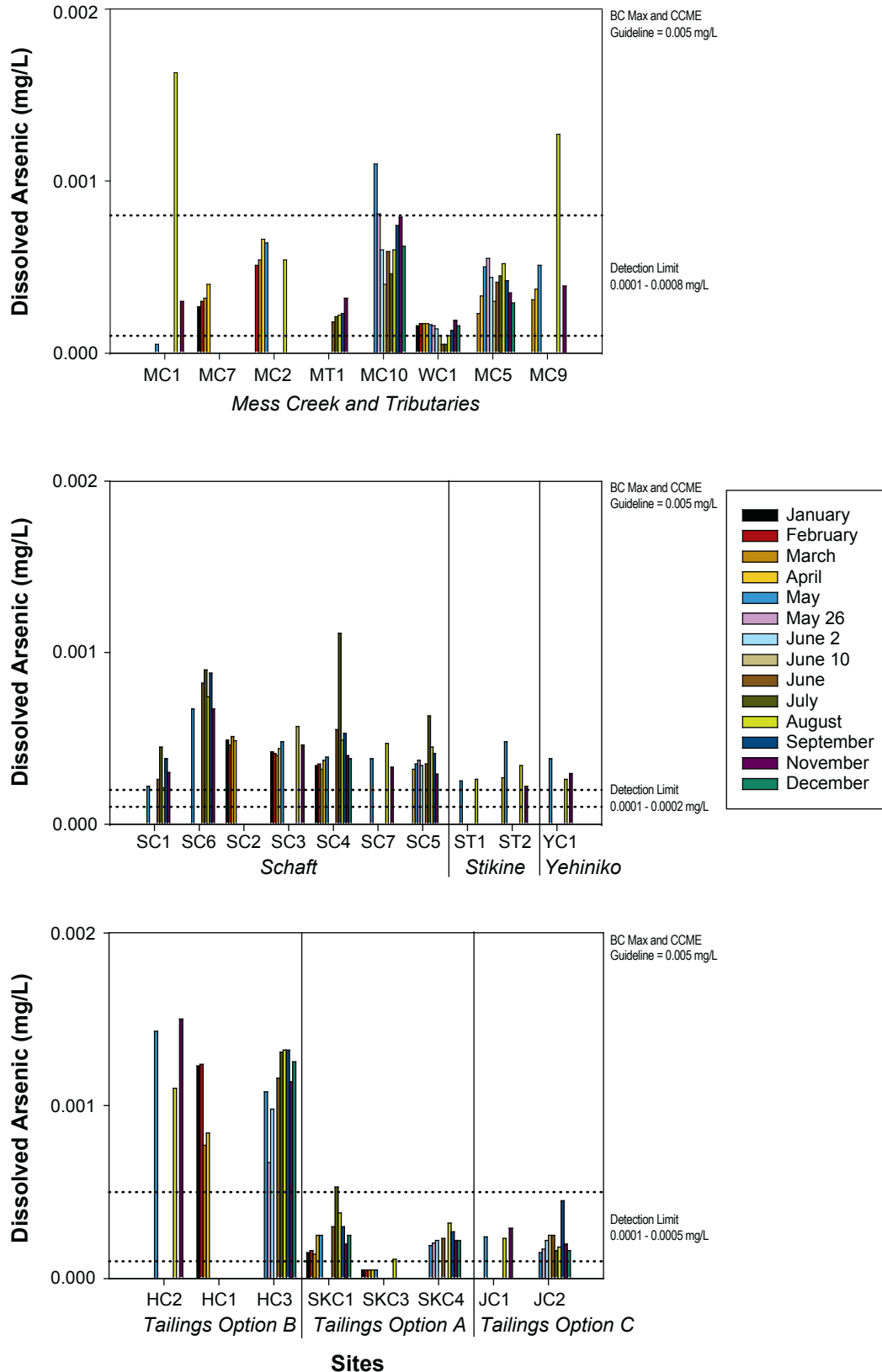
Sites

Notes: No aquatic life guideline exists for BC 30-d Mean.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-13



**Total Arsenic Concentrations
 in Schaft Creek Project Streams, 2007**

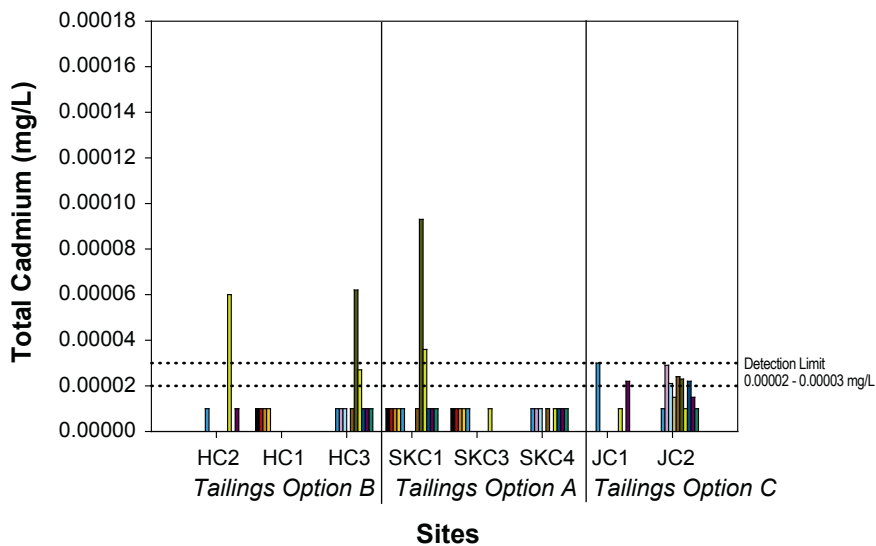
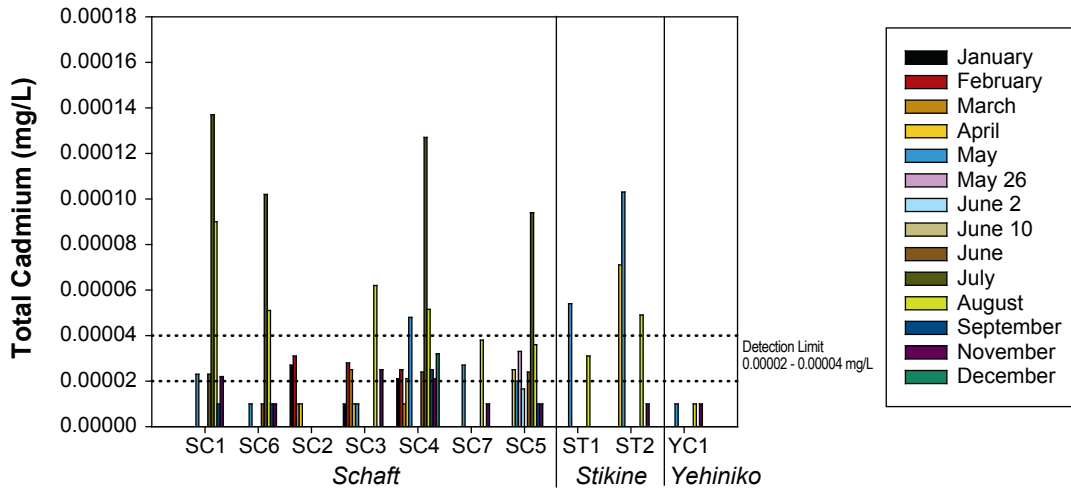
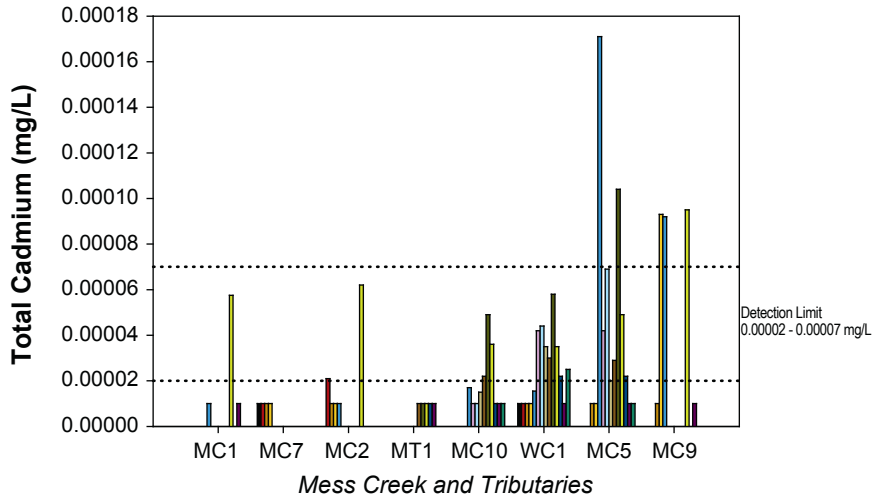


Notes: No aquatic life guideline exists for BC 30-d Mean.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-14



Dissolved Arsenic Concentrations in Schaft Creek Project Streams, 2007

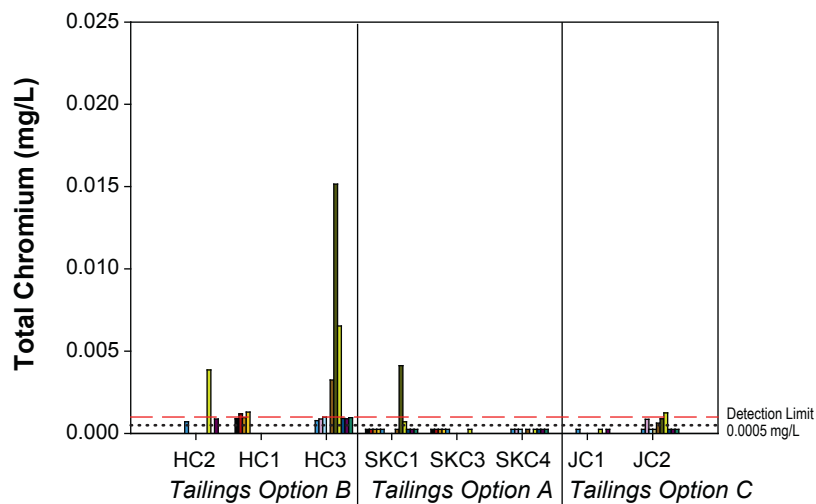
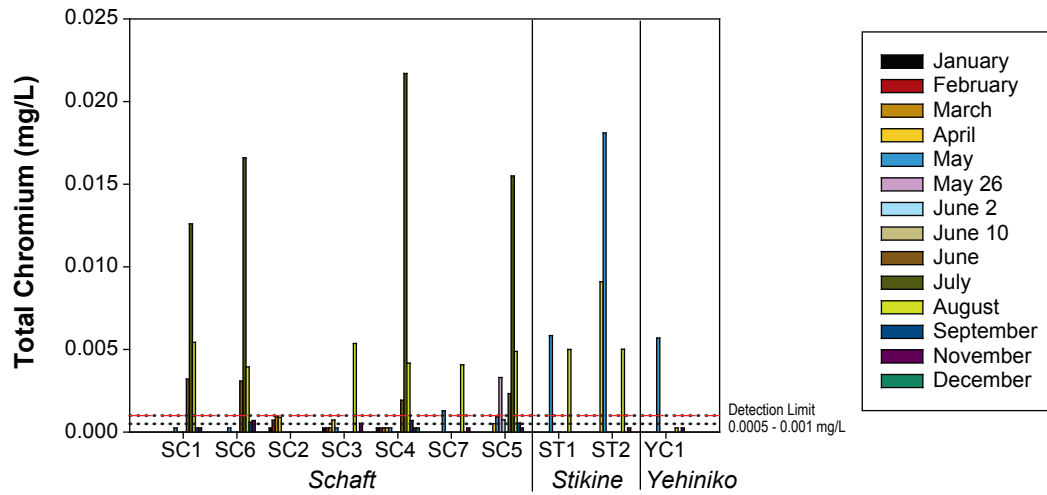
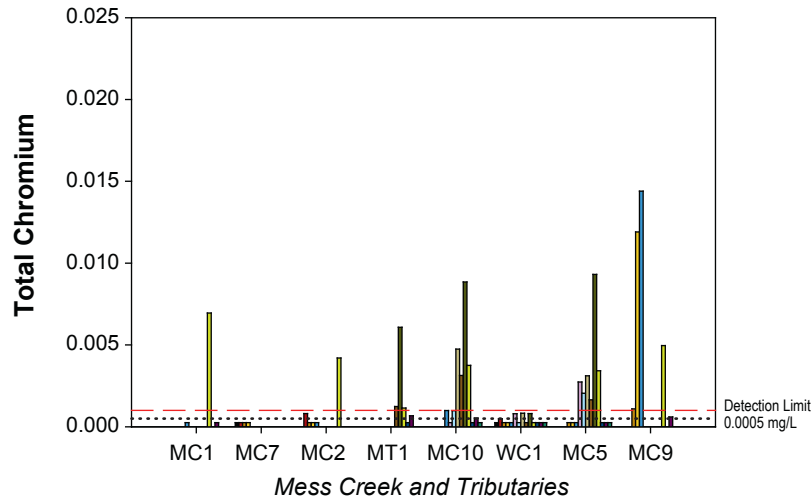


Notes: CCME and BC guidelines depends on hardness.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-15



Total Cadmium Concentrations in Schaft Creek Project Streams, 2007



Sites

Notes: BC Max and CCME guidelines are 0.001 mg/L (CrVI).
 No aquatic life guideline exists for BC 30-d Mean
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-16



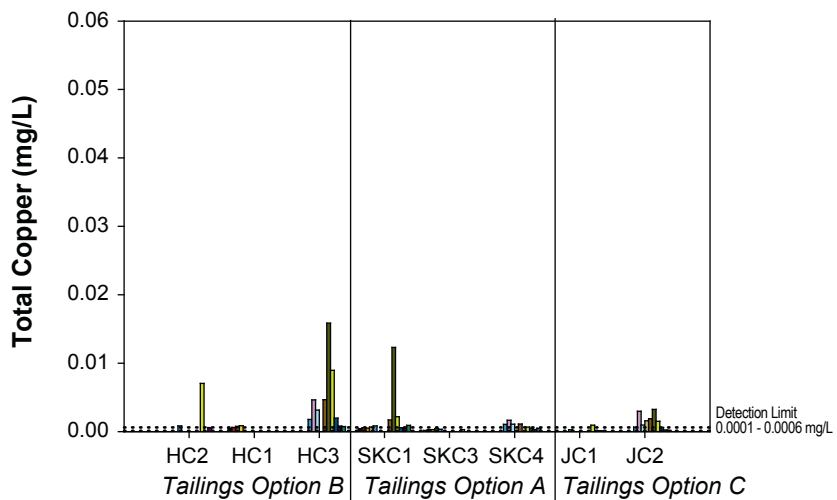
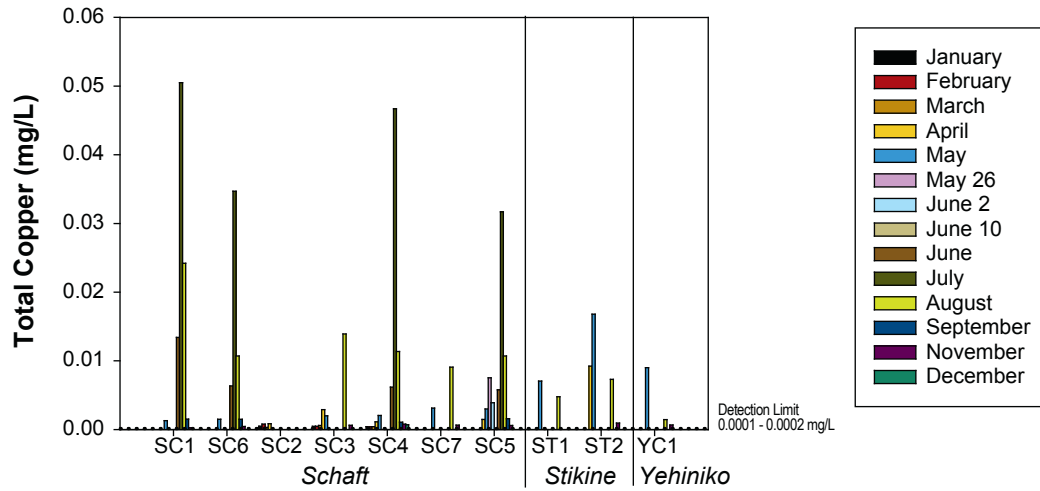
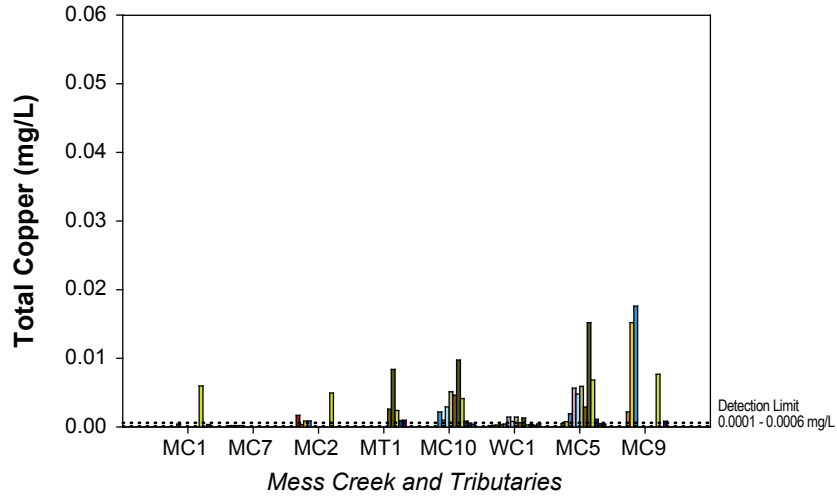
**Total Chromium Concentrations
 in Schaft Creek Project Streams, 2007**

The mean concentrations of T-Cr (averaged over the entire year) exceeded the B.C. Max and CCME guidelines at all sites except MC7, WC1, SC2, SKC1, SKC3, SKC4, JC1 and JC2 (Table 3.1-1).

Total cobalt (T-Co) ranged from below the detection limit 0.00010 mg/L to 0.00997 mg/L (SC4, July). Concentrations of dissolved cobalt (D-Co) ranged from below the detection limit (89% of samples) to 0.00205 mg/L (MC9, Aug) and did not exceed any guidelines. No sites exceeded the B.C. Max guideline of 0.11 mg/L. The B.C 30-d Mean guideline of 0.004 mg/L for T-Co was exceeded in July by sites HC3, MC5 and all Schaft Creek sites except SC2 and SC3. Sites SC1 (August), ST2 (May), and MC9 (April and May) also exceeded the B.C. Mean guideline. Cobalt was not provided with a figure because most samples were below the detection limit.

Total copper (T-Cu) ranged from 0.00011 (JC1, Nov) to 0.05050 mg/L (SC1, July) of (Figure 3.1-17). Concentrations of dissolved copper (D-Cu) ranged from below the detection limit 0.00010 mg/L (MC7, Jan) to 0.00361 mg/L (YC1, May) (Figure 3.1-18). Unlike T-Cu which peaked in July, D-Cu tended to be higher in the spring months. The three guidelines for T-Cu (CCME, B.C. Max, and B.C. 30-d Mean) depend on hardness concentrations. In the summer months T-Cu exceeded all three guidelines at most sites. Sites MC9, Stikine River and Yehinko Creek sites exceeded all three guidelines in either May and/or April. Most sites exceeded the CCME and B.C. 30-d Mean guidelines for T-Cu in the spring. No exceedances occurred during the fall and winter months. Schaft Creek T-Cu concentrations reached as high as twenty-five times over the B.C. Mean and CCME guidelines, Mess Creek seven times these guidelines, Stikine River eight times, Yehiniko Creek four times. Tailing Options B and A exceeded as high as eight and six times respectively. The only sites where no T-Cu exceedances occurred were sites MC7, SC2, HC1, SKC3, SKC4, JC1, and reference site WC1. The mean concentrations of T-Cu (averaged over the entire year) exceeded the B.C. 30-d Mean and CCME guidelines at ten sites located throughout the study area (MT1, MC5, MC9, SC4, SC7, SC5, ST1, ST2, YC1, HC3). MC1 and MC10 T-Cu mean concentrations exceeded the CCME guideline, and SC1 and SC6 exceeded all three guidelines (Table 3.1-1). Dissolved copper concentrations never exceeded all three guidelines, only the B.C. 30-d Mean and CCME guidelines were exceeded at sites MC1 (Aug), YC1 (May), and HC3 (May 26 and June).

Total iron (T-Fe) concentrations ranged from below the detection limit of 0.03 mg/L to 18.60 mg/L (SC1, July) (Figure 3.1-19). Dissolved iron (D-Fe) ranged from below the detection limit to 3.03 mg/L (MC9, Aug) (Figure 3.1-20). Total iron, like total copper, was highest in July for most sites except for MC9, ST1, ST2, and YC1 which were highest in May. Overall, concentrations of T-Fe were slightly higher in lower Mess Creek sites (MC10, WC1, MC5, and MC9). Tailing Option A sites had the lowest T-Fe concentration. Dissolved iron had unusually high concentrations in August at sites MC1 and MC9. Both these samples exceeded the B.C. Max and CCME guideline of 0.3 mg/L. The rest of the D-Fe concentrations were below these guidelines with similar concentrations across all watersheds. Total iron exceeded the B.C. Max and CCME guideline for most sites in June/July/August. These guidelines were also exceeded in the spring for lower Mess Creek sites, Stikine River sites, Yehiniko Creek, SC5, and site JC2. The only sites that did not exceed the T-Fe guidelines were SC2, HC1, SKC3, and SKC4. The highest T-Fe concentration exceeded the guideline by sixty times (SC1, July), and on average in Mess Creek Watershed and Schaft Creek were four and six times the guideline, respectively (Table 3.1-3).

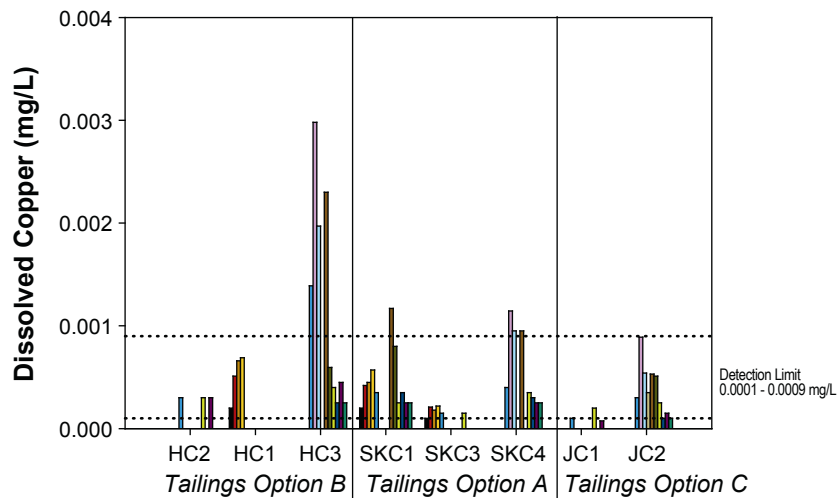
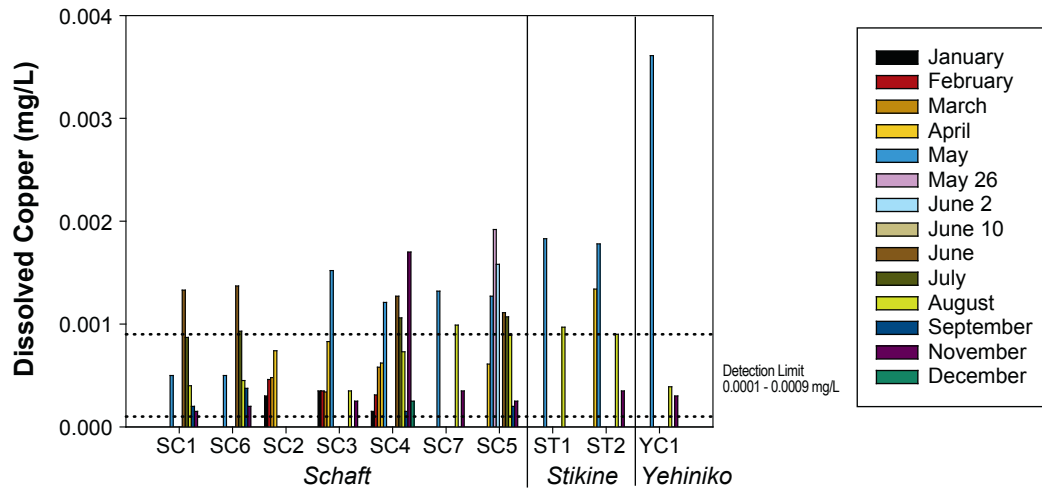
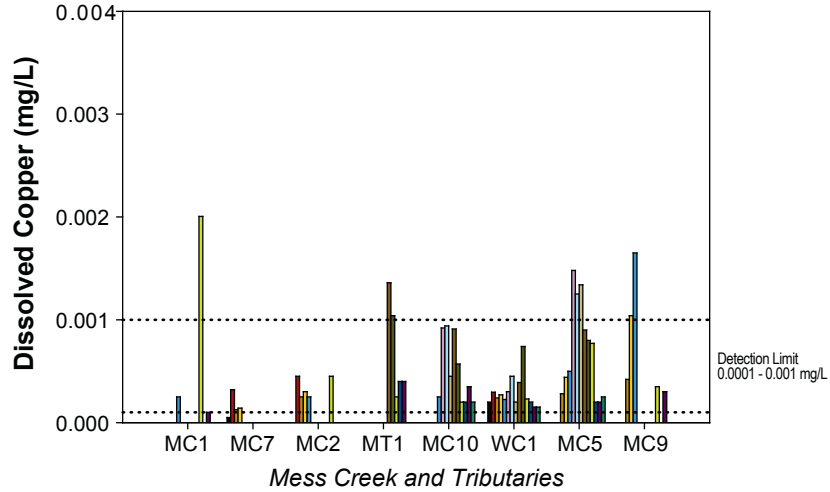


Notes: CCME and BC guidelines depend on hardness.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-17



Total Copper Concentrations in Schaft Creek Project Streams, 2007



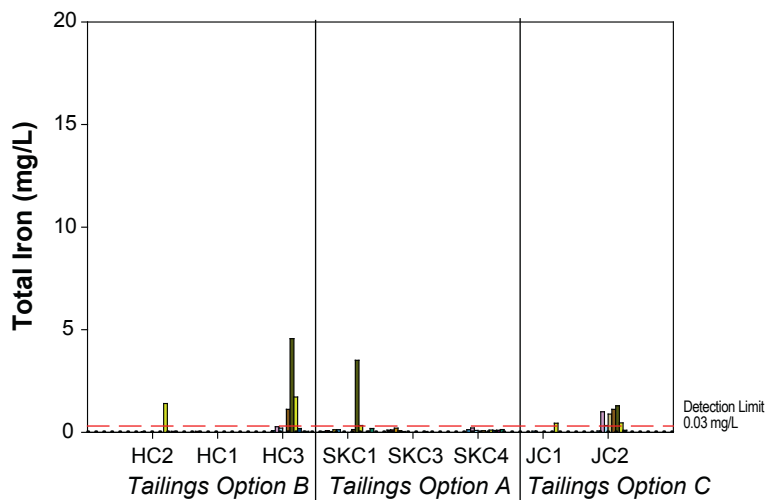
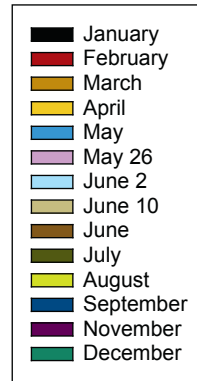
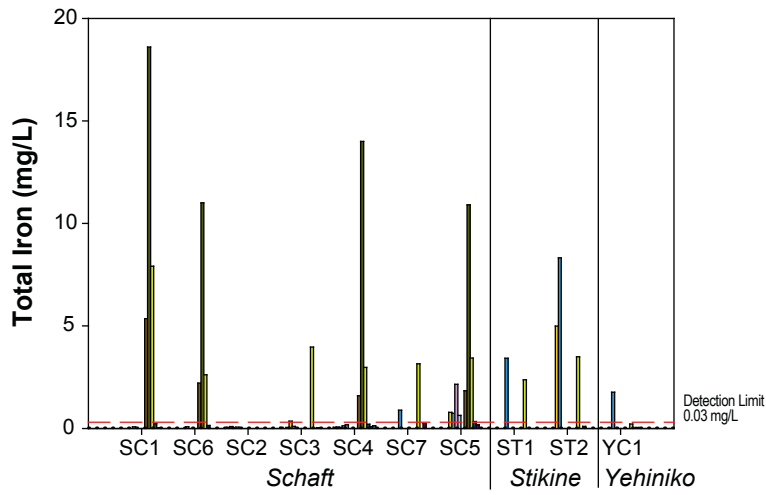
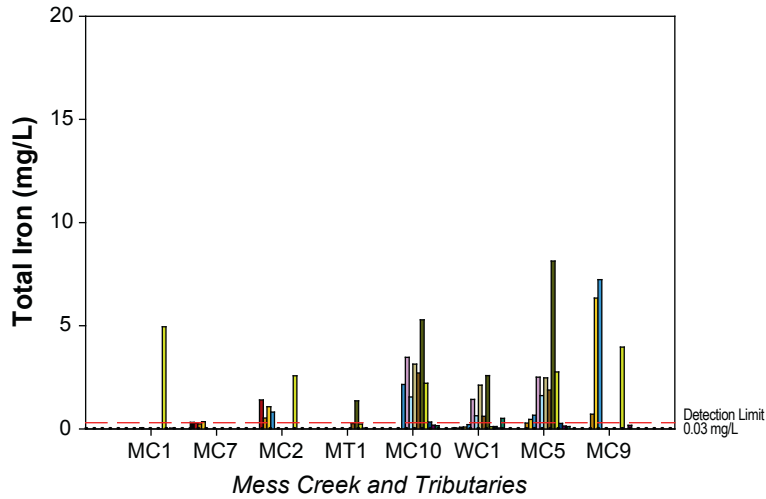
Sites

Notes: CCME and BC guidelines depend on hardness.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-18



**Dissolved Copper Concentrations
 in Schaft Creek Project Streams, 2007**



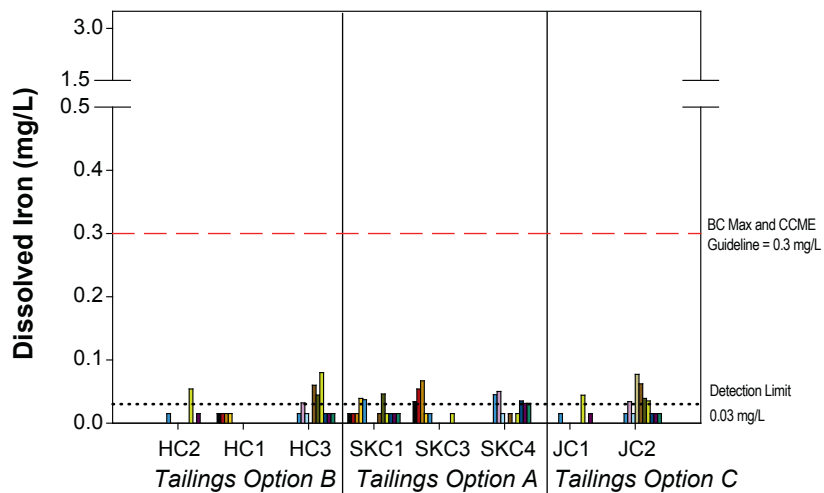
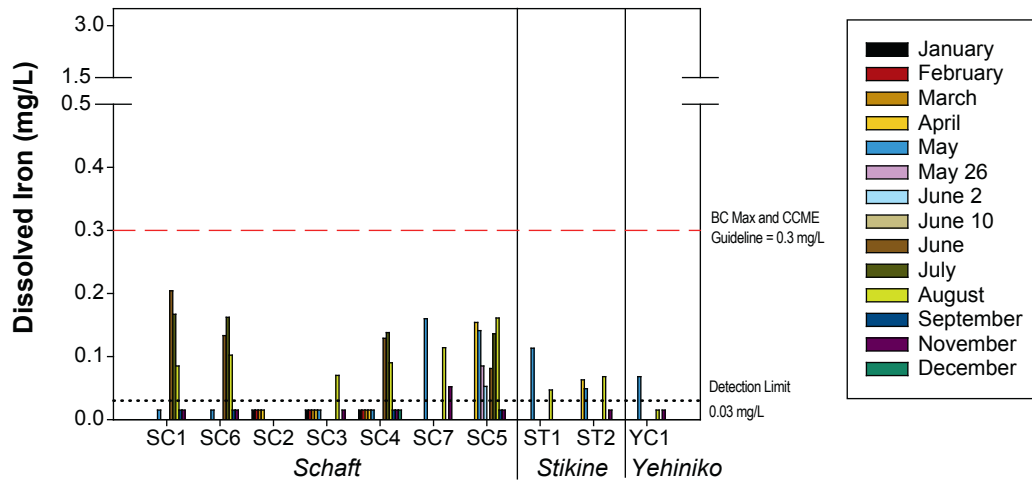
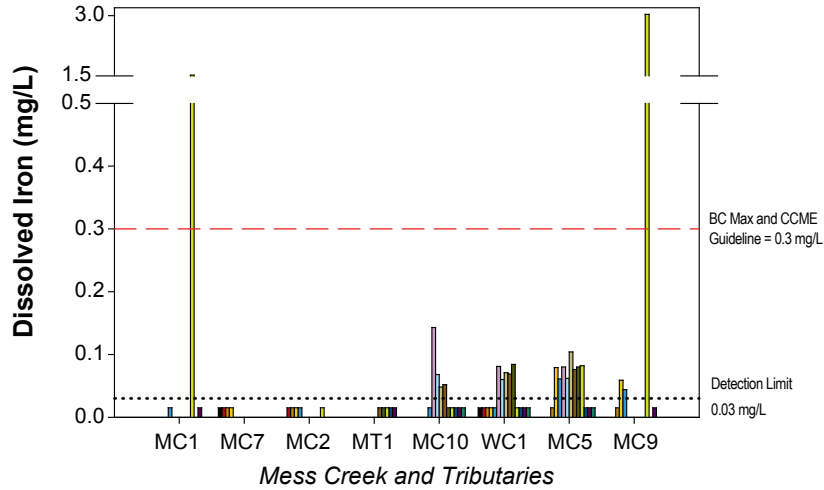
Sites

Notes: CCME and BC Max guidelines are 0.3 mg/L.
 No aquatic life guideline exists for BC 30-d Mean.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-19



**Total Iron Concentrations
 in Schaft Creek Project Streams, 2007**



Sites

Notes: No aquatic life guideline exists for BC 30-d Mean.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-20



**Dissolved Iron Concentrations
 in Schaft Creek Project Streams, 2007**

The mean concentrations of T-Fe (averaged over the entire year) exceeded the B.C. Max and CCME guidelines at all sites except SC2, MC7, HC1, SKC3, SKC4, and JC1 (Table 3.1-1). The mean concentrations of D-Fe exceeded the same guidelines at MC1 and MC9 (Table 3.1-2).

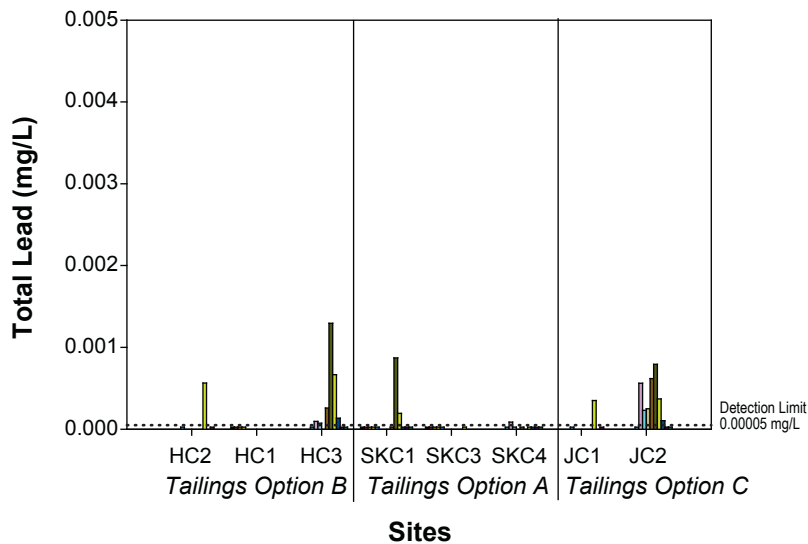
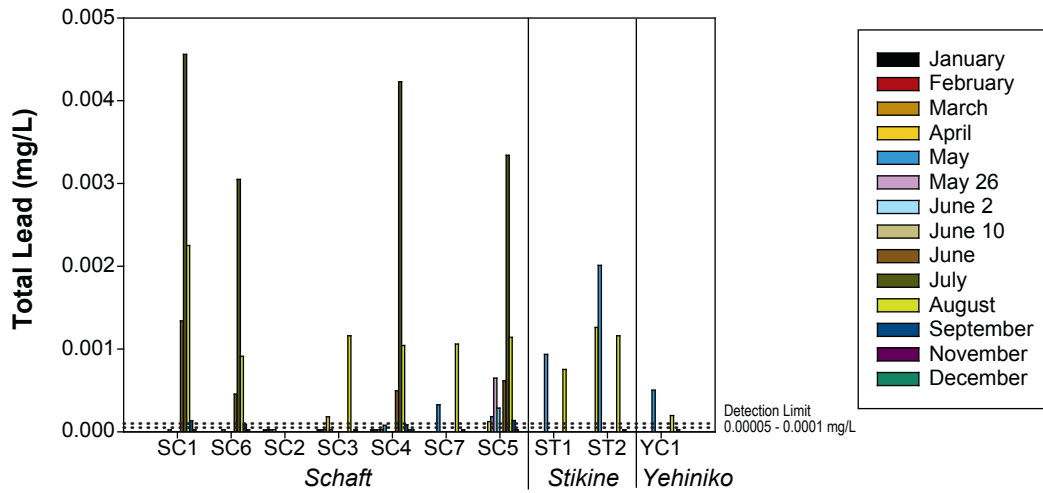
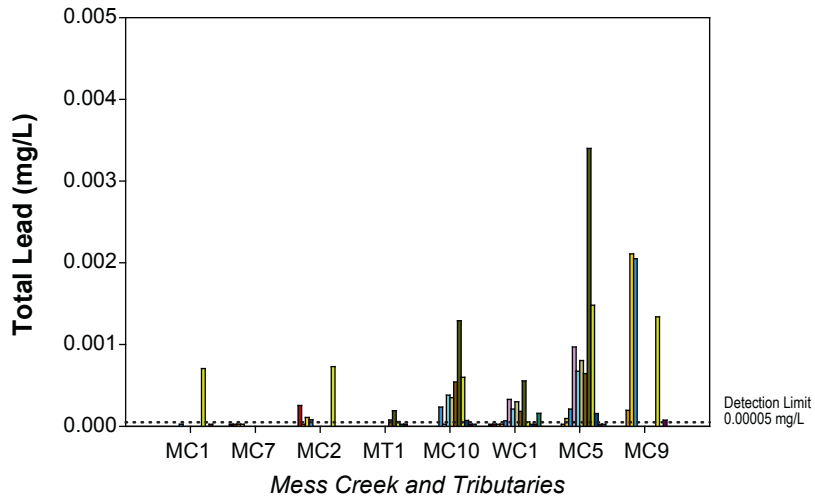
Total lead (T-Pb) ranged from below the detection limit of 0.00005 mg/L to 0.00456 mg/L (SC1, July) (Figure 3.1-21). Dissolved lead (D-Pb) concentrations ranged from below the detection limit (89% of samples) to 0.00142 mg/L (MC9, Aug), and were generally low across all watersheds, never exceeding the B.C. and CCME guidelines. Total lead peaked in July for most sites, coinciding with the peaks observed for TSS and many other metals. Concentrations of T-Pb were lowest in upper Mess Creek sites and Tailing Options sites (except HC3 and JC2). The B.C. and CCME guidelines for lead depend on hardness concentrations. Total lead never exceeded the B.C. Max guideline, but the CCME guideline was exceeded in July and/or August for sites MC5, all Schaft Creek sites except SC2, and Tailings Option B site HC3. Site SC1 (July) was the only site to exceed the B.C. 30-d Mean guideline. Lower Mess Creek and Stikine river sites MC9 and ST2 both exceeded the CCME guideline in May.

Total manganese (T-Mn) ranged from 0.000477 mg/L (HC1, March) to 0.555 mg/L (SC1, July) (Figure 3.1-22). Dissolved manganese (D-Mn) concentrations ranged from below the detection limit 0.000070 mg/L (HC1, April) to 0.171 mg/L (SC5, April) (Figure 3.1-23). Peaks of T-Mn occurred in July for most sites. Site MC9, Stikine River and Yehiniko Creek sites peaked in May. T-Mn concentrations were lowest at the Tailing Options sites. Peaks in D-Mn were not observed in July, but tended to be highest in the winter months or early spring. Most noticeable was the high concentrations of D-Mn found at sites MC2, MC10, M5, MC9, SC7, and SC5. Total and dissolved manganese never exceeded the B.C. Max and CCME guidelines which depend on hardness.

Total mercury (T-Hg) ranged from below the detection limit 0.000010 mg/L (93% of samples) to 0.000027 mg/L HC3 (June). Dissolved mercury (D-Hg) was not detected at any sites. The B.C. Max mercury guideline is 0.0001 mg/L, the B.C. 30-d Mean is 0.00002 mg/L, and the CCME guideline is 0.000026 mg/L. No sites exceeded the B.C. Max guideline but sites MC1 (Aug) and MC5 (July) exceeded the B.C. 30-d Mean guideline. HC3 (June) exceeded both the B.C. Mean and CCME guidelines.

Total molybdenum (T-Mo) ranged from below the detection limit 0.0010 mg/L (YC1, May) to 0.0130 mg/L (SC2, April) (Figure 3.1-24). Dissolved molybdenum concentrations ranged from 0.00013 mg/L (MT1, July) to 0.0130 mg/L (SC2, April) (Figure 3.1-25). Molybdenum behaved differently than most of the metals (except manganese) discussed so far. Total and dissolved molybdenum were highest in the winter and fall months with lower concentrations during the summer. As well, molybdenum was primarily in the dissolved form since D-Mo concentrations were roughly equivalent to T-Mo concentrations. Schaft Creek and Tailing Option C sites had the highest concentrations of molybdenum, at least five times higher than all other sites. B.C. and CCME guidelines were not exceeded at any sites.

Total nickel (T-Ni) concentrations ranged from below the detection limit of 0.0005 mg/L to 0.0206 mg/L (SC4, July) (Figure 3.1-26). Dissolved nickel (D-Ni) ranged from below the detection limit to 0.0052 mg/L (MC9, Aug). Dissolved nickel was below the detection limit for most sites (76%), though increased concentrations were seen in the winter/spring for MC2, and throughout the spring and fall for MC10.

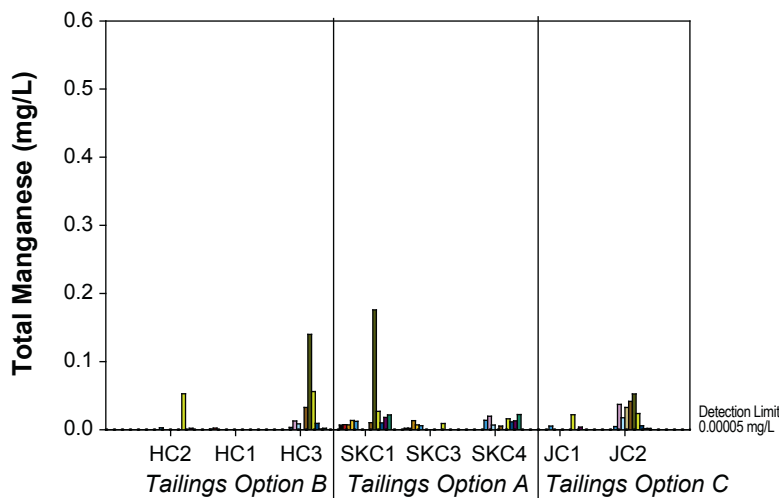
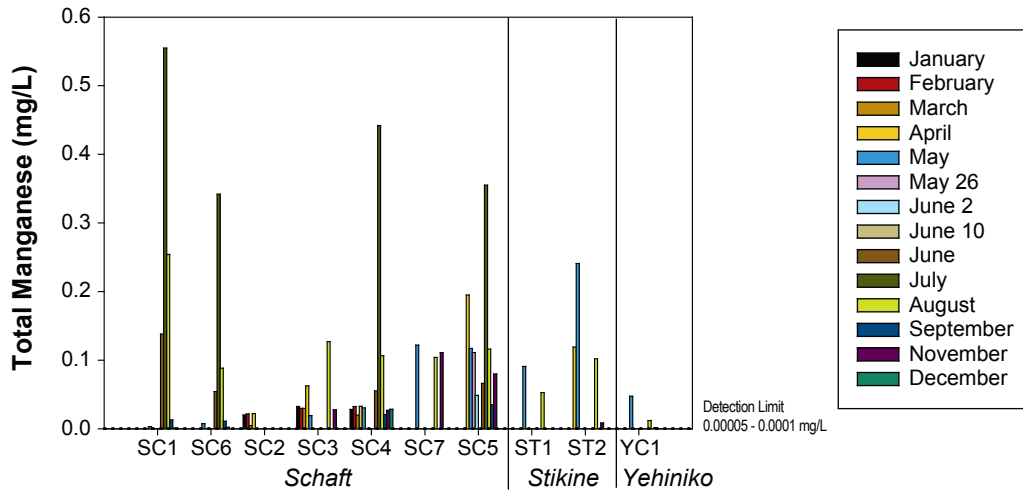
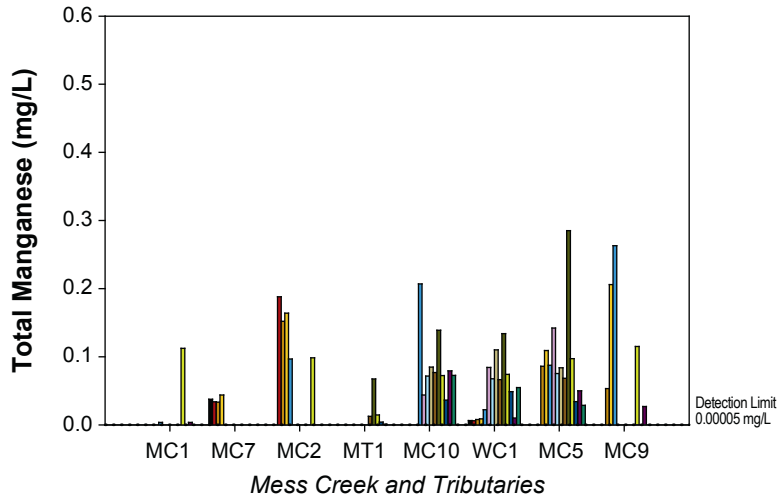


Notes: CCME, BC Max and 30-d Mean guidelines depend on hardness.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-21



Total Lead Concentrations in Schaft Creek Project Streams, 2007



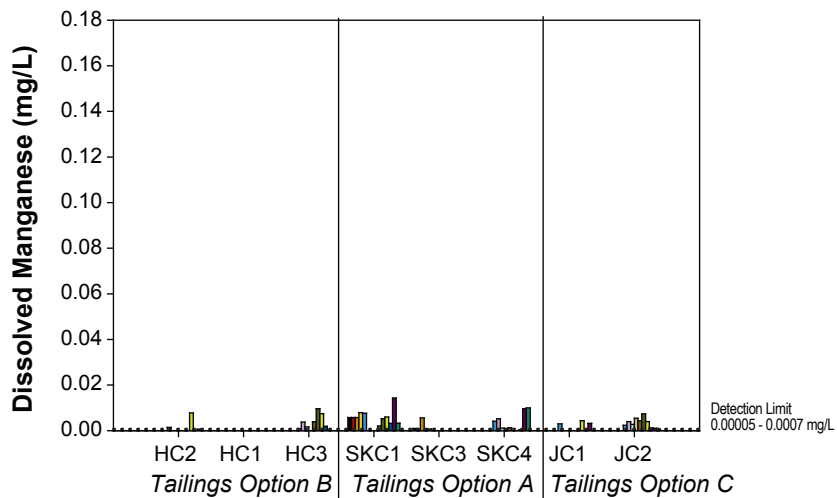
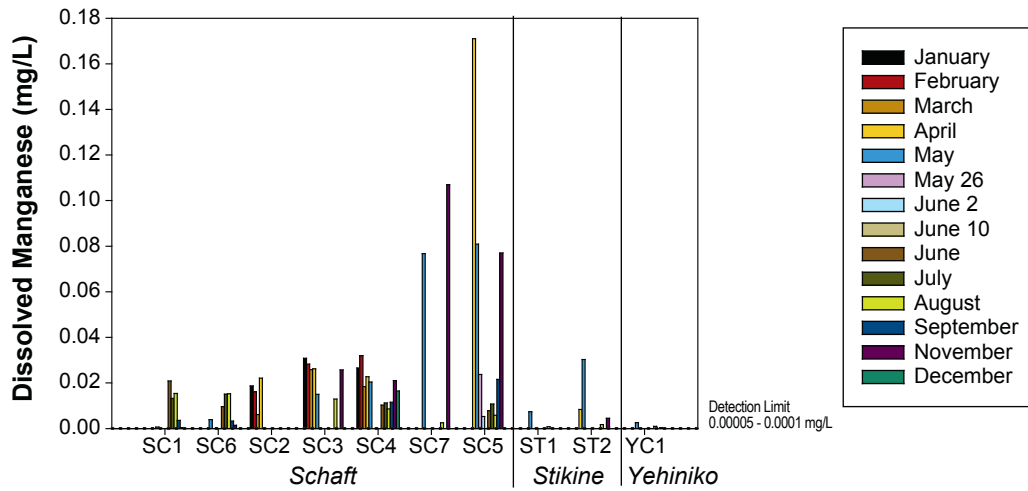
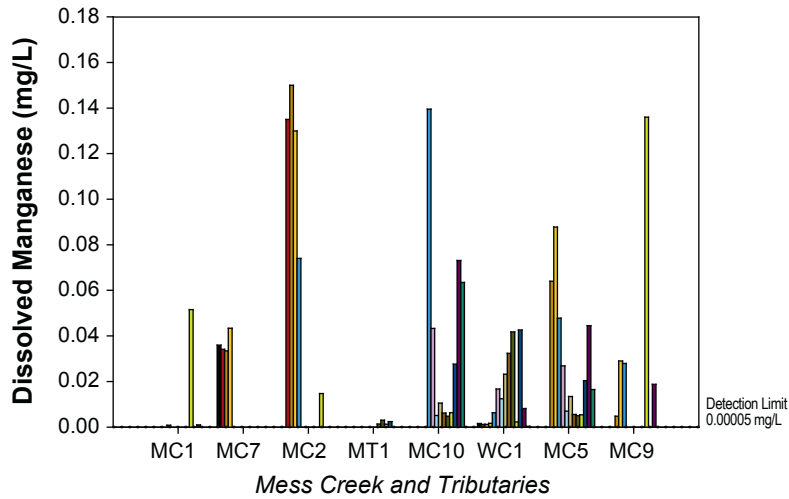
Sites

Notes: BC Max and 30-d Mean guidelines depend on hardness.
 No aquatic life guideline exists for CCME.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-22



**Total Manganese Concentrations
 in Schaft Creek Project Streams, 2007**



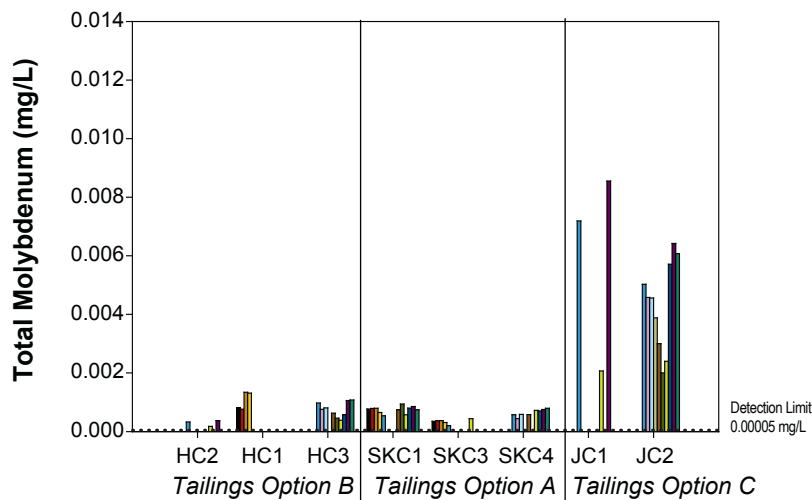
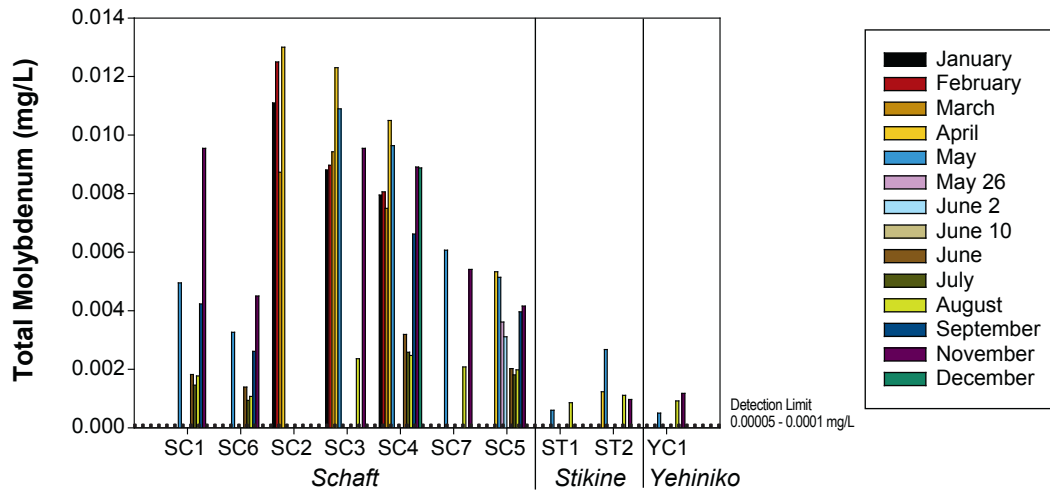
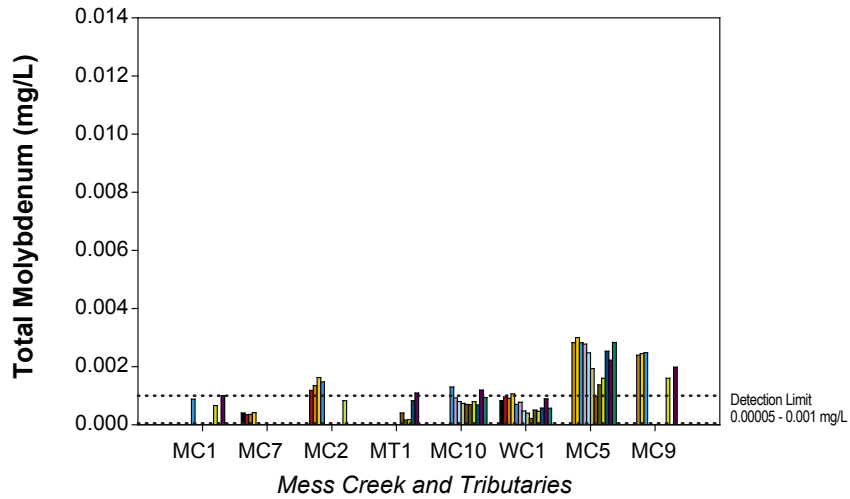
Sites

Notes: BC Max and 30-d Mean guidelines depend on hardness.
 No aquatic life guideline exists for CCME.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-23



**Dissolved Manganese Concentrations
 in Schaft Creek Project Streams, 2007**



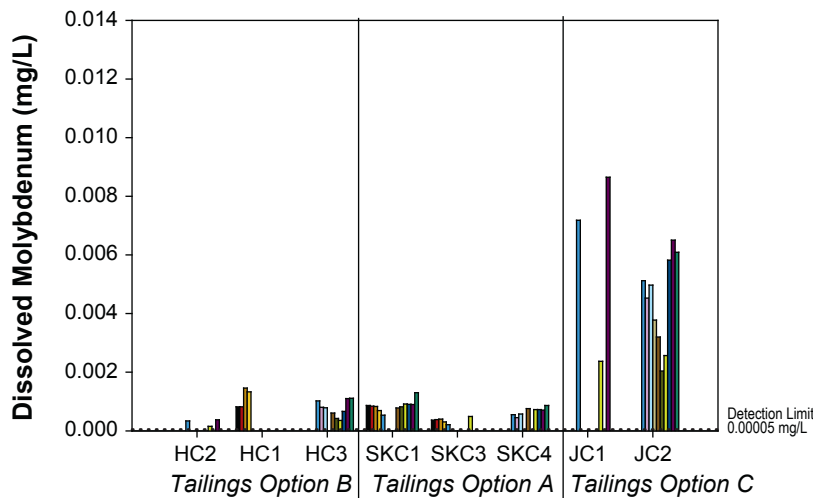
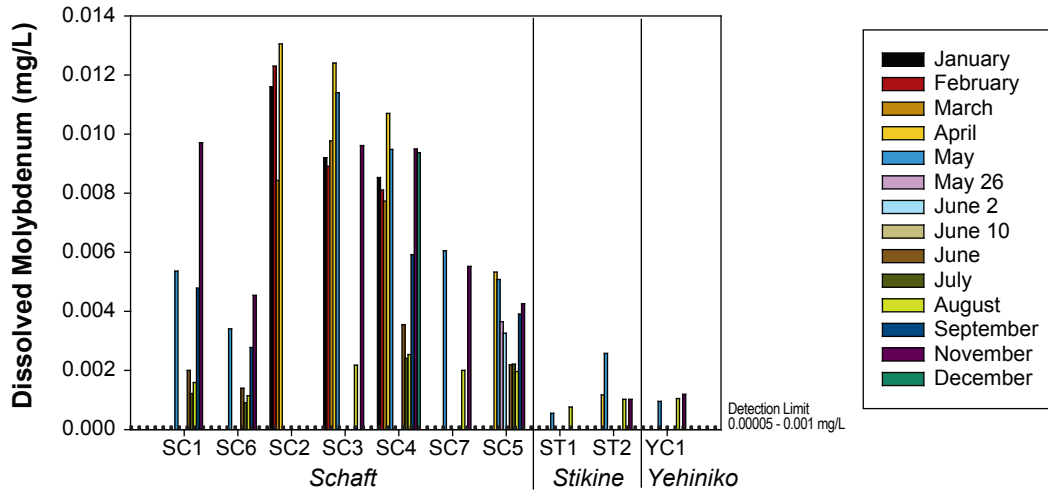
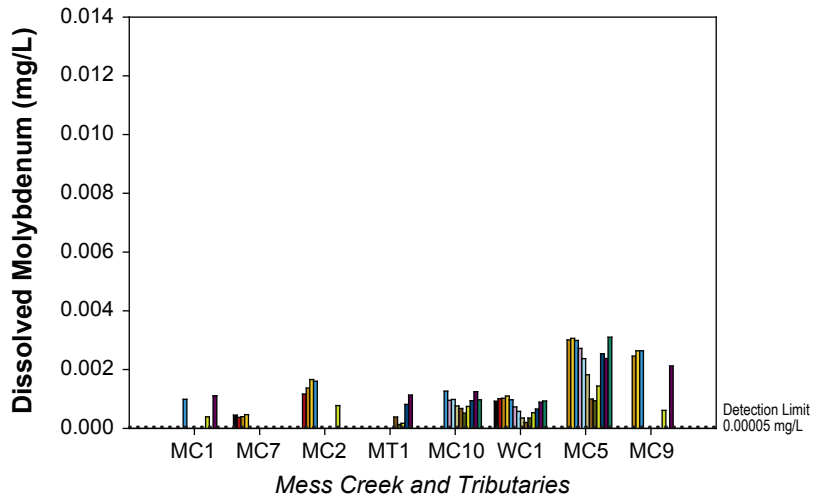
Sites

Notes: BC Max guideline is 2 mg/L, and BC 30-d Mean guideline is 1 mg/L. CCME guideline is 0.073 mg/L. Dotted line represents analytical detection limit. Red dashed line indicates guideline value, where available.

FIGURE 3.1-24



Total Molybdenum Concentrations in Schaft Creek Project Streams, 2007



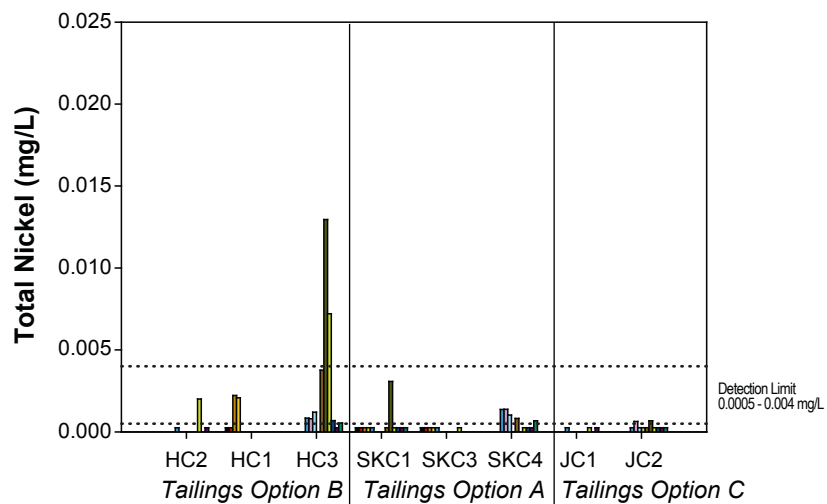
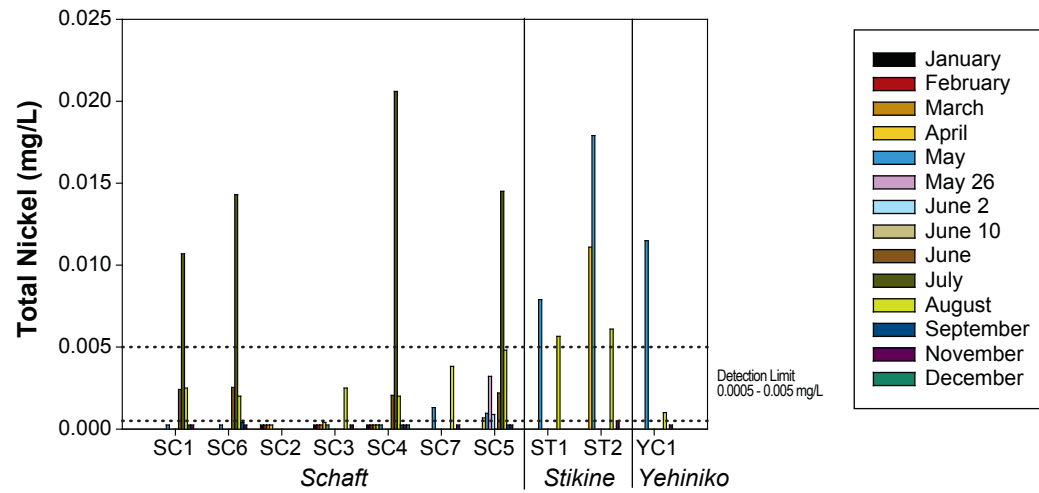
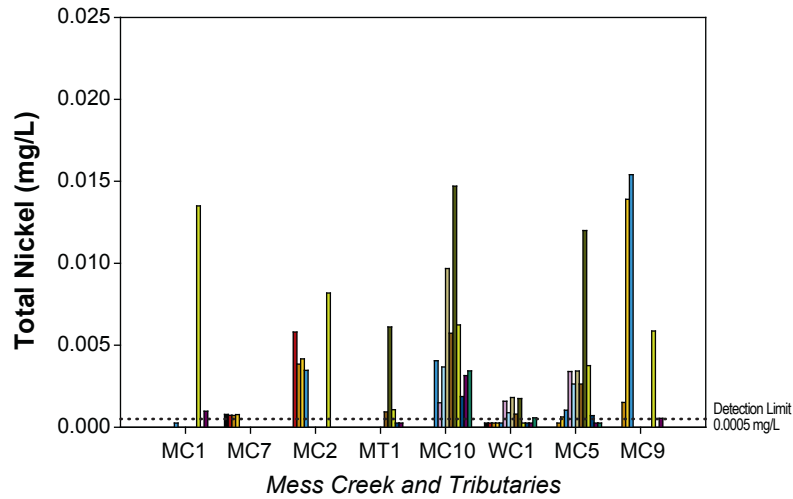
Sites

Notes: BC Max guideline is 2 mg/L, and BC 30-d Mean guideline is 1 mg/L. CCME guideline is 0.073 mg/L. Dotted line represents analytical detection limit. Red dashed line indicates guideline value, where available.

FIGURE 3.1-25



Dissolved Molybdenum Concentrations in Schaft Creek Project Streams, 2007



Sites

Notes: CCME, BC Max, and 30-d Mean guidelines depend on hardness.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-26



**Total Nickel Concentrations
 in Schaft Creek Project Streams, 2007**

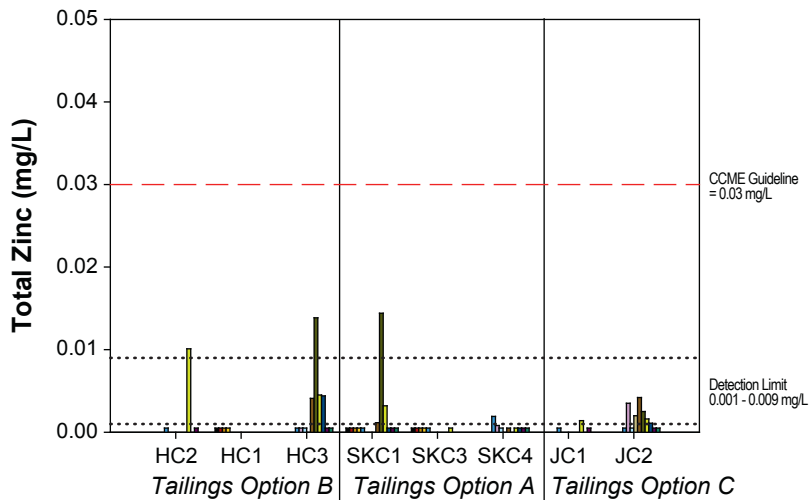
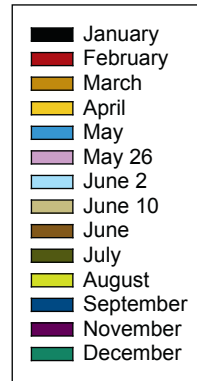
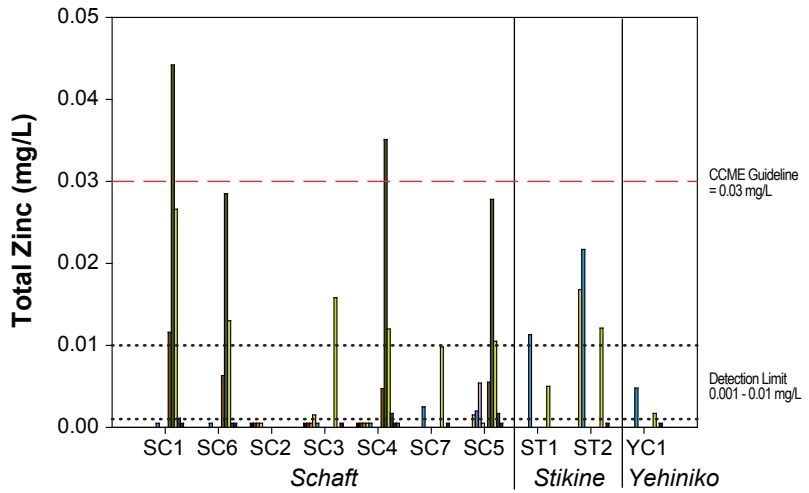
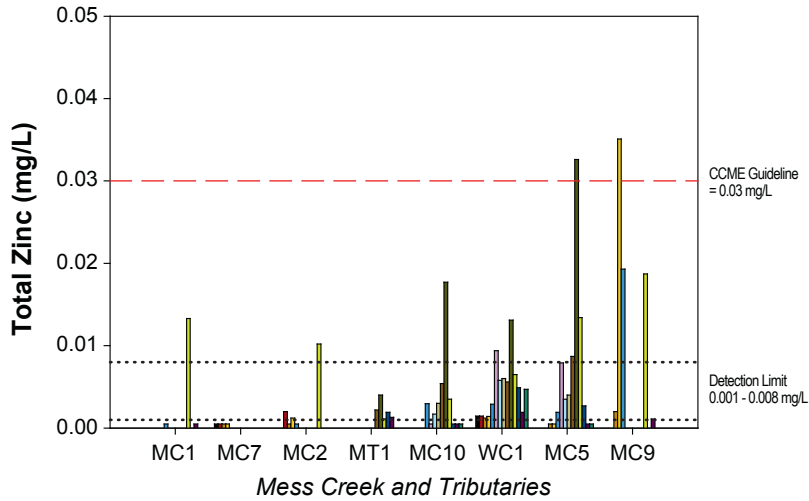
Concentrations of T-Ni peaked in July and were generally highest in the Mess Creek Watershed throughout the year. T-Ni concentrations were highest in April/May for site MC9, Stikine River and Yehiniko Creek sites. Concentrations of T-Ni and D-Ni did not exceed the CCME and B.C. guidelines, which depend on hardness.

Total selenium (T-Se) ranged from below the detection limit of 0.00050 mg/L to 0.00117 mg/L (MC5, Aug). Dissolved selenium (D-Se) ranged from below the detection limit to 0.00121 mg/L (SKC1, Jan). The B.C. 30-d Mean guideline for selenium is 0.002 mg/L, the CCME guideline is 0.001 mg/L. No sites exceeded the B.C. 30-d Mean guideline for either T-Se or D-Se. A number of sites exceeded the CCME guideline including MC7 (Feb), MC2 (Feb), MC5 (Aug), and SKC1 (Jan). Dissolved selenium exceeded the CCME guidelines at sites MC7 (Jan and Feb) and SKC1 (Jan). Selenium was not provided with a figure because 60% of the samples were below the detection limit.

Total silver (T-Ag) ranged from below the detection limit of 0.000010 mg/L to 0.000135 mg/L (MC5, July). Dissolved silver (D-Ag) ranged from below the detection limit to 0.000012 mg/L (MC1, Aug). The B.C. Max and 30-d Mean guidelines depend on hardness. The CCME aquatic life guideline is 0.0001 mg/L. Total silver exceeded the B.C. 30-d Mean guideline only in the months of July for SC1, SC6, SC4, SC5, MT1, MC10, and MC1. The only site to exceed all three guidelines was MC5 (July). Only 1% of dissolved silver concentrations were above the detection limit, indicating that silver was primarily particulate bound. No exceedances occurred for D-Ag. Silver was not provided with a figure because 77% of the samples were below the detection limit.

Total titanium (T-Ti) ranged from below the detection limit of 0.010 mg/L to 0.817 mg/L (SC1, July). Like silver, only 1% of the dissolved titanium (D-Ti) was above the detection limit with the maximum concentration at 0.072 mg/L (MC9, Aug). Total titanium peaked in July for most sites, and in May/April for MC9, and Stikine River and Yehiniko Creek sites. The B.C. Max aquatic life guideline for titanium is 0.1 mg/L. This guideline was exceeded at all Schaft Creek sites, except SC2, for months June, July, and/or August. Lower Mess Creek sites MC10 and MC5, and Tailings Option B site HC3 exceeded T-Ti guideline in July. Sites MC9 and ST2 exceeded the guidelines in April, May and August. The mean concentrations of T-Ti (averaged over the entire year) exceeded the B.C. Max guideline at MC9, SC1, SC6, and ST2 (Table 3.1-1). No D-Ti exceeded the B.C. Max guideline. No B.C. 30-d Mean or CCME guidelines exist for titanium. Titanium was not provided with a figure because 62% of the samples were below the detection limit.

Total zinc (T-Zn) ranged from below the detection limit 0.0010 mg/L to 0.0442 mg/L (SC1, July) (Figure 3.1-27). Dissolved zinc (D-Zn) ranged from below the detection limit (86% of samples) to 0.0104 mg/L (MC9, August). Total zinc concentrations were highest in lower Mess Creek sites MC10, WC1, and MC5 year round. The highest zinc concentrations occurred in July suggesting that zinc concentrations were primarily bound to particulates in the water column. MC9, Stikine River and Yehiniko creek sites, on the other hand, peaked in April or May. The B.C. Max and 30-d Mean guidelines for zinc depend on hardness concentration. The CCME guideline is 0.03 mg/L. All three guidelines were exceeded in July for sites SC1 and SC4. The B.C. 30-d Mean guideline exceeded at all Schaft Creek sites in July and August, with the exception of SC2. SC1 (June) also exceeded the B.C. 30-d Mean guideline.



Sites

Notes: BC Max and 30-d Mean guidelines depend on hardness.
 Dotted line represents analytical detection limit.
 Red dashed line indicates guideline value, where available.

FIGURE 3.1-27



**Total Zinc Concentrations
 in Schaft Creek Project Streams, 2007**

This guideline was exceeded by all July samples of lower Mess Creek sites (MC10, WC1, and MC5) and August samples of MC1, MC2, MC5, MC9 and HC2. Stikine River sites also exceeded the B.C. 30-d Mean guidelines. The CCME guideline was also exceeded by MC5 (July), and MC9 (April). Sites that did not exceed any guidelines were MC7, MC2, MT1, SC2, YC1, HC1, SKC3, SKC4, JC1 and JC2. Though guidelines were exceeded by most sites, only Schaft Creek had T-Zn more than double the guideline (Table 3.1-3). The mean concentrations of T-Zn (averaged over the entire year) exceeded the B.C. 30-d Mean guideline at SC1, ST1, and ST2 (Table 3.1-1). Dissolved zinc concentrations were generally low throughout the whole study area, but one exceedance of the B.C. 30-d Mean guideline occurred at site MC9 (Aug).

3.1.1.3 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 turbidity in 2 of 14 field blanks (<2 times MDL), ammonia in 3 of 14 field blanks (one sample >2 times MDL, others <2 times MDL), total manganese (T-Mn) in 1 of 14 field blanks (>2 times MDL), and total dissolved solids (TDS), total phosphate (TP), total organic carbon (TOC), total calcium (T-Ca), and total barium (T-Ba) in 1 of 14 field blanks (all <2 times MDL). Travel blank data were all below MDL values, with the exception of TDS and turbidity in 1 of 13 field blanks (both <2 times MDL), ammonia in 1 of 13 field blanks (>2 times MDL), TOC in 2 of 13 field blanks (<2 times MDL), total nitrogen (TN) in 1 of 14 field blanks (both >5 times MDL).

The RPD analysis of QA/QC field duplicate data for receiving environment streams are reported in Appendix 3.1-3. In summary, 16 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 70% of analytical results were below the method detection limit (MDL), and therefore RPD values were not calculated. Of the remaining results, 11% (46 of 422 RPD calculations) were greater than the threshold of 20% indicated by provincial guidance. A total of 35 of these 46 RPD values were from duplicates taken in July and August. These elevated RPD values were taken during periods of precipitation which can add variation to surface flow inputs.

3.1.2 Sediment Quality

Sediment quality was assessed at 21 stream sites (including WL8) by collecting triplicate sediment samples in 2007 (Figure 2.1-1). All raw data, including highlighted samples that exceed guidelines, are shown in Appendix 3.1-7.

3.1.2.1 Particle Size

Analysis of particle size distributions indicated that all stream sites were dominated by sand (50 to 97%), with smaller proportions of silt (1.0 to 39%), gravel (0.5 to 16%), and clay (0.8 to 4.0%) (Figure 3.1-28). Particle size analyses are indicative of the energy of water flow in the area of the sediment sample. The predominance of larger particle sizes in the sediment, such as sand, indicates a higher energy flow regime relative to sediment that contains high proportions of smaller particle sizes.

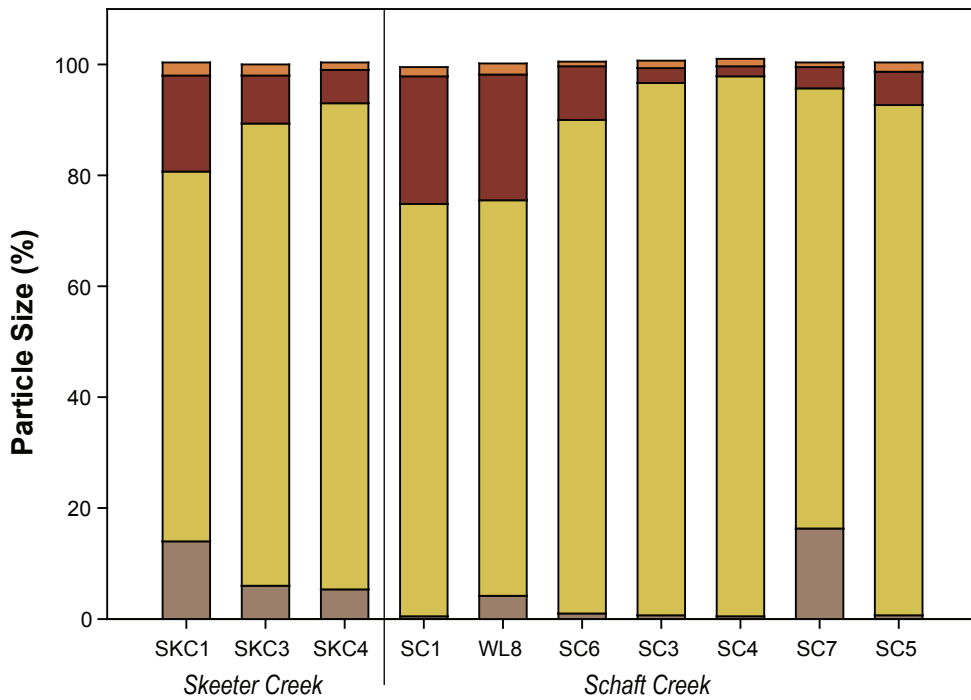
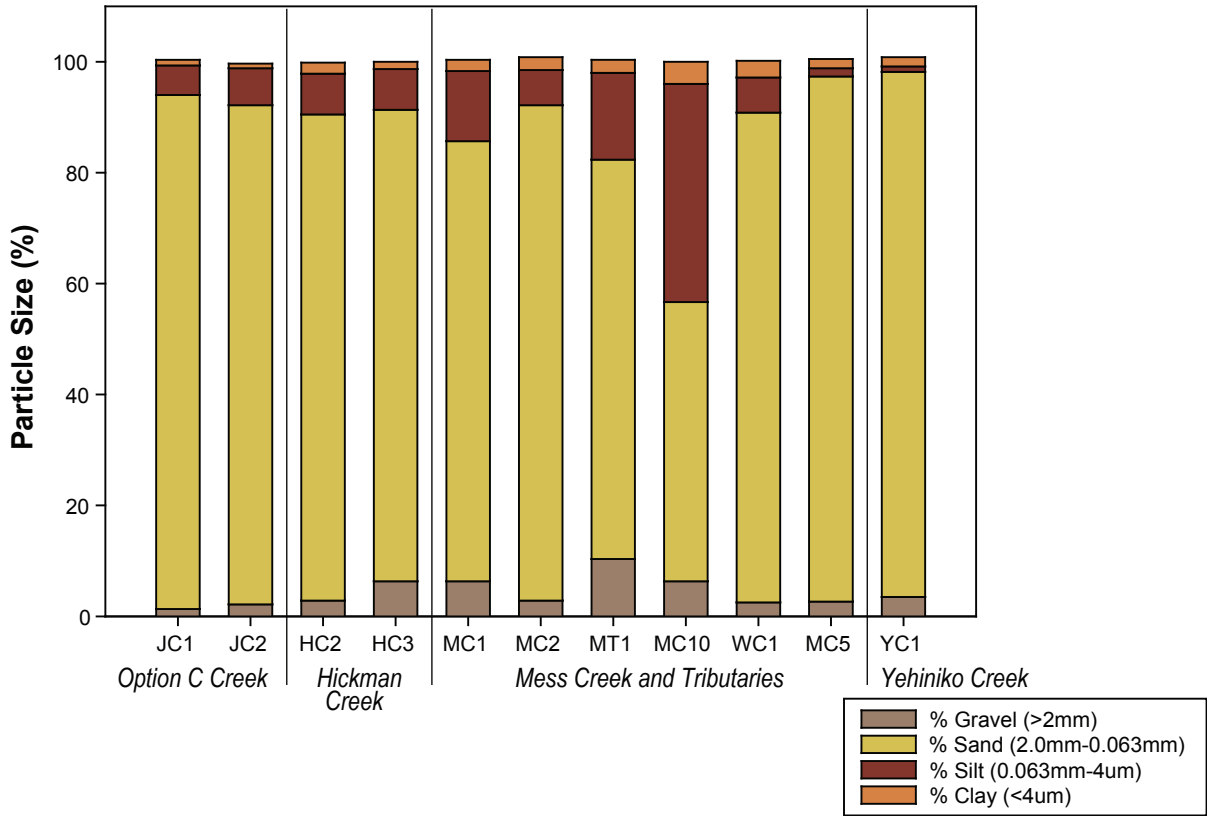


FIGURE 3.1-28



Smaller sediment particles and sediments with high organic content generally have a higher affinity for metals (Horowitz and Elrick, 1988). Stream sites are primarily composed of sand but three sites have substantial portions (> 20%) of silt and clay (MC10 = 43%; SC1 = 24%; WL8 = 25%). Since this size fraction is potentially more biologically relevant to benthic organisms, concentrations of select metals that exceed guidelines at MC10, SC1 or WL8 will be normalized to the percent of fines in order to better judge metal content (Section 3.1.2.3).

3.1.2.2 Nutrients, TOC and Cyanides

Nutrient concentrations at stream sites were generally low and below detection in many cases. Average available phosphorus concentrations were below detection limits (1 mg/kg) at more than 80% of the samples and are not presented graphically for this reason. JC1, JC2, MT1 and WC1 had available phosphorus concentrations at or just over the detection limit. Average nitrogen concentrations were above the detection limit (0.02%) at several sites. All sites except SKC3 had average concentrations below 0.05%. The average nitrogen concentration at SKC3 (0.16%) in the Skeeter Lake Watershed was more than three times greater than other sites (Figure 3.1-29).

The average total organic carbon (TOC) values were below the detection limit of 0.05% at several sites and generally low overall (Figure 3.1-30). As was seen with total nitrogen concentrations, the average TOC value at SKC3 (2.1%) was greater than at other sites.

Analysis for total cyanide was below analytical detection limits (3 mg/kg) in all 2006 stream sediment samples (Rescan, 2006). For this reason no cyanide analyses were conducted on the 2007 sediment samples.

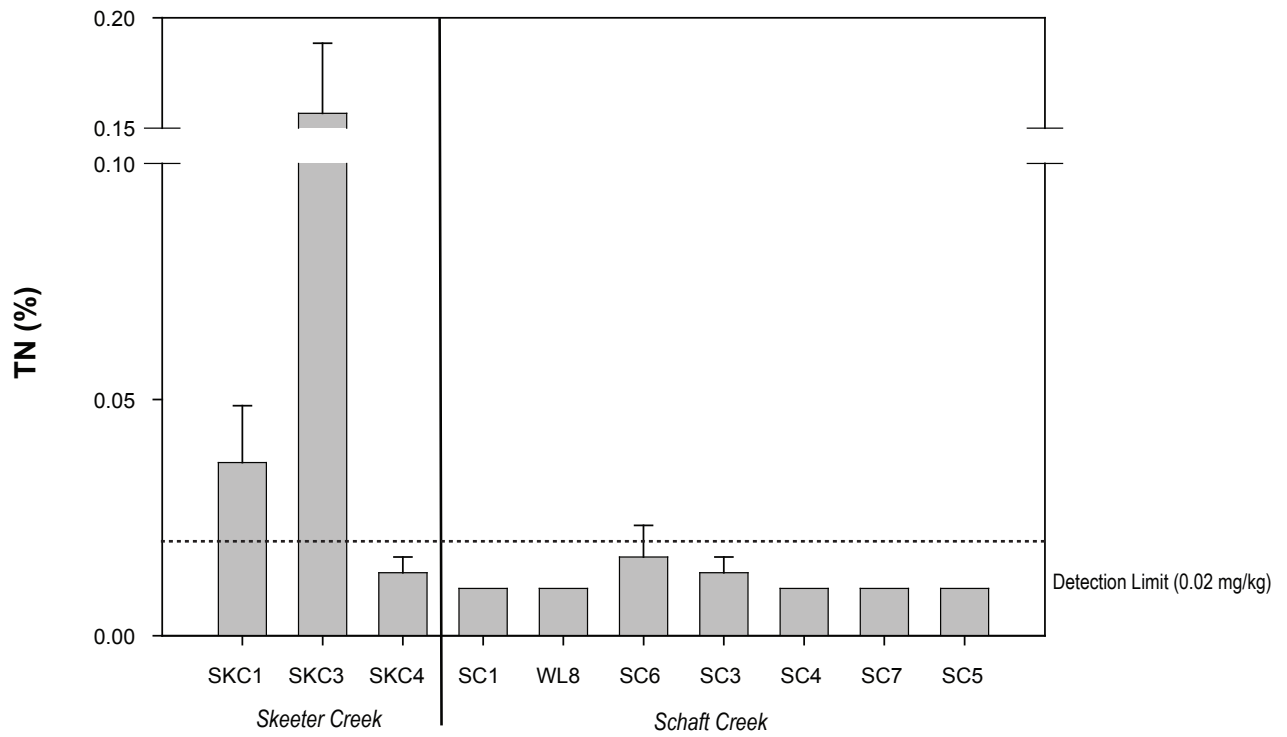
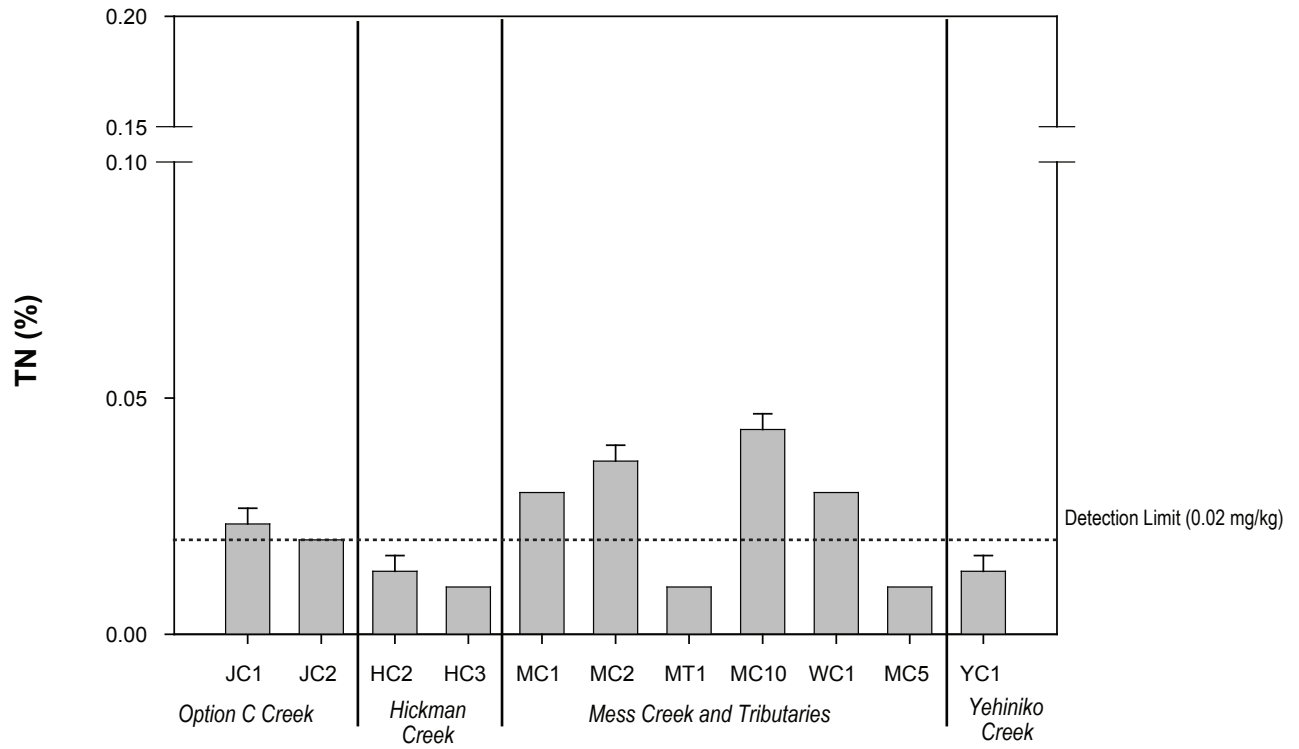
3.1.2.3 Total Metals

Of the metals analyzed; antimony, beryllium, bismuth, cadmium, lead, molybdenum, selenium, silver, thallium and tin were not detected in more than 80% of samples in stream sites and are not discussed below (Appendix 3.1-7).

Several of the analyzed metals do not have provincial or federal guidelines and are discussed below prior to those metals with guidelines. Even though these metals have no guidelines, they are presented graphically to facilitate comparison between sites (Figures 3.1-31 to 3.1-38). Average metal concentrations are generally greater in the Mess Creek Watershed for several metals including barium, cobalt, magnesium, manganese and strontium. The Skeeter Lake Watershed showed relatively high concentrations of aluminium (SKC1) and manganese (SKC3 more than double the concentrations seen at most sites). Option C Creek often had the lowest metal concentrations, below detection in some cases. The Hickman Creek sites had relatively high concentrations of aluminium, cobalt, magnesium and vanadium (HC2 greatest in most cases).

Metal concentrations for which guidelines exist are presented graphically below. Of the nine metals that have guidelines, two had 100% of samples below detection limits (cadmium and lead) and seven exceeded guidelines at one or more sites.

Average arsenic concentrations ranged from below the detection limit at several sites across watersheds to 52 mg/kg (MC1) (Figure 3.1-39).

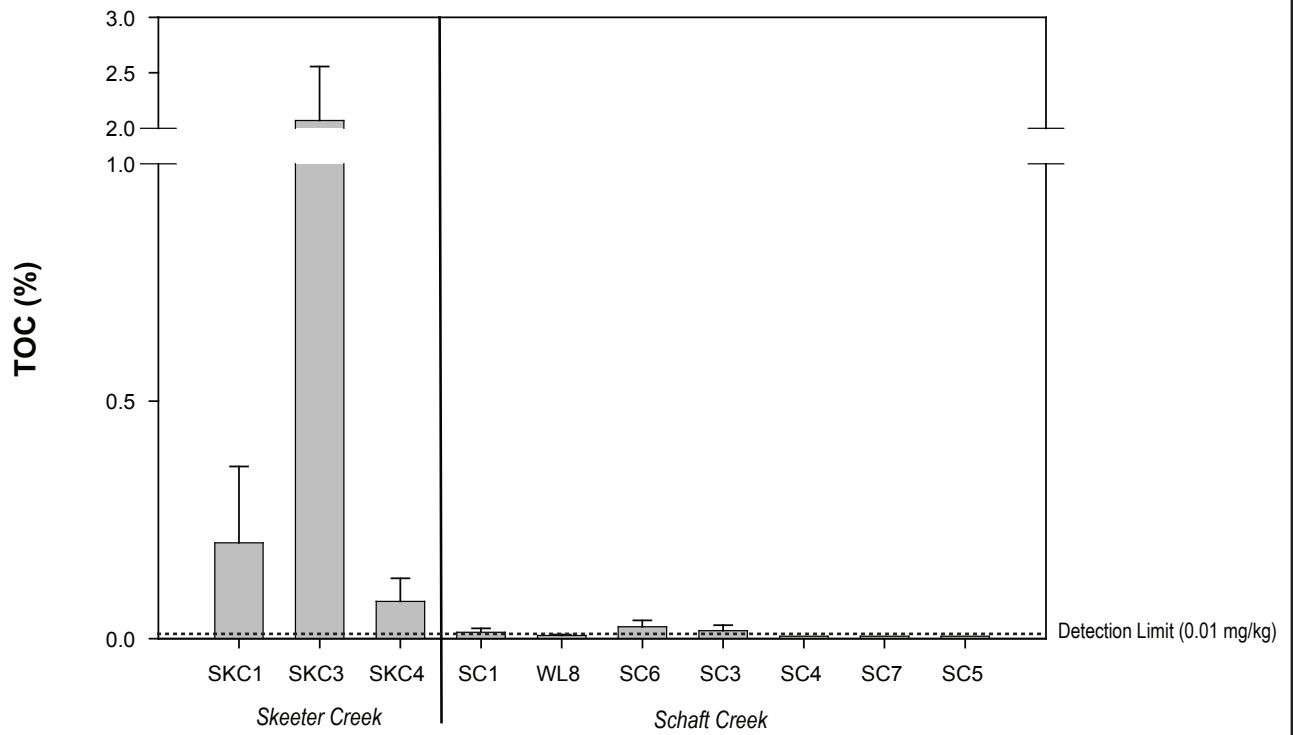
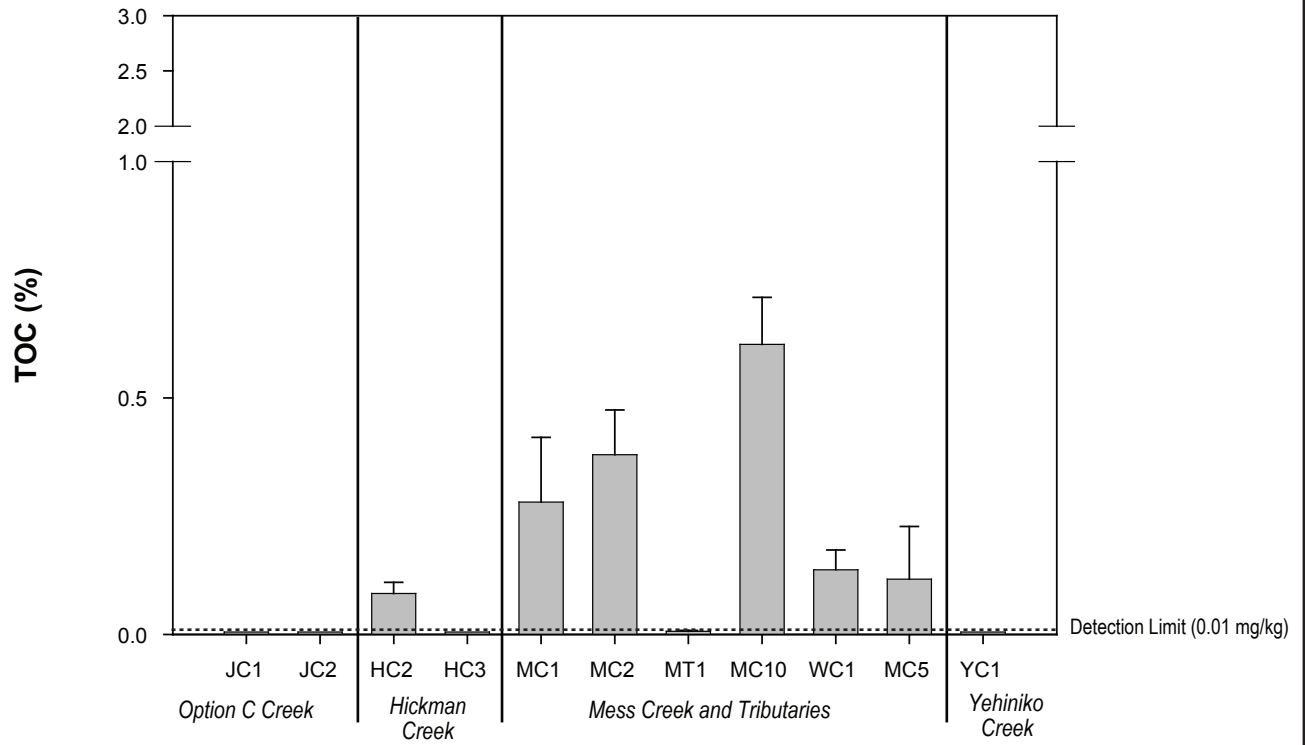


Streams

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

FIGURE 3.1-29



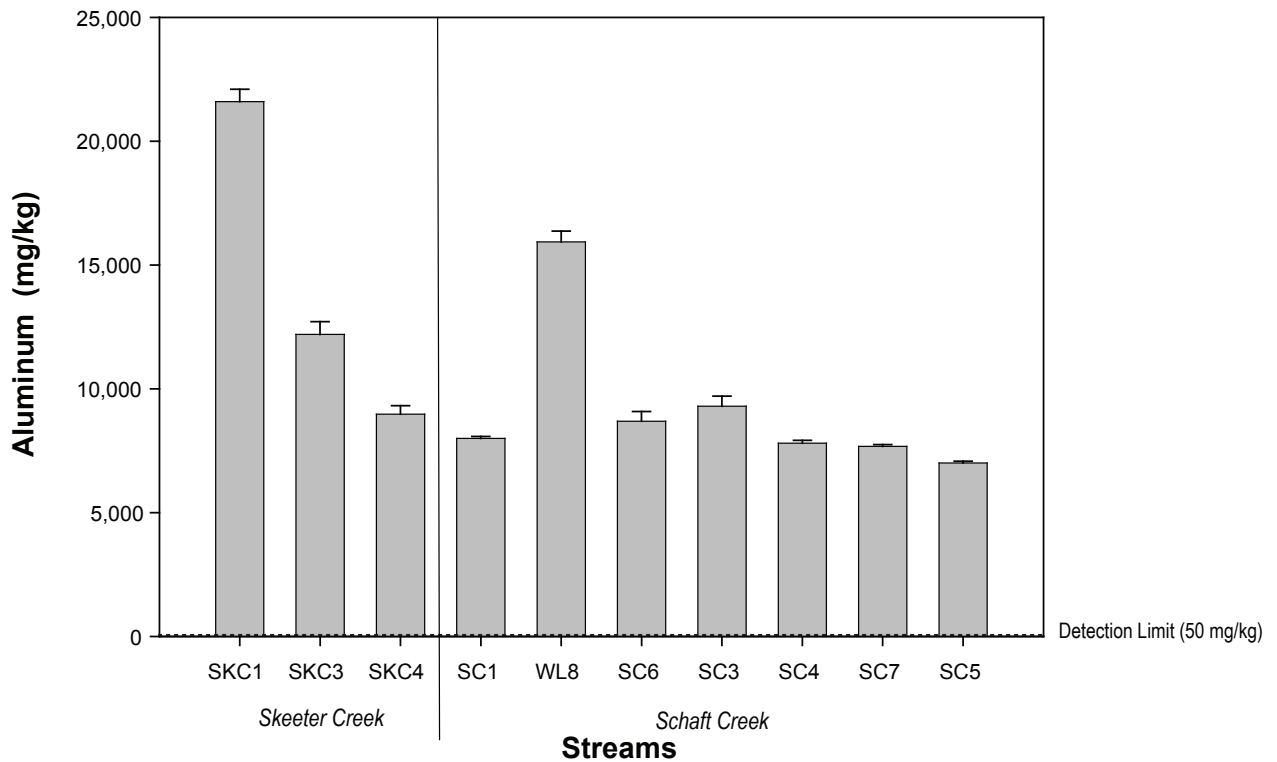
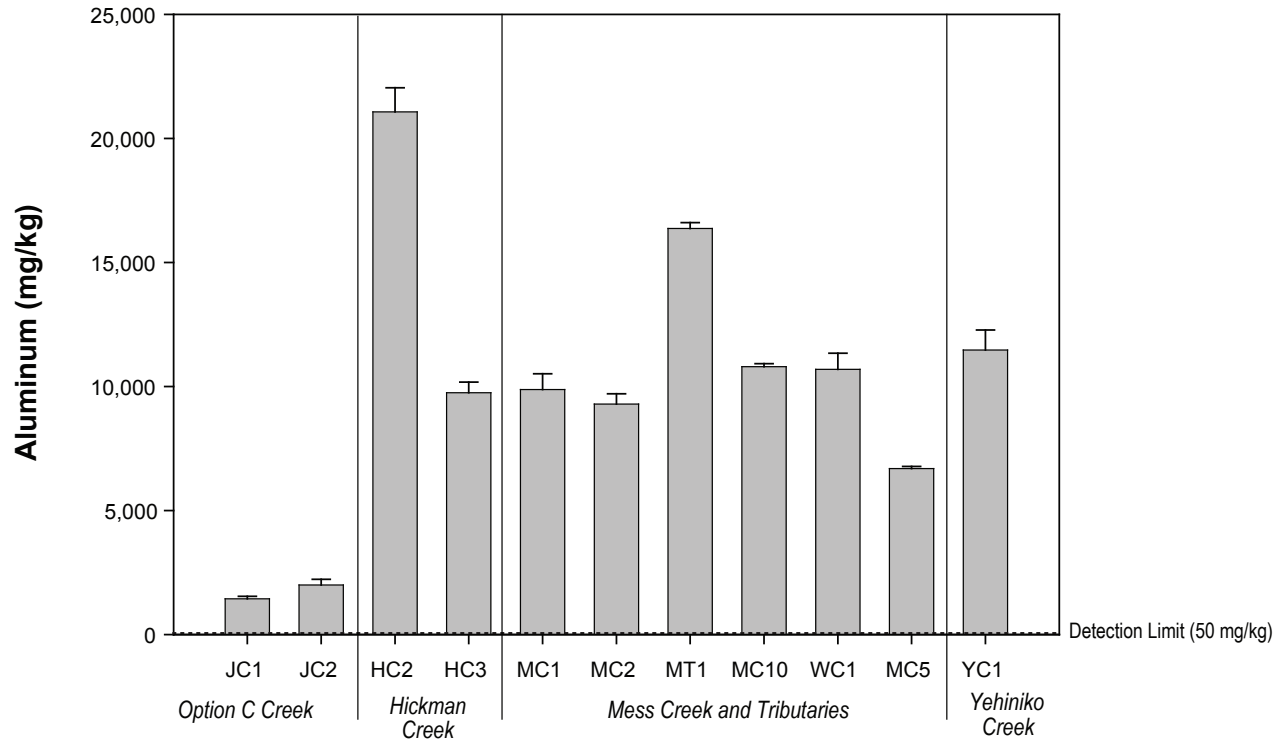


Streams

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

FIGURE 3.1-30

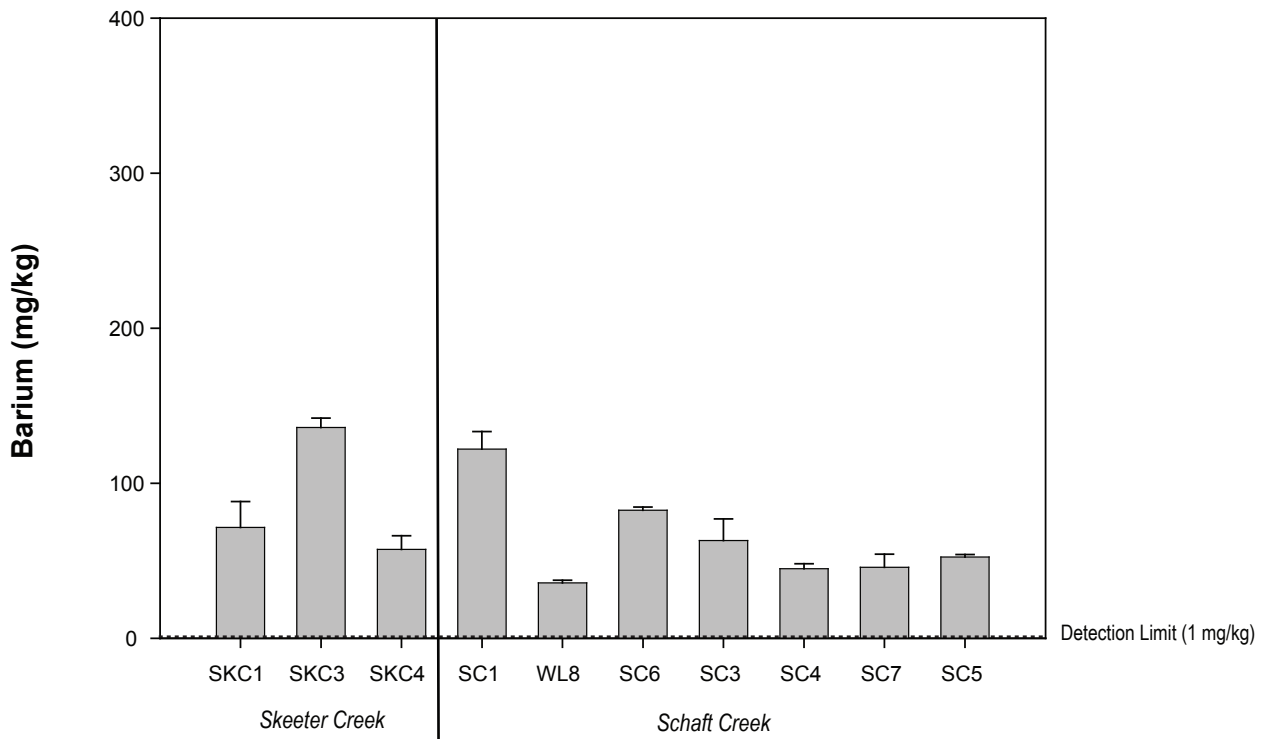
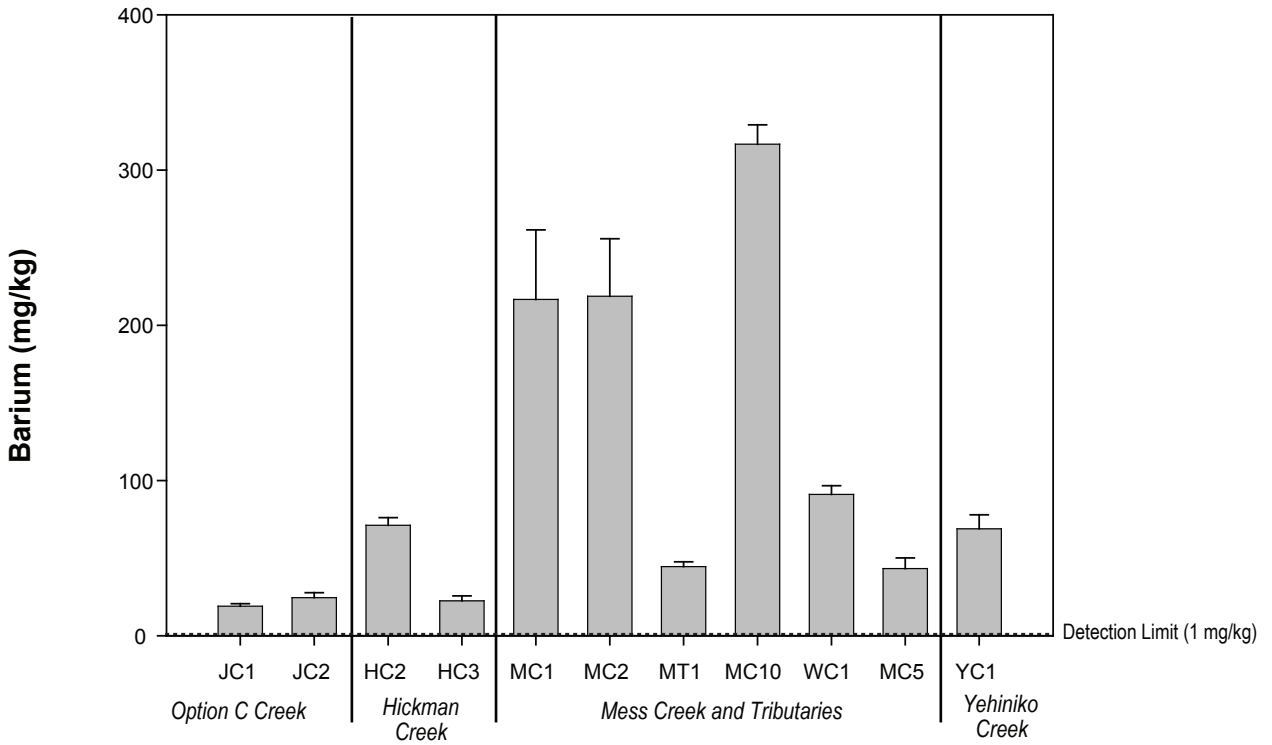




Note: Error bars represent standard error of the mean.
Dotted line denotes detection limit.

FIGURE 3.1-31



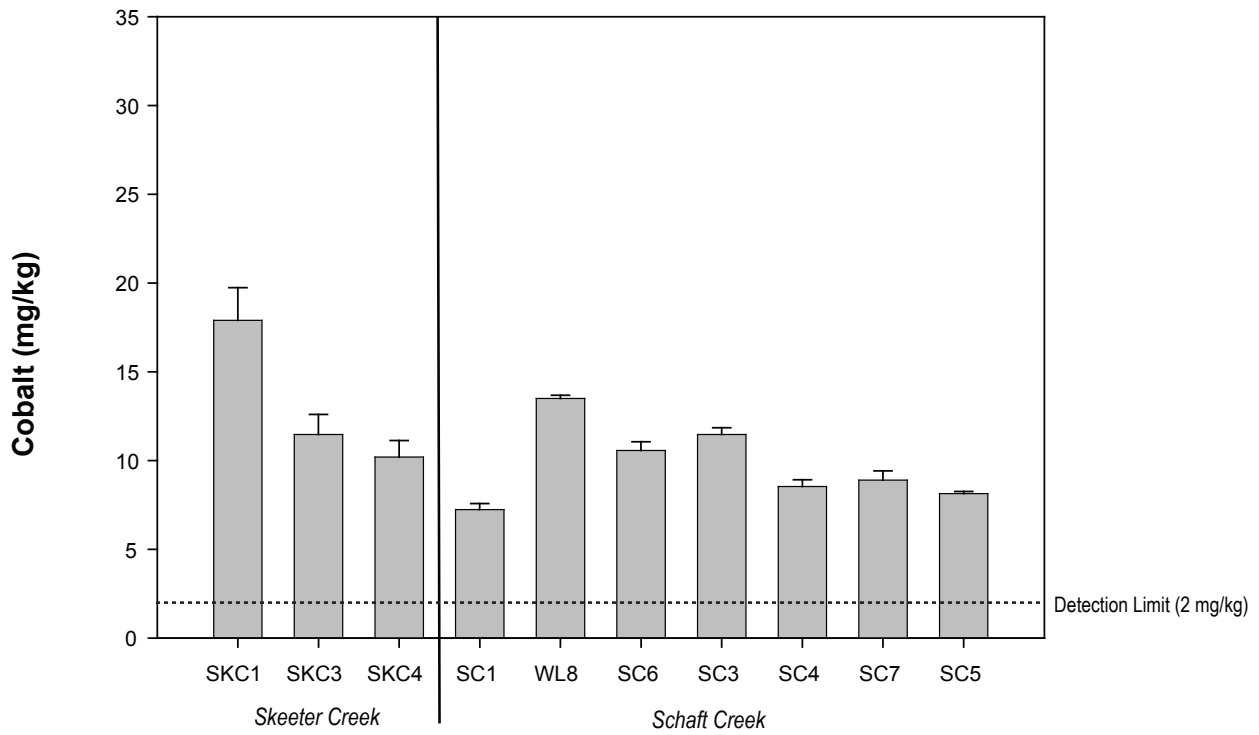
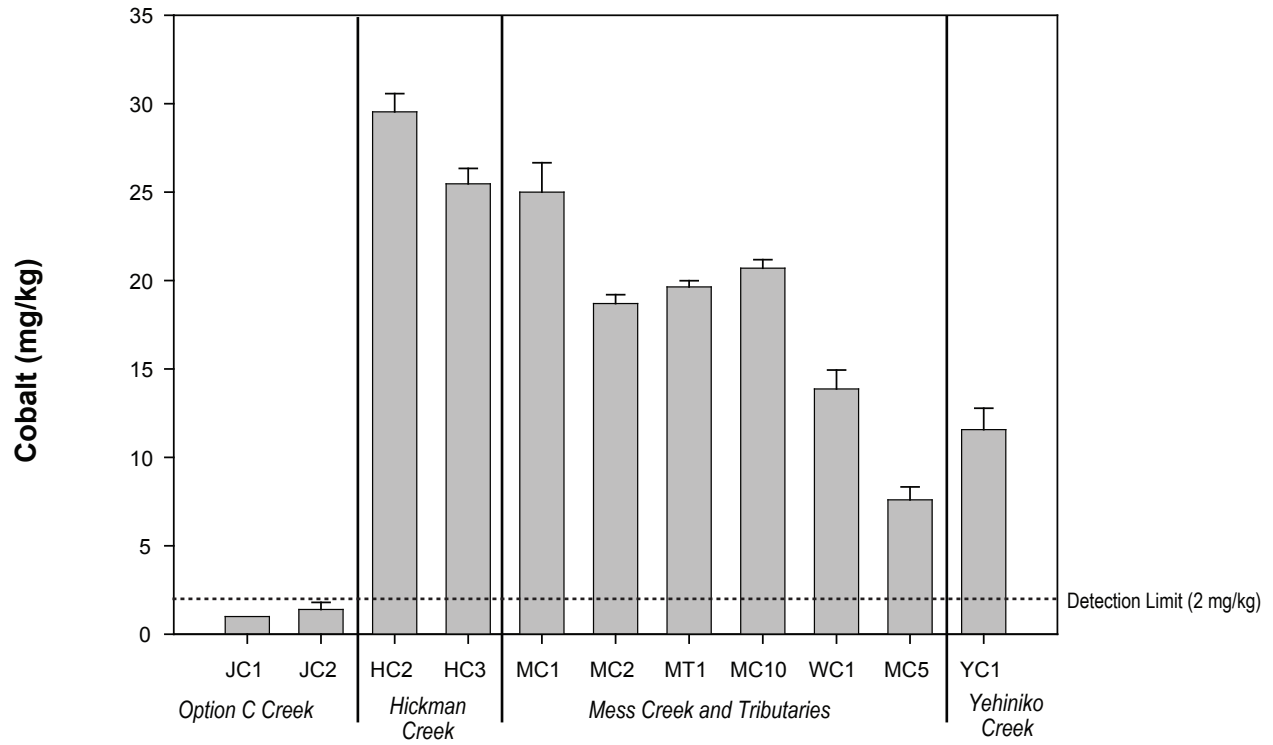


Streams

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

FIGURE 3.1-32



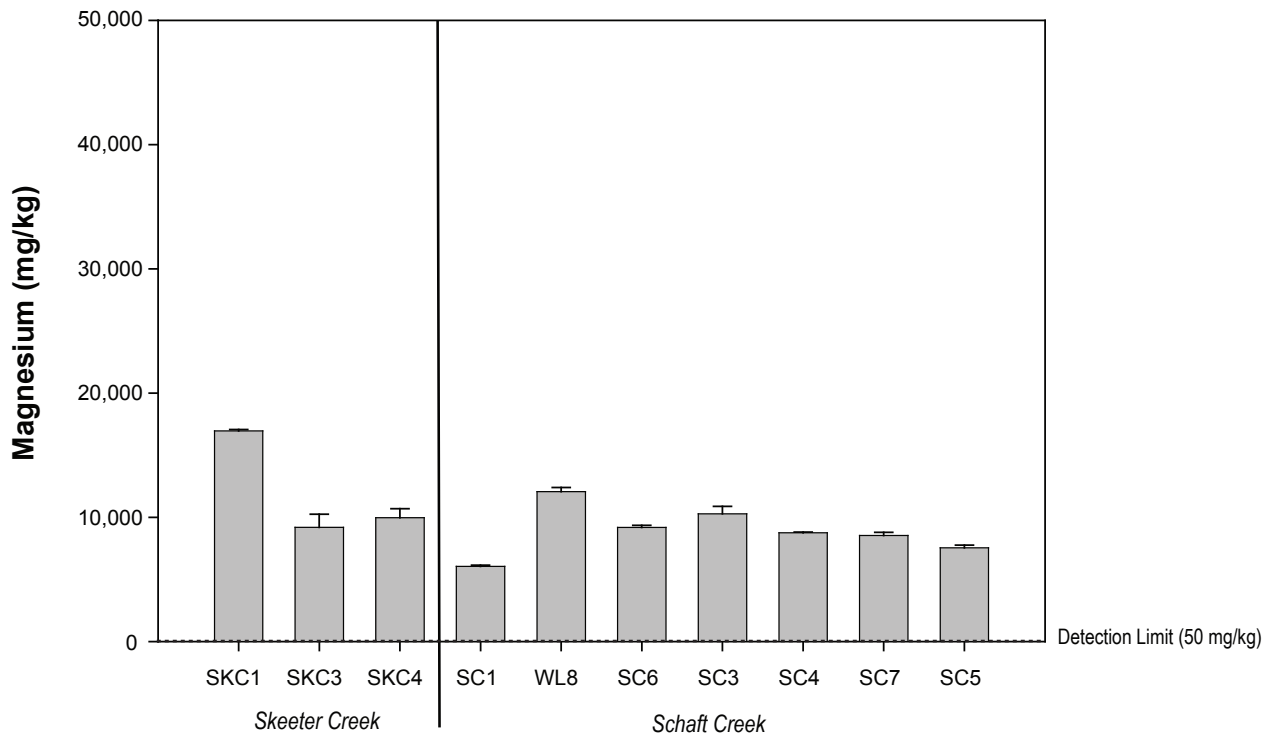
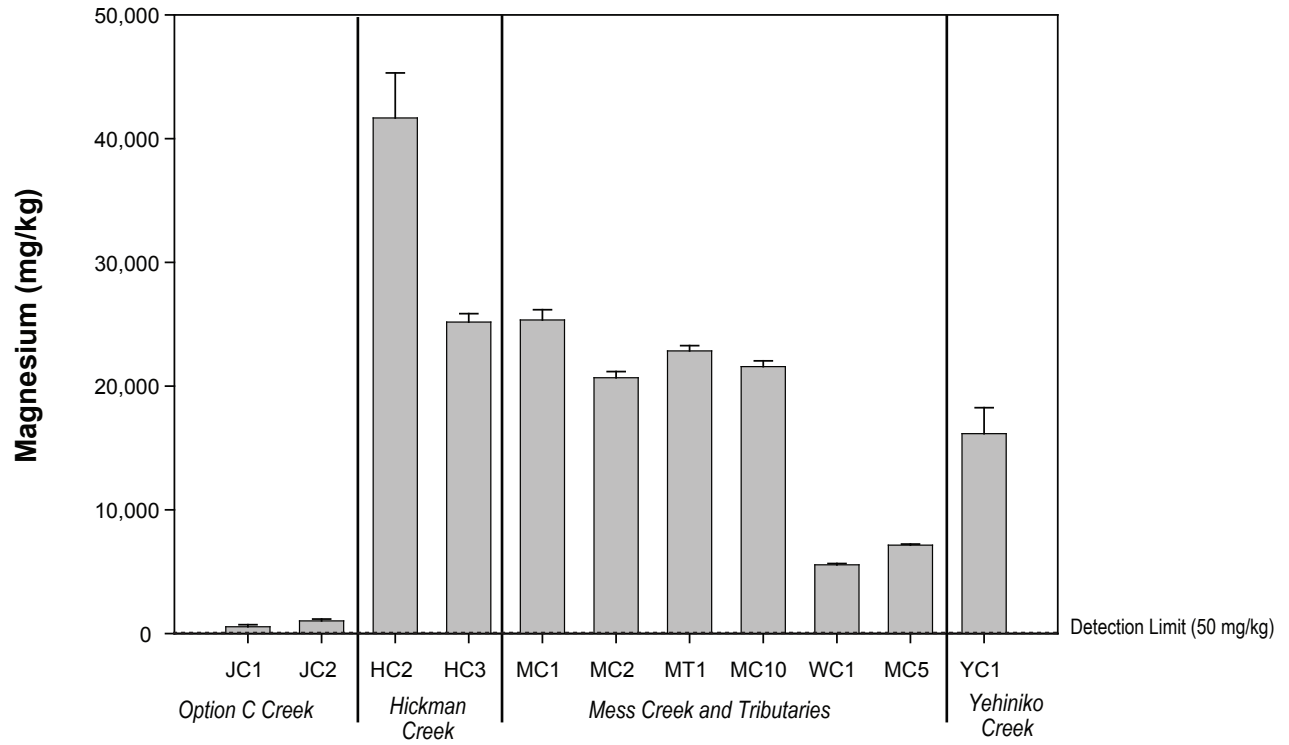


Streams

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

FIGURE 3.1-33



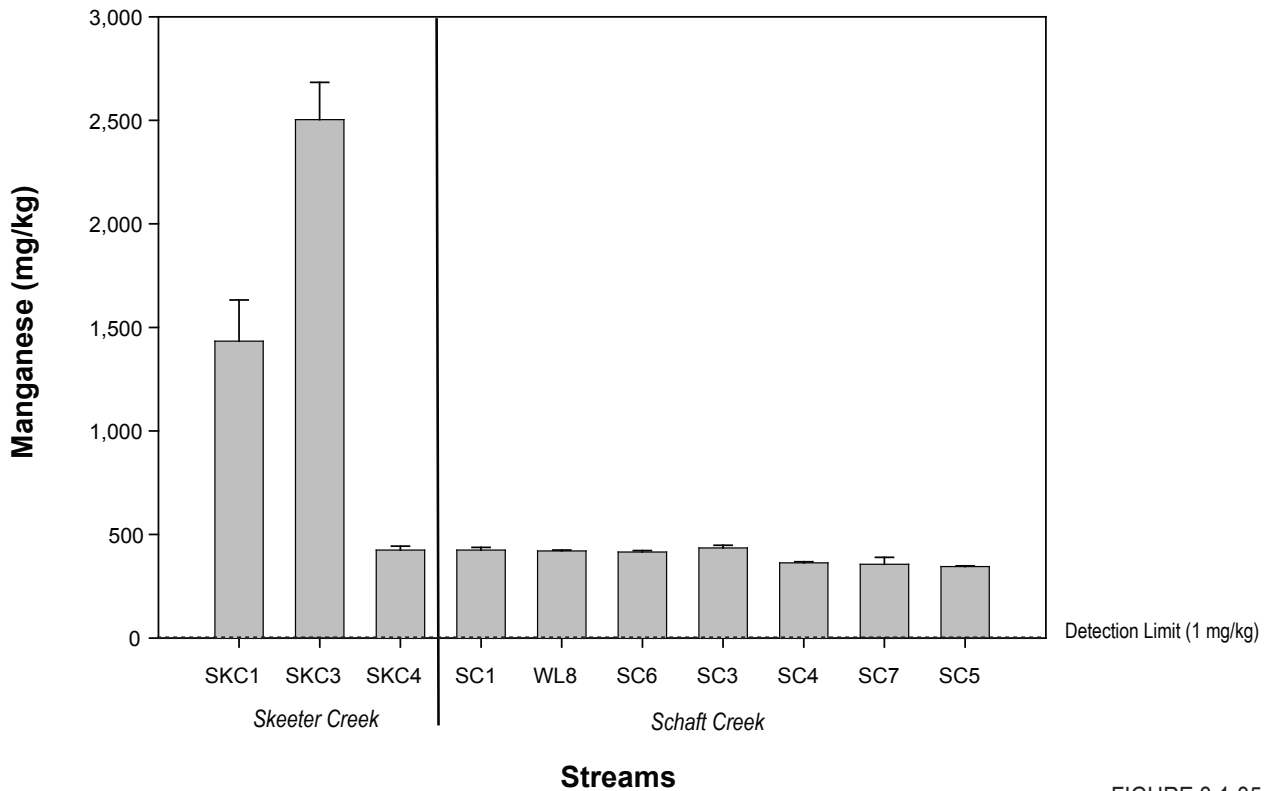
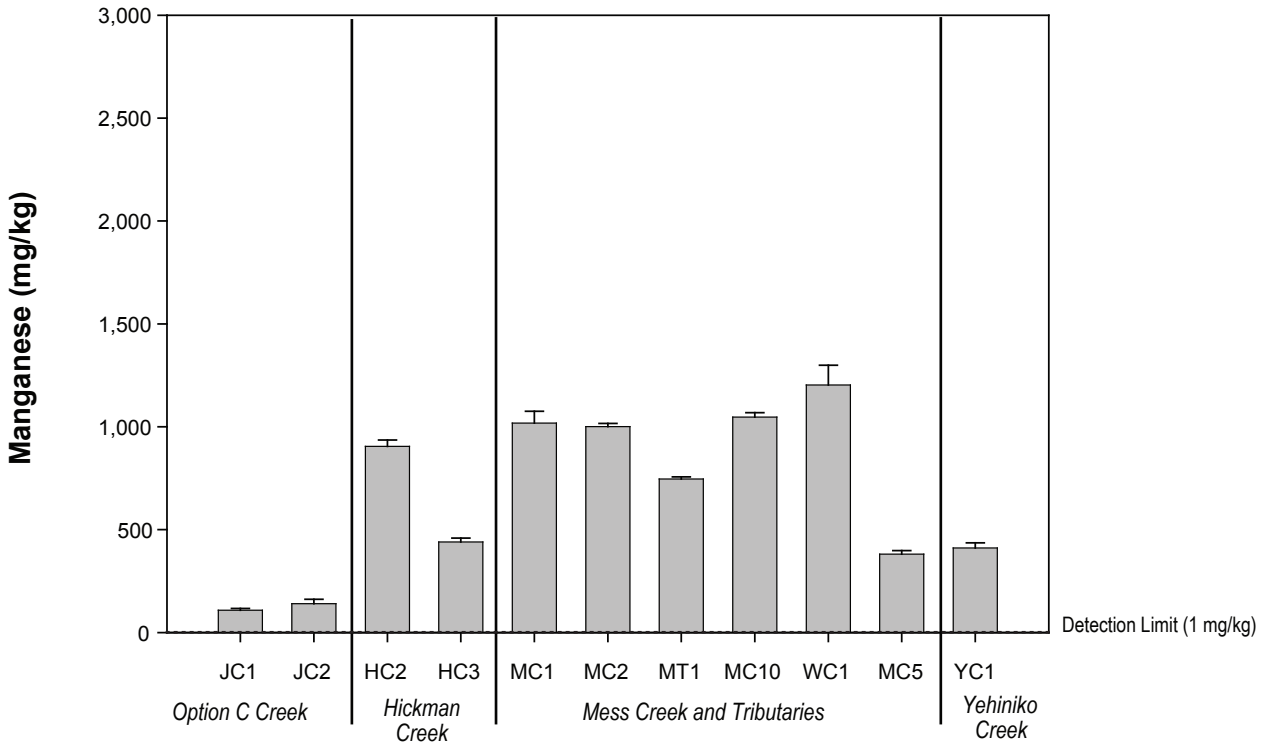


Streams

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

FIGURE 3.1-34

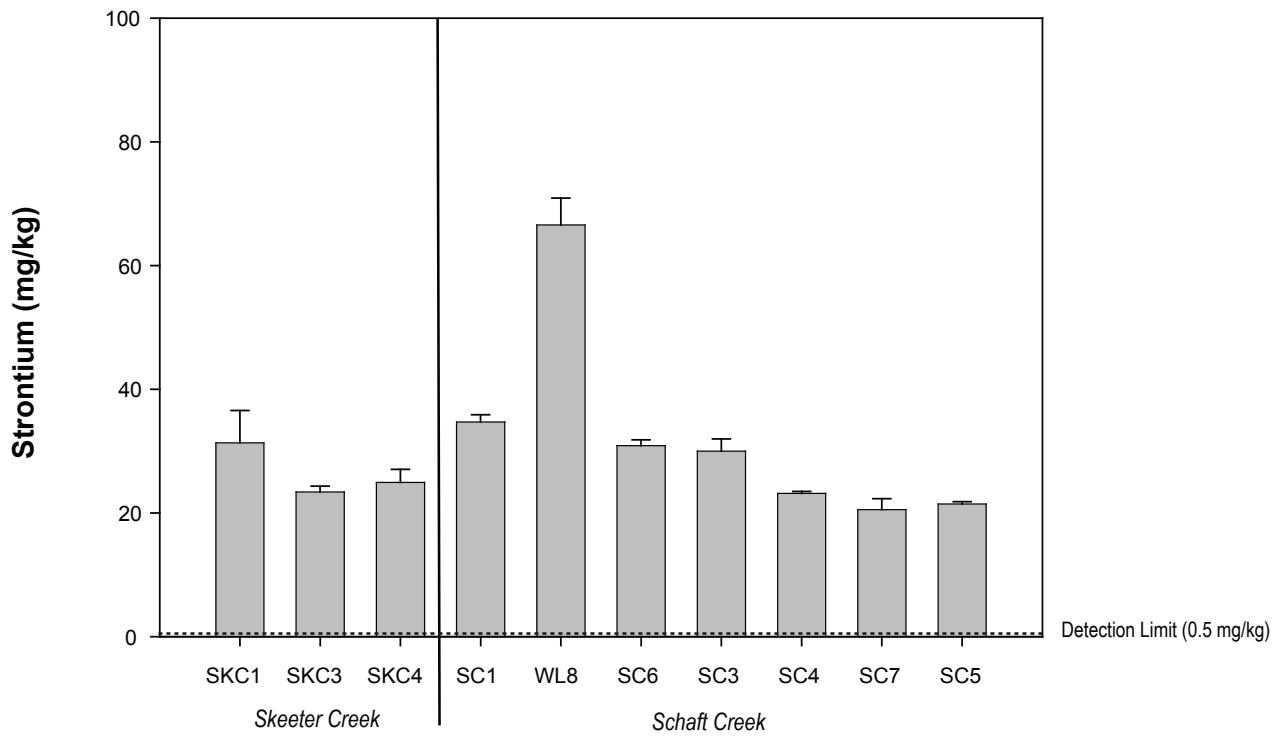
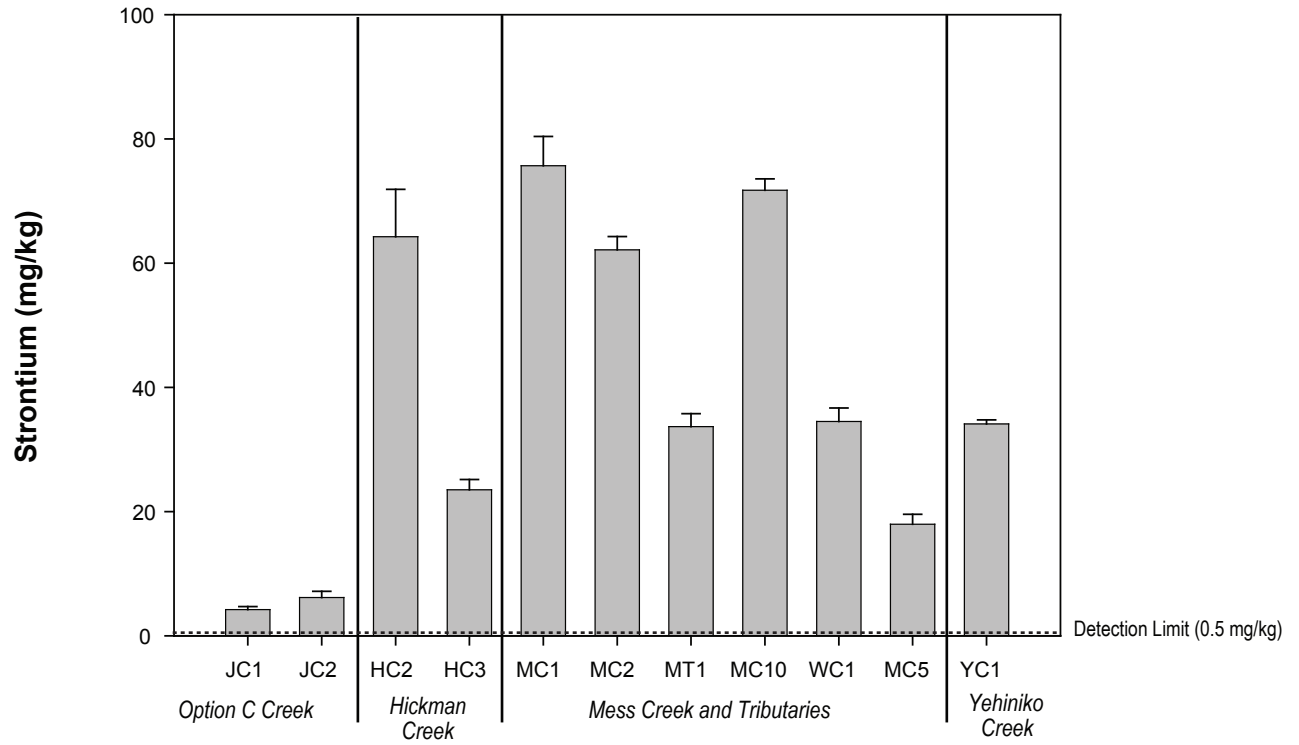




Note: Error bars represent standard error of the mean.
Dotted line denotes detection limits.

FIGURE 3.1-35



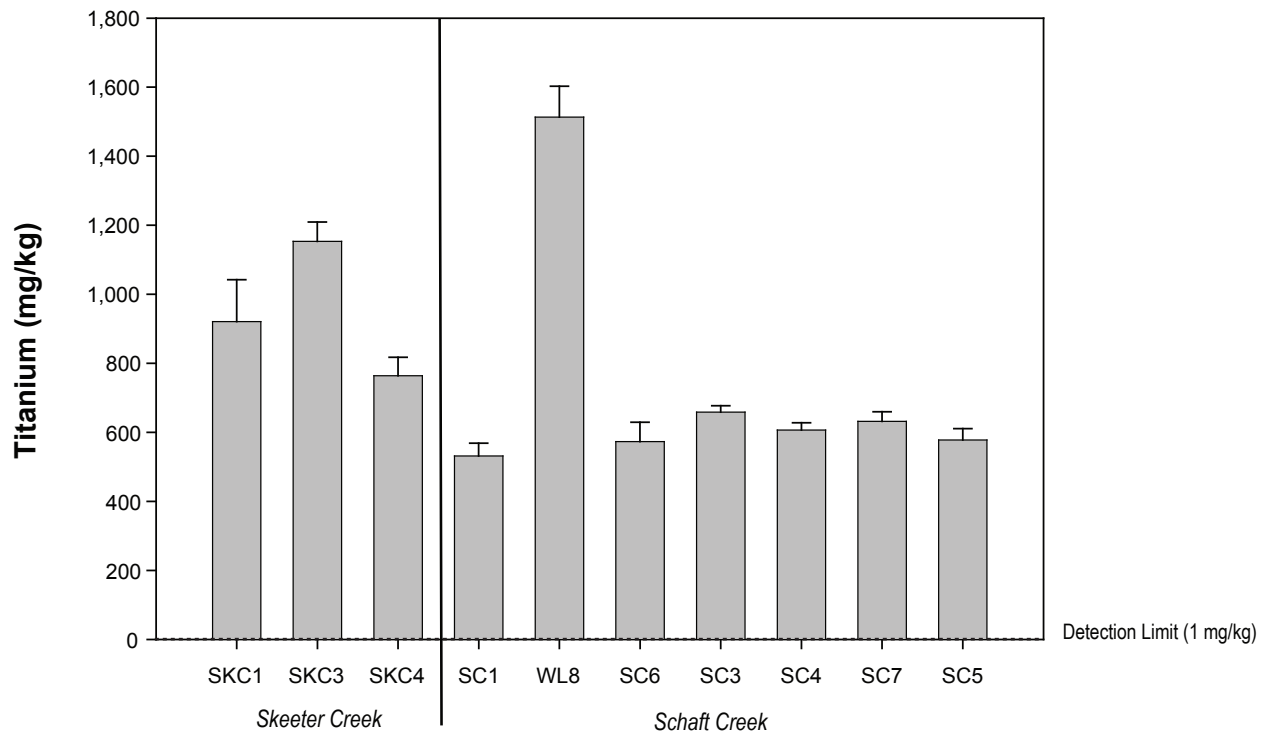
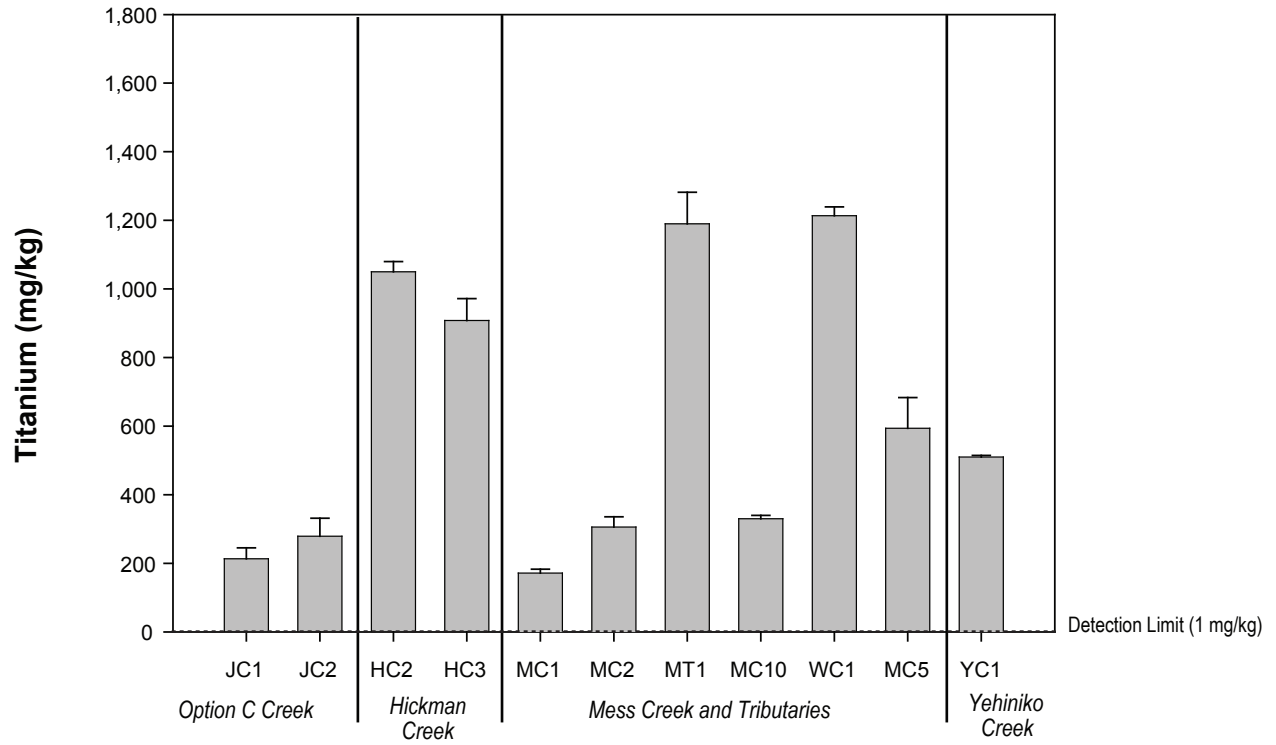


Streams

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

FIGURE 3.1-36



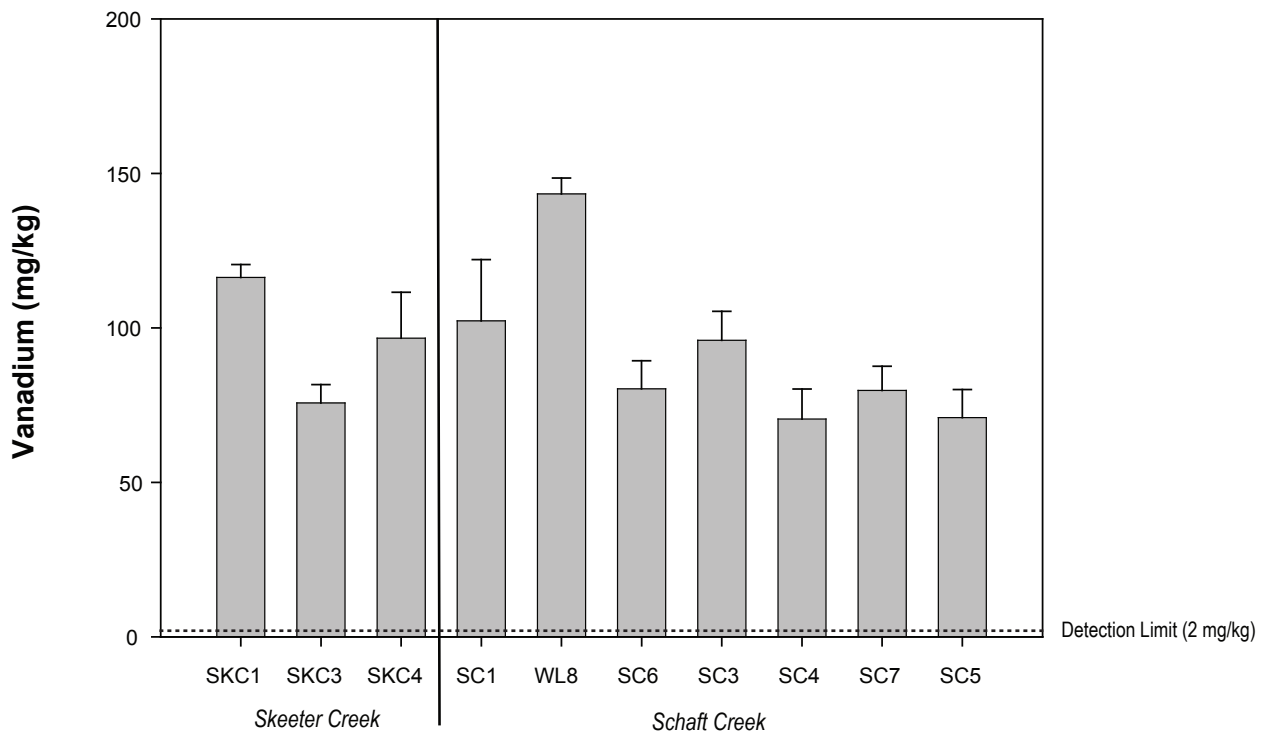
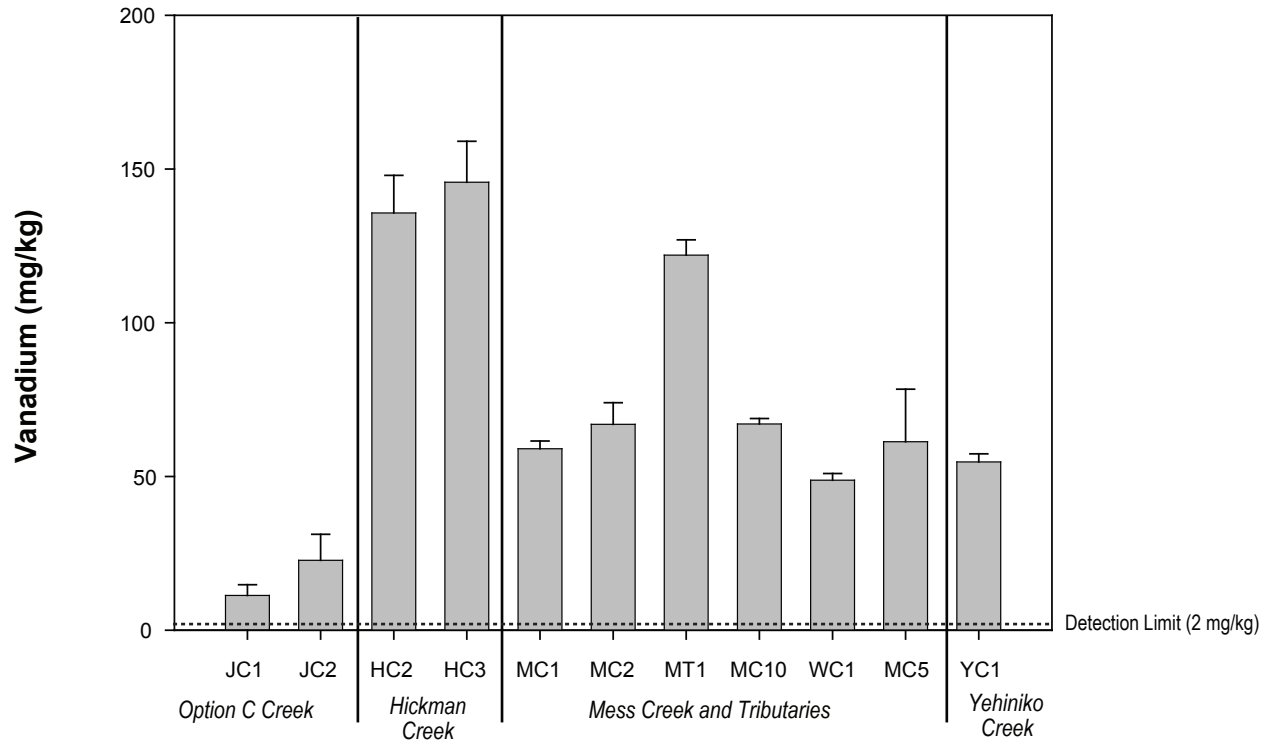


Streams

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

FIGURE 3.1-37



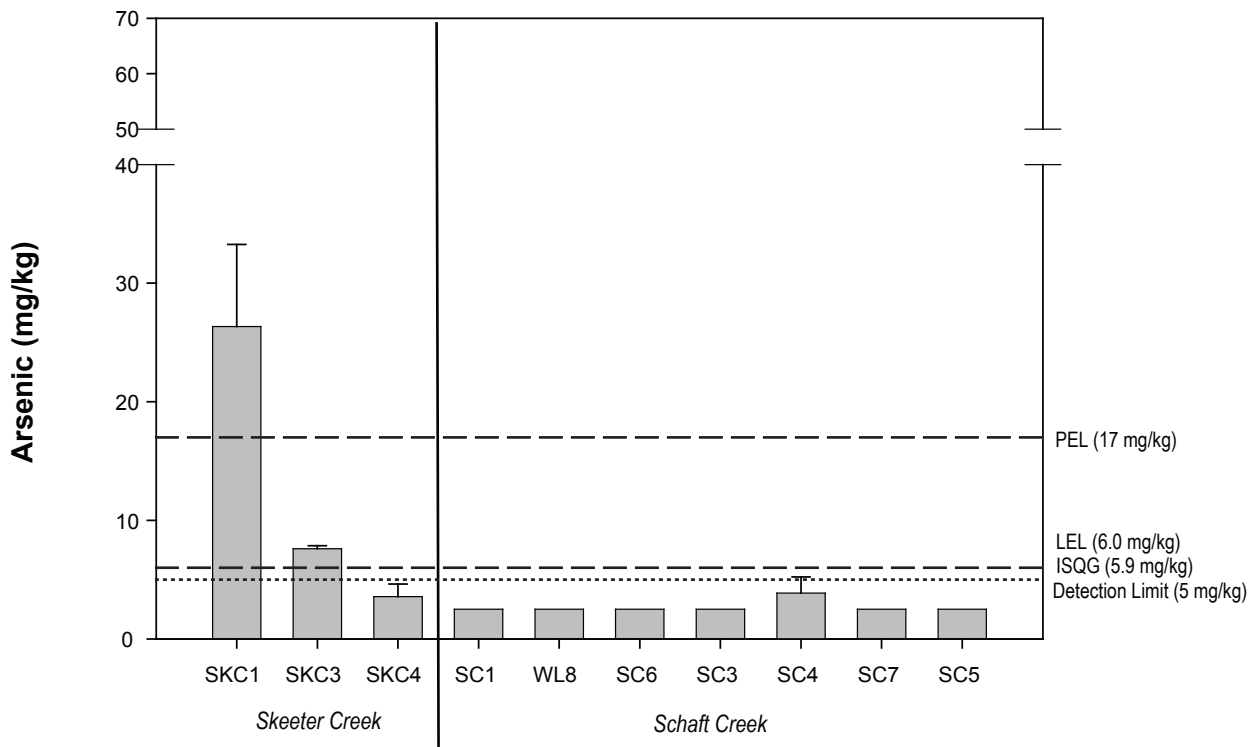
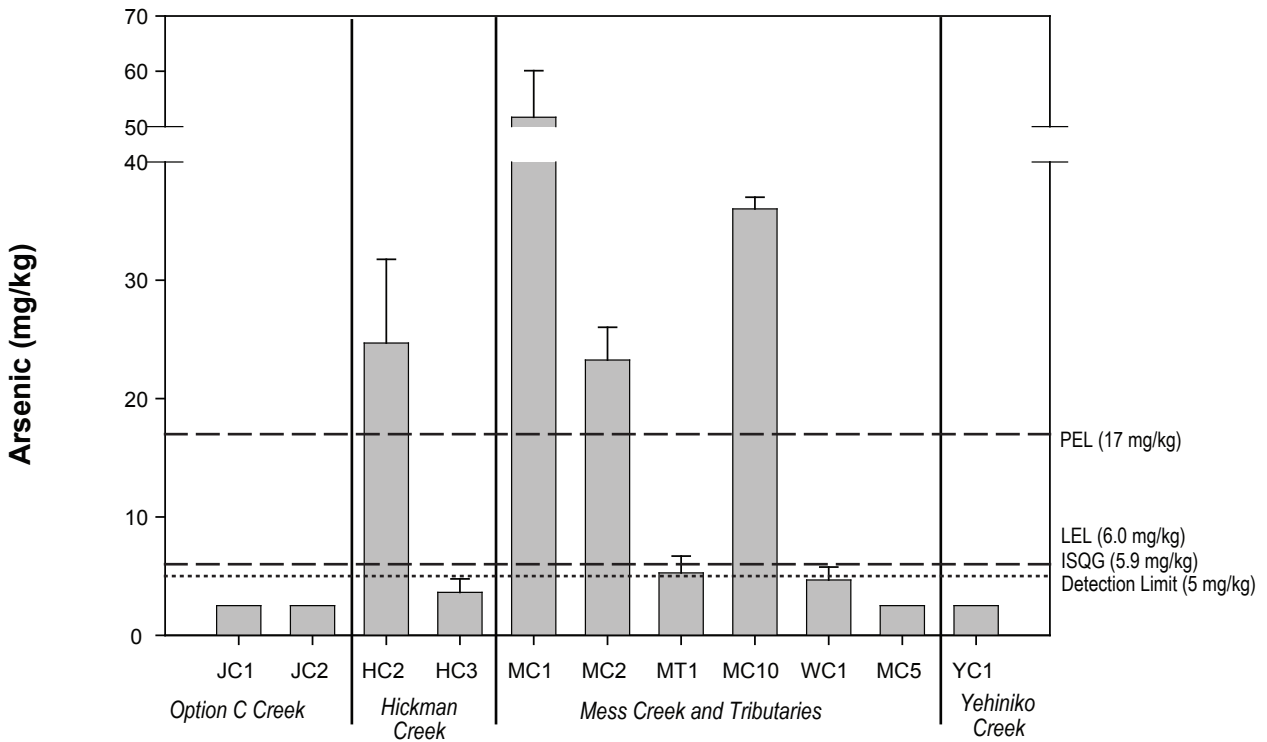


Streams

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

FIGURE 3.1-38





Streams

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

FIGURE 3.1-39



Results and Discussion

B.C. LEL and CCME ISQG guidelines (6.0 and 5.9 mg/kg, respectively) were exceeded by HC2, four Mess Creek Watershed sites (MC1, MC2, MT1 and MC10) and two Skeeter Creek Watershed sites (SKC1 and SKC3). The CCME PEL guideline (17 mg/kg) was also exceeded by HC2, MC1, MC2, MC10 and SKC1. The high arsenic value in the upper Mess Creek area (MC1) is consistent with what was found for that area in 2006 (Rescan, 2006).

Most average chromium concentrations were between 50 and 150 mg/kg. The total range was from 14 mg/kg at JC1 to 517 mg/kg at HC2 (Figure 3.1-40). All stream sites, except JC1, JC2, WC1 and SC1, exceeded the CCME ISQG (37.3 mg/kg) guideline. Several sites (HC2, HC3, MT1, SKC4, WL8, SC3 and SC7) also had one or more samples exceed the PEL (90 mg/kg) guideline. As was the case in 2006, the average chromium concentration within the Hickman Creek Watershed is more than three times that recorded at other sites.

Average copper concentrations exceeded the CCME ISQG (35.7 mg/kg) guideline at Hickman Creek, at most Mess Creek Watershed sites except WC1 and MC5, SKC1, and at SC1, WL8, SC6 and SC3 in Schaft Creek (Figure 3.1-41). Option C sites had the lowest copper concentrations and concentrations at SKC1 (96 mg/kg) were considerably higher than most sites.

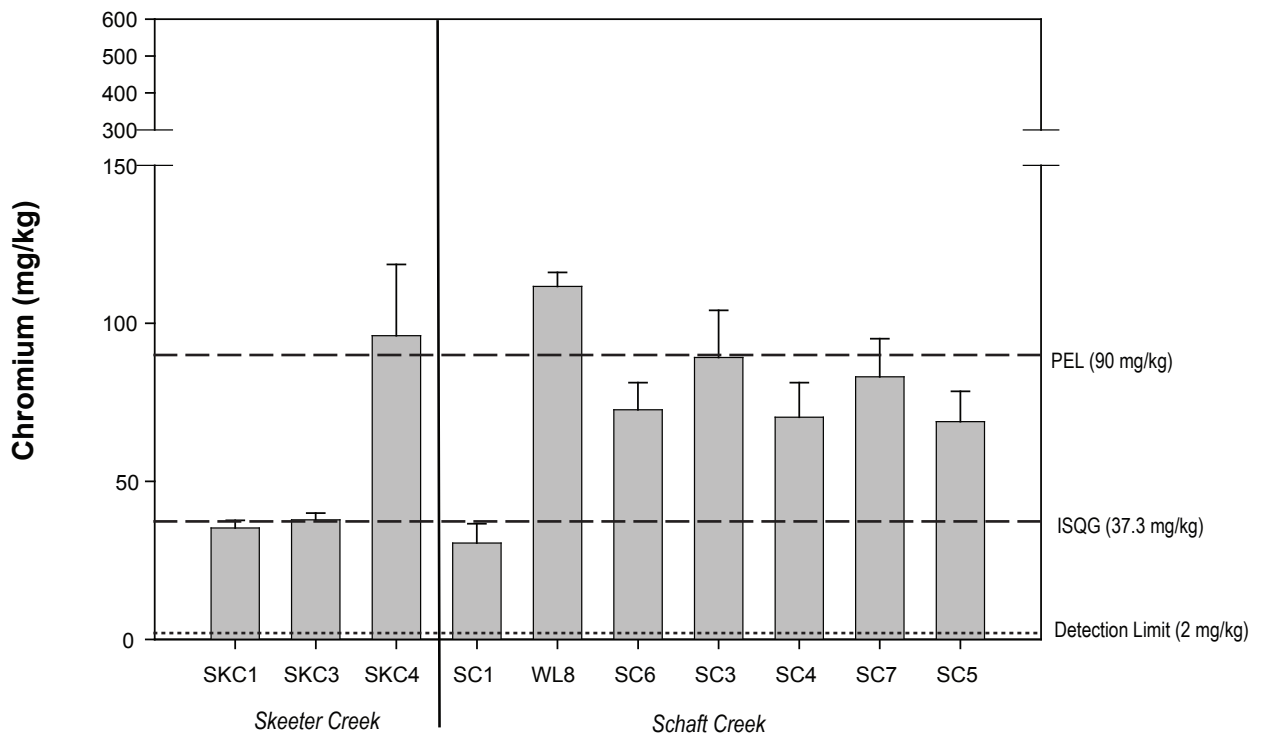
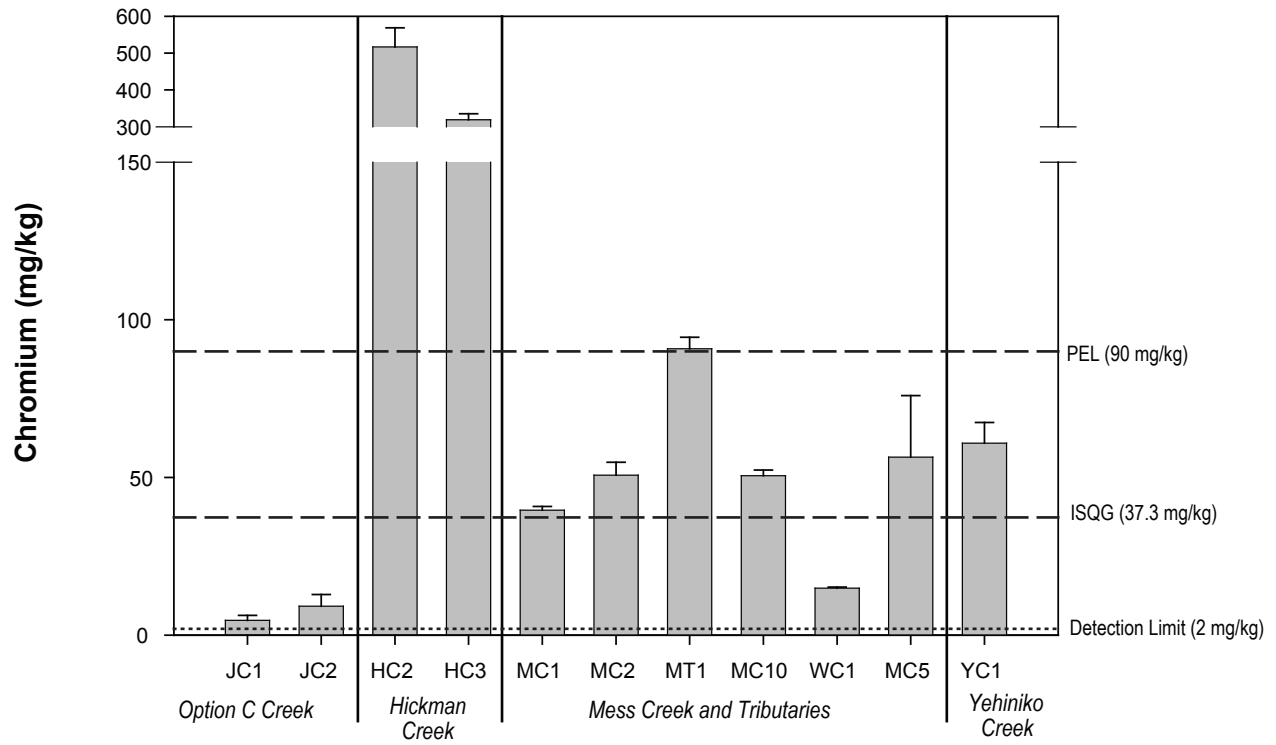
Most average iron concentrations fell between 20,000 and 50,000 mg/kg (Figure 3.1-42). All stream sites except JC1 and JC2 exceeded the B.C. LEL guideline (21,200 mg/kg). Eight sites exceeded the B.C. SEL (43,766 mg/kg) guideline including sites from Hickman, Mess, Skeeter and Schaft Creek watersheds.

Most sites had average mercury concentrations below or close to the detection limit of 0.005 mg/kg (Figure 3.1-43). All sites were well below ISQG (0.17 mg/kg) guidelines except MC1 (average of 0.21 mg/kg) and one site at SKC3 (0.46 mg/kg), which was responsible for driving up the average concentration.

Average nickel concentrations ranged from below the analytical detection limit (5 mg/kg) at JC1 and JC2 to 247 mg/kg at HC2 (Figure 3.1-44). The nickel concentration at HC2 was almost four times that seen at most sites. All sites except JC1, JC2 and SC1 exceeded the LEL guidelines of 16 mg/kg and only HC2, HC3 and YC1 exceeded the SEL guideline of 75 mg/kg.

Average zinc concentrations ranged from 9 (JC1) to 149 mg/kg (WC1) (Figure 3.1-45). Similar to 2006, only WC1 and SKC1 exceeded the CCME ISQG (123 mg/kg) guideline. All other sites had average zinc concentrations below 80 mg/kg.

The values discussed above are concentrations from whole sediment samples. Three stream sites had more than 20% fines (MC10, SC1 and WL8). Prior to normalizing metal concentrations MC10 had samples that exceeded guidelines for arsenic, all three sites exceeded guidelines for chromium, copper, and iron and WL8 and MC10 had exceeded guidelines for nickel. After these concentrations were normalized to the fraction of sediment that was less than 63µm, the highest available guideline (CCME PEL) for arsenic (MC10 only), chromium and copper were exceeded by all samples above detection limits. The SEL for iron (43,766 mg/kg) was exceeded at all three sites and mercury concentrations exceeded the CCME ISQG (0.17 mg/kg) at MC10. All SC1 samples exceeded the LEL for nickel (16 mg/kg) and the ISQG for zinc (123 mg/kg). Both WL8 and MC10 exceeded the SEL for nickel (75 mg/kg) and the ISQG for zinc.



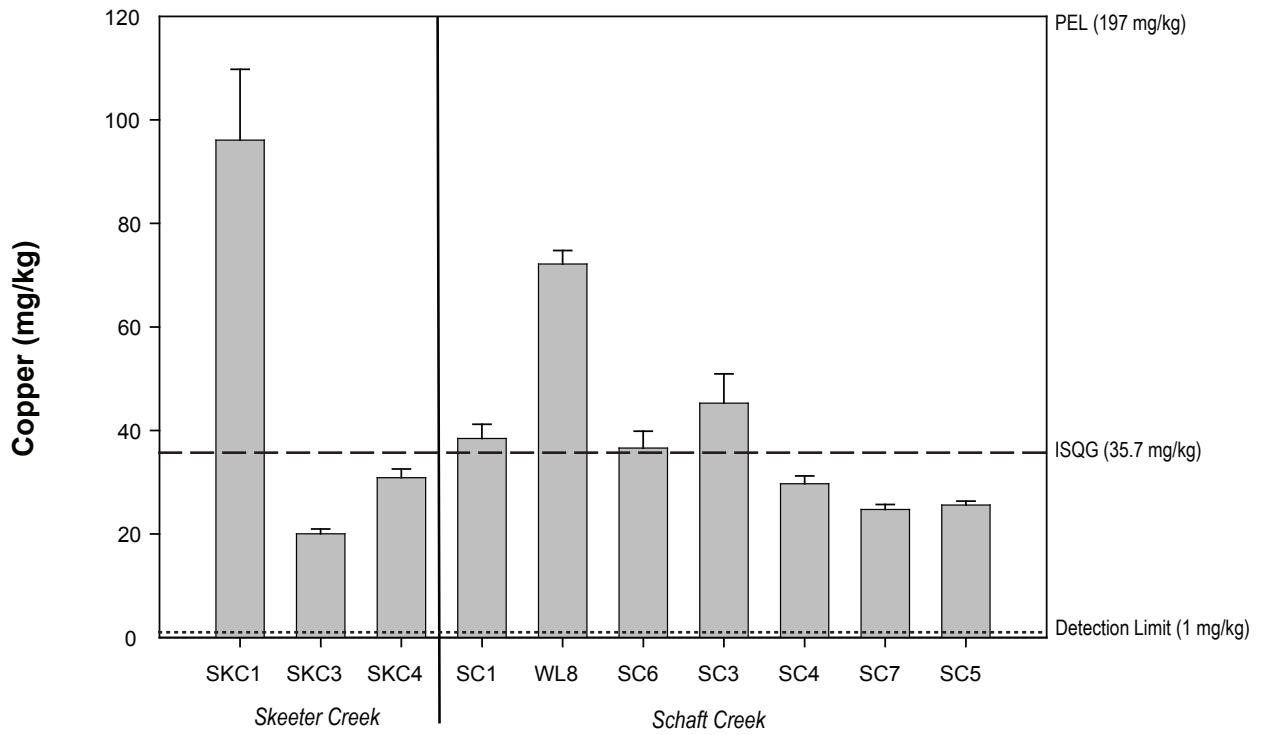
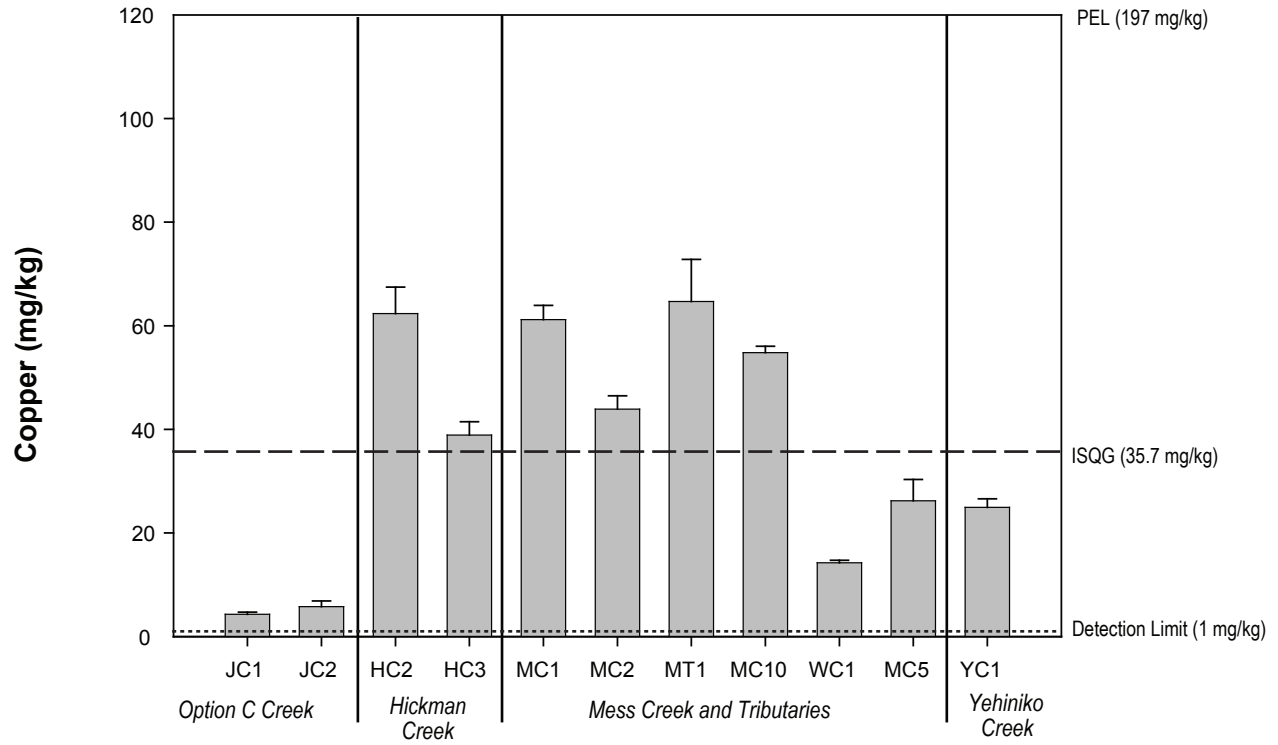
Streams

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

FIGURE 3.1-40



Chromium Concentrations in Stream Sediments, 2007



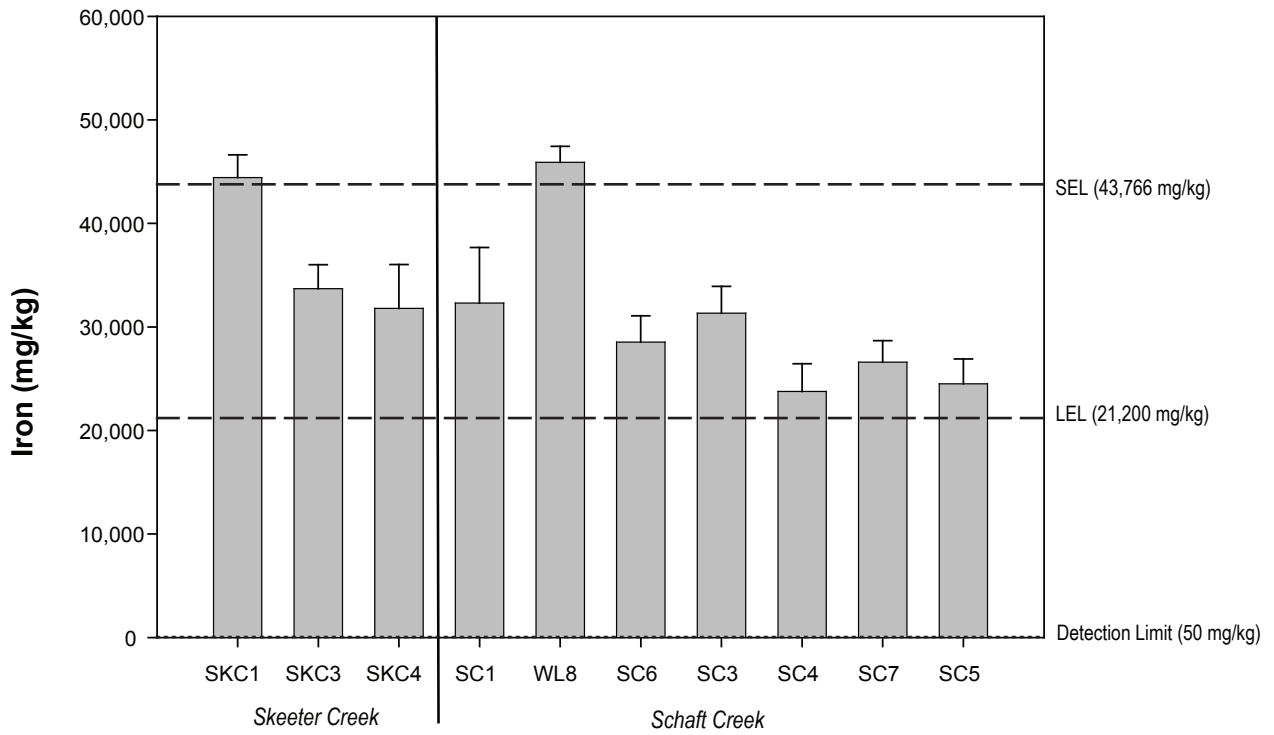
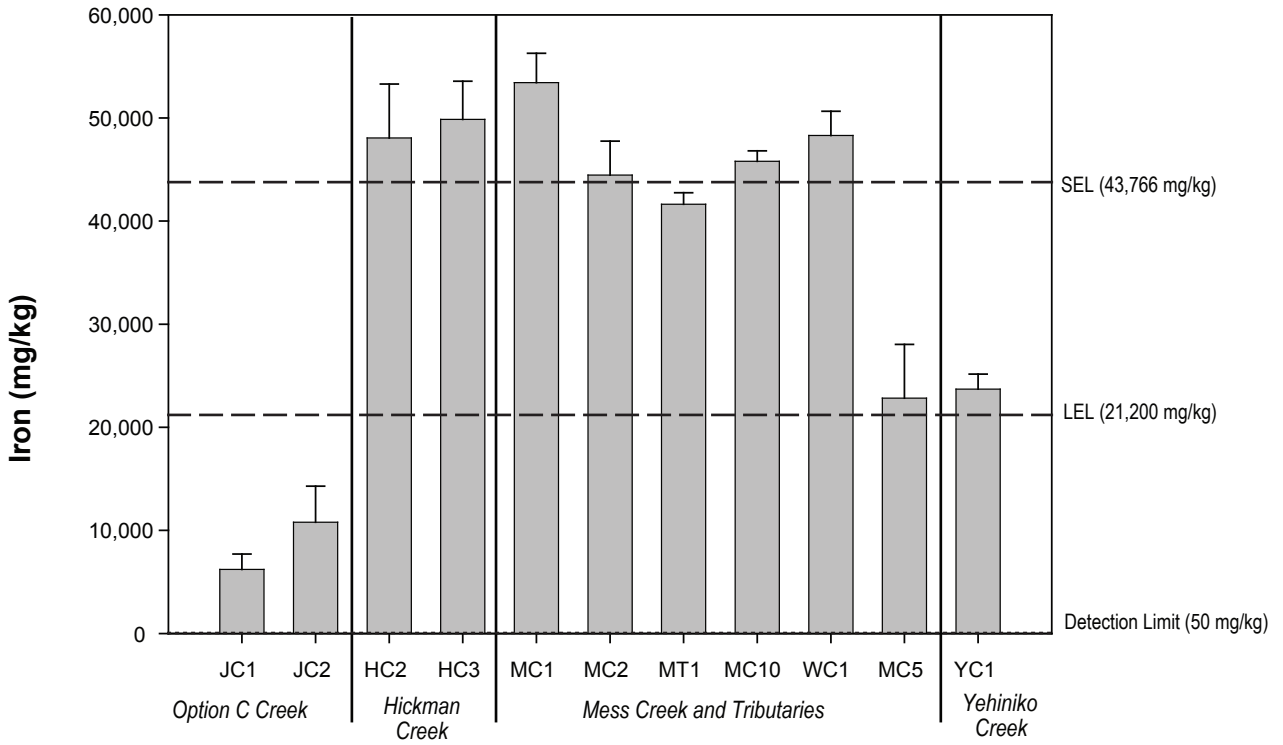
Streams

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

FIGURE 3.1-41



Copper Concentrations in Stream Sediments, 2007



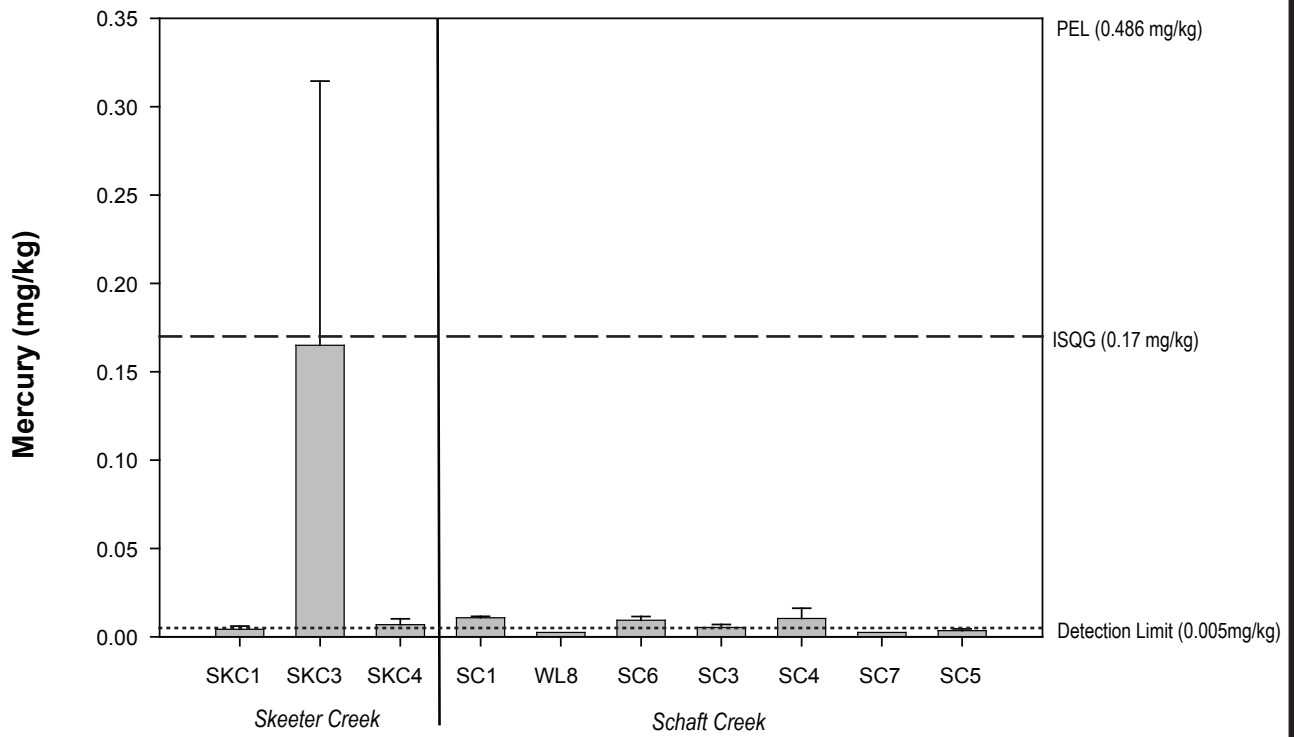
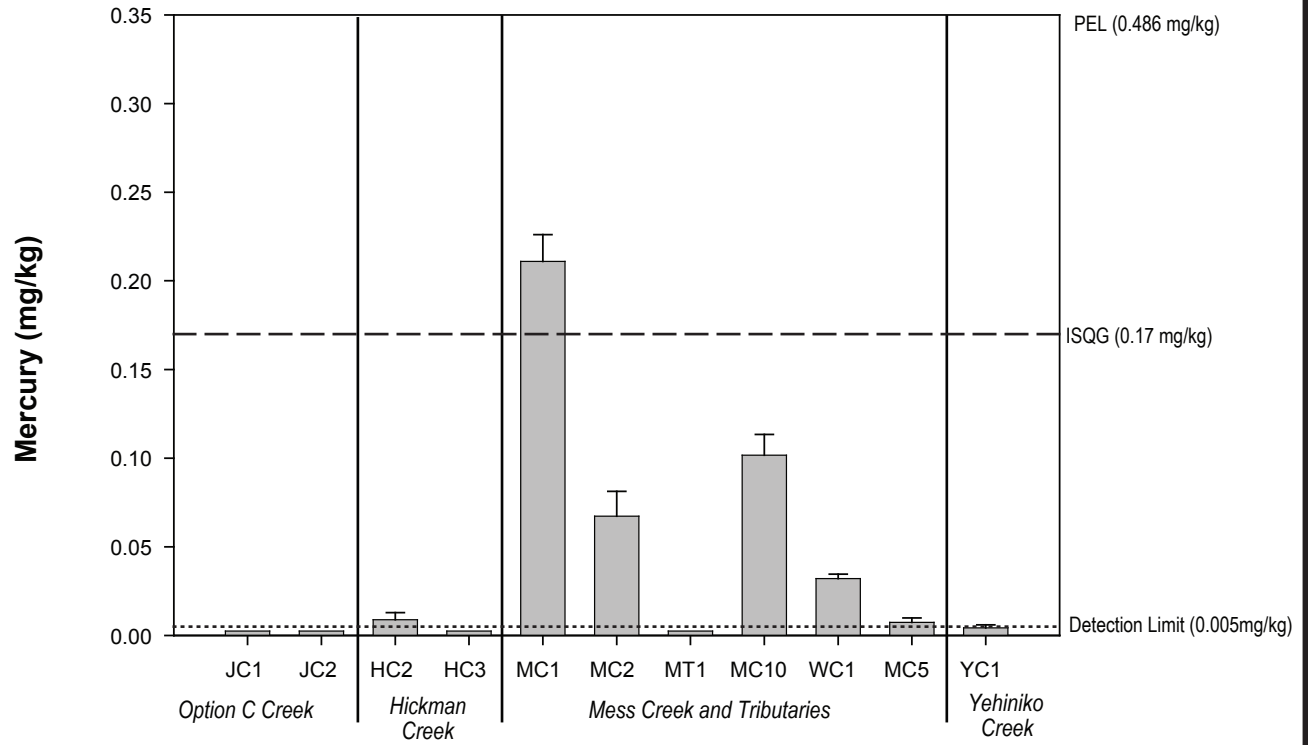
Streams

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

FIGURE 3.1-42



Iron Concentrations in Stream Sediments, 2007



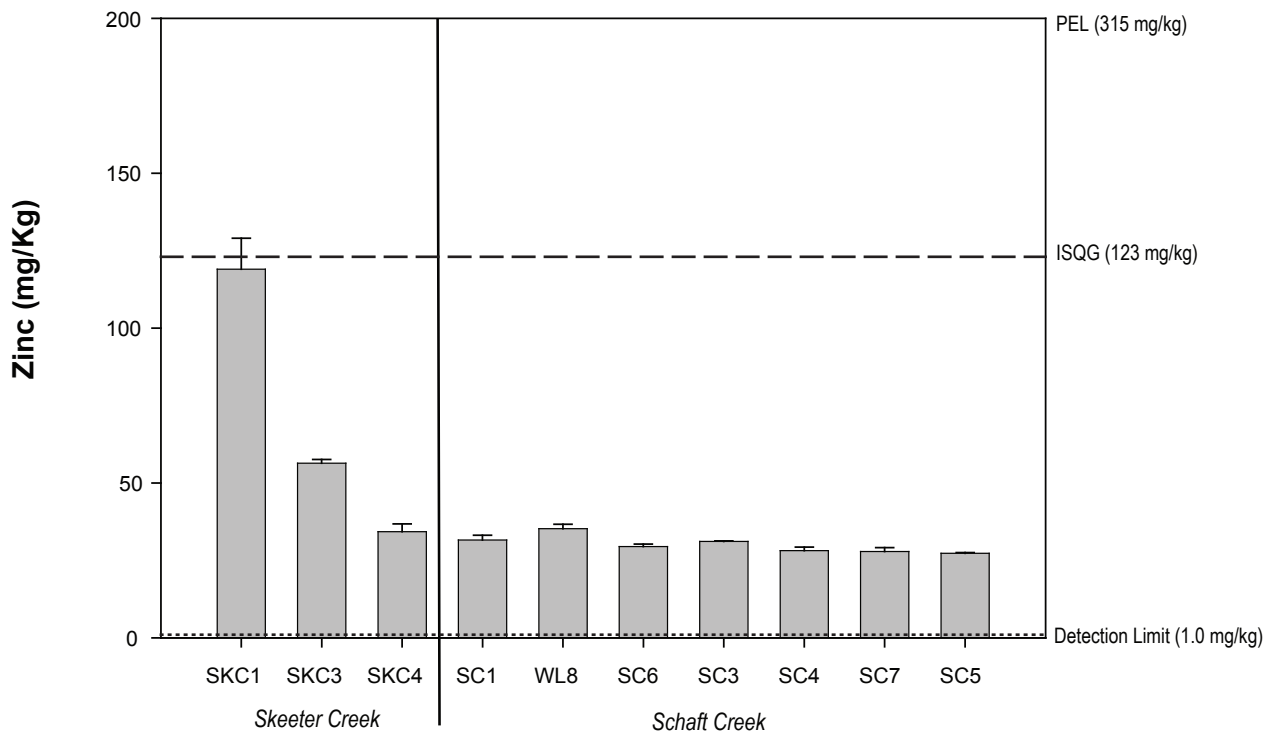
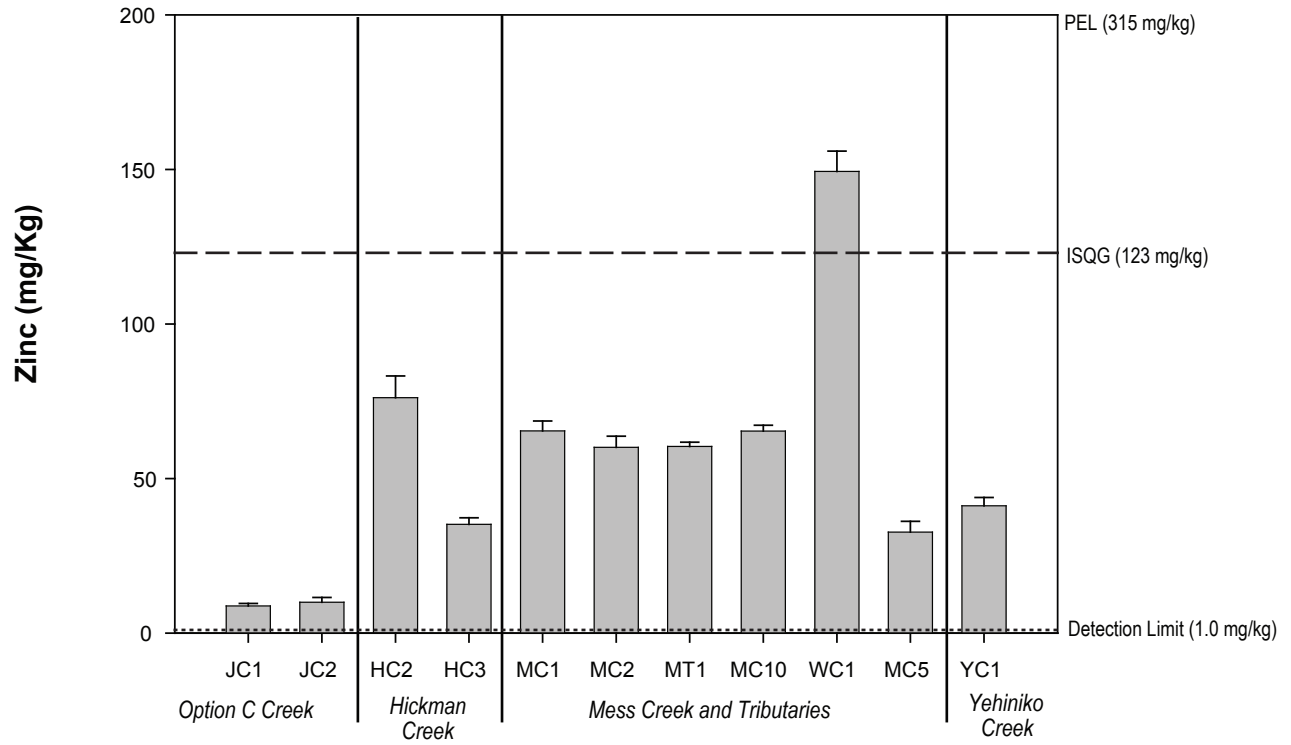
Streams

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

FIGURE 3.1-43



Mercury Concentrations in Stream Sediments, 2007



Streams

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

FIGURE 3.1-45



Zinc Concentrations in Stream Sediments, 2007

3.1.3 Primary and Secondary Producers

3.1.3.1 Periphyton

All stream periphyton taxonomic data can be found in Appendix 3.1-8. Chlorophyll *a* concentrations were used to calculate biomass and these data are in Appendix 3.1-9.

Biomass and Density

It should be noted that the three cyanophyte species that were identified in these streams were counted as mm/cm² because of their filamentous nature. This differs from cells/cm² but for the sake of comparison 1 mm/cm² was made equivalent to the cell counts used for all other species. This is not expected to impact analyses significantly since these species were generally rare across sites. Stream sites displayed generally low productivity with average periphyton biomass below 0.8 µg/cm² chlorophyll *a* at all sites except HC3, MC1 and YC1 (Figure 3.1-46). Average biomass ranged from 0.02 µg/cm² (SC1 and WL8) to 1.45 µg/cm² (MC1). Average periphyton density ranged from 20 cells x 10⁶/m² at WL8 to 3,342 cells x 10⁶/m² at WC1 (Figure 3.1-47). The greatest contribution to the cell density found at WC1 came from the diatom *Hannaea arcus* and the chrysophyte *Hydrurus foetidus*, which were present in numbers that were at least an order of magnitude greater than other species.

Relative Abundance

The periphyton communities in these streams were primarily composed of either diatoms or chrysophytes (Figures 3.1-48 a-d). Diatoms composed 19 to 100% of these communities while chrysophytes composed <1 to 81%. Smaller proportions (approximately 1%) of the communities were composed of cyanophytes, chlorophytes and cryptophytes (10% at WC1), which are often rare in low productivity streams.

Richness and Diversity Indices

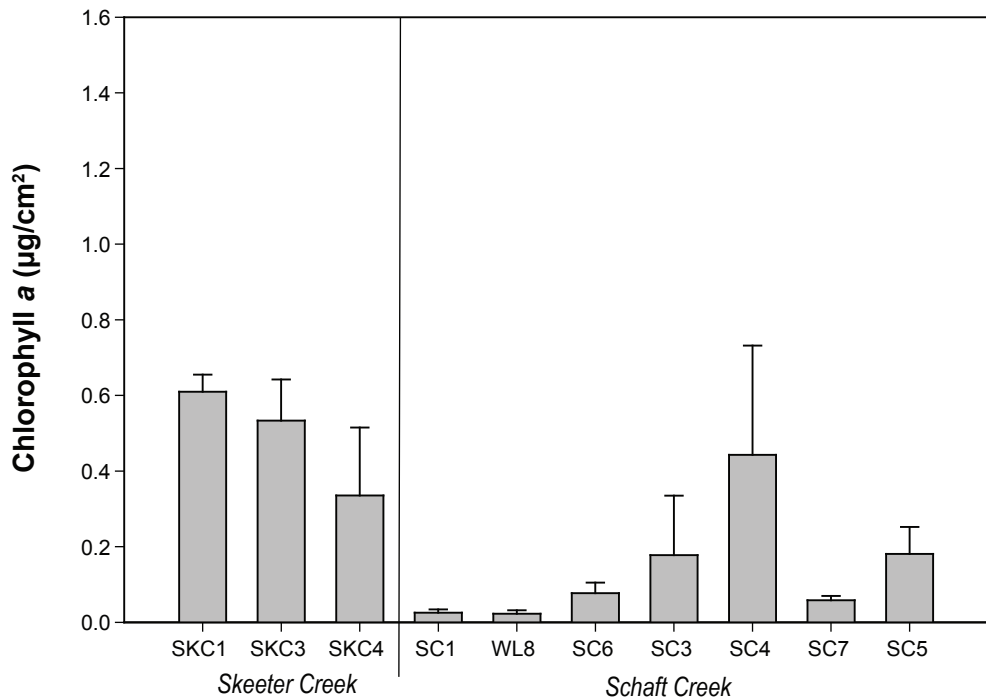
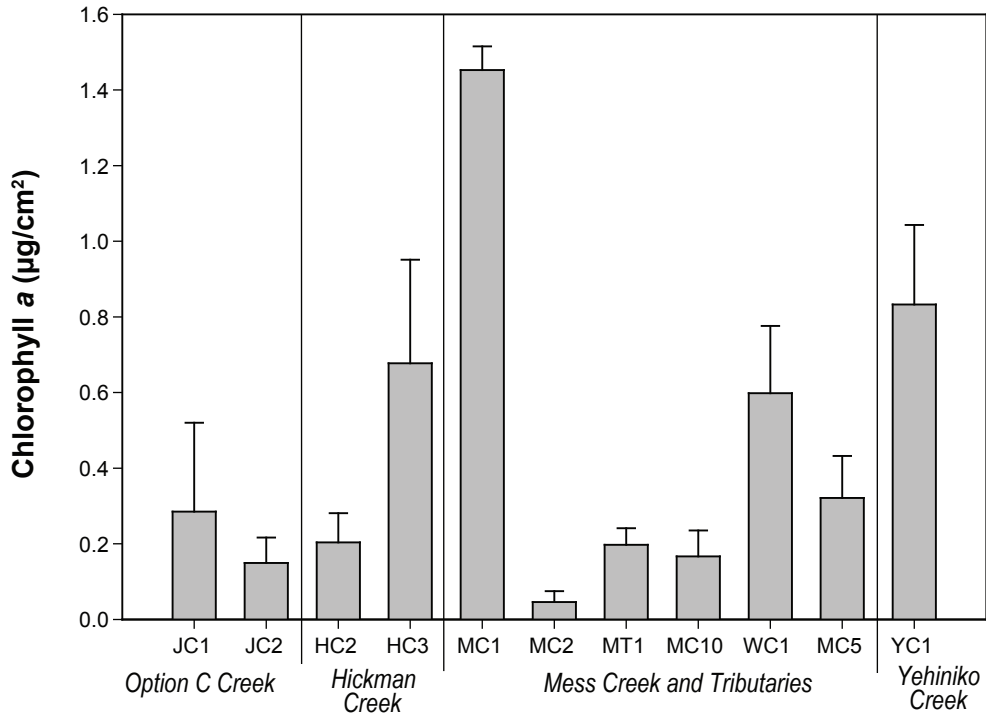
Average periphyton genus richness ranged from 3 (SC1) to 9 (SKC4) taxa among stream sites (Figure 3.1-49). Most streams had richness values between 4 and 8 taxa. Average Simpson diversity index values ranged from 0.3 at SC1 to 0.7 at YC1 (Figure 3.1-50). Other than the Yehiniko site, the Skeeter Watershed sites generally had the highest average diversity. 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 0.4 at SC4 to 0.9 at WL8 (Figure 3.1-51).

3.1.3.2 Benthic Invertebrates

In 2007, benthic invertebrate communities were sampled in 21 streams. All benthos taxonomic data can be found in Appendix 3.1-10.

Density and Relative Abundance

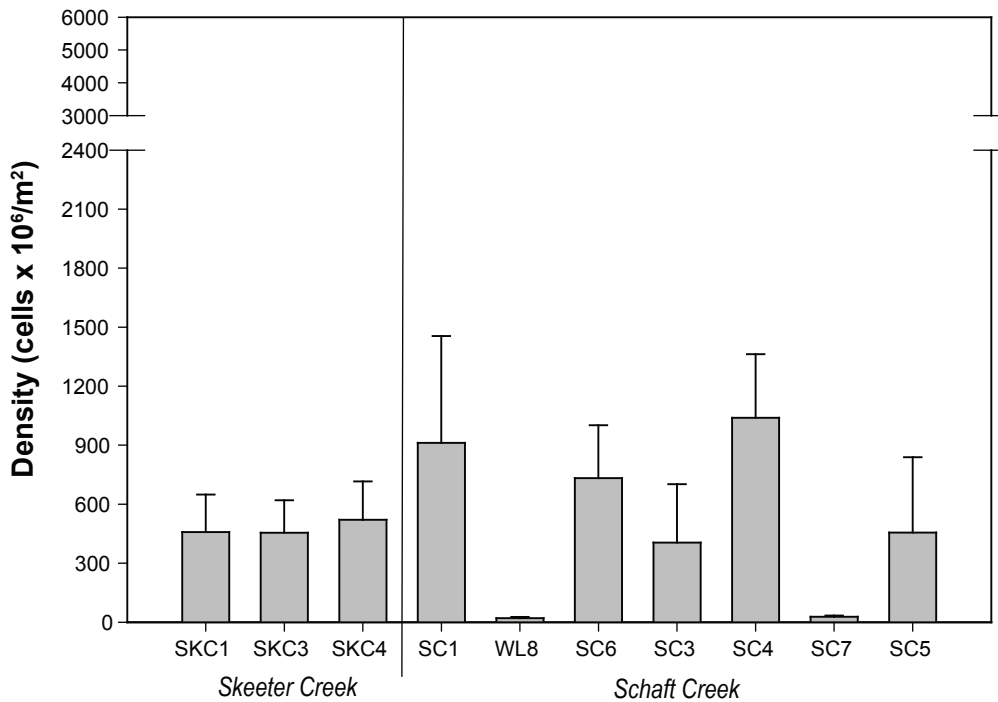
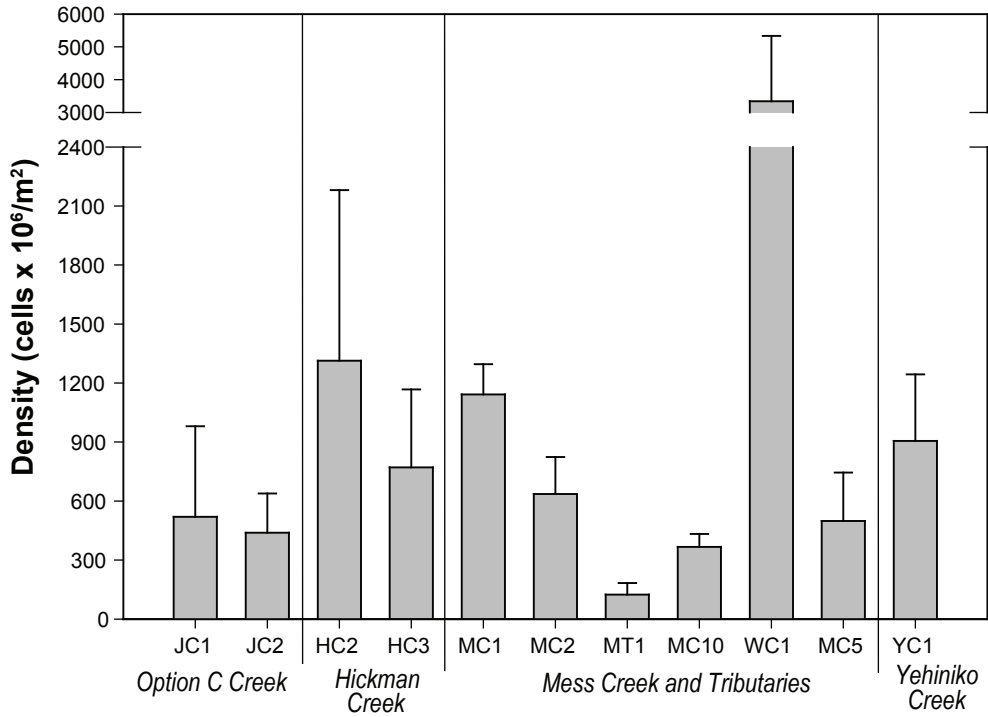
Density of secondary producers is often related to the levels of primary productivity available to the community. It may also be low during extreme environmental conditions when populations of intolerant taxa are reduced.



Note: Error bars represent standard error of the mean.

FIGURE 3.1-46

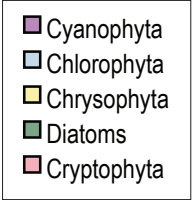
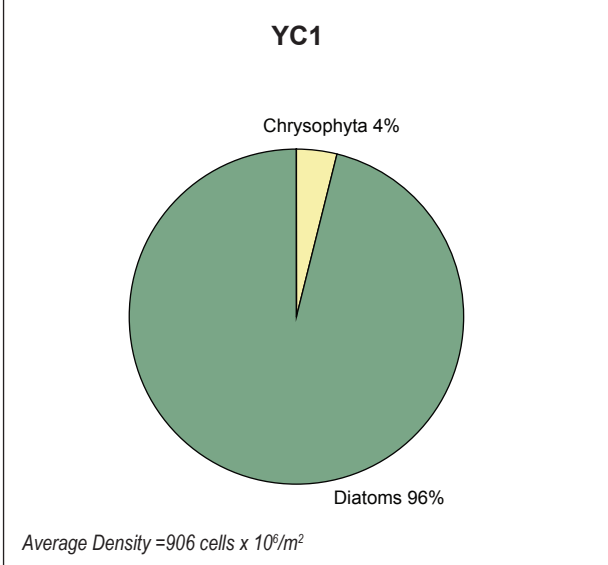
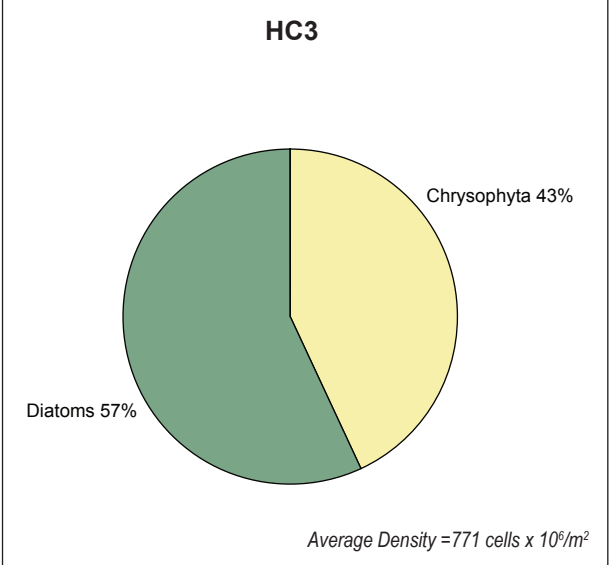
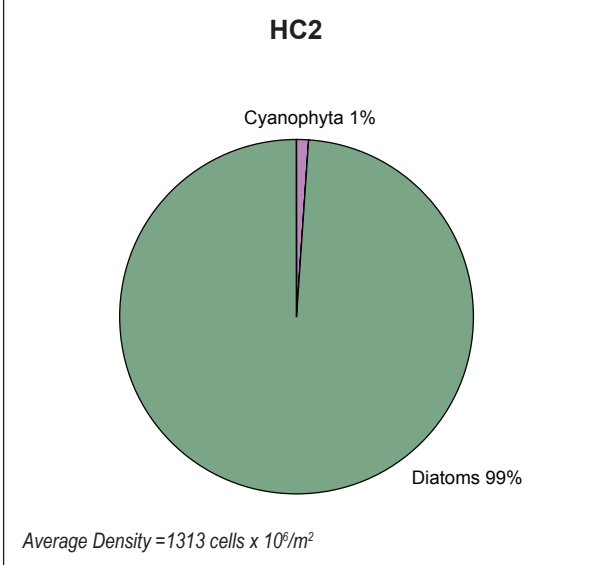
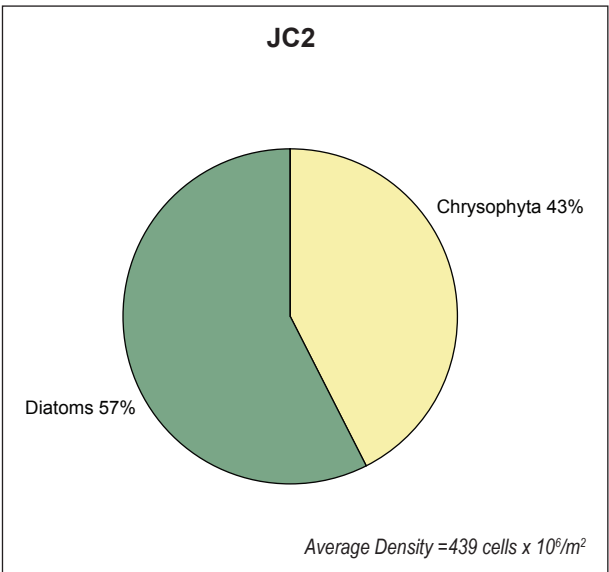
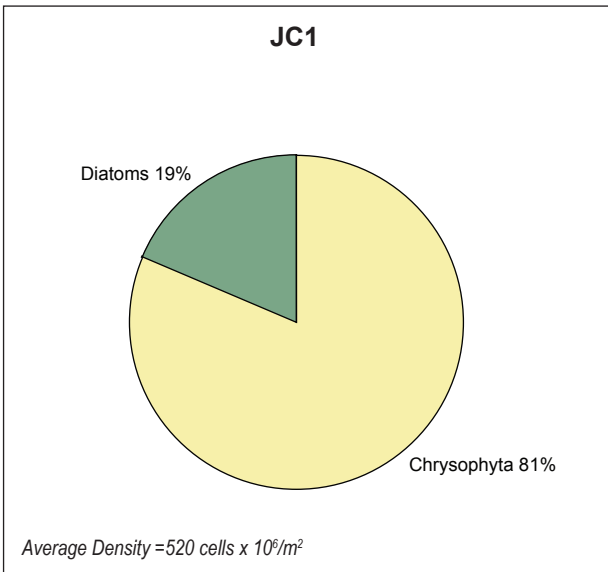


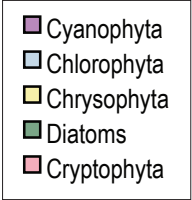
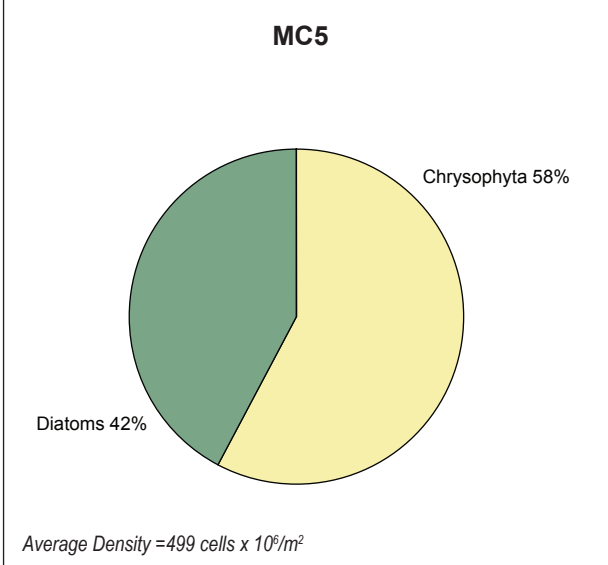
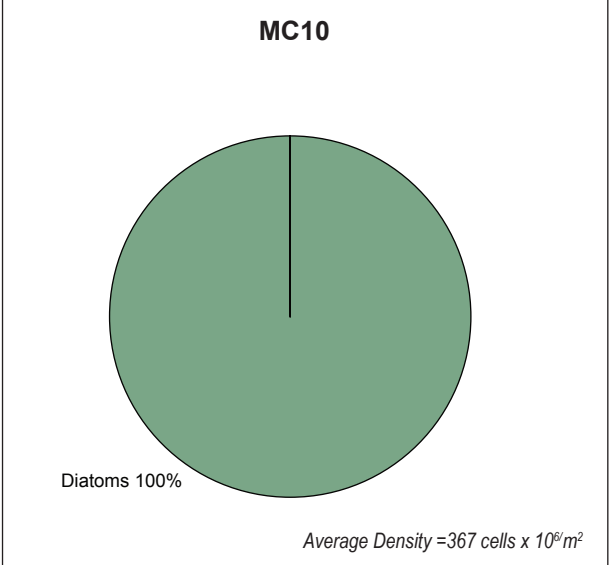
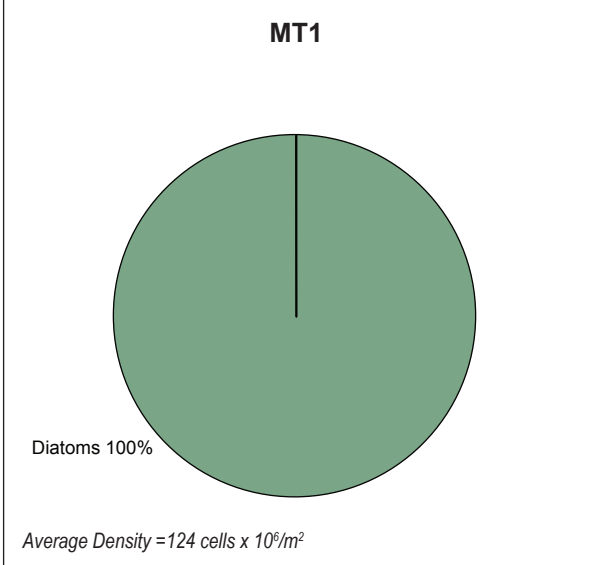
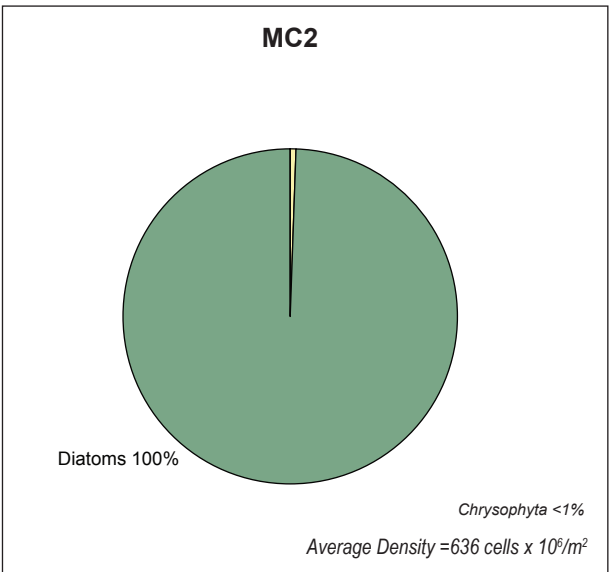
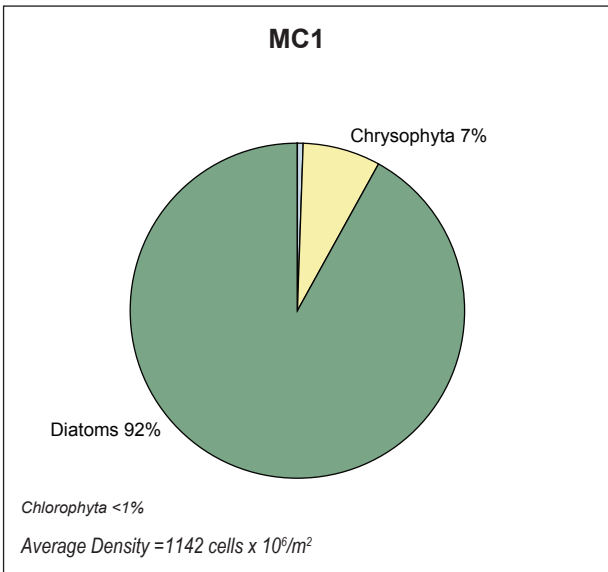


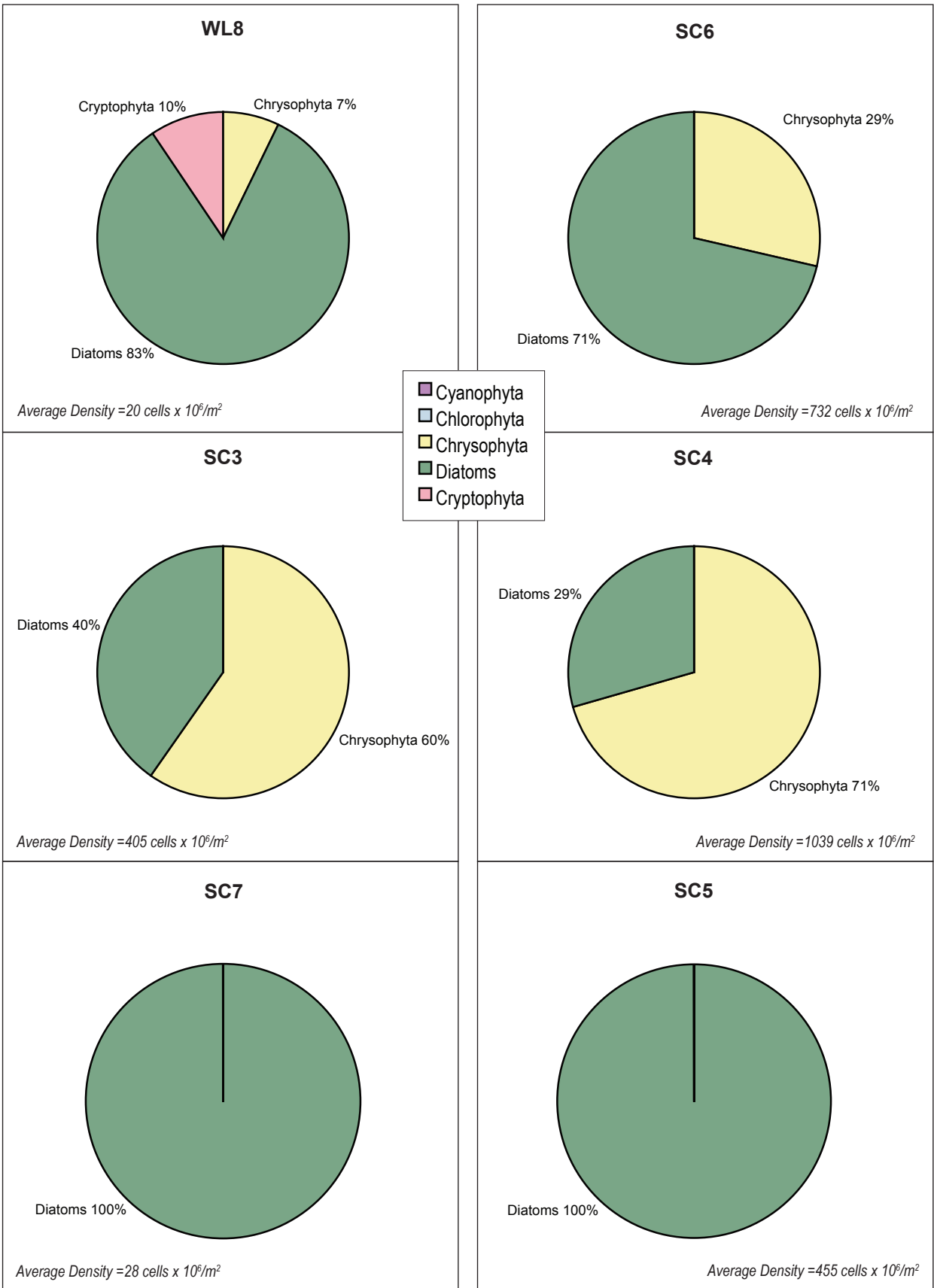
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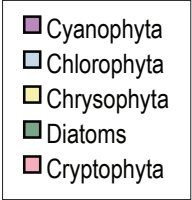
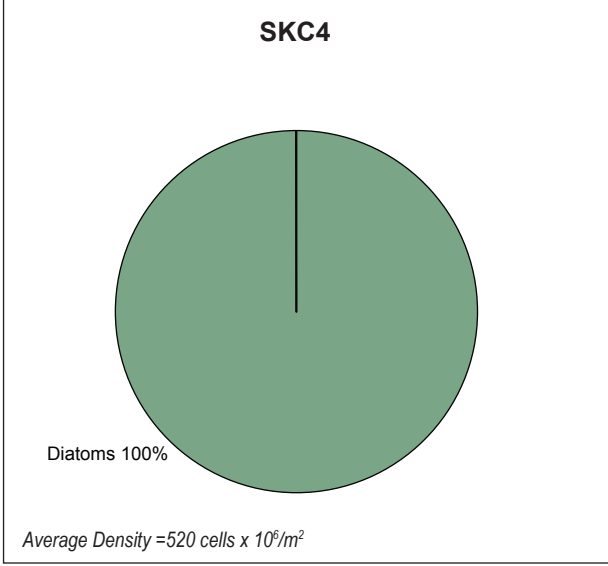
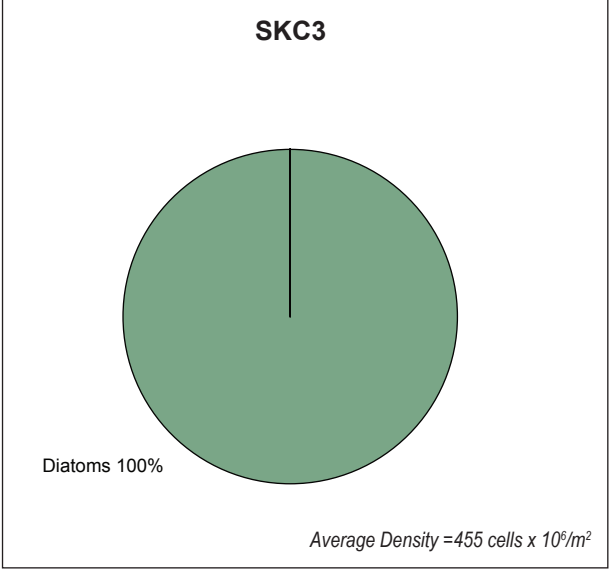
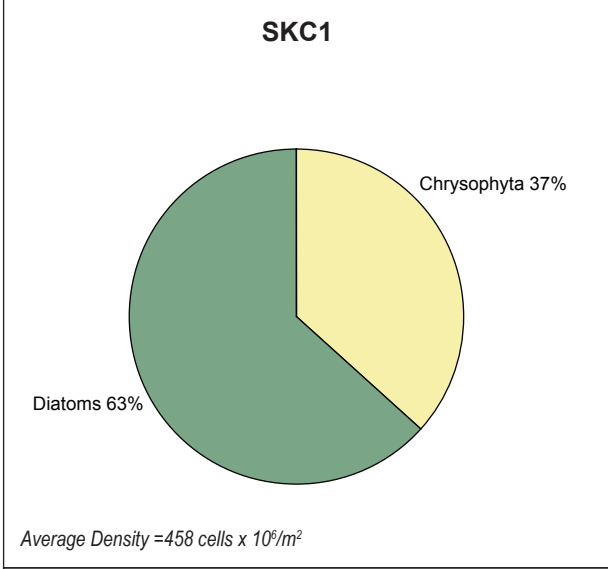
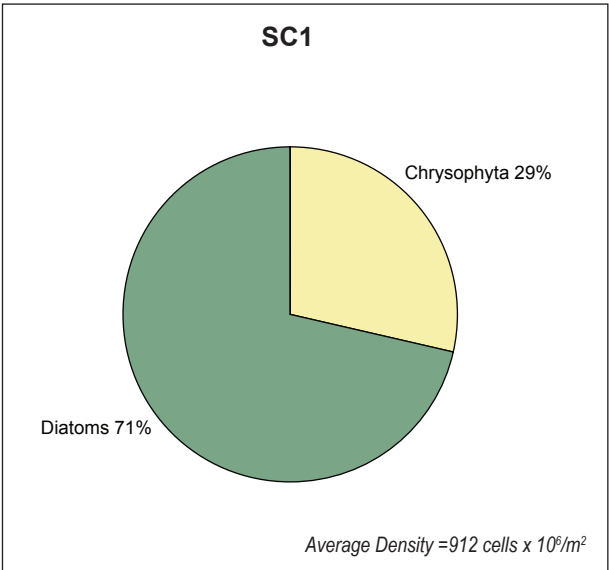
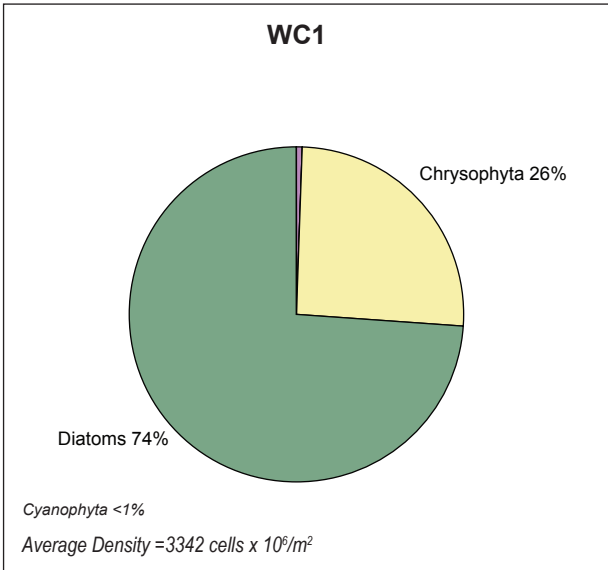
FIGURE 3.1-47

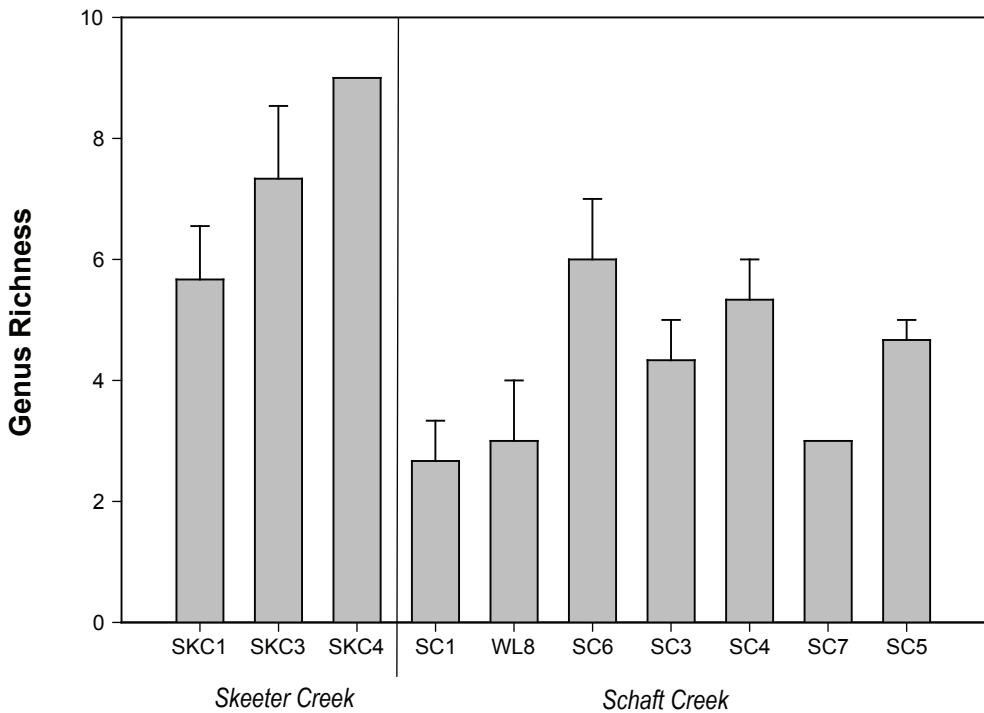
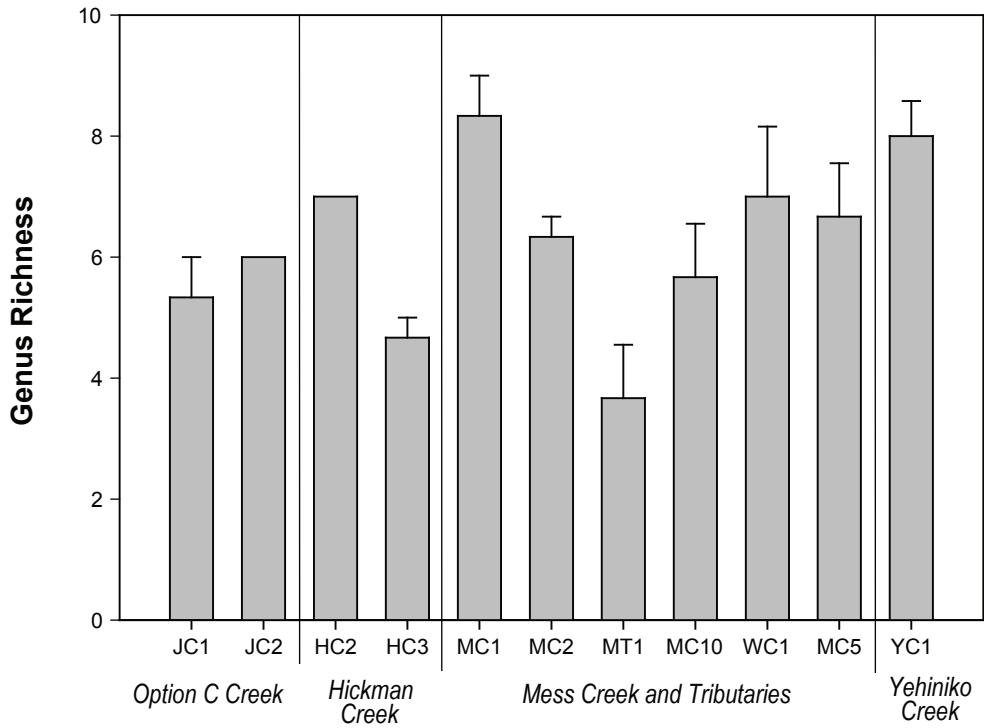








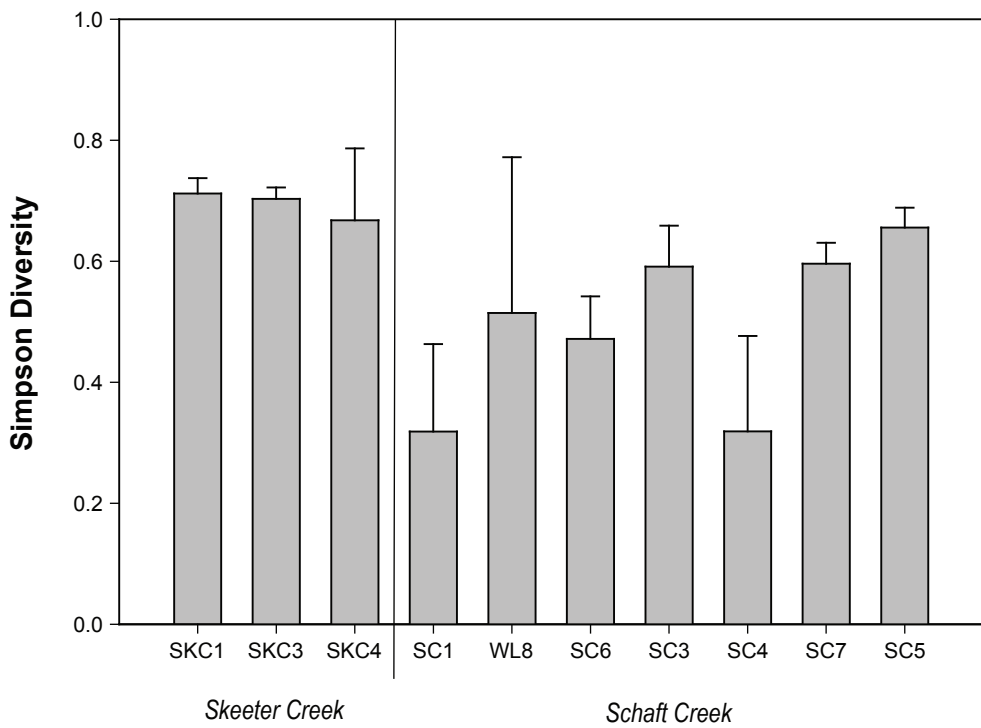
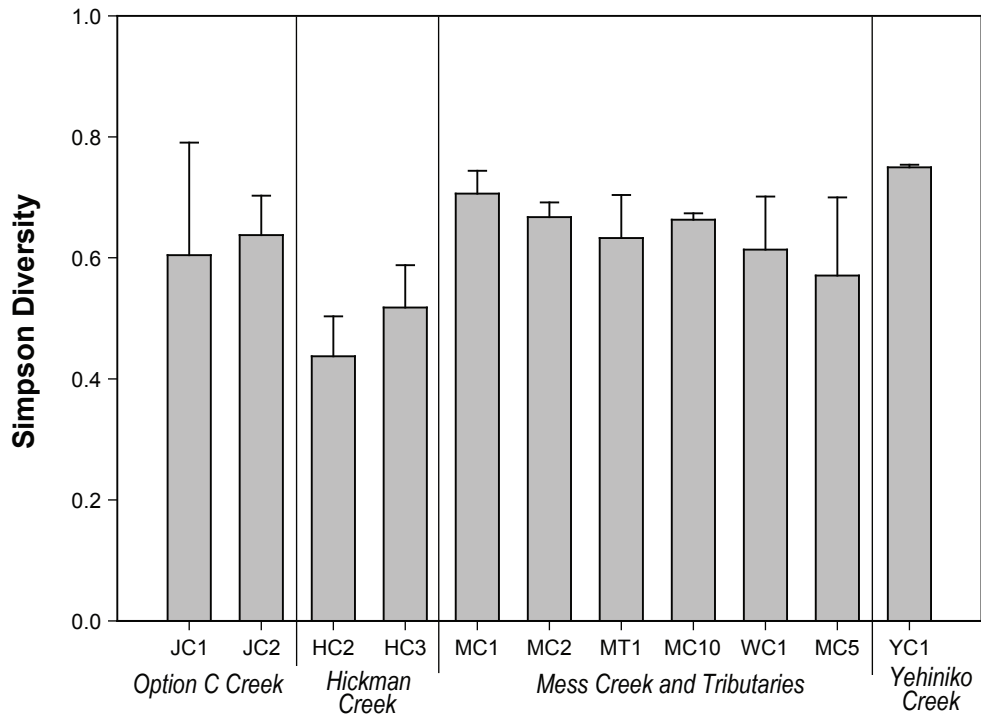




Note: Error bars represent standard error of the mean.

FIGURE 3.1-49

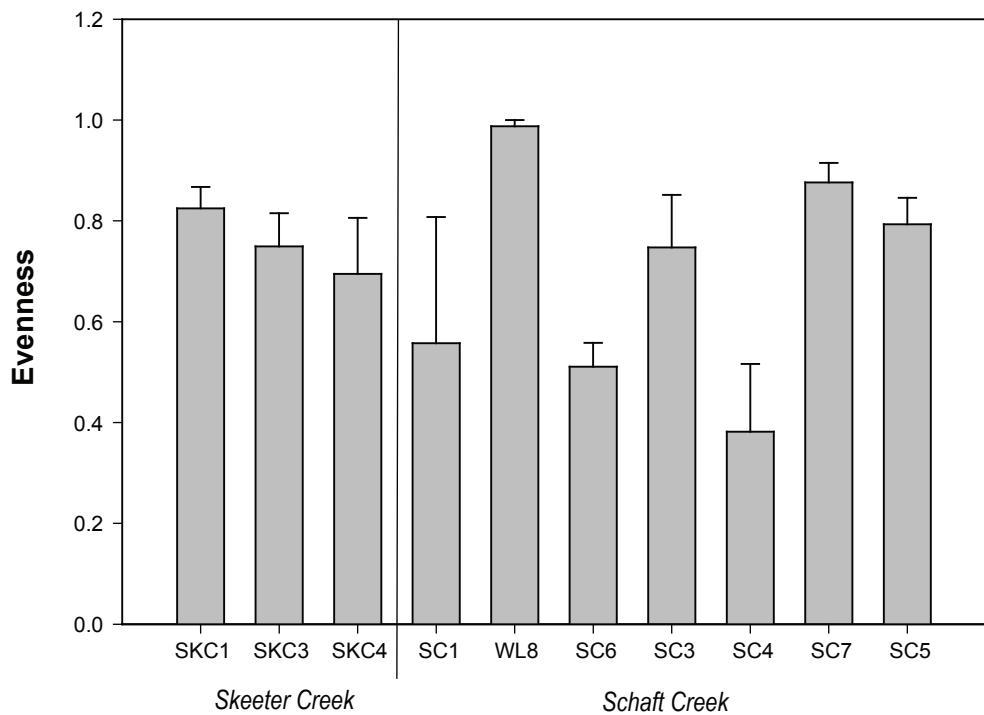
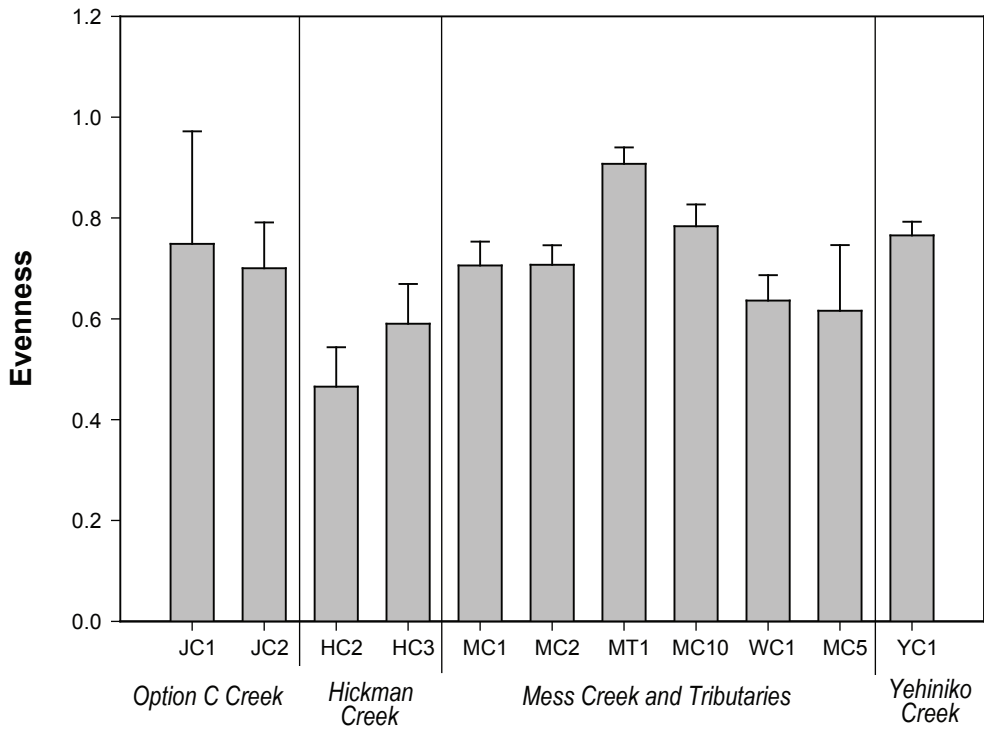




Note: Error bars represent standard error of the mean.

FIGURE 3.1-50





Note: Error bars represent standard error of the mean.

FIGURE 3.1-51



The average density of benthic invertebrates across all stream sites was 2,025 organisms/m². Density ranged from 301 organisms/m² at MC2 to 22,050 organisms/m² at SCK3 (Figure 3.1-52). In addition to the average density of SCK3 being almost ten times greater than other sites, the average density for the Skeeter sites (9,308 organisms/m²) was greater than all other watersheds which had average densities below 1,600 organisms/m². SCK3 also had the greatest benthos density in 2006. This stream site is lined with overhanging vegetation (Plate 3.1-1) that would contribute a considerable amount terrestrially sourced nutrients supporting the benthic invertebrate community.

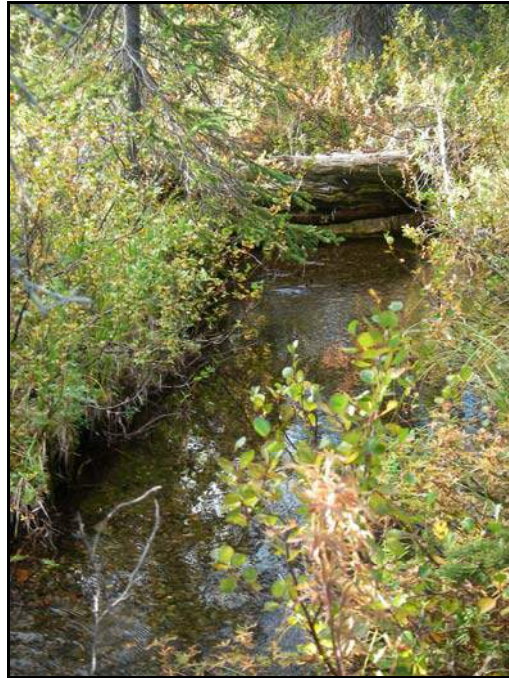
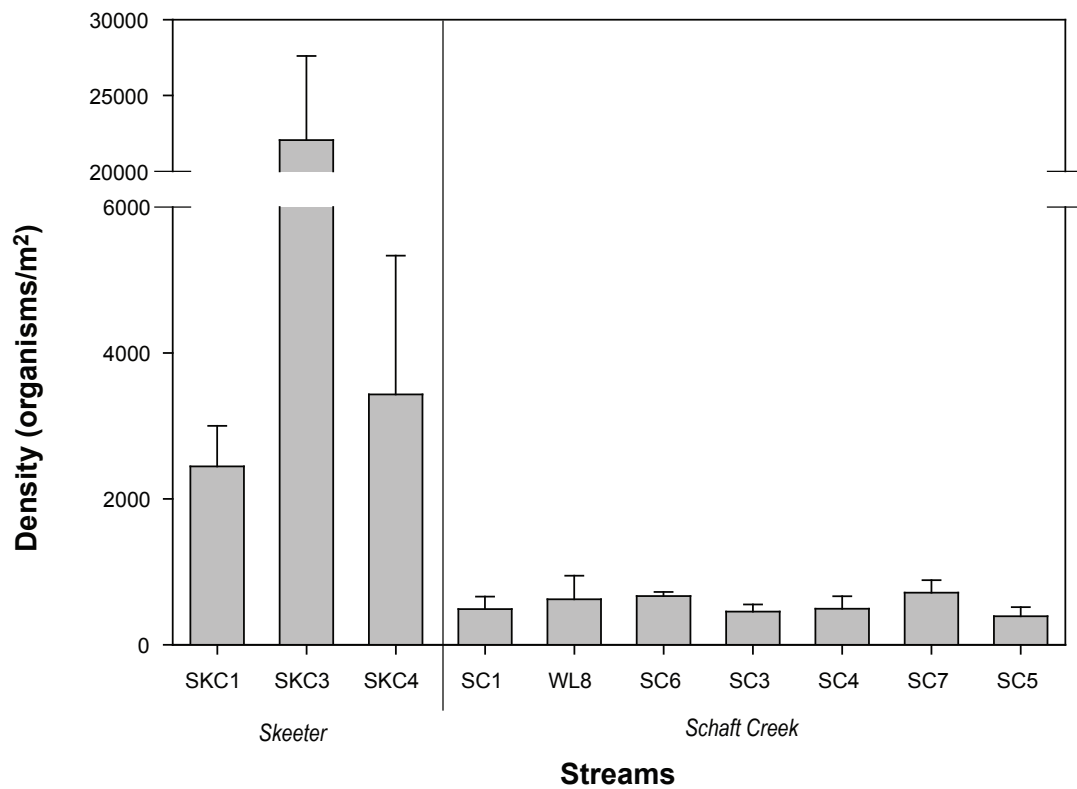
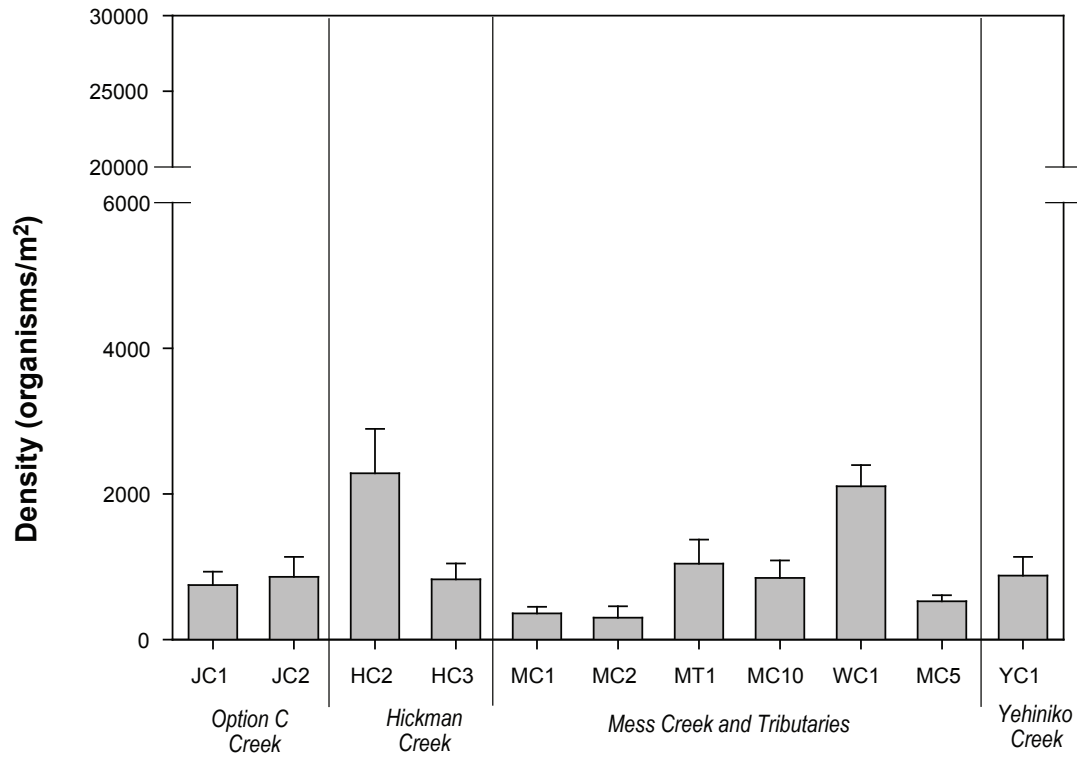


Plate 3.1-1 Dense vegetation along the SCK3 stream.

As was the case in 2006, the most dominant taxonomic groups at all stream sites were stoneflies (Plecoptera), dipterans and mayflies (Ephemeroptera) to a lesser extent (Figures 3.1-53 a-d). Together stoneflies and dipterans composed 57 to 98% of all the stream benthos communities. Mayfly abundances ranged from 1 to 41% and were generally above 10% at most sites. Chironomids accounted for most of dipterans that were present in these streams. The proportion of taxa that were not from the three most dominant groups was always less than 5% at all sites except for eight. Copepods (MC10), cladocera (SKC1) and ostracods (SKC3) were noticeably present at a few sites. These remaining community proportions include individuals from oligochaeta, nematoda, trichoptera, collembola, and arachnida.

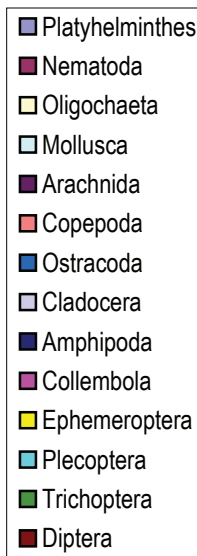
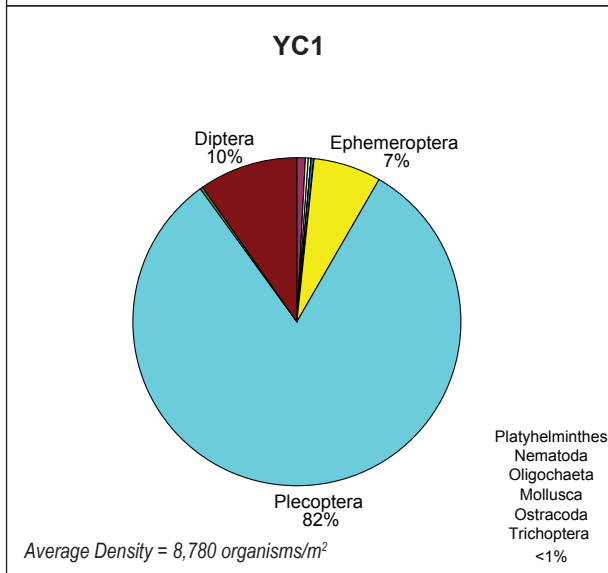
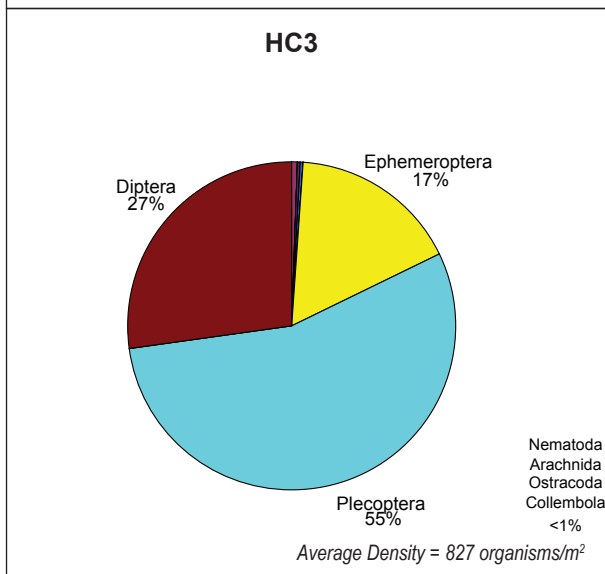
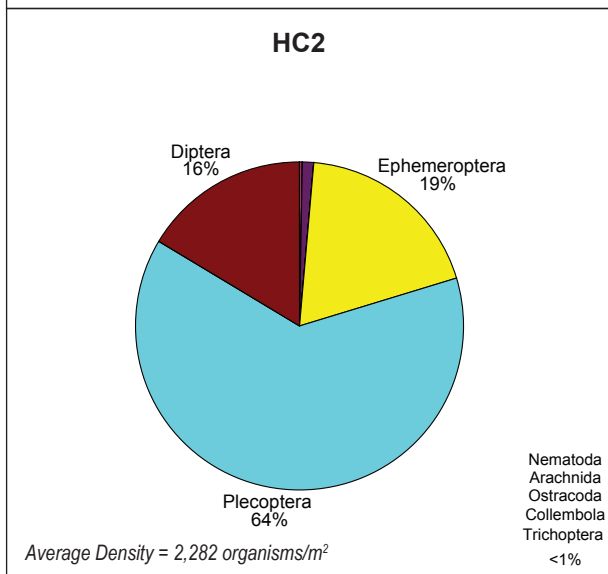
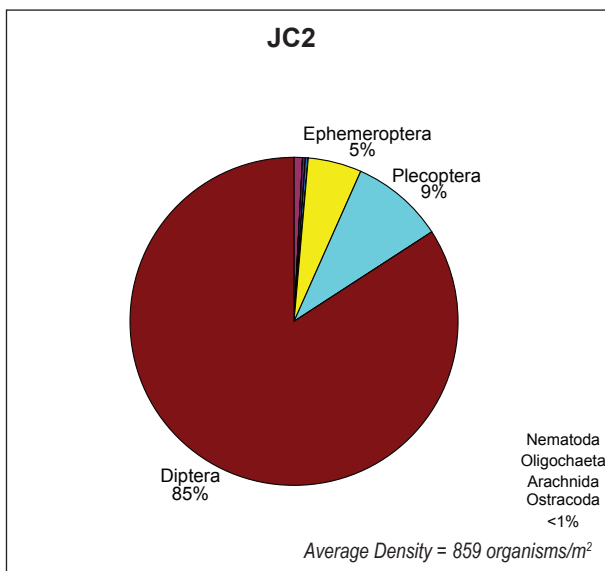
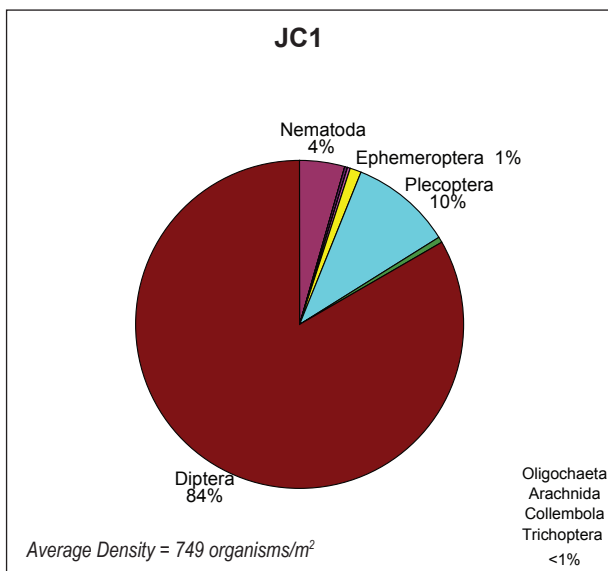
Ephemeropteran, plectopteran, and trichopteran (EPT) taxa are known to be sensitive to environmental stresses. For this reason, having a high proportion of these groups indicates relatively good environmental conditions. The proportion of the community composed of these taxa will decrease with a reduction in habitat quality.

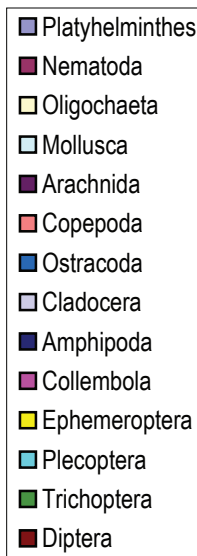
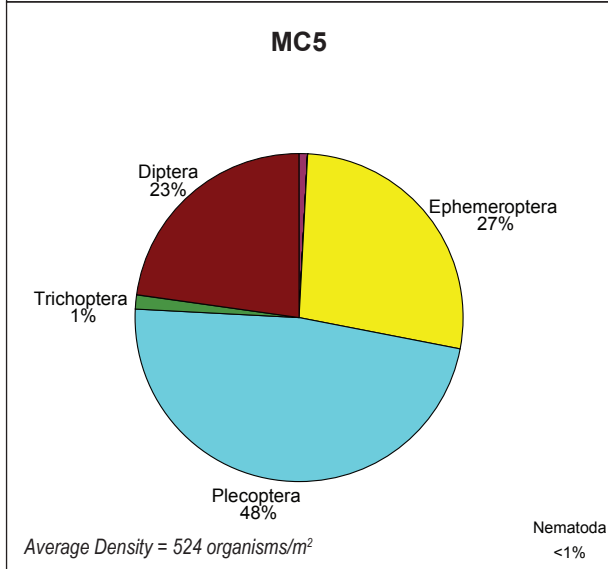
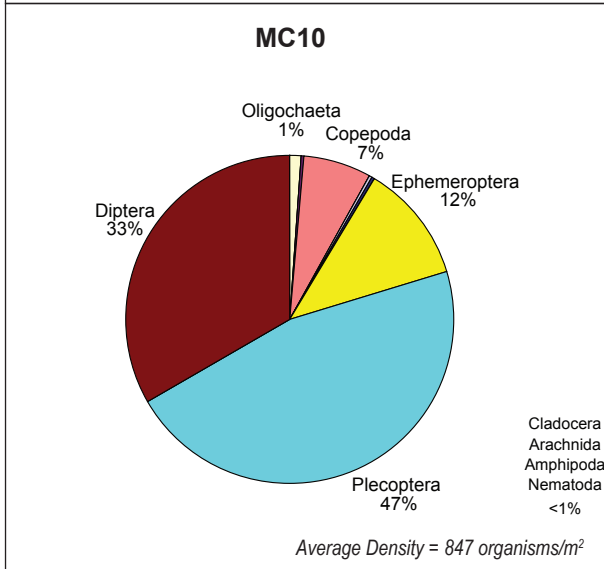
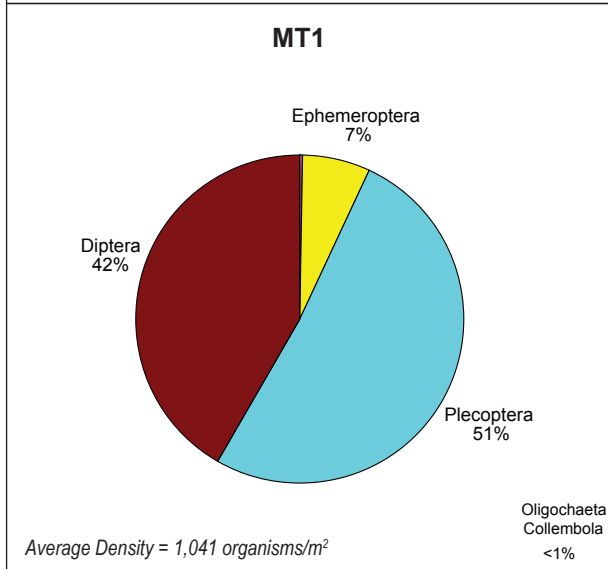
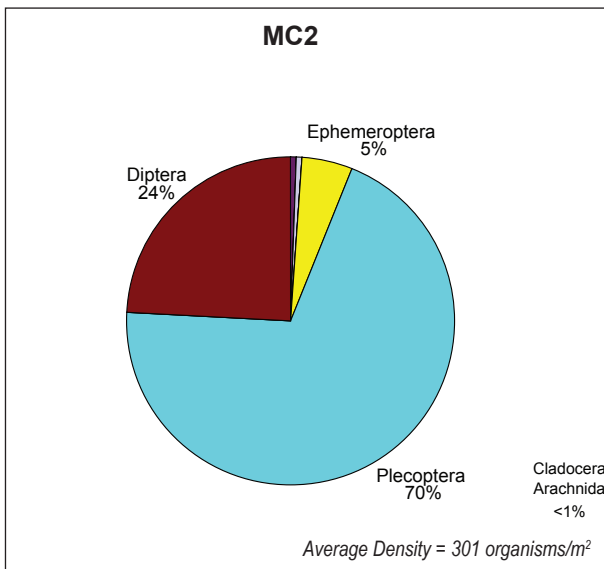
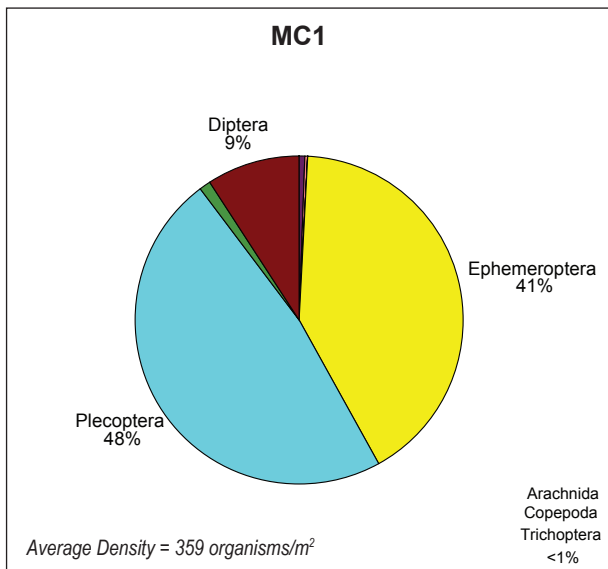


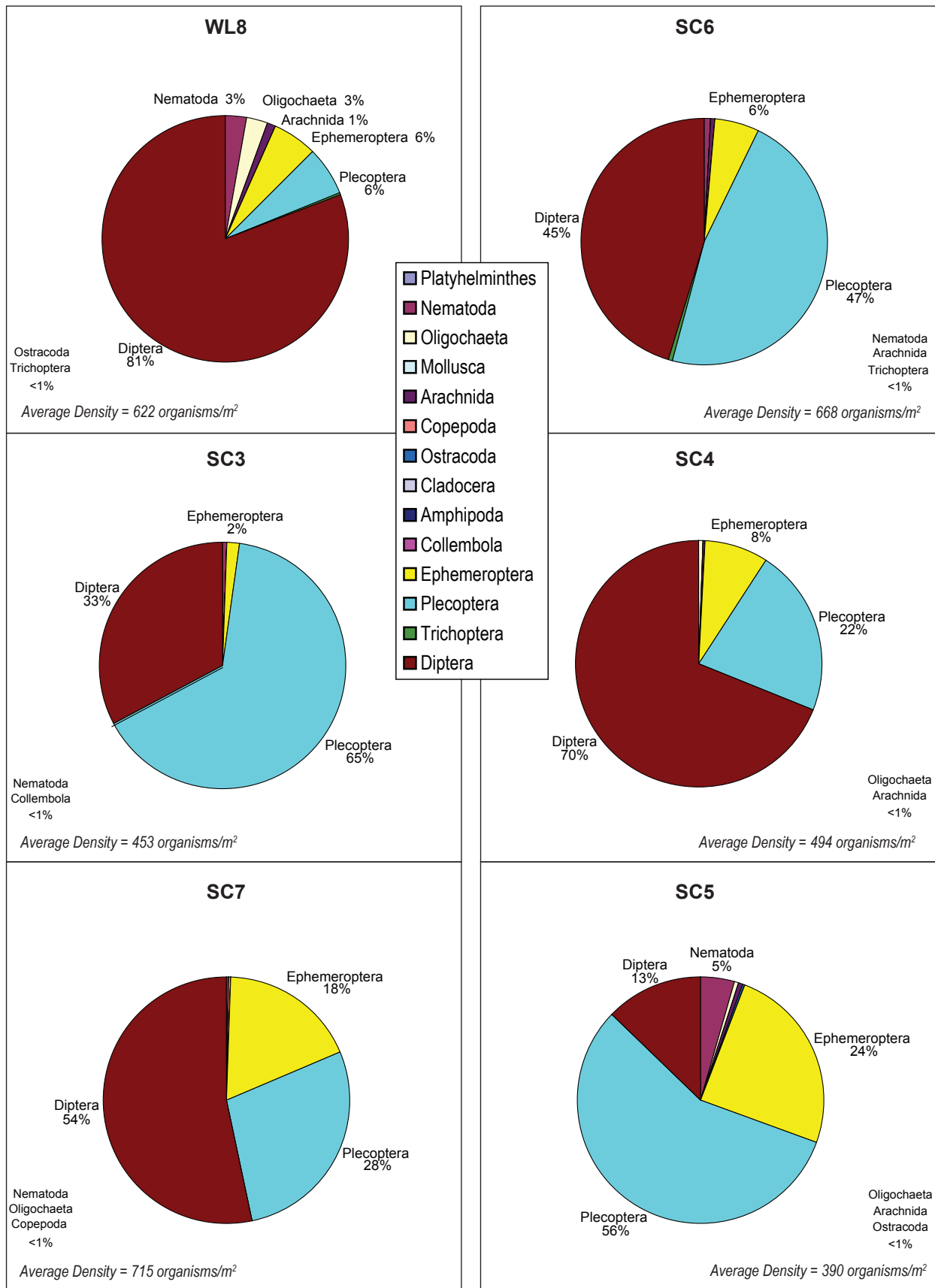
Note: Error bars represent the standard error of the mean

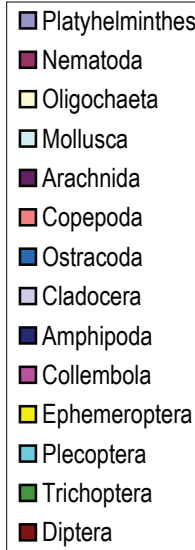
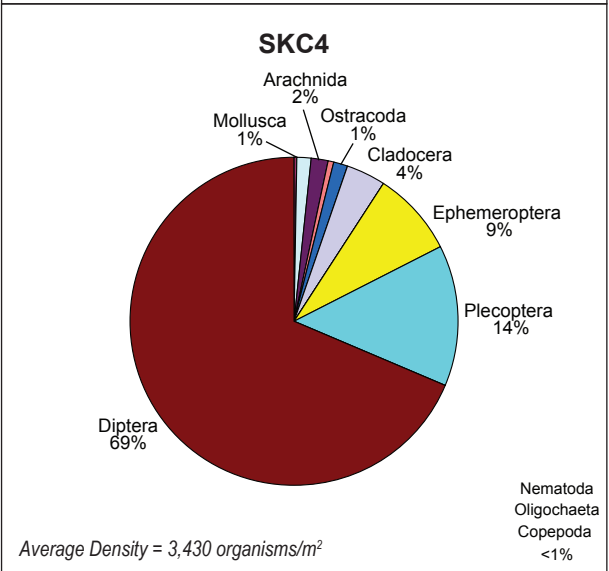
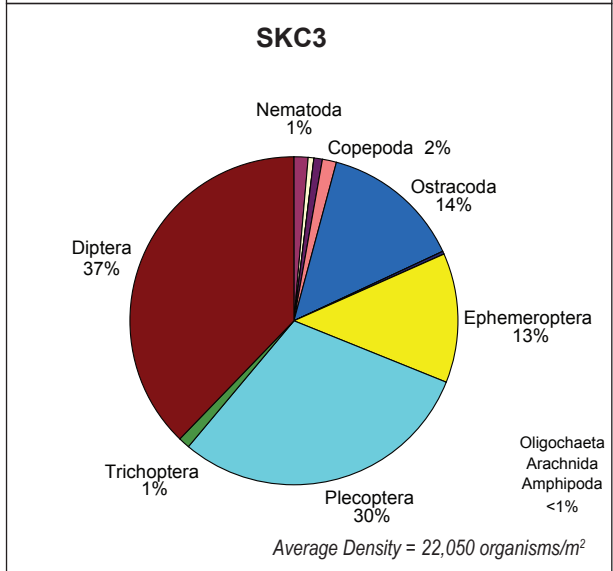
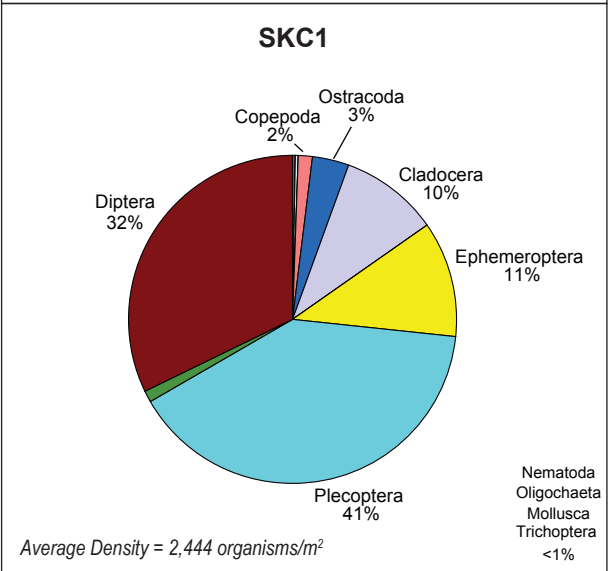
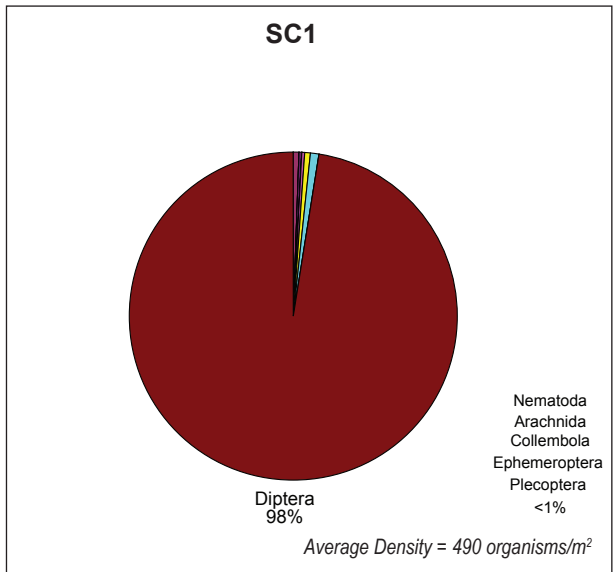
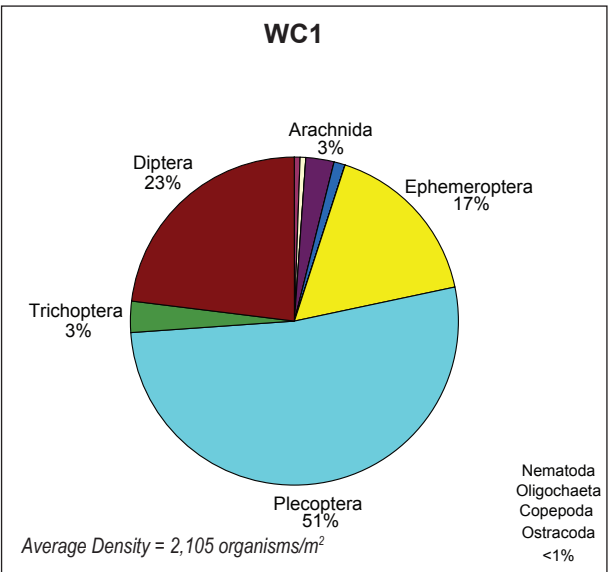
FIGURE 3.1-52











Since these organisms generally require high amounts of dissolved oxygen their absence in the riffle zones of streams can indicate site impairment resulting from low dissolved oxygen or siltation. EPT composed more than 50% of the community at most sites. Exceptions to this included sites that were particularly turbid (SC1, 2% EPT; JC1, 10% EPT and JC2, 17% EPT) which likely decreased dissolved oxygen levels (Plate 3.1-2).



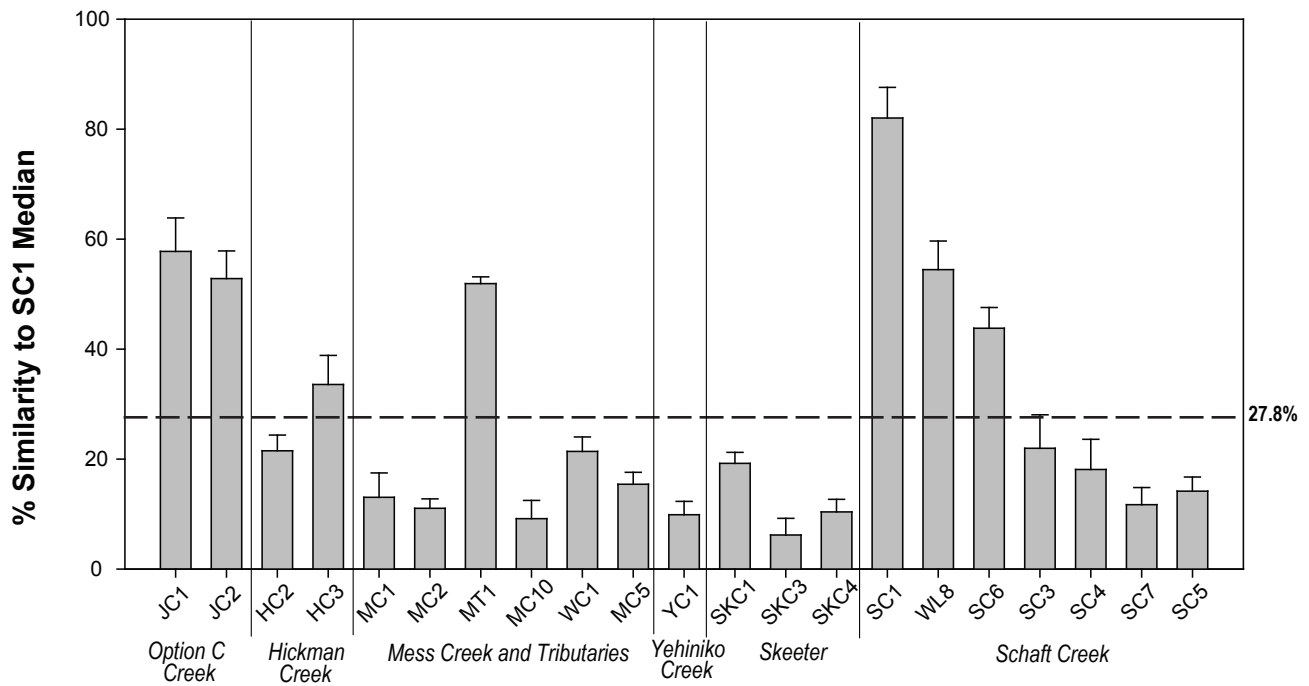
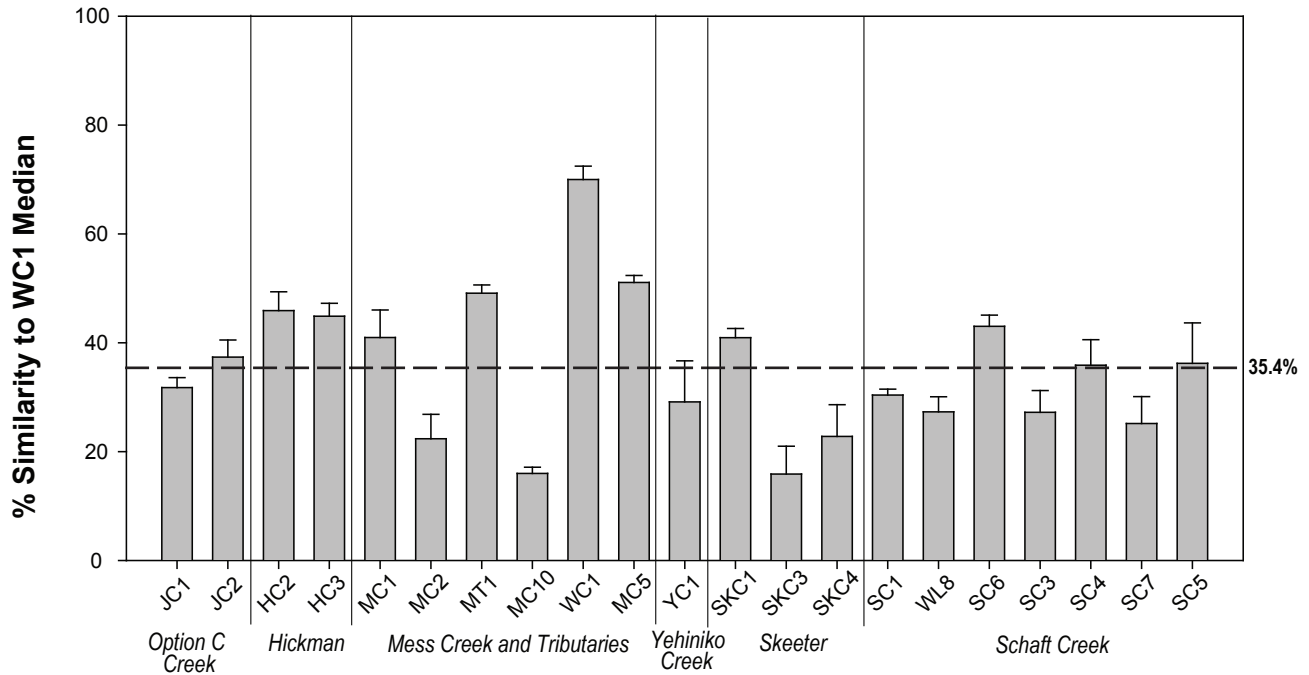
Plate 3.1-2 Turbid waters during sampling at SC1 (A) and JC1 (B).

Bray-Curtis Similarity

Bray-Curtis is a similarity coefficient 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 of the stream sites was produced which showed the similarities in the benthic community between sites. A similarity matrix showing the mean similarities for all site combinations is available in Appendix 3.1-11. Benthic invertebrate communities of each stream were compared to each reference site (SC1 and WC1) to determine percent similarity (Environment Canada 2003). Figure 3.1-54 illustrates these comparisons along with the mean percent similarity across all sites to each reference site median. As would be expected both SC1 and WC1 are most similar to their own median percent similarity. Similarity to the SC1 reference stream benthic community ranged from 6% (SKC3) to 58% (JC1) with an average of 27.8%. Similarity to the WC1 reference stream ranged from approximately 16% (MC10 and SKC3) to 51% (MC5) with an average of 35.4%. It can be seen that similarity to SC1 gradually decreases moving downstream along Schaft Creek. The above average similarity of JC1, JC2, HC3 and MT1 may be due to their being lower order streams having relatively close proximity to headwaters, similar to reference streams.

Richness and Diversity Indices

Genus richness across stream sites ranged from 3 (SC1) to 19 (WC1) taxa (Figure 3.1-55). As was the case in 2006, the Skeeter Lake Watershed had the greatest average richness. The Schaft Creek Watershed had the lowest average richness. Average Simpson Diversity Index values ranged from 0.06 at SC1 to 0.85 at SKC1 (Figure 3.1-56). Most sites had values above 0.5 with the exceptions of JC1, JC2, MT1, SC1 and WL8.

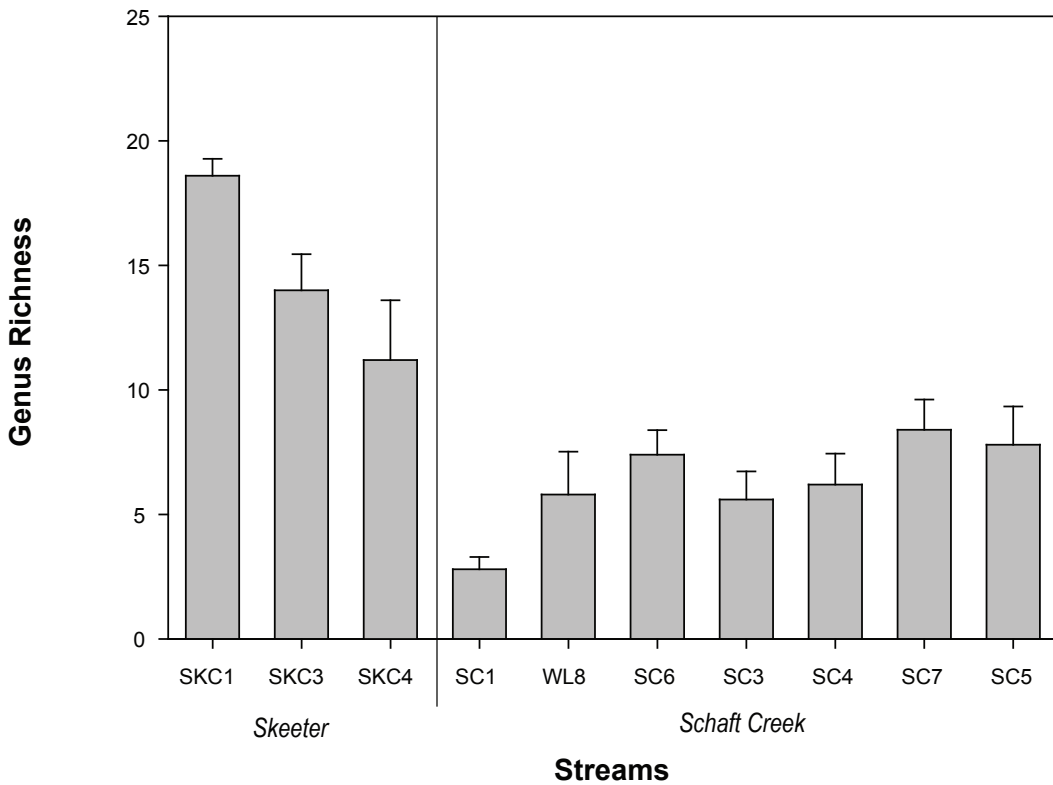
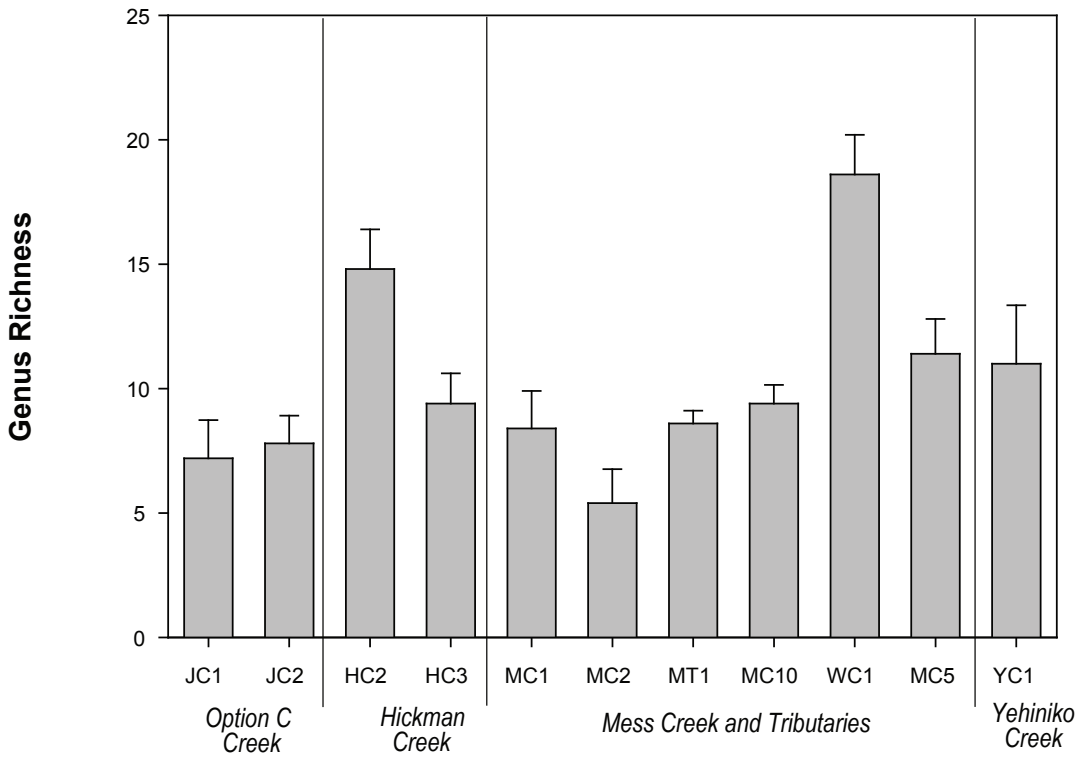


Note: Error bars represent the standard error of the mean
 Dashed line denotes mean similarity for all sites.

FIGURE 3.1-54



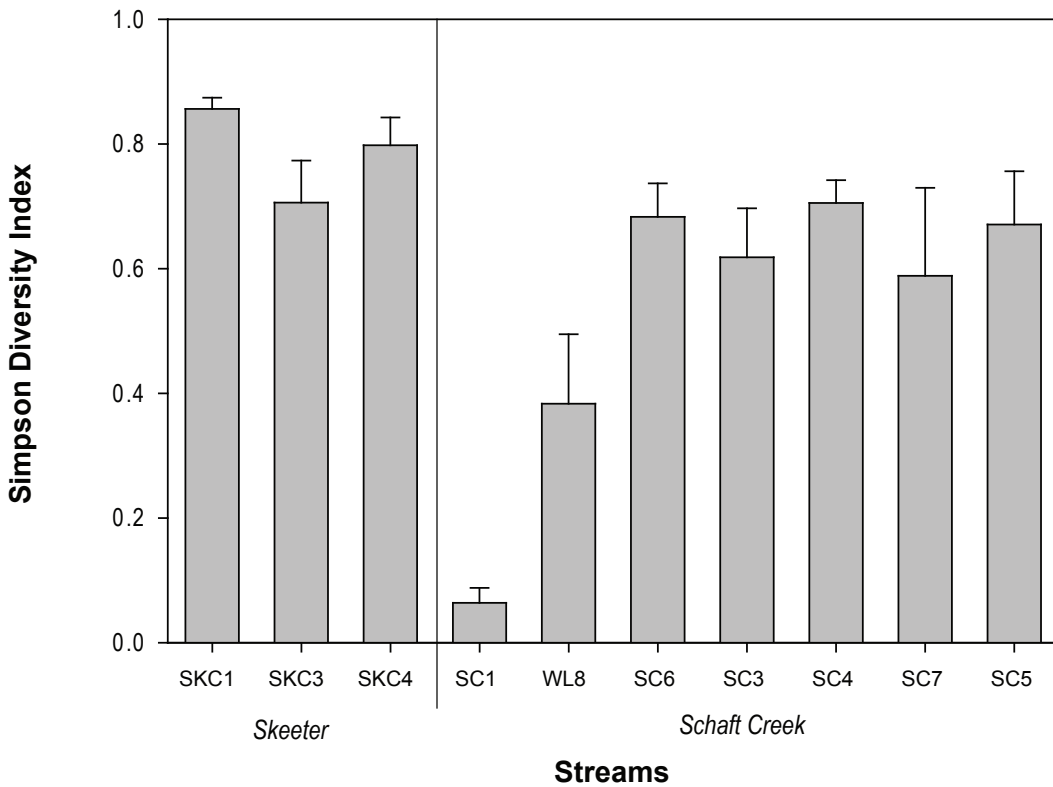
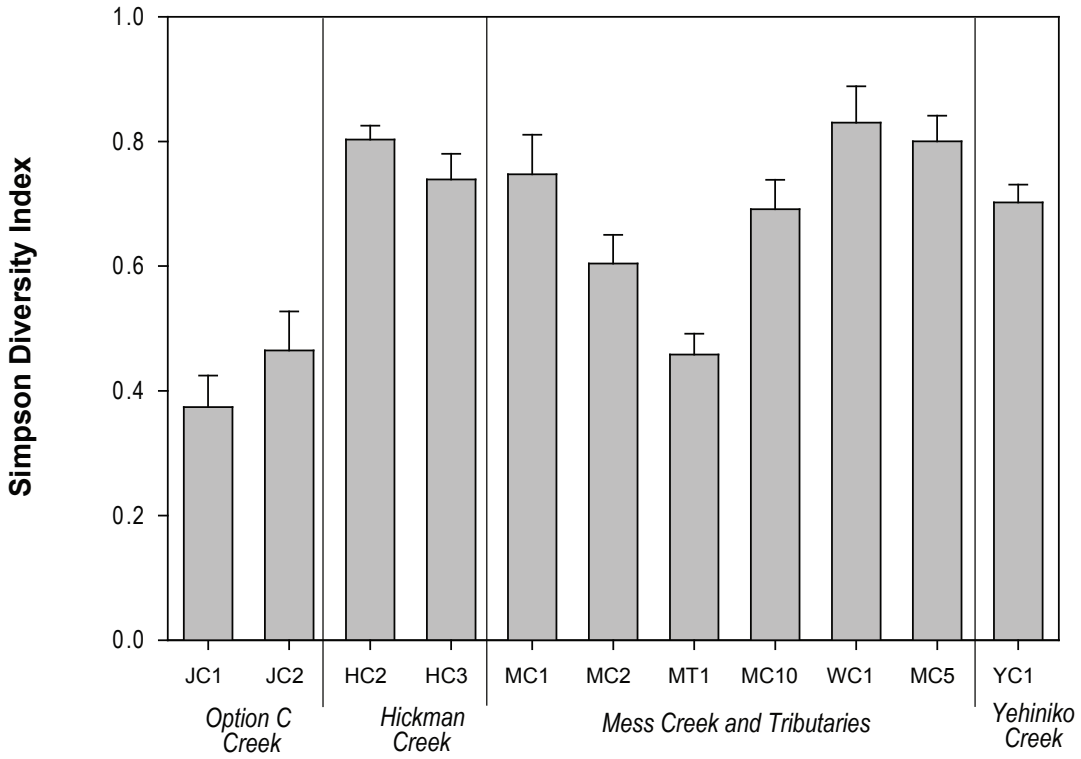
Bray-Curtis Similarity Comparisons for Stream Benthic Invertebrates, 2007



Note: Error bars represent the standard error of the mean

FIGURE 3.1-55





Note: Error bars represent the standard error of the mean

FIGURE 3.1-56



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 0.17 at SC1 to 0.80 at SKC4 (Figure 3.1-57). Mess Creek sites (0.49 to 0.73) generally had higher evenness than Schaft Creek sites (0.17 to 0.79).

3.2 Wetlands and Lakes

In 2007, water and sediment quality, primary and secondary producer samples were collected at six lakes and eleven wetlands. These sites were similar to those sampled in 2006 with a couple of additions. The six lakes included a reference lake (L4), which is located north of the Project and relatively isolated from Project activities. Lakes from the Mess Creek (L1, L3 and L6) and Skeeter Lake (L2 and L5) watersheds were also sampled. L6 was added in 2007 as it was located along a potential road route (Plate 3.2-1).

Four of the eleven wetlands (WL1, WL3, WL7 and WL10) were within the Schaft Creek Watershed, six were within the Mess Creek Watershed (WL2, WL5, WL6, WL9, WL11 and Airstrip WL) and one was within the Skeeter Lake Watershed (WL4) just south of Skeeter Lake. WL1, at the north end of the Schaft Creek Watershed, is the reference site for monitoring potential adverse effects in wetlands. The Airstrip WL is located just southwest of the proposed airstrip location (Plate 3.2-2).



Plate 3.2-1 Aerial view of an icy L6, 2007.



Plate 3.2-2 Aerial view of Airstrip WL, 2007.

3.2.1 Water Quality

3.2.1.1 Annual Water Quality

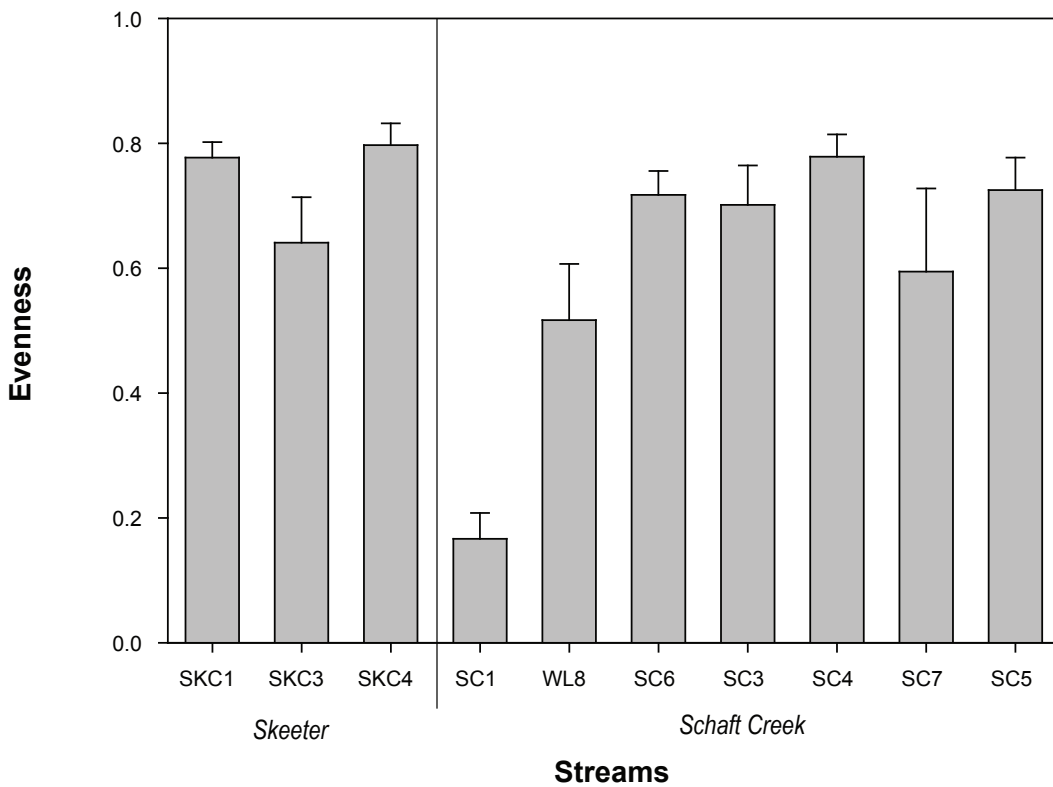
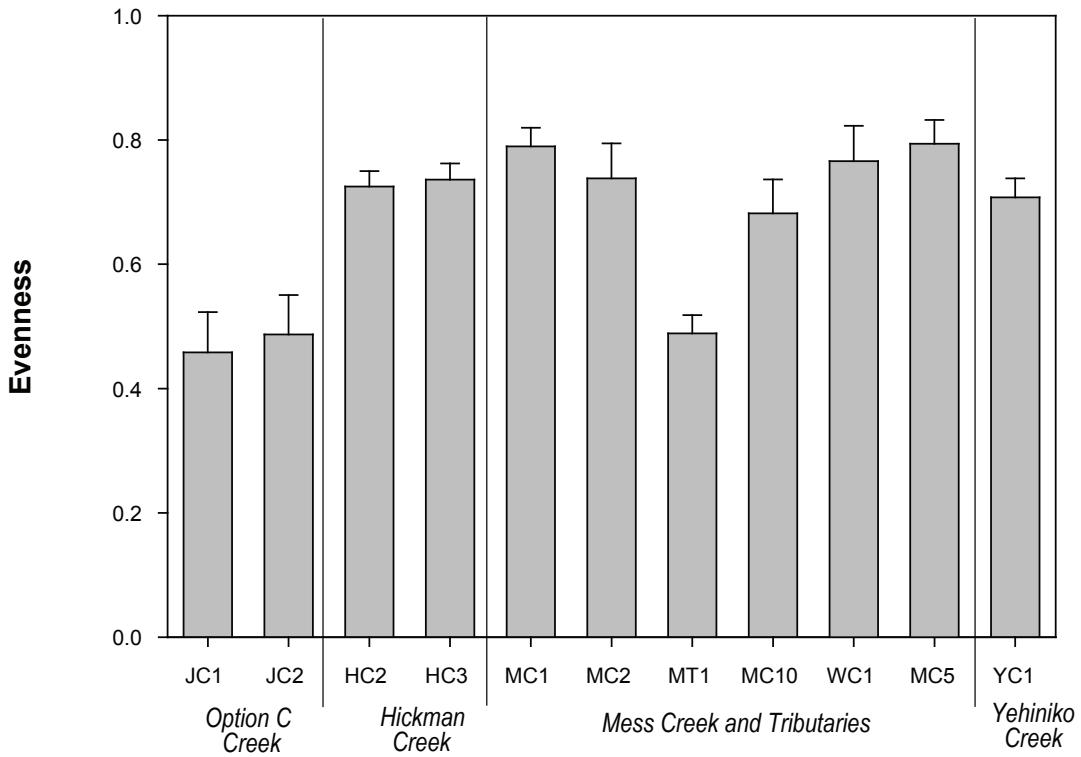
All wetland and lake water quality data are provided in Appendix 3.2-1. Samples for water quality analyses were collected once in 2007 from each of eleven wetlands and six lakes.

3.2.1.2 General Variables and Nutrients

Key variables (total dissolved solids, hardness, pH, total suspended solids, turbidity, sulphate, nitrate, ammonia, total nitrogen, total phosphate, and cyanide) are presented graphically and discussed below. Within each figure, sites are shown from upstream to downstream, and are grouped by watersheds. If available, CCME and B.C. guidelines are indicated. Since L4 is relatively isolated from the potential mine and road activities it is indicated as the reference lake for monitoring potentially adverse effects.

At most wetland and lake sites concentrations of total dissolved solids (TDS) ranged from 40 to 250 mg/L (Figure 3.2-1). The exception to this was WL-2, which had a TDS concentration of 889 mg/L, a value approximately half that observed in 2006 at this site, but still notably higher than other study lakes and wetlands. Variability in TDS was lower in lakes than wetlands, with lakes averaging around 100 mg/L TDS, except for L6 (24 mg/L). There are no CCME or B.C. guidelines for TDS.

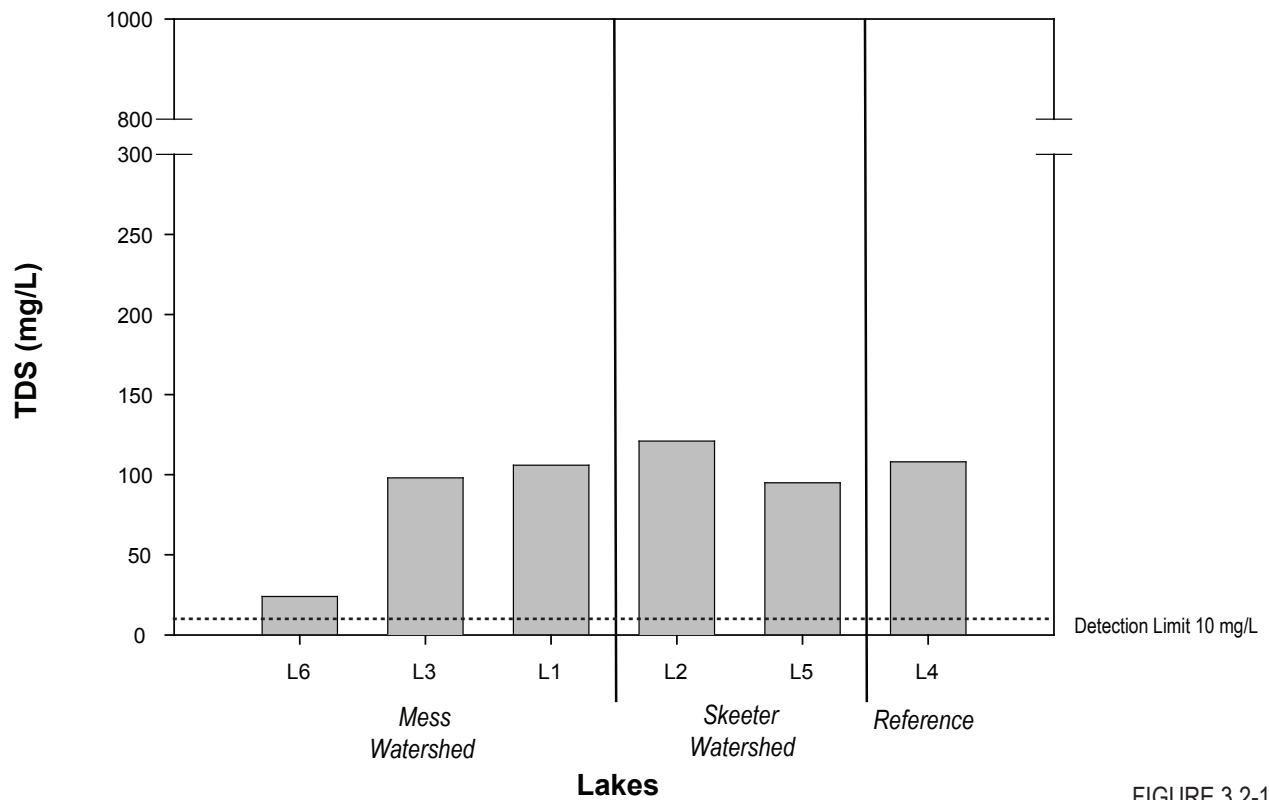
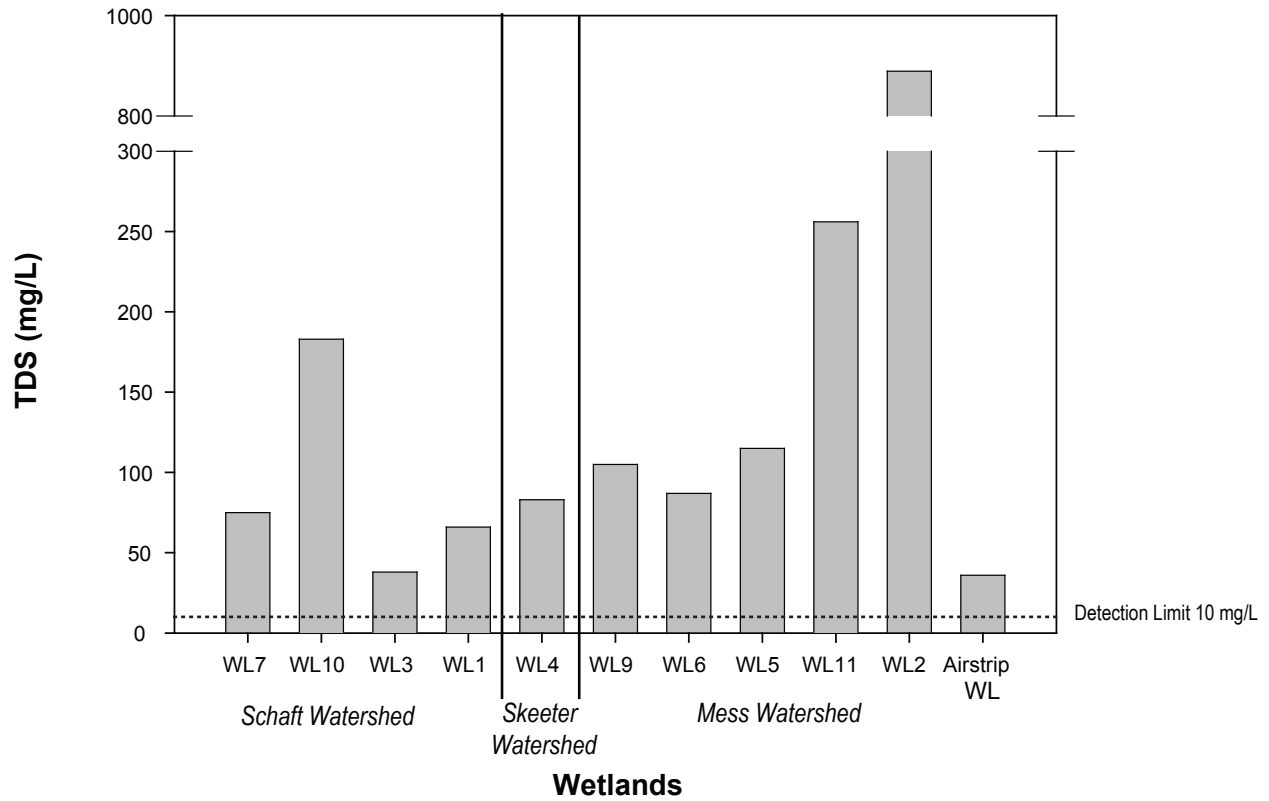
Water hardness showed similar patterns as TDS, with WL2 having the highest hardness (277 mg/L), and L6 the lowest (15.4 mg/L) (Figure 3.2-2).



Note: Error bars represent the standard error of the mean

FIGURE 3.1-57



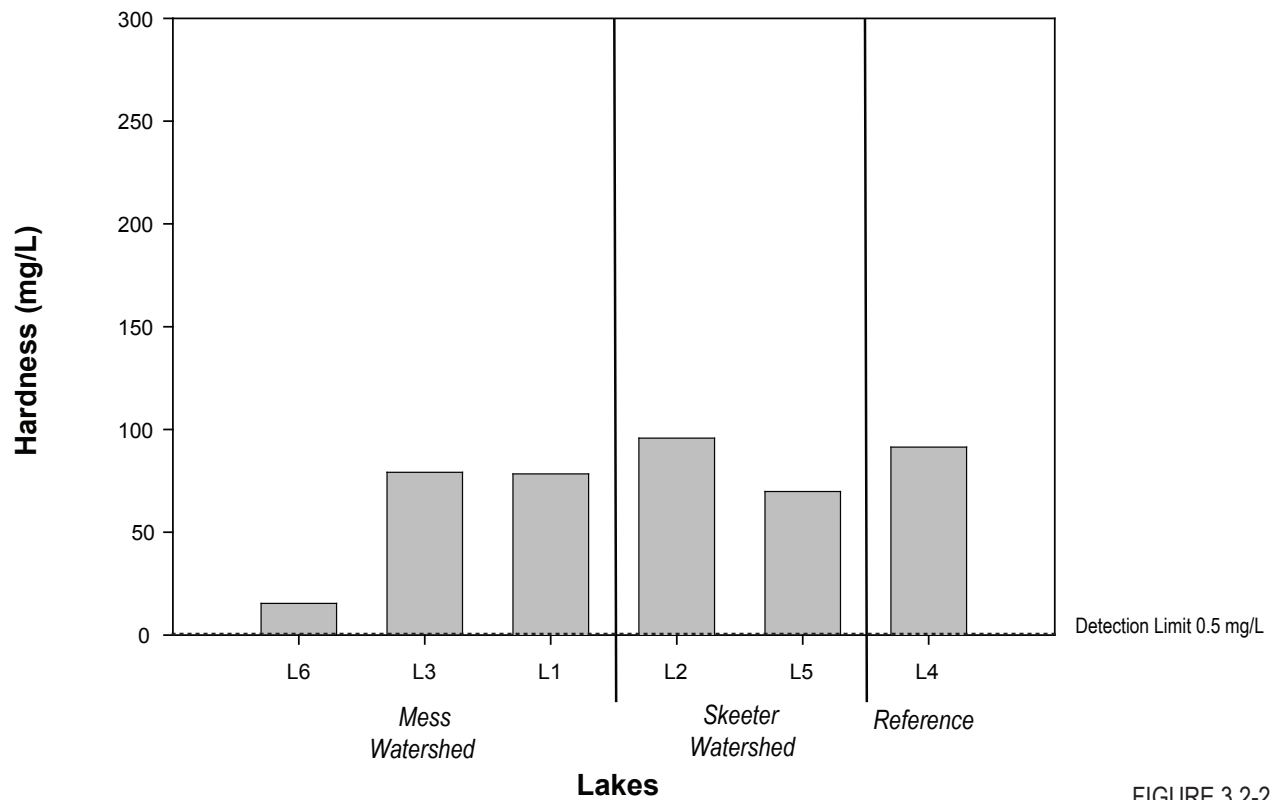
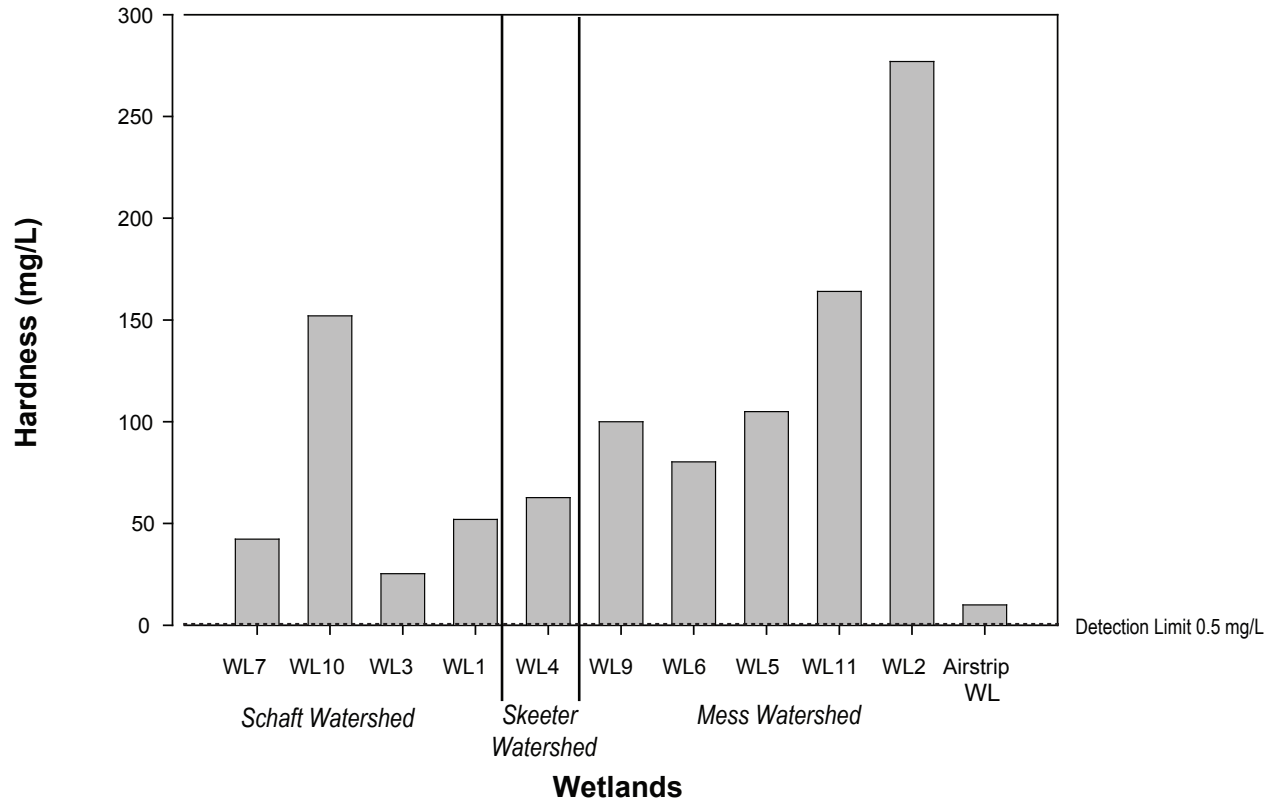


Note: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.

FIGURE 3.2-1



Total Dissolved Solids (TDS) Concentrations in Lakes and Wetlands, 2007



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

FIGURE 3.2-2



Wetland hardness ranged from 25.3 mg/L (WL3) to 277.0 mg/L (WL2) with an average of 97.3 mg/L. Lake hardness ranged from 15.4 mg/L (L6) to 95.8 (L2) and averaged 71.7 mg/L. There are no CCME or B.C. guidelines for water hardness.

All wetlands and lakes had near neutral pH and showed little variability between sites (Figures 3.2-3). pH values in wetlands ranged from 7.59 to 8.45 and from 8.01 to 8.16 in lakes. All samples were within the CCME and B.C. guidelines for the protection of aquatic life (6.5 to 9.0).

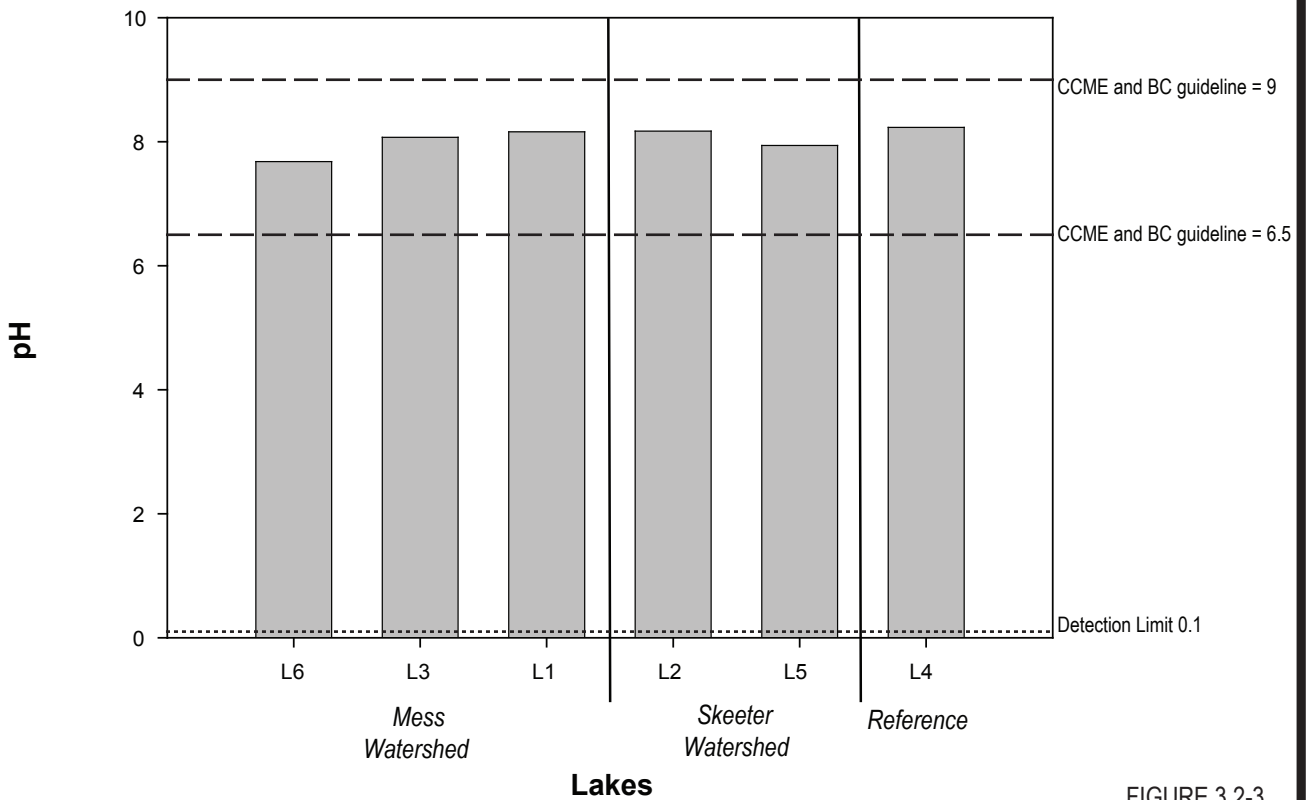
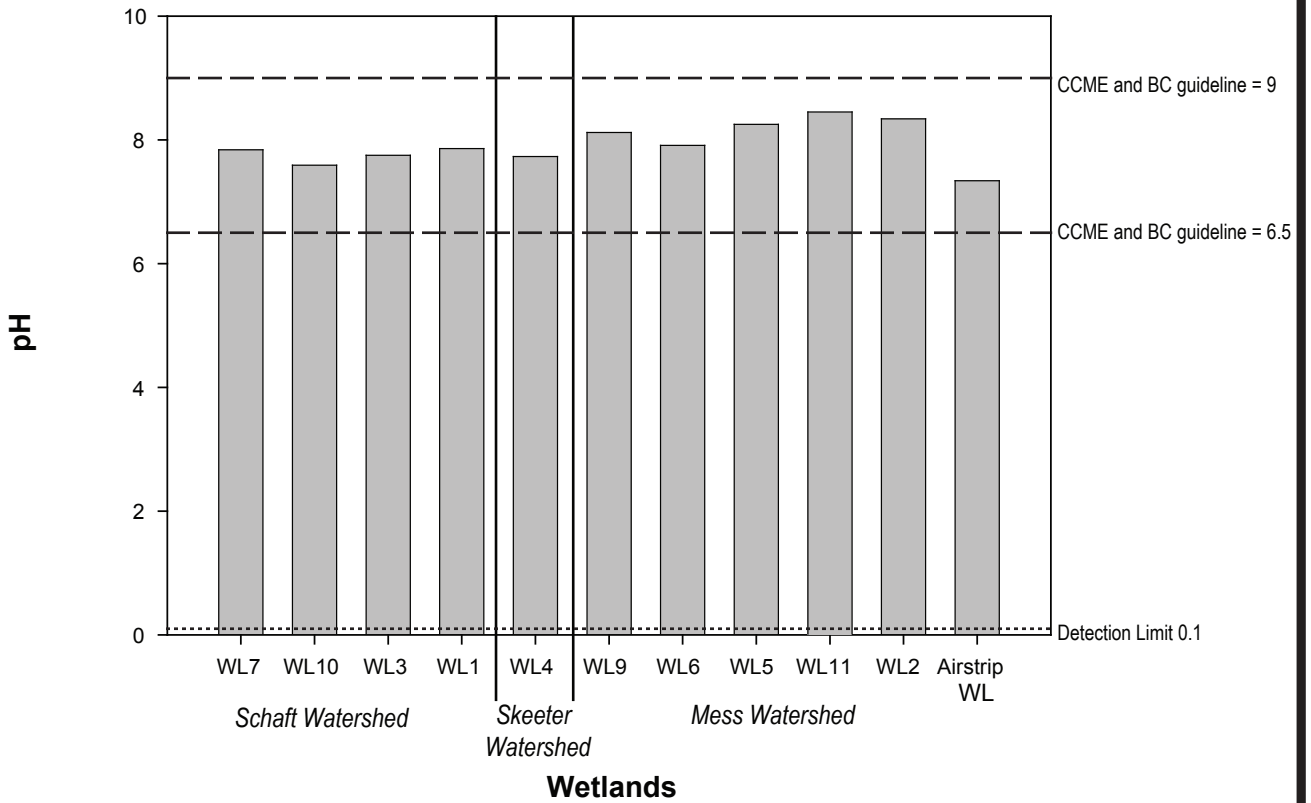
Most lakes and wetlands had total suspended solid (TSS) concentrations below detection limits (3 mg/L), with values slightly lower than those observed in 2006 (Figure 3.2-4). Detectable TSS concentrations in wetlands ranged from 3.0 mg/L (WL11 and WL2) to 11.5 (WL3), lower than the range observed in 2006 (3.5 mg/L (WL1) to 78.5 (WL5)). L1 was the only lake with TSS above detection (15.0 mg/L), slightly higher than 2006 levels (11.0 mg/L). All lake sites, except L1, and WL7 had total suspended solids (TSS) concentrations below detection limits. TSS at L1, WL3, and WL5 were considerably greater than other sites. Guidelines for TSS are based on changes from background values. This is the second year of background data collection.

Turbidity tended to be generally low in both wetlands and lakes, although a few sites possessed higher levels (WL10, WL3, WL6, and L1) (Figure 3.2-5). Wetland turbidity ranged from 0.36 NTU (WL9) to 45.9 NTU (WL10) and from 0.21 NTU (L6) to 32.6 NTU (L1) in lakes. Lake turbidity was similar between 2007 and 2006, but wetlands differed substantially between years. Guidelines for turbidity are based on changes from background values. This year represents the second year background data collection.

Wetland and lake sulphate concentrations ranged from 0.25 mg/L to 18.30 mg/L, with the exception of WL2, whose sulphate concentration was 260.00 mg/L (Figure 3.2-6). These findings are in agreement with those of 2006, where all sites, apart from WL2, possessed sulphate concentrations below approximately 20 mg/L. In 2006, the sulphate concentrations at WL2 was a very high 607 mg/L. In both years (2006 and 2007), the B.C. Max guideline (100 mg/L) was exceeded at WL-2. No other guidelines apply to sulphate.

Nitrate concentrations were below detection (0.005 mg/L) at most wetland and lake sites (Figure 3.2-7). Only three wetlands possessed nitrate concentrations above detection (WL3, WL4 and WL9), with values ranging from 0.0065 mg/L (WL3) to 0.0339 mg/L (WL4). In lakes, nitrate concentrations were also only detectable at three sites, with values ranging from approximately 0.0200 mg/L (L1 and L5) to 0.0912 mg/L (L2). As in 2006, no samples had nitrate concentrations exceeding the CCME (2.93 mg/L), B.C. Max (200 mg/L), or B.C. 30-d Mean (40mg/L) guidelines.

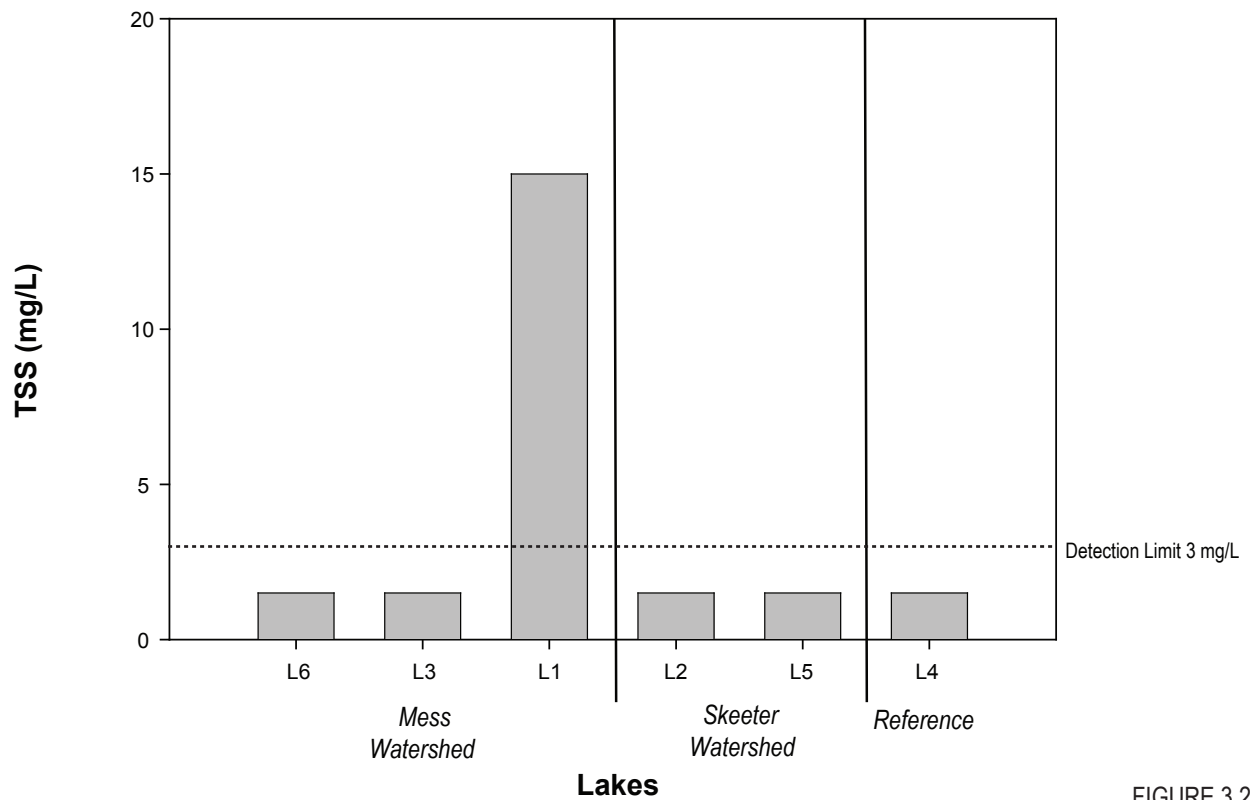
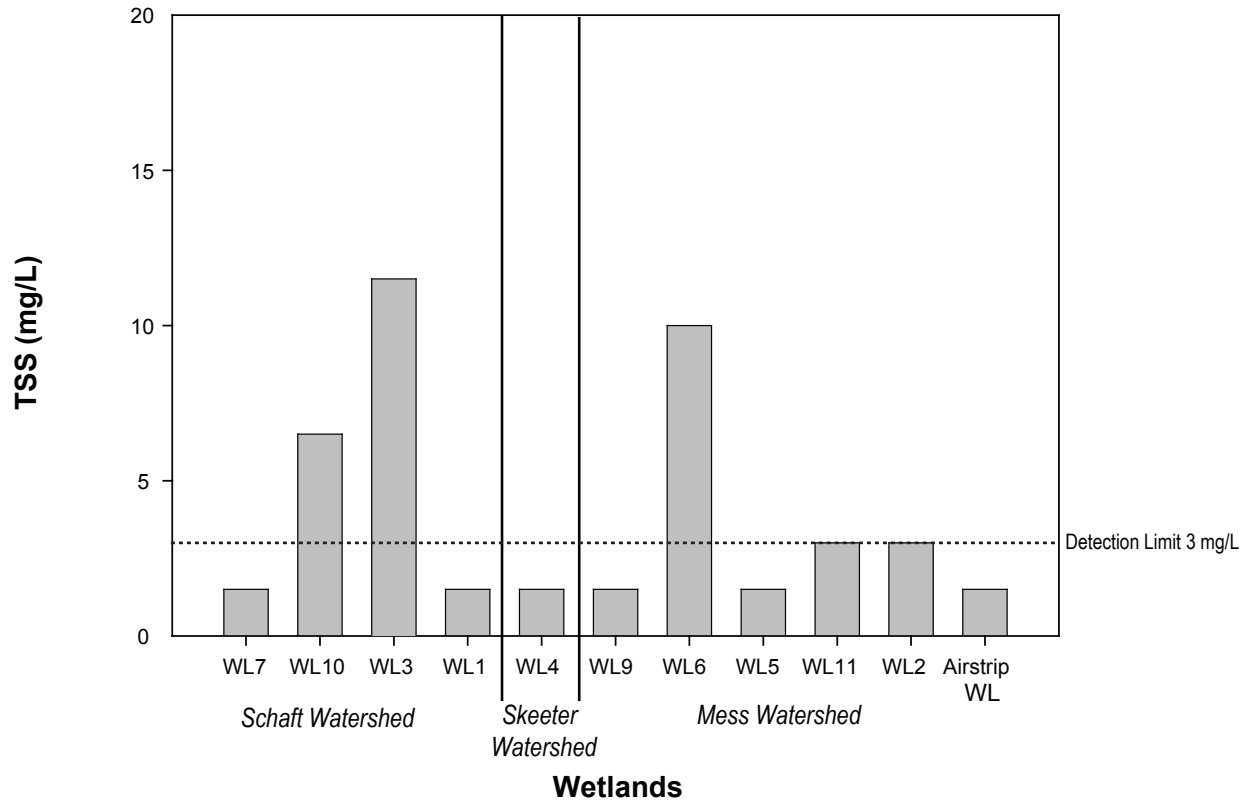
Similar to 2006, ammonia concentrations in 2007 were generally greater in wetlands than lakes, although both had sites with values below detection (Figure 3.2-8). Sites ranged from below detection limits (0.005 mg/L) to a high of 0.0642 mg/L (WL11) in wetlands and 0.0186 (L4) in lakes. The B.C. Max guideline for total ammonia (with pH 8.0 and temperature 2 to 12° C) is between 3.69 and 8.98 mg/L.



Note: Dotted line represents analytical detection limit.
Dashed line represents CCMC and BC guidelines.

FIGURE 3.2-3

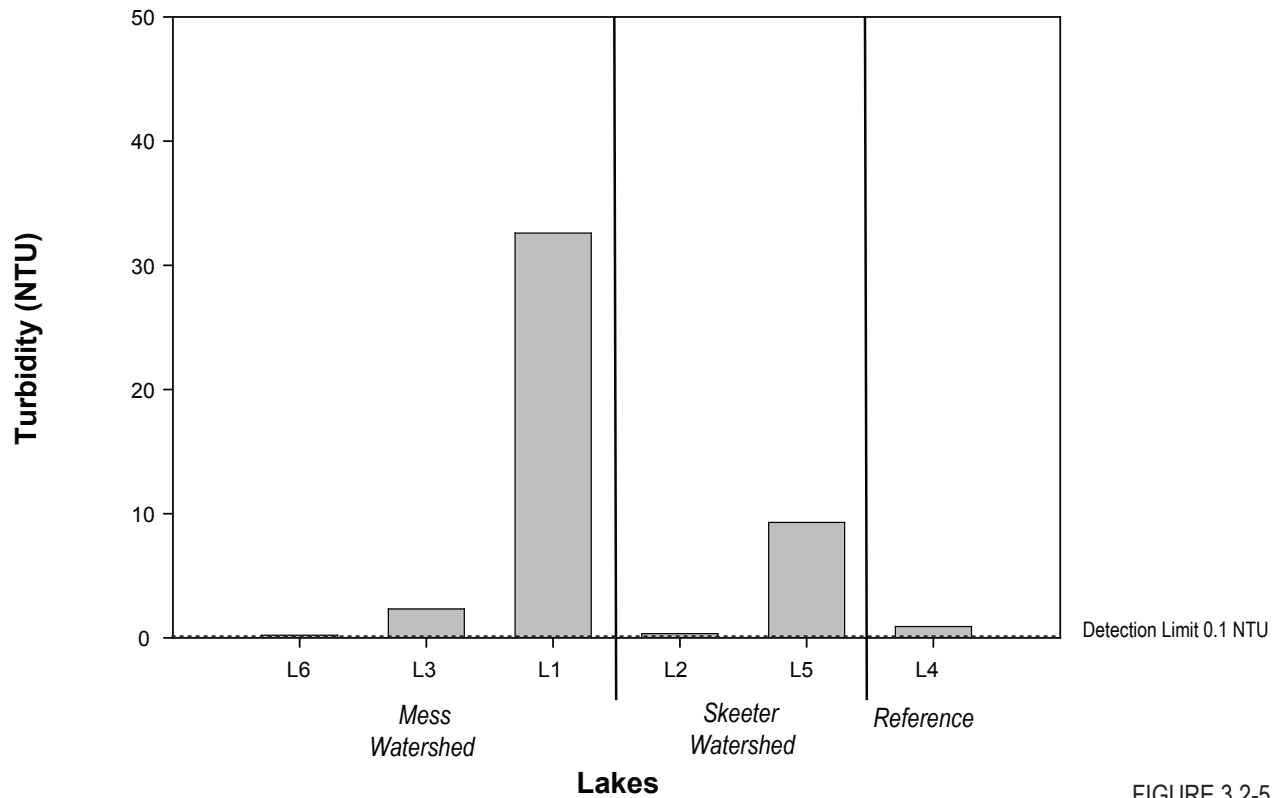
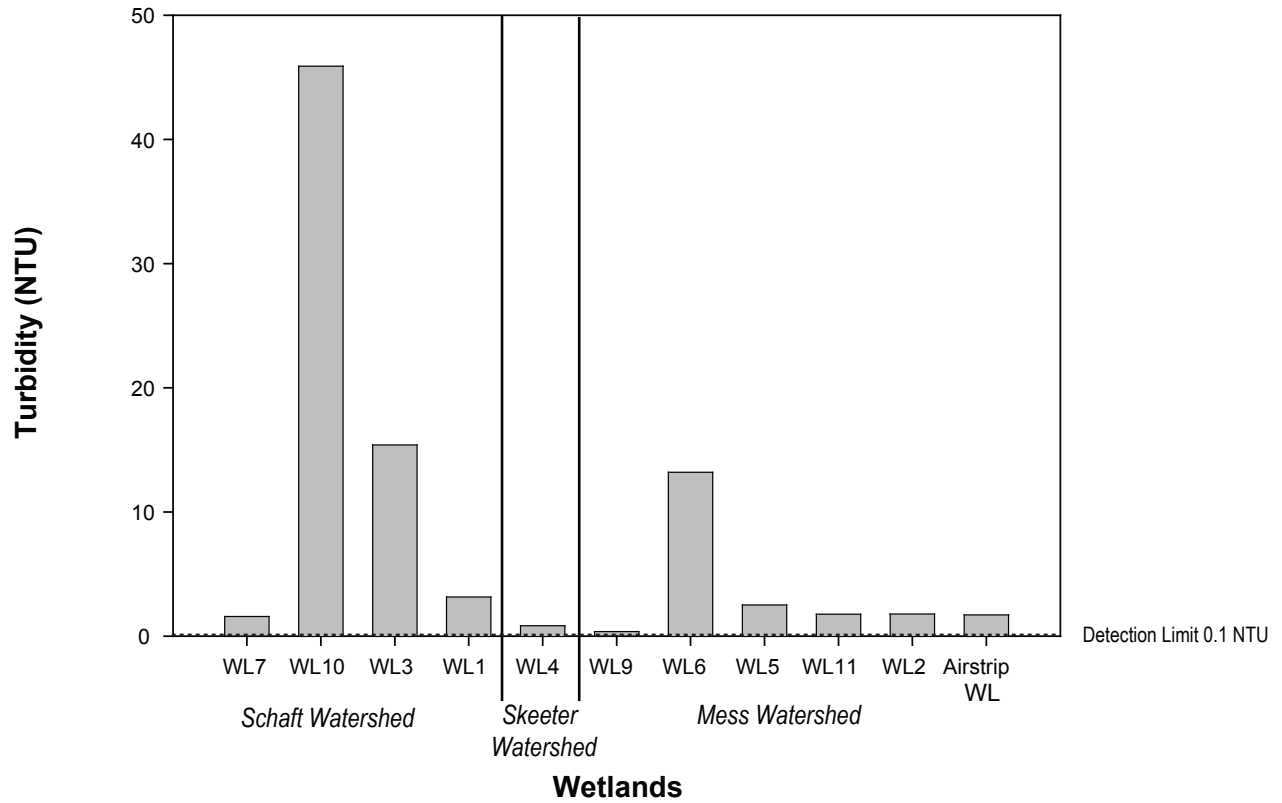




Note: BC guidelines depend on background; CCME guideline is 25 mg/L above background.
 Dotted line represents analytical detection limit.

FIGURE 3.2-4

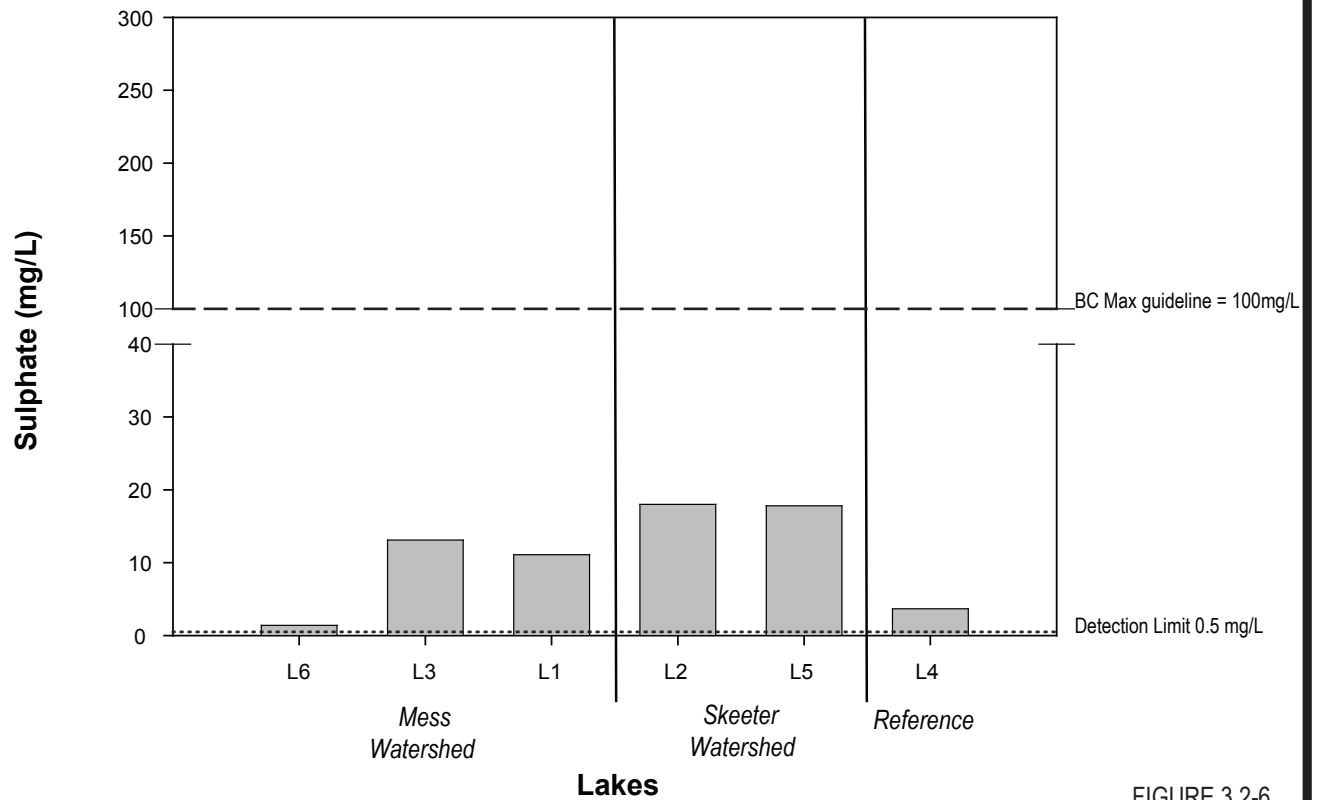
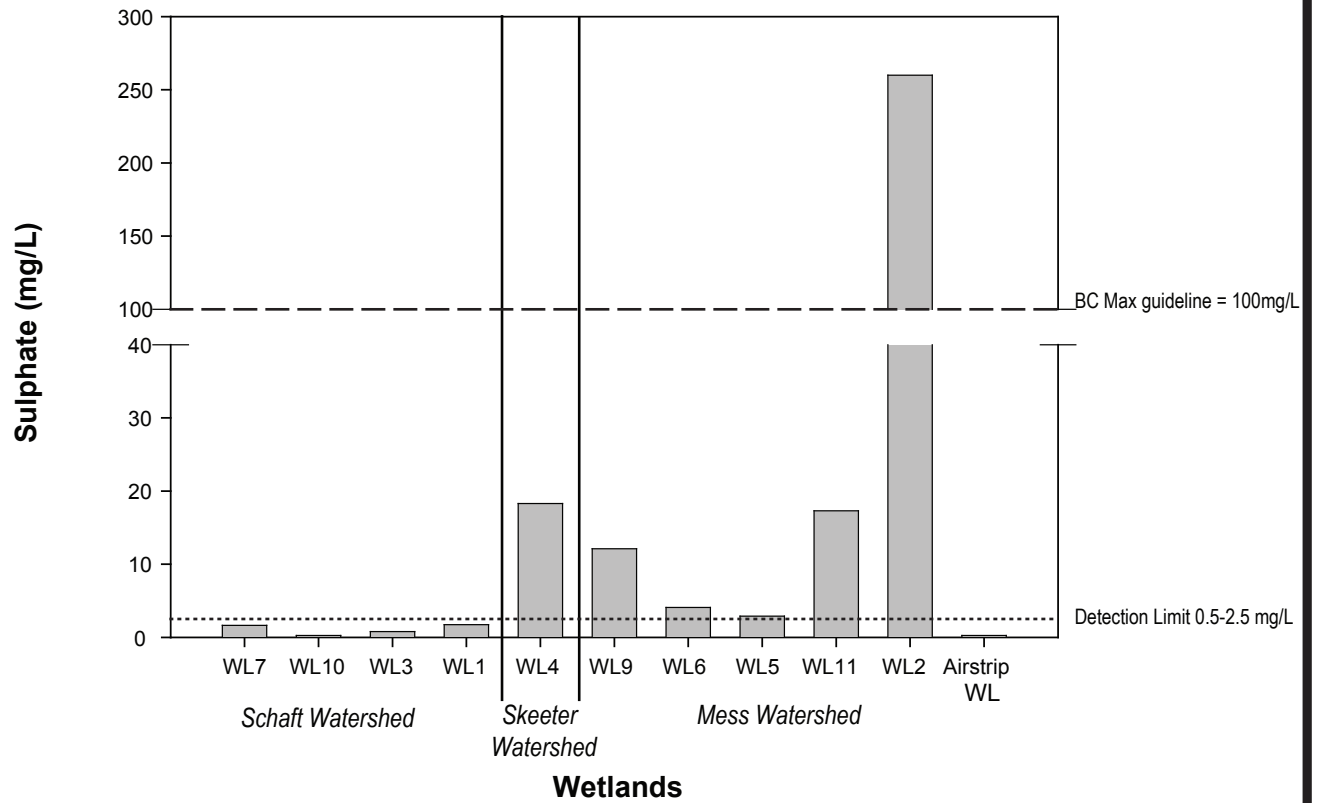




Note: CCME or BC guidelines depend on background and max 10% increase when turbidity exceeds 80 NTU.
 Dotted line represents analytical detection limit.

FIGURE 3.2-5



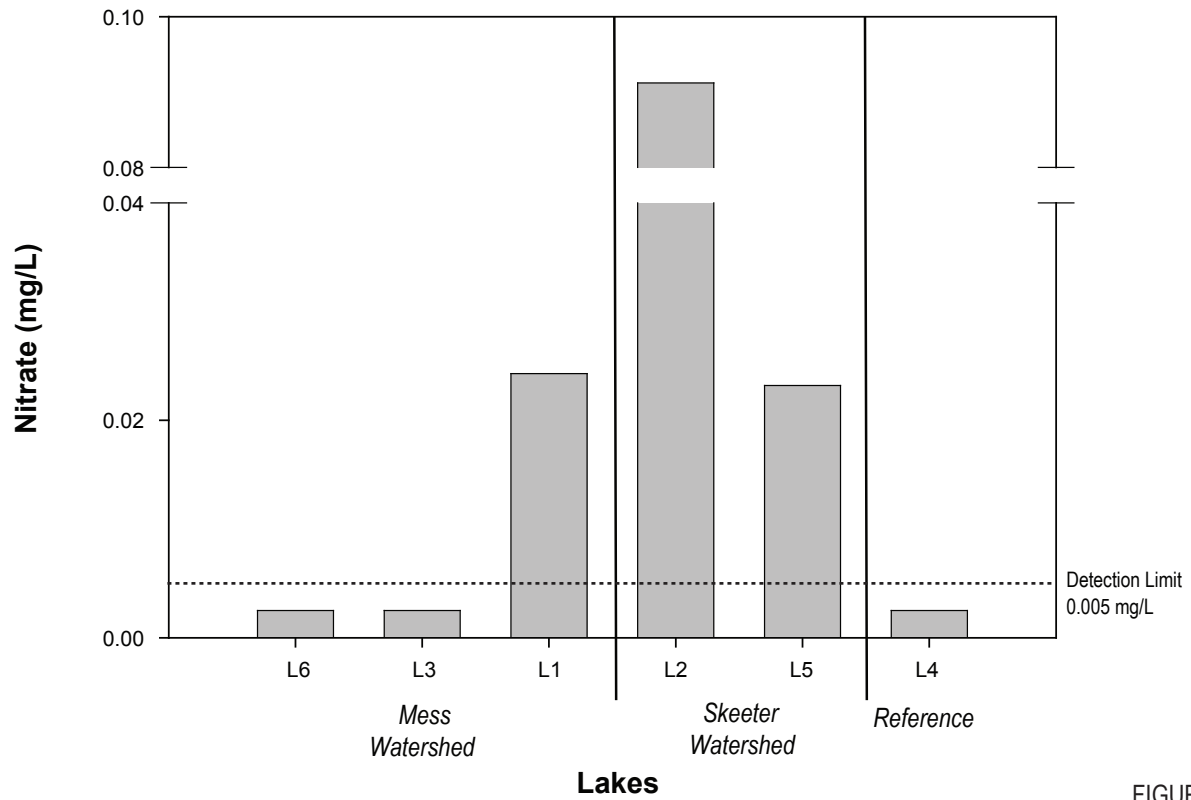
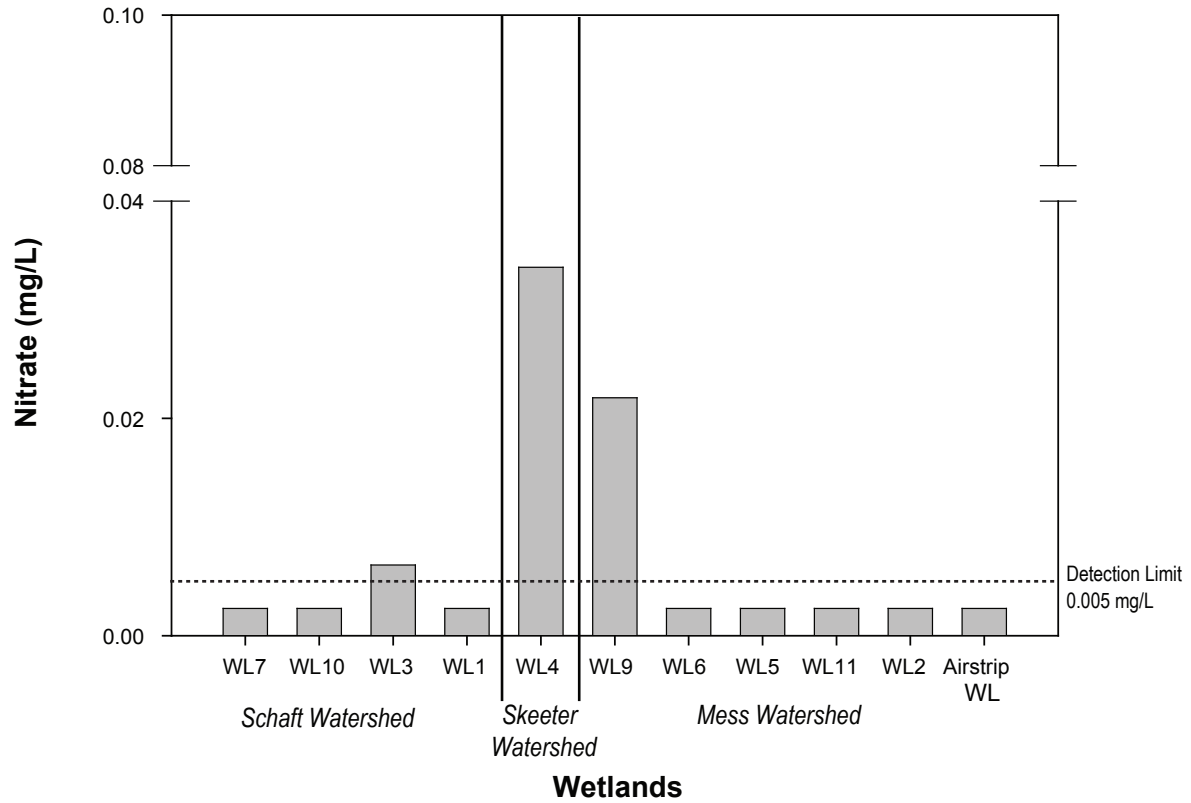


Note: No CCME guidelines exist.
 Dotted line represents analytical detection limit.
 Dashed line indicates BC MAX guideline 100 mg/L.

FIGURE 3.2-6



Sulphate Concentrations in Lakes and Wetlands, 2007

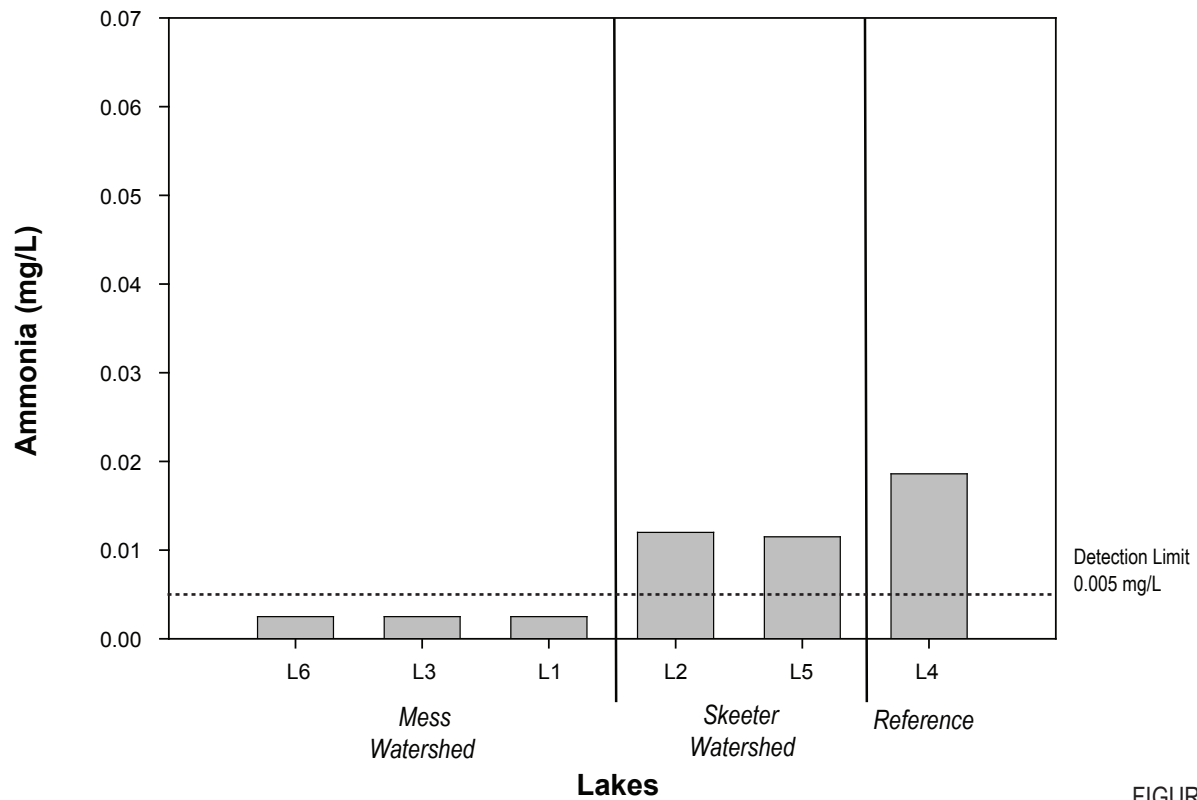
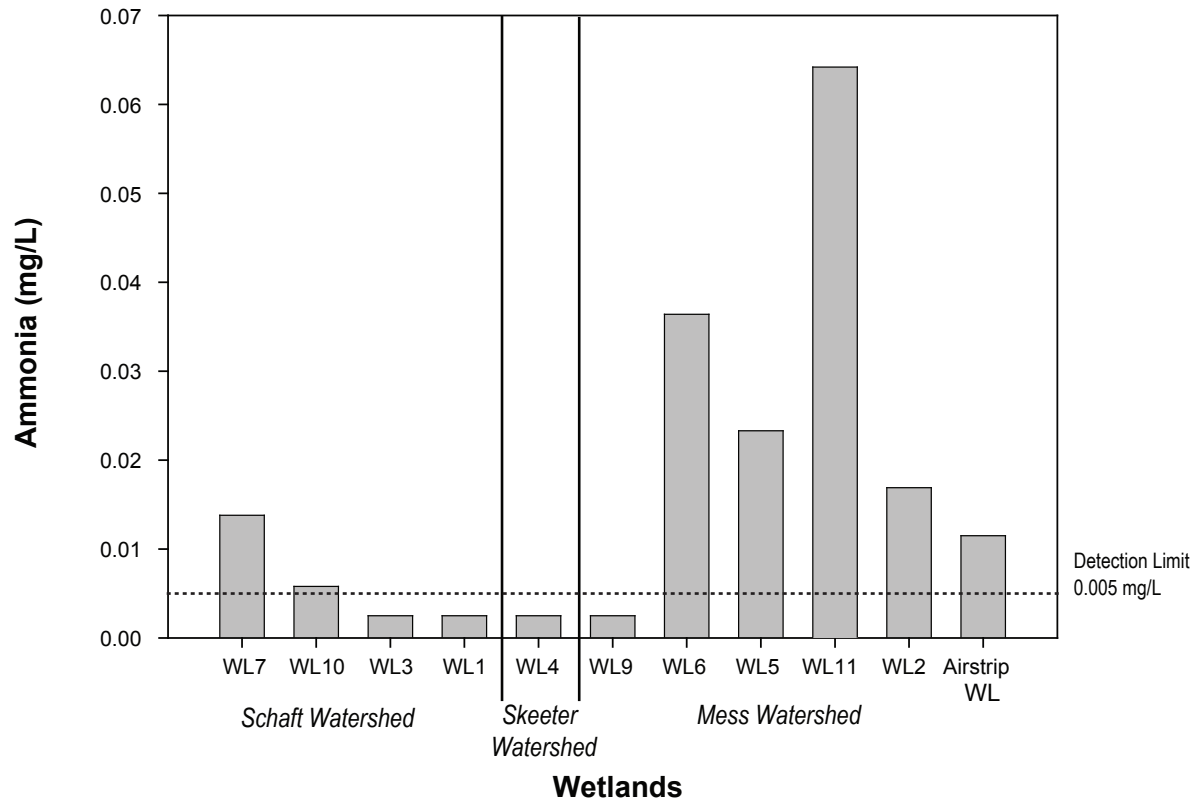


Note: CCME = 2.93mg/L; BC Max = 200mg/L; BC 30-d = 40mg/L.
 Dotted line represents analytical detection limit.

FIGURE 3.2-7



Nitrate Concentrations in Lakes and Wetlands, 2007



Note: CCME and BC guidelines depend on pH and temperature.
Dotted line represents analytical detection limit.

FIGURE 3.2-8



Ammonia Concentrations in Lakes and Wetlands, 2007

The B.C. 30-d Mean guideline for total ammonia (with pH 8.0 and temperature between 2 and 12° C) is between 0.71 and 1.73 mg/L. CCME guideline for total ammonia (with pH 8.0 and temperature between 5 and 15° C) is between 0.715 and 1.54 mg/L. Therefore, as in 2006, all samples were well below the B.C. or CCME guidelines for total ammonia.

Wetland and lake total nitrogen (TN) concentrations ranged from below detection at several sites (0.2 mg/L) to 0.81 mg/L (WL11) and 0.27 mg/L (L4) (Figure 3.2-9). Average TN was 0.19 mg/L in wetlands and 0.10 mg/L in lakes. There are no guidelines for TN.

As in 2006, total phosphate (TP) concentrations were generally greater in wetlands than in lakes (Figure 3.2-10). TP concentrations ranged from below detection (0.0010 mg/L) in both wetlands and lakes to 0.0209 mg/L (WL6) in wetlands and 0.0132 mg/L in lakes (L1). There are no guidelines for TP.

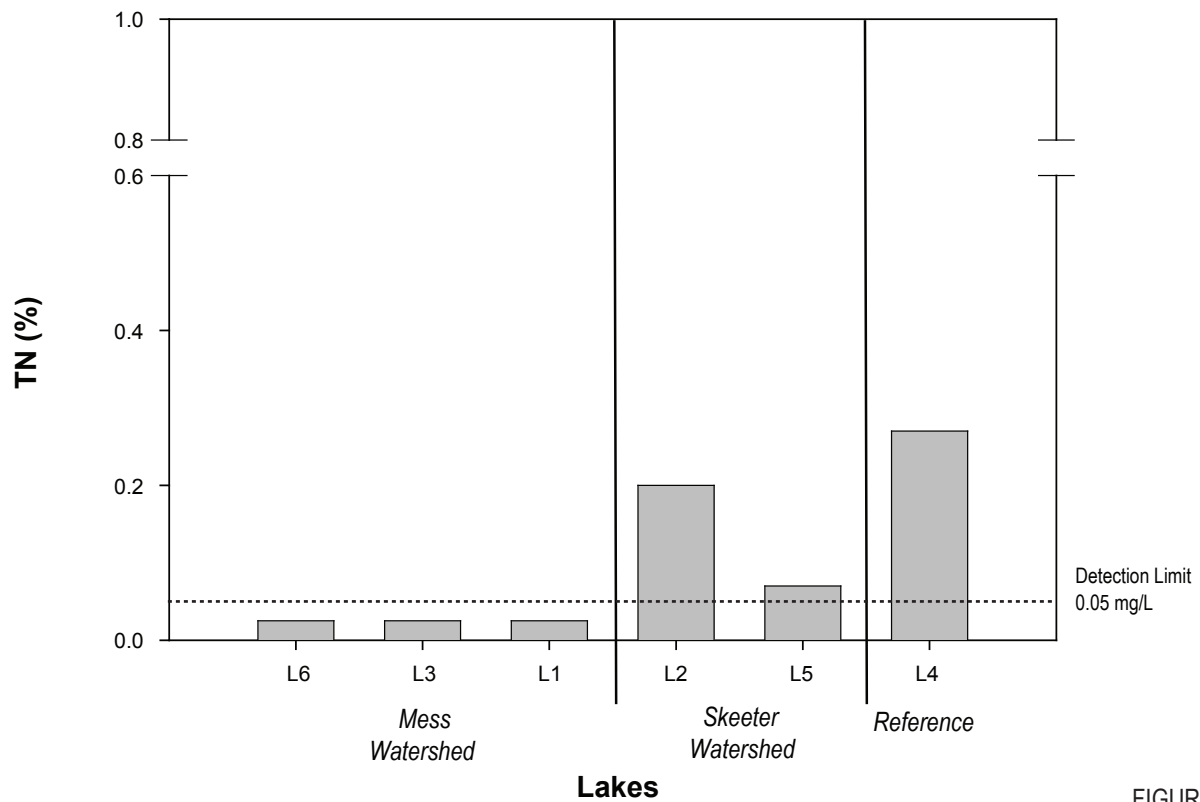
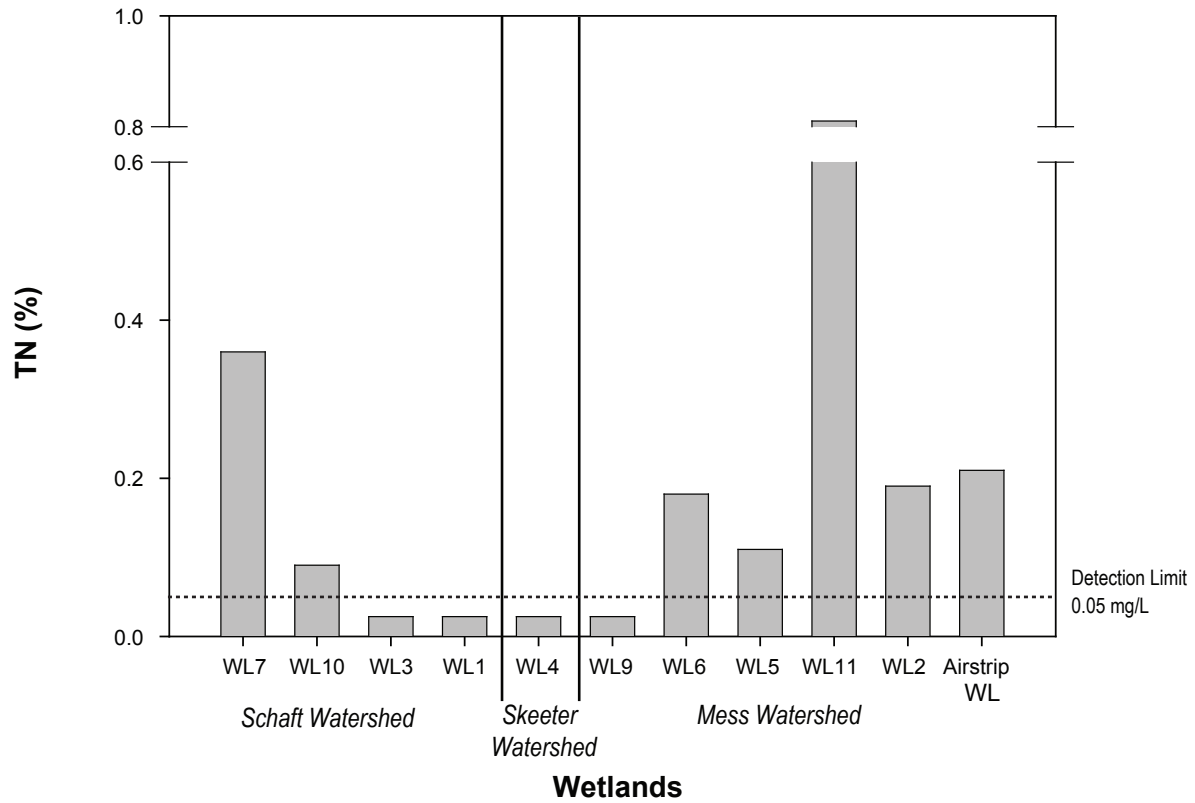
Total cyanide concentrations tended to be higher in wetlands than lakes (Figure 3.2-11). Wetland concentrations ranged from below detection (0.001 mg/L) to 0.0098 mg/L (WL11), with three wetlands (WL7, WL11, and Airstrip WL) exceeding CCME and B.C. 30d mean guidelines of 0.005 mg/L. The B.C. Max guideline of 0.01 mg/L was only exceeded by WL11 (0.0104 mg/L). Lake total cyanide concentrations ranged from below detection (0.001 mg/L) to 0.0034 mg/L (L4) with an average of 0.0014 mg/L. No lakes exceeded any B.C. or CCME guidelines.

3.2.1.3 Total and Dissolved Metals

Key variables (aluminium, arsenic, boron, cadmium, copper, iron, manganese, molybdenum, nickel, selenium and zinc) are presented graphically and discussed below. Concentrations of dissolved zinc were almost all below the detection limit and are not discussed further. CCME and B.C. guidelines for total metals were used to screen both total and dissolved metal concentrations, except for dissolved aluminium which has specific B.C. or CCME guidelines.

Total aluminium (T-Al) concentrations ranged from 0.0017 mg/L (WL10) to 0.6690 mg/L (WL3) in wetlands and from 0.0032 (L4) to 1.1200 mg/L (L1) in lakes (Figure 3.2-12). Concentrations of dissolved aluminium (D-Al) ranged from below the detection limit (0.001 mg/L) at several sites to 0.0995 mg/L (Airstrip WL) in wetlands and 0.0403 mg/L (L1) in lakes (Figure 3.2-13). The CCME guideline for T-Al (0.1 mg/L for pH \geq 6.5) was exceeded at three wetland sites (WL3, WL6, and Airstrip WL) and two (L1 and L5) of the six lake sites. No B.C. guideline exists for T-Al. No site exceeded the B.C. Max guideline (0.10 mg/L) for D-Al, although Airstrip WL was only 0.0005 mg/L below this guideline. Airstrip was the only site to exceed the B.C. 30-d mean guideline (0.050 mg/L). No CCME guidelines exist for D-Al.

Concentrations of total arsenic (T-As) ranged from below the detection limits (0.0001-0.0002 mg/L) at L6 and L3 to 0.00484 mg/L at WL5 (Figure 3.2-14). Concentrations of dissolved arsenic (D-As) ranged from below the detection limits at several sites to 0.00283 mg/L at WL5 (Figure 3.2-15). No guidelines were exceeded, although both WL6 and WL5 had T-As concentrations only slightly lower than CCME and B.C. Max guidelines of 0.005 mg/L. No site exceeded the CCME or B.C. guideline for D-As.

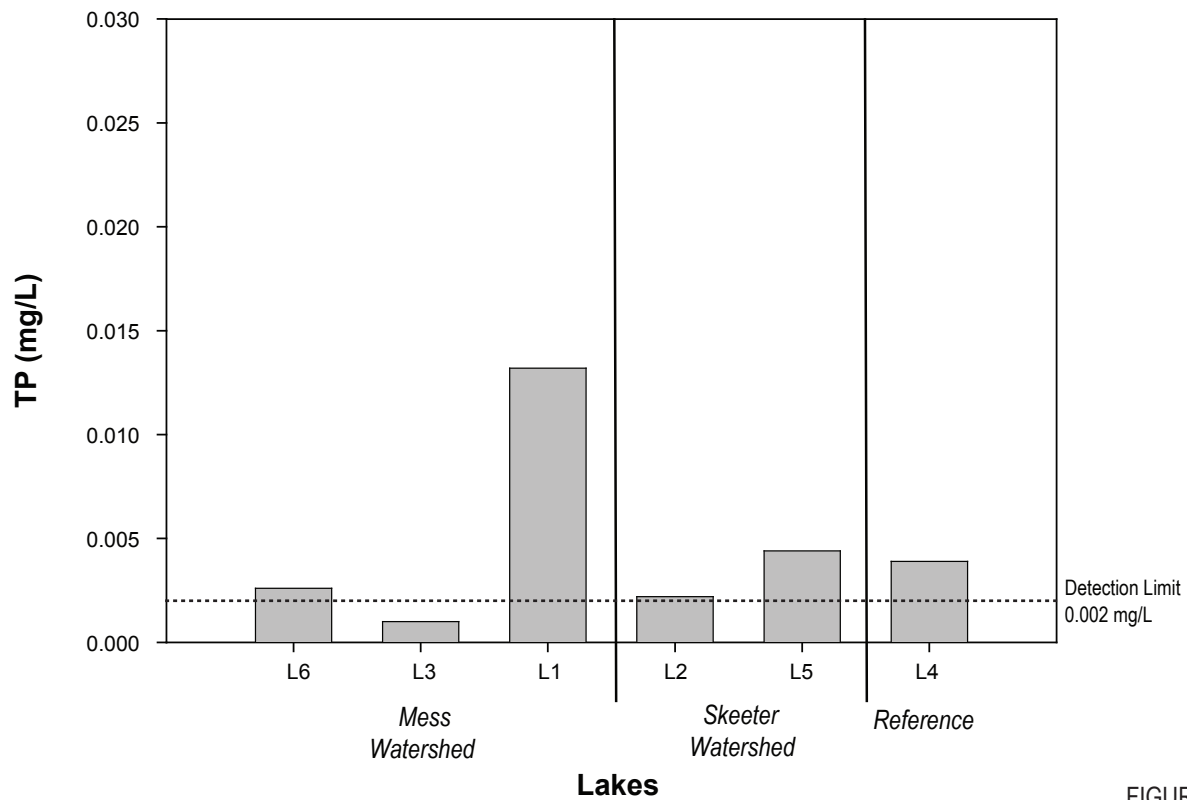
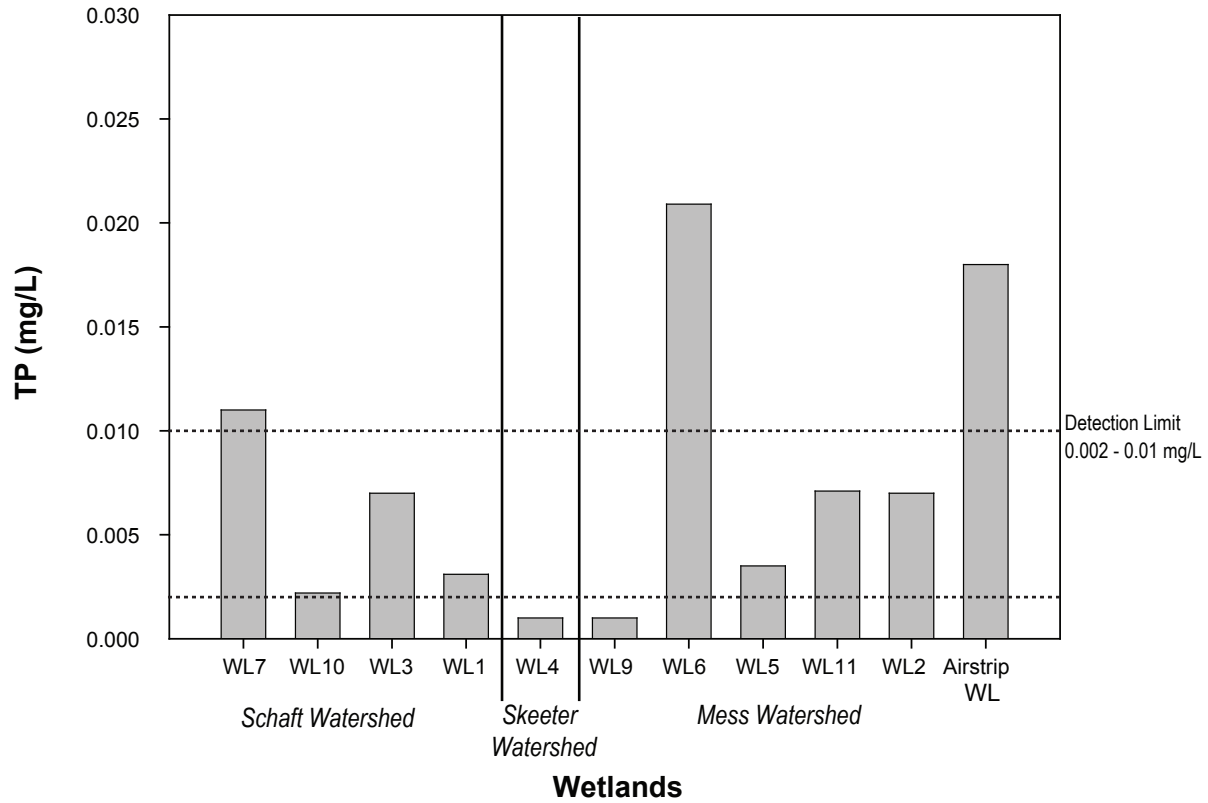


Note: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.

FIGURE 3.2-9



Total Nitrogen (TN) Concentrations in Lakes and Wetlands, 2007

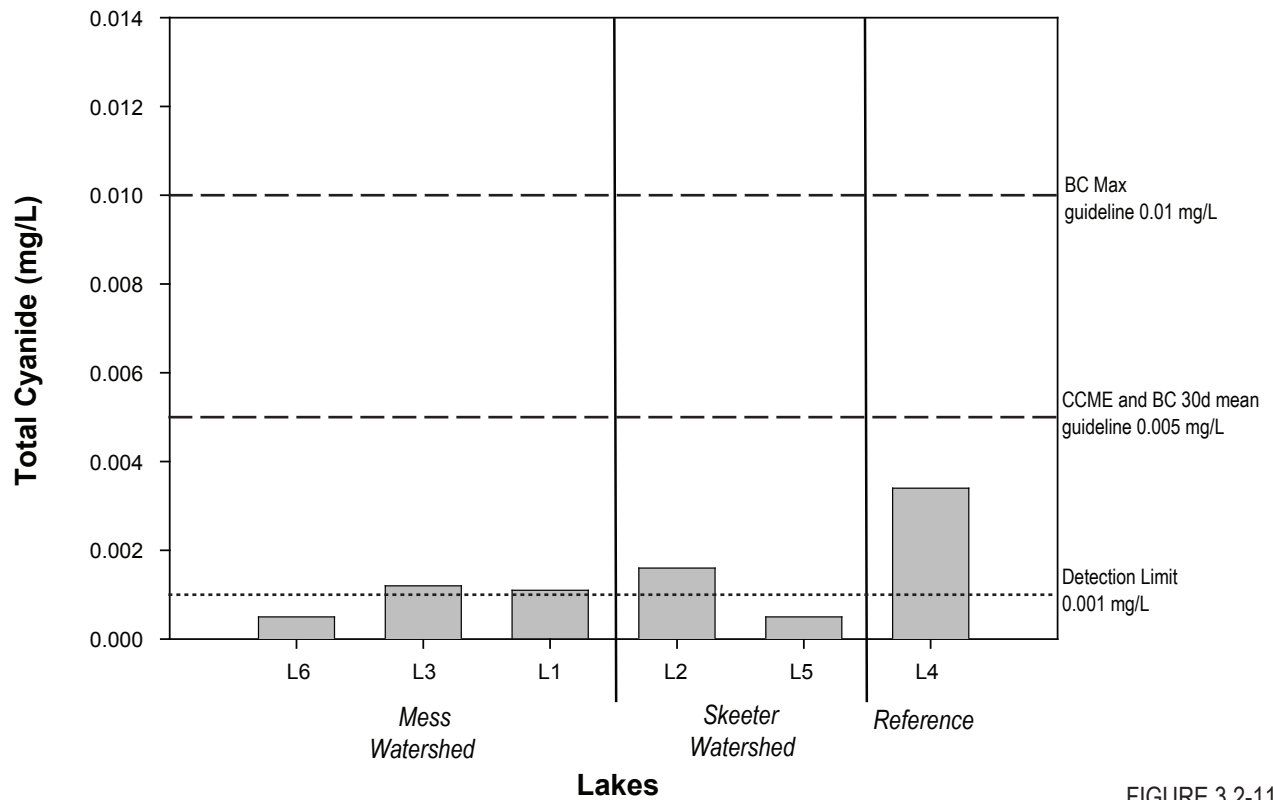
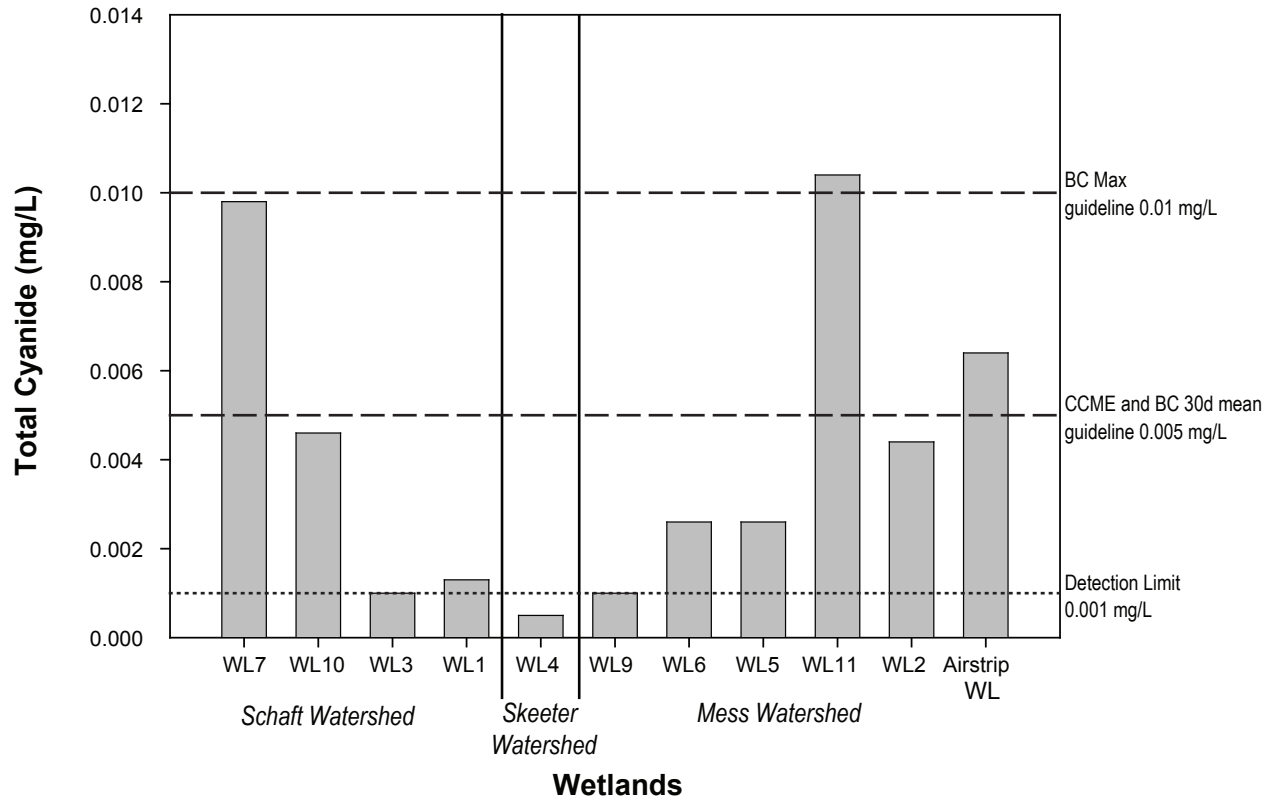


Note: No CCME or BC aquatic life guidelines exist.
 Dotted line represents analytical detection limit.

FIGURE 3.2-10



Total Phosphate (TP) Concentrations in Lakes and Wetlands, 2007

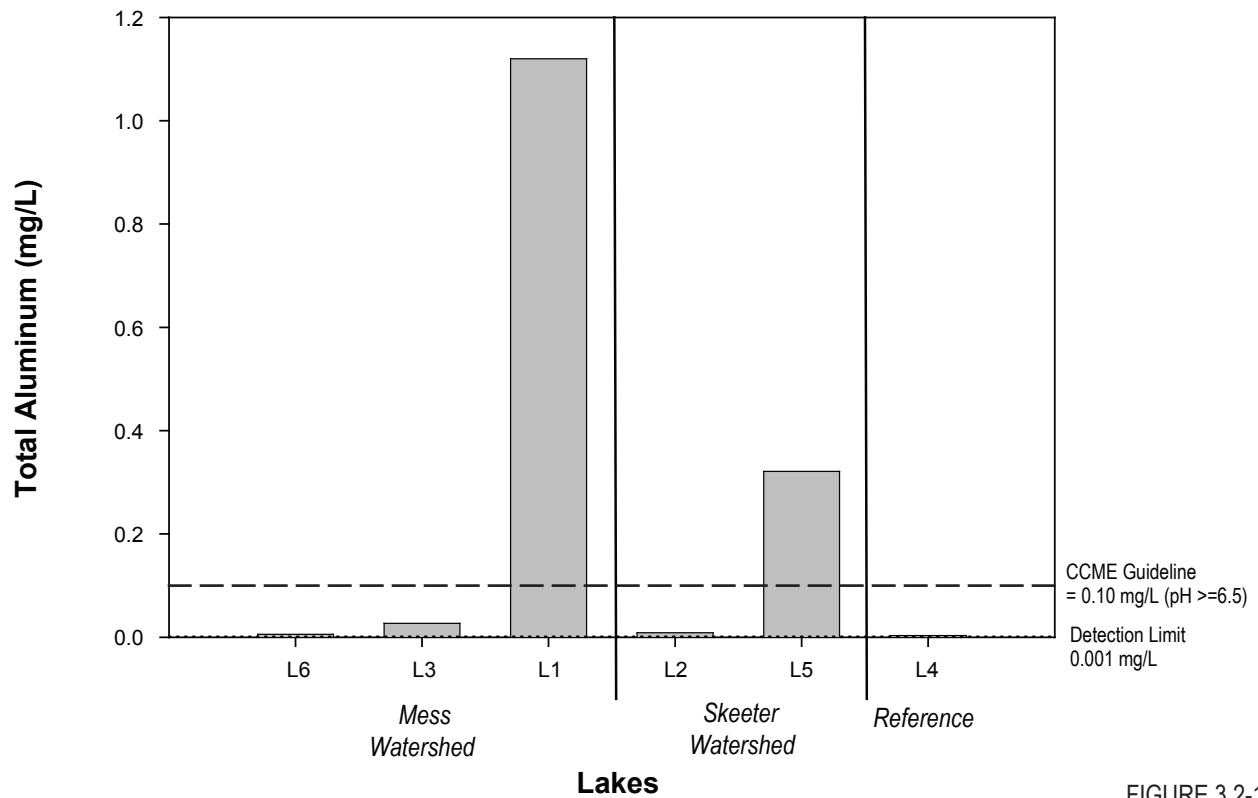
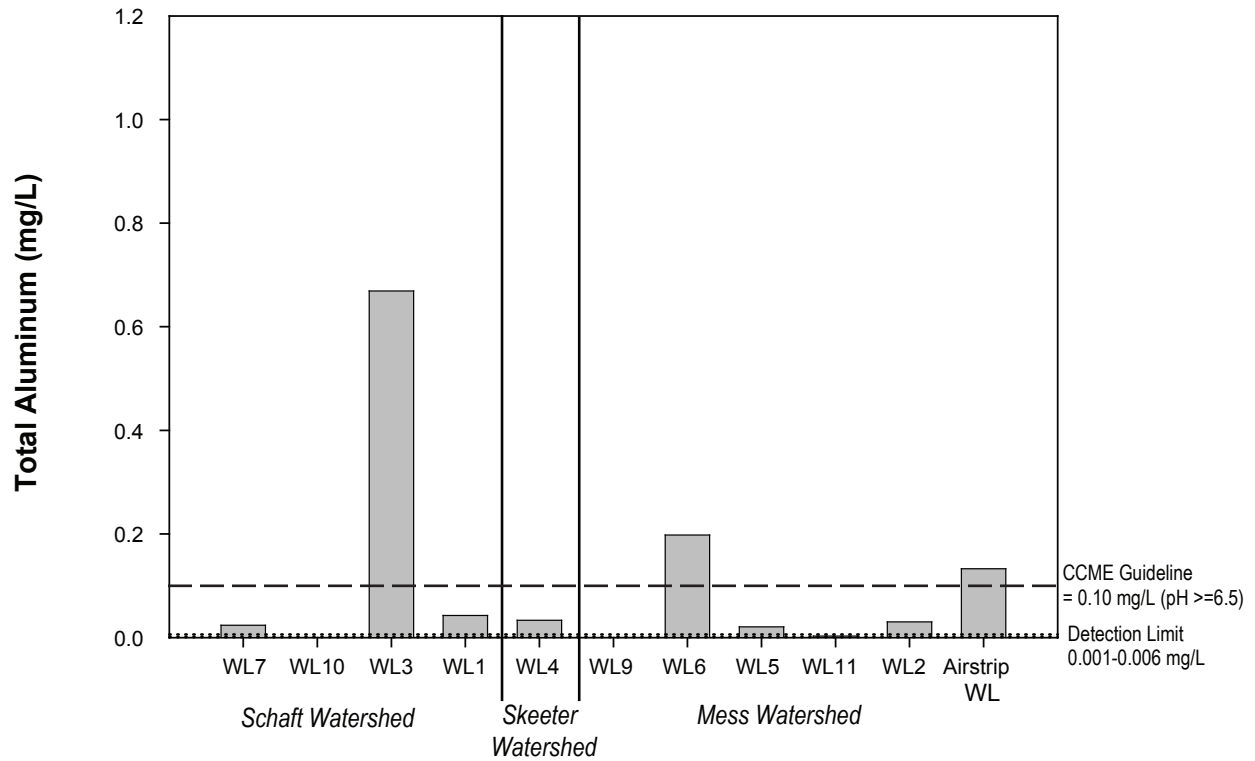


Note: Dotted line represents analytical detection limit.
Dashed line indicates guideline value, where available.

FIGURE 3.2-11



Total Cyanide Concentrations in Lakes and Wetlands, 2007

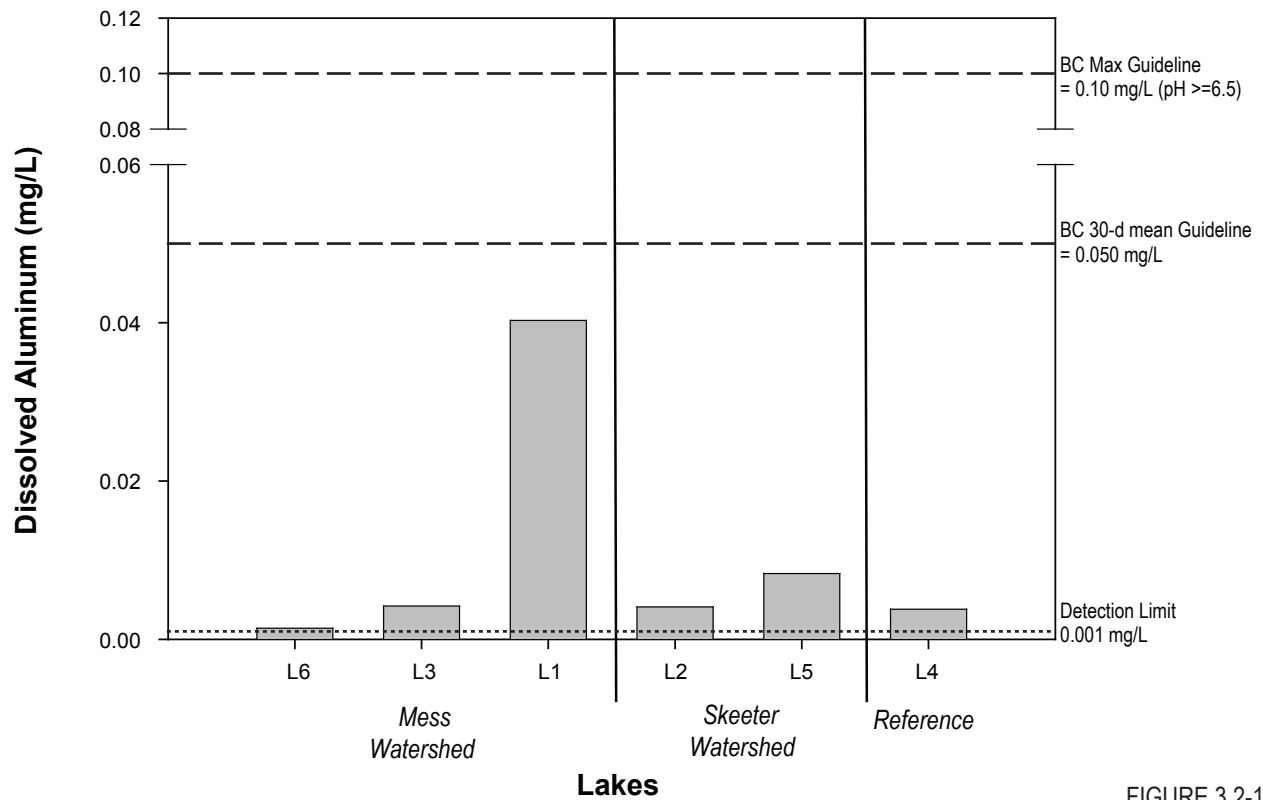
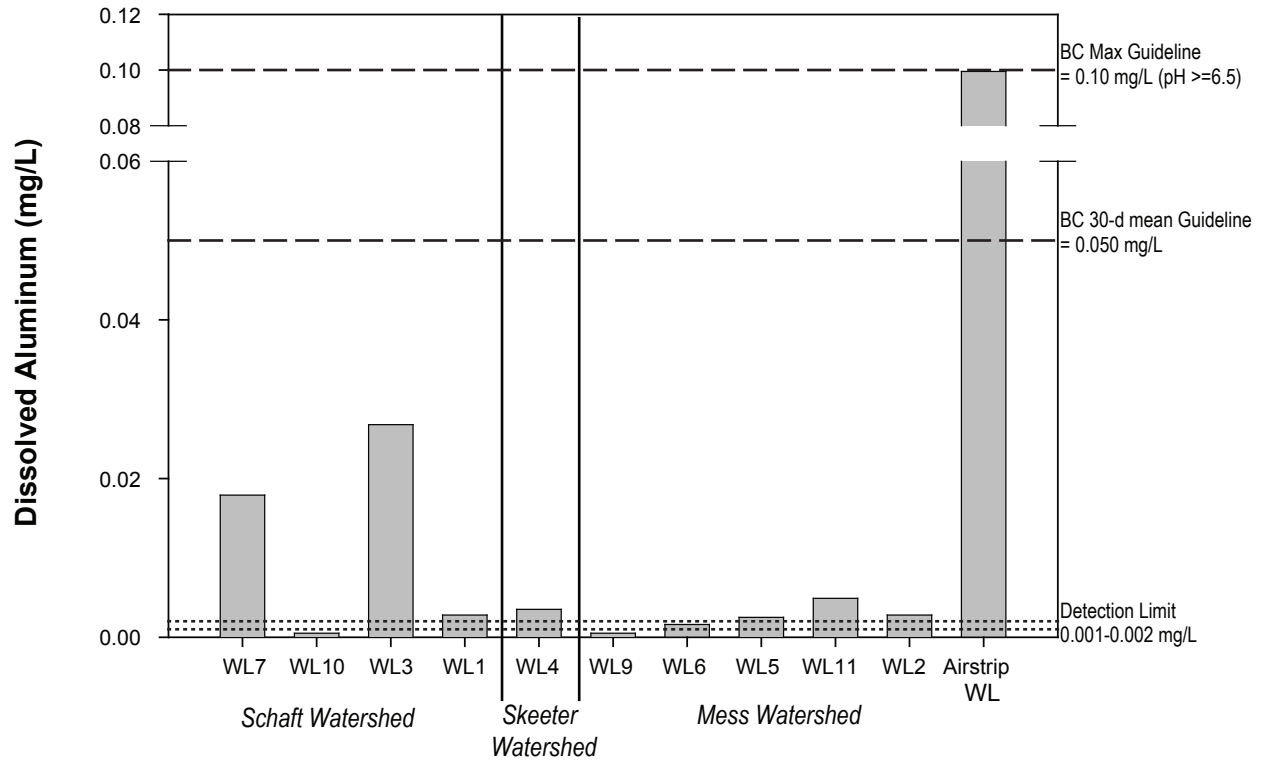


Note: No BC aquatic life guideline exists.
 Dotted line represents analytical detection limit.
 Dashed line indicated guideline value, where available.

FIGURE 3.2-12



Total Aluminum Concentrations in Lakes and Wetlands, 2007

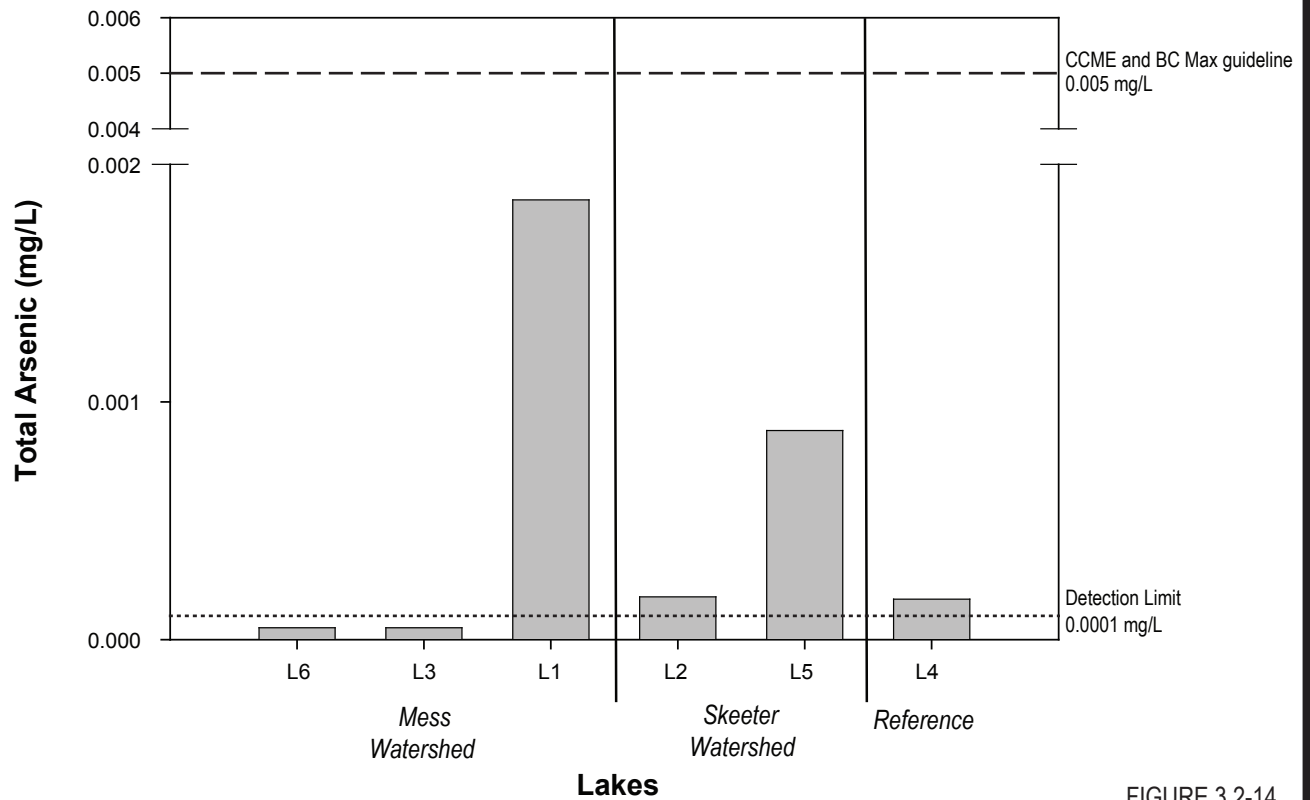
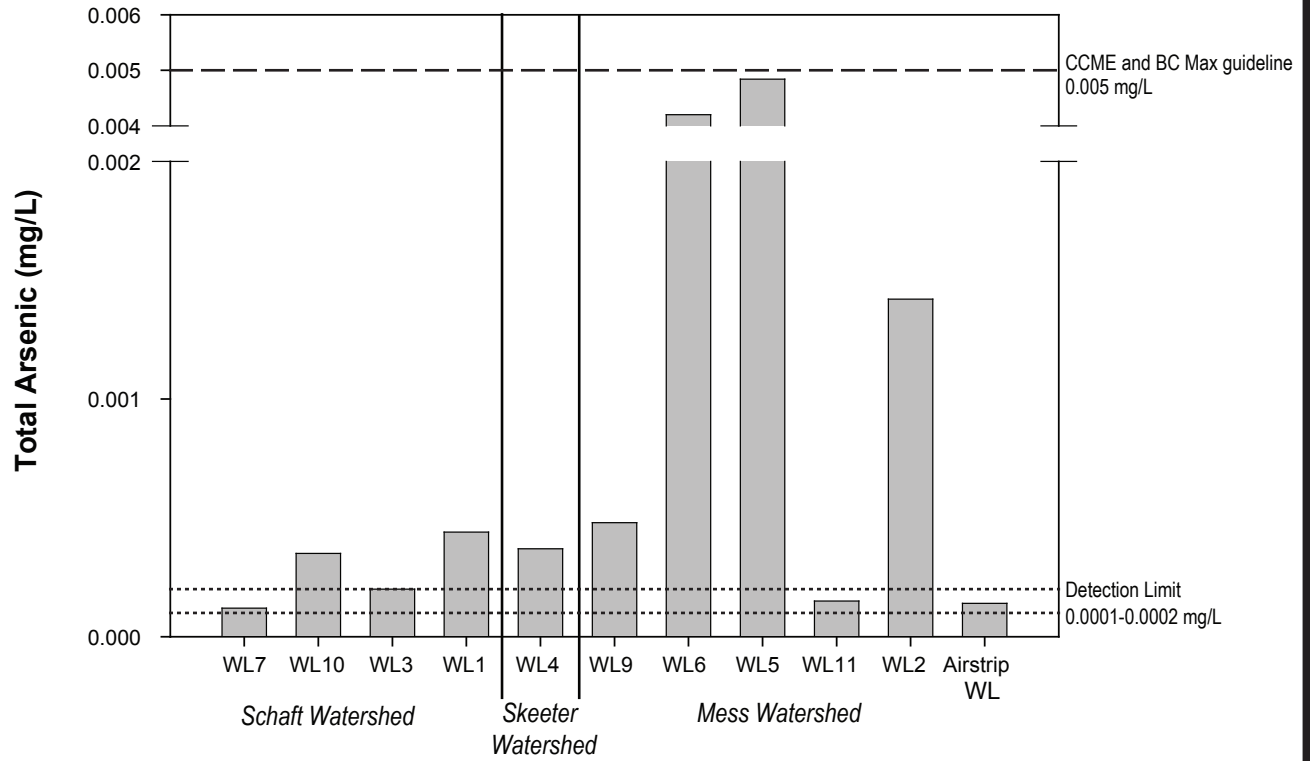


Note: Dotted line represents analytical detection limit.
Dashed line indicated guideline value, where available.

FIGURE 3.2-13



Dissolved Aluminum Concentrations in Lakes and Wetlands, 2007

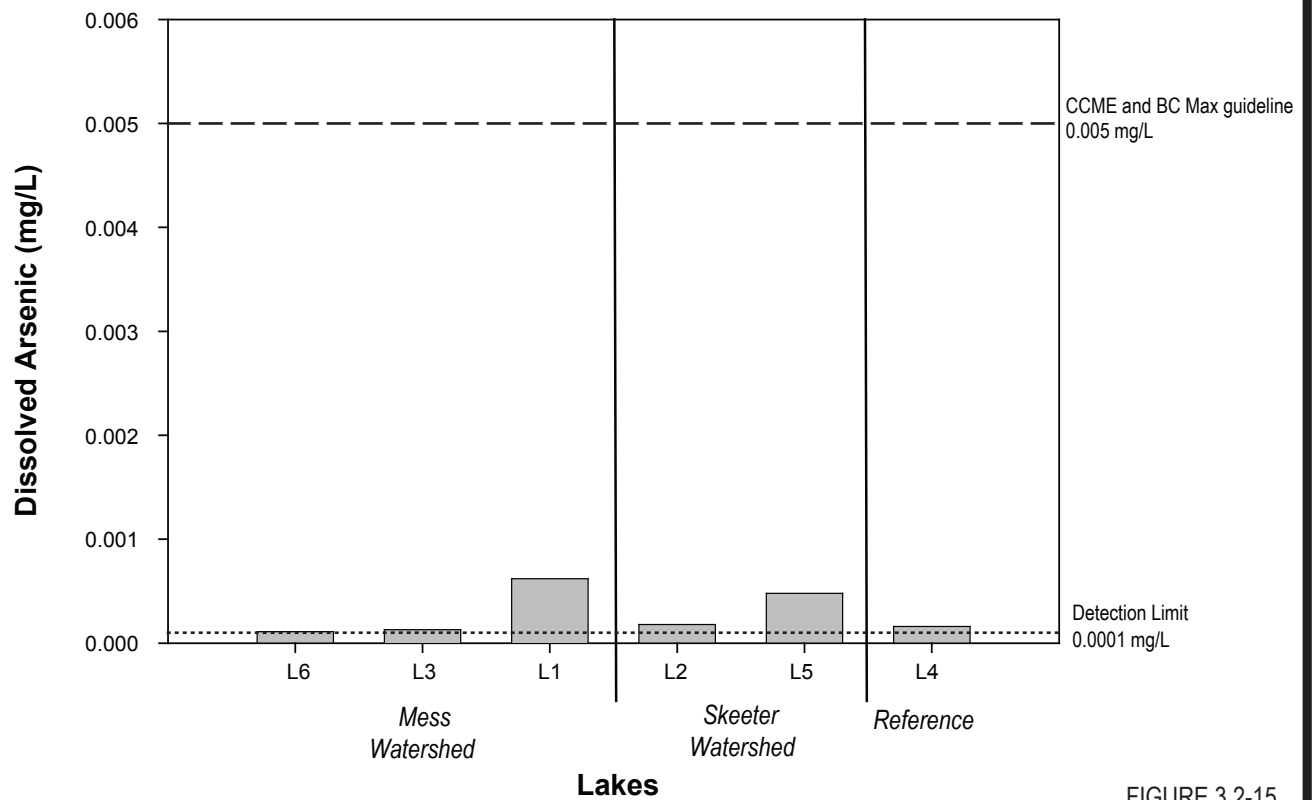
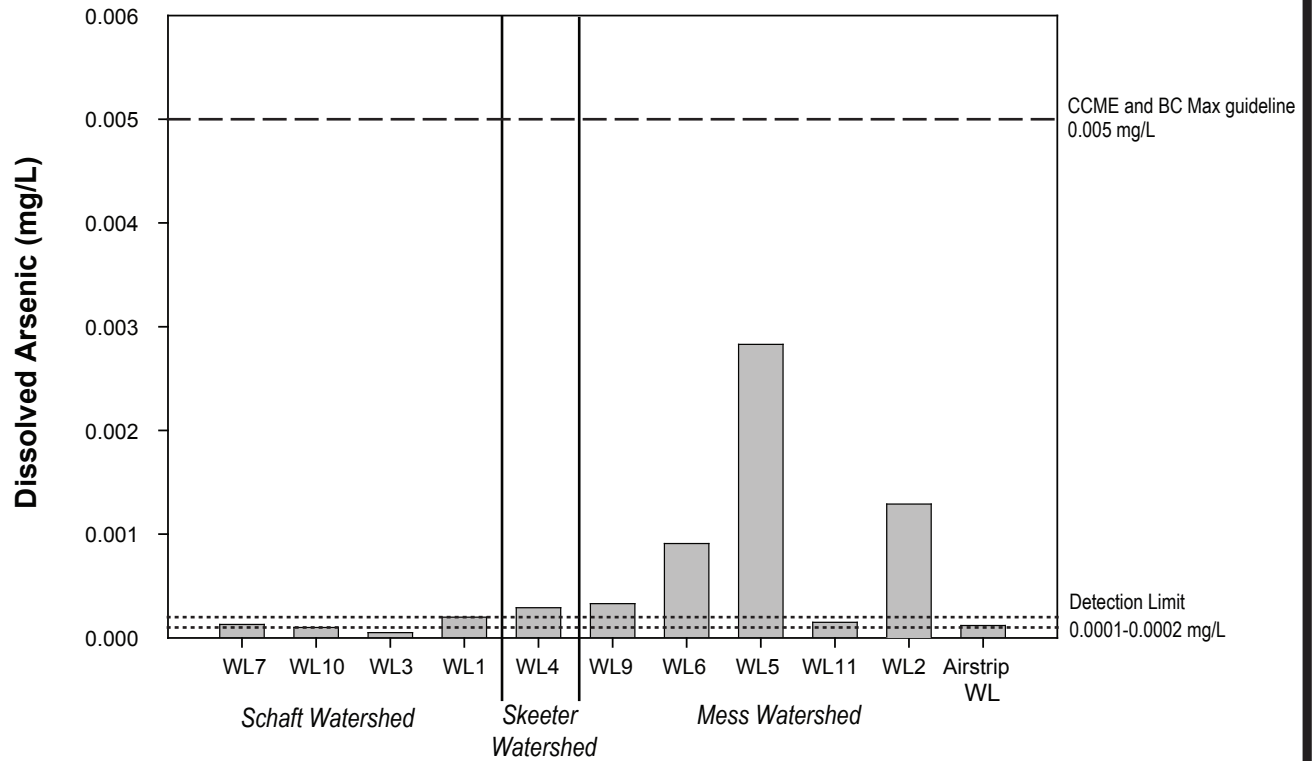


Note: Dotted line represents analytical detection limit.
Dashed line indicated guideline value, where available.

FIGURE 3.2-14



Total Arsenic Concentrations in Lakes and Wetlands, 2007



Note: Dotted line represents analytical detection limit.
Dashed line indicated guideline value, where available.

FIGURE 3.2-15



Dissolved Arsenic Concentrations in Lakes and Wetlands, 2007

Results and Discussion

At most lake and wetland sites both total and dissolved boron concentrations were below detection (Figures 3.2-16 and 3.2-17). Total boron ranged from below detection (0.01 mg/L) to 1.230 mg/L (WL2) in wetlands and 0.017 (L1) in lakes. The dissolved fractions accounted for approximately 100% of total concentrations at all sites. B.C. Max guideline (1.2 mg/L) was exceeded at WL2 in both the total and dissolved concentrations. No other guidelines exist for boron.

Most samples of total cadmium (T-Cd) and dissolved cadmium (D-Cd) were below detection limits (Figures 3.2-18 and 3.2-19). Only one wetland (0.0000260 mg/L, WL4) and two lakes (0.0000230 mg/L at L4, and 0.0000300 mg/L at L1) had T-Cd above detection. All lakes had D-Cd concentrations below detection (0.00002 mg/L). WL7 was the only wetland site with D-Cd concentrations above detection (0.0000460 mg/L). CCME and B.C. Max guidelines (both hardness dependent) for T-Cd were not exceeded at any site, although WL7 D-Cd did exceed CCME and B.C. Max guidelines for T-Cd. Because T-Cd at WL7 was below detection (0.00002 mg/L) it may be that this result for D-Cd (0.000046 mg/L) is due to contamination.

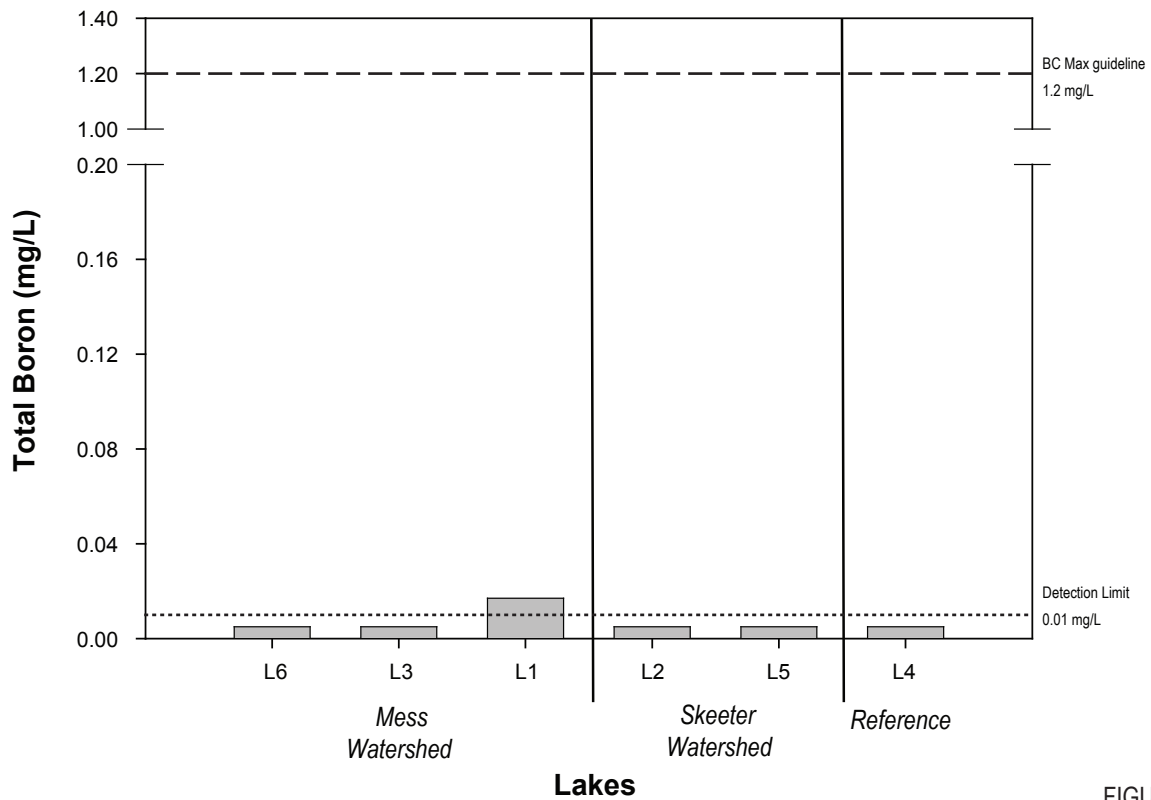
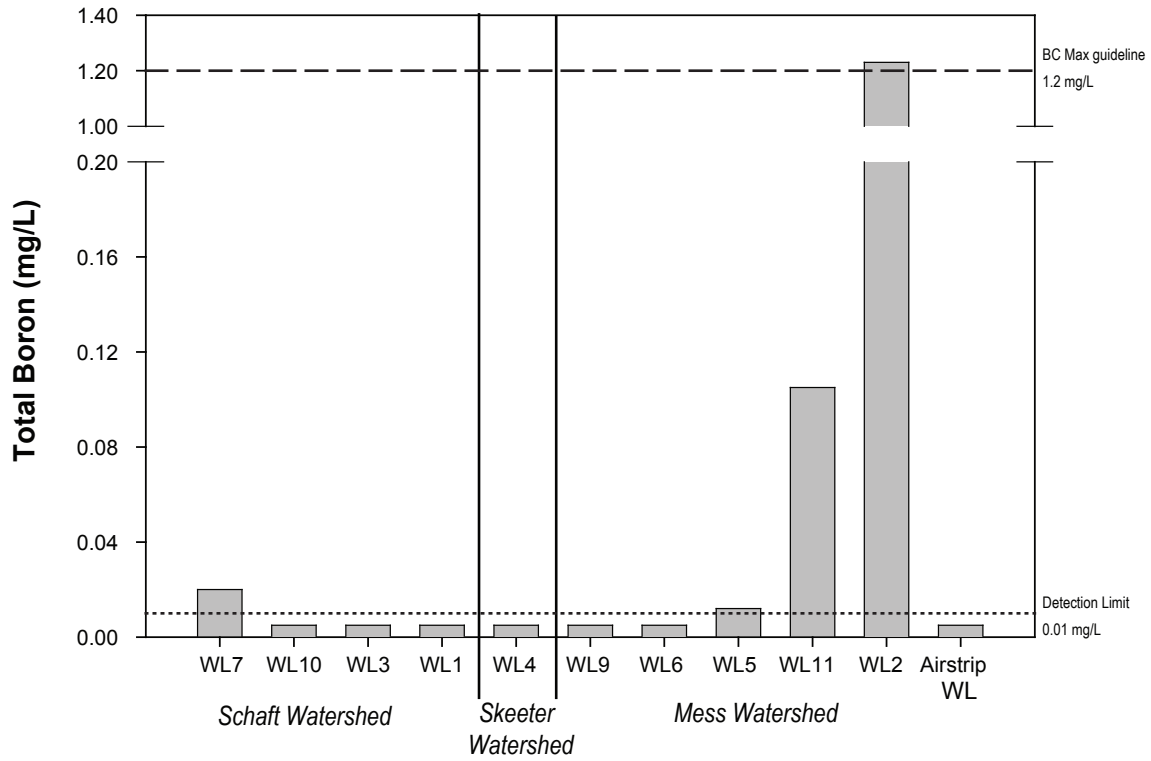
Concentrations of total copper (T-Cu) ranged from below detection limits (WL3 and WL11) to 0.00273 mg/L (WL7) in wetlands and from 0.00011 mg/L (L6) to 0.00398 mg/L (L1) in lakes (Figure 3.2-20). Dissolved copper (D-Cu) was less than 0.001 mg/L in all wetlands and lakes but WL7 (0.00273 mg/L) and L1 (0.00187 mg/L) (Figure 3.2-21). CCME total copper guidelines were exceeded at WL7 (both T-Cu and D-Cu) and L1 and L5 (T-Cu only). No B.C. guidelines were exceeded.

Total iron (T-Fe) varied widely between sampling sites, with wetlands ranging from 0.046 (WL11) to 6.81 mg/L (WL10) and lakes from below detection (0.015 mg/L) to 1.07 mg/L (L1) (Figure 3.2-22). Dissolved iron (D-Fe) concentrations were below detection limits (0.03mg/L) for all lakes and most wetlands (Figure 3.2-23). Detectable D-Fe concentrations ranged from 0.033 mg/L (WL5) to 0.383 mg/L (Airstrip WL). As noted in 2006, many sites (WL10, WL3, WL1, WL6, WL5, Airstrip WL, L1, and L5) exceeded CCME and B.C. Max guidelines (0.3 mg/L). Only Airstrip WL D-Fe exceeded these guidelines.

Wetland and lake concentrations of total manganese (T-Mn) ranged from 0.00170 mg/L at L6 to 0.19900 mg/L at WL10 (Figure 3.2-24). Dissolved manganese (D-Mn) concentrations ranged from 0.000095 at WL5 to 0.160000 mg/L at WL10 (Figure 3.2-25). No CCME guideline exists for manganese. No sites exceeded B.C. Max or 30-d Mean guidelines (both hardness dependent).

Wetland and lake concentrations of total molybdenum (T-Mo) ranged from 0.0000610 (WL11) to 0.0020500 mg/L (WL9) (Figure 3.2-26). Dissolved molybdenum (D-Mo) concentrations ranged from below detection (0.000025 mg/L) at WL11 to 0.00216 mg/L at WL9 in wetlands (Figure 3.2-27). In lakes T-Mo ranged from 0.0006520 (L2) to 0.0017500 mg/L (L4) and D-Mo ranged from 0.0003470 (L6) to 0.0019100 mg/L (L4). As with boron, T-Mo and D-Mo concentrations were very similar at each site, indicating a lack of particulate-bound molybdenum. No sites exceeded CCME or B.C. guidelines for T-Mo or D-Mo.

With the exception of three sites (WL7, WL6 and L1) concentrations of total nickel (T-Ni) were below detection limits (Figure 3.2-28).

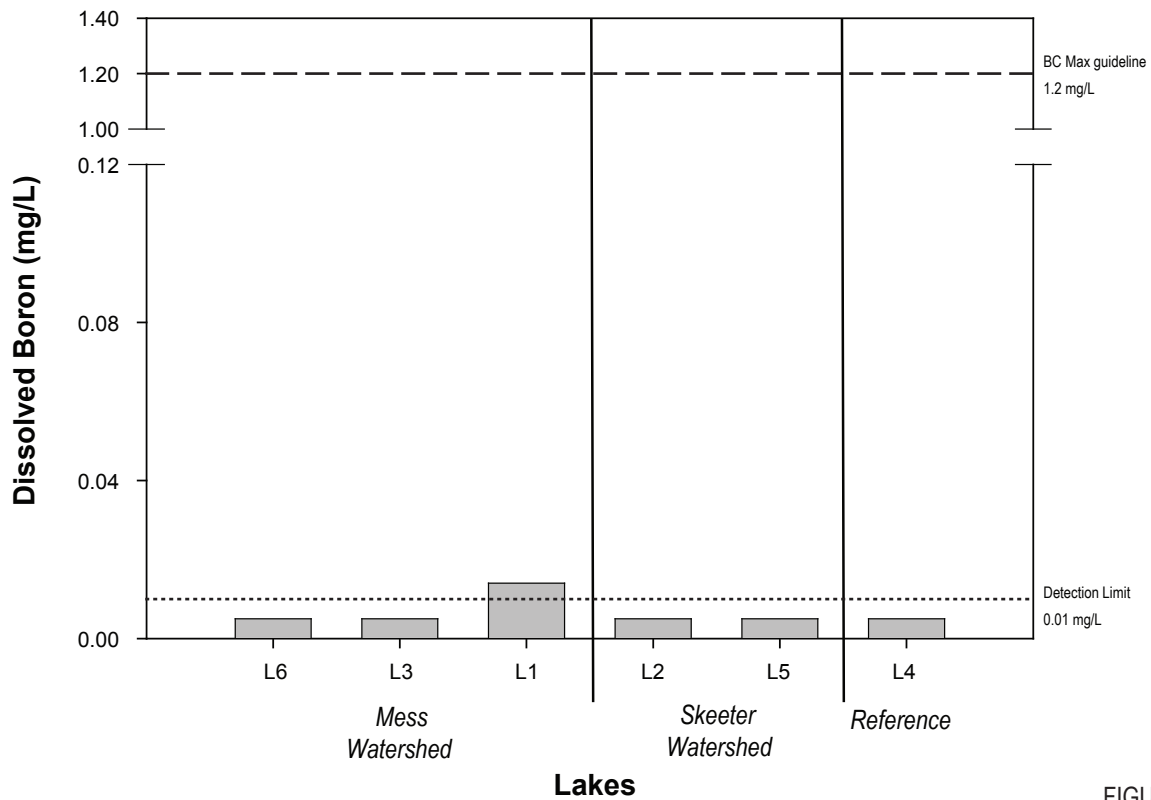
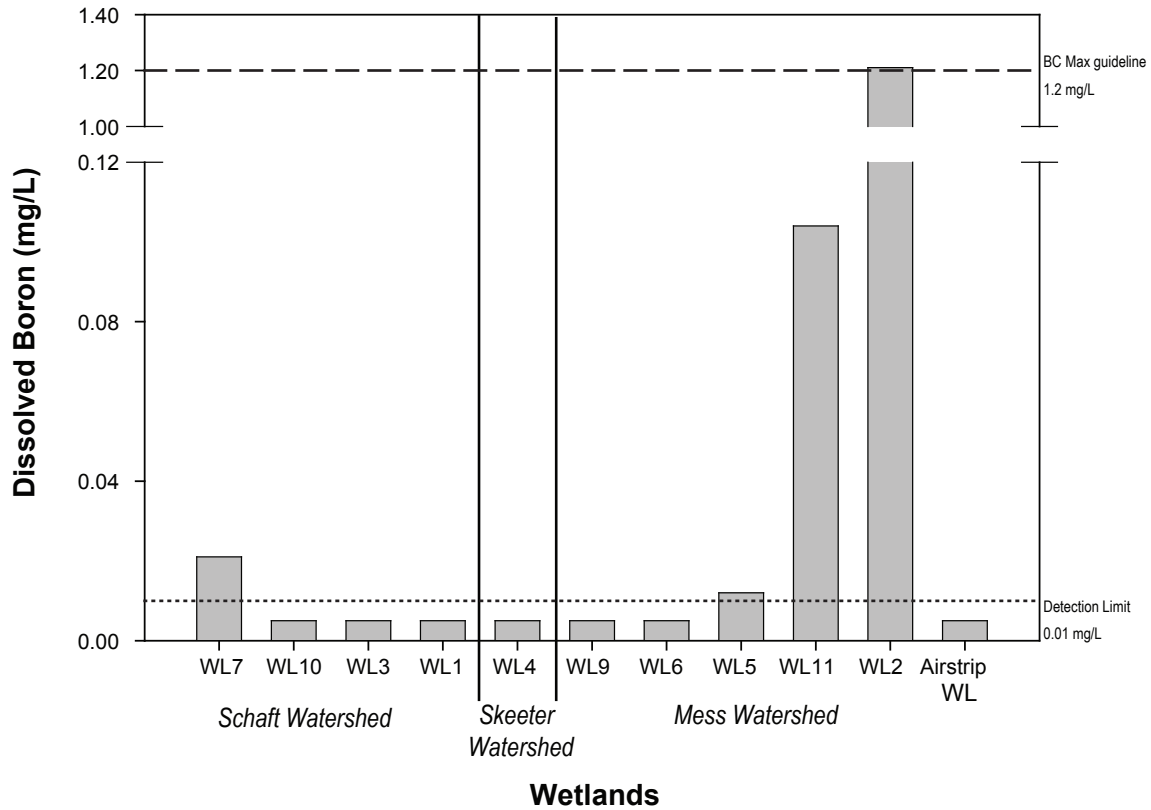


Note: No CCME or BC 30-d guidelines exist.
 Dotted line represents analytical detection limit.
 Dashed line indicates guideline value, where available.

FIGURE 3.2-16



Total Boron Concentrations in Lakes and Wetlands, 2007

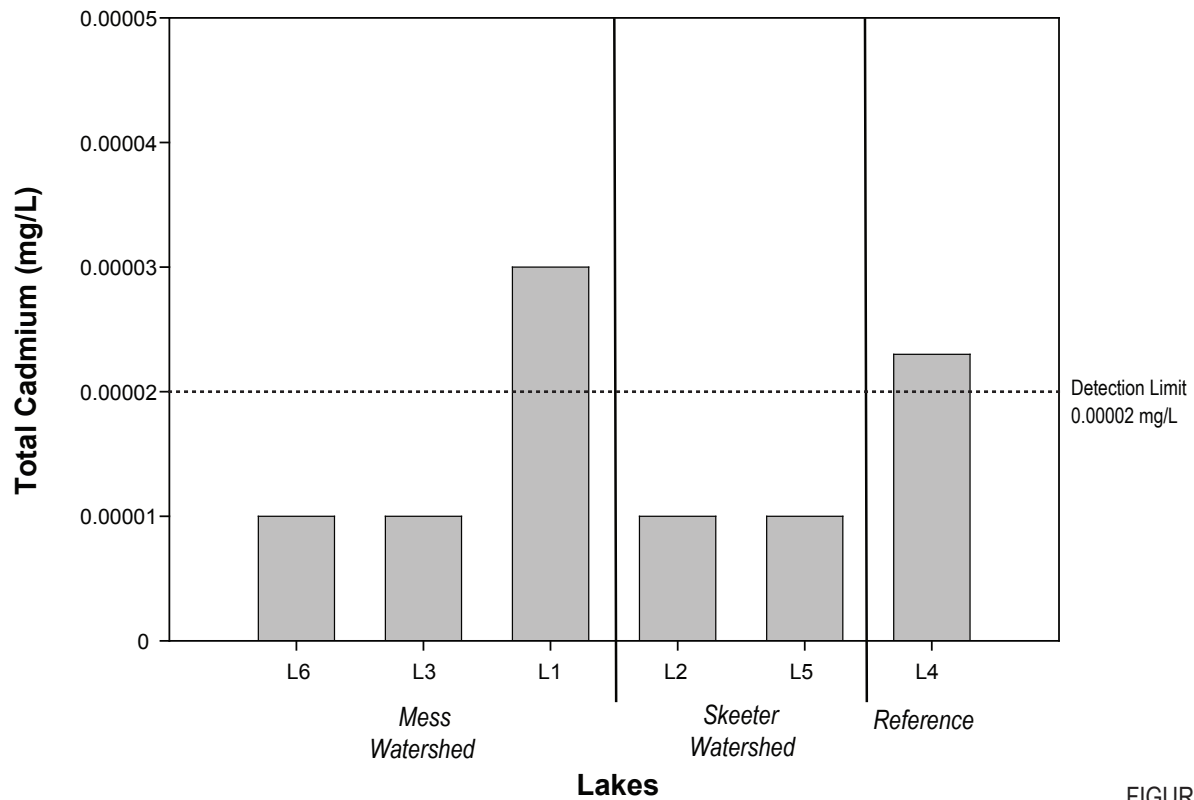
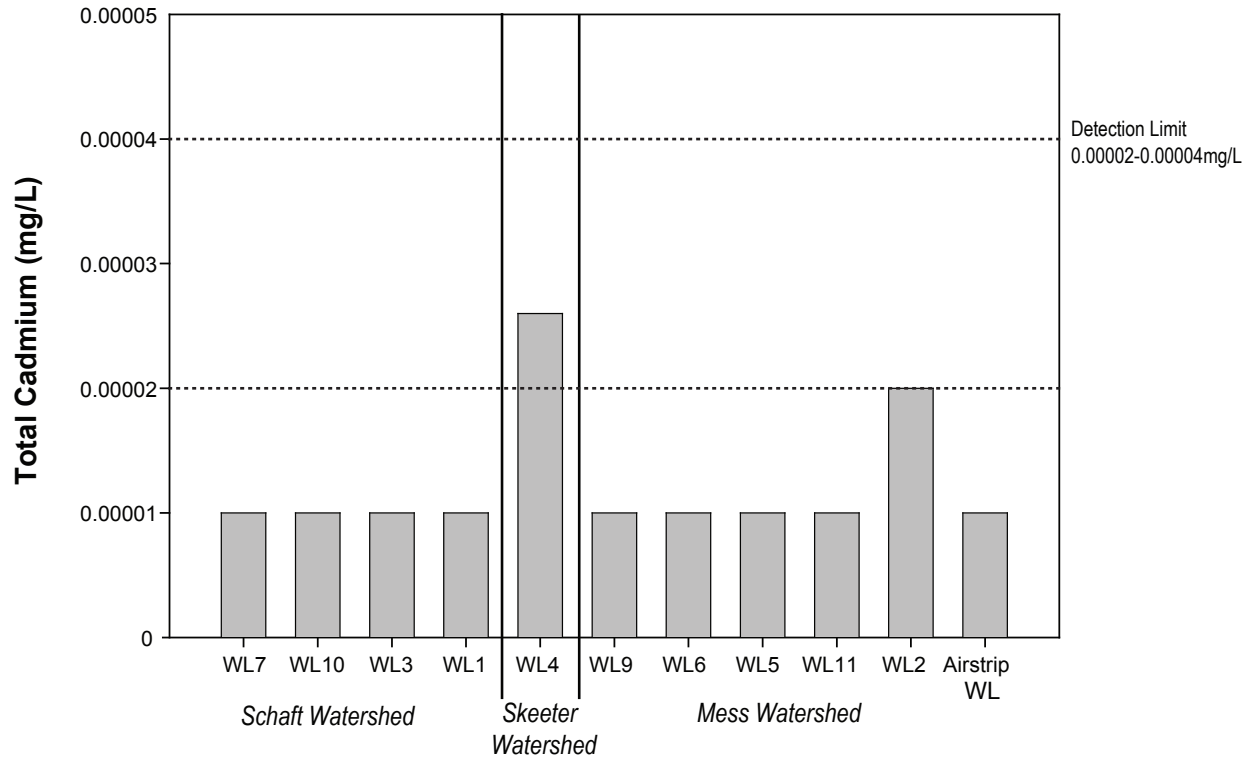


Note: No CCME or BC 30-d guidelines exist.
 Dotted line represents analytical detection limit.
 Dashed line indicates guideline value, where available.

FIGURE 3.2-17



Dissolved Boron Concentrations in Lakes and Wetlands, 2007

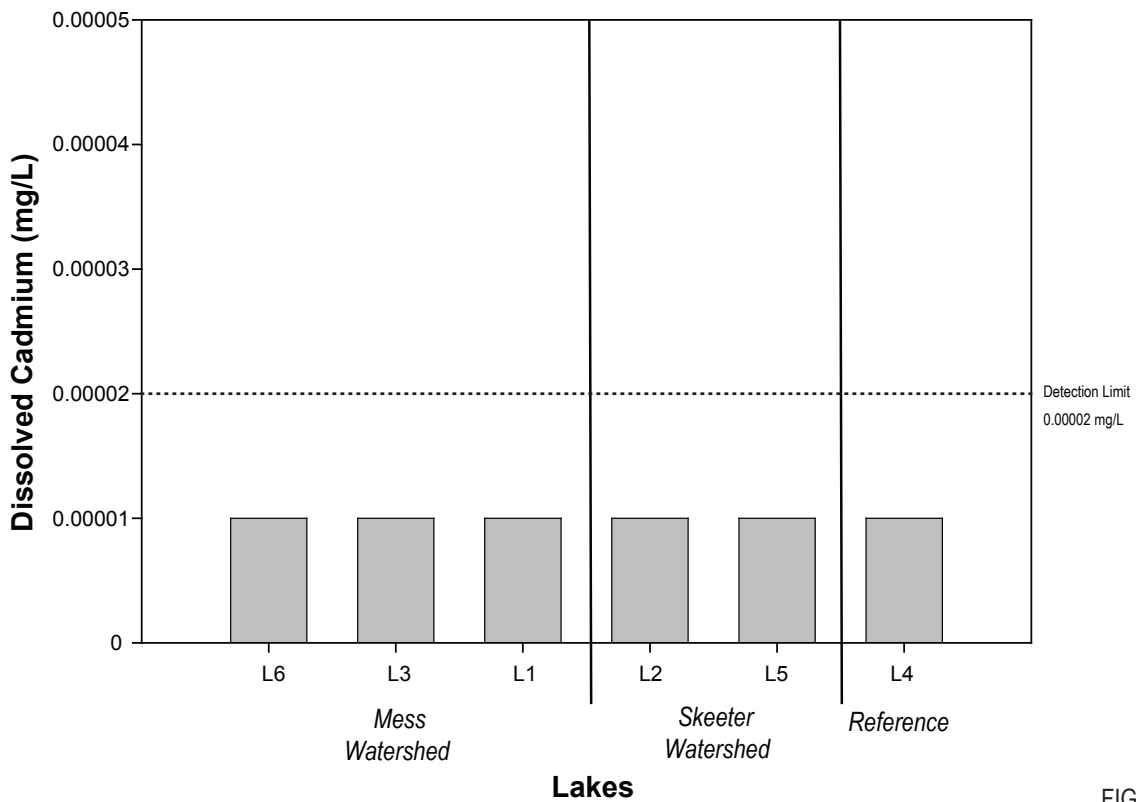
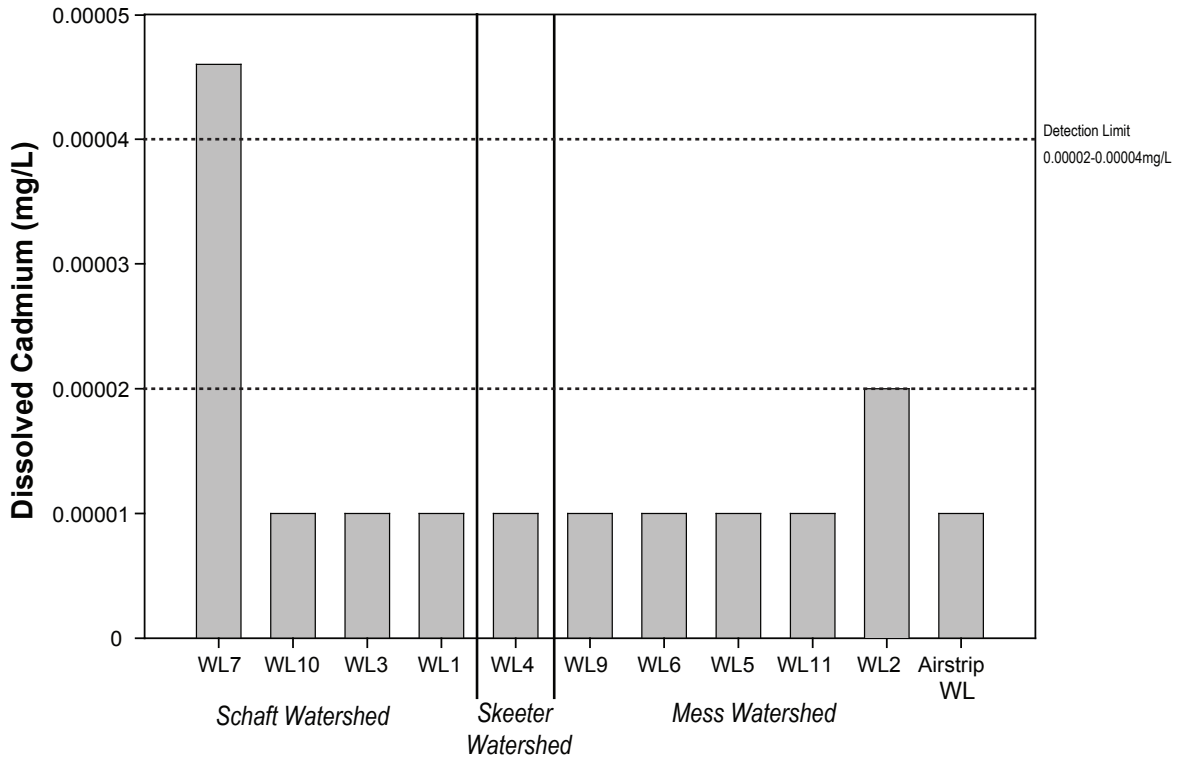


Note: CCME and BC-Max guidelines are hardness dependent.
Dotted line represents analytical detection limit.

FIGURE 3.2-18



Total Cadmium Concentrations in Lakes and Wetlands, 2007

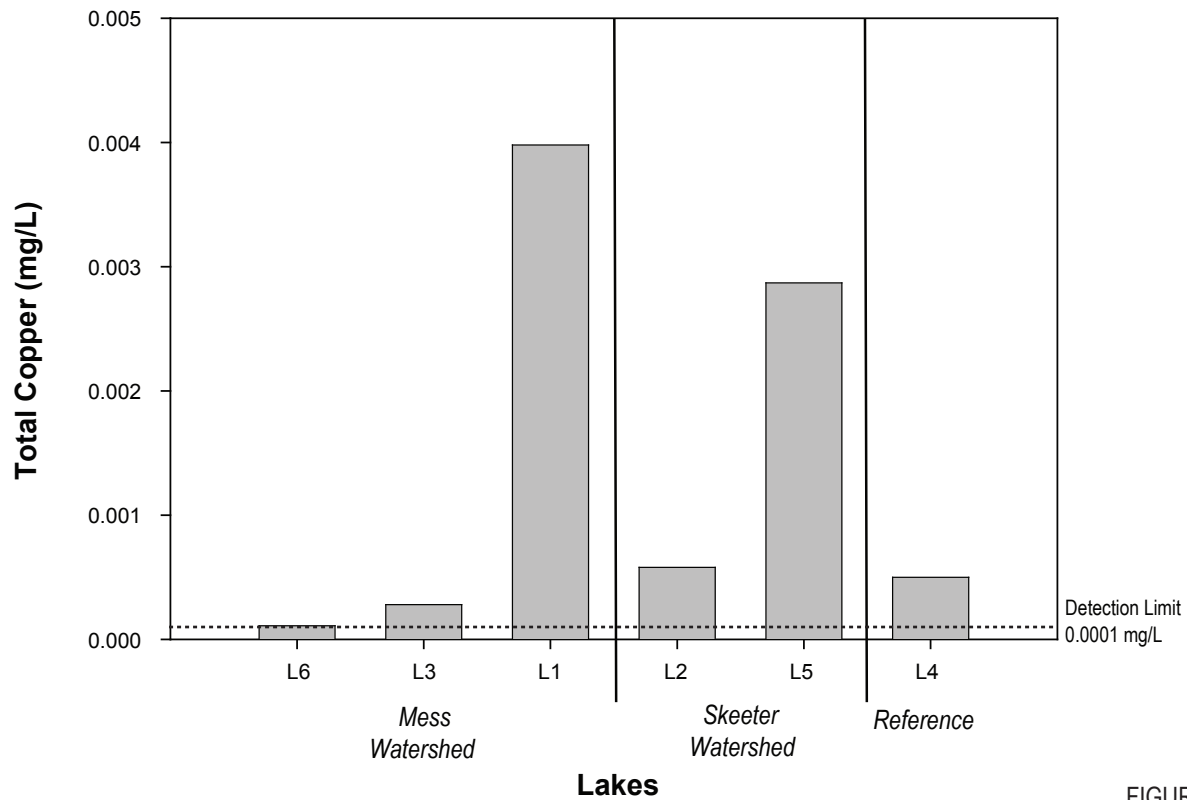
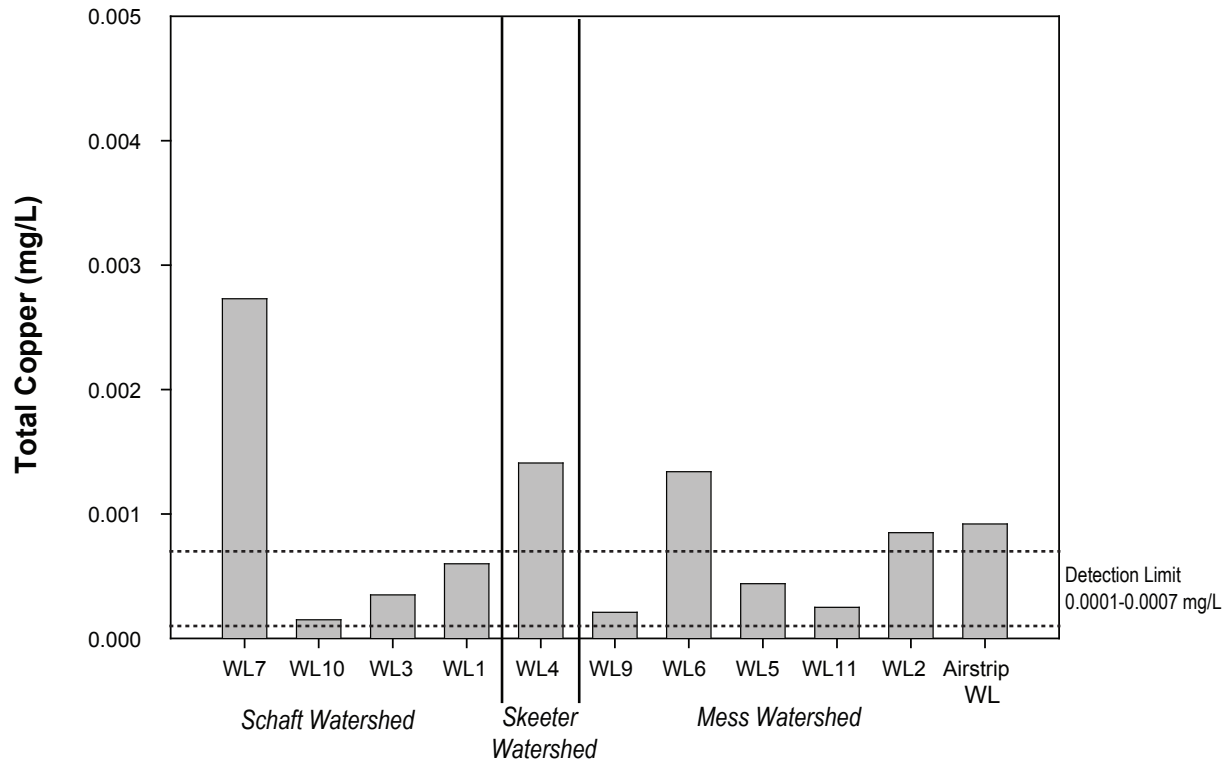


Note: CCME and BC-Max guidelines are hardness dependent.
Dotted line represents analytical detection limit.

FIGURE 3.2-19



Dissolved Cadmium Concentrations in Lakes and Wetlands, 2007

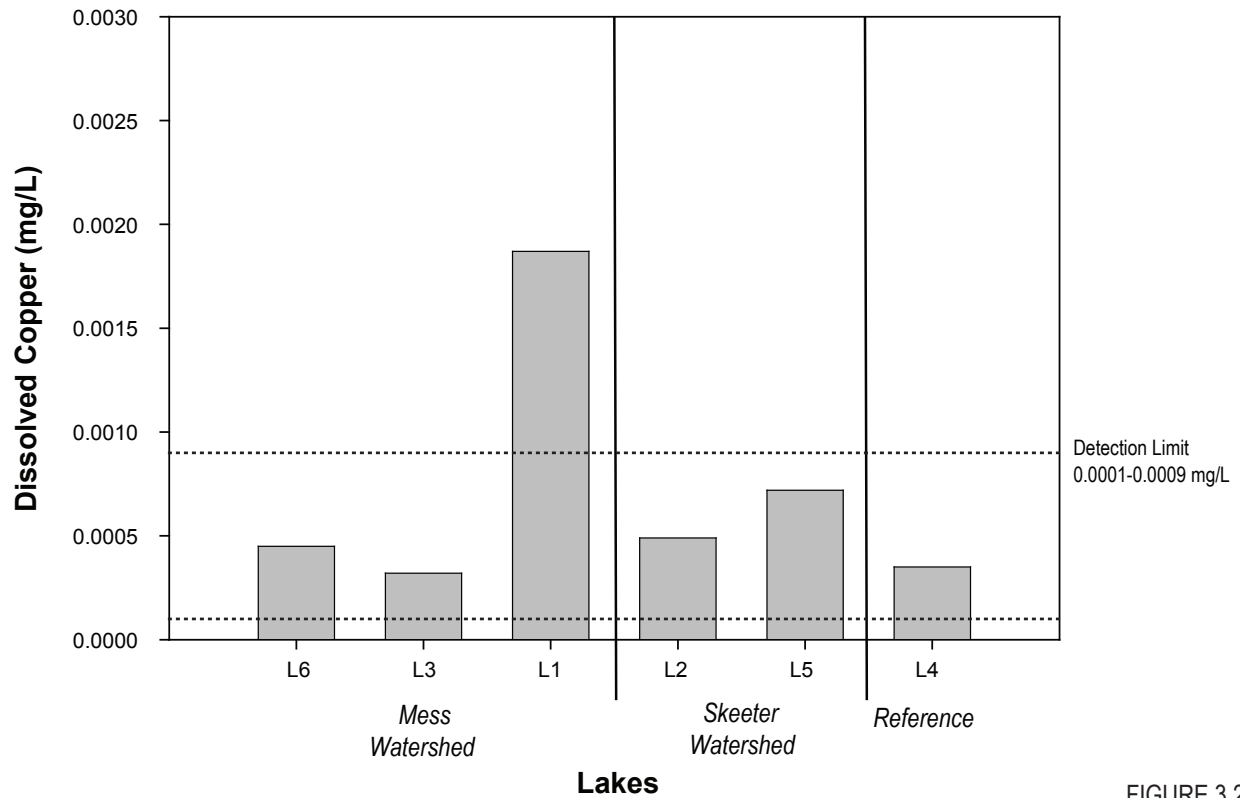
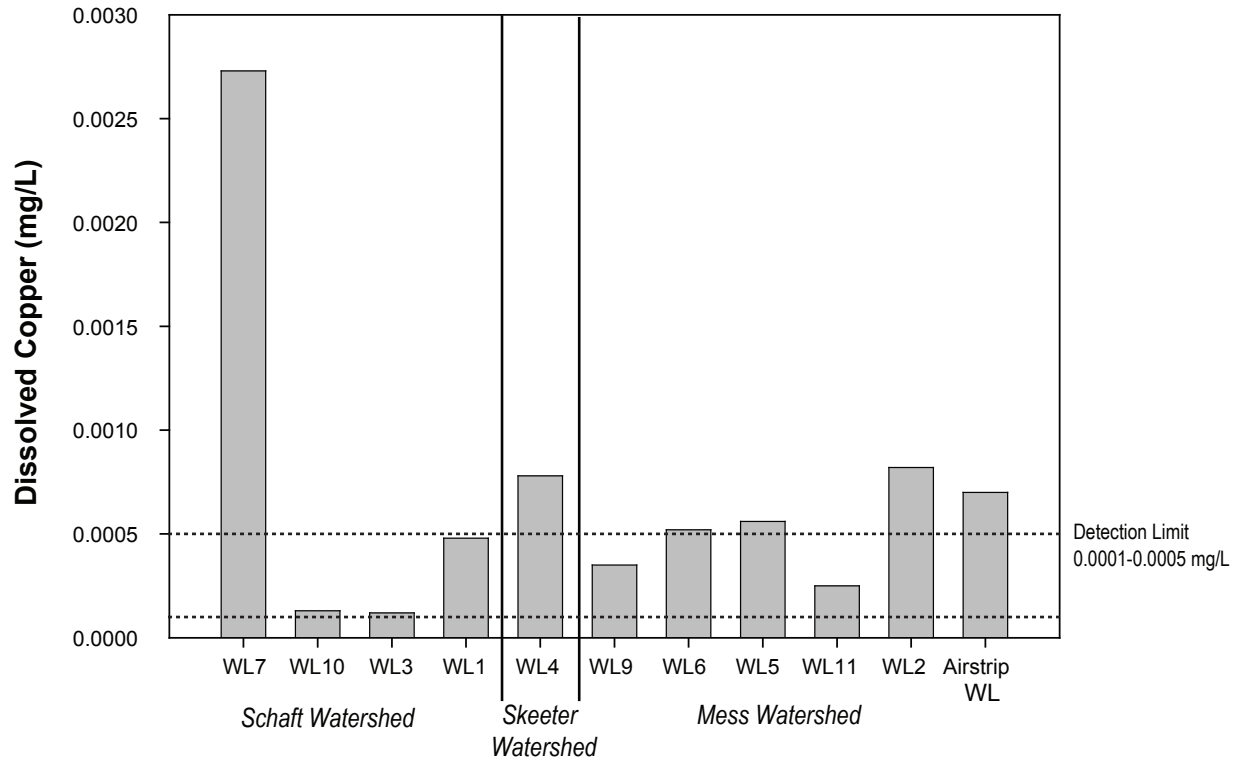


Note: CCME, BC Max and 30-d Mean guidelines depend on hardness.
 Dotted line represents analytical detection limit.

FIGURE 3.2-20



Total Copper Concentrations in Lakes and Wetlands, 2007

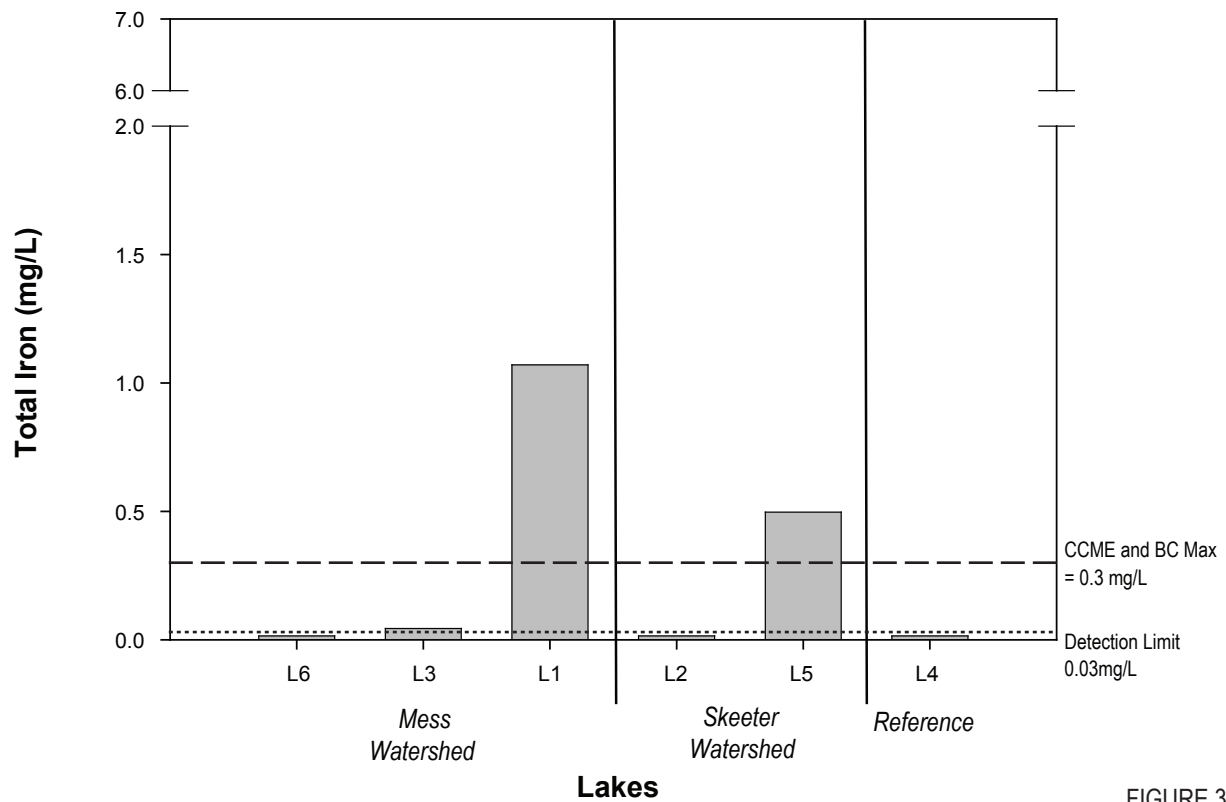
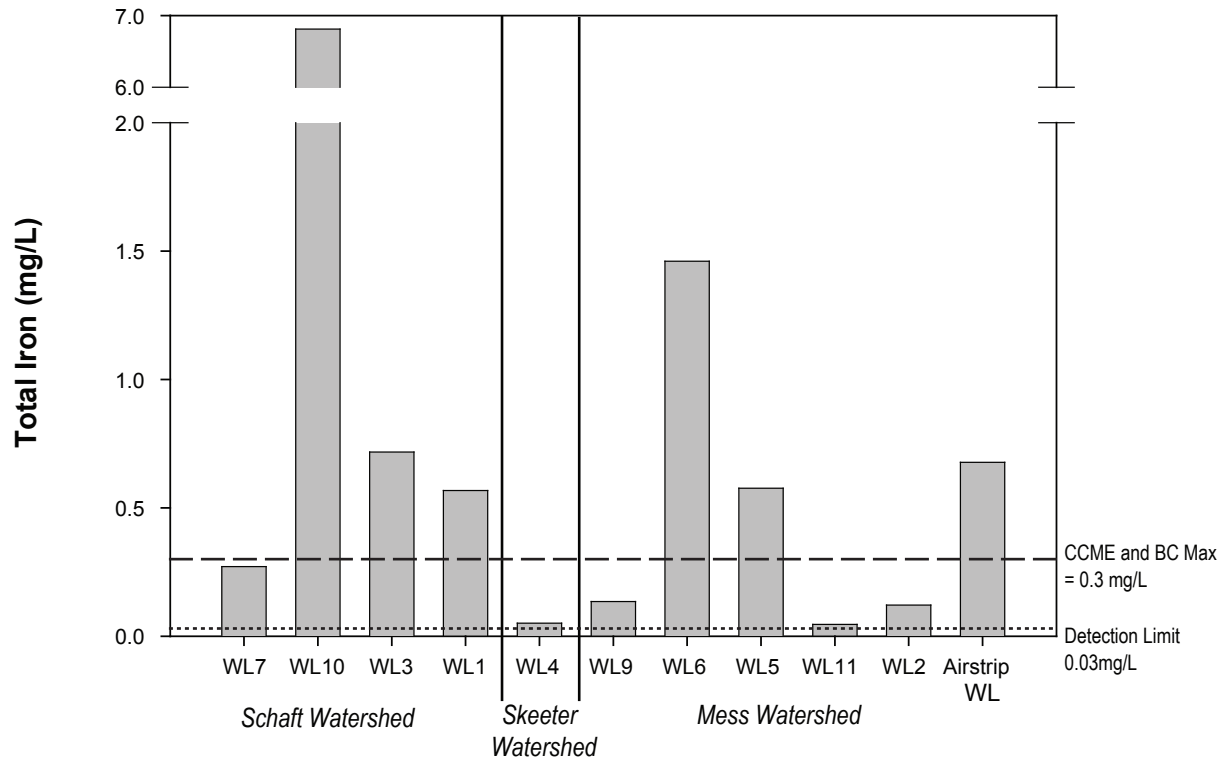


Note: CCME, BC Max and 30-d Mean guidelines depend on hardness.
 Dotted line represents analytical detection limit.

FIGURE 3.2-21



Dissolved Copper Concentrations in Lakes and Wetlands, 2007

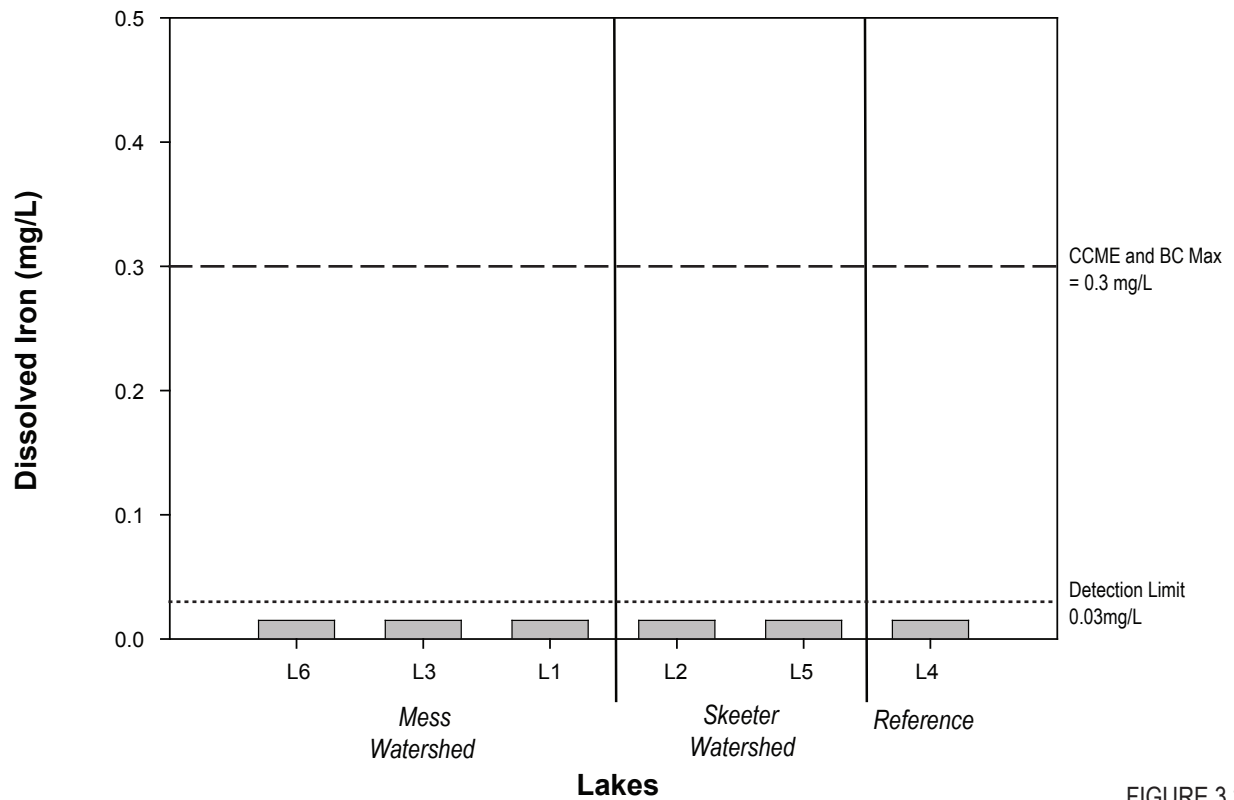
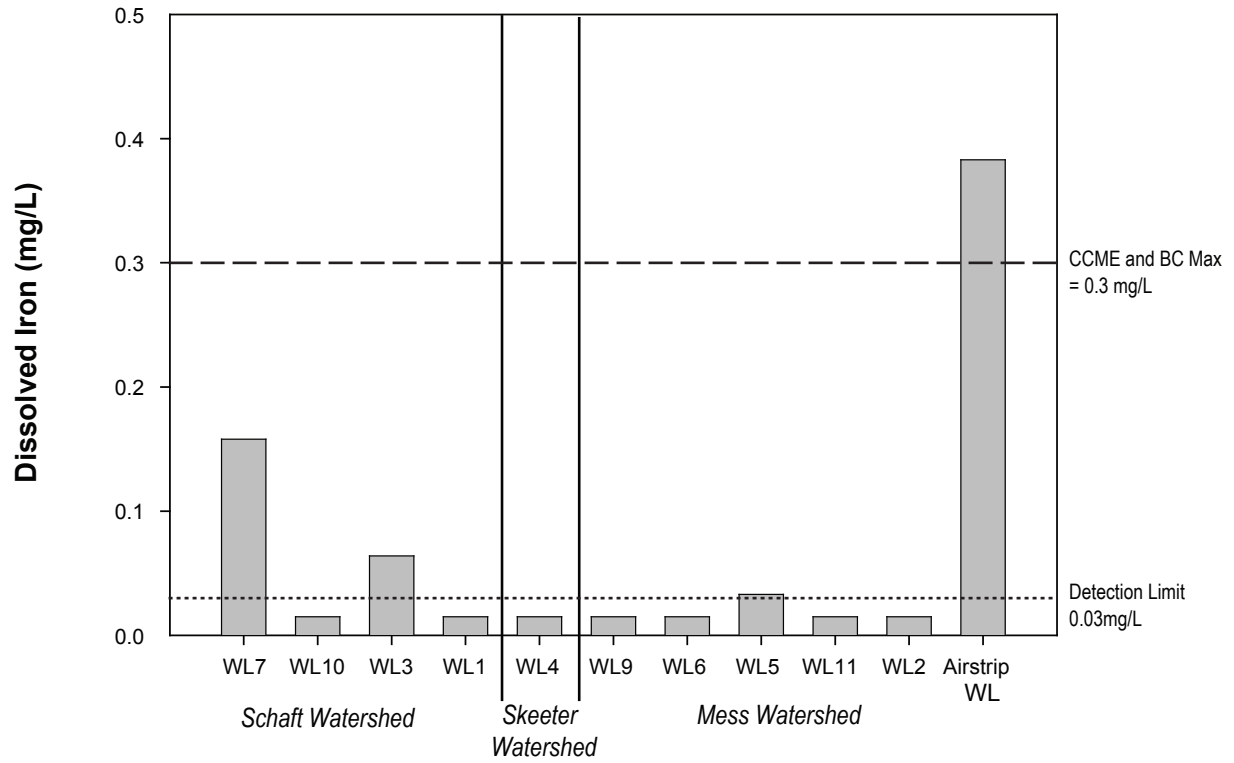


Note: Dotted line represents analytical detection limit.
Dashed line indicates guideline value, where available.

FIGURE 3.2-22



Total Iron Concentrations in Lakes and Wetlands, 2007

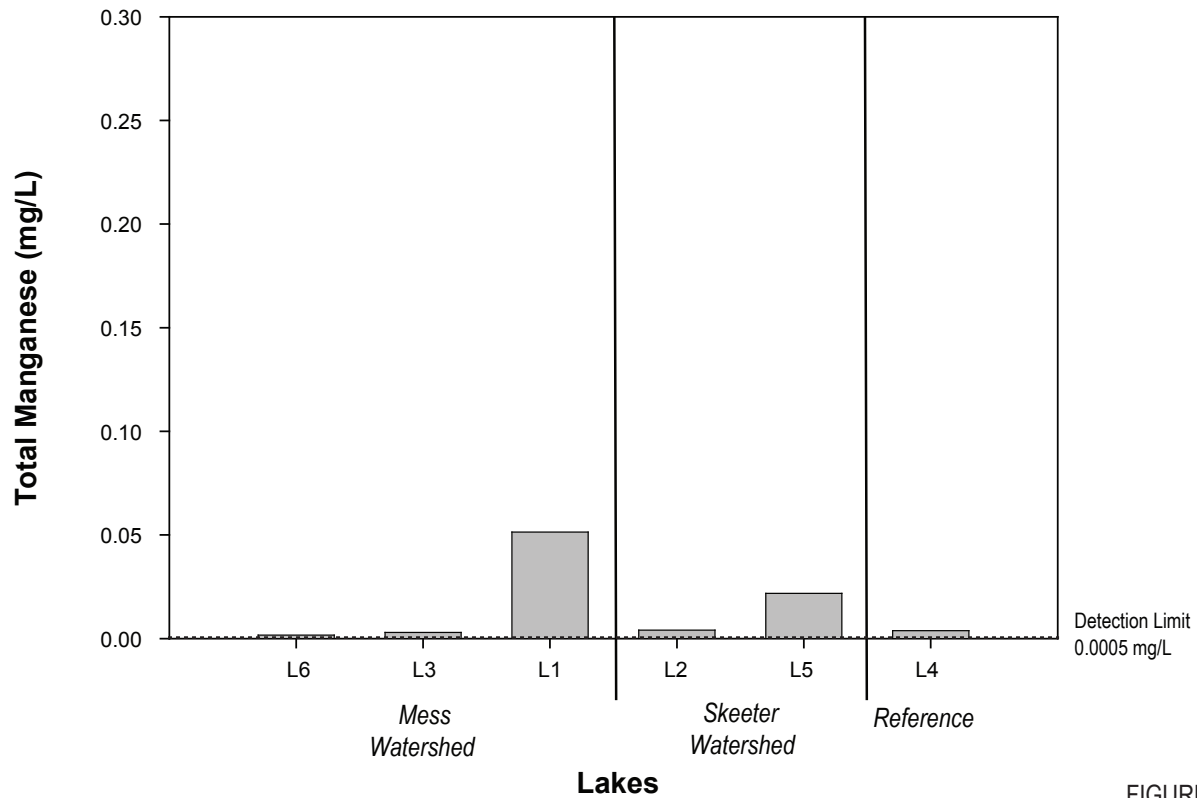
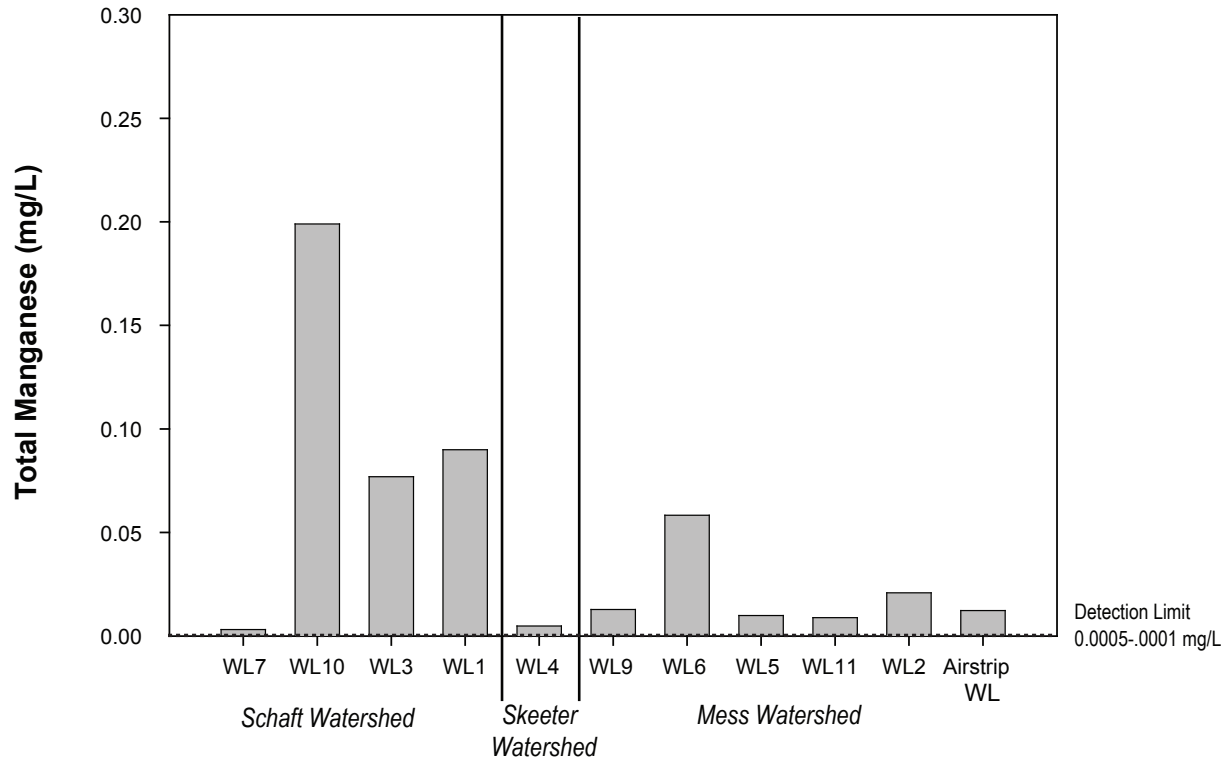


Note: Dotted line represents analytical detection limit.
Dashed line indicates guideline value, where available.

FIGURE 3.2-23



Dissolved Iron Concentrations in Lakes and Wetlands, 2007

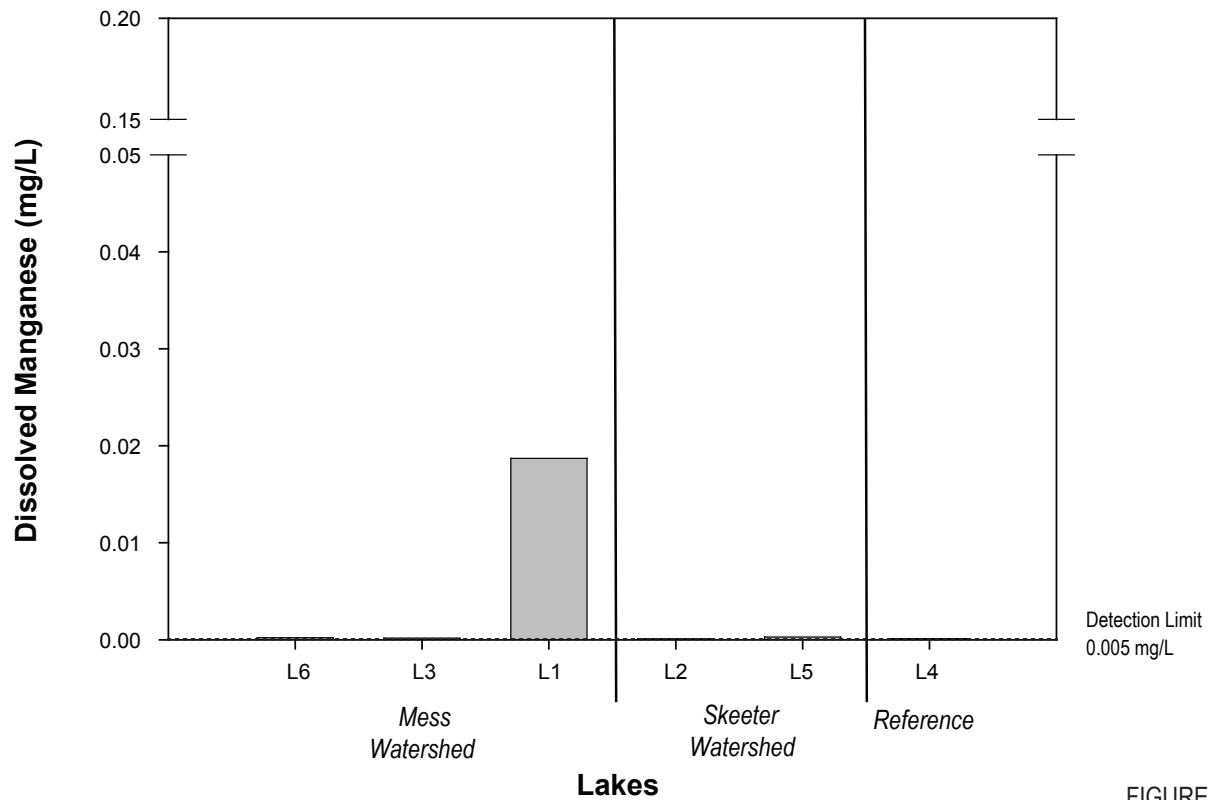
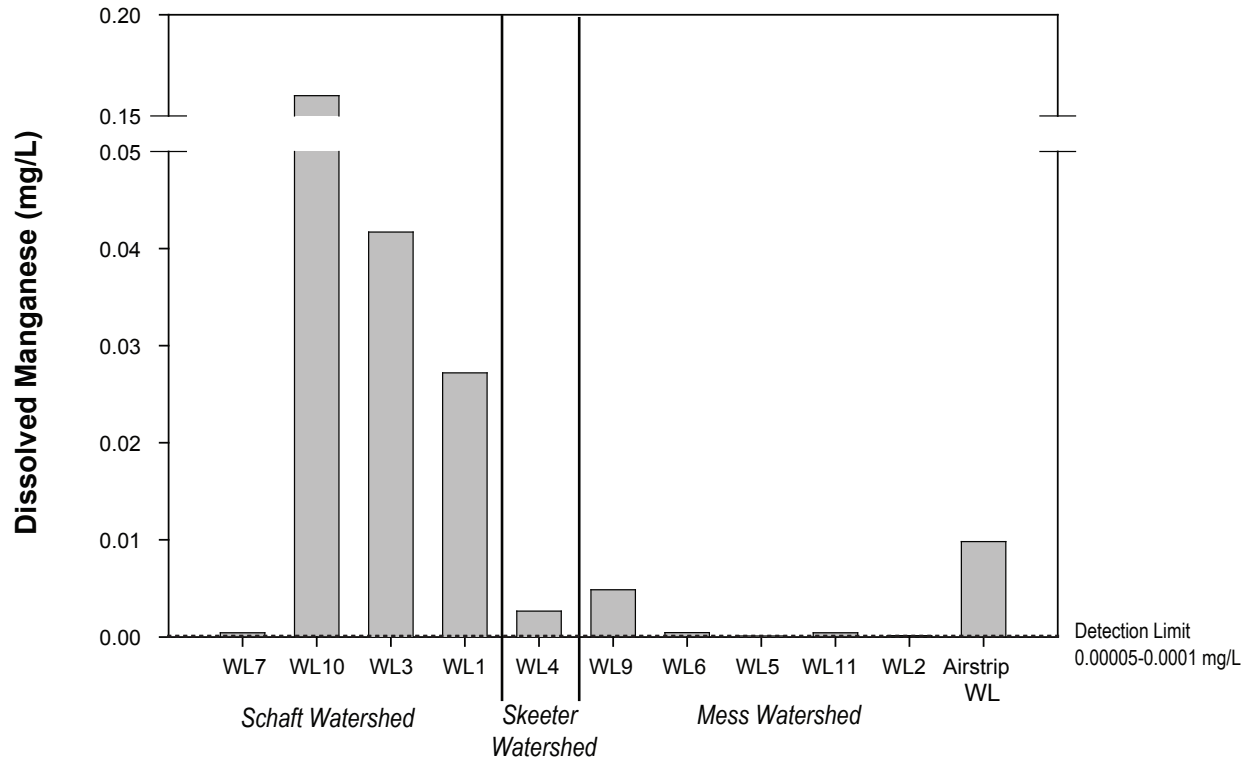


Note: No CCME guideline. BC guideline depends on hardness.
 Dotted line represents analytical detection limit.

FIGURE 3.2-24



Total Manganese Concentrations in Lakes and Wetlands, 2007

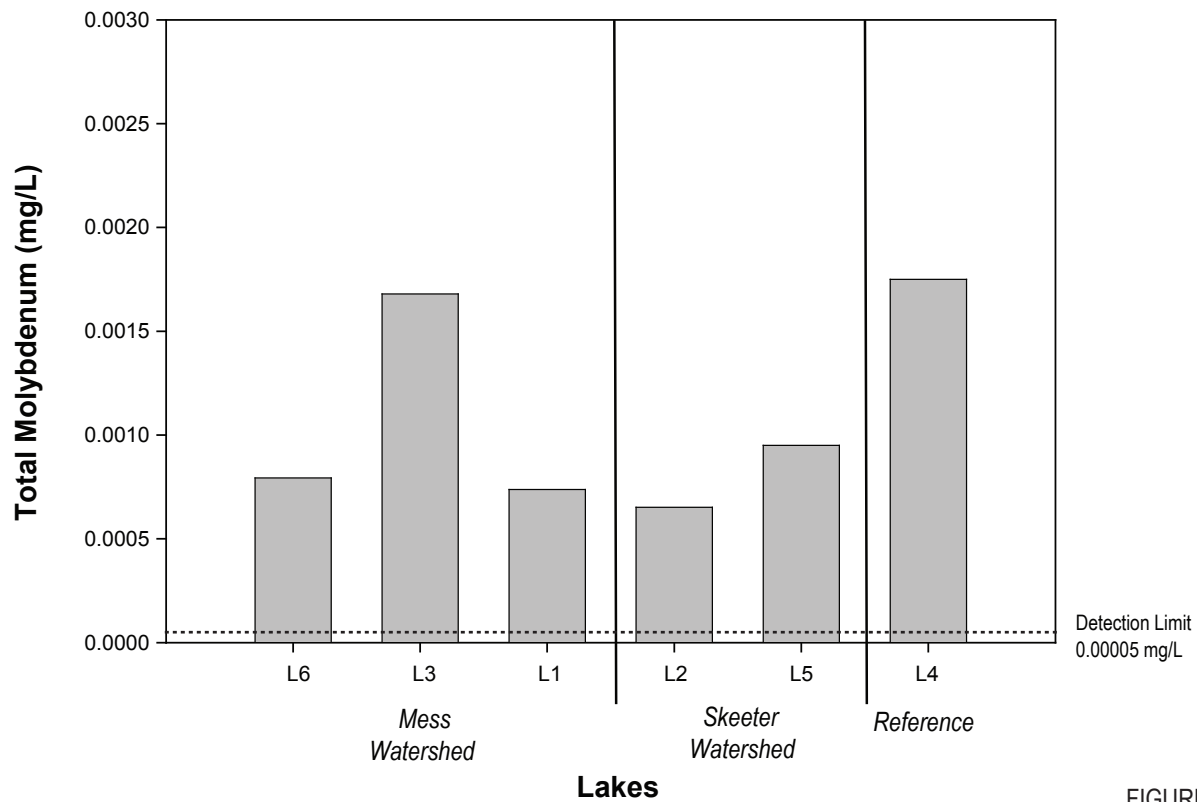
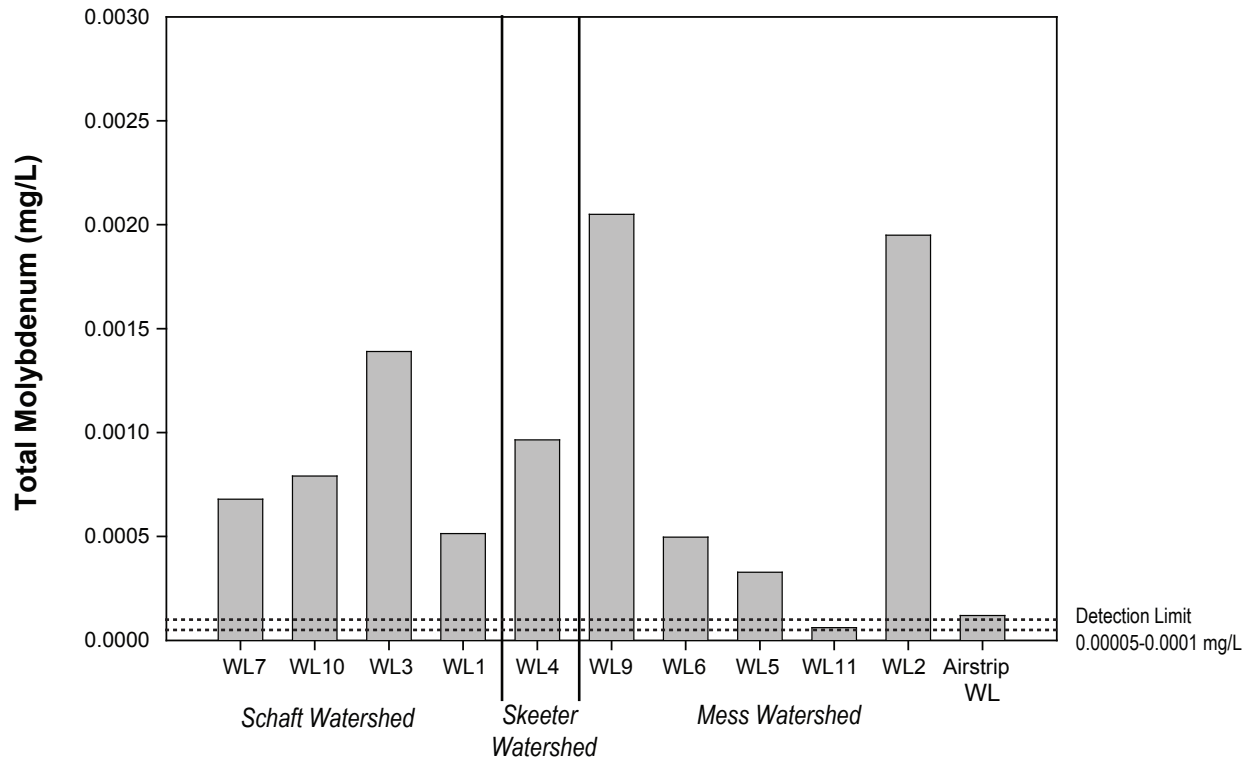


Note: No CCME guideline. BC guideline depends on hardness.
 Dotted line represents analytical detection limit.

FIGURE 3.2-25



Dissolved Manganese Concentrations in Lakes and Wetlands, 2007

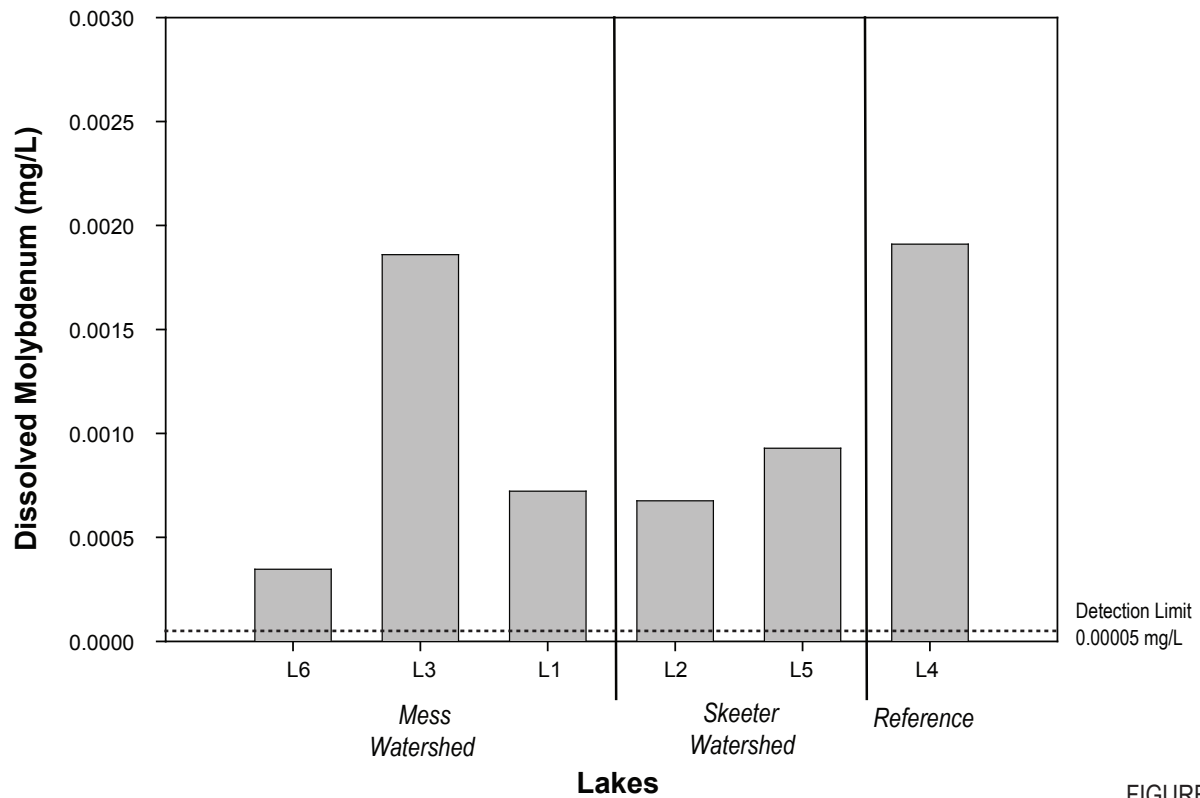
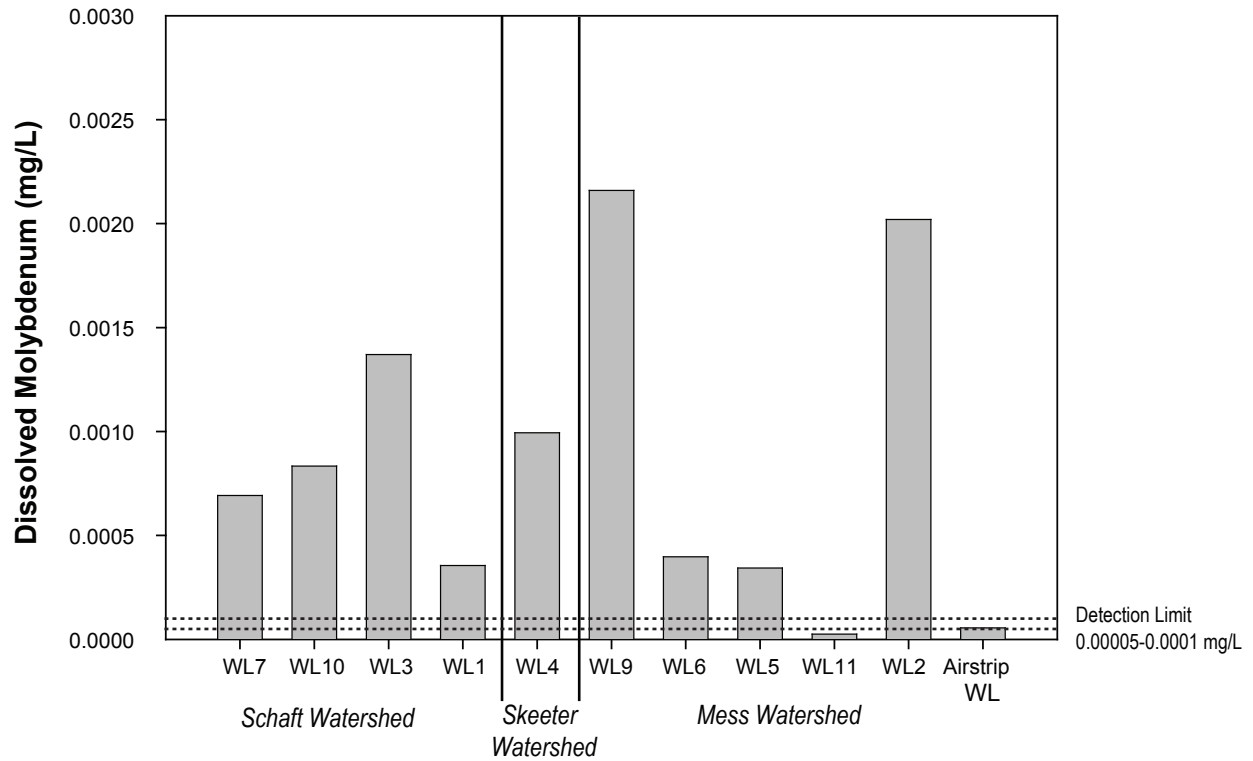


Note: CCME guideline is 0.07300 mg/L; BC guideline is 2 mg/L (Max) and 1 mg/L (30-d Mean).
Dotted line represents analytical detection limit.

FIGURE 3.2-26



Total Molybdenum Concentrations in Lakes and Wetlands, 2007

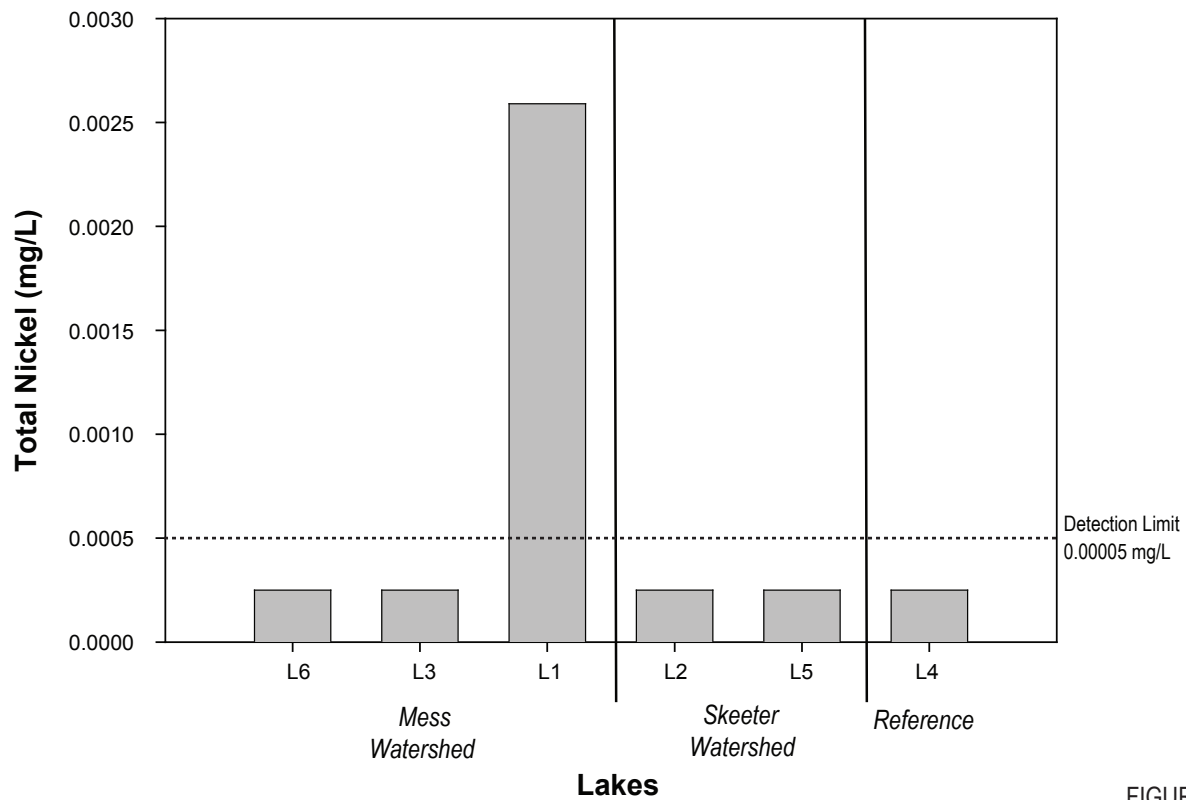
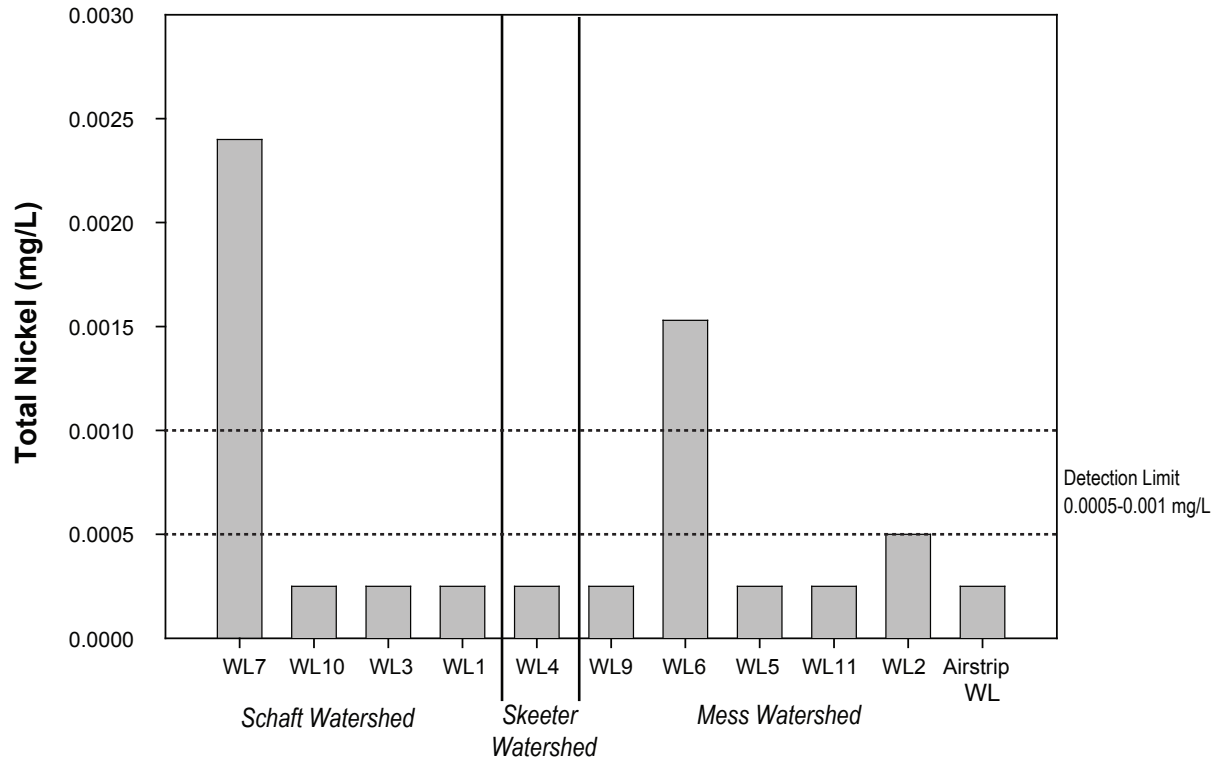


Note: CCME guideline is 0.07300 mg/L; BC guideline is 2 mg/L (Max) and 1 mg/L (30-d Mean).
Dotted line represents analytical detection limit.

FIGURE 3.2-27



Dissolved Molybdenum Concentrations in Lakes and Wetlands, 2007



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

FIGURE 3.2-28



Total Nickel Concentrations in Lakes and Wetlands, 2007

Detectable T-Ni concentrations reached the highest concentration (0.00259 mg/L) at L1. Similarly, most dissolved nickel (D-Ni) concentrations were below detection and ranged to a high of 0.00252 mg/L at WL7 (Figure 3.2-29). As in 2006, no CCME and B.C. guidelines for T-Ni and D-Ni (hardness dependent) were exceeded at any sites.

Concentrations of total selenium (T-Se) were below the detection limit (0.0005 mg/L) at all but three sites (WL4, L1, and L5) (Figure 3.2-30). Highest T-Se concentrations were found at L5 (0.00101 mg/L), the only site to exceed any guideline (CCME; 0.001 mg/L). Dissolved selenium (D-Se) data ranged from below the detection limit to 0.00089 mg/L at WL4 (Figure 3.2-31). All sites were well below the B.C. 30-day mean guideline.

Concentrations of total zinc (T-Zn) ranged from below the detection limits (0.001 – 0.006 mg/L) to 0.0125 mg/L (Airstrip WL) (Figure 3.2-32). Almost all dissolved zinc concentrations were below detection with the exception of Airstrip WL, L1 and L4, with a maximum value of 0.0025 mg/L at L4 (Figure 3.2-33). D-Zn concentrations never exceeded B.C. or CCME aquatic life guidelines. Airstrip WL and L1's T-Zn concentrations exceeded the B.C. 30d guidelines (hardness dependant). No B.C. Max or CCME guidelines were exceeded.

3.2.1.4 Quality Assurance and Quality Control (QA/QC)

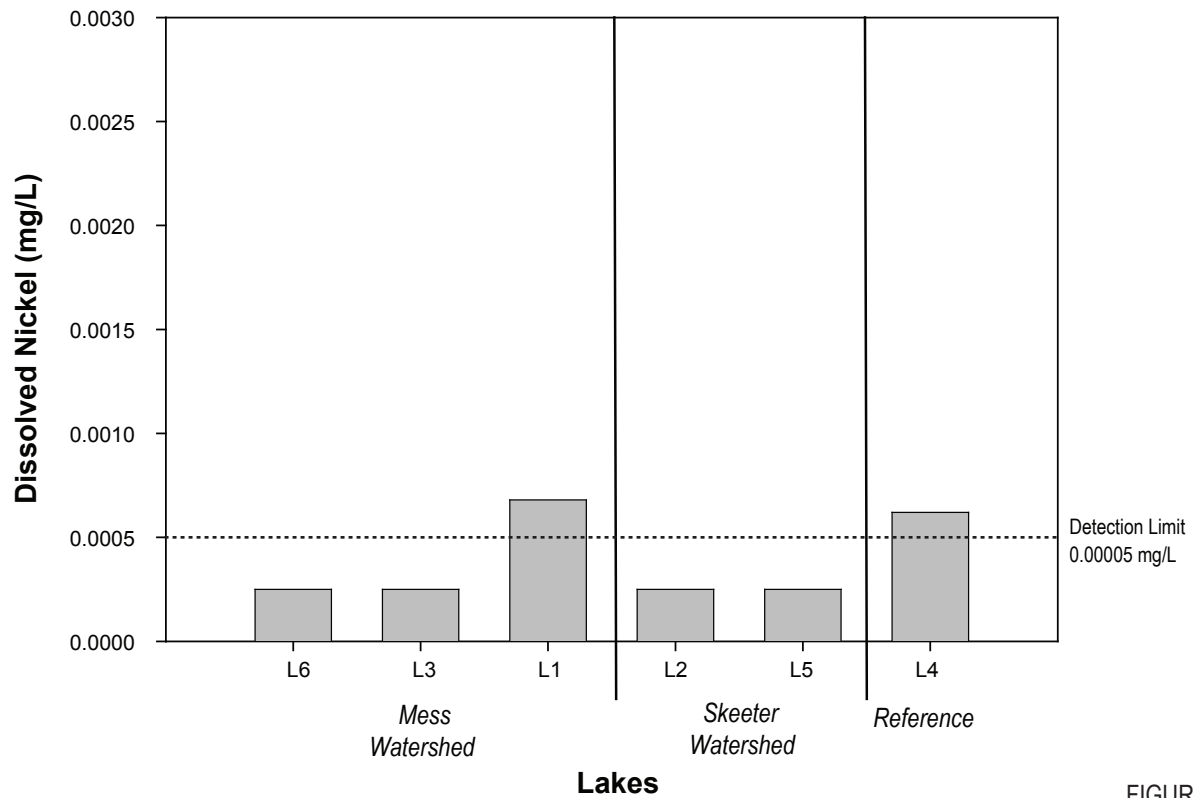
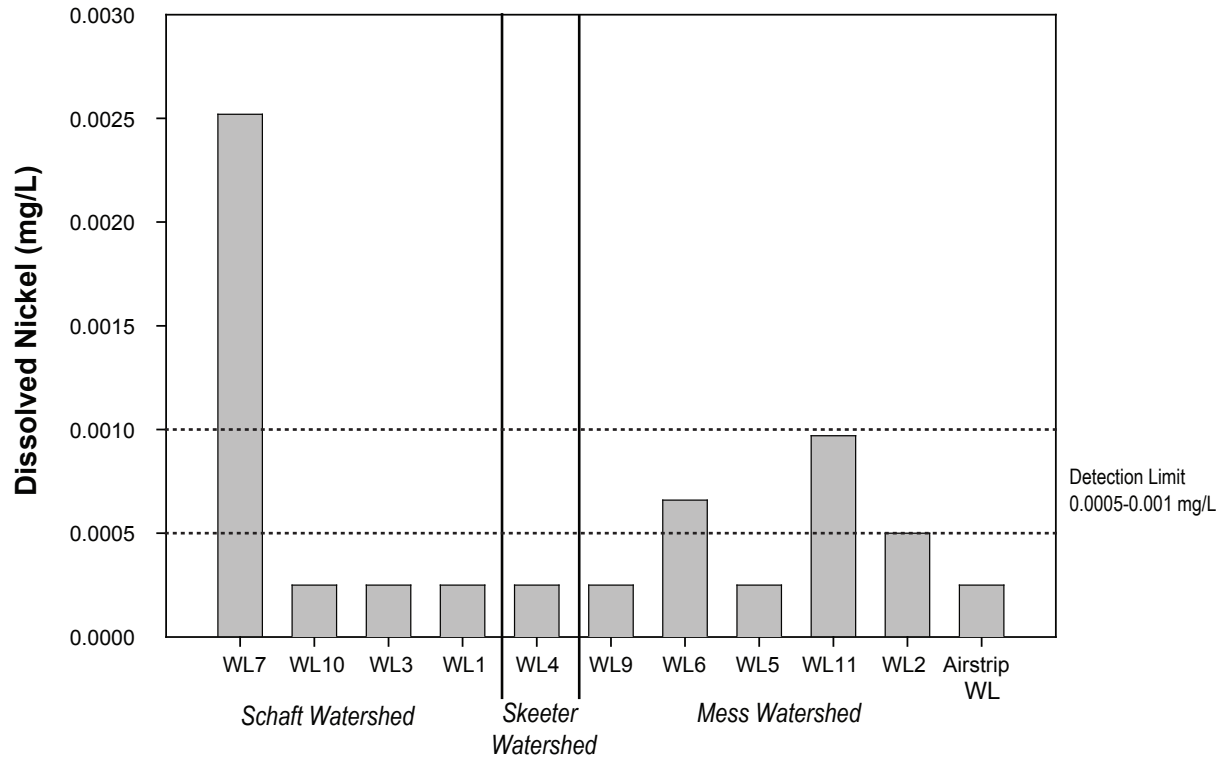
Field and travel blank data are presented in Appendix 3.2-1. Field blank and travel blank data were all below detection limits with the exception of acidity as CaCO₃, where the blank results were both < 2 times the DL.

The RPD analysis of QA/QC field duplicate data for wetlands and lakes are reported in Appendix 3.2-3. Each variable from a duplicate pair of samples obtained from L2 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 88 parameters examined, 68% of analytical results were below the detection limit, and therefore RPD values were not calculated. Of the remaining results, 7.4% (2 of 27 RPD calculations) were greater than the threshold of 20% indicated by provincial guidance, but both of these values were within 5 x the detection limit, a range within which values should be interpreted with caution.

3.2.2 Physical Limnology

Basic physical limnological parameters were measured at all six of the Schaft Creek Project lakes. The raw limnology data are shown in Appendix 3.2-4.

Surface pH, surface conductivity, and depth profiles of temperature and dissolved oxygen were measured at each site (Table 3.2-1). The maximum depth of these sites ranged from 1.5 to 28 meters. Strong winds at L5, which made it difficult to hold an anchor position, resulted in sampling near shore. The dissolved oxygen and temperature readings therefore do not represent total water column of the lake. Secchi depth (a measure of surface water transparency) ranged from 0.2 to 11.0 meters. Extreme average temperatures in these lakes were 3.0 °C at L6 and 13.0 °C at L5. Extreme average DO concentrations were 7.1 mg/L at L4 and 10.0 mg/L at L6.

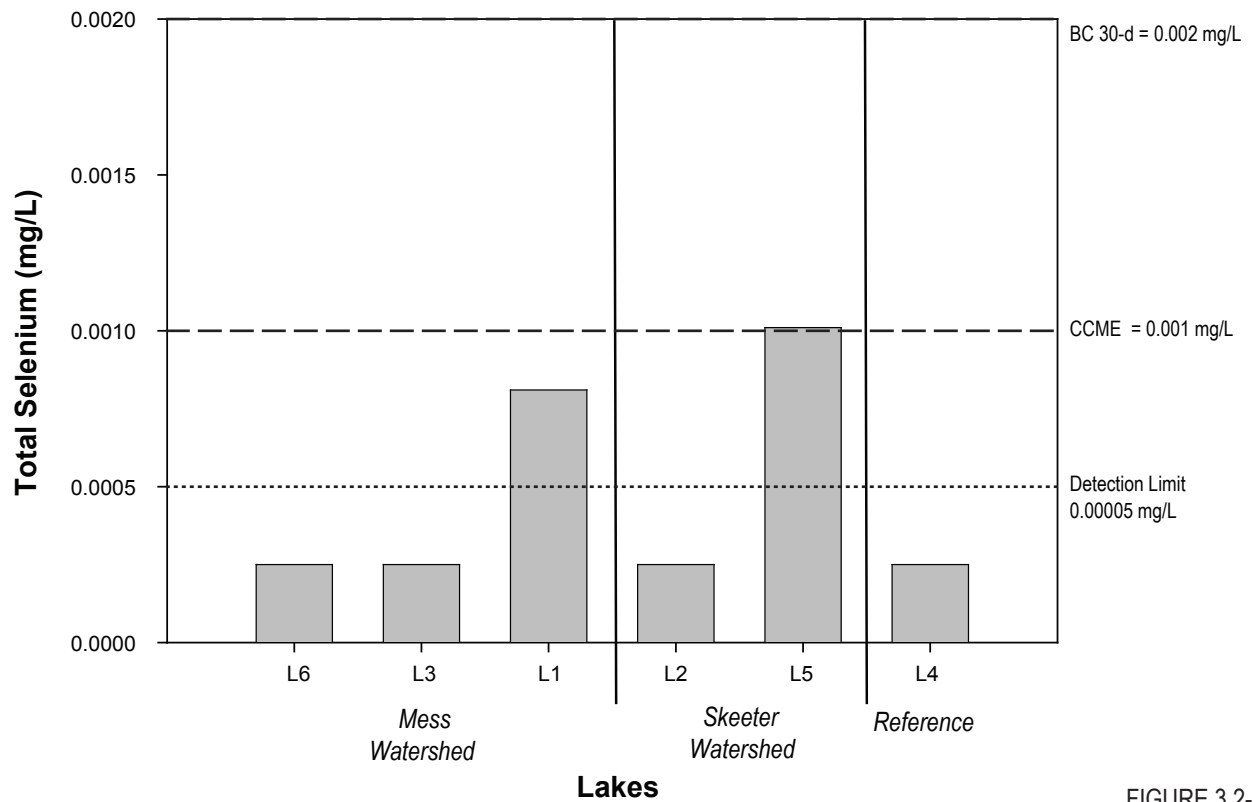
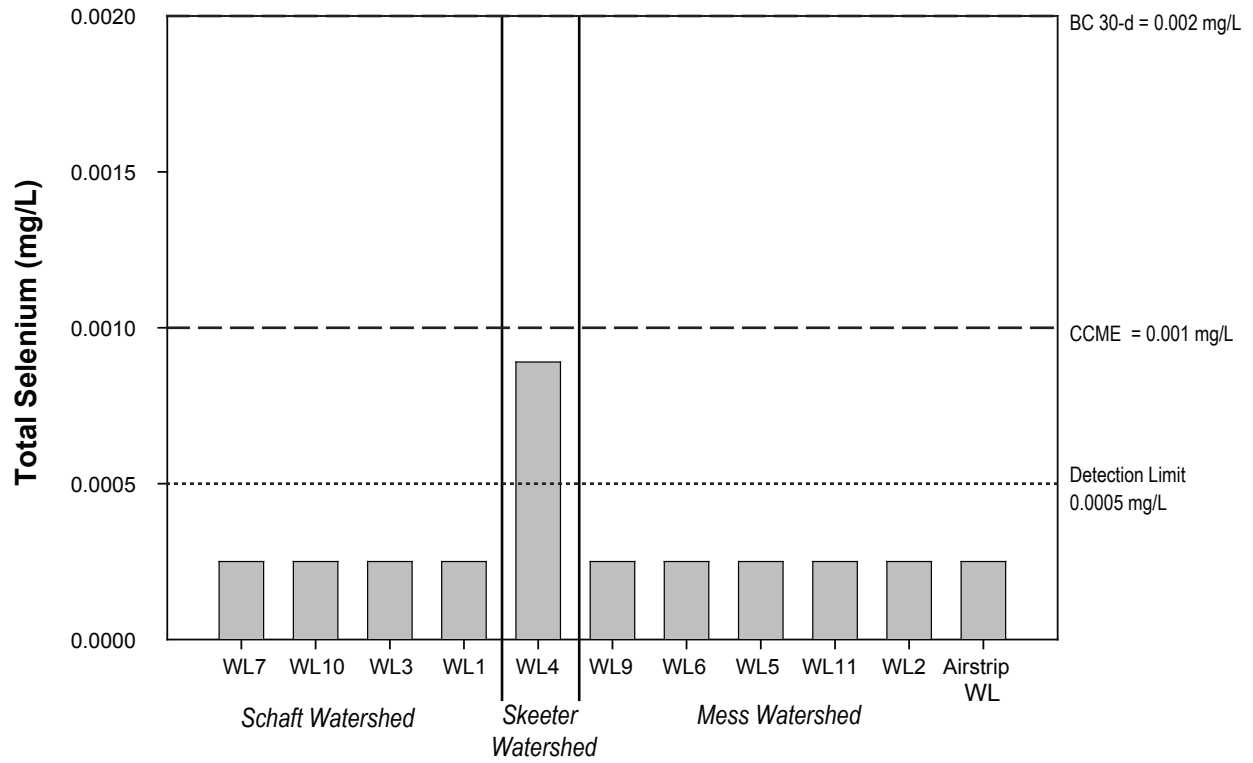


Note: CCME and BC guidelines depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.2-29



Dissolved Nickel Concentrations in Lakes and Wetlands, 2007

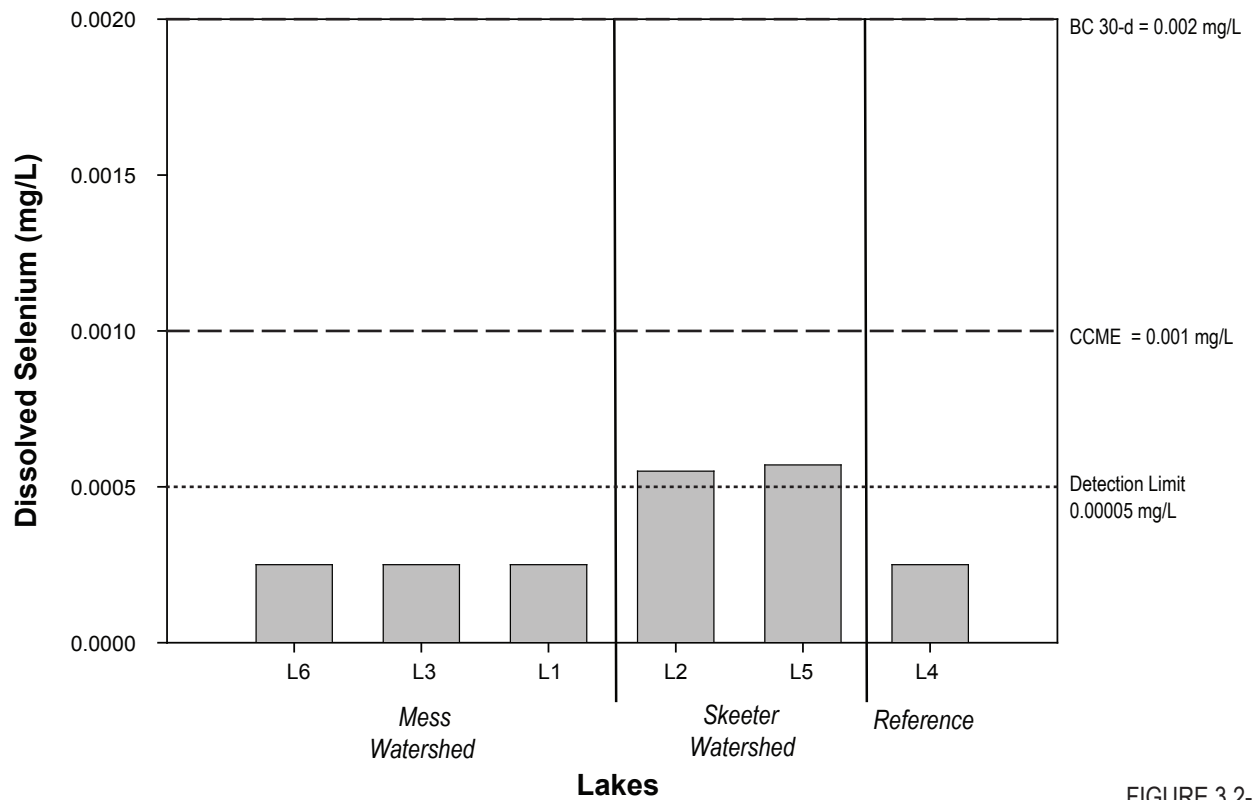
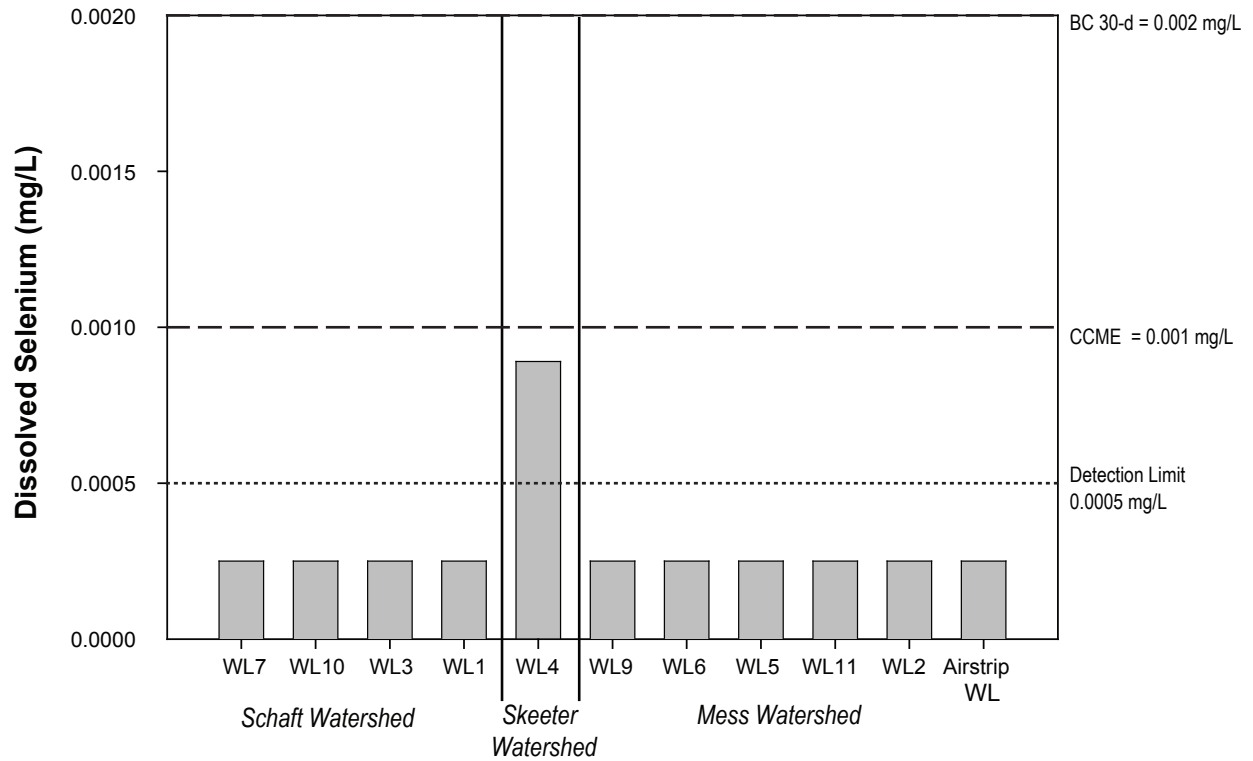


Note: CCME guideline = 0.01 mg/L; BC 30-d mean = 0.002 mg/L.
Dotted line represents analytical detection limit.

FIGURE 3.2-30



Total Selenium Concentrations in Lakes and Wetlands, 2007

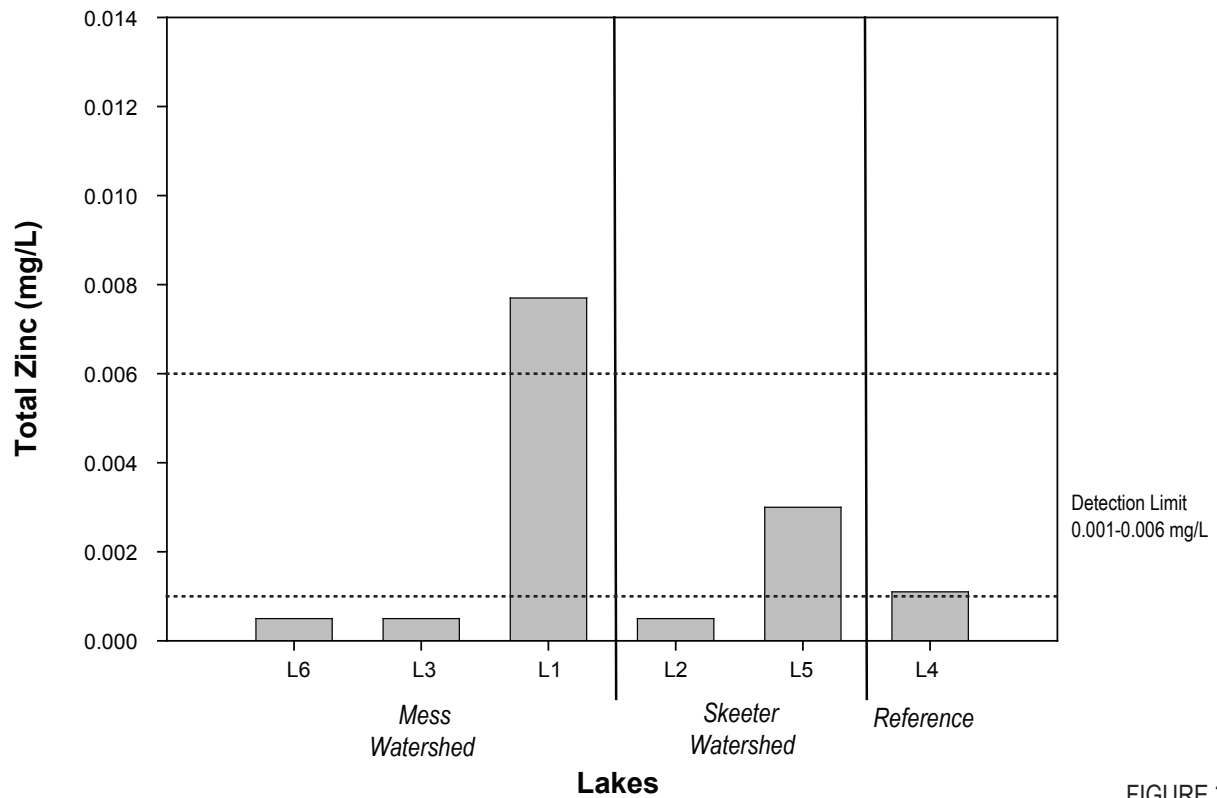
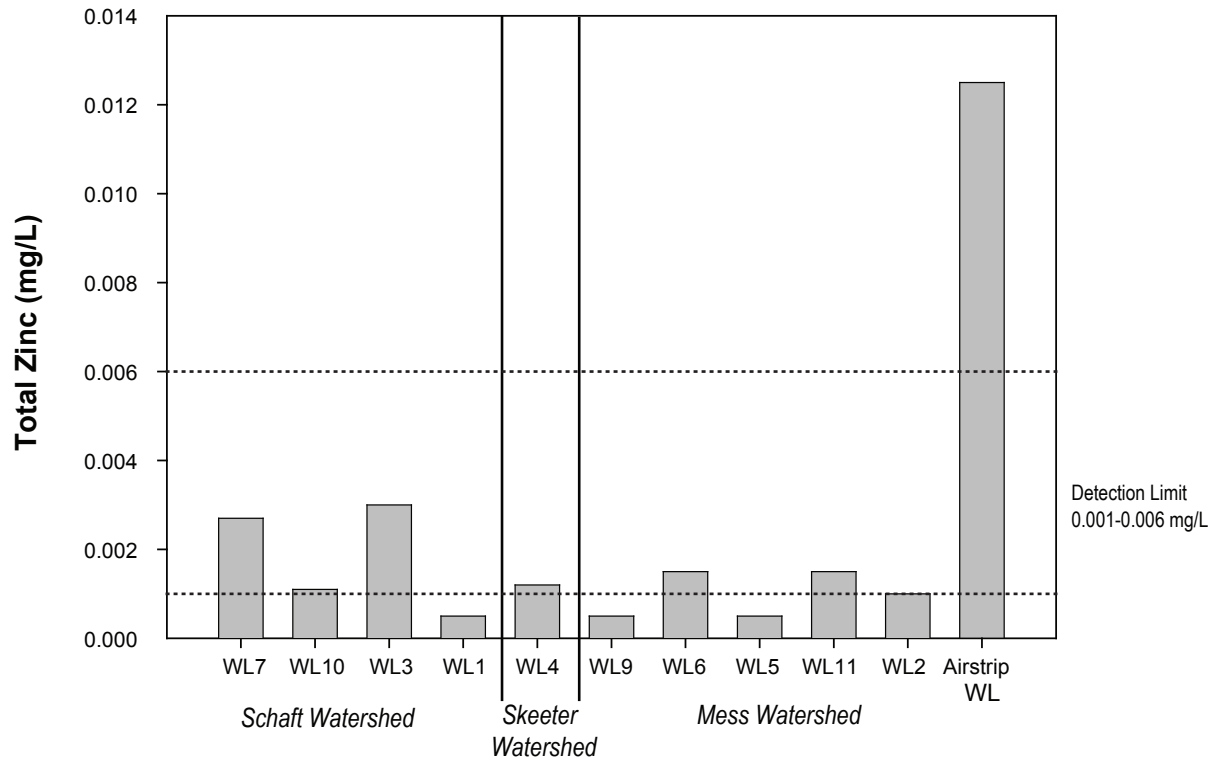


Note: CCME guideline = 0.01 mg/L; BC 30-d mean = 0.002 mg/L.
Dotted line represents analytical detection limit.

FIGURE 3.2-31



Dissolved Selenium Concentrations in Lakes and Wetlands, 2007



Note: CCME guideline = 0.03 mg/L; BC and 30-d Mean guidelines depend on hardness.
Dotted line represents analytical detection limit.

FIGURE 3.2-32



Total Zinc Concentrations in Lakes and Wetlands, 2007

**Table 3.2-1
Limnology data from Schaft Creek Project Lakes, August 2007**

Site	Surface pH	Surface Conductivity	Max Sample Depth (m)	Secchi Depth (m)	n	Mean Temperature (°C)	SE	Mean Dissolved Oxygen (mg/L)	SE
L1	8.3	150	17	0.2	17	9.5	0.1	8.2	0.1
L2	-	-	28	-	28	7.3	0.7	8.3	0.2
L3	8.6	160	7.2	3.0	12	7.2	0.2	9.3	0.1
L4	8.2	180	15	11.0	15	11.5	1.1	7.1	0.6
L5	8.0	140	1.5	1.0	2	13.0	0.5	8.5	0.2
L6	8.8	30	11.5	10.5	11	3.0	0.1	10.0	0.1

Note: Mean values are averaged over the depths sampled.
SE = standard error of the mean.
 Dashes (-) indicate no data available

3.2.3 Sediment Quality

Sediment quality was assessed at 11 wetland and six lake sites by collecting triplicate sediment samples at each site in 2007. All raw data, including highlighted samples that exceed guidelines, are shown in Appendix 3.2-5. Results from Relative Percent Difference analysis is presented in Appendix 3.2-6.

3.2.3.1 Particle Size

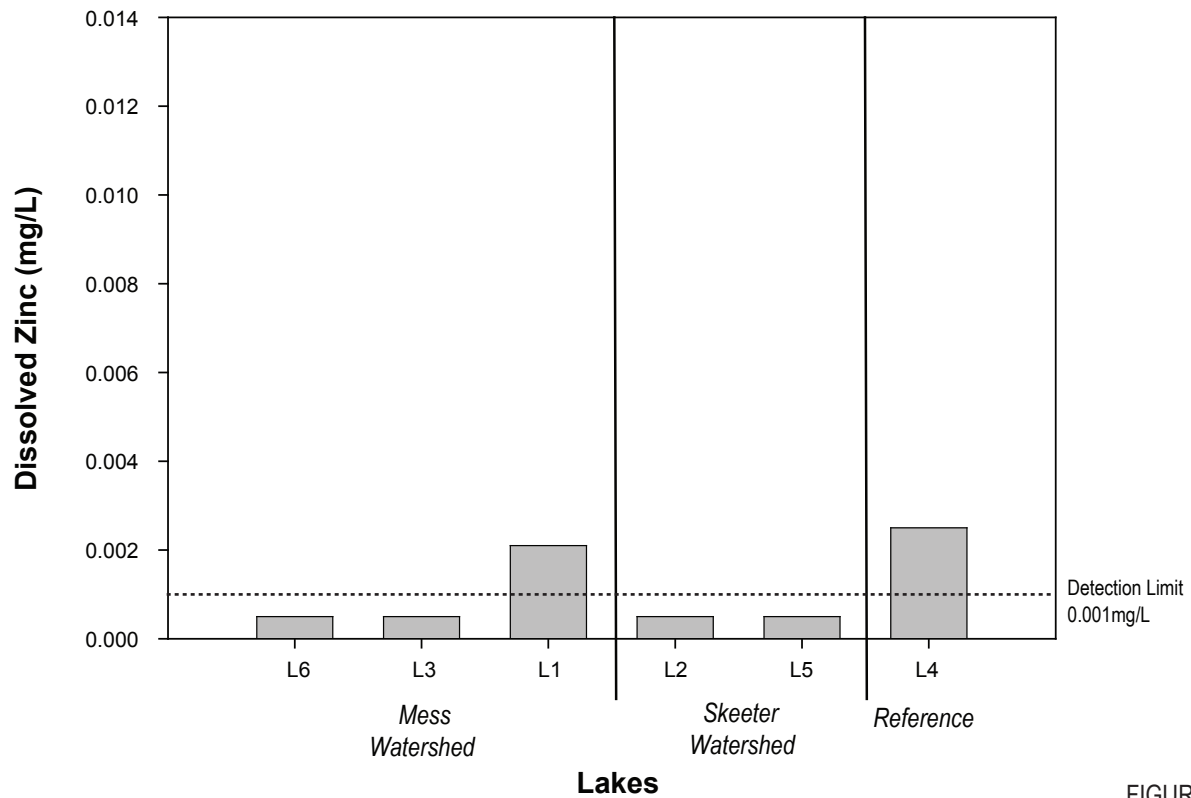
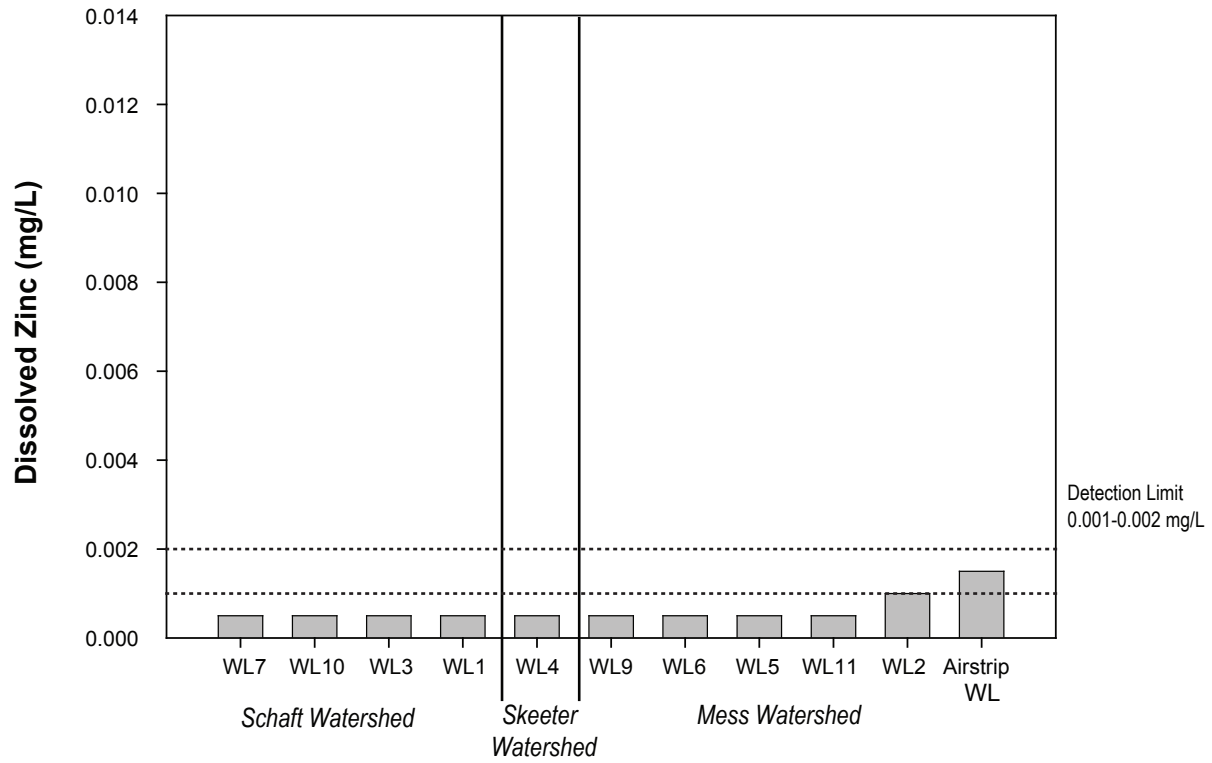
Analysis of particle size data in wetland sediments indicated that most wetland sites were composed primarily of silt (33 to 64%) and clay (6 to 54%) with smaller proportions of sand (4 to 64%) and very little gravel (<1%) (Figure 3.2-34). WL3 is the exception to this since the sediment at this site was dominated by sand (64%). This was expected since WL3 is a visibly sandy site adjacent to a large sand bar on the western shore of Schaft Creek. Figure 3.2-34 shows that lake sediments were also composed primarily of silt (51 to 73%) and clay (19 to 47%). Smaller proportions of sand (<1 to 8%) composed the remainder of the sediments. Particle size analysis for WL3 and L4 are unavailable due to sample shortages for both of these sites.

3.2.3.2 Nutrients, TOC and Cyanides

Total nitrogen (TN) and total organic carbon (TOC) concentrations in wetlands were greatest at WL7 than other wetlands (1.4 and 18% respectively), while total phosphorus was greatest at WL4 (1,330 mg/kg) (Figure 3.2-35). The TN and TOC values follow similar trends with the lowest values for both variables occurring at WL3.

TN and TOC also followed similar trends in Lakes with the greatest concentrations at L4 (1.9 and 28% respectively) and the lowest concentrations at L3 (0.05 and 0.6% respectively) (Figure 3.2-36). Total phosphorus in lakes ranged from 766 mg/kg at L3 to 1,686 mg/kg at L2.

Analysis for total cyanide was below the analytical detection limit (3 mg/kg) in all 2006 stream sediment samples. For this reason no cyanide analyses were conducted on the 2007 sediment samples.

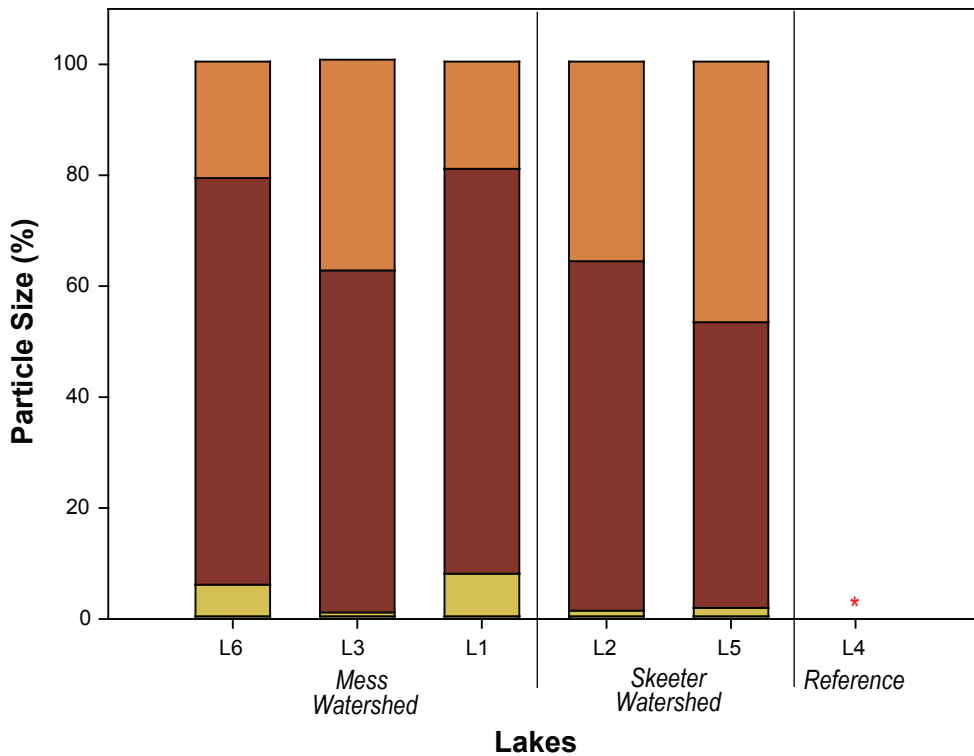
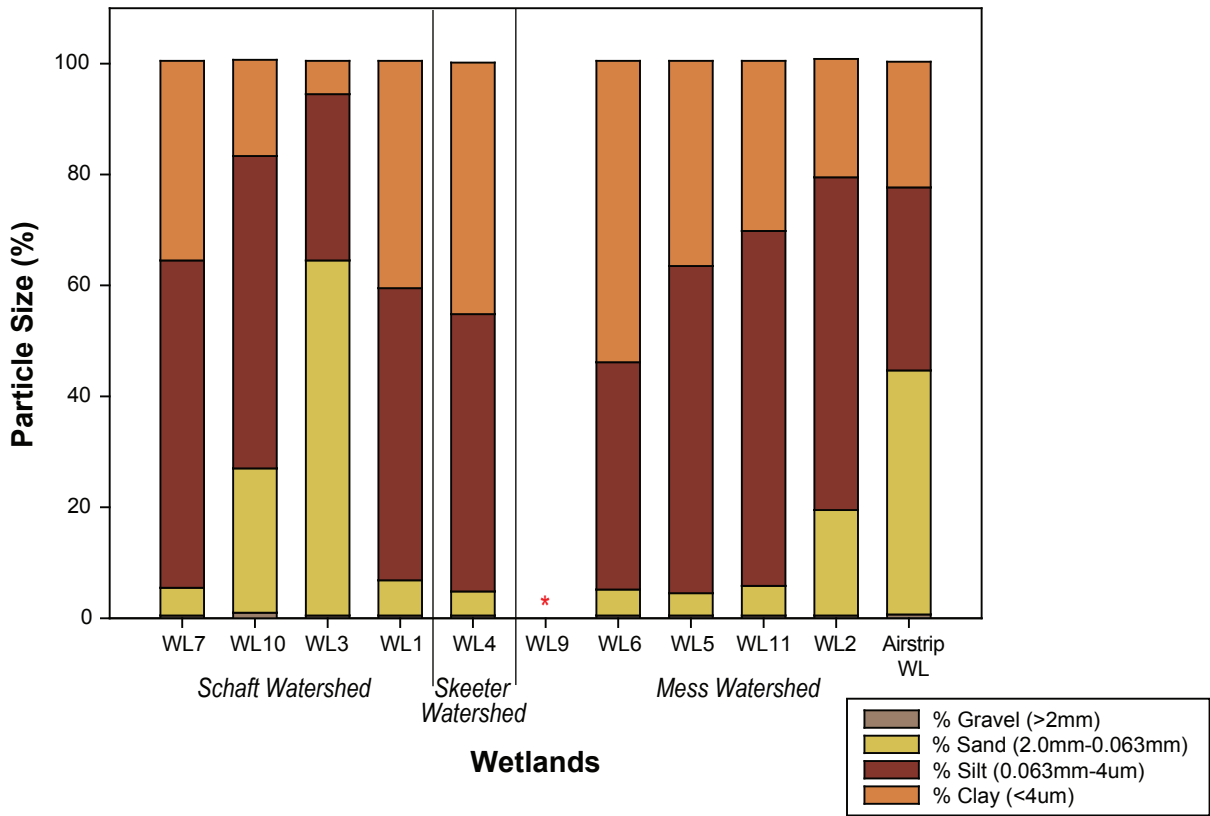


Note: CCME guideline = 0.03 mg/L; BC and 30-d Mean guidelines depend on hardness.
 Dotted line represents analytical detection limit.

FIGURE 3.2-33



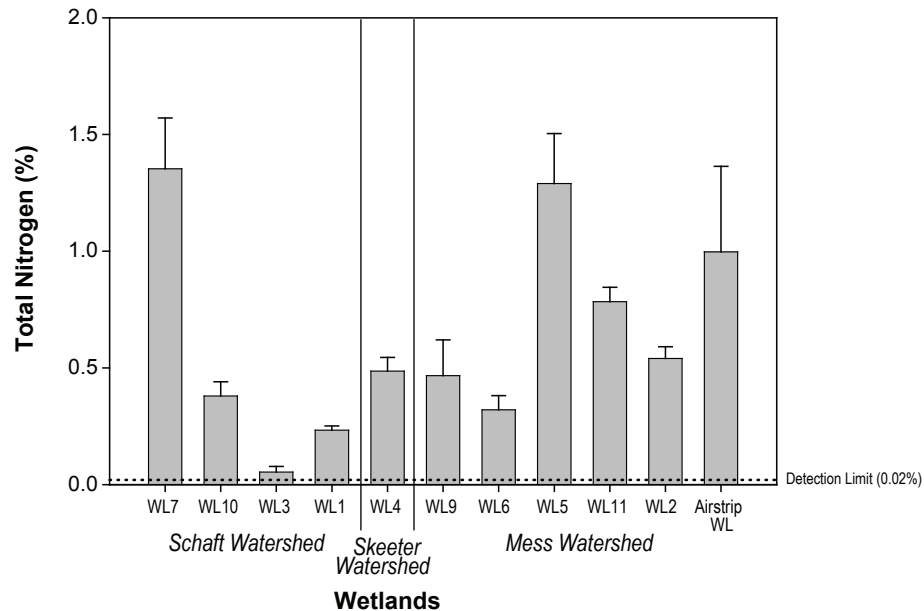
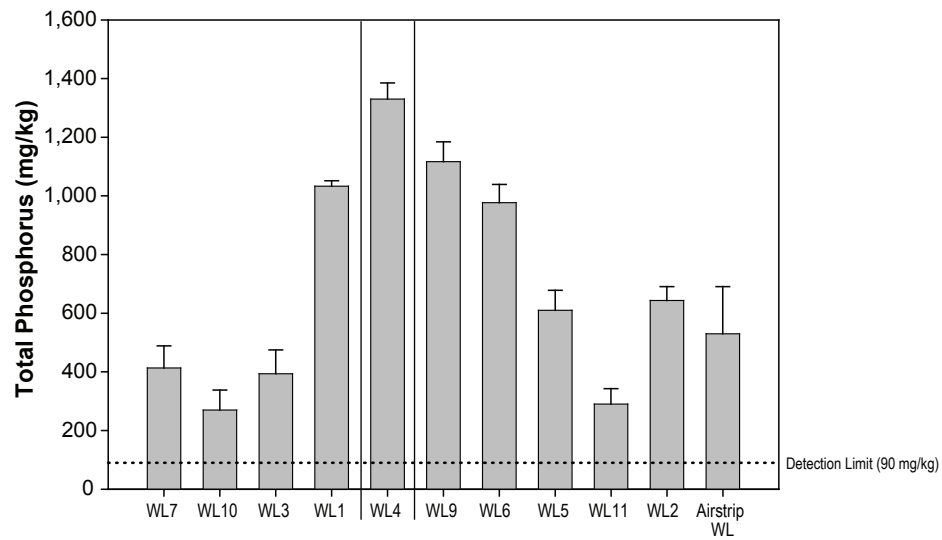
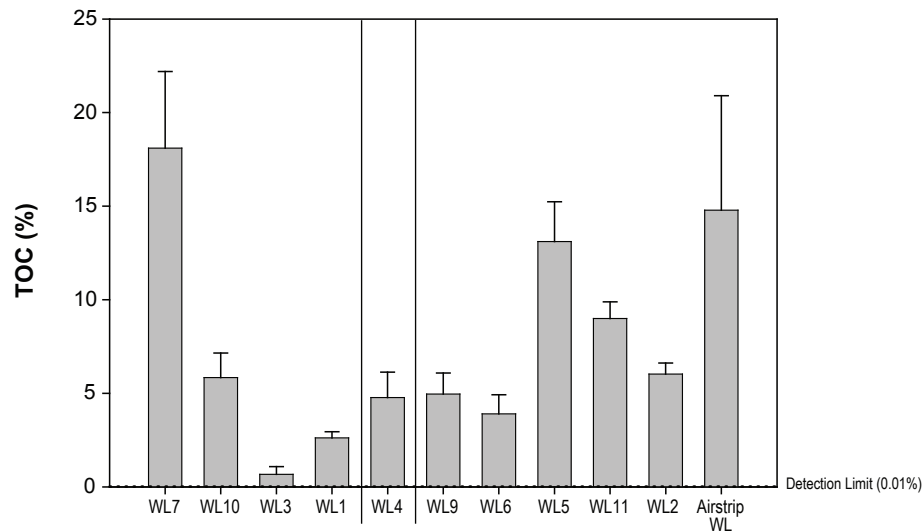
Dissolved Zinc Concentrations in Lakes and Wetlands, 2007



Note: * No data available for these sites.

FIGURE 3.2-34

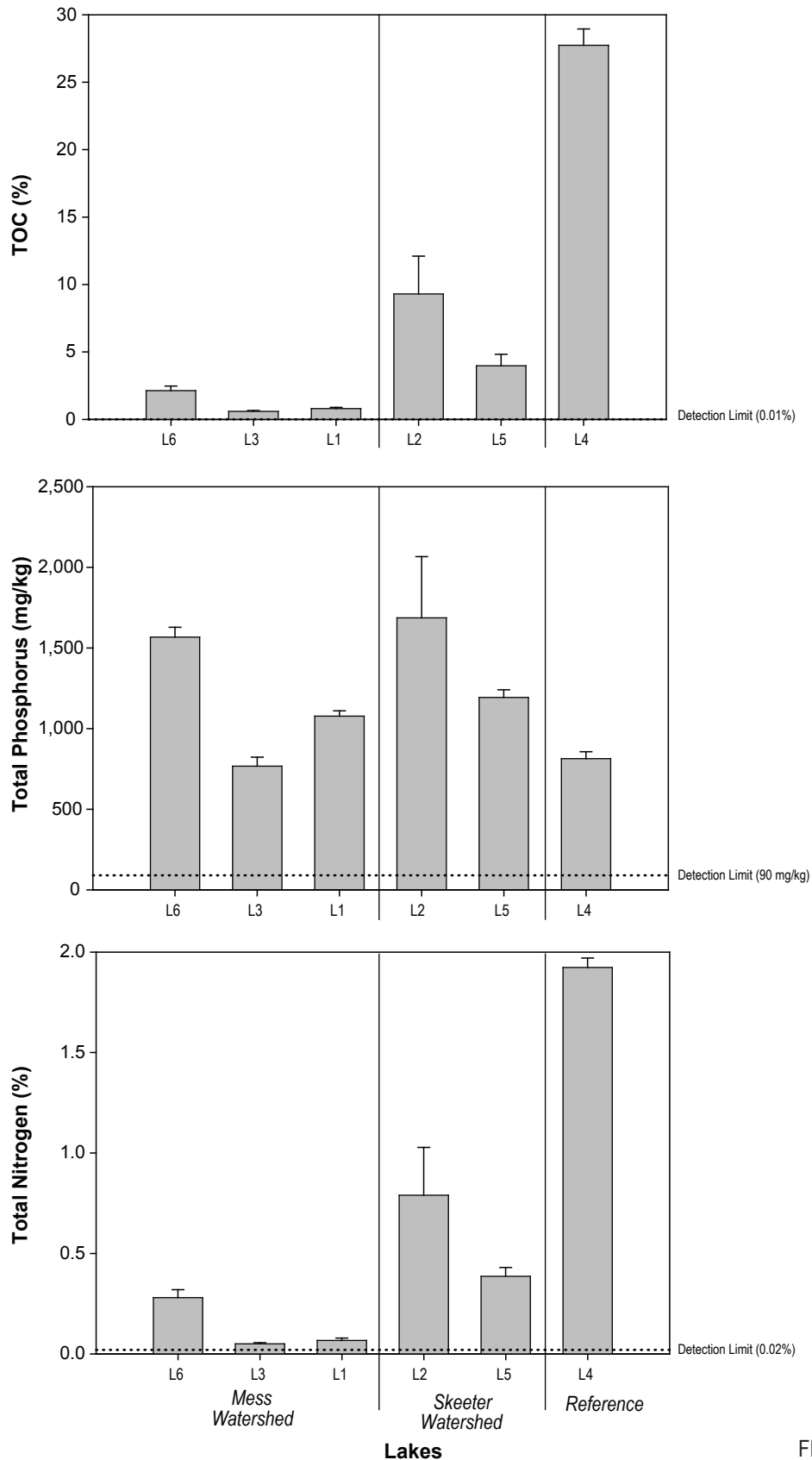




Note: Error bars represent standard error of the mean
Dotted line denotes detection limits

FIGURE 3.2-35





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

FIGURE 3.2-36



Total Nitrogen, Phosphorus and Total Organic Carbon (TOC) Concentrations in Lake Sediments, 2007

3.2.3.3 Total Metals

Of the metals analyzed antimony, bismuth, cadmium, lead, selenium, silver, thallium and tin were not detected in more than 80% of samples across all wetland and lake sites (Appendix 3.2-5). These variables are not discussed below.

Several of the analyzed metals that do not have provincial or federal guidelines are discussed below prior to those metals with guidelines. Even though these metals (aluminum, barium, cobalt, magnesium, manganese, molybdenum, titanium, and vanadium) have no guidelines, they are presented graphically to facilitate comparison between sites (Figures 3.2-37 to 3.2-44). Similar to 2006, WL4 had the highest wetland concentrations of several metals including aluminum, cobalt, magnesium, titanium and vanadium. Relatively high concentrations of aluminum, cobalt, magnesium and vanadium were also found at L5. WL5 and L6 were highest in barium. L4 (reference lake) showed generally low concentrations of most metals in lake sediments.

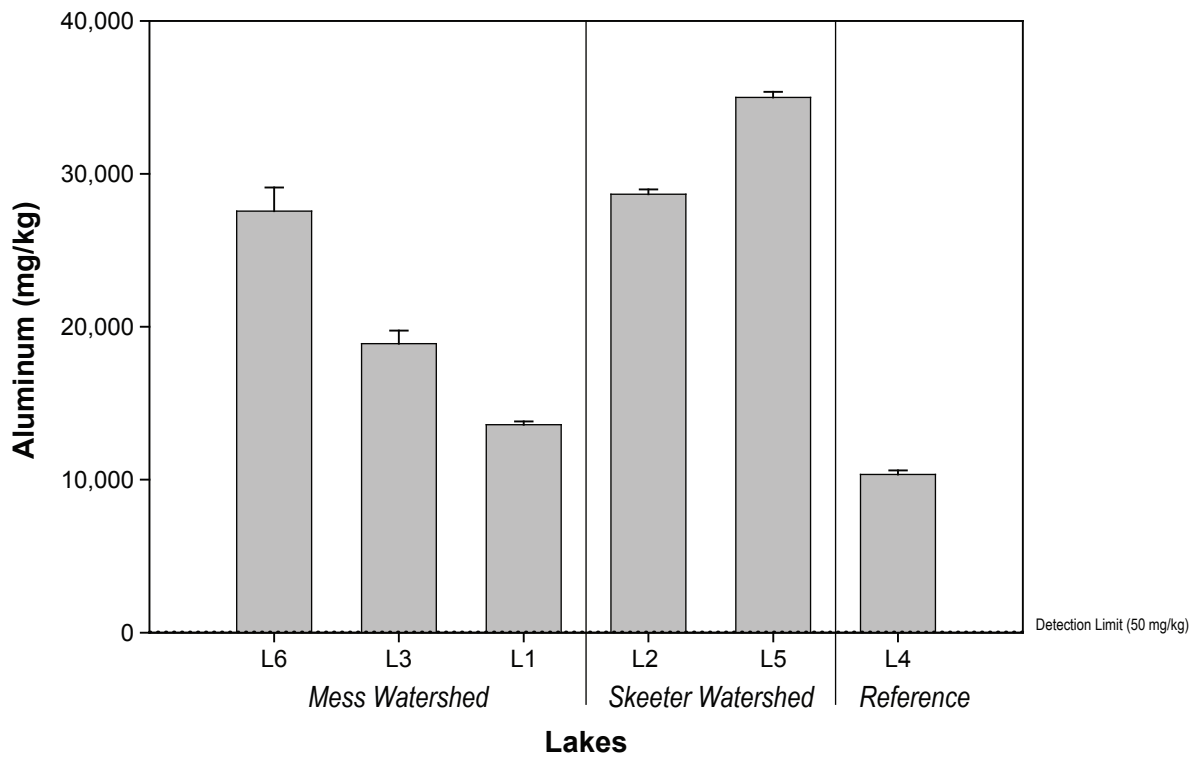
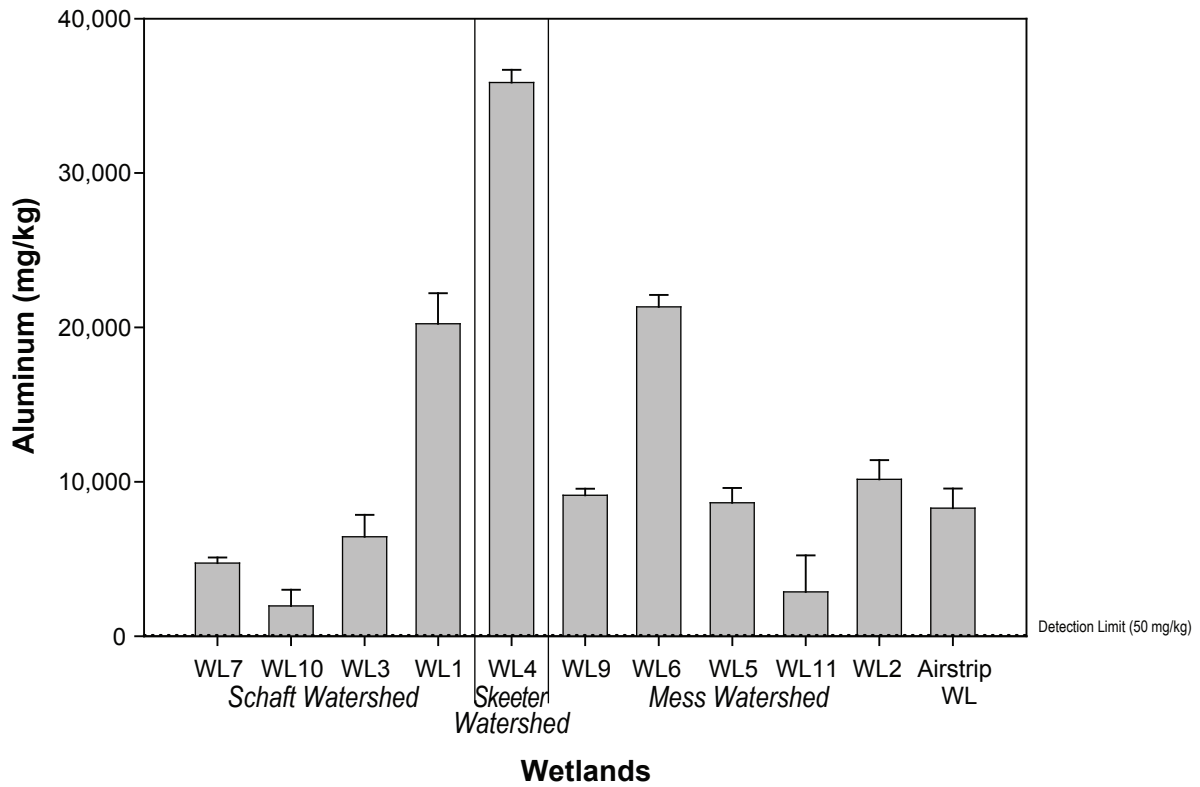
Metals for which guidelines exist are discussed and presented graphically below. Six of the nine metals for which guidelines are available exceeded those guidelines at wetland and lake sites. Two of these nine metals, cadmium and lead, had 90% of samples below detection limits. The figures below show that WL4 and WL6 often had the highest wetland metal concentrations including mercury, nickel, copper, chromium and zinc. Lake metal concentrations were relatively variable, although L5 had the greatest concentrations of copper and zinc.

All sites except for WL2, WL3, WL7, WL10, WL11, Airstrip WL and L4 exceeded the B.C. LEL and CCME ISQG guidelines (6.0 and 5.9 mg/kg, respectively) for arsenic (Figure 3.2-45). The CCME PEL guideline (17 mg/kg) was exceeded by all lakes except L4 and WL1, WL4, WL9, WL6 and WL5. Average wetland concentrations of arsenic ranged from below detection limits (5 to 10 mg/kg) at several sites to 263 mg/kg (WL9), which was almost three times the concentrations at most sites. Concentrations of arsenic in lake sediments ranged from below the analytical detection level of 5 mg/kg (L4) to 89 mg/kg (L2).

Wetlands WL1, WL4 and WL6 and all lakes except L4 exceeded the CCME ISQG (37.3 mg/kg) guidelines for chromium concentrations (Figure 3.2-46). Average wetland chromium concentrations ranged from 2.7 mg/kg at WL11 to 84 mg/kg at WL4. Lake chromium concentrations ranged from 28 mg/kg at L4 to 128 mg/kg at L3.

Most wetlands (except WL-2 and WL-3) and all lakes exceeded the CCME ISQG (35.7 mg/kg) guideline for copper (Figure 3.2-47). The PEL guideline (197 mg/kg) was also exceeded at WL7, WL4 and L5. Average copper concentrations ranged from 2.4 (WL11) to 287 mg/kg (WL4). Copper concentrations at lake sites ranged from 42 mg/kg (L6) to 199 mg/kg (L5).

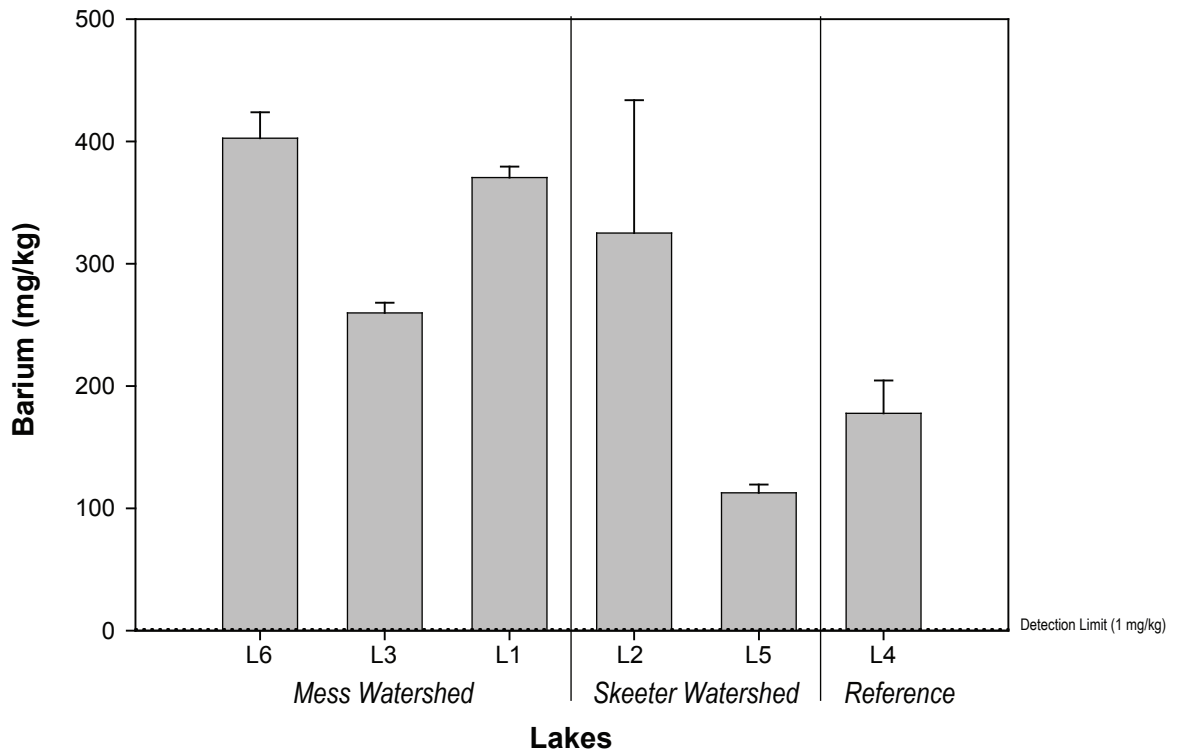
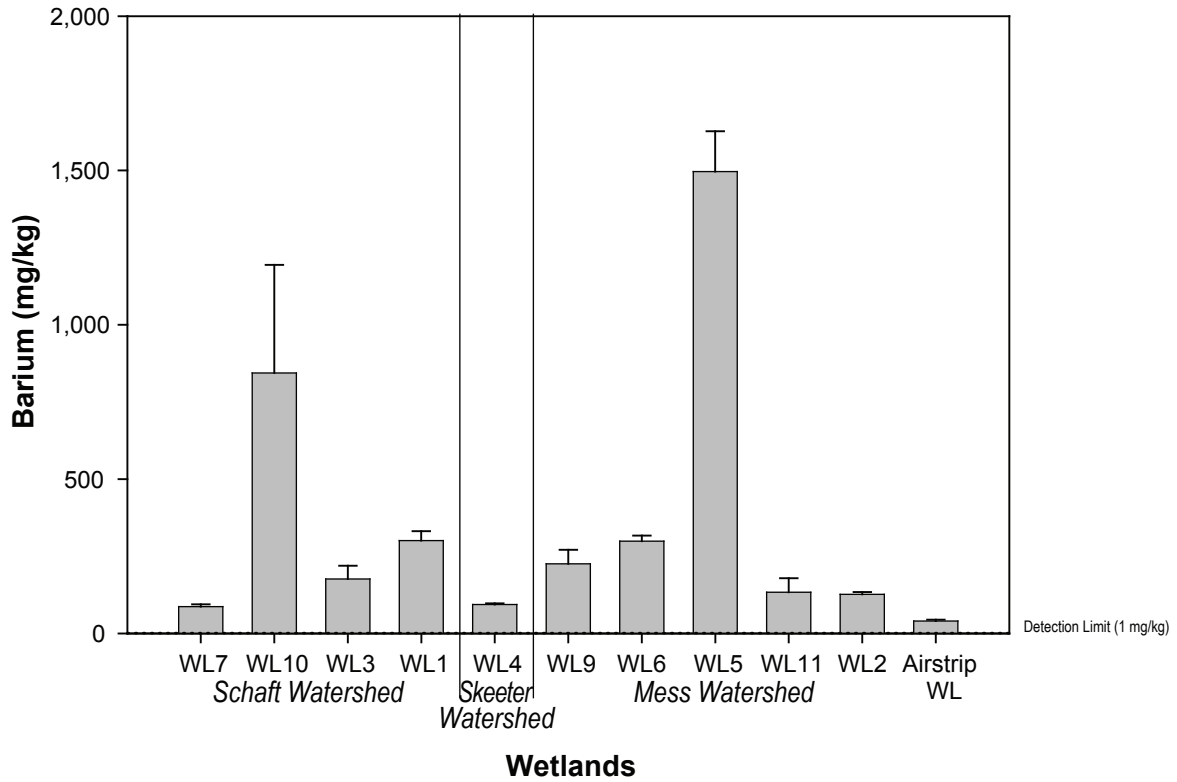
All wetlands and lakes (except WL7, WL11, Airstrip and L4) exceeded the B.C. LEL guideline (21,200 mg/kg) and all but WL2, WL3, WL7, WL11, Airstrip WL and L4 exceeded the B.C. SEL (43,766 mg/kg) guideline (Figure 3.2-48). Wetland iron concentrations ranged from 5,433 mg/kg at WL11 to 303,533 mg/kg at WL10. Iron concentrations in lake sediments ranged from 12,766 mg/kg at L4 to 77,766 mg/kg at L6.



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

FIGURE 3.2-37



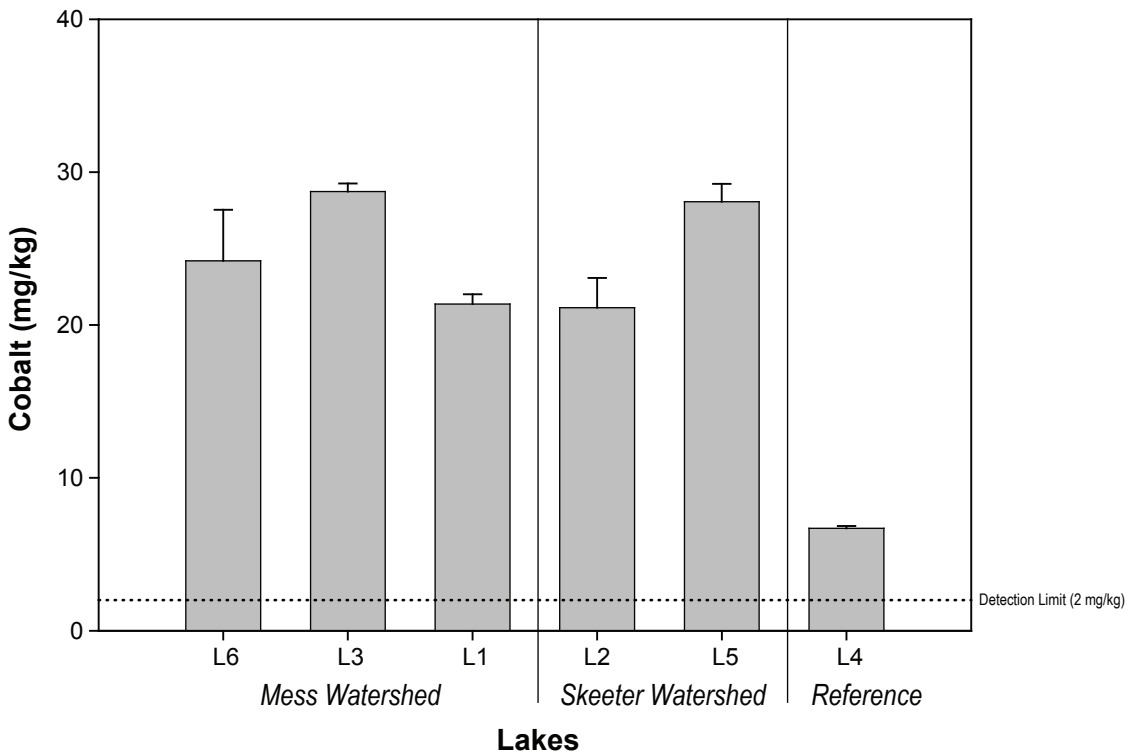
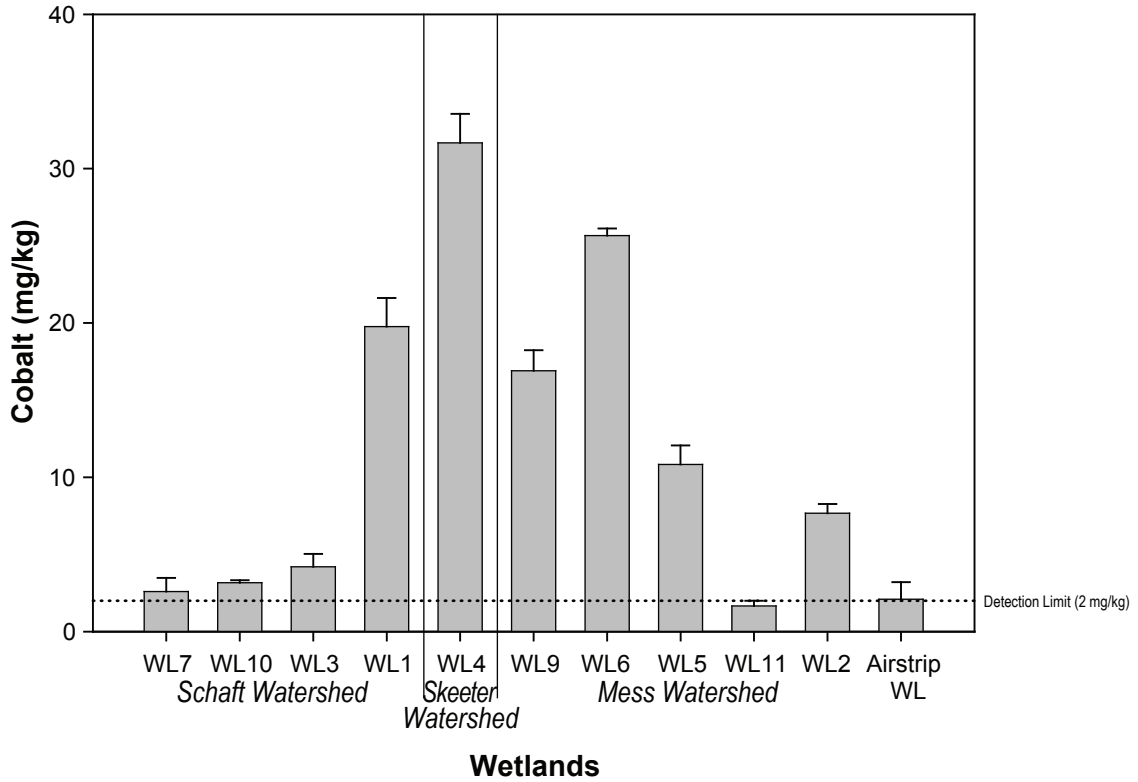


Note: Error bars represent standard error of the mean
Dotted line denotes detection limits

FIGURE 3.2-38



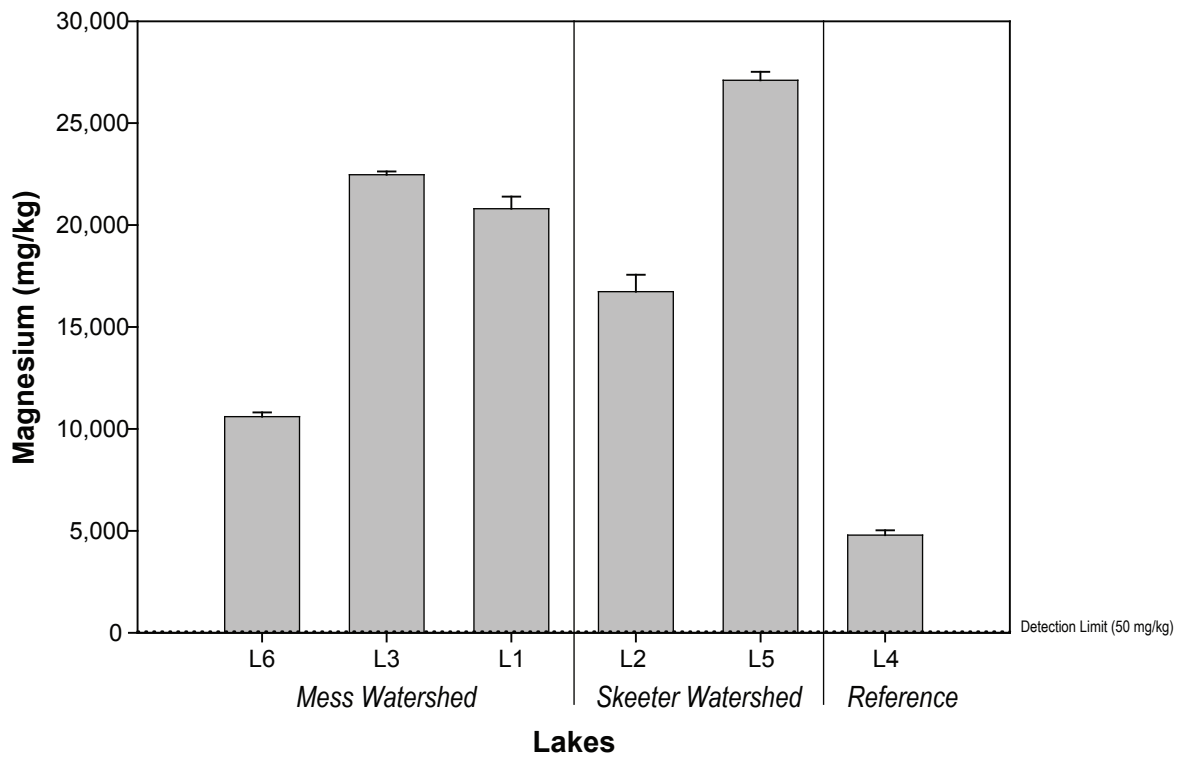
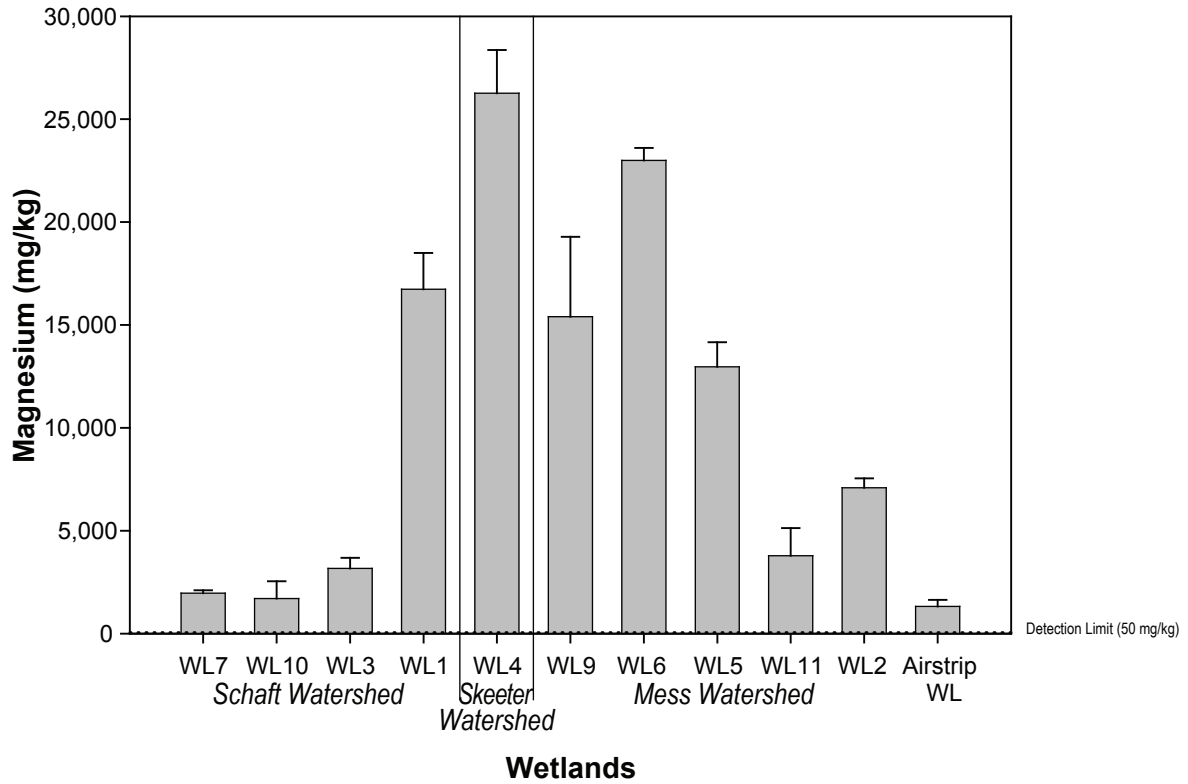
Barium Concentrations in Wetland and Lake Sediments, 2007



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

FIGURE 3.2-39

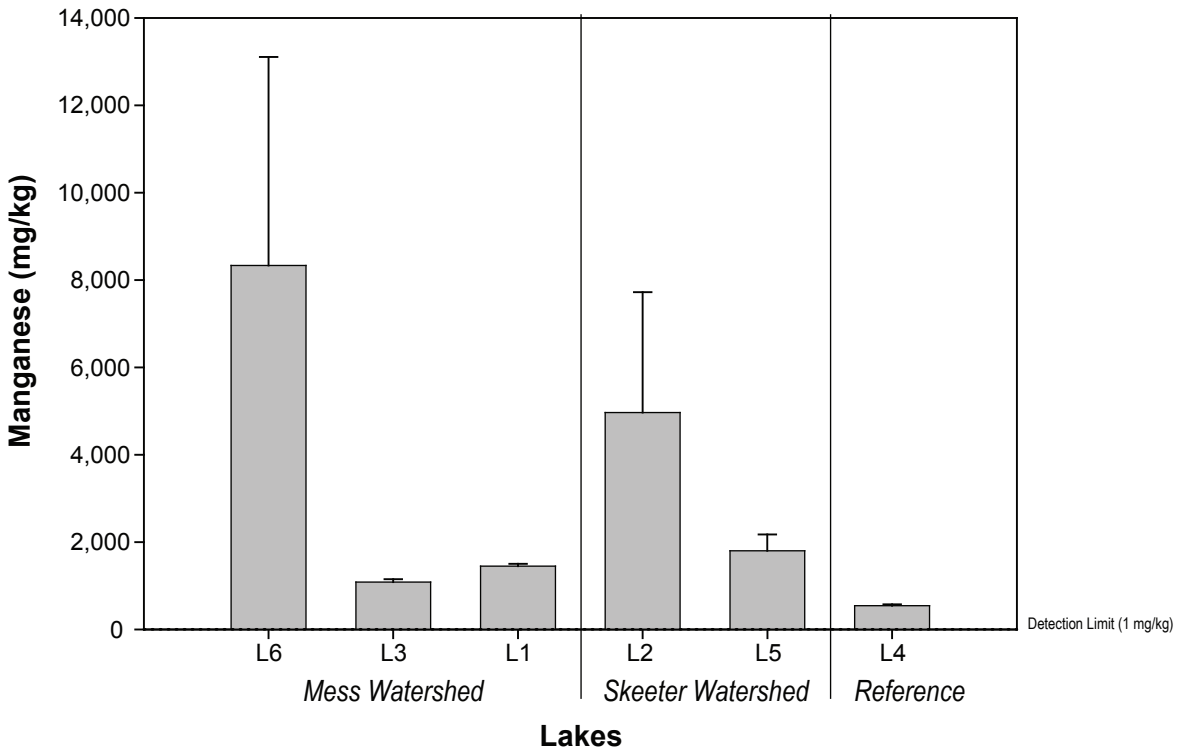
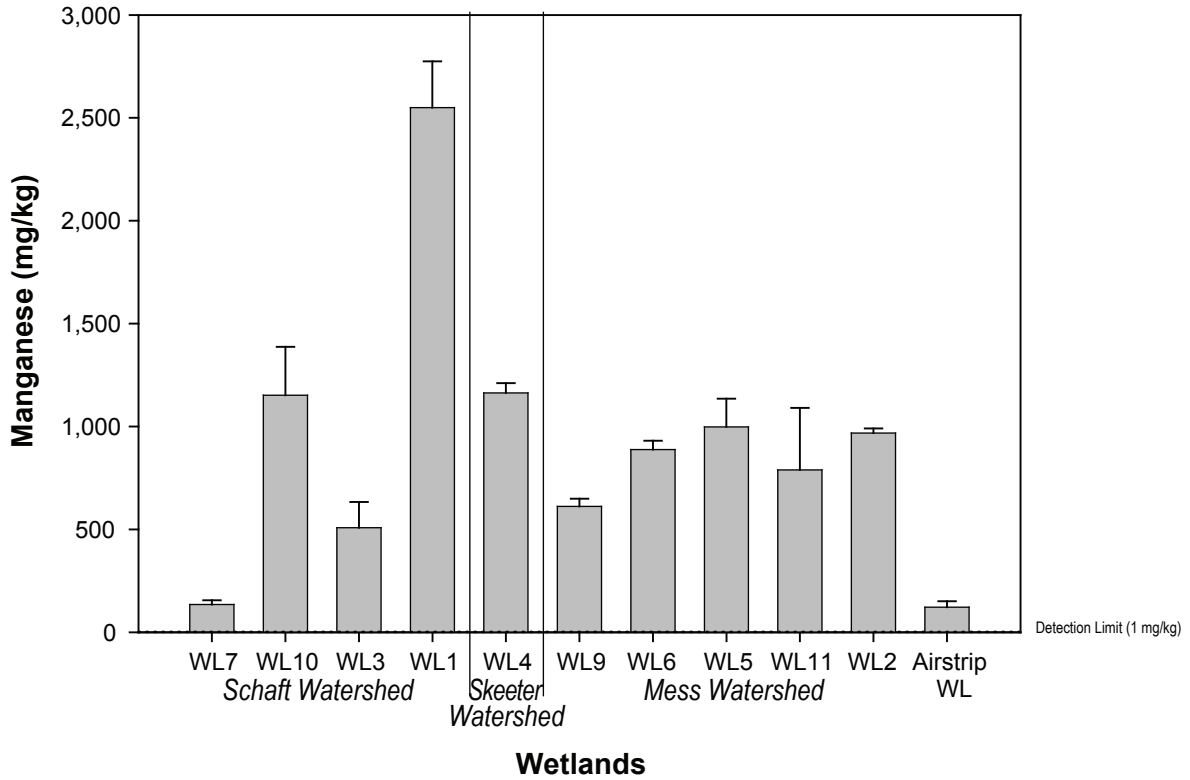




Note: Error bars represent standard error of the mean
Dotted line denotes detection limits

FIGURE 3.2-40

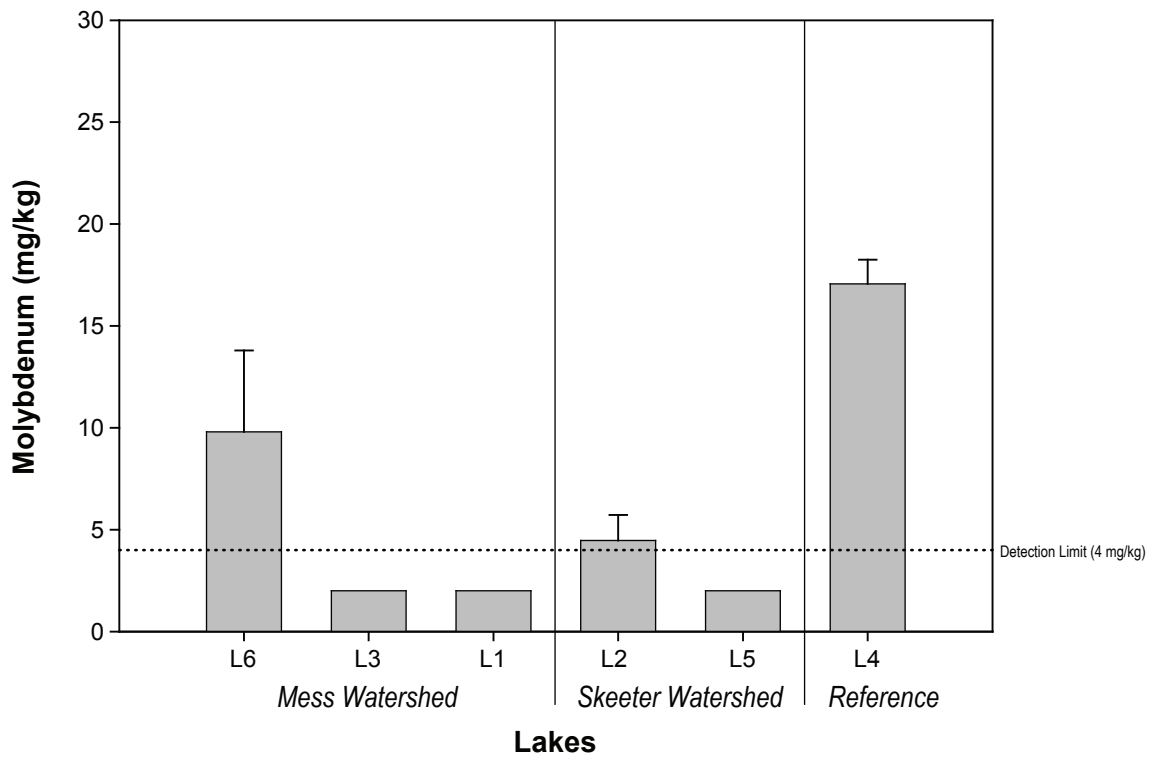
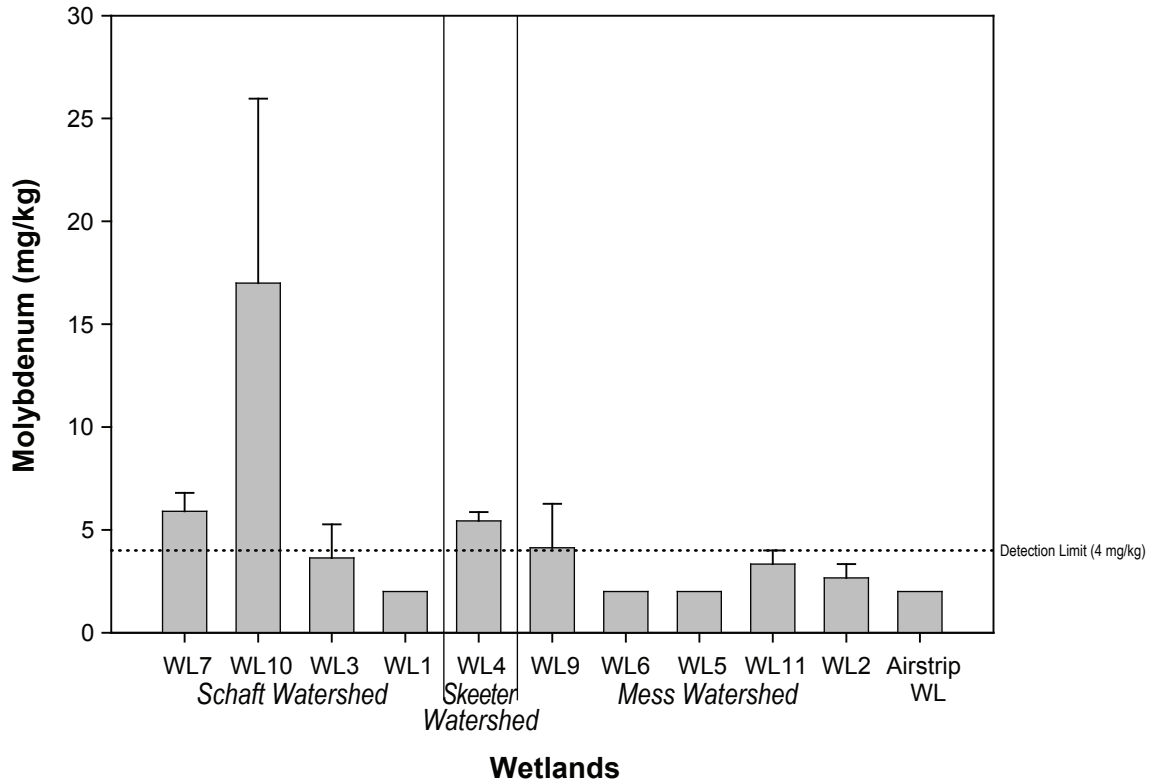




Note: Error bars represent standard error of the mean
Dotted line denotes detection limits

FIGURE 3.2-41

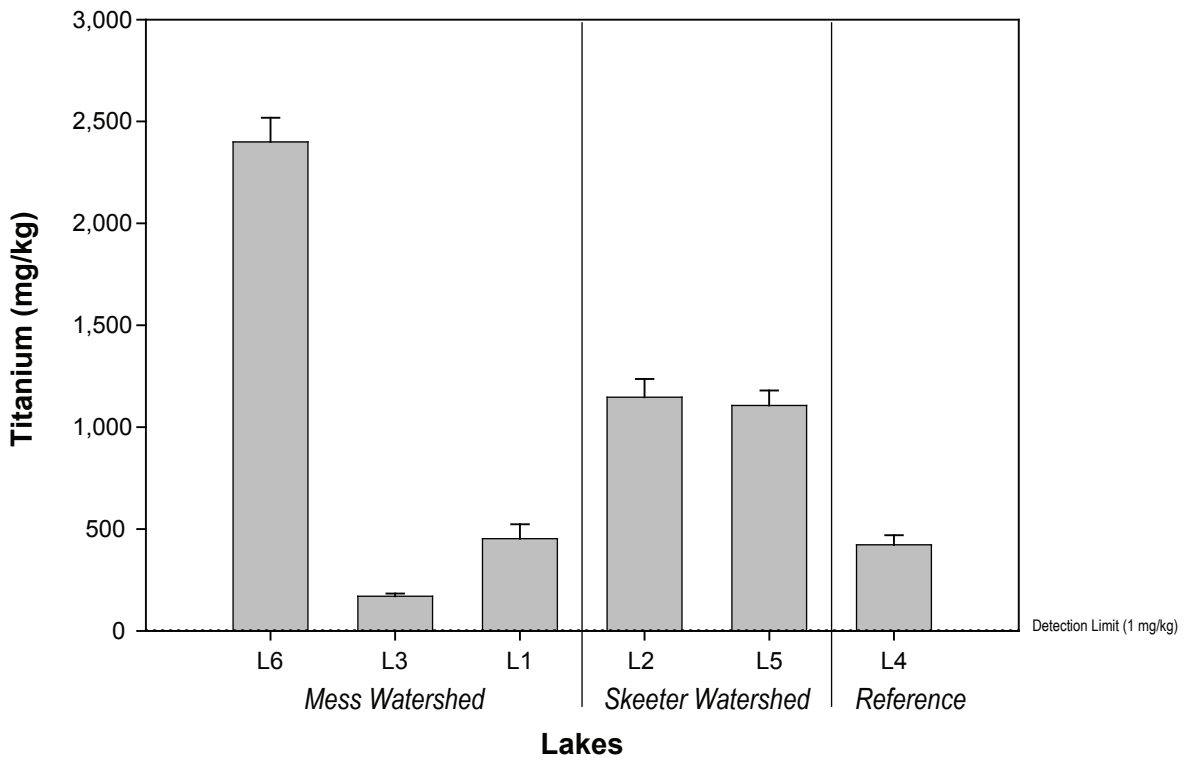
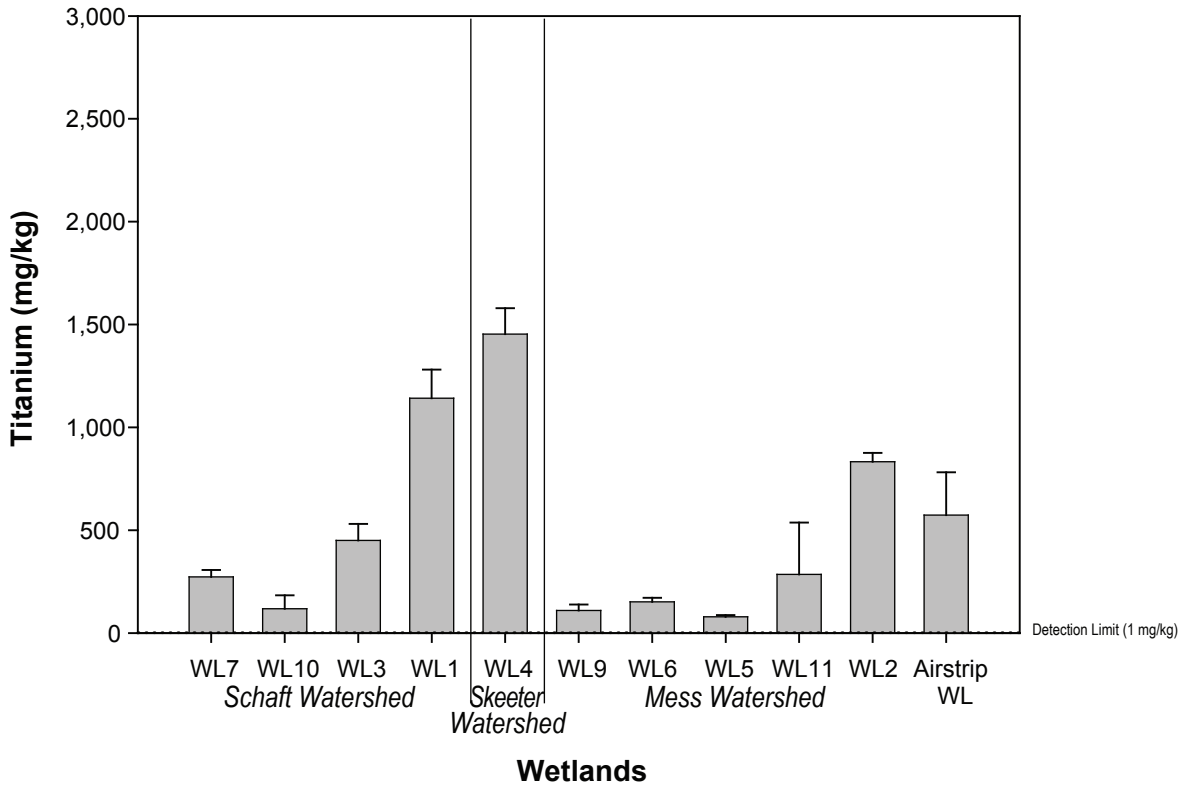




Note: Error bars represent standard error of the mean
Dotted line denotes detection limits

FIGURE 3.2-42



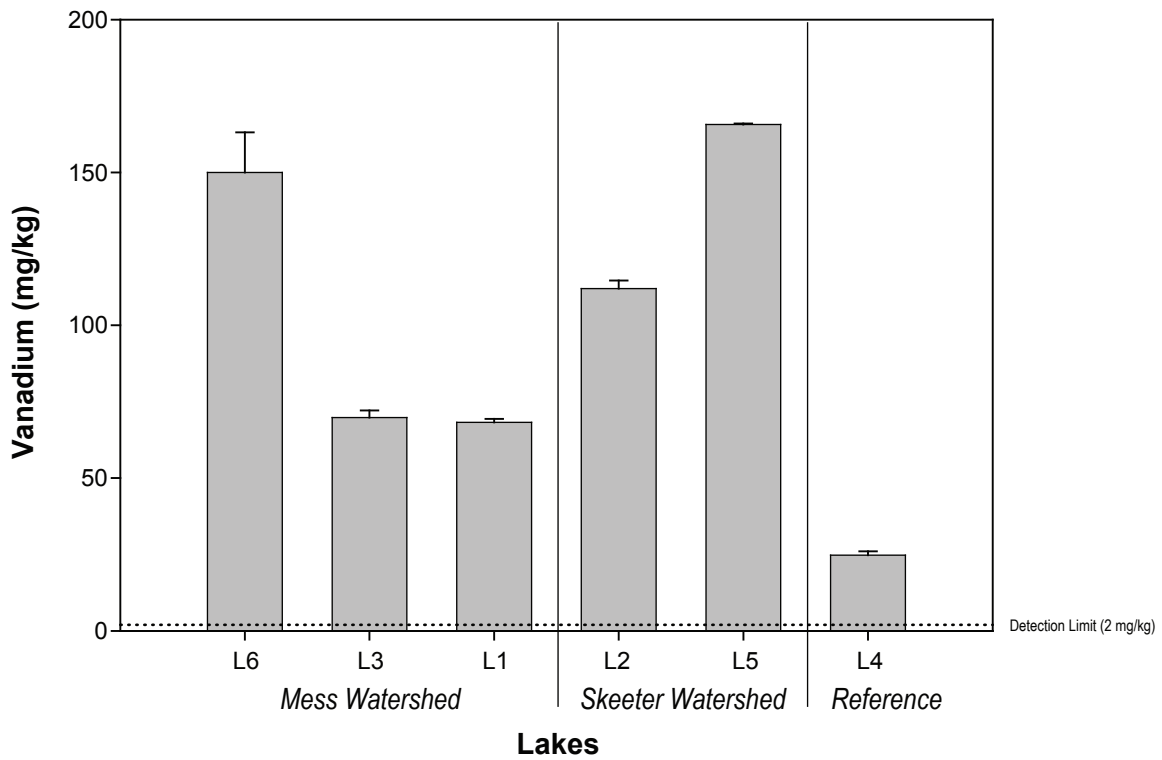
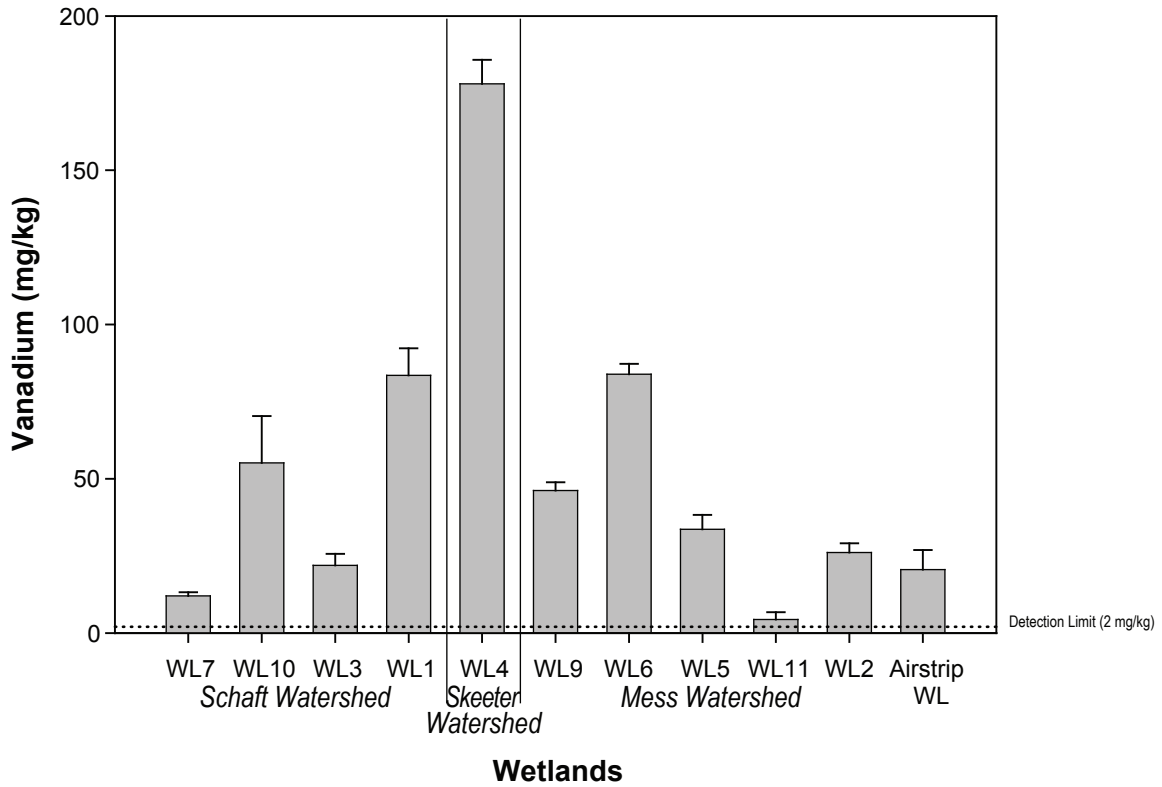


Note: Error bars represent standard error of the mean
Dotted line denotes detection limits

FIGURE 3.2-43



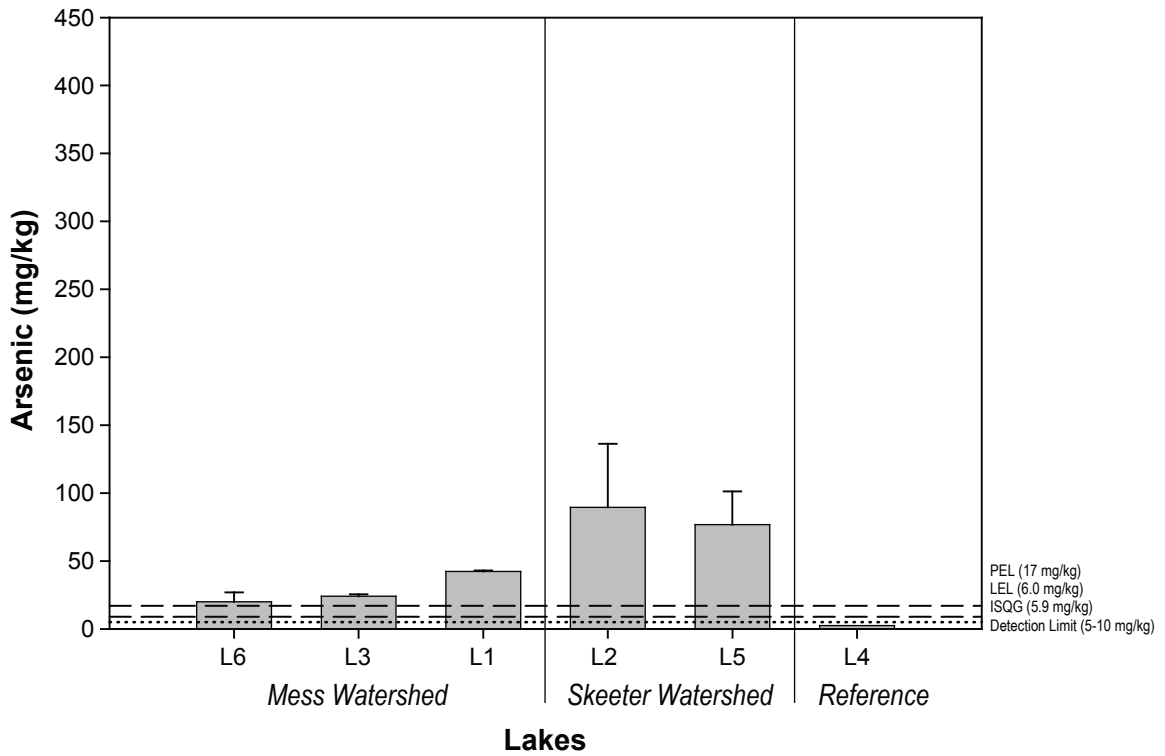
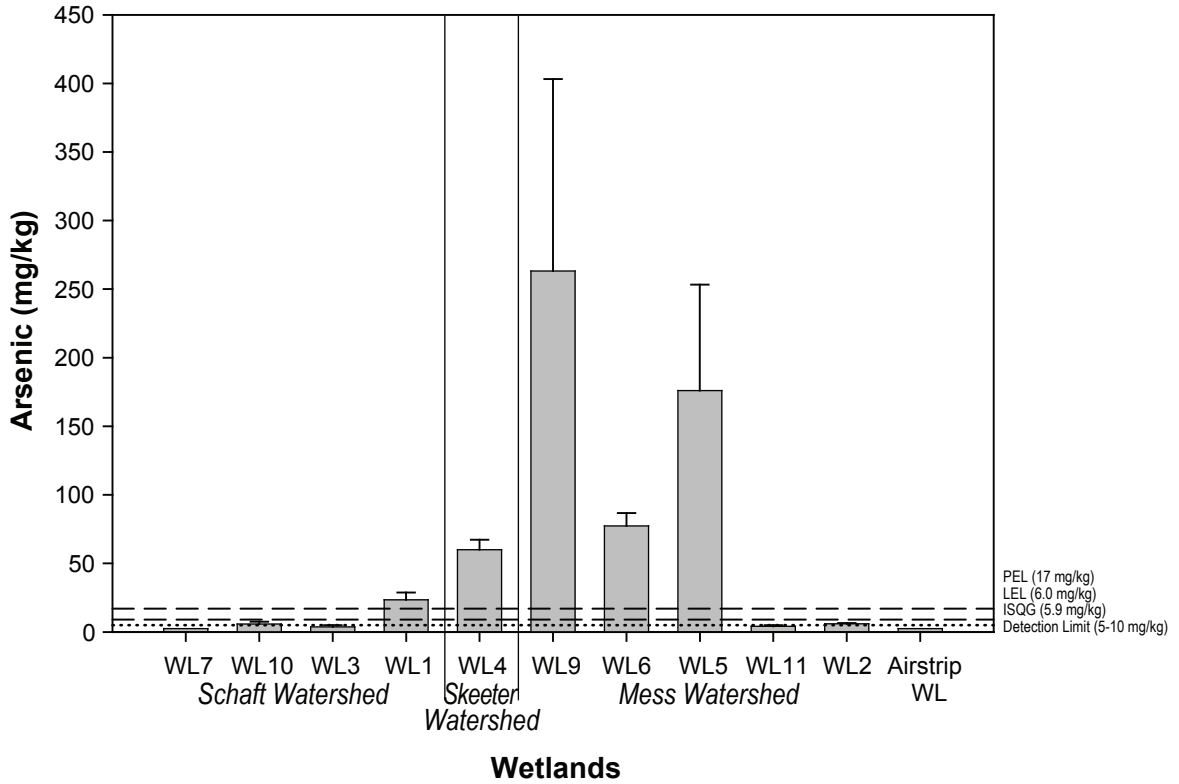
Titanium Concentrations in Wetland and Lake Sediments, 2007



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

FIGURE 3.2-44

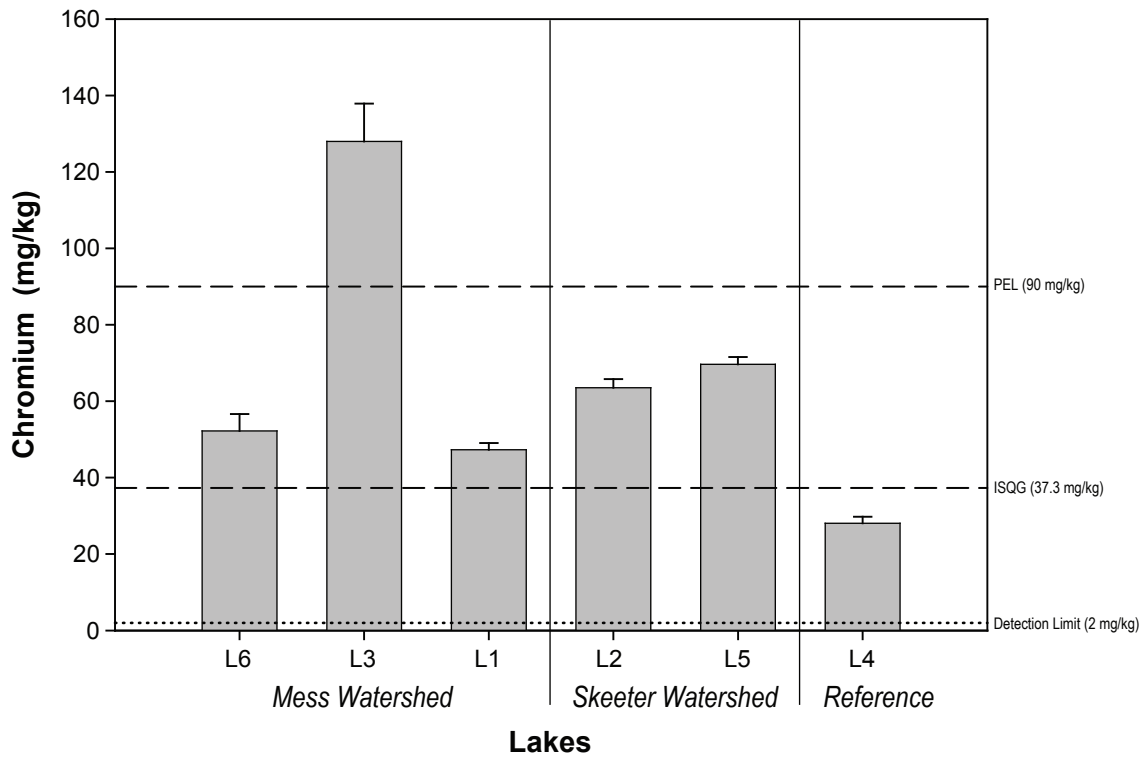
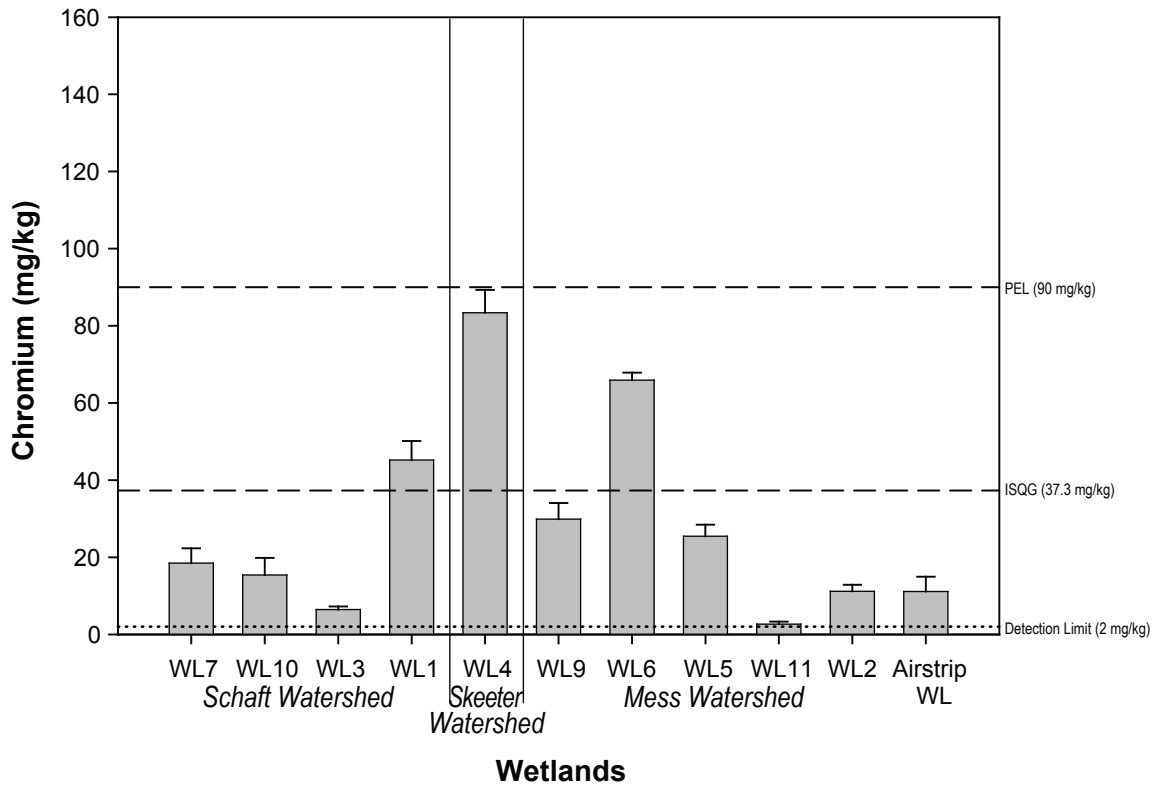




Note: Error bars represent standard error of the mean
 Dotted line denotes detection limits
 Dashed line denotes guideline values, where available.

FIGURE 3.2-45

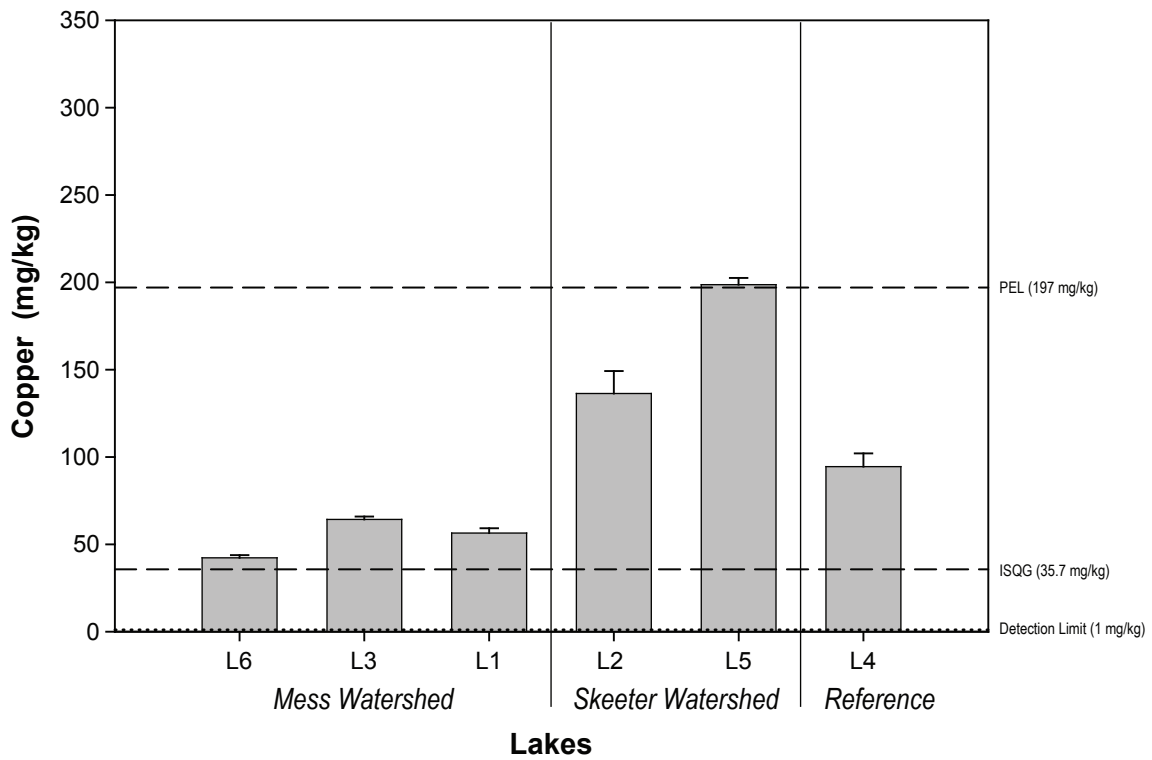
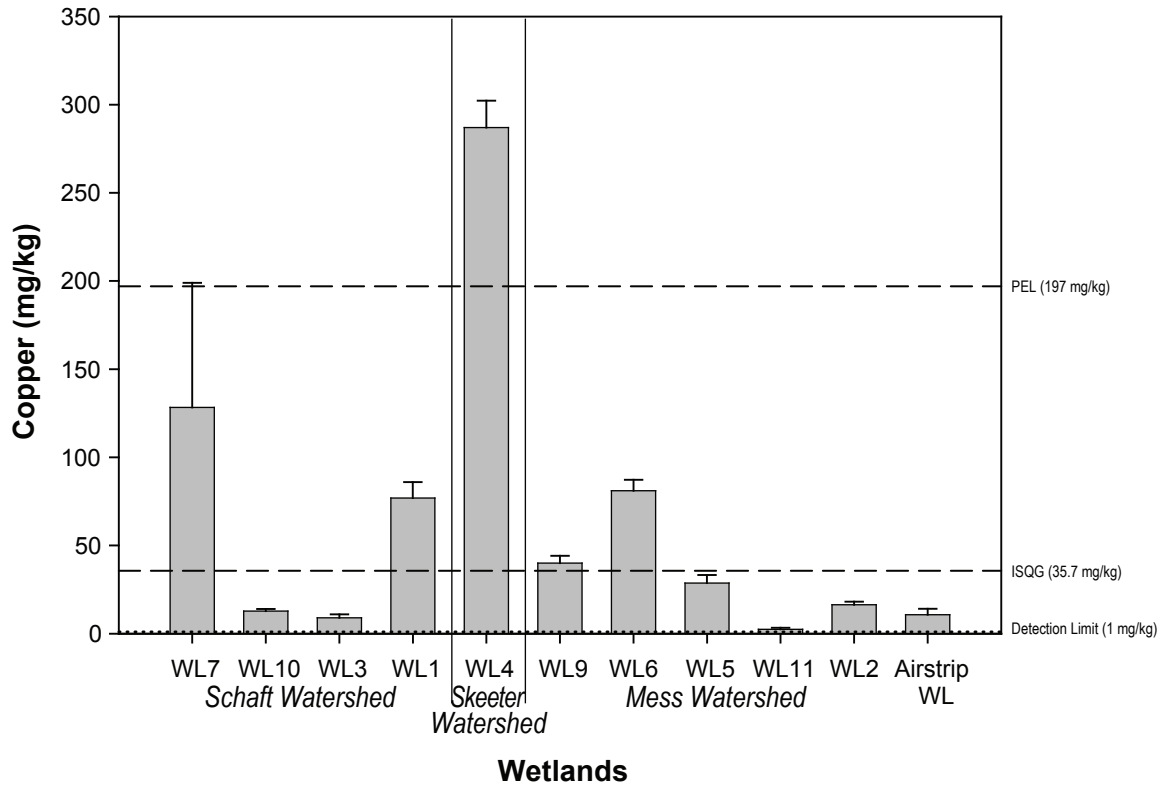




Note: Error bars represent standard error of the mean
 Dotted line denotes detection limits
 Dashed line denotes guideline values, where available.

FIGURE 3.2-46



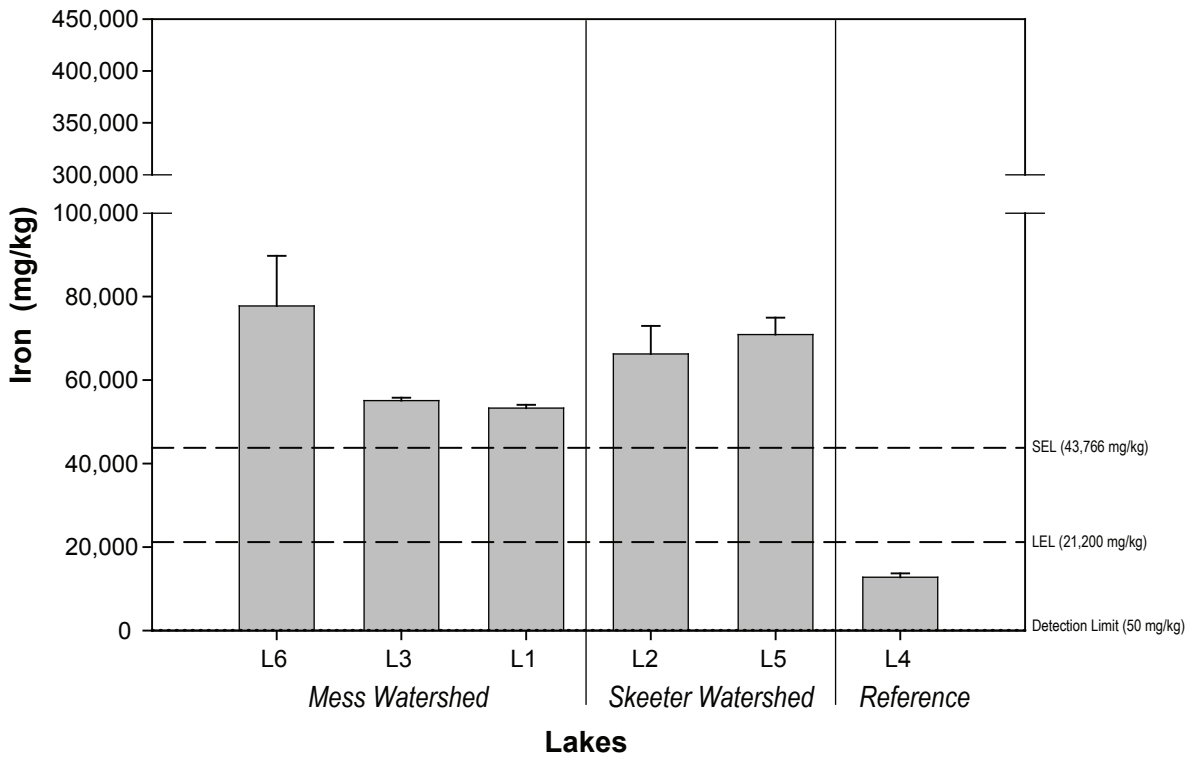
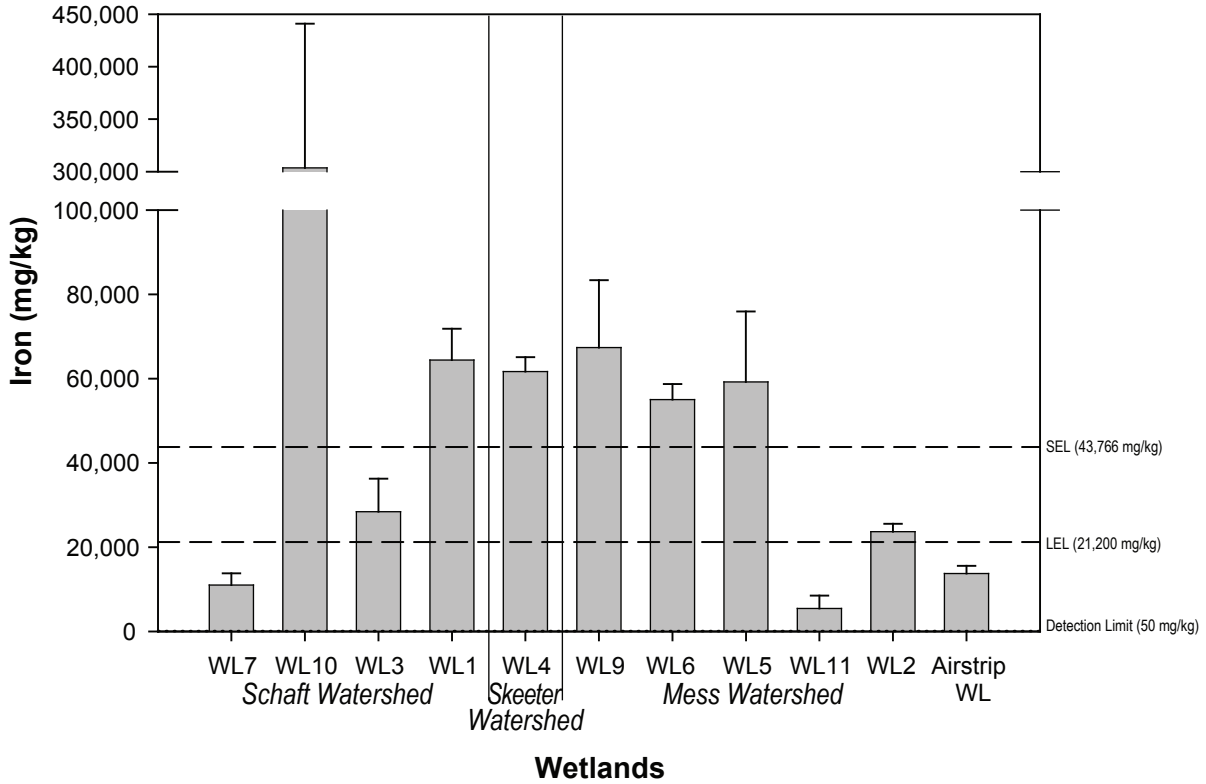


Note: Error bars represent standard error of the mean
 Dotted line denotes detection limits
 Dashed line denotes guideline values, where available.

FIGURE 3.2-47



Copper Concentrations in Wetland and Lake Sediments, 2007



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

FIGURE 3.2-48



Iron Concentrations in Wetland and Lake Sediments, 2007

All wetland and lake mercury concentrations were well below PEL and ISQG guidelines with average wetland mercury concentrations ranging from 0.01 mg/kg at WL3 to 0.11 mg/kg at WL6 (Figure 3.2-49). Average mercury concentrations in lake sediments ranged from 0.02 mg/kg at L5 to 0.10 mg/kg at L2. This range of mercury concentrations for wetlands and lakes is similar to recorded values in 2006.

Average nickel concentrations in wetland sediments ranged from below the analytical detection limit (5 mg/kg) at WL3 to 92 mg/kg at WL6 (Figure 3.2-50). Average nickel concentrations in lake sediments ranged from 33 mg/kg at L6 to 83 mg/kg at L3. The B.C. LEL guideline (16 mg/kg) was exceeded at all wetlands (except WL10, WL3, WL11 and Airstrip) and all lakes. WL6, L2, L3 and L4 also exceeded the B.C. SEL guideline of 75 mg/kg.

Concentrations of zinc in wetland sediments ranged from 15 (WL10) to 182 mg/kg (WL4) while average concentrations in lake sediments ranged from 55 (L4) to 222 mg/kg (L5) (Figure 3.2-51). Only WL4, L1 and L5 exceeded the CCME ISQG (123 mg/kg) guideline. All sites were well below the PEL guideline of 315 mg/kg.

3.2.3.4 Quality Assurance/Quality Control (QA/QC)

Duplicates from three replicates of one lake and one wetland were compared for 35 variables (210 duplicate pairs). The relative percent deviation (RPD) between the duplicates was used as a measure of the variability inherent in field sampling and homogenization of sediment samples (Appendix 3.2-6). The total proportion of duplicate pairs that were below detection limits was 25% (52 of 210 pairs). Of the remaining variables, 89.3% showed less than $\pm 20\%$ difference between duplicates. All of the duplicate pairs that had a RPD greater than 20% (16 in total) occurred in one duplicate sample of the six analysed. This implies a problem regarding the degree of homogenization may only apply to this site (WL1). Therefore, results where WL1 has exceeded guidelines (chromium, copper and iron) should be interpreted with caution.

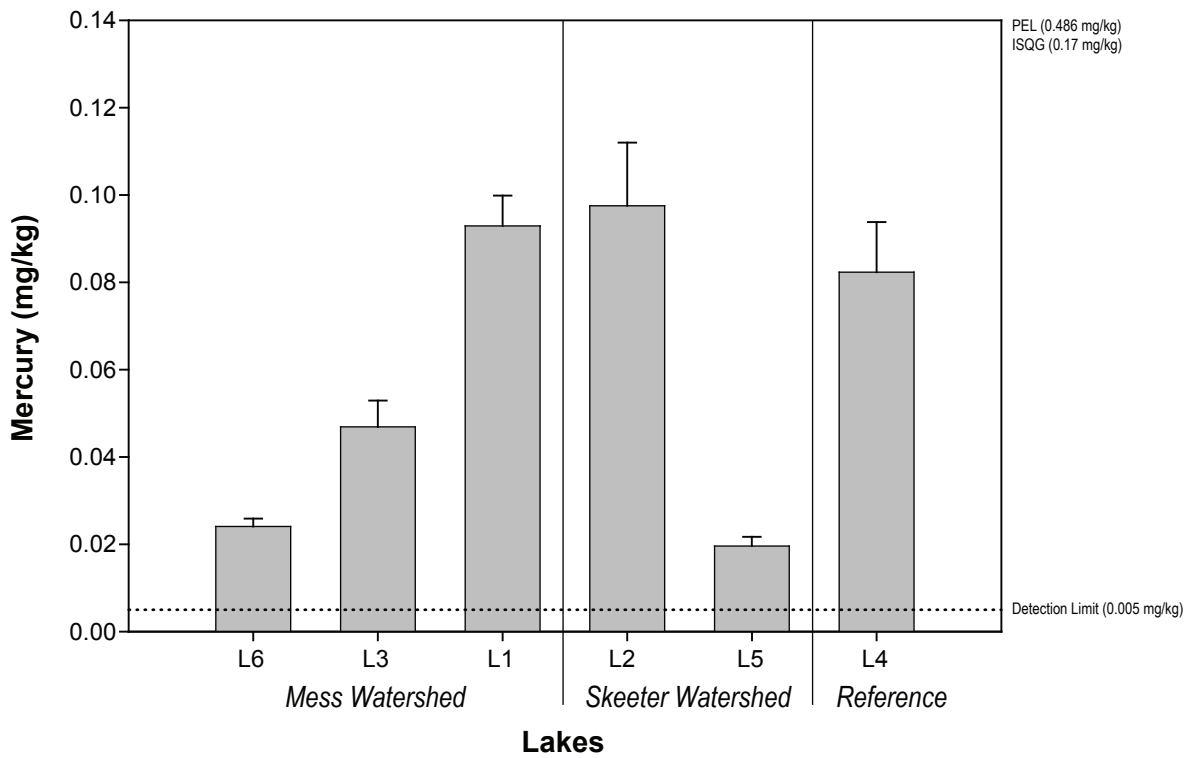
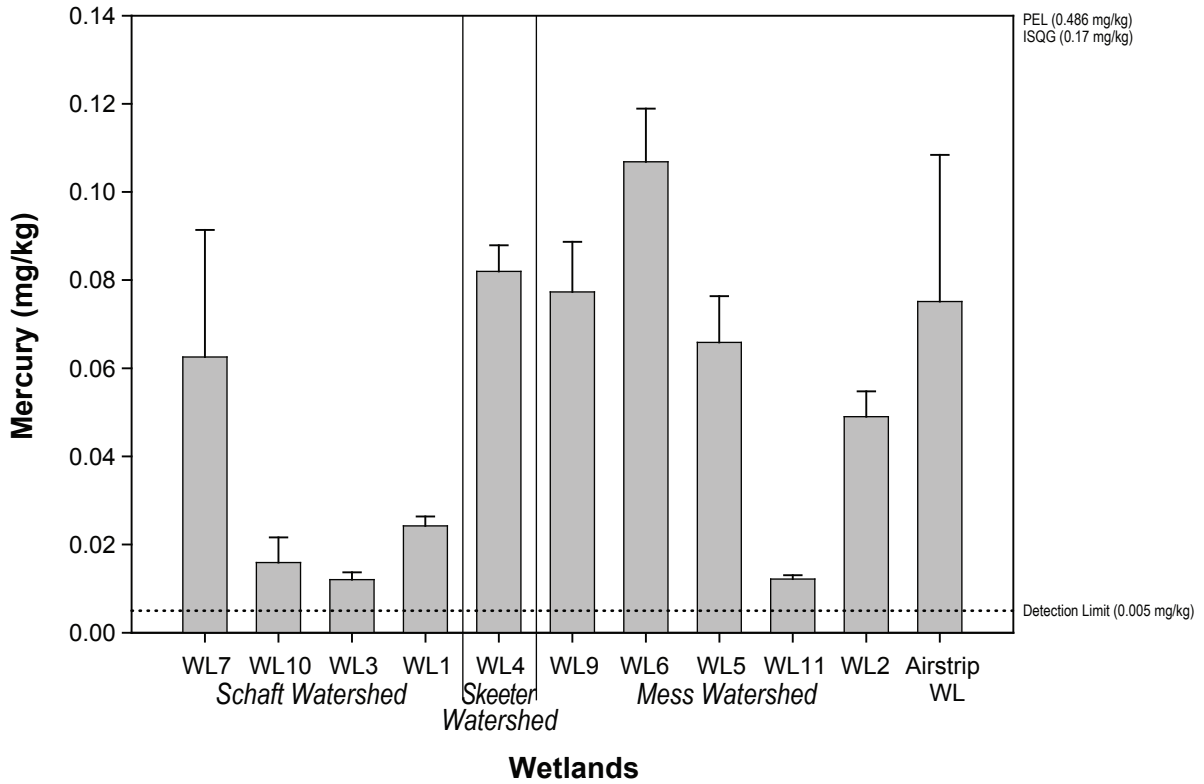
3.2.4 Primary and Secondary Producers

3.2.4.1 Phytoplankton

In August of 2007, phytoplankton samples were collected at eleven wetlands and six lakes. All phytoplankton taxonomy data can be found in Appendix 3.2-7, while biomass data are in Appendix 3.2-8.

Biomass

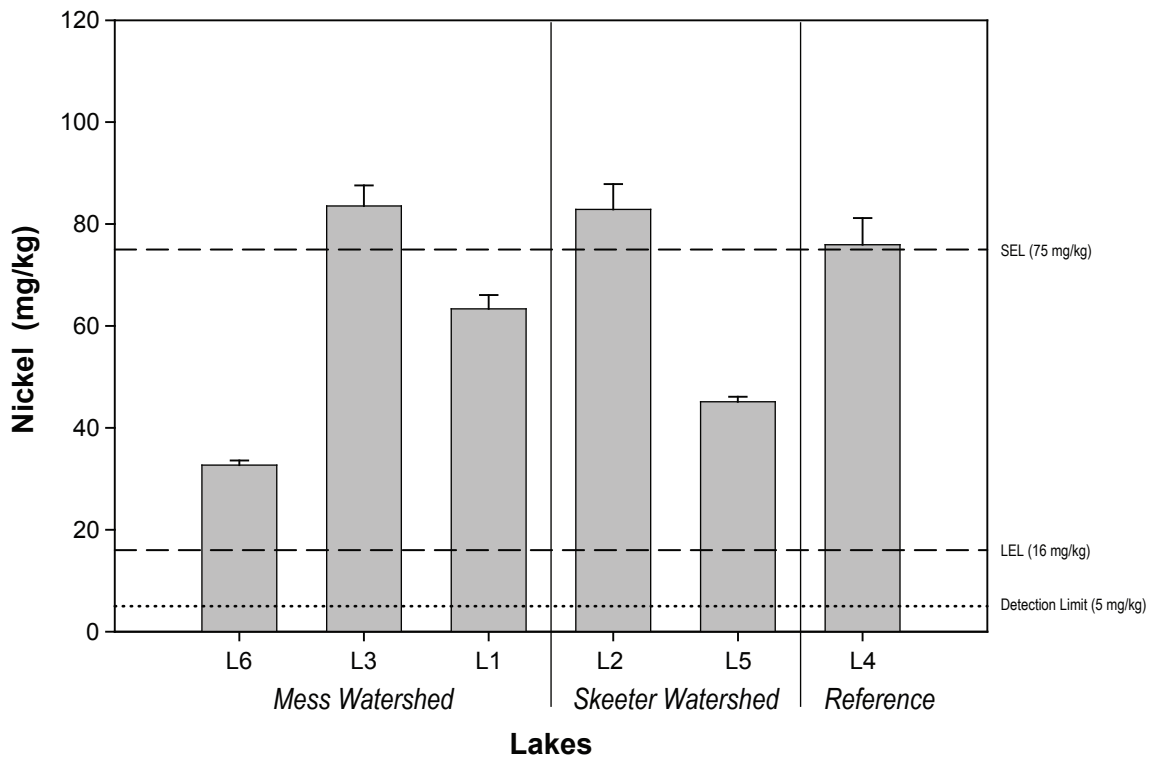
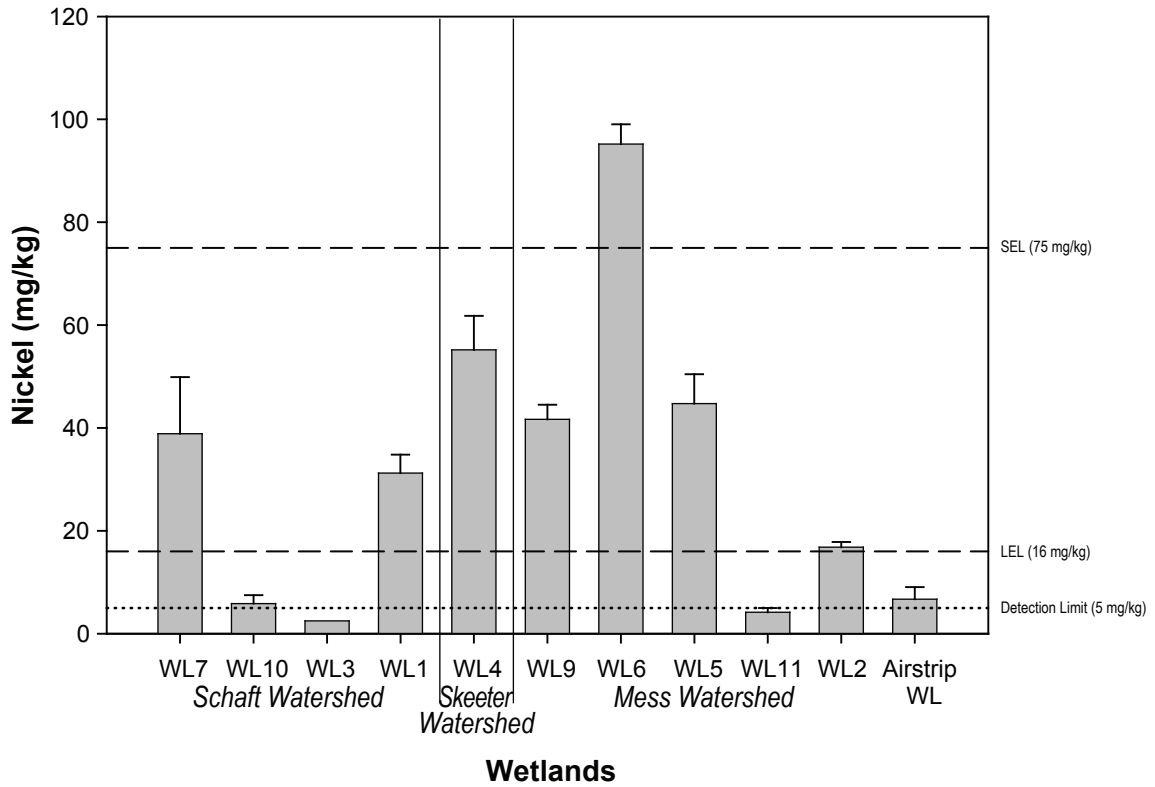
Phytoplankton biomass varied widely between lakes, wetlands and watersheds. Mean wetland biomass ranged from 0.02 $\mu\text{g/L}$ chlorophyll *a* at WL-4 to 3.03 $\mu\text{g/L}$ chlorophyll *a* at WL-6 (Figure 3.2-52). Lake phytoplankton biomass ranged from 0.04 $\mu\text{g/L}$ at L-1 to 0.90 $\mu\text{g/L}$ at L-5, similar to values observed in 2006. Wetland phytoplankton biomass averaged 0.56 $\mu\text{g/L}$, slightly higher than the lake average of 0.44 $\mu\text{g/L}$.



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

FIGURE 3.2-49

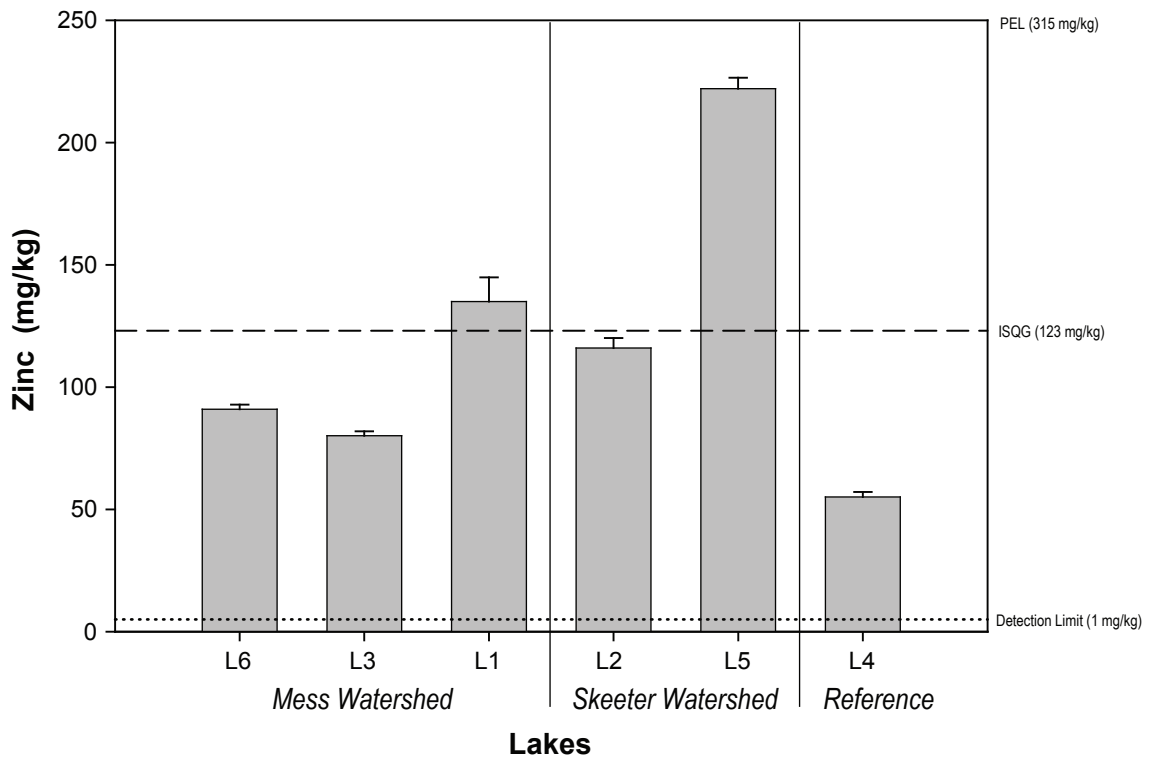
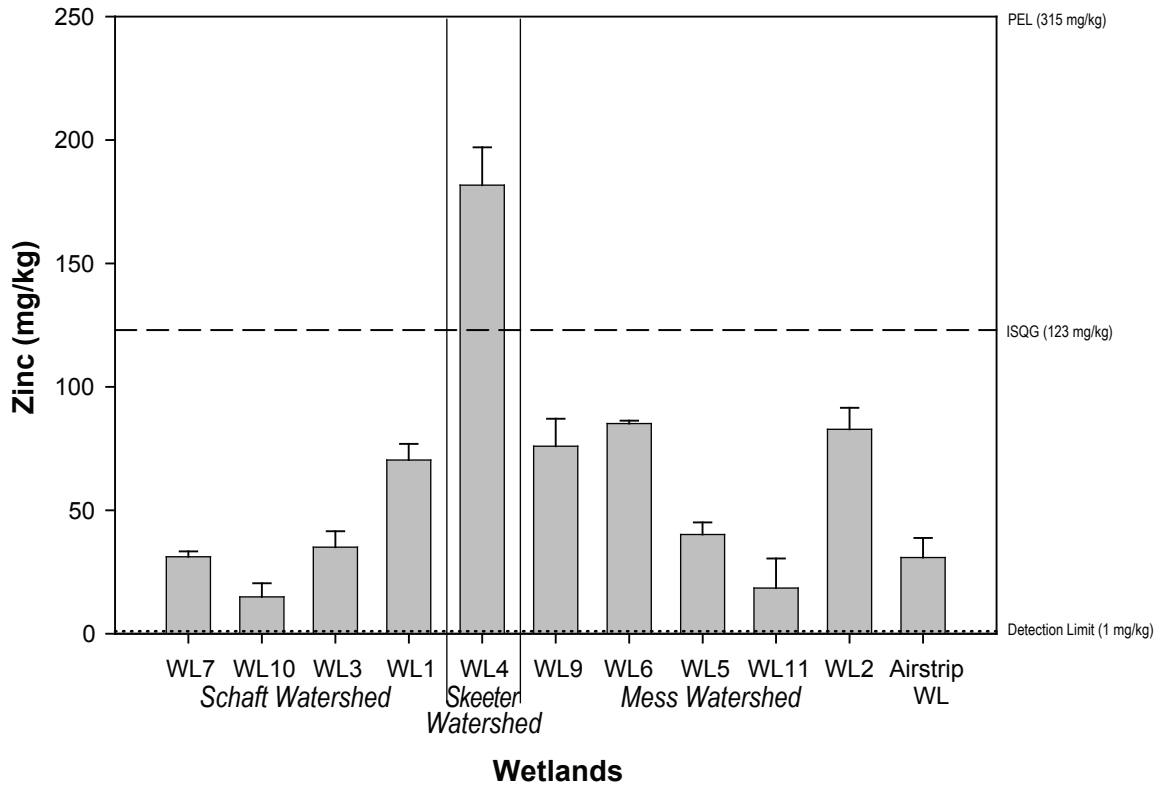




Note: Error bars represent standard error of the mean
 Dotted line denotes detection limits
 Dashed line denotes guideline values, where available.

FIGURE 3.2-50





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

FIGURE 3.2-51



Density and Relative Abundance

Wetland phytoplankton densities ranged from 2 cells x 10³/L at WL-10 to 419 cells x 10³/L at the Airstrip wetland, although replicate results from this location varied considerably (101 to 1044 cells x 10³/L) (Figure 3.2-53). Mean wetland density was 103 cells x 10³/L, with Mess Creek Watershed wetlands (which contains Airstrip) having the highest average densities.

Lake phytoplankton densities ranged from a low of 4 cells x 10³/L at L-1 to 1,595 cells x 10³/L at L-4, a value almost twenty times that of the next most dense wetland. These findings are in congruence with those of 2006, which identified L-1, L-3 and L-5 as having the lowest densities and the reference lake (L-4) as having the highest densities by a considerable amount. In both 2007 and 2006 the high densities at L-4 were largely due to the cyanophyte *Aphanocapsa elachista*.

Most wetlands were dominated by chrysophytes, which composed an average of 61% of the phytoplankton community densities (Figures 3.2-54 a, b, c). Chlorophytes, cryptophytes and cyanophytes were also prevalent in the wetlands surveyed, and constituted an average of 15%, 13%, and 10% respectively of the phytoplankton communities. Lakes in the study area were also heavily dominated by chrysophytes average of (63%), with cyanophytes (17%) and cryptophytes (14%) the next most prevalent taxa. Although chrysophytes were dominant on a regional scale, a few individual sites possessed notable exceptions to this pattern. At WL-7, WL-5, WL-11, Airstrip and L-4 only 4% (L-4) to 34% (WL-5) of the phytoplankton densities were attributed to chrysophyta.

Richness and Diversity

Average wetland phytoplankton richness ranged from 3 at WL-10 to 15 at WL-11, with a mean of 9 genera (Figure 3.2-55). Lake phytoplankton richness ranged from 4 at L-1 to 10 at L-2, L-5 and L-4, with a mean of 8 genera.

Genus diversity calculations using Shannon and Simpson diversity indices show WL-11 being the most diverse wetland site (Figure 3.2-56 and 3.2-57). Average Shannon diversity ranged from 0.83 (WL-10) to 2.24 (WL-11). Average Simpson diversity ranged from 0.45 (WL-10) to 0.85 (WL-11). Lake diversity ranged from a very low Simpson diversity of 0.28 (0.69 Shannon) at L4 (the lake with the highest phytoplankton density) to highs in L2 and L5 of 0.75 (Shannon = 1.67 and 1.73, respectively).

Table 3.2-2 summarizes dominance indicators for phytoplankton diversity. The average number of genera composing 90% of the abundance ranged from 3 (WL-10) to 9 (WL-11) in the wetlands, and 2 (L-4) to 6 (L-5) in the lakes. The maximum percent dominance by one genus at a site ranged from 27% (WL-11) to 64% (WL-2) in the wetlands, and from 31% (L1) to 84% (L-4). These results corroborate findings in diversity differences, with L-4 to lowest diversity lake despite having the highest densities and genera richness observed due to the fact that this lake was heavily dominated (as observed in 2006) by a single taxon; *Aphanocapsa elachista*.

**Table 3.2-2
Average Dominance Indicators for Phytoplankton Diversity in
Schaft Creek Project Wetlands and Lakes, 2007**

Site	Number of Replicates	G (90%)	SE	Maximum Dominance %	SE
WL7	3	7	0.67	45	4.82
WL10	3	3	0.88	60	20.06
WL3	3	5	0.58	34	2.17
WL1	3	6	0.33	31	3.80
WL4	3	5	0.58	40	5.27
WL9	3	6	0.88	43	3.48
WL6	3	5	1.76	36	12.33
WL5	3	6	1.00	49	10.12
WL11	3	9	0.58	27	5.19
WL2	3	5	0.88	64	3.56
Airstrip WL	3	4	1.53	56	21.12
L6	3	3	1.53	72	14.54
L3	3	4	0.58	52	4.25
L1	3	4	0.58	31	4.52
L2	3	5	0.67	35	2.28
L5	3	6	0.67	39	3.42
L4	3	2	0.67	84	3.22

Note: G (90%) is the average number of genera comprising 90% of the assemblage. Maximum Dominance is the percent dominance by genus. SE is the standard error of the mean.

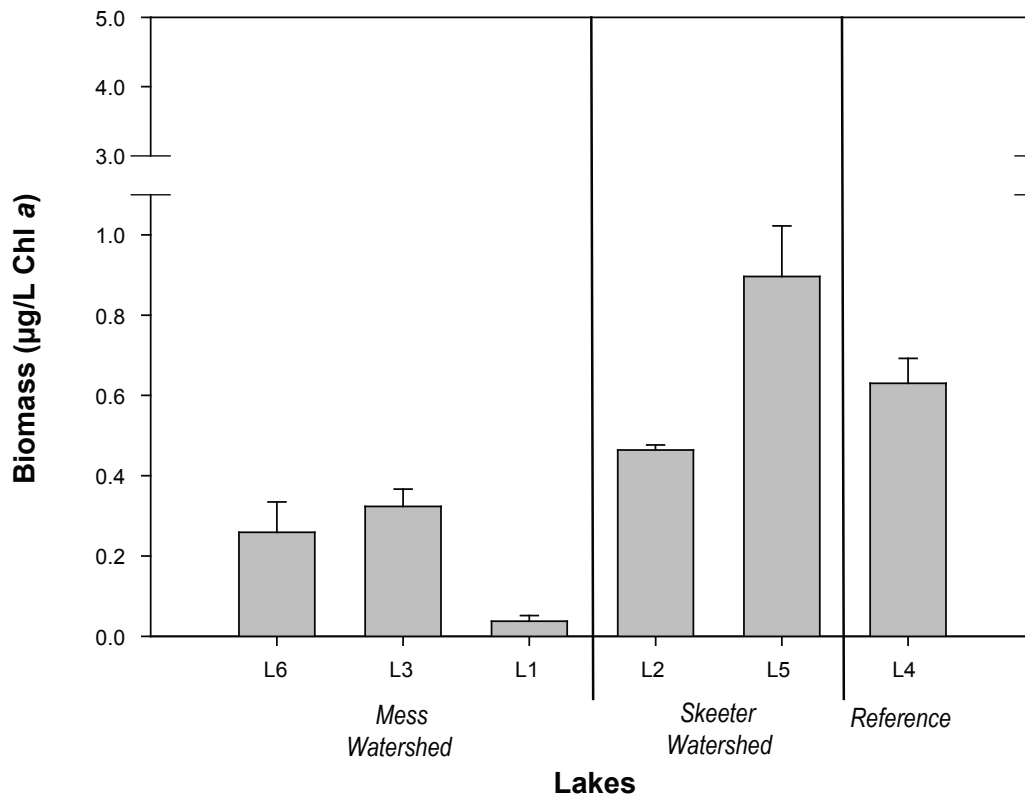
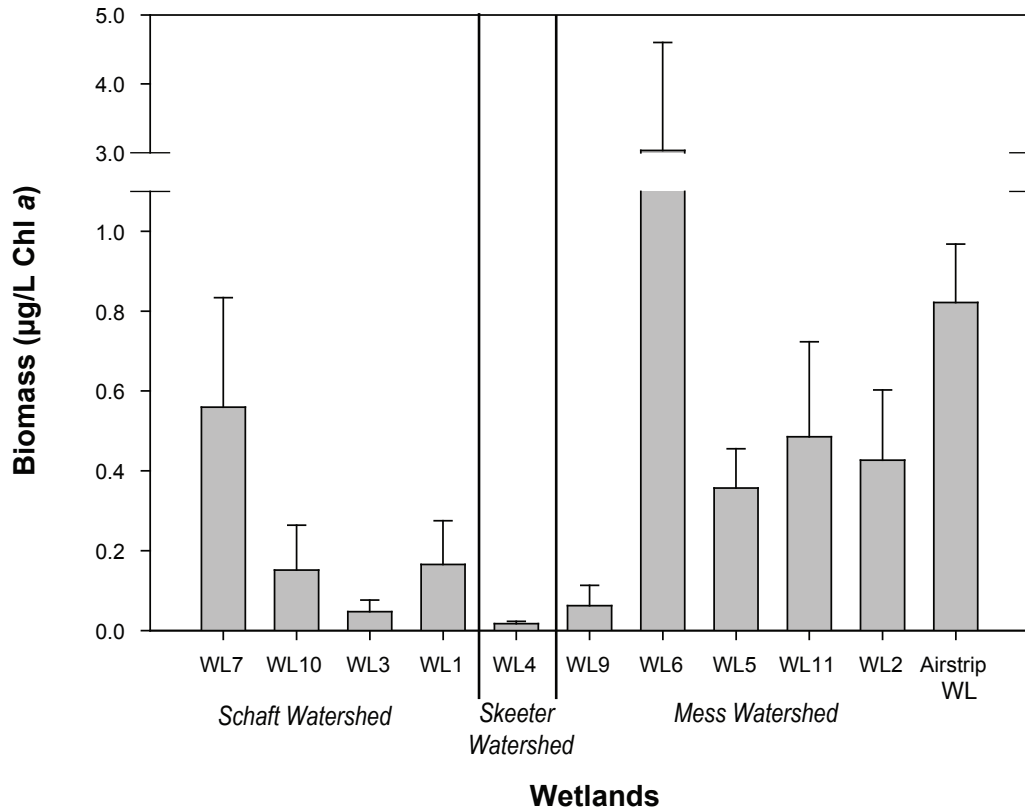
3.2.4.2 Benthic Invertebrates

Benthos samples were collected from each of the six lakes and eleven wetlands in August of 2007. All benthos taxonomy data can be found in Appendix 3.2-9.

Density and Relative Abundance

The average density of benthos varied between sites in both wetlands and lakes (Figure 3.2-58). Wetlands showed a greater difference in average density between sites, ranging from 1,718 (WL10) to 53,630 (WL9) organisms/m². However, of the eleven wetlands sampled, nine had densities between 13,000 to 39,000 organisms/m². In comparison, the average density of lake benthos ranged from 237 at L4 to 17,274 organisms/m² at L6. Three of the six lake sites (L6, L1 and L5) had average densities above 15,000 organisms/m². Wetlands accounted for over 80 percent of all organisms sampled. This indicates that benthic invertebrate populations have greater densities in wetlands than the lakes sampled in the Schaft Creek Project area.

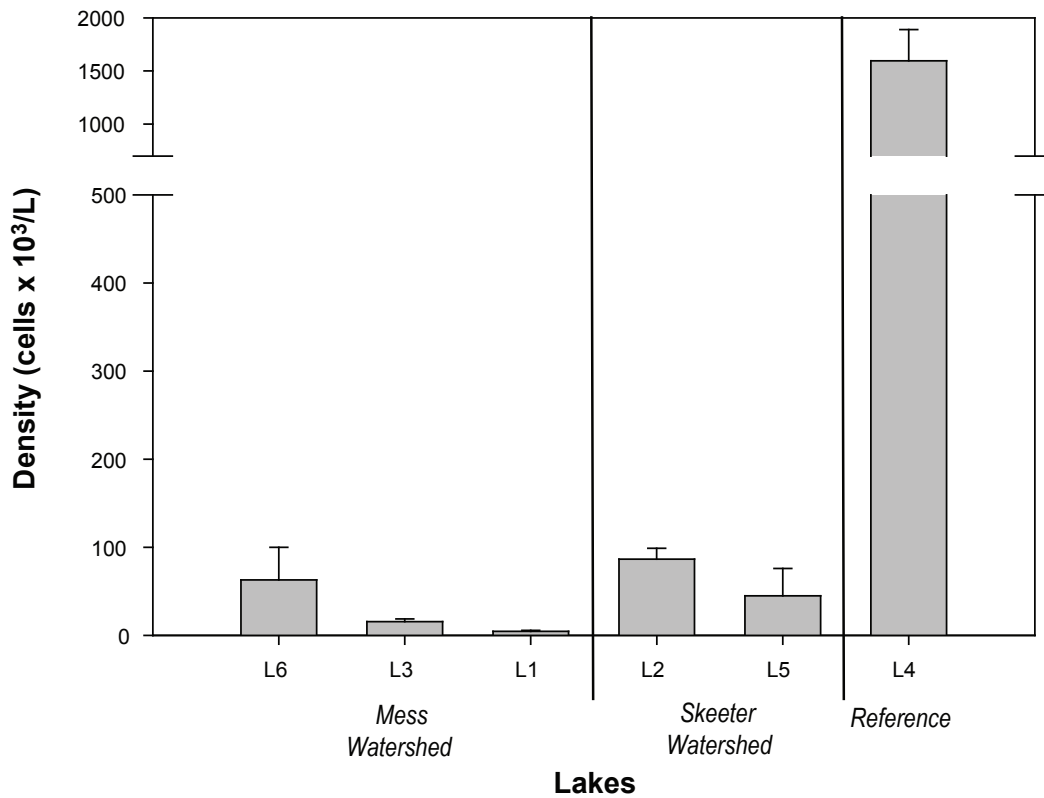
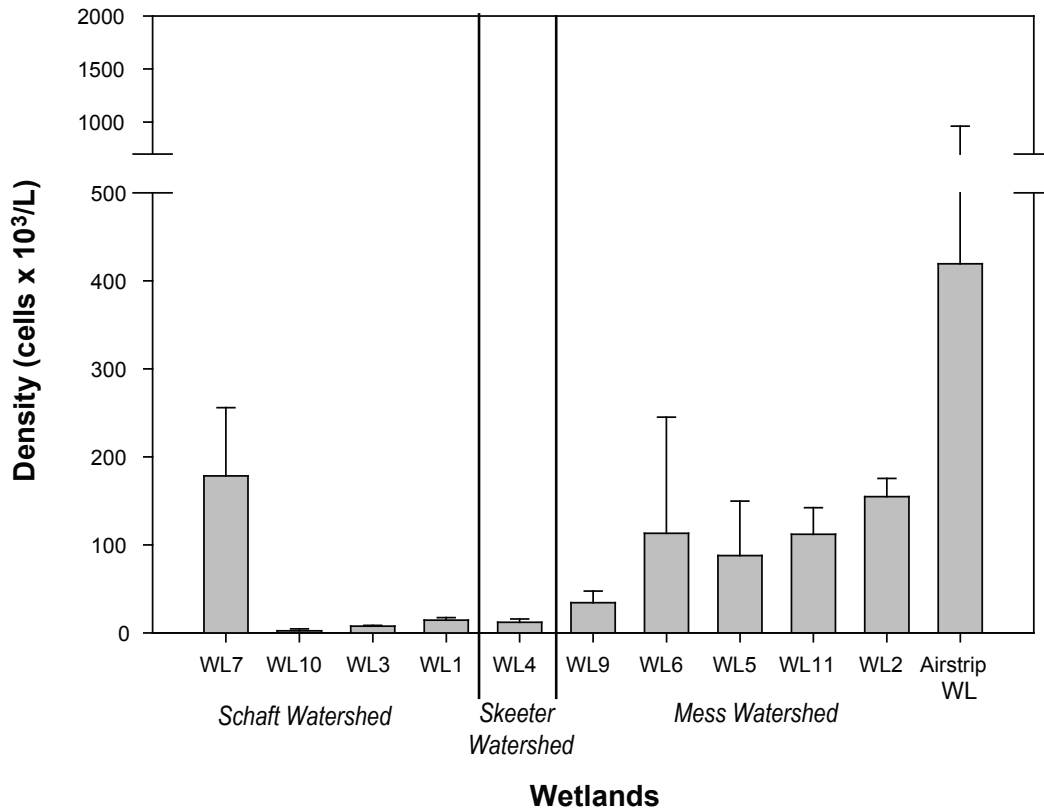
Dipterans (flies) were the dominant taxonomic group at eight (WL7, WL3, WL4, WL9, WL6, WL5, and WL2) of the eleven wetlands sampled and two (L6 and L3) of the six lakes sampled, accounting for over 50 percent of all organisms collected (Figures 3.2-59 a, b, c)



Note: Error bars represent standard error of the mean.

FIGURE 3.2-52

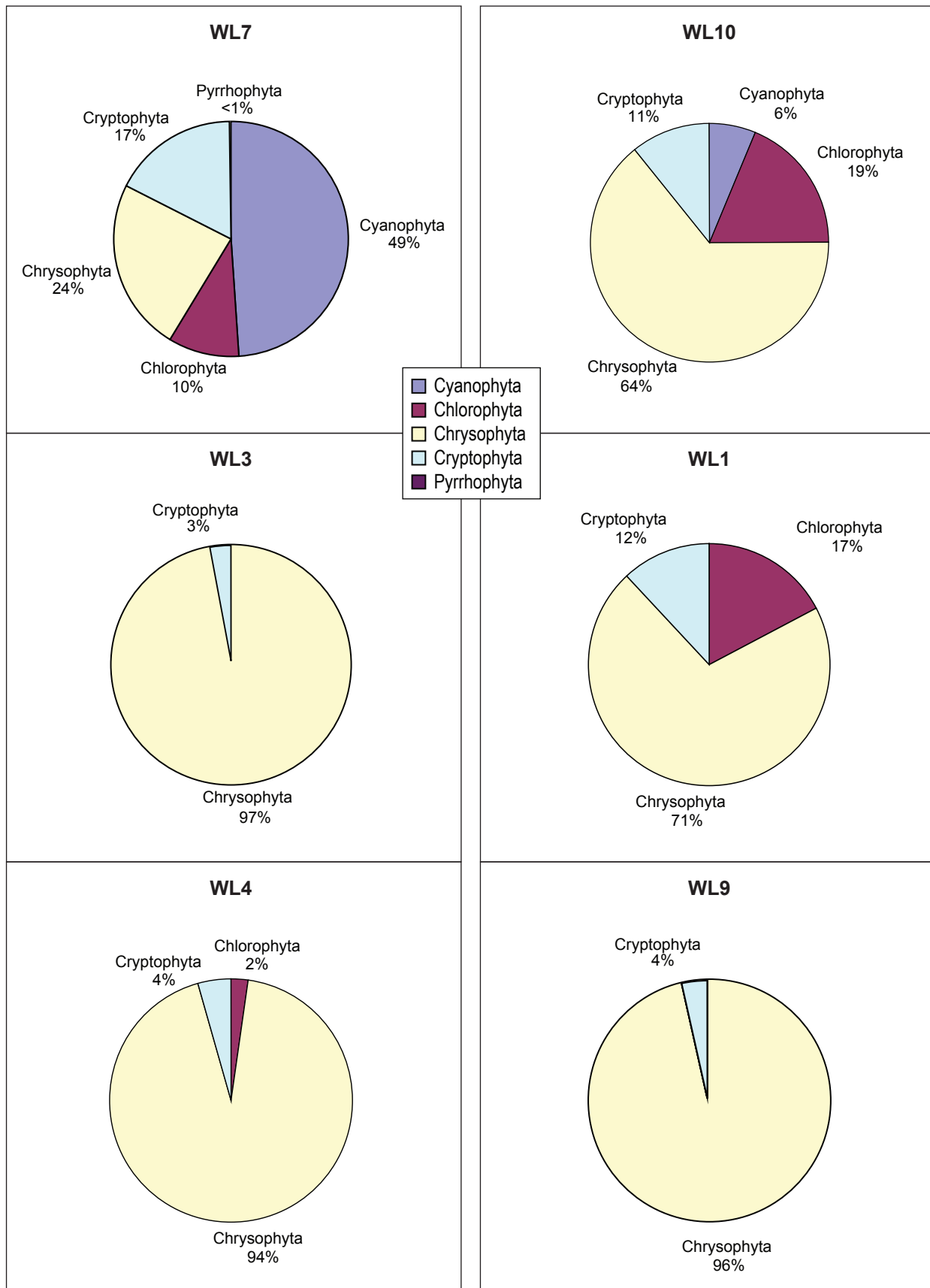


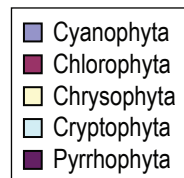
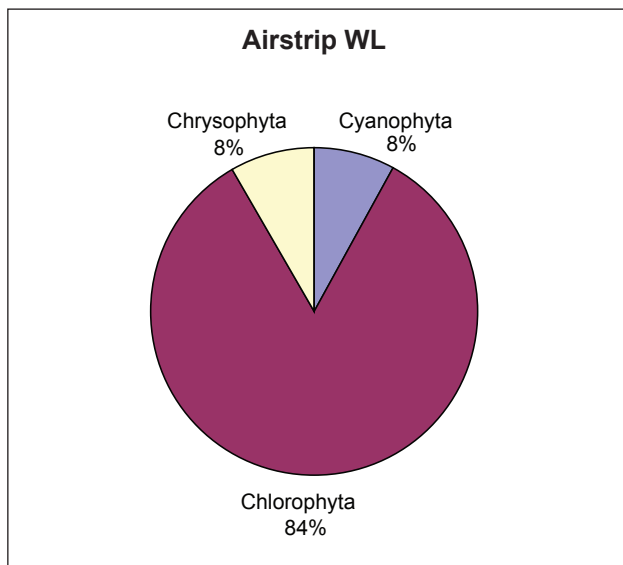
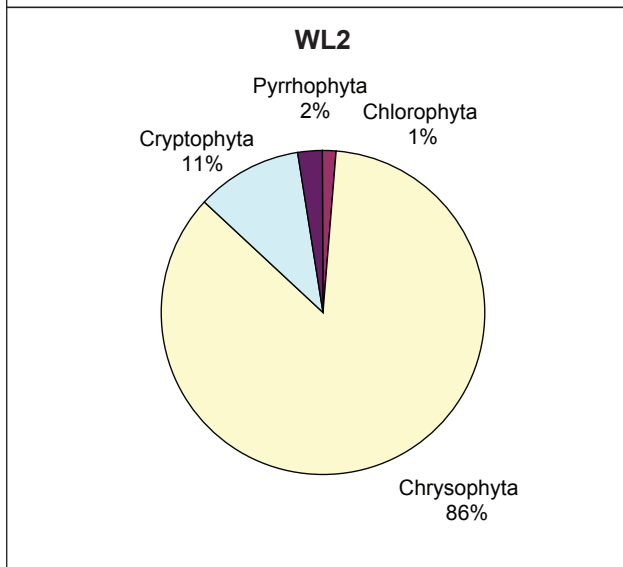
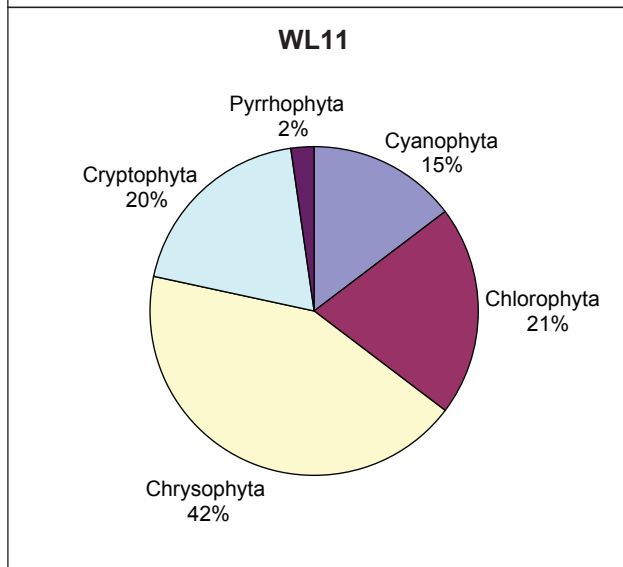
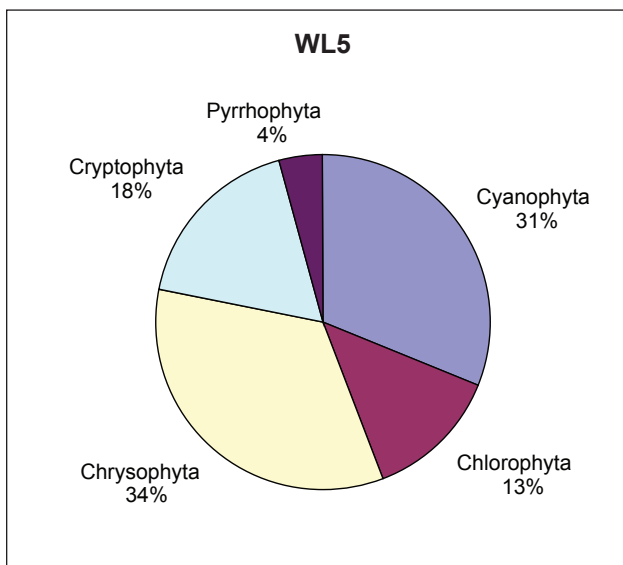
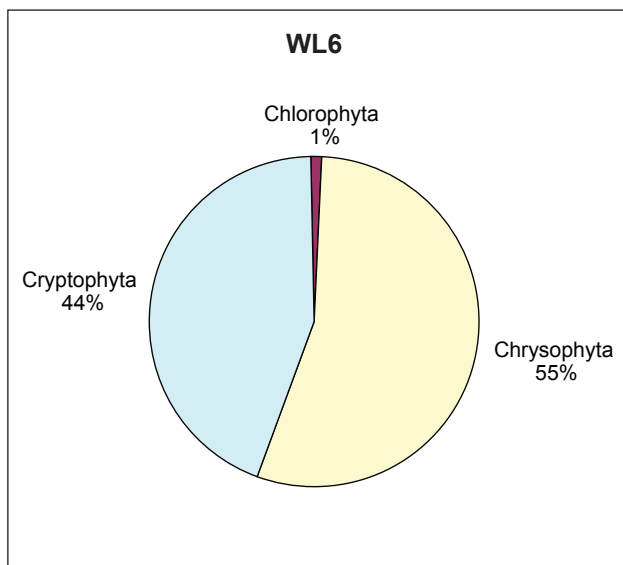


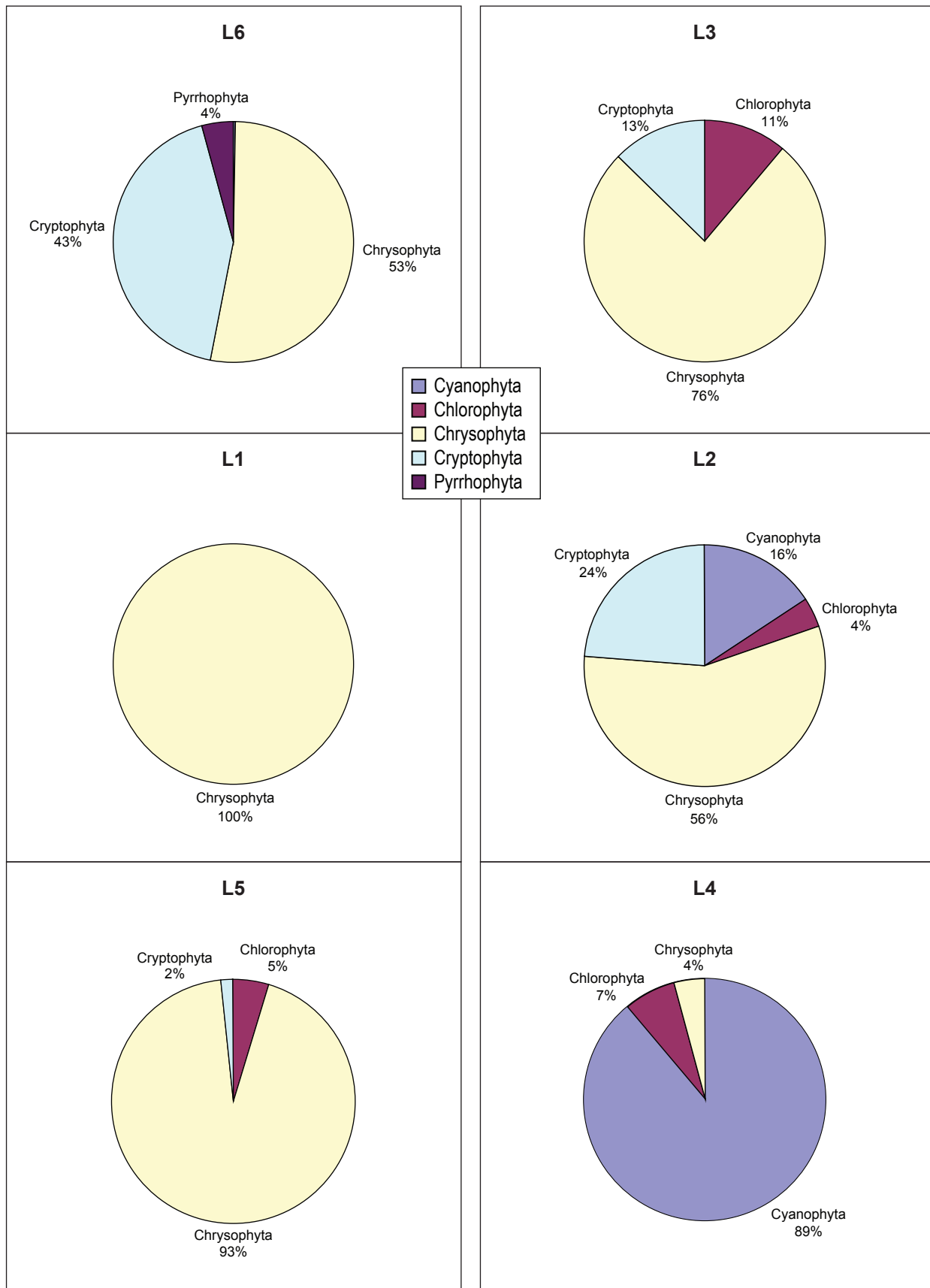
Note: Error bars represent standard error of the mean.

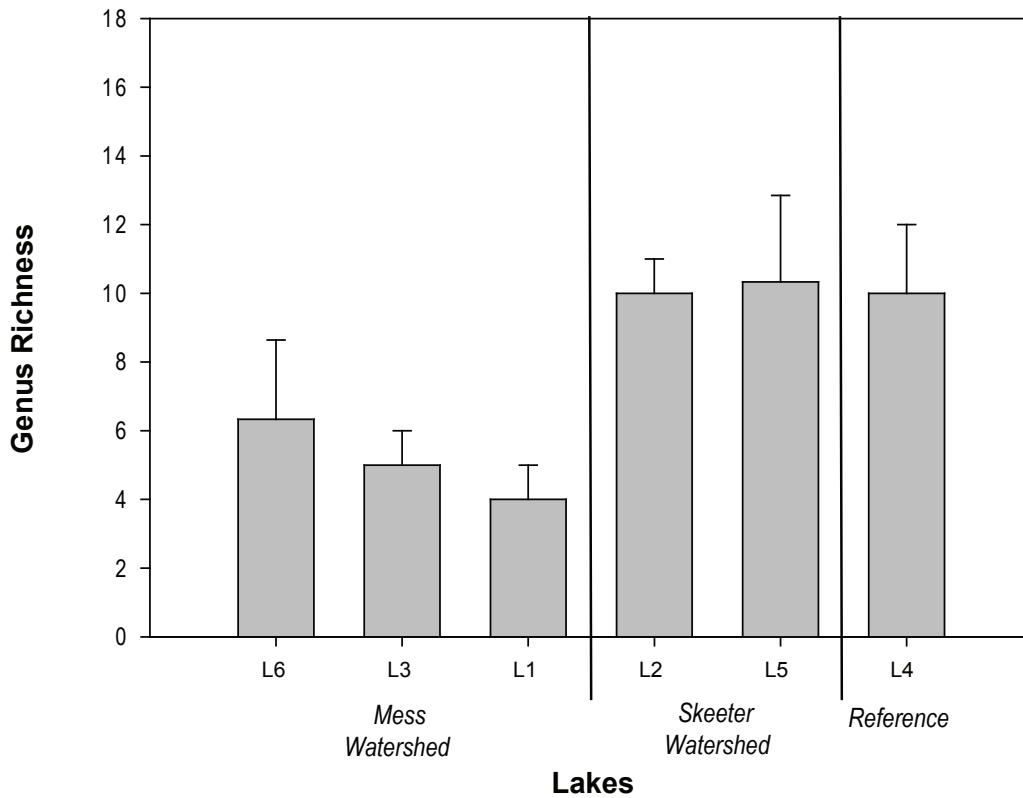
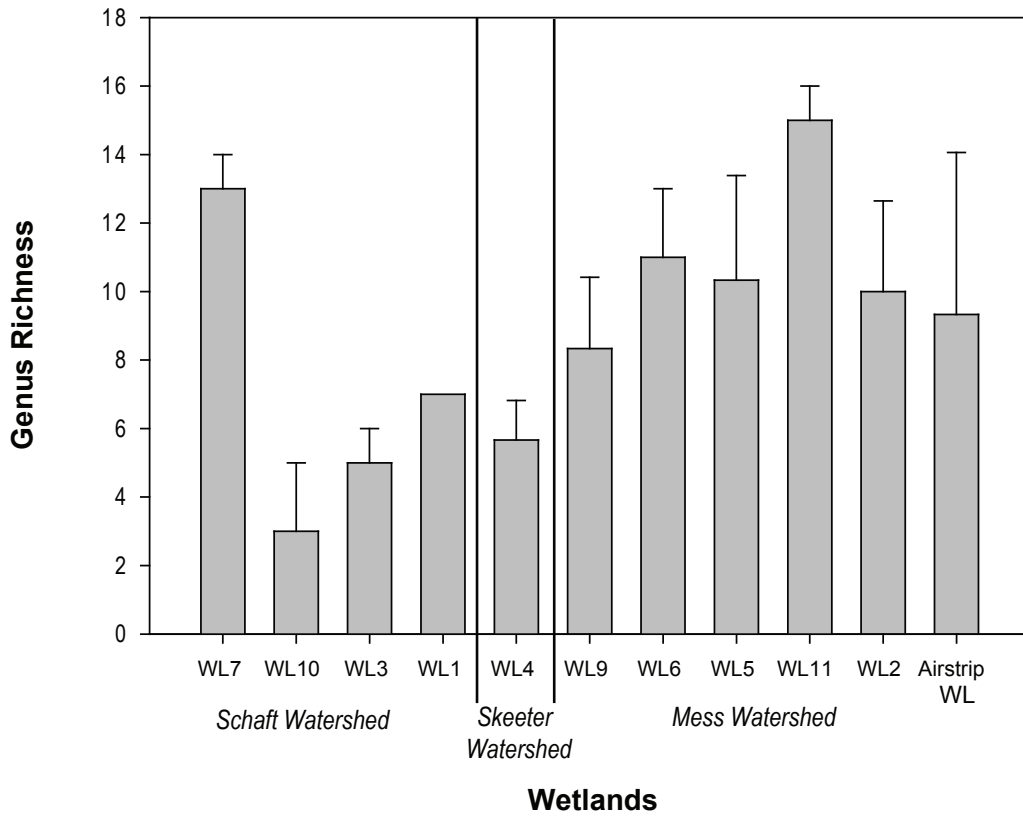
FIGURE 3.2-53







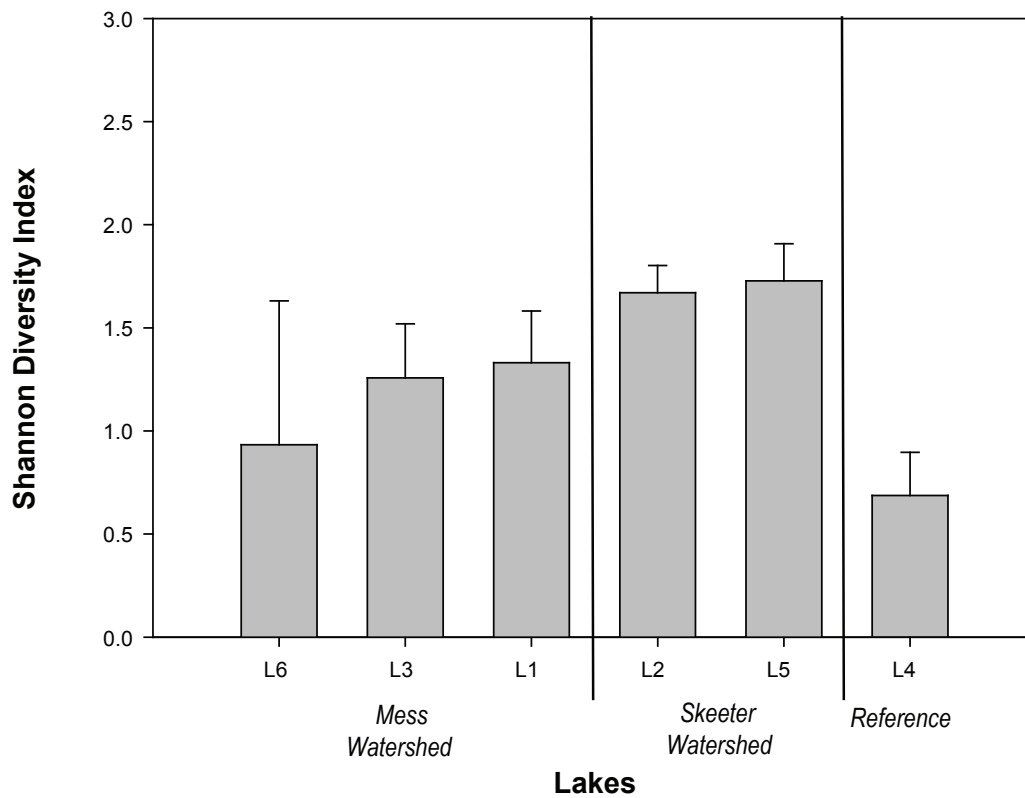
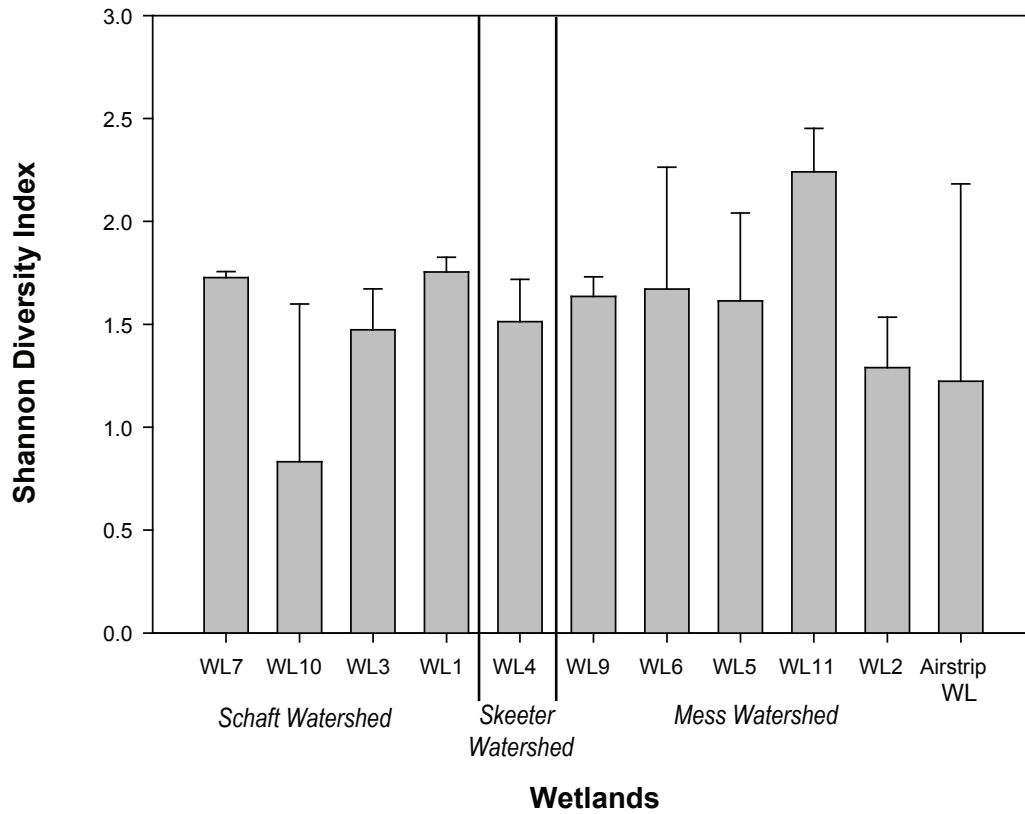




Note: Error bars represent standard error of the mean.

FIGURE 3.2-55

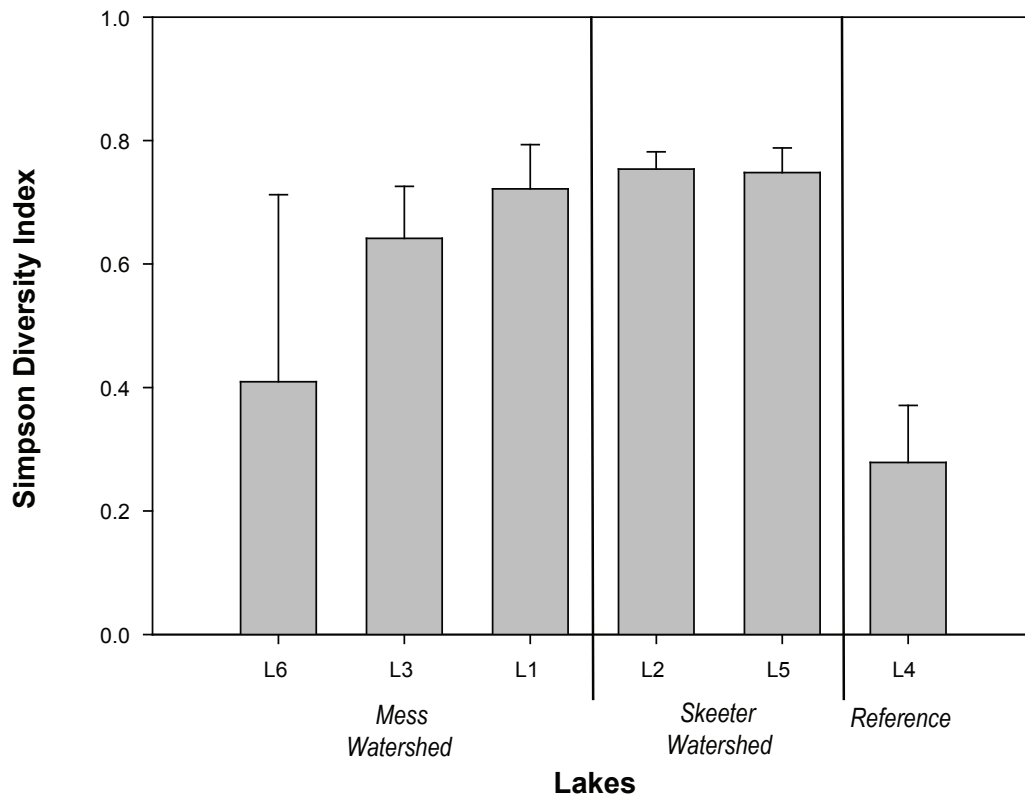
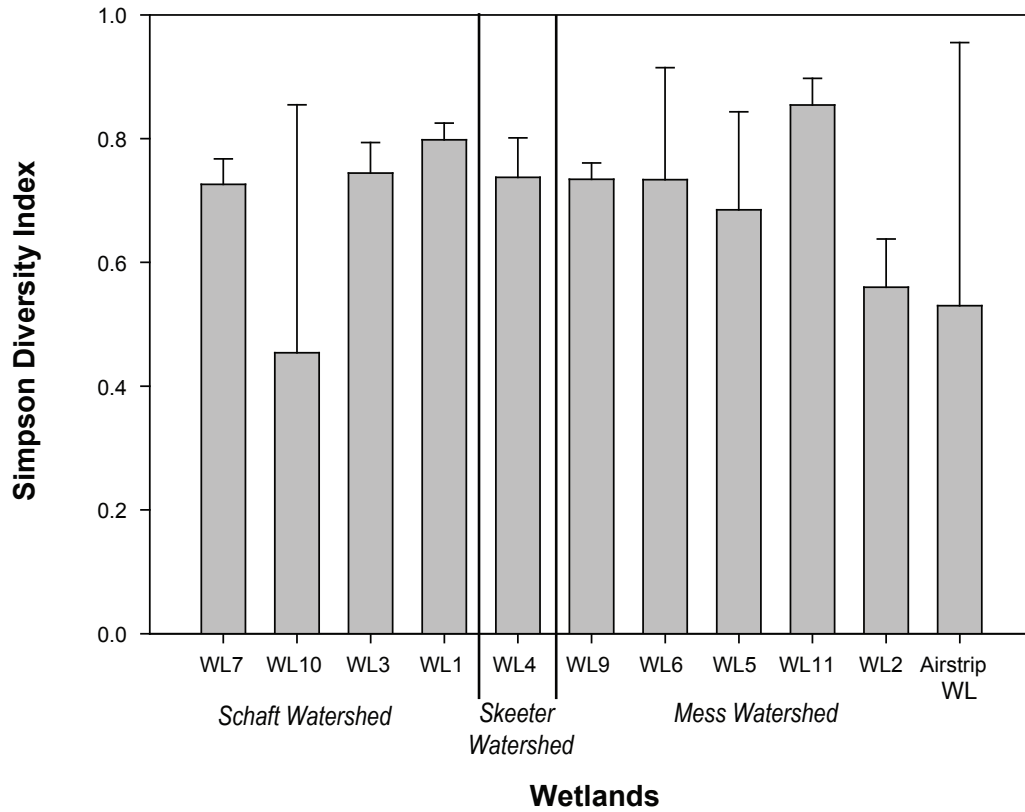




Note: Error bars represent standard error of the mean.

FIGURE 3.2-56

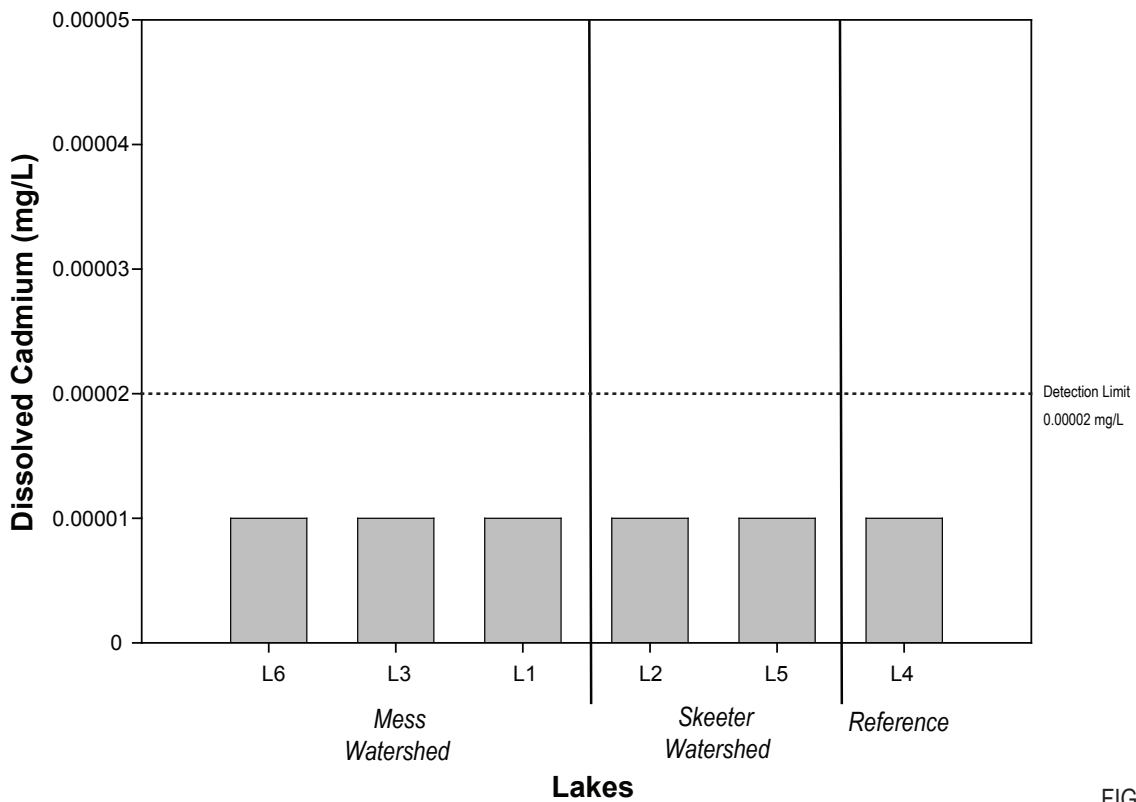
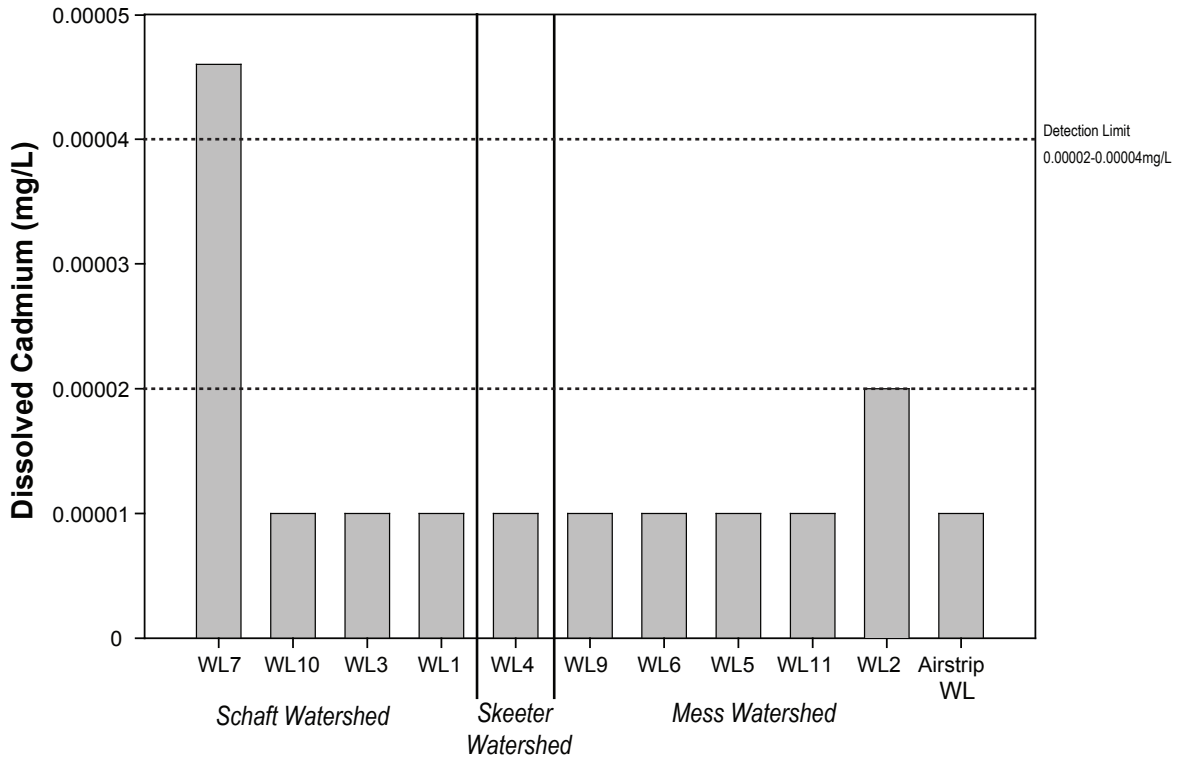




Note: Error bars represent standard error of the mean.

FIGURE 3.2-57





Note: CCME and BC-Max guidelines are hardness dependent.
Dotted line represents analytical detection limit.

FIGURE 3.2-19

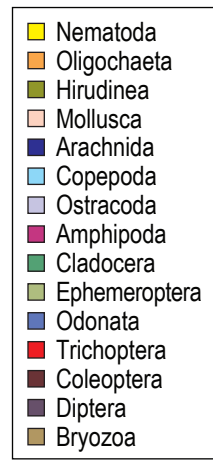
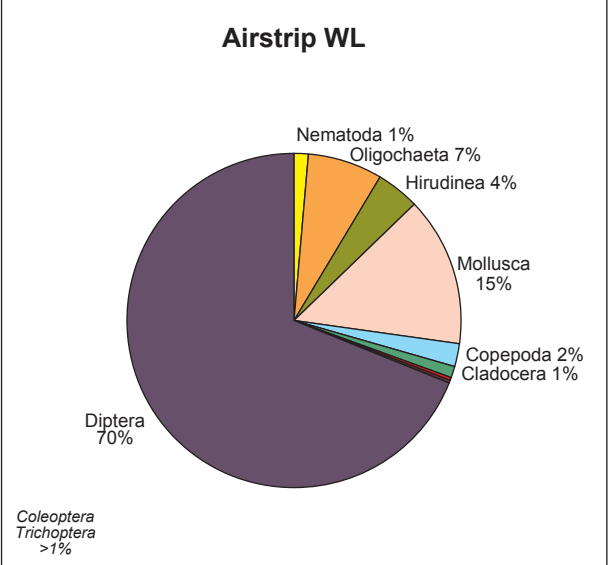
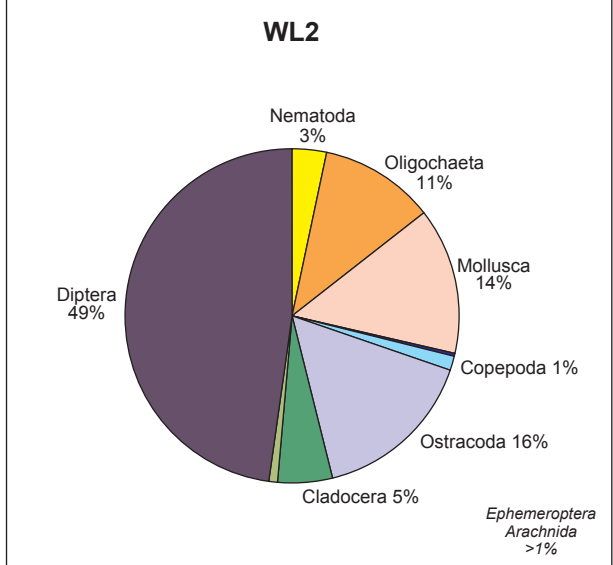
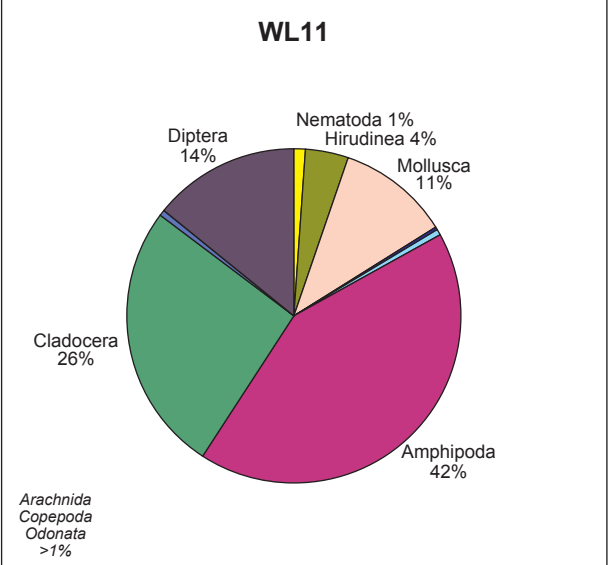
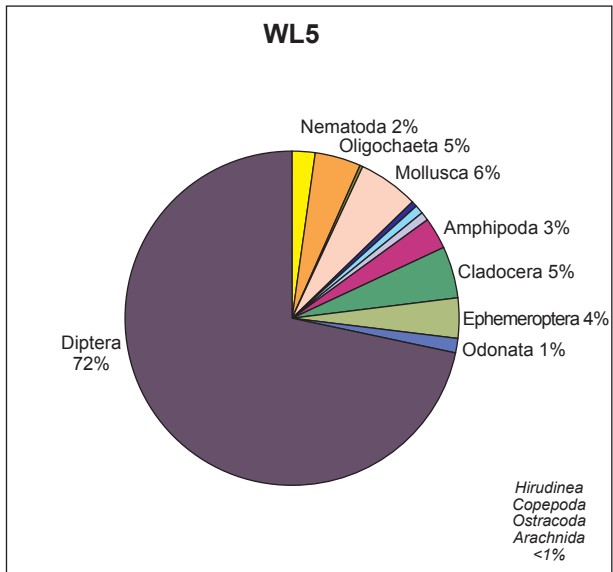
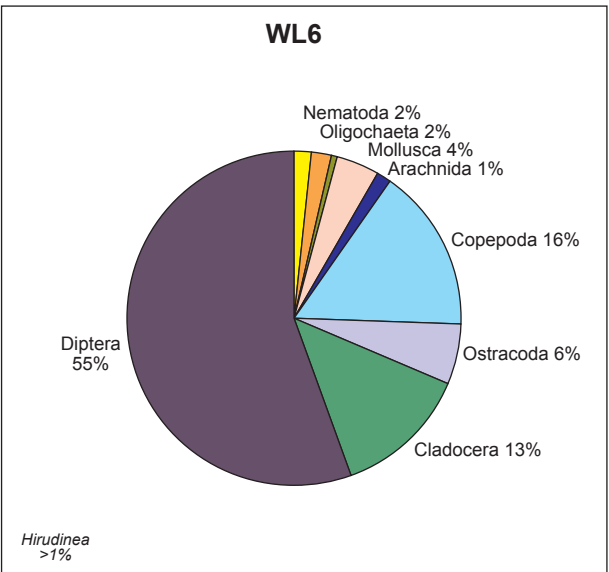


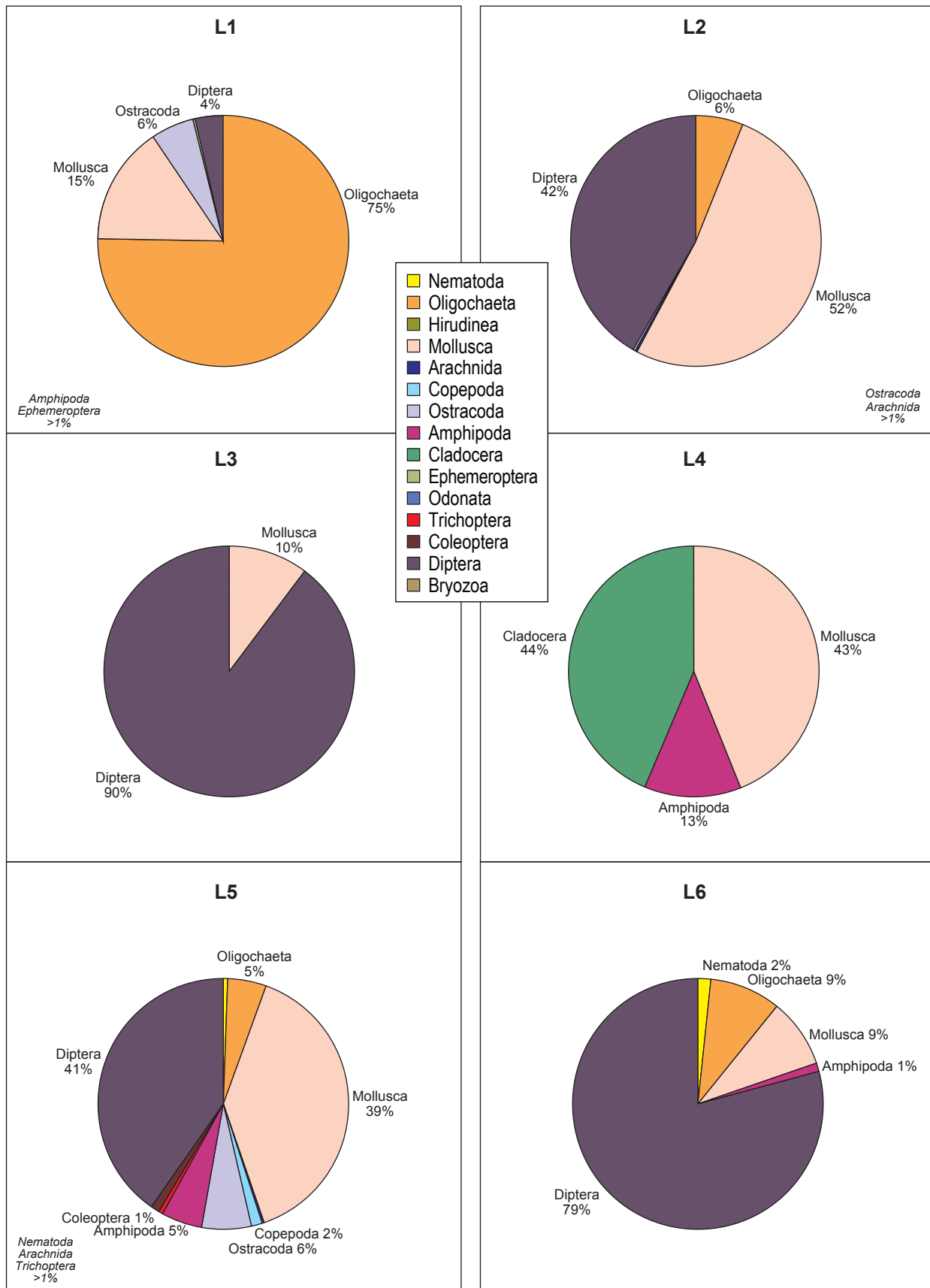
Dissolved Cadmium Concentrations in Lakes and Wetlands, 2007



Taxonomic Composition of Benthic Invertebrates in Wetlands and Lakes, 2007

FIGURE 3.2-59a





The relative abundance of dipterans ranged from 14% (WL11) to 87% (WL4) among samples collected from wetlands and 0% (L4) to 90% (L3) among samples collected from lakes. Diptera were considerably less dominant in lakes, where mollusca, oligochaeta (earth worms), and cladocera (water fleas) were more abundant. Of the diptera collected, they were almost exclusively from the chironomid family (98% of all diptera).

Mollusca were the second most abundant taxonomic group for both wetland and lake sites but were relatively more abundant in lakes. The relative abundance of mollusca ranged from 0 (WL4) to 46% (WL1) in wetlands and from 9 (L6) to 52% (L2) at lake sites. The relative abundance of oligochaeta in wetlands ranged from 0% (WL11) to 33% at WL10 where they were the most dominant taxa. The relative abundance of oligochaeta in lakes ranged from 0% (L3 and L4) to 75% (L1). Oligochaeta were the third most abundant taxonomic group for both wetland and lake sites. Amphipoda were present in relatively high numbers at two wetlands (WL11 and WL7) and one (L4) lake. Cladocera were subdominant at site WL11 (26%) and equally dominant to mollusca at site L4 (44%), but were otherwise present in relatively low numbers. Hirudinea, nematoda, arachnida, ostracoda, copepoda, and bryozoa composed smaller proportions of the wetland benthos communities, while only ostracoda composed the remainder of the lake communities.

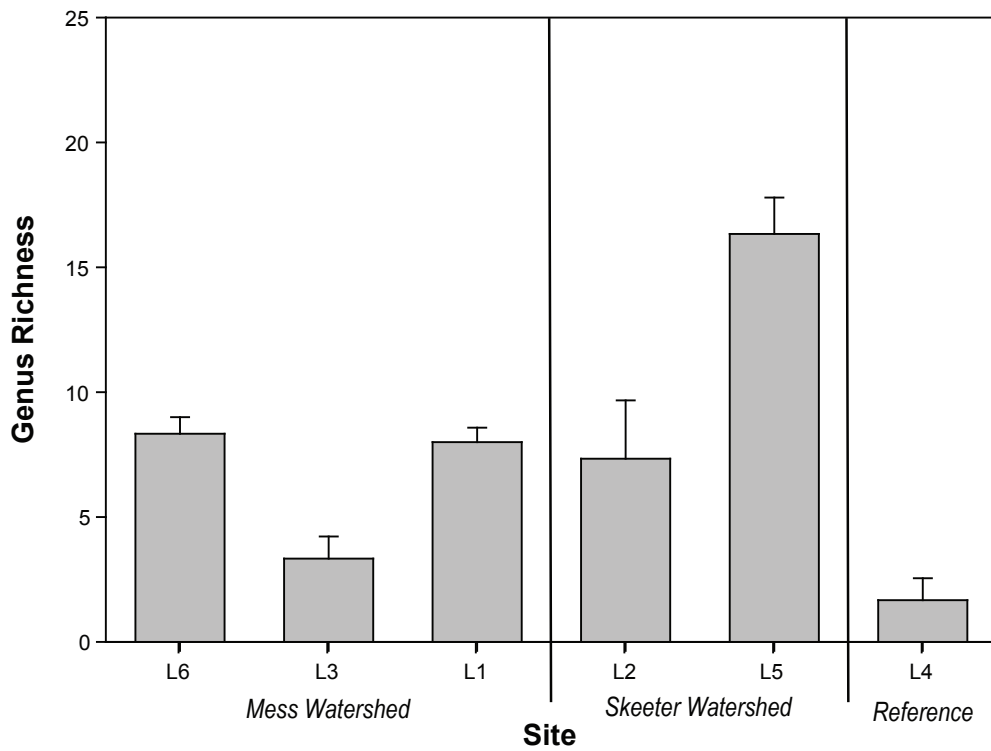
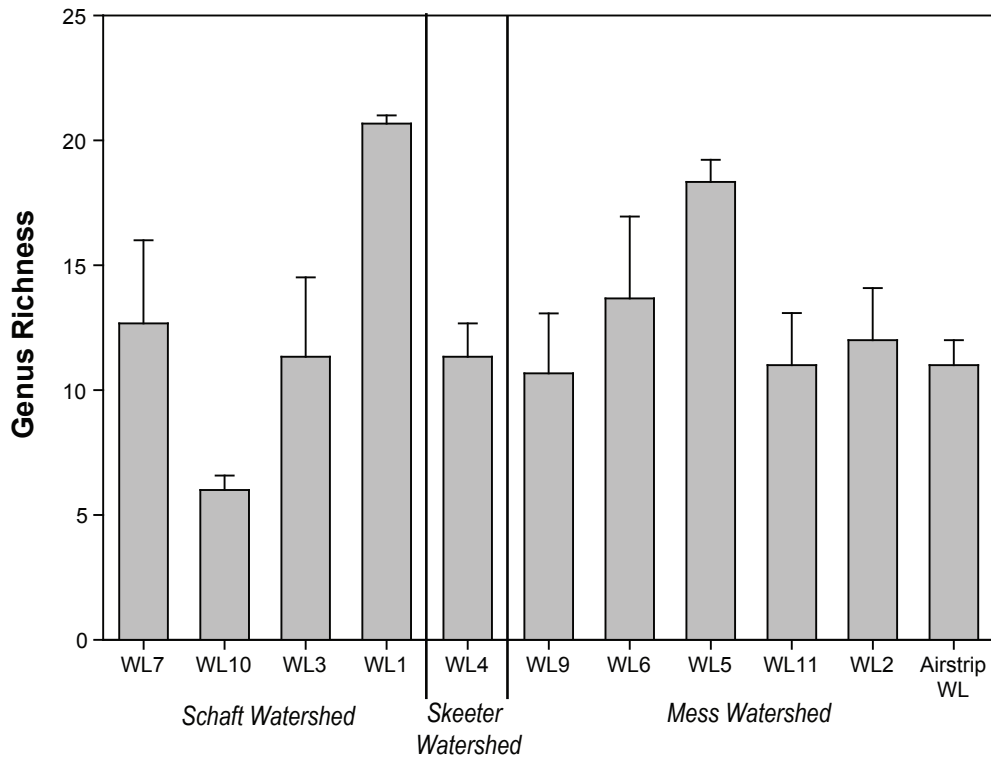
Richness and Diversity Indices

Average benthos genus richness for wetlands and lakes ranged from 6 (WL10) to 20.7 (WL1) and 1.7 (L4) to 16.3 (L5), respectively (Figure 3.2-60). Most wetlands ranged from 10 to 13 taxa, while four of the six lakes had a richness value between 7 and 8 taxa. This indicates that overall, the wetland benthic communities have a higher genus richness level than the benthic communities present in the lakes sampled.

Benthos communities sampled from wetlands and lakes were measured for their diversity using the Shannon and Simpson Diversity Indices. These values account for both the number of taxonomic (genus) groups present, as well as their abundance within the community. Overall, wetlands were more diverse than the lakes sampled. For wetlands, the Shannon Diversity Index ranged from 1.16 (WL4) to 2.38 (WL1), while lakes ranged from 0.49 (L4) to 2.16 (L5) (Figure 3.2-61). There was little variation in Shannon Diversity between sites for both wetlands and lakes, with seven of eleven wetlands ranging from 1.49 (WL3) to 2.05 (WL6) and four of six lakes ranging from 0.68 (L3) to 1.51 (L6).

The Simpson Diversity Index reflects a similar order of diversity between the wetland and lake sites (Figure 3.2-62). The Simpson Diversity Index values for wetlands ranged from 0.49 (WL9) to 0.85 (WL1), while most wetlands fell between 0.66 (WL3) to 0.85. The Simpson Diversity Index values for lakes ranged from 0.30 (L4) to 0.83 (L5). Four of the six lakes sampled fell between 0.64 (L1) to 0.83.

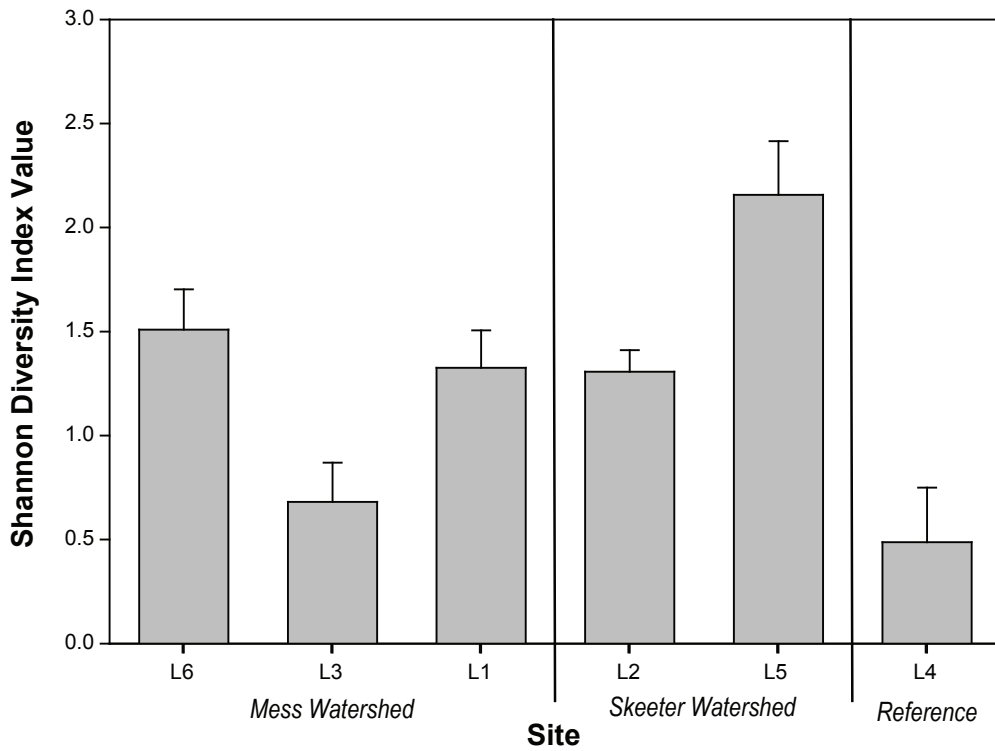
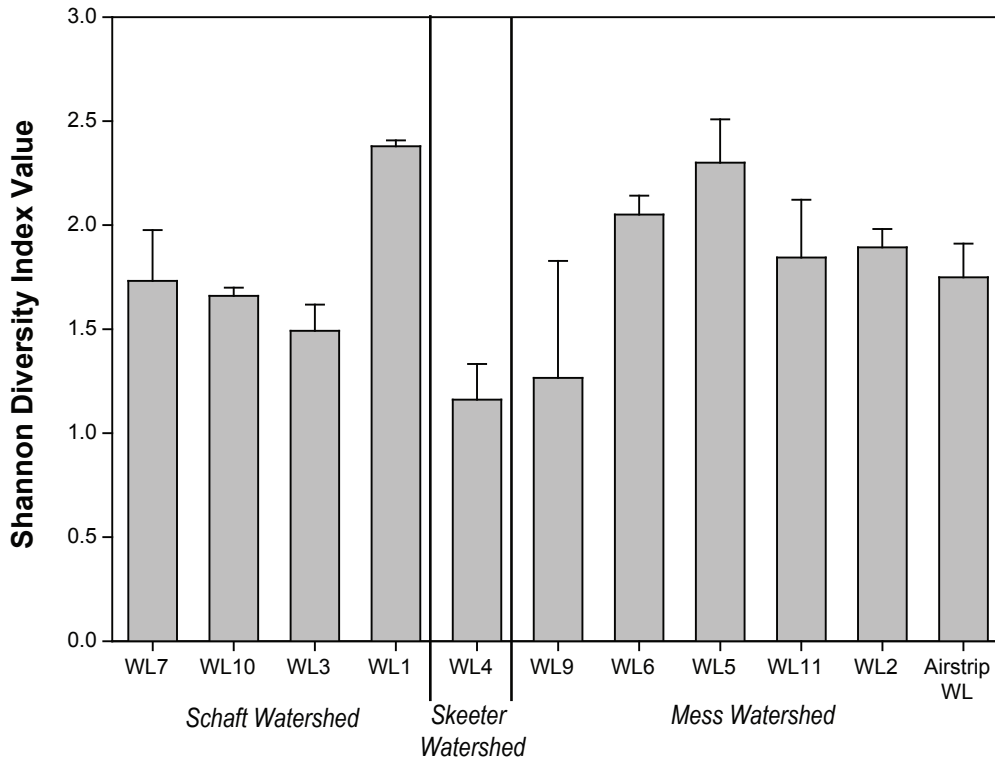
There were no clear relationships between metal concentrations and benthic communities. WL4 and WL6 often had the highest wetland several metal concentrations (mercury, nickel, copper, chromium and zinc) and WL4 was on the low end of the range for benthos density and richness. Lake metal concentrations were relatively variable and showed no obvious relationship.



Note: Error bars represent the standard error of the mean

FIGURE 3.2-60

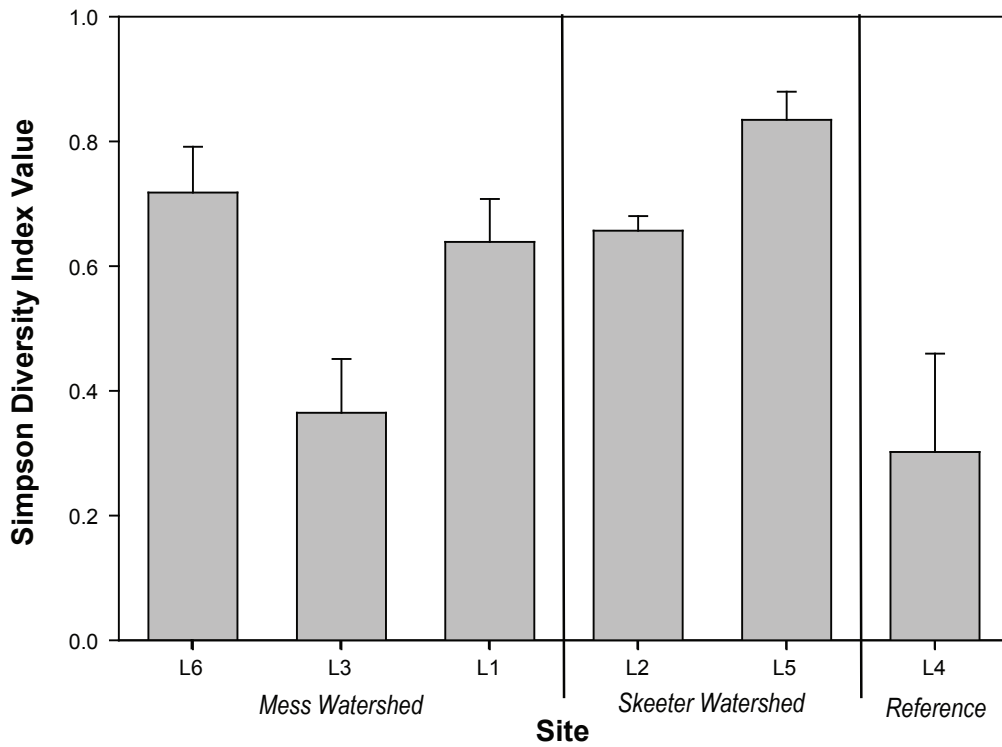
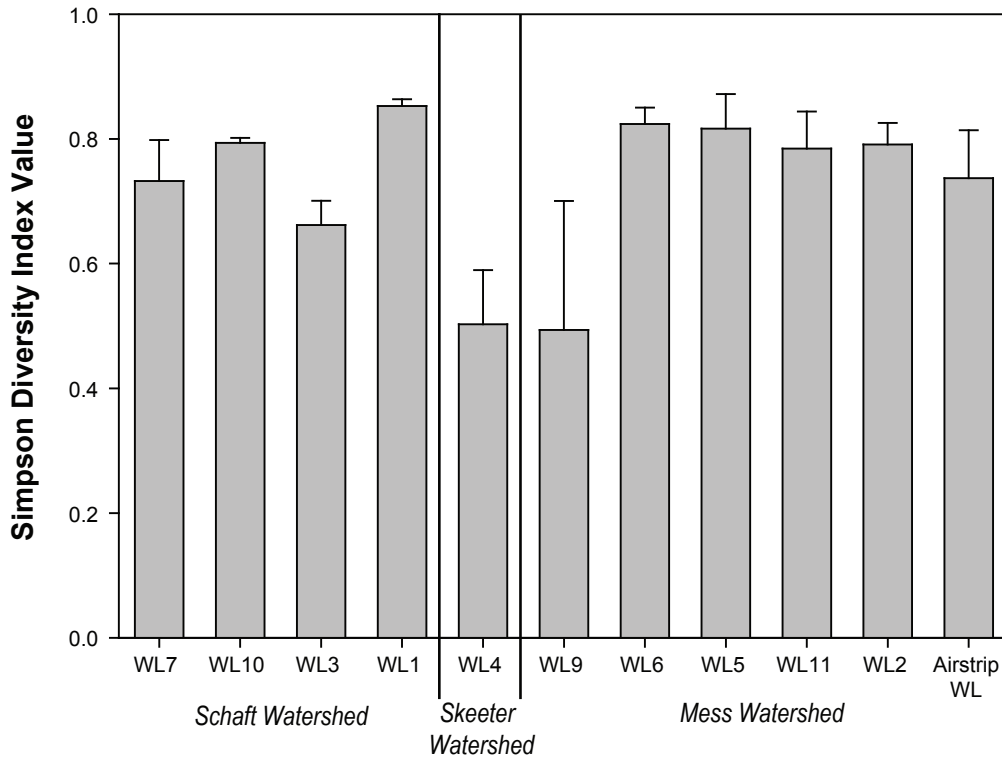




Note: Error bars represent the standard error of the mean

FIGURE 3.2-61





Note: Error bars represent the standard error of the mean

FIGURE 3.2-62



3.2.4.3 Zooplankton

In August of 2007, zooplankton samples were collected in triplicate at 6 lakes. All zooplankton taxonomy data can be found in Appendix 3.2-10, while additional notes on haul depth and quality are in Appendix 3.2-11.

Density and Relative Abundance

Similar to 2006, the mean zooplankton densities were lowest at lakes within the Mess Creek Watershed (Figure 3.2-63). L1 had the lowest density with 28.2 organisms/m³. Low water clarity at L1 results in low light penetration which can negatively affect zooplankton density. By comparison, the mean zooplankton densities were highest at lakes within the Skeeter Watershed. L2 had the highest density with 20,150 organisms/m³, which is almost 10 times the density of other sites. This was primarily a result of the large numbers of immature (nauplii and copepodites) cyclopoid copepods present during sampling. In contrast to 2006, the mean zooplankton density at L5 was considerably lower in 2007. This is likely due to windy weather conditions in the field causing sampling to be done horizontally. Vertical sampling is the preferred method as it represents the entire water column of the lake and generally a greater volume of water is sampled.

Most samples had relatively large numbers of immature copepods present. Five of the six lake sites were dominated by cyclopoid copepods, ranging from 7 to 99% (Figure 3.2-64). The relative abundance of calanoid copepods ranged from <1 to 77% and were the dominant taxa at L4. *Daphnidae* were considerably more abundant at L4 (15%), in contrast to other lakes sampled. The relative abundance of rotifers ranged from <1 to 20%. Rotifers were also present in relatively high numbers at lakes L2 (17%) and L6 (20%). *Diptera Harpacticoida*, *Bosminidae*, and *Gammaridae* composed the remaining proportions of these communities.

Richness and Diversity Indices

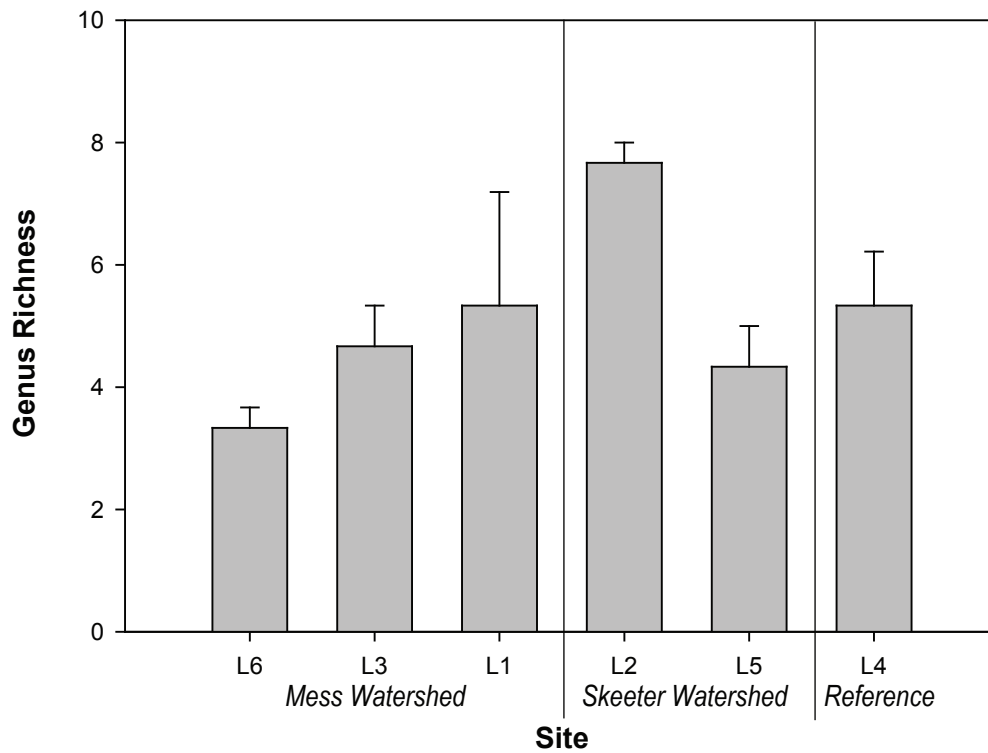
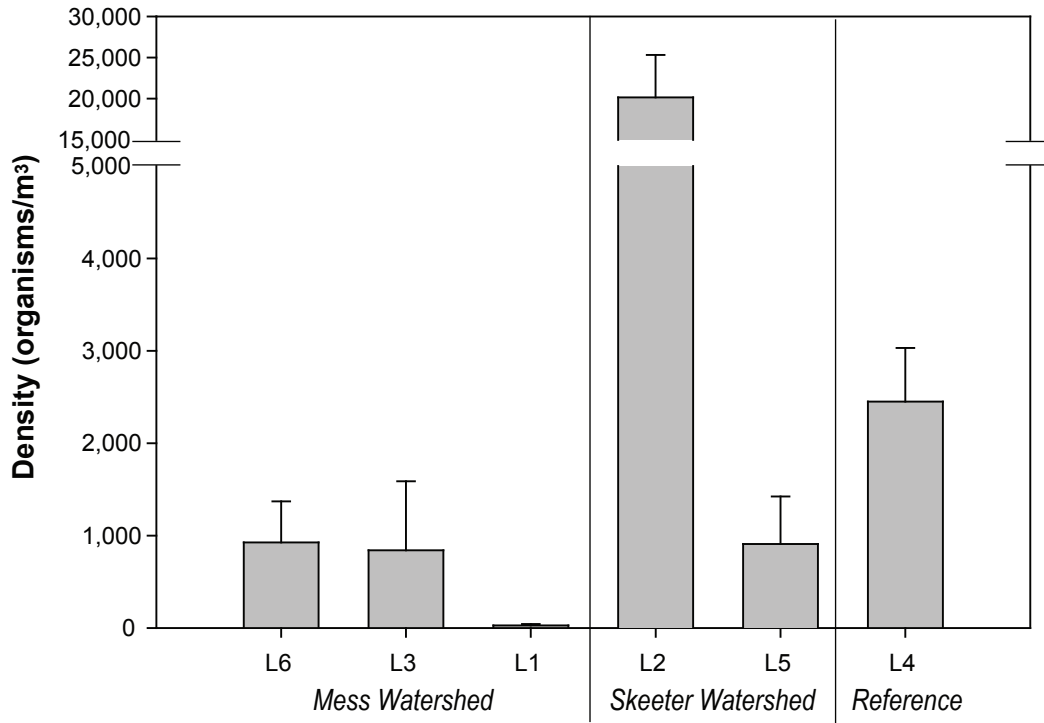
Average zooplankton richness ranged from 3.3 at L6 to 7.7 at L-2 (Figure 3.2-63). Genus diversity calculations using Shannon and Simpson diversity indices resulted in L1 as the most diverse site, followed by L2 (Figure 3.2-65). Average Shannon diversity ranged from 0.56 (L4) to 1.38 (L1). Average Simpson diversity ranged from 0.29 (L4) to 0.70 (L1).

Table 3.2-3 summarizes dominance indicators for zooplankton diversity. The average number of genera composing 90% of the abundance was either 2 or 3 at the 6 sites sampled. The maximum percent dominance by one genus at a site ranged from 46% (L6) to 71% (L3).

**Table 3.2-3
Average Dominance Indicators for Zooplankton Diversity in Lakes,
2007**

Site	Number of Replicates	G (90%)	SE	Maximum Dominance %	SE
L1	3	3	1.3	50	7.3
L2	3	3	0.3	57	0.9
L3	3	2	0.9	71	12.1
L4	3	2	0.3	48	14.6
L5	3	3	0.3	65	6.1
L6	3	3	0.3	46	7.9

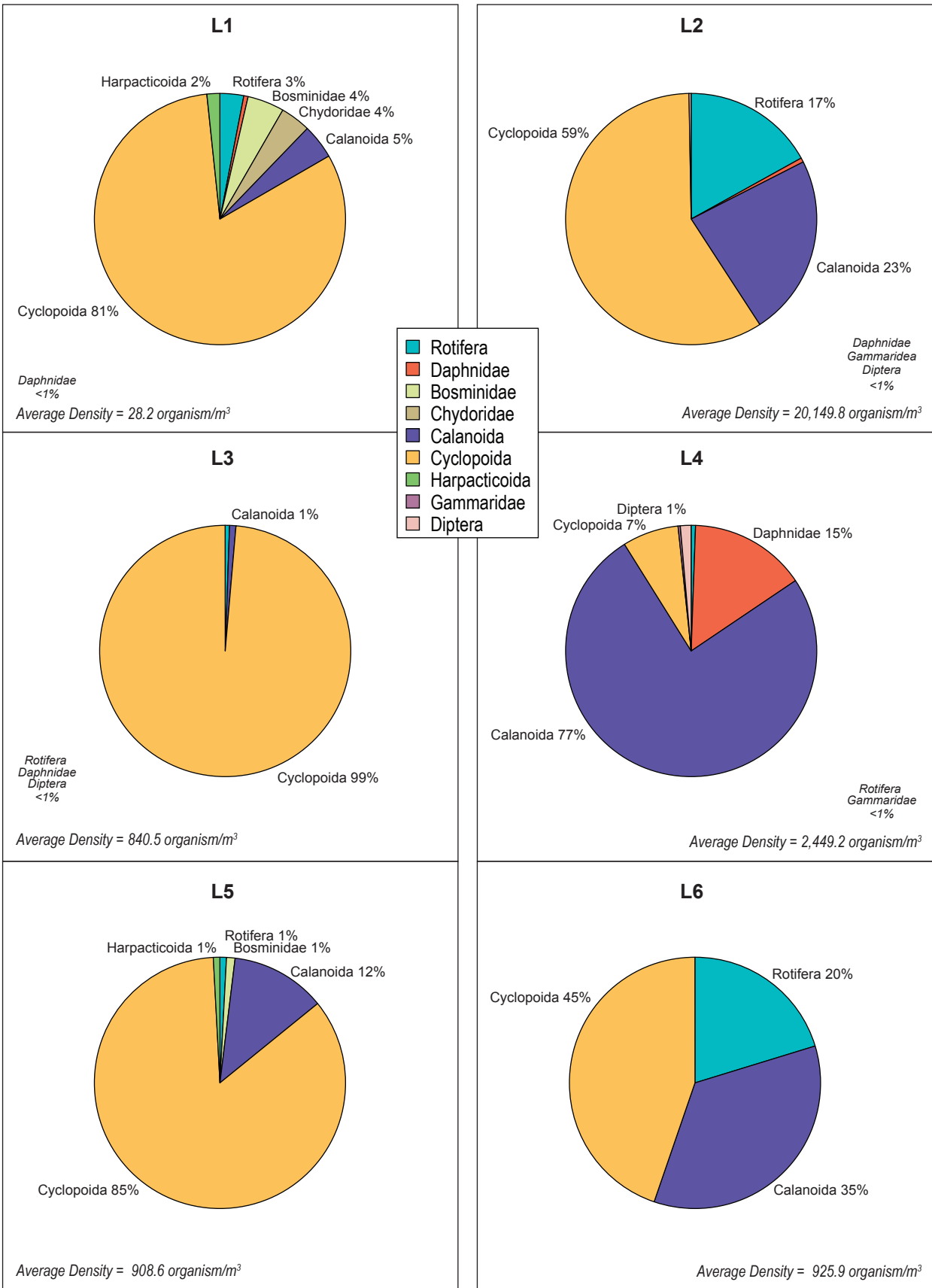
**Note: G (90%) is the average number of genera comprising 90% of the assemblage.
Maximum Dominance is the percent dominance by genus.
SE is the standard error of the mean.**

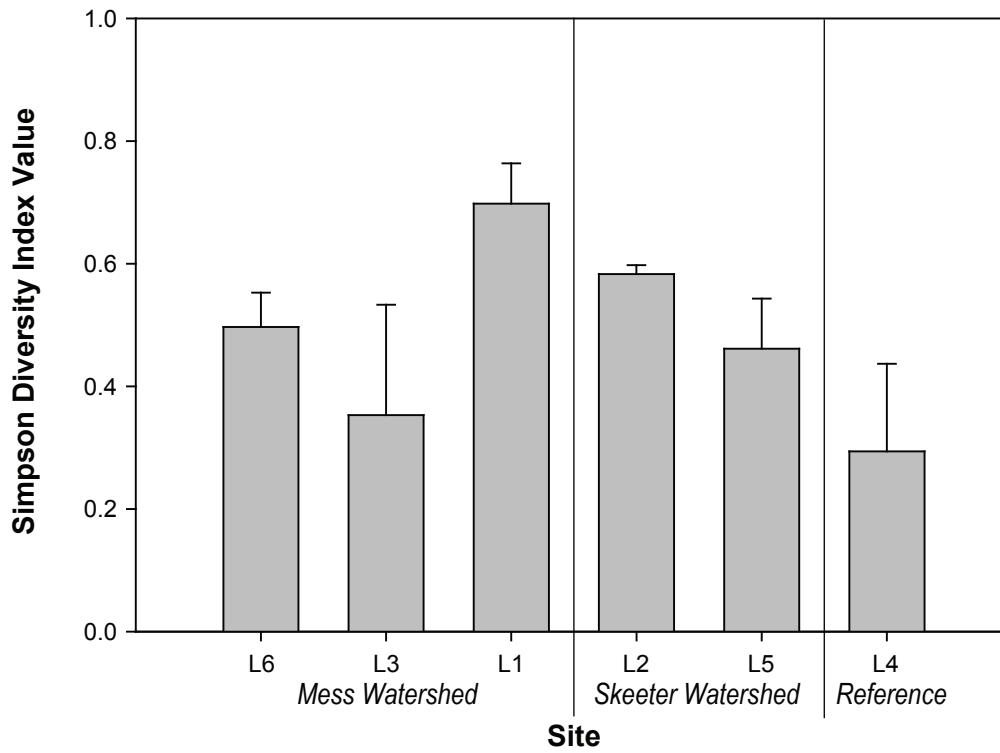
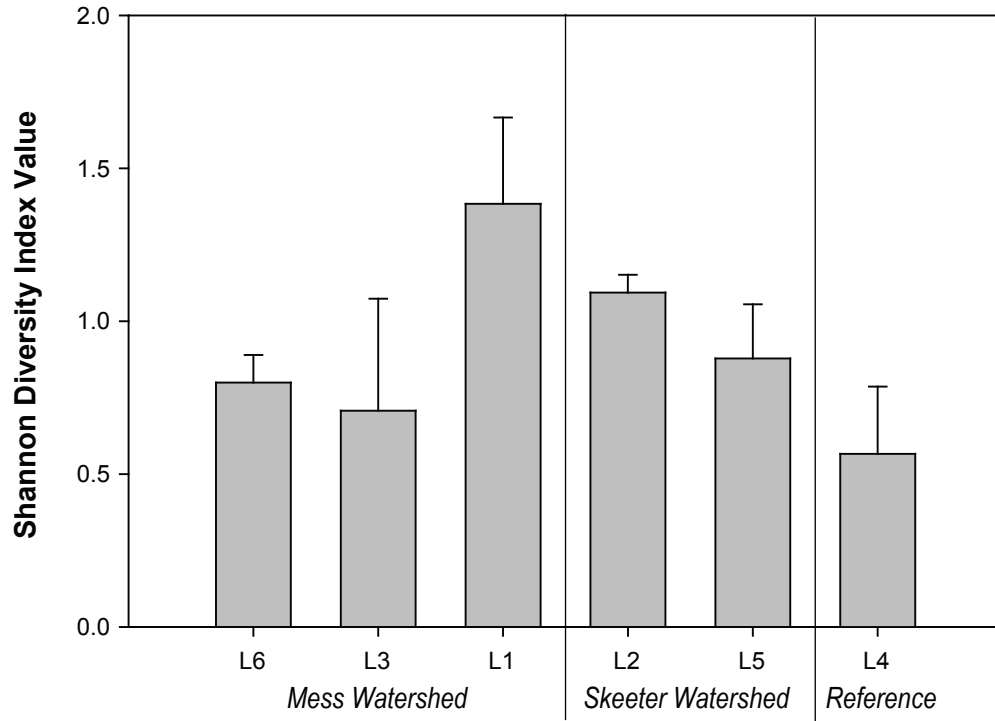


Note: Error bars represent standard error of the mean

FIGURE 3.2-63







Note: Error bars represent standard error of the mean

FIGURE 3.2-65



4. SUMMARY

4. Summary

4.1 Streams

4.1.1 Water Quality

Streams within the Schaft Creek Project area were slightly alkaline and generally had moderate levels of hardness. Hardness, TDS, and sulphate concentrations were highest in the Mess Creek Watershed and during the winter months. TN, TOC, and total cyanide concentrations were highest in the spring months coinciding with freshet. Throughout the Schaft Creek Project area many variables (particularly total metals and including TP) peaked in July coinciding with high concentrations of TSS and increased turbidity. Precipitation and the completion of freshet in July resulted in increased sediment loadings carrying particulate bound metals into the aquatic environment. Many metals naturally exceeded the aquatic life guidelines within July and the rest of the summer months, reflecting the high mineralization of the Schaft Creek Project area. Schaft Creek usually had the highest concentrations of variables in July, but throughout the rest of the year lower Mess Creek sites possessed slightly higher concentrations for most variables. The Tailing Option sites (A, B, and C) commonly had the lowest concentrations of water quality variables.

Metals that frequently exceeded the B.C. and CCME aquatic life guidelines were total aluminum, cadmium, chromium, copper, iron, zinc, and dissolved aluminum. Though most of these exceedances were associated with a rain event in July, the mean concentrations (per site) of these metals exceeded guidelines at many sites suggesting that they were naturally high year round (Table 3.1-1 and 3.1-2). Other metals that exceeded guidelines were total arsenic, cobalt, lead, mercury, selenium, silver, titanium and dissolved chromium, copper, iron, selenium, and zinc. Many of these metals also exceeded guidelines in 2006.

4.1.2 Sediment Quality

All stream sites were dominated by sand comprising 50 to 97% of particulates, with smaller proportions of silt (1.0 to 39%), gravel (0.5 to 16%), and clay (0.8 to 4.0%). Since particulate size of sediment reflects the energy of water flow in the area of the sediment sample, the higher proportion of sand within the study sites indicates a higher energy flow regime. Nutrients were generally low throughout the project area, especially available phosphorus which had only 20% of samples above the detection limit (1 mg/kg) and a maximum concentration of 2 mg/kg. Average nitrogen concentrations generally ranged from 0.01% (just above the DL) to 0.04%, though SKC3 had more than three times the concentration of all other sites at 0.16%. Average total organic carbon (TOC) concentrations varied greatly between sites, with concentrations near or below the detection limit at 0.005% to concentrations as high as 2.07 % at SKC3.

Many metals were not detected in more than 80% of the samples; these included antimony, beryllium, bismuth, cadmium, lead, molybdenum, selenium, silver, thallium and tin. Metals with a greater proportion of detects were generally highest in the Mess Creek Watershed including barium, cobalt, magnesium, manganese and strontium. Hickman Creek sites also had high concentrations of cobalt and magnesium, along with aluminum and vanadium. Of the nine

metals that have guidelines, seven exceeded guidelines (arsenic, chromium, copper, iron, mercury, nickel, and zinc) and two had 100% of samples below the detection limits (cadmium and lead). All sites exceeded at least one of the seven guidelines except Tailings Option C sites (JC1 and JC2). Depending on the metal, seven to nineteen of the twenty one study sites exceeded these metal guidelines, except for mercury which exceeded only at MC1, and zinc at WC1.

4.1.3 Primary and Secondary Producers

4.1.3.1 Periphyton

Stream productivity was generally low throughout the study area. Biomass ranged between 0.02 to 0.83 $\mu\text{g}/\text{cm}^2$ chlorophyll *a* at most sites and MC1 had the highest biomass at 1.45 $\mu\text{g}/\text{cm}^2$. Overall, Schaft Creek had the lowest average productivity (0.14 $\mu\text{g}/\text{cm}^2$), while Skeeter, Mess, and Hickman Creeks had similar productivity levels (0.44 to 0.49 $\mu\text{g}/\text{cm}^2$). Periphyton densities varied considerably between sites; ranging from 20 to 3,342 cells $\times 10^6/\text{m}^2$, though most sites ranged between 350 to 1,300 cells $\times 10^6/\text{m}^2$. Periphyton genus richness ranged from 3 (SC1) to 9 (SKC4) taxa among its stream sites. Diatoms dominated the periphyton communities at all sites except for MC5, SC3, SC4, and JC1 which were dominated by chrysophyta. Smaller proportions of cryptophyta, cyanophyta, and chlorophyta were also observed (<1% to 10%). Simpson Diversity Indexes ranged from 0.3 to 0.7, but most site's values were 0.5 to 0.6; suggesting that periphyton communities were relatively diverse.

4.1.3.2 Benthic Invertebrates

Benthic invertebrate density ranged from 301 (MC2) to 22,050 organisms/ m^2 (SKC3). Skeeter sites had densities ten times greater than all other sites with an average of 9,308 organisms/ m^2 . This was similar to 2006 where SKC3 had considerably higher benthos density compared to other sites. All the other stream sites had average densities below 1,600 organisms/ m^2 . Genus richness ranged from 3 (SC1) to 19 (WC1) taxa, with a mean of 10 genera. Community composition was also similar to 2006 with stoneflies (Plecoptera) being the most dominant taxon, followed by dipterans (largely chironomids) and mayflies (Ephemeroptera). Together stoneflies and dipterans composed 57 to 98% of all stream benthos communities. Also present in the communities were smaller proportions of, cladocera, copepods, oligochaeta, ostracods, nematoda, trichoptera, collembolan, and arachnida. Most sites were relatively diverse with a Simpson Diversity Index above 0.5 except for Tailings Option C sites, MT1, SC1 and WL8.

4.2 Wetlands and Lakes

4.2.1 Water Quality

More than half of the water quality variables analyzed for wetlands and lakes had 50% or more of their values below the detection limits. The Schaft Creek and Skeeter watersheds generally had low hardness, while the Mess Creek Watershed had moderate to high hardness. Total dissolved solids followed a similar pattern to hardness, though extremely high concentrations were seen in WL2 (889 mg/L). All lakes had moderate hardness, (except for L6 which was low), and had similar concentrations of TDS. All wetlands and lakes had near neutral pH and low

concentrations of total suspended solids. Water was fairly clear at most wetlands (0.36 to 1.58 NTU) and lakes (0.21 to 9.3 NTU). Higher levels of turbidity were observed at WL3, WL6, and WL10 which had the highest turbidity at 45.9 NTU, and at L1 with the highest turbidity for lakes at 32.6 NTU. Nutrients were relatively low at all wetlands with total phosphates having a maximum concentration of 0.0209 mg/L and total nitrogen maximum concentration of 0.81 mg/L. Lakes had even lower nutrient concentrations than wetlands with a maximum TP concentration of 0.0132 mg/L and TN concentration of 0.186 mg/L.

No major trends were observed for wetlands, though the Mess Creek Watershed had slightly higher concentrations of ammonia, hardness, TDS and total and dissolved arsenic, boron, and manganese. Total and dissolved nickel and copper, and dissolved cadmium were considerably higher at WL7 than all other wetlands. Dissolved aluminum and iron, and total zinc were highest at Airstrip WL. Variables that exceeded B.C. or CCME aquatic life guidelines included total cyanide, sulphate, dissolved cadmium, total zinc, and total and dissolved aluminum, boron, copper and iron. Most of these variables exceeded at only one wetland site. Total iron exceeded guidelines at six wetland sites and total cyanide and aluminum exceeded at three wetlands. The only two wetlands with no exceedances were WL4 (Skeeter Watershed) and WL9 (Mess Creek Watershed).

L1 and L5 usually had the highest concentrations of total metals in lakes, which coincided with increased concentrations of total suspended solids (TSS) at L1, and turbidity values at L5. Metal concentrations only exceeded guidelines at these two sites. Total aluminum, iron, and copper exceeded at L1 and L5 sites, total zinc and chromium exceeded at L1, and total selenium exceeded at L5.

4.2.2 Sediment Quality

Both wetland and lake sediments were primarily composed of silt and clay with smaller proportions of sand. WL3 was the only exception to this, being dominated by sand (64%). Total nitrogen and total organic carbon (TOC) followed similar trends between their respective wetland and lake sites, and also varied considerably between sites. TOC and TN concentrations were highest at L4 (1.9 and 28 %, respectively) and WL7 (1.4 and 18.1 %, respectively), and lowest at L3 (0.05 and 0.6 %, respectively) and WL3 (0.05 and 0.7 %, respectively). Total phosphorus ranged between 270 to 1330 mg/kg at wetland sites, and 766 to 1,686 mg/kg at lake sites. WL4 and L2 had the highest TP concentrations.

Of the metals analyzed antimony, bismuth, cadmium, lead, selenium, silver, thallium and tin were not detected in more than 80% of samples across all wetland and lake sites. Lower Schaft Creek wetland (WL1), Skeeter wetland (WL4), and upper Mess Creek wetlands (WL5 and WL6) often had the highest concentrations of metals including aluminum, arsenic, chromium, cobalt, magnesium, mercury, nickel, vanadium, and zinc, though wetlands WL4 and WL6 were often the highest. Reference lake L4 had the lowest concentrations of most metals (for lakes), while Mess Creek and Skeeter watersheds generally had similar concentrations of metals between their lakes except for arsenic and copper which were highest in the Skeeter Watershed. All wetland and lake sites exceeded at least one metal guideline. Copper, iron and nickel exceeded guidelines at most wetlands, while one wetland (WL4) exceeded zinc guidelines. Arsenic and

chromium exceeded guidelines at six and three wetlands, respectively. Mercury did not exceed at any of the wetland or lake sites. Chromium, copper and nickel exceeded at all lakes sites, and zinc exceeded only at L1 and L5. Arsenic and iron exceeded at all lake sites except for reference site L4.

4.2.3 Primary and Secondary Producers

4.2.3.1 Phytoplankton

Phytoplankton biomass varied widely between wetlands and was highest within the Mess Creek Watershed. Biomass ranged from 0.02 (WL4) to 3.03 $\mu\text{g/L}$ (WL6), with a mean of 0.56 $\mu\text{g/L}$ chlorophyll *a*. Phytoplankton densities were also highest in the Mess Creek Watershed and ranged from 2 (WL10) to 419 cells $\times 10^3/\text{L}$ (Airstrip WL), with a mean of 103 cells $\times 10^3/\text{L}$. Genus richness between the eleven wetlands ranged from 3 to 15 phytoplankton taxa, with a mean of 9 genera. Chrysophyta (golden algae) dominated most wetland communities (average 61% of phytoplankton communities) with the exception of Airstrip WL which was dominated by Chlorophyta (green algae) at 84%. Smaller proportions of cryptophytes and cyanophytes were also present. The Shannon and Simpson diversity indices did not vary widely between wetlands and ranged from 0.83 to 2.24 and 0.45 to 0.85, respectively. Both diversity indices assigned WL11 as the most diverse wetland site. The mean Shannon and Simpson diversity indices across all wetlands are 1.54 and 0.69, respectively.

Phytoplankton productivity was generally low in all lakes ranging from 0.04 (L1) to 0.90 $\mu\text{g/L}$ (L5) chlorophyll *a*, with Mess Watershed lakes having the lowest productivity. Most lakes had low phytoplankton densities as well ranging between 4 (L1) and 86 cells $\times 10^3/\text{L}$ (L2). The only exception to this was the reference lake (L4) which had a density of 1,595 cells $\times 10^3/\text{L}$. Densities in 2007 year were very similar to 2006 with L1, L3 and L5 having the lowest densities and reference lake (L4) having considerably higher densities than all other lakes. Lake phytoplankton richness ranged from 4 (L1) to 10 (L2, L5, and L4), with a mean of 8 genera. Chrysophyta dominated the communities at all lakes except for L4 which was dominated by cyanophyte *Aphanocapsa elachista*. Also observed in smaller proportions were chlorophyta, cryptophyta, and pyrrophyta. Both the Simpson and Shannon diversity indices were lowest at L4 (0.28 and 0.69 respectively), which had the highest densities of phytoplankton. The highest diversity for the Simpson and Shannon indices were lakes L2 and L5 (Simpson both 0.75) and (Shannon 1.67 and 1.73, respectively).

4.2.3.2 Benthic Invertebrates

The average density of benthic invertebrates varied between wetlands, ranging from 1,718 (WL10) to 53,630 organisms/ m^2 (WL10). However, of the eleven wetlands sampled nine had densities between 13,000 to 39,000 organisms/ m^2 . Wetlands within Mess Creek Watershed had the highest densities of benthos. Average benthos genus richness ranged from 6 to 21, but most wetlands ranged from 10 to 13 taxa. Diptera (flies) were the dominant taxonomic group at eight of the eleven wetlands sampled; accounting for over 50 percent of all organisms collected. Diptera were almost exclusively from the chironomid family (98%). Mollusca were the second most abundant taxonomic group, followed by Oligochaeta (worms). Amphipoda were present in relatively high numbers at two wetlands (WL11 and WL7) and cladocera, hirudinea, nematoda,

arachnida, ostracoda, copepoda, and bryozoa composed smaller proportions of the wetland benthos communities. Little variation was observed between wetlands and their corresponding Shannon and Simpson Diversity Indices. The Shannon Diversity Index values ranged from 1.16 (WL4) to 2.38 (WL1), though most wetlands had values between of 1.49 and 2.05. The Simpson Diversity Index values ranged from 0.49 (WL9) to 0.85 (WL1), with most wetlands ranging from 0.66 to 0.85.

Benthic densities were not as high in lakes as in the wetlands. L4 and L3 had the lowest average densities (237 and 874 organisms/m², respectively) while L1, L5, and L6 had higher densities ranging from 15,748 to 17,274 organisms/m². Average genus richness was also lower in lakes compared to wetlands and ranged from 1.7 (L4) to 16.3 (L5), though half of the lakes had 7 to 8 genera. Community composition varied considerably between lakes. Diptera dominated (>50%) at L6 and L3, Oligochaeta dominated L1, mollusca had partial dominance with diptera at L2 and L5, and L4 had shared dominance between cladocera and mollusca. Also present in the communities were Amphipoda, Archnida, Coleopteran, Copepoda, Ephemeroptera, Nematoda, Ostracoda, and Trichoptera. Lakes with the lowest densities (L3 and L4) also had the lowest diversity for both the Simpson and Shannon indices, while L5 (which had the highest average genus richness) had the highest diversity for both indices. The Simpson Diversity index ranged from 0.30 to 0.83, and the Shannon Diversity index ranged from 0.49 to 2.16.

4.2.3.3 Zooplankton

Zooplankton densities were similar to 2006 with the lowest densities occurring within the Mess Creek Watershed lakes and the highest at L2 in the Skeeter Watershed. Density ranged from 28.2 (L1) to 20,149.8 organisms/m³ (L2), though the rest of the lakes ranged from 840.5 to 2449.2 organisms/m³. The high density at L2 was primarily a result of the large numbers of immature cyclopoid copepods (nauplii and copepodites) present during sampling. Average zooplankton richness ranged from 3.3 (L6) to 7.7 (L2) with a mean of 5.1 genera. Five of the six lakes were dominated by cyclopoid copepods except for L4 which was dominated by calanoid copepods. *Daphnidae* were also abundant in L4, and rotifera numbers were considerable in L6 and L2. Also present within the lake communities were bosminidae, chydoridae, diptera, gammaridea, and harpacticoida. Both the Shannon and Simpson diversity indices resulted in L1 as the most diverse site, followed by L2. Average Shannon diversity ranged from 0.56 (L4) to 1.38 (L1). Average Simpson diversity ranged from 0.29 (L4) to 0.70 (L1).

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**APPENDIX 3.1-1
SCHAFT CREEK PROJECT STREAM WATER QUALITY DATA,
2007**



**Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007**

Sample ID	WC-1-1	WC-1-2	SC-2	SC-3	SC-4	HC-1	MC-7	FIELD BLANK	TRAVEL BLANK	SKC-1
Date Sampled	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007
Time Sampled										
ALS Sample ID	L476549-1	L476549-2	L476549-3	L476549-4	L476549-5	L476549-6	L476549-7	L476549-8	L476549-9	L476549-10
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	48.6	48.6	106	104	98	90.5	249	<0.50	<0.50	84.8
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	129	129	217	219	202	191	481	<2.0	<2.0	180
pH	8.00	7.99	8.17	8.17	8.15	8.12	8.18	5.58	5.59	7.97
Total Dissolved Solids	90.0	88.0	125	127	115	110	263	<10	<10	108
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity (NTU)	0.57	0.60	0.64	0.54	0.64	0.66	2.70	0.11	0.11	0.36
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	2.5	2.4	1.3	1.8	1.7	2.0	1.9	1.7	1.6	2.2
Alkalinity, Total CaCO ₃	58.2	56.3	97.5	102	94.2	84.4	250	<2.0	<2.0	70.3
Bromide Br	<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
Fluoride F	0.179	0.181	<0.020	<0.020	0.042	<0.020	0.036	<0.020	<0.020	0.023
Sulfate SO ₄	12.0	12.0	19.9	18.3	14.9	20.7	37.4	<0.50	<0.50	25.5
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.075	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrate N	0.0647	0.0656	0.0543	0.0604	0.0764	0.0487	0.148	<0.0050	<0.0050	0.0682
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.14	0.10	0.08	0.10	0.11	0.07	0.19	<0.05	<0.05	0.10
Total Phosphate P	0.0204	0.0207	0.0030	0.0035	0.0031	0.0033	0.0022	<0.0020	<0.0020	0.0024
Cyanides										
Total Cyanide CN	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	0.0449	0.0437	0.0182	0.0155	0.0188	0.0254	0.0052	<0.0010	<0.0010	0.0035
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00066	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00017	0.00016	0.00057	0.00048	0.00040	0.00127	0.00053	<0.00010	<0.00010	0.00020
Barium T-Ba	0.00476	0.00471	0.0931	0.109	0.104	0.0385	0.0921	<0.000050	<0.000050	0.00936
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	0.010	0.010	0.013	0.012	<0.010	0.013	0.018	<0.010	<0.010	<0.010
Cadmium T-Cd	<0.000020	<0.000020	0.000027	<0.000020	0.000021	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Calcium T-Ca	11.6	11.5	32.7	32.3	30.7	28.0	45.1	0.025	<0.020	29.1
Chromium T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00089	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt T-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00021	<0.00010	<0.00010	<0.00010
Copper T-Cu	0.00019	0.00018	0.00048	0.00046	0.00041	0.00044	0.00017	<0.00010	<0.00010	0.00044
Iron T-Fe	0.041	0.036	0.059	0.044	0.061	<0.030	0.312	<0.030	<0.030	0.041
Lead T-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	4.85	4.76	5.82	5.59	4.70	5.30	34.7	<0.0050	<0.0050	2.44
Manganese T-Mn	0.00641	0.00625	0.0200	0.0325	0.0282	0.000884	0.0377	<0.000050	<0.000050	0.00684
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.000835	0.000827	0.0111	0.00881	0.00795	0.000820	0.000404	<0.000050	<0.000050	0.000773
Nickel T-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00078	<0.00050	<0.00050	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	1.69	1.67	0.644	0.613	0.594	0.505	0.709	<0.050	<0.050	0.303
Selenium T-Se	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00068	<0.00050	<0.00050	0.00101
Silicon T-Si	10.6	10.4	2.27	2.45	2.64	2.12	1.95	<0.050	<0.050	2.52
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	5.9	5.6	<2.0	<2.0	<2.0	<2.0	4.4	<2.0	<2.0	<2.0
Strontium T-Sr	0.0518	0.0519	0.178	0.183	0.163	0.126	0.304	<0.00010	<0.00010	0.0476
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.000126	0.000120	0.000447	0.000467	0.00104	0.00038	0.000254	<0.000010	<0.000010	0.000151
Vanadium T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc T-Zn	0.0016	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals										
Aluminum D-Al	0.0179	0.0203	0.0047	0.0044	0.0039	0.0033	<0.0010	-	-	<0.0010
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010
Arsenic D-As	0.00015	0.00017	0.00049	0.00042	0.00034	0.00123	0.00027	-	-	0.00015
Barium D-Ba	0.00458	0.00456	0.0920	0.107	0.106	0.0379	0.0878	-	-	0.00944
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050
Boron D-B	0.011	0.010	0.013	0.013	<0.010	0.013	0.017	-	-	<0.010
Cadmium D-Cd	<0.000020	<0.000020	0.000032	0.000029	<0.000020	<0.000020	<0.000020	-	-	<0.000020
Calcium D-Ca	11.6	11.5	32.8	31.4	27.8	28.9	43.9	-	-	29.9
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00093	<0.00050	-	-	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00020	-	-	<0.00010
Copper D-Cu	<0.00040	<0.00040	<0.00060	<0.00070	<0.00030	<0.00040	<0.00010	-	-	<0.00040
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	-	-	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	<0.0050
Magnesium D-Mg	4.79	4.81	5.85	5.60	4.77	5.11	33.8	-	-	2.47
Manganese D-Mn	0.00155	0.00161	0.0187	0.0308	0.0266	0.000183	0.0360	-	-	0.00576
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010
Molybdenum D-Mo	0.000905	0.000940	0.0116	0.00920	0.00853	0.000820	0.000449	-	-	0.000864
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00080	-	-	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	-	<0.30
Potassium D-K	1.69	1.68	0.640	0.612	0.610	0.490	0.692	-	-	0.311
Selenium D-Se	<0.00050	0.00058	<0.00050	0.00056	0.00063	0.00080	0.00110	-	-	0.00121
Silicon D-Si	10.00	10.8	2.22	2.28	2.30	2.01	1.90	-	-	2.49
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010
Sodium D-Na	5.5	6.1	<2.0	<2.0	<2.0	<2.0	4.4	-	-	<2.0
Strontium D-Sr	0.0519	0.0526	0.176	0.184	0.169	0.126	0.296	-	-	0.0486
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010
Tin D-Sn	<0.00010									

**Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	SC-4	MC-2	MC-7	WC-1-1	WC-1-2	FIELD BLANK	TRAVEL BLANK	MC-2	MC-5	MC-9
Date Sampled	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	24/03/2007	24/03/2007	24/03/2007
Time Sampled										
ALS Sample ID	L481886-8	L481886-9	L481886-10	L481886-11	L481886-12	L481886-13	L481886-14	L490267-1	L490267-2	L490267-3
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	101	249	257	51	49.9	<0.50	<0.50	260	120	107
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	209	503	474	131	131	<2.0	<2.0	508	255	255
pH	8.15	8.13	8.22	8.06	8.03	5.56	5.58	8.18	8.18	8.20
Total Dissolved Solids	116	280	259	91.0	90.0	<10	<10	274	149	156
Total Suspended Solids	<3.0	50.7	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	11.5	20.5
Turbidity (NTU)	0.53	7.08	2.33	0.65	0.60	<0.10	<0.10	2.55	1.61	9.93
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.6	2.6	1.4	2.1	2.2	2.7	2.6	1.9	1.2	1.1
Alkalinity, Total CaCO ₃	96.9	258	249	56.7	56.7	<2.0	<2.0	239	125	113
Bromide Br	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride Cl	<0.50	4.70	1.34	<0.50	<0.50	<0.50	<0.50	4.90	1.33	1.24
Fluoride F	0.054	0.042	0.044	0.205	0.208	<0.020	<0.020	0.041	0.100	0.146
Sulfate SO ₄	14.7	27.4	34.2	12.5	12.5	<0.50	<0.50	27.1	17.7	18.3
Nutrients										
Ammonia Nitrogen N	<0.0050	0.0083	0.0062	<0.0050	<0.0050	<0.0050	<0.0050	0.0121	0.0098	0.0062
Total Kjeldahl Nitrogen N	0.053	0.069	0.09	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrate N	0.0574	0.0708	0.0997	0.0422	0.0439	<0.0050	<0.0050	0.0653	0.0533	0.0525
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.11	0.14	0.19	0.08	0.08	<0.05	<0.05	0.11	0.10	0.09
Total Phosphate P	0.0024	0.0471	0.0022	0.0194	0.0199	<0.0020	<0.0020	0.0035	0.0106	0.0301
Cyanides										
Total Cyanide CN	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0016	<0.0010
Total Metals										
Aluminum T-Al	0.0121	0.230	0.0031	0.0431	0.0414	<0.0010	<0.0010	0.0042	0.0399	0.377
Antimony T-Sb	<0.00010	0.00032	0.00064	<0.00010	<0.00010	<0.00010	<0.00010	0.00027	<0.00010	0.00011
Arsenic T-As	0.00044	0.00165	0.00057	0.00018	0.00017	<0.00010	<0.00010	0.00082	0.00038	0.00056
Barium T-Ba	0.107	0.178	0.0872	0.00494	0.00493	<0.000050	<0.000050	0.173	0.0846	0.0634
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	0.079	0.011	0.011	0.011	<0.010	<0.010	0.083	0.027	0.034
Cadmium T-Cd	0.000025	0.000021	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Calcium T-Ca	32.1	54.9	45.1	12.2	12.0	<0.020	<0.020	51.7	33.0	31.2
Chromium T-Cr	<0.00050	0.00081	<0.00050	<0.00050	0.00073	<0.00050	<0.00050	<0.00050	<0.00050	0.00109
Cobalt T-Co	<0.00010	0.00088	0.00020	<0.00010	<0.00010	<0.00010	<0.00010	0.00039	<0.00010	0.00045
Copper T-Cu	0.00038	0.00167	0.00019	0.00022	0.00024	<0.00010	<0.00010	0.00033	0.00046	0.00218
Iron T-Fe	0.054	1.40	0.278	0.032	0.036	<0.030	<0.030	0.523	0.284	0.711
Lead T-Pb	<0.000050	0.000254	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000195
Lithium T-Li	<0.0050	0.0083	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0083	<0.0050	0.0064
Magnesium T-Mg	4.53	29.1	33.9	5.01	4.89	<0.0050	<0.0050	27.7	9.23	10.2
Manganese T-Mn	0.0325	0.188	0.0339	0.00607	0.00622	<0.000050	<0.000050	0.152	0.0860	0.0533
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00806	0.00118	0.00347	0.000949	0.000957	<0.000050	<0.000050	0.00135	0.00282	0.00239
Nickel T-Ni	<0.00050	0.00580	0.00073	<0.00050	<0.00050	<0.00050	<0.00050	0.00385	<0.00050	0.00151
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.616	1.13	0.715	1.76	1.73	<0.050	<0.050	1.00	0.932	1.58
Selenium T-Se	<0.00050	0.00102	0.00101	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00098
Silicon T-Si	2.58	3.80	2.01	10.8	10.7	<0.050	<0.050	3.76	4.50	6.62
Silver T-Ag	<0.000010	0.000022	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000013
Sodium T-Na	<2.0	9.9	4.5	6.1	6.1	<2.0	<2.0	10.4	5.1	9.2
Strontium T-Sr	0.161	0.292	0.292	0.0551	0.0542	<0.00010	<0.00010	0.298	0.158	0.154
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.019
Uranium T-U	0.00110	0.000187	0.000206	0.000135	0.000136	<0.000010	<0.000010	0.000190	0.000660	0.000721
Vanadium T-V	<0.0010	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0028
Zinc T-Zn	<0.0010	<0.0040	<0.0010	0.0013	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0040
Dissolved Metals										
Aluminum D-Al	0.0037	0.0036	0.0029	0.0164	0.0163	-	-	<0.0010	0.0025	0.0048
Antimony D-Sb	<0.00010	0.00025	0.00062	<0.00010	<0.00010	-	-	0.00026	0.00010	<0.00010
Arsenic D-As	0.00035	0.00051	0.00030	0.00017	0.00017	-	-	0.00054	0.00023	0.00031
Barium D-Ba	0.107	0.168	0.0868	0.00486	0.00473	-	-	0.170	0.0808	0.0553
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	0.080	0.015	0.011	0.011	-	-	0.084	0.027	0.031
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	-	-	<0.000020	<0.000020	<0.000020
Calcium D-Ca	32.8	52.4	46.3	12.3	12.0	-	-	54.4	32.6	28.1
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	0.00033	0.00019	<0.00010	<0.00010	-	-	0.00034	<0.00010	<0.00010
Copper D-Cu	0.00031	0.00045	0.00032	0.00028	0.00031	-	-	0.00025	0.00028	0.00042
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	-	-	<0.030	<0.030	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	0.0082	<0.0050	<0.0050	<0.0050	-	-	0.0082	<0.0050	0.0058
Magnesium D-Mg	4.59	28.6	34.3	4.96	4.86	-	-	30.1	9.38	8.96
Manganese D-Mn	0.0320	0.135	0.0341	0.00120	0.00121	-	-	0.150	0.0640	0.00474
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00811	0.00117	0.000371	0.000990	0.00103	-	-	0.00137	0.00031	0.00246
Nickel D-Ni	<0.00050	0.00436	0.00086	<0.00050	<0.00050	-	-	0.00377	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	-	-	<0.30	<0.30	<0.30
Potassium D-K	0.624	1.02	0.740	1.76	1.74	-	-	1.08	0.938	1.39
Selenium D-Se	<0.00050	0.00054	0.00115	0.00056	0.00052	-	-	0.00076	0.00061	<0.00050
Silicon D-Si	2.49	3.60	1.90	10.3	10.2	-	-	3.69	4.29	5.71
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	10	4.3	5.9	5.9	-	-	10.3	5.0	8.8
Strontium D-Sr	0.162	0.287	0.293	0.0551	0.0555	-	-	0.298	0.156	0.146
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010
Tin D-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010
Titanium D-Ti	<0.010	<0.010								

Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	SC-4	B-LINE	F-LINE	WC-1	FIELD BLANK	TRAVEL BLANK	SC-2-1	SC-2-2	SC-3	SC-4
Date Sampled	24/03/2007	24/03/2007	24/03/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007
Time Sampled										
ALS Sample ID	L490267-14	L490267-15	L490267-16	L500494-1	L500494-2	L500494-3	L500496-1	L500496-2	L500496-3	L500496-4
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	100	82.1	86.2	61.5	<0.50	<0.50	105	106	103	98.3
Colour (CU)	<5.0	6.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	209	171	175	152	<2.0	<2.0	213	214	212	199
pH	8.14	8.03	7.98	7.99	5.56	5.51	8.24	8.24	8.24	8.21
Total Dissolved Solids	126	109	105	111	<10	<10	125	118	119	95.0
Total Suspended Solids	<3.0	<3.0	<3.0	3.2	<3.0	<3.0	<3.0	<3.0	6.7	7.7
Turbidity (NTU)	0.65	1.19	1.23	1.07	<0.10	<0.10	0.91	0.83	1.13	2.76
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.4	1.9	2.1	1.6	1.4	1.4	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total CaCO ₃	94.4	77.7	92.7	52.6	<2.0	<2.0	78.8	78.6	80.9	78.4
Bromide Br	<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	0.51	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride F	0.053	0.021	0.023	0.205	<0.020	<0.020	0.026	0.025	0.027	0.045
Sulfate SO ₄	14.2	12.0	13.0	14.9	<0.50	<0.50	18.4	18.4	17.0	14.8
Nutrients										
Ammonia Nitrogen N	0.0056	0.0079	0.0081	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	0.084	0.057	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrate N	0.0560	0.136	0.143	<0.0050	<0.0050	<0.0050	0.0424	0.0441	0.0441	0.0631
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.09	0.22	0.20	<0.05	<0.05	<0.05	0.07	0.08	0.09	0.10
Total Phosphate P	0.0040	0.0036	0.0022	0.0186	<0.0020	<0.0020	0.0027	0.0035	0.0069	0.0064
Cyanides										
Total Cyanide CN	<0.0010	0.0020	0.0017	0.0012	<0.0010	<0.0010	0.0012	0.0013	0.0015	0.0013
Total Metals										
Aluminum T-Al	0.0129	0.0136	0.0035	0.0636	<0.0010	<0.0010	0.0127	0.0314	0.220	0.0511
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010
Arsenic T-As	0.00040	<0.00010	0.00011	0.00018	<0.00010	<0.00010	0.00054	0.00057	0.00067	0.00049
Barium T-Ba	0.107	0.0222	0.0286	0.00619	<0.000050	<0.000050	0.0864	0.0876	0.0951	0.0961
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	0.014	0.014	0.012	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000021
Calcium T-Ca	32.1	28.5	29.5	15.0	<0.020	<0.020	32.5	33.0	33.5	31.9
Chromium T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00075	0.00103	0.00073	<0.00050
Cobalt T-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00025	<0.00010
Copper T-Cu	0.00042	0.00135	0.00040	0.00031	<0.00010	<0.00010	0.00064	0.00102	0.00290	0.00111
Iron T-Fe	0.059	0.327	0.466	0.085	<0.030	<0.030	0.044	0.085	0.359	0.130
Lead T-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000182	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	4.27	2.54	2.53	5.93	<0.0050	<0.0050	5.28	5.39	5.30	4.69
Manganese T-Mn	0.0199	0.0624	0.163	0.00871	<0.000050	<0.000050	0.0186	0.0257	0.0625	0.0327
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00750	0.00216	0.00220	0.00106	<0.000050	<0.000050	0.0132	0.0128	0.0123	0.0105
Nickel T-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00080	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.584	0.300	0.324	1.96	<0.050	<0.050	0.648	0.668	0.712	0.646
Selenium T-Se	<0.00050	<0.00050	0.00052	<0.00050	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	<0.00050
Silicon T-Si	2.59	3.57	3.26	10.4	<0.050	<0.050	2.68	2.63	2.84	2.59
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	<2.0	<2.0	6.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.160	0.0949	0.0960	0.0632	<0.00010	<0.00010	0.161	0.163	0.175	0.165
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010
Uranium T-U	0.00108	0.000013	0.000012	0.000191	<0.000010	<0.000010	0.000352	0.000469	0.000488	0.00103
Vanadium T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010
Zinc T-Zn	<0.0010	<0.0010	0.0093	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030	<0.0010
Dissolved Metals										
Aluminum D-Al	0.0039	0.0032	<0.0010	0.0165	-	-	0.0053	0.0053	0.0064	0.0058
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00032	<0.00010	<0.00010	0.00017	-	-	0.00048	0.00049	0.00044	0.00037
Barium D-Ba	0.106	0.0217	0.0283	0.00582	-	-	0.0871	0.0868	0.0929	0.0942
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	<0.010	0.013	-	-	0.013	0.014	0.012	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	-	-	<0.000020	<0.000020	<0.000020	<0.000020
Calcium D-Ca	32.9	28.7	30.2	14.9	-	-	33.0	32.7	31.7	31.7
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	0.00058	0.00142	0.00026	0.00027	-	-	0.00076	0.00072	0.00083	0.00062
Iron D-Fe	<0.030	0.192	<0.030	<0.030	-	-	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	-	-	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	4.38	2.54	2.62	5.92	-	-	5.34	5.39	5.13	4.65
Manganese D-Mn	0.0184	0.0595	0.155	0.00166	-	-	0.0220	0.0222	0.0262	0.0227
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00773	0.00220	0.00230	0.00110	-	-	0.0130	0.0131	0.0124	0.0107
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	-	-	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.602	0.309	0.337	1.93	-	-	0.659	0.673	0.633	0.645
Selenium D-Se	0.00077	0.00061	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Silicon D-Si	2.56	3.46	3.20	10.3	-	-	2.57	2.51	2.58	2.49
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	<2.0	<2.0	6.7	-	-	<2.0	<2.0	<2.0	<2.0
Strontium D-Sr	0.159	0.0950	0.0961	0.0634	-	-	0.163	0.164	0.172	0.164
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin D-Sn	<0.00010	<0.00010	<0.00010							

**Appendix 3.1-1
Schaff Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	HC-1	MC-1	MC-2	MC-5	MC-9	F-LINE	HC-2	HC-3	JC-1	JC-2
Date Sampled	26/04/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007
Time Sampled										
ALS Sample ID	L500505-5	L508063-1	L508063-2	L508063-3	L508063-4	L508063-5	L508063-6	L508063-7	L508063-8	L508063-9
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	100	99.1	194	110	110	87.7	100	96.7	30.2	47.6
Colour (CU)	<5.0	<5.0	<5.0	9.4	12.1	<5.0	<5.0	<5.0	<5.0	7.7
Conductivity (mS/cm)	207	185	380	230	235	180	200	194	67.6	97.5
pH	8.17	7.96	8.07	8.11	8.17	7.88	8.09	8.09	7.70	7.87
Total Dissolved Solids	129	102	211	130	135	97.7	111	106	34.1	53
Total Suspended Solids	<3.0	3.0	11.7	27.0	271	6.3	<3.0	4.3	4.3	5.0
Turbidity (NTU)	0.43	1.51	5.80	9.06	14.1	1.56	1.03	1.70	1.42	1.72
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.1	2.3	2.7	1.8	1.2	2.4	1.6	1.5	1.8	1.8
Alkalinity, Total CaCO ₃	75.7	95.6	194	113	115	72.8	93.0	86.9	31.1	46.6
Bromide Br	<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	2.60	1.17	1.06	<0.50	<0.50	<0.50	0.55	<0.50
Fluoride F	<0.020	0.022	0.036	0.078	0.098	0.021	<0.020	<0.020	0.180	0.124
Sulfate SO ₄	21.6	10.6	18.3	12.9	13.1	17.4	15.0	15.9	2.00	3.45
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	0.0085	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	0.151	0.203	0.199	0.289	0.152	0.157	0.164	0.26	0.164
Nitrate N	0.0274	0.110	0.187	0.0713	0.0761	0.521	0.128	0.0928	0.161	0.206
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	<0.05	0.26	0.39	0.27	0.36	0.81	0.28	0.25	0.42	0.37
Total Phosphate P	<0.0020	0.0038	0.0207	0.0270	0.219	0.0073	0.0037	0.0054	0.0030	0.0044
Cyanides										
Total Cyanide CN	<0.0010	0.0014	0.0022	0.0026	0.0046	0.0013	0.0013	0.0020	<0.0010	0.0024
Total Metals										
Aluminum T-Al	0.0140	0.0165	0.0457	0.187	5.18	0.0249	0.0359	0.0443	0.0480	0.0556
Antimony T-Sb	<0.00010	<0.00010	0.00027	0.00010	0.00020	<0.00010	0.00014	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00087	0.00013	0.00142	0.00082	0.00202	<0.00010	0.00145	0.00111	0.00026	0.00018
Barium T-Ba	0.0422	0.0611	0.142	0.0851	0.146	0.0269	0.0531	0.0387	0.0368	0.0822
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	0.012	<0.010	0.047	0.030	0.032	<0.010	0.011	0.012	<0.010	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000020	0.000171	0.000092	<0.000020	<0.000020	<0.000020	0.000030	<0.000020
Calcium T-Ca	28.3	21.5	42.6	30.3	37.0	30.3	28.7	28.6	10.8	15.2
Chromium T-Cr	0.00130	<0.00050	<0.00050	<0.00050	0.0144	<0.00050	0.00071	0.00078	<0.00050	<0.00050
Cobalt T-Co	<0.00010	<0.00010	0.00042	0.00030	0.00476	<0.00010	<0.00010	0.00010	<0.00010	<0.00010
Copper T-Cu	0.00086	0.00039	0.00088	0.00192	0.0176	0.00123	0.00082	0.00178	0.00026	0.00065
Iron T-Fe	<0.030	0.055	0.816	0.660	7.23	0.174	0.032	0.072	0.055	0.062
Lead T-Pb	<0.000050	<0.000050	0.000080	0.000210	0.00205	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	0.0062	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	7.13	10.6	20.9	8.92	12.7	2.69	6.21	5.40	0.953	2.07
Manganese T-Mn	0.000712	0.00355	0.0967	0.0876	0.263	0.0229	0.00294	0.00327	0.00537	0.00466
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00131	0.000880	0.00147	0.00282	0.00248	0.00198	0.000330	0.000973	0.00719	0.00503
Nickel T-Ni	0.00208	<0.00050	0.00347	0.00104	0.0154	<0.00050	<0.00050	0.00084	<0.00050	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	1.41	0.437	0.854	0.915	2.02	0.325	0.493	0.574	0.711	0.605
Selenium T-Se	<0.00050	<0.00050	0.00058	<0.00050	0.00075	0.00054	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	3.36	1.96	3.13	4.27	13.8	3.06	2.13	2.79	2.39	2.71
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	0.000036	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	<2.0	6.3	5.2	7.2	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.125	0.187	0.217	0.150	0.191	0.0984	0.144	0.117	0.0390	0.0969
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	0.010	0.186	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.000030	0.000111	0.000133	0.000556	0.000733	0.000021	0.000043	0.000042	0.00034	0.00238
Vanadium T-V	<0.0010	<0.0010	<0.0010	<0.0010	0.0183	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc T-Zn	<0.0010	<0.0010	<0.0010	0.0019	0.0193	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals										
Aluminum D-Al	0.0026	0.0025	0.0011	0.0085	0.0282	0.0027	0.0036	0.0057	0.0097	0.0166
Antimony D-Sb	<0.00010	<0.00010	0.00026	<0.00010	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00084	<0.00010	0.00064	0.00050	0.00051	<0.00010	0.00143	0.00108	0.00024	0.00015
Barium D-Ba	0.0414	0.0604	0.139	0.0810	0.0257	0.0257	0.0385	0.0350	0.0813	0.0813
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	0.012	<0.010	0.048	0.030	0.030	<0.010	0.011	0.012	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	0.000051	<0.000020	<0.000020	<0.000020	<0.000020	0.000024	<0.000020
Calcium D-Ca	28.6	21.8	42.6	29.7	30.7	29.6	29.6	29.6	10.6	15.7
Chromium D-Cr	0.00093	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00069	0.00072	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	0.00022	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	0.00069	<0.00050	<0.00050	<0.0010	0.00165	<0.00070	<0.00060	0.00139	<0.00020	<0.00060
Iron D-Fe	<0.030	<0.030	<0.030	0.061	0.044	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	7.01	10.9	21.2	8.79	12.9	2.69	6.39	5.50	0.911	2.05
Manganese D-Mn	<0.00030	0.000789	0.0740	0.0478	0.0279	0.0109	0.00139	0.000913	0.00298	0.00235
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00133	0.000988	0.00160	0.00299	0.00264	0.00207	0.000340	0.00102	0.00718	0.00512
Nickel D-Ni	0.00206	<0.00050	0.00271	0.00060	0.00070	<0.00050	<0.00050	0.00063	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	1.39	0.443	0.866	0.881	1.17	0.321	0.505	0.593	0.682	0.594
Selenium D-Se	0.00057	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon D-Si	3.26	1.92	3.01	3.92	4.50	3.00	2.06	2.65	2.19	2.64
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	<2.0	6.5	5.3	7.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium D-Sr	0.125	0.193	0.219	0.149	0.163	0.0956	0.148	0.123	0.0383	0.0965
Thallium D-Tl	<0.00010									

**Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	SC-1	SC-3	SC-4	SC-5	SC-6	SC-7	SKC-1	SKC-3	SKC-4	D-LINE
Date Sampled	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007
Time Sampled										
ALS Sample ID	L508063-10	L508063-11	L508063-12	L508063-13	L508063-14	L508063-15	L508063-16	L508063-17	L508063-18	L508063-19
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	60.2	94.2	82.5	76.5	87.2	78.2	79.9	94.3	77.7	31.8
Colour (CU)	<5.0	5.6	6.4	12.1	<5.0	12.1	12.8	13.1	16.6	29.5
Conductivity (mS/cm)	122	189	168	152	178	156	157	183	158	70.0
pH	7.94	8.04	8.01	7.99	8.07	7.91	7.77	7.88	8.00	7.14
Total Dissolved Solids	62.2	107	91.2	86.9	97.6	89.1	91.5	103	90.8	42.4
Total Suspended Solids	<3.0	3.7	11.0	42.3	7.0	37.7	<3.0	<3.0	<3.0	<3.0
Turbidity (NTU)	2.77	2.43	4.22	10.6	2.23	8.74	0.66	0.35	1.03	0.93
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.7	1.7	1.8	1.8	1.6	2.1	2.7	2.6	1.8	5.6
Alkalinity, Total CaCO ₃	48.6	87.6	76.4	76.4	83.6	77.8	75.3	99.2	74.8	31.5
Bromide Br	<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
Fluoride F	0.031	0.027	0.049	0.047	<0.020	0.046	0.025	0.029	0.031	0.024
Sulfate SO ₄	8.92	14.9	11.7	8.09	13.5	8.59	11.5	3.00	11.4	4.06
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	0.0102	<0.0050	0.0060	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.144	0.164	0.161	0.176	0.14	0.186	0.178	0.238	0.207	0.24
Nitrate N	0.0960	0.0857	0.109	0.114	0.0896	0.134	0.0525	0.232	0.0933	<0.0050
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.24	0.25	0.27	0.29	0.23	0.32	0.23	0.47	0.30	0.24
Total Phosphate P	0.0069	0.0061	0.0083	0.0285	0.0069	0.0487	0.0051	0.0037	0.0043	0.0119
Cyanides										
Total Cyanide CN	0.0017	0.0023	0.0025	0.0030	0.0016	0.0027	0.0036	0.0037	0.0043	0.0057
Total Metals										
Aluminum T-Al	0.0707	0.0508	0.0915	0.374	0.0600	0.541	0.0183	0.0113	0.0378	0.0384
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00023	0.00052	0.00049	0.00060	0.00074	0.00068	0.00032	<0.00010	0.00024	<0.00010
Barium T-Ba	0.0980	0.0867	0.0888	0.0867	0.0754	0.0929	0.00824	0.00840	0.0115	0.0132
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012
Cadmium T-Cd	0.000023	<0.000020	0.000048	0.000020	<0.000020	0.000027	<0.000020	<0.000020	<0.000020	<0.000020
Calcium T-Ca	17.7	29.1	27.5	26.0	27.2	26.8	26.3	29.7	26.7	9.06
Chromium T-Cr	<0.00050	<0.00050	<0.00050	0.00092	<0.00050	0.00129	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt T-Co	<0.00010	<0.00010	0.00011	0.00038	<0.00010	0.00050	<0.00010	<0.00010	<0.00010	0.00011
Copper T-Cu	0.00130	0.00198	0.00203	0.00298	0.00149	0.00311	0.00084	0.00033	0.00106	<0.0010
Iron T-Fe	0.073	0.101	0.178	0.738	0.080	0.887	0.125	0.038	0.124	0.227
Lead T-Pb	<0.00050	<0.00050	0.000078	0.000184	<0.00050	0.000326	<0.00050	<0.00050	<0.00050	<0.00050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	3.51	4.86	4.30	3.99	5.28	4.14	2.97	4.79	4.26	2.59
Manganese T-Mn	0.00311	0.0191	0.0304	0.117	0.00735	0.122	0.0123	0.00583	0.0139	0.0960
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00495	0.0109	0.00964	0.00514	0.00326	0.00607	0.000537	0.000199	0.000575	0.000376
Nickel T-Ni	<0.00050	<0.00050	<0.00050	0.00096	<0.00050	0.00131	<0.00050	<0.00050	0.00137	0.00068
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.569	0.647	0.659	0.683	0.641	0.728	0.399	0.364	0.504	0.575
Selenium T-Se	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00066	<0.00050
Silicon T-Si	1.69	2.77	3.50	2.30	3.50	3.79	3.00	3.44	3.78	4.09
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.142	0.156	0.149	0.128	0.145	0.133	0.0440	0.0492	0.0601	0.0410
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	0.018	<0.010	0.029	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.000682	0.000418	0.00103	0.000854	0.000442	0.000886	0.000104	0.000084	0.000092	<0.000010
Vanadium T-V	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	0.0017	<0.0010	<0.0010	<0.0010	<0.0010
Zinc T-Zn	<0.0010	<0.0010	<0.0010	0.0020	<0.0010	0.0025	<0.0010	<0.0010	0.0019	0.0024
Dissolved Metals										
Aluminum D-Al	0.0293	0.0082	0.0119	0.0159	0.0072	0.0156	0.0068	0.0071	0.0123	0.0296
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00022	0.00048	0.00039	0.00035	0.00067	0.00038	0.00025	<0.00010	0.00019	<0.00010
Barium D-Ba	0.0979	0.0865	0.0869	0.0828	0.0735	0.0860	0.00817	0.00832	0.0111	0.0120
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011
Cadmium D-Cd	0.000028	<0.000020	0.000027	0.000023	<0.000020	0.000026	<0.000020	<0.000020	<0.000020	<0.000020
Calcium D-Ca	18.2	29.6	26.4	24.8	25.4	27.1	29.8	27.1	28.6	8.56
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	<0.0010	0.00152	0.00121	0.00127	<0.0010	0.00132	<0.00070	<0.00030	<0.00080	<0.00090
Iron D-Fe	<0.030	<0.030	<0.030	0.141	<0.030	0.160	0.037	<0.030	0.045	0.092
Lead D-Pb	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	3.56	4.93	4.06	3.56	5.28	3.59	2.98	4.81	3.57	2.54
Manganese D-Mn	0.000682	0.0150	0.0204	0.0809	0.00388	0.0767	0.00757	0.000744	0.00411	0.00362
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00536	0.0114	0.00948	0.00508	0.00341	0.00605	0.000536	0.000212	0.000550	0.000337
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00093	0.00053
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.579	0.648	0.619	0.586	0.621	0.602	0.404	0.369	0.480	0.570
Selenium D-Se	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00054	<0.00050	<0.00050	<0.00050
Silicon D-Si	1.52	2.69	2.65	3.03	2.17	2.97	2.98	3.42	3.92	4.33
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium D-Sr	0.146	0.161	0.145	0.124	0.144	0.126	0.0447			

**Appendix 3-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	JC-2	HC-3	WC-1	SC-5	SKC-4-1	SKC-4-2	MC-5	MC-10	FIELD BLANK	TRAVEL BLANK
Date Sampled	26/05/2007	26/05/2007	26/05/2007	26/05/2007	26/05/2007	26/05/2007	26/05/2007	26/05/2007	26/05/2007	26/05/2007
Time Sampled										
ALS Sample ID	L510791-1	L510791-2	L510791-3	L510791-4	L510791-5	L510791-6	L510791-7	L510791-8	L510791-9	L510791-10
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	36.4	89	43.3	62.3	63.4	63.3	91.9	118	<0.50	<0.50
Colour (CU)	8.7	11.2	9.0	16.5	24.4	24.6	15.5	9.3	<5.0	<5.0
Conductivity (mS/cm)	78.5	179	111	129	129	129	189	237	<2.0	<2.0
pH	8.15	8.11	8.06	8.07	8.04	8.05	8.13	8.09	5.64	5.58
Total Dissolved Solids	48.0	103	79.0	83.0	92.0	89.0	107	131	<10	<10
Total Suspended Solids	64.7	17.2	43.2	130	23.7	20.7	130	107	<3.0	<3.0
Turbidity (NTU)	28.2	11.2	15.5	32.3	1.55	1.62	35.7	43.0	<0.10	<0.10
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	3.2	3.7	4.2	3.8	4.3	4.1	3.6	3.6	1.1	1.5
Alkalinity, Total CaCO ₃	35.0	83.6	45.2	64.2	60.7	59.2	85.9	115	<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
Chloride Cl	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.75	<0.50	<0.50
Fluoride F	0.106	<0.020	0.169	0.038	0.025	0.022	0.058	0.029	<0.020	<0.020
Sulfate SO ₄	2.61	9.14	8.75	5.92	8.14	8.14	10.1	11.0	<0.50	<0.50
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.131	0.143	0.17	0.164	0.228	0.218	0.193	0.167	<0.050	<0.050
Nitrate N	0.220	0.0575	<0.0050	0.156	0.112	0.112	0.137	0.243	<0.0050	<0.0050
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.35	0.20	0.17	0.32	0.34	0.33	0.33	0.41	<0.05	<0.05
Total Phosphate P	0.0211	0.0190	0.0470	0.120	0.0173	0.0221	0.113	0.107	<0.0020	<0.0020
Cyanides										
Total Cyanide CN	0.0022	0.0033	0.0028	0.0046	0.0055	0.0060	0.0046	0.0032	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	1.30	0.179	0.919	1.85	0.0792	0.0852	1.79	0.0130	<0.0010	<0.0010
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00030	<0.00010	<0.00010
Arsenic T-As	0.00042	0.00080	0.00037	0.00127	0.00029	0.00030	0.00178	0.00081	<0.00010	<0.00010
Barium T-Ba	0.0881	0.0340	0.0124	0.0972	0.0100	0.0104	0.104	0.0939	<0.000050	<0.000050
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.023	0.016	<0.010	<0.010
Cadmium T-Cd	0.000029	<0.000020	0.000042	0.000033	<0.000020	<0.000020	0.000042	<0.000020	<0.000020	<0.000020
Calcium T-Ca	12.6	28.4	11.5	21.6	20.2	20.4	27.3	27.9	<0.020	<0.020
Chromium T-Cr	0.00086	0.00088	0.00079	0.00330	<0.00050	<0.00050	0.00273	<0.00050	<0.00050	<0.00050
Cobalt T-Co	0.00037	0.00025	0.00055	0.00135	0.00013	0.00014	0.00129	0.00016	<0.00010	<0.00010
Copper T-Cu	0.00297	0.00462	0.00144	0.00753	0.00166	0.00163	0.00564	0.00097	<0.00010	<0.00010
Iron T-Fe	1.00	0.270	1.43	2.15	0.215	0.207	2.51	3.47	<0.030	<0.030
Lead T-Pb	0.000561	0.000094	0.000328	0.000648	0.000071	0.000100	0.000971	<0.000050	<0.000050	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	1.85	3.98	4.52	4.13	3.33	3.36	7.96	12.0	<0.0050	<0.0050
Manganese T-Mn	0.0371	0.0128	0.0844	0.111	0.0180	0.0213	0.142	0.0439	<0.000050	<0.000050
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	<0.000010	<0.000010
Molybdenum T-Mo	0.00458	0.000757	0.000771	0.00361	0.000429	0.000454	0.00277	0.000923	<0.000050	<0.000050
Nickel T-Ni	0.00063	0.00080	0.00158	0.00321	0.00134	0.00141	0.00339	0.00149	<0.00050	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.979	0.430	1.89	0.919	0.436	0.435	1.12	0.680	<0.050	<0.050
Selenium T-Se	0.00055	0.00065	<0.0050	0.00050	<0.00050	<0.00050	0.00075	0.00069	<0.00050	<0.00050
Silicon T-Si	4.43	2.96	4.43	5.90	3.49	3.44	6.51	4.76	<0.050	<0.050
Silver T-Ag	<0.000010	<0.000010	0.000028	0.000015	<0.000010	<0.000010	0.000024	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.5	2.4	<2.0	<2.0
Strontium T-Sr	0.0752	0.108	0.0460	0.112	0.0451	0.0460	0.135	0.127	<0.00010	<0.00010
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	0.048	<0.010	0.048	0.103	<0.010	<0.010	0.098	0.043	<0.010	<0.010
Uranium T-U	0.00231	0.000094	0.000181	0.000793	0.000072	0.000079	0.000604	0.000082	<0.000010	<0.000010
Vanadium T-V	0.0017	<0.0010	0.0023	0.0054	<0.0010	<0.0010	0.0046	<0.0010	<0.0010	<0.0010
Zinc T-Zn	0.0035	<0.0010	0.0094	0.0054	0.0011	<0.0010	0.0079	<0.0010	<0.0010	<0.0010
Dissolved Metals										
Aluminum D-Al	0.0714	0.0558	0.0680	0.0458	0.0211	0.0206	0.0352	0.0124	-	-
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00026	-	-
Arsenic D-As	0.00017	0.00067	0.00016	0.00037	0.00021	0.00020	0.00055	0.00081	-	-
Barium D-Ba	0.0642	0.0330	0.00499	0.0717	0.00896	0.00904	0.0784	0.0938	-	-
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-
Boron D-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	0.015	-	-
Cadmium D-Cd	0.000037	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	-	-
Calcium D-Ca	12.0	28.8	10.7	20.1	20.1	20.0	25.5	27.5	-	-
Chromium D-Cr	<0.00050	0.00073	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00017	-	-
Copper D-Cu	0.00089	0.00298	<0.00060	0.00192	0.00119	0.00110	0.00148	0.00092	-	-
Iron D-Fe	0.034	0.032	0.081	0.085	0.052	0.048	0.080	0.143	-	-
Lead D-Pb	0.000103	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000051	<0.000050	-	-
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-
Magnesium D-Mg	1.53	4.16	4.06	2.93	3.21	3.24	6.89	11.9	-	-
Manganese D-Mn	0.00400	0.00374	0.0167	0.0237	0.00523	0.00525	0.0269	0.0433	-	-
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-
Molybdenum D-Mo	0.00453	0.000806	0.000728	0.00365	0.000455	0.000443	0.00272	0.000955	-	-
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	0.00104	0.00094	0.00067	0.00143	-	-
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	-
Potassium D-K	0.566	0.449	1.67	0.523	0.422	0.417	0.725	0.679	-	-
Selenium D-Se	<0.00050	0.00058	<0.00050	0.00050	<0.00050	0.00057	<0.00050	<0.00050	-	-
Silicon D-Si	2.08	2.53	9.01	2.66	3.33	3.34	3.18	2.62	-	-
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-
Sodium D-Na	<2.0	<2.0	4.3	<2.0	<2.0	<2.0	3.2	2.3	-	-
Strontium D-Sr	0.0720	0.110	0.0408	0.103	0.0445	0.0445	0.127	0.126	-	-
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-
Tin D-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-
Titanium D-Ti	<0.010	<0.010	<0.010	<0						

Appendix 3.1-1 Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	MC-5	MC-10	SC-5-1	SC-5-2	HC-3	TRAVEL BLANK	WC-1	JC-2	SKC-4	SCH CA
Date Sampled	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007
Time Sampled										
ALS Sample ID	L514177-1	L514177-2	L514177-3	L514177-4	L514177-5	L514177-6	L514177-7	L514177-8	L514177-9	L514177-10
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	69.9	96	54.8	54.7	72.3	<0.50	29.5	31.3	73.8	107
Colour (CU)	11.1	7.2	12.9	12.9	7.7	<5.0	8.1	6.0	19.2	29.2
Conductivity (mS/cm)	165	208	118	118	149	<2.0	82.1	66.8	158	207
pH	8.22	8.11	8.07	8.03	8.08	5.56	7.76	7.88	8.06	8.05
Total Dissolved Solids	99.0	117	78.0	78.0	95.0	<10	63.0	46.0	106	136
Total Suspended Solids	77.5	69.5	85.5	78.0	8.0	<3.0	32.0	41.5	5.0	<3.0
Turbidity (NTU)	26.5	31.0	23.7	23.0	11.0	<0.10	13.1	17.7	1.17	2.45
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.8	2.6	2.7	2.7	1.5	2.1	3.6	1.9	2.7	2.9
Alkalinity, Total CaCO ₃	75.0	102	65.8	53.4	70.4	<2.0	34.3	31.8	73.5	101
Bromide Br	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride Cl	<0.50	0.65	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride F	0.057	0.026	0.043	0.044	<0.020	<0.020	0.139	0.124	0.031	0.023
Sulfate SO ₄	8.15	9.92	5.50	5.52	8.76	<0.50	7.10	2.12	12.5	6.40
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.17	0.17	0.173	0.173	0.136	0.136	0.13	0.119	0.197	0.225
Nitrate N	0.120	0.180	0.129	0.117	0.0737	<0.0050	<0.0050	0.181	0.0818	0.0154
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	<0.0010
Total Nitrogen N	0.29	0.35	0.28	0.29	0.21	<0.05	0.13	0.30	0.28	0.24
Total Phosphate P	0.0612	0.0511	0.0880	0.0741	0.0102	<0.0020	0.0446	0.0129	0.0053	0.0059
Cyanides										
Total Cyanide CN	0.0034	0.0023	0.0037	0.0040	0.0023	<0.0010	0.0015	0.0017	0.0034	0.0070
Total Metals										
Aluminum T-Al	1.06	0.193	0.309	0.323	0.166	<0.0010	0.307	0.247	0.0361	0.0788
Antimony T-Sb	0.00015	0.00032	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00129	0.00214	0.00063	0.00063	0.00107	<0.0010	0.00021	0.00028	0.00025	0.00050
Barium T-Ba	0.0754	0.0825	0.0674	0.0680	0.0332	<0.00050	0.00821	0.0559	0.0104	0.0356
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	0.013	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	0.000069	<0.000020	<0.000020	0.000023	<0.000020	<0.000020	0.000044	0.000021	<0.000020	<0.000020
Calcium T-Ca	22.6	24.3	18.9	18.8	23.1	<0.020	8.00	10.4	24.3	35.3
Chromium T-Cr	0.00205	0.00098	0.00076	0.00071	0.00099	<0.00050	<0.00050	<0.00050	<0.00050	0.00087
Cobalt T-Co	0.00087	0.00092	0.00039	0.00038	0.00026	<0.0010	0.00035	0.00012	<0.00010	<0.00010
Copper T-Cu	0.00479	0.00291	0.00367	0.00414	0.00314	<0.0010	0.00080	0.00095	0.00109	0.0118
Iron T-Fe	1.61	1.55	0.635	0.640	0.202	<0.030	0.637	0.327	0.092	0.127
Lead T-Pb	0.000674	0.000381	0.000295	0.000277	0.000073	<0.00050	0.000211	0.000229	<0.00050	0.000137
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	5.33	9.01	2.56	2.63	3.89	<0.0050	2.73	1.16	3.46	3.79
Manganese T-Mn	0.0753	0.0716	0.0468	0.0503	0.00856	<0.00050	0.0677	0.0175	0.00676	0.00508
Mercury T-Hg	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00247	0.000800	0.00319	0.00303	0.000809	<0.00050	0.000470	0.00456	0.000585	0.000776
Nickel T-Ni	0.00263	0.00367	0.00091	0.00086	0.00120	<0.00050	0.00088	<0.00050	0.00102	0.00105
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.959	0.627	0.537	0.528	0.541	<0.050	1.43	0.599	0.426	0.454
Selenium T-Se	0.00061	<0.00050	0.00063	<0.00050	0.00060	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	4.42	2.52	2.66	2.65	2.19	<0.050	7.42	3.27	3.27	3.28
Silver T-Ag	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.105	0.106	0.0902	0.0885	0.0918	<0.00010	0.0329	0.0574	0.0502	0.114
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	0.061	<0.010	0.012	0.011	<0.010	<0.010	0.016	0.017	<0.010	<0.010
Uranium T-U	0.000604	0.000090	0.000791	0.000771	0.000036	<0.00010	0.000111	0.00230	0.000096	0.000087
Vanadium T-V	0.0032	0.0015	0.0012	0.0012	0.0012	<0.0010	0.0012	<0.0010	<0.0010	<0.0010
Zinc T-Zn	<0.0070	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	0.0058	<0.0010	<0.0010	0.0051
Dissolved Metals										
Aluminum D-Al	0.0368	0.0180	0.0497	0.0475	0.0233	-	0.0714	0.0638	0.0303	0.0344
Antimony D-Sb	<0.00010	0.00026	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00044	0.00060	0.00033	0.00035	0.00098	-	0.00014	0.00022	0.00022	0.00046
Barium D-Ba	0.0562	0.0677	0.0566	0.0566	0.0318	-	0.00402	0.0482	0.00980	0.0337
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	0.012	0.014	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	-	<0.000020	<0.000020	<0.000020	<0.000020
Calcium D-Ca	20.4	23.9	18.1	18.0	22.7	-	7.58	10.6	24.0	36.3
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	0.00057	-	<0.00050	<0.00050	<0.00050	0.00063
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	0.00125	0.00094	0.00160	0.00156	0.00197	-	0.00045	0.00054	0.00095	0.0108
Iron D-Fe	0.062	0.068	0.053	0.052	<0.030	-	0.060	<0.030	<0.030	0.044
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	4.61	8.81	2.35	2.37	3.79	-	2.56	1.15	3.36	3.98
Manganese D-Mn	0.00701	0.00512	0.00530	0.00533	0.00166	-	0.0124	0.00275	0.00108	0.00159
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00237	0.000982	0.00329	0.00323	0.000788	-	0.000574	0.00497	0.000575	0.000746
Nickel D-Ni	0.00053	0.00125	<0.00050	<0.00050	0.00077	-	<0.00050	<0.00050	0.00086	0.00091
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.592	0.602	0.472	0.475	0.521	-	1.34	0.553	0.416	0.454
Selenium D-Se	0.00060	0.00082	<0.00050	0.00062	0.00074	-	<0.00050	<0.00050	<0.00050	<0.00050
Silicon D-Si	2.61	2.21	2.25	2.24	2.02	-	7.08	1.70	3.27	3.25
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	<2.0	<2.0	<2.0	<2.0	-	2.9	<2.0	<2.0	<2.0
Strontium D-Sr	0.0932	0.105	0.0865	0.0845	0.0904	-	0.0303	0.0593	0.0495	0.119
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin D-Sn	<0.00010	<0.00010								

Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	SCH CA IT	FIELD BLANK	WC-1	JC-2	MC-5	MC-10	FIELD BLANK	WC-1	JC-2	MC-5
Date Sampled	02/06/2007	02/06/2007	10/06/2007	10/06/2007	10/06/2007	10/06/2007	10/06/2007	16/06/2007	16/06/2007	16/06/2007
Time Sampled										
ALS Sample ID	L514177-11	L514177-12	L516807-1	L516807-2	L516807-3	L516807-4	L516807-5	L519867-1	L519867-2	L519867-3
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	117	<0.50	19.5	24.7	56.4	86.8	<0.50	21.3	21.5	62
Colour (CU)	18.9	<5.0	<5.0	5.6	10	6.3	<5.0	<5.0	<5.0	6.7
Conductivity (mS/cm)	232	<2.0	49.3	52.6	115	174	<2.0	53.7	45.4	130
pH	8.20	5.62	7.83	7.86	8.02	8.12	5.67	7.55	7.61	8.03
Total Dissolved Solids	148	<10	45.0	50.0	74.0	96.3	<10	48.0	38.0	86.0
Total Suspended Solids	3.0	<3.0	57.0	41.5	79.5	78.0	<3.0	17.3	77.8	48.8
Turbidity (NTU)	1.75	<0.10	26.2	28.5	52.8	51.4	<0.10	10.4	28.5	35.8
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	2.0	2.0	3.4	3.3	3.2	2.8	4.2	1.6	1.4	1.1
Alkalinity, Total CaCO ₃	104	<2.0	18.2	25.2	58.2	84.2	<2.0	20.2	21.3	60.2
Bromide Br	<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
Fluoride F	<0.020	<0.020	0.099	0.110	0.045	0.022	<0.020	0.104	0.085	0.060
Sulfate SO ₄	8.56	<0.50	5.34	1.49	5.72	8.22	<0.50	6.20	1.15	7.16
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.158	<0.050	0.208	0.16	0.202	0.18	<0.050	<0.050	<0.050	0.069
Nitrate N	0.0225	<0.0050	0.0217	0.141	0.0685	0.0996	<0.0050	0.0167	0.0967	0.0511
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.18	<0.05	0.23	0.30	0.27	0.28	<0.05	<0.05	0.17	0.12
Total Phosphate P	0.0049	<0.0020	0.0726	0.0247	0.114	0.0757	<0.0020	0.0277	0.0196	0.0458
Cyanides										
Total Cyanide CN	0.0056	<0.0010	0.0014	0.0011	0.0013	0.0014	<0.0010	<0.0010	0.0013	0.0022
Total Metals										
Aluminum T-Al	0.0382	<0.0010	1.16	1.16	2.09	1.47	<0.0010	0.393	1.33	1.14
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00060	<0.00010	<0.00010	<0.00010	0.00020
Arsenic T-As	0.00039	<0.00010	<0.00050	<0.00050	0.00148	0.00326	<0.00010	0.00014	0.00046	0.00121
Barium T-Ba	0.0376	0.000064	0.0163	0.0536	0.0688	0.0833	<0.000050	0.00622	0.0575	0.0552
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000070	<0.000030	<0.000040	<0.000030	<0.000020	0.000030	0.000024	0.000029
Calcium T-Ca	42.6	<0.020	5.18	8.09	16.4	20.8	<0.020	5.47	7.29	15.7
Chromium T-Cr	<0.00050	<0.00050	0.00083	<0.00050	0.00311	0.00474	<0.00050	<0.00050	0.00063	0.00165
Cobalt T-Co	<0.00010	<0.00010	0.00096	0.00028	0.00136	0.00190	<0.00010	0.00035	0.00034	0.00082
Copper T-Cu	0.00408	<0.00010	0.00143	0.00157	0.00589	0.00512	<0.00010	0.00061	0.00187	0.00289
Iron T-Fe	0.128	<0.030	2.12	0.888	2.47	3.14	<0.030	0.613	1.12	1.88
Lead T-Pb	<0.00050	<0.00050	<0.00060	<0.00050	0.000805	<0.00070	<0.00050	0.000183	0.000644	0.000644
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	3.83	<0.0050	1.87	1.06	4.14	9.12	<0.0050	2.21	1.09	5.67
Manganese T-Mn	0.00705	0.000138	0.110	0.0327	0.0837	0.0847	<0.000050	0.0663	0.0415	0.0683
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.000670	<0.000050	0.000399	0.00388	0.00193	0.000737	<0.000050	0.000213	0.00300	0.000971
Nickel T-Ni	<0.00050	<0.00050	0.00181	<0.00050	0.00342	0.00968	<0.00050	0.00080	<0.00050	0.00263
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.514	<0.050	1.18	0.902	1.04	1.08	<0.050	1.11	0.847	0.861
Selenium T-Se	<0.00050	<0.00050	0.00062	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	2.72	<0.050	8.23	4.40	6.98	5.46	<0.050	7.18	4.30	5.38
Silver T-Ag	<0.000010	<0.000010	<0.000040	<0.000010	<0.000030	<0.000020	<0.000010	0.000021	<0.000010	<0.00019
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.137	<0.00010	0.0242	0.0523	0.0822	0.0918	<0.00010	0.0205	0.0470	0.0728
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	0.00034	0.00013
Titanium T-Ti	<0.010	<0.010	0.069	0.054	0.107	0.046	<0.010	0.015	0.068	0.062
Uranium T-U	0.000089	<0.000010	0.000160	0.00181	0.000577	0.000102	<0.000010	0.000082	0.00175	0.000265
Vanadium T-V	<0.0010	<0.0010	0.0027	0.0014	0.0052	0.0050	<0.0010	0.0011	0.0015	0.0027
Zinc T-Zn	<0.0010	<0.0010	<0.012	<0.0040	<0.0080	<0.0060	<0.0010	0.0056	0.0042	0.0087
Dissolved Metals										
Aluminum D-Al	0.0162	-	0.0761	0.183	0.122	0.0287	-	0.0775	0.140	0.0692
Antimony D-Sb	<0.00010	-	<0.00010	<0.00010	<0.00010	0.00028	-	<0.00010	<0.00010	0.00015
Arsenic D-As	0.00035	-	<0.00020	<0.00050	<0.00060	<0.00080	-	<0.00010	0.00025	0.00041
Barium D-Ba	0.0339	-	0.00272	0.0436	0.0471	0.0593	-	<0.00242	0.0353	0.0405
Beryllium D-Be	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	-	<0.010	<0.010	<0.010	0.011	-	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	-	<0.000020	<0.000020	<0.000020	<0.000020	-	<0.000020	<0.000020	<0.000020
Calcium D-Ca	40.7	-	4.96	8.38	16.8	21.0	-	5.19	7.20	16.0
Chromium D-Cr	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010
Copper D-Cu	0.00352	-	<0.00040	<0.00070	0.00134	<0.00090	-	0.00039	0.00053	0.00090
Iron D-Fe	<0.030	-	0.071	0.077	0.104	0.048	-	0.069	0.062	0.076
Lead D-Pb	<0.000050	-	<0.000050	0.000089	0.000057	<0.000050	-	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	3.79	-	1.72	0.916	3.48	8.32	-	2.04	0.865	5.37
Manganese D-Mn	0.000894	-	0.0232	0.00545	0.0134	0.0105	-	0.0324	0.00435	0.00556
Mercury D-Hg	<0.000010	-	<0.000030	<0.000030	<0.000030	<0.000030	-	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.000629	-	0.000350	0.00378	0.00182	0.000760	-	<0.00040	0.00320	0.00100
Nickel D-Ni	<0.00050	-	<0.00050	<0.00050	<0.00050	0.00114	-	<0.00050	<0.00050	<0.00050
Phosphorus D-P	<0.30	-	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30
Potassium D-K	0.474	-	1.04	0.512	0.572	0.621	-	1.06	0.434	0.604
Selenium D-Se	<0.00050	-	<0.00050	<0.00050	<0.00050	0.00058	-	<0.00050	<0.00050	<0.00050
Silicon D-Si	2.66	-	6.21	1.97	2.73	2.35	-	6.67	1.65	3.06
Silver D-Ag	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	-	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0
Strontium D-Sr	0.136	-	0.0178	0.0486	0.0719	0.0956	-	0.0188	0.0447	0.0737
Thallium D-Tl	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010
Tin D-Sn	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	0.00012

**Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	MC-10	MT-1	FIELD BLANK	B-LINE	F-LINE	D-LINE	SKC-4	HC-3	TRAVEL BLANK	SC-1
Date Sampled	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007
Time Sampled										
ALS Sample ID	L519867-4	L519867-5	L519867-6	L519867-7	L519867-8	L519867-9	L519867-10	L519867-11	L519867-12	L519867-13
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	76	37.9	<0.50	78.2	69.3	26.3	78.5	49.6	<0.50	32.1
Colour (CU)	<5.0	7.9	<5.0	25.7	<5.0	55.6	15.6	<5.0	<5.0	5.4
Conductivity (mS/cm)	150	76.8	<2.0	183	146	54.3	161	107	<2.0	69.1
pH	8.05	7.89	5.61	7.99	8.10	7.40	8.09	7.99	5.60	7.89
Total Dissolved Solids	96.0	54.0	<10	127	81.0	57.0	109	65.0	<10	86.0
Total Suspended Solids	48.8	4.3	<3.0	4.8	<3.0	4.3	4.8	13.3	<3.0	125
Turbidity (NTU)	44.3	7.52	<0.10	2.82	4.71	1.80	1.62	24.7	<0.10	150
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.1	1.3	1.2	1.4	<1.0	2.0	1.6	1.2	1.2	1.2
Alkalinity, Total CaCO ₃	70.8	40.7	<2.0	65.3	68.6	23.7	74.9	48.2	<2.0	32.6
Bromide Br	<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
Fluoride F	0.022	<0.020	<0.020	0.031	<0.020	<0.020	0.021	<0.020	<0.020	<0.020
Sulfate SO ₄	6.85	0.95	<0.50	25.4	9.58	1.97	12.7	6.35	<0.50	2.66
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.068	0.072	<0.050	0.253	0.1	0.37	0.257	<0.050	0.26	<0.050
Nitrate N	0.0523	0.0074	<0.0050	0.0167	<0.0050	<0.0050	0.0731	0.0256	<0.0050	0.0257
Nitrite N	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.12	0.08	<0.05	0.27	0.10	0.37	0.33	0.05	0.26	<0.05
Total Phosphate P	0.0595	0.0087	<0.0020	0.0036	0.0064	0.0083	0.0054	0.0483	<0.0020	0.191
Cyanides										
Total Cyanide CN	0.0018	0.0023	<0.0010	0.0056	<0.0010	0.0109	0.0042	<0.0010	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	1.30	0.300	<0.0010	0.129	0.0772	0.0693	0.0389	0.831	<0.0020	5.71
Antimony T-Sb	0.00049	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013
Arsenic T-As	0.00336	0.00022	<0.00010	0.00016	0.00021	0.00012	0.00025	0.00153	<0.00010	0.00099
Barium T-Ba	0.0854	0.00773	<0.00050	0.0195	0.0184	0.0157	0.0102	0.0280	<0.00050	0.139
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	0.014	<0.010	0.012	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	0.000022	<0.000020	<0.000020	0.000068	<0.000020	0.000085	<0.000020	<0.000020	<0.000020	0.000023
Calcium T-Ca	17.7	14.0	<0.020	24.6	25.6	7.41	25.8	15.6	<0.020	11.2
Chromium T-Cr	0.00313	0.00124	<0.00050	0.00058	<0.00050	0.00092	<0.00050	0.00325	<0.00050	0.00321
Cobalt T-Co	0.00144	0.00032	<0.00010	0.00022	<0.00010	<0.00010	<0.00010	0.00133	<0.00010	0.00240
Copper T-Cu	0.00463	0.00258	<0.00010	0.00691	0.00691	0.00451	0.00110	0.00465	<0.00010	0.0134
Iron T-Fe	2.71	0.259	<0.030	0.175	0.126	0.212	0.076	1.12	<0.030	5.35
Lead T-Pb	0.000543	0.000078	<0.000050	0.000168	<0.000050	0.000244	<0.000050	0.000258	<0.000050	0.00134
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	8.44	1.06	<0.0050	3.31	2.00	2.05	4.12	3.79	<0.0050	3.73
Manganese T-Mn	0.0769	0.0125	<0.00050	0.0197	0.0177	0.00525	0.0326	<0.00050	<0.00050	0.138
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000027	<0.000010	<0.000010
Molybdenum T-Mo	0.000696	0.000402	<0.000050	0.0512	0.000578	0.00114	0.000582	0.000630	<0.000050	0.00182
Nickel T-Ni	0.00573	0.00093	<0.00050	0.00089	<0.00050	0.00219	0.00082	0.00377	<0.00050	0.00241
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.940	0.209	<0.050	0.827	0.296	0.509	0.429	0.509	<0.050	2.25
Selenium T-Se	<0.00050	<0.00050	<0.00050	<0.00050	0.00057	<0.00050	<0.00050	<0.00050	<0.00050	0.00056
Silicon T-Si	4.68	2.59	<0.050	4.70	1.61	4.90	3.73	3.63	<0.050	13.3
Silver T-Ag	0.000017	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000020
Sodium T-Na	<2.0	<2.0	<2.0	5.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.0913	0.0279	<0.00010	0.141	0.104	0.0295	0.0554	0.0720	<0.00010	0.0877
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	0.00016	<0.00010	0.00012
Titanium T-Ti	0.051	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.041	<0.010	0.315
Uranium T-U	0.000082	0.000018	<0.000010	<0.000010	0.000056	<0.000010	0.000103	0.000028	<0.000010	0.000488
Vanadium T-V	0.0040	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0035	<0.0010	0.0125
Zinc T-Zn	0.0054	0.0022	<0.0010	0.0061	0.0013	0.0029	<0.0010	0.0041	<0.0010	0.0116
Dissolved Metals										
Aluminum D-Al	0.0281	0.0332	-	0.0153	0.0149	0.0515	0.0115	0.0607	-	0.386
Antimony D-Sb	0.00025	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010
Arsenic D-As	0.00059	0.00018	-	0.00012	0.00015	0.00011	0.00023	0.00116	-	0.00026
Barium D-Ba	0.0577	0.00610	-	0.0191	0.0171	0.0149	0.00984	0.0223	-	0.0536
Beryllium D-Be	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050
Boron D-B	<0.010	<0.010	-	0.014	<0.010	0.011	<0.010	<0.010	-	<0.010
Cadmium D-Cd	<0.000020	<0.000020	-	0.000054	<0.000020	<0.000020	<0.000020	<0.000020	-	<0.000020
Calcium D-Ca	17.7	13.9	-	25.6	7.14	25.0	15.1	9.84	-	9.84
Chromium D-Cr	<0.00050	<0.00050	-	<0.00050	<0.00050	0.00077	<0.00050	0.00055	-	<0.00050
Cobalt D-Co	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	0.00011
Copper D-Cu	0.00091	0.00136	-	0.00511	0.00073	0.00427	0.00095	0.00230	-	0.00133
Iron D-Fe	0.052	<0.030	-	0.032	<0.030	0.074	<0.030	0.060	-	0.204
Lead D-Pb	<0.000050	<0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	0.000072
Lithium D-Li	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050
Magnesium D-Mg	7.75	0.746	-	3.50	1.90	2.05	3.91	2.92	-	1.83
Manganese D-Mn	0.00619	0.00135	-	0.000596	0.0102	0.0103	0.00125	0.00387	-	0.0209
Mercury D-Hg	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010
Molybdenum D-Mo	0.000675	0.000387	-	0.0522	0.000464	0.00109	0.000757	0.00610	-	0.00200
Nickel D-Ni	0.00089	<0.00050	-	0.00052	<0.00050	0.00207	0.00066	0.00101	-	<0.00050
Phosphorus D-P	<0.30	<0.30	-	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30
Potassium D-K	0.508	0.183	-	0.852	0.284	0.494	0.409	0.429	-	0.502
Selenium D-Se	<0.00050	<0.00050	-	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	-	<0.00050
Silicon D-Si	2.08	2.05	-	4.62	1.48	4.85	3.56	1.78	-	1.36
Silver D-Ag	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010
Sodium D-Na	<2.0	<2.0	-	5.9	<2.0	<2.0	<2.0	<2.0	-	<2.0
Strontium D-Sr	0.0902	0.0275	-	0.144	0.103	0.0281	0.0545	0.0706	-	0.0761
Thallium D-Tl	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010
Tin D-Sn	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	0.00027	-	<0.00010

**Appendix 3.1-1
Schaff Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	SC-4	SC-5	SC-6	SKC-1-1	SKC-1-2	SC-1	SC-4	SC-5	SC-6	SKC-1
Date Sampled	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007
Time Sampled										
ALS Sample ID	L519867-14	L519867-15	L519867-16	L519867-17	L519867-18	L532433-1	L532433-2	L532433-3	L532433-4	L532433-5
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	44.9	42.4	46.8	75	74.3	29.6	41.6	40.5	39.6	62.1
Colour (CU)	<5.0	7.2	6.1	<5.0	<5.0	8.6	7.9	7.8	5.6	<5.0
Conductivity (mS/cm)	97.0	92.0	102	157	158	60.5	82.2	84.8	82.5	140
pH	7.95	7.94	7.98	7.98	7.98	7.80	7.97	7.93	8.06	7.92
Total Dissolved Solids	68.0	60.0	81.0	92.0	89.0	47.0	57.0	59.0	56.0	94.0
Total Suspended Solids	60.8	85.3	30.3	4.8	3.8	736	624	534	465	41.8
Turbidity (NTU)	42.3	38.3	52.6	2.36	2.18	453	379	283	323	42.6
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.2	1.2	1.2	1.4	1.4	2.3	2.2	2.3	1.9	2.8
Alkalinity, Total CaCO ₃	44.8	43.1	46.5	66.5	68.7	27.9	38.3	38.2	37.9	51.1
Bromide Br	<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
Fluoride F	0.032	0.036	<0.020	<0.020	0.022	<0.020	0.033	0.036	<0.020	0.025
Sulfate SO ₄	4.59	4.24	5.32	15.5	15.5	2.18	3.45	3.25	3.88	17.8
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	0.063	<0.050	0.059	0.071	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrate N	0.0591	0.0571	0.0231	0.0612	0.0595	0.0147	0.0218	0.0155	0.0126	0.0134
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.10	0.12	<0.05	0.12	0.13	<0.05	<0.05	<0.05	<0.05	<0.05
Total Phosphate P	0.0752	0.0937	0.0550	0.0101	0.0048	0.92	0.65	0.332	0.57	0.0805
Cyanides										
Total Cyanide CN	<0.0010	0.0020	<0.0010	0.0018	0.0019	<0.0010	0.0021	0.0016	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	1.45	1.66	2.42	0.0755	0.0822	16.4	14.1	11.4	10.8	2.23
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00023	0.00020	0.00015	0.00020	0.00016
Arsenic T-As	0.00091	0.00083	0.00123	0.00044	0.00043	0.00587	0.00618	0.00429	0.00536	0.00359
Barium T-Ba	0.0736	0.0729	0.0668	0.0109	0.0107	0.270	0.219	0.185	0.162	0.0234
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.010	<0.010	0.010	<0.010
Cadmium T-Cd	0.000024	0.000024	<0.000020	<0.000020	<0.000020	0.000137	0.000127	0.000094	0.000102	0.000093
Calcium T-Ca	14.5	14.5	15.3	26.5	27.1	27.0	23.1	21.5	20.7	25.5
Chromium T-Cr	0.00193	0.00233	0.00309	<0.00050	<0.00050	0.0126	0.0217	0.0155	0.0166	0.00412
Cobalt T-Co	0.00090	0.00102	0.00131	<0.00010	<0.00010	0.00954	0.00997	0.00712	0.00804	0.00176
Copper T-Cu	0.00618	0.00577	0.00636	0.00159	0.00182	0.0505	0.0467	0.0317	0.0347	0.0123
Iron T-Fe	1.59	1.84	2.21	0.128	0.140	18.6	14.0	10.9	11.0	3.51
Lead T-Pb	0.000497	0.000615	0.000456	<0.00050	<0.00050	0.00456	0.00423	0.00334	0.00305	0.000871
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	0.0075	0.0053	0.0057	<0.0050
Magnesium T-Mg	2.91	2.80	3.84	2.19	2.21	9.34	10.7	7.97	8.59	2.84
Manganese T-Mn	0.0552	0.0660	0.0542	0.0105	0.00999	0.555	0.442	0.355	0.342	0.176
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00319	0.00202	0.00139	0.000759	0.000729	0.00146	0.00258	0.00181	0.000939	0.000941
Nickel T-Ni	0.00206	0.00220	0.00254	<0.00050	<0.00050	0.0107	0.0206	0.0145	0.0143	0.00307
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	1.03	0.68	0.61	0.49	<0.30
Potassium T-K	0.771	0.739	0.998	0.315	0.323	3.20	3.02	2.66	2.37	0.609
Selenium T-Se	0.00064	<0.00050	<0.00050	0.00051	0.00069	<0.00050	0.00067	<0.00050	0.00053	0.00062
Silicon T-Si	4.79	5.52	6.94	2.54	2.60	21.5	19.5	16.0	15.2	4.75
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000079	0.000062	0.000058	0.000052	0.000029
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	2.5	2.3	2.1	<2.0	<2.0
Strontium T-Sr	0.0827	0.0735	0.0864	0.0476	0.0476	0.125	0.112	0.0989	0.0978	0.0411
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	0.00051	0.00287	0.00026	<0.00010	<0.00010	<0.00020	0.00013	0.00016	0.00013	<0.00010
Titanium T-Ti	0.081	0.090	0.130	<0.010	<0.010	0.817	0.611	0.454	0.517	0.086
Uranium T-U	0.000782	0.000768	0.000226	0.000219	0.000227	0.000994	0.00120	0.00116	0.000521	0.000281
Vanadium T-V	0.0037	0.0044	0.0061	<0.0010	<0.0010	0.0464	0.0358	0.0269	0.0308	0.0097
Zinc T-Zn	0.0047	0.0055	0.0063	0.0011	0.0012	0.0442	0.0351	0.0278	0.0285	0.0144
Dissolved Metals										
Aluminum D-Al	0.188	0.0961	0.190	0.0069	0.0074	0.347	0.304	0.198	0.278	0.4006
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00055	0.00035	0.00082	0.00029	0.00031	0.00045	0.00111	0.00063	0.00090	0.00053
Barium D-Ba	0.0533	0.0473	0.0419	0.0101	0.0103	0.0518	0.0493	0.0465	0.0450	0.0103
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.00040	0.000030	<0.000020	<0.000020	<0.000020
Calcium D-Ca	14.2	13.7	14.2	26.3	26.3	9.98	14.0	13.9	13.0	22.5
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	0.00010	<0.00010	0.00013	<0.00010
Copper D-Cu	0.00127	0.00111	0.00137	0.00110	0.00124	0.00087	0.00106	0.00107	0.00093	0.00080
Iron D-Fe	1.29	0.081	0.133	<0.030	<0.030	0.167	0.138	0.136	0.162	0.046
Lead D-Pb	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	0.000071	0.000056	0.000058	<0.00050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	2.29	2.01	2.75	2.09	2.10	1.14	1.58	1.43	1.70	1.43
Manganese D-Mn	0.0103	0.00784	0.00964	0.00197	0.00211	0.0132	0.0112	0.0108	0.0151	0.00523
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00355	0.00219	0.00140	0.000768	0.000789	0.00122	0.00241	0.00221	0.000911	0.000819
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.486	0.386	0.473	0.306	0.313	0.45	0.501	0.434	0.444	0.251
Selenium D-Se	<0.00050	<0.00050	<0.00050	0.00082	0.00064	<0.00050	<0.00050	<0.00050	<0.00050	0.00080
Silicon D-Si	2.02	2.02	1.79	2.42	2.42	0.969	1.29	1.45	1.18	1.59
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00020	<0.000010	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium D-Sr	0.0837	0.0713	0.0803	0.0474	0.0475	0.0656	0.0661	0.0613	0.0634	0.0398
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	&

Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	MT-1	MC-5	MC-10	WC-1	FIELD BLANK	B-LINE	F-LINE	D-LINE	TRAVEL BLANK	HC-3-1
Date Sampled	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007
Time Sampled										
ALS Sample ID	L532434-1	L532434-2	L532434-3	L532434-4	L532434-5	L532535-1	L532535-2	L532535-3	L532535-4	L532539-1
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	30.5	49.3	65.2	18	<0.50	77	58	34.5	<0.50	46.6
Colour (CU)	<5.0	6.4	<5.0	<5.0	<5.0	17.7	<5.0	54.6	<5.0	<5.0
Conductivity (mS/cm)	57.9	111	142	53.9	<2.0	166	124	64.8	<2.0	96.9
pH	7.68	7.94	8.01	7.55	5.59	8.00	7.91	7.61	5.50	7.96
Total Dissolved Solids	48.0	73.0	84.0	47.0	<10	115	73.0	59.0	<10	83.0
Total Suspended Solids	9.5	233	125	58.1	<3.0	157	67.3	8.3	<3.0	122
Turbidity (NTU)	46.0	197	119	28.1	<0.10	229	10.6	0.71	<0.10	145
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.3	1.1	1.1	1.3	1.0	1.2	1.2	1.5	1.1	1.0
Alkalinity, Total CaCO ₃	32.0	48.7	64.8	17.8	<2.0	64.5	42.1	32.7	<2.0	40.9
Bromide Br	<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
Fluoride F	<0.020	0.079	0.027	0.127	<0.020	0.034	0.023	0.040	<0.020	<0.020
Sulfate SO ₄	<0.50	5.90	6.73	7.83	<0.50	12.1	6.52	0.75	<0.50	5.74
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	0.0101	<0.0050	<0.0050	0.0055	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	<0.050	<0.050	<0.050	<0.050	0.228	0.179	0.46	<0.050	<0.050
Nitrate N	<0.0050	0.0099	0.0129	0.0165	<0.0050	0.0225	0.351	<0.0050	<0.0050	0.0147
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	0.53	0.46	<0.05	<0.05
Total Phosphate P	0.0384	0.224	0.128	0.0811	<0.0020	0.233	0.0651	0.0045	<0.0020	0.144
Cyanides										
Total Cyanide CN	<0.0010	0.0016	0.0010	<0.0010	<0.0010	0.0034	0.0011	0.0086	<0.0010	<0.0010
Total Metals										
Aluminium T-Al	2.03	7.68	4.69	1.54	<0.0010	7.20	0.697	0.0346	<0.0010	3.75
Antimony T-Sb	<0.00010	0.00040	0.00074	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	0.00012
Arsenic T-As	0.00054	0.00448	0.00079	0.00043	<0.00010	0.00123	0.00055	0.00012	<0.00010	0.00389
Barium T-Ba	0.0139	0.112	0.118	0.0152	<0.000050	0.0540	0.0246	0.0188	<0.000050	0.0457
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.010
Cadmium T-Cd	<0.000020	0.000104	0.000049	0.000058	<0.000020	0.000139	0.000028	<0.000020	<0.000020	0.000061
Calcium T-Ca	12.7	17.8	18.7	5.89	<0.020	31.6	23.3	8.84	<0.020	17.9
Chromium T-Cr	0.00608	0.00931	0.00885	0.00081	<0.00050	0.0164	0.00171	0.00063	<0.00050	0.0136
Cobalt T-Co	0.00215	0.00425	0.00330	0.00099	<0.00010	0.00662	0.00053	<0.00010	<0.00010	0.00482
Copper T-Cu	0.00837	0.0152	0.00974	0.00129	<0.00010	0.0432	0.0120	0.00302	<0.00010	0.0154
Iron T-Fe	1.36	8.13	5.29	2.58	<0.030	6.56	0.625	0.233	<0.030	4.11
Lead T-Pb	0.000191	0.00340	0.00129	0.000555	<0.000050	0.00118	0.000261	<0.000050	<0.000050	0.00127
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0055	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	2.94	7.65	9.90	2.19	<0.0050	8.82	2.35	2.80	<0.0050	6.27
Manganese T-Mn	0.0673	0.285	0.139	0.134	<0.000050	0.208	0.0378	0.00362	<0.000050	0.133
Mercury T-Hg	<0.000010	0.000021	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.000158	0.00137	0.000690	0.000501	<0.000050	0.0215	0.00194	0.000709	<0.000050	0.000463
Nickel T-Ni	0.00611	0.0120	0.0147	0.00175	<0.00050	0.0129	0.00112	0.00259	<0.00050	0.0119
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.385	2.63	2.09	1.36	<0.050	1.23	0.385	0.595	<0.050	1.04
Selenium T-Se	0.00066	0.00077	0.00069	0.00078	<0.00050	0.00079	0.00052	<0.00050	<0.00050	<0.00050
Silicon T-Si	4.91	17.8	10.4	9.94	<0.050	13.6	3.63	4.07	<0.050	7.91
Silver T-Ag	0.000099	0.000135	0.000078	0.000090	<0.000010	0.000042	0.000014	<0.000010	<0.000010	0.000028
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.0258	0.0920	0.0952	0.0285	<0.00010	0.160	0.0822	0.0335	<0.00010	0.0772
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	0.00025	<0.00010	0.00016	<0.00010	0.00020	0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	0.064	0.327	0.147	0.097	<0.010	0.487	0.045	<0.010	<0.010	0.160
Uranium T-U	0.000030	0.000642	0.000122	0.000165	<0.000010	0.000126	0.000030	<0.000010	<0.000010	0.000071
Vanadium T-V	0.0048	0.0161	0.0126	0.0030	<0.0010	0.0245	0.0030	<0.0010	<0.0010	0.0129
Zinc T-Zn	<0.0080	0.0326	0.0177	0.0131	<0.0010	0.0207	<0.0040	0.0011	<0.0010	0.0130
Dissolved Metals										
Aluminum D-Al	0.218	0.0958	0.0408	0.0852	-	0.120	0.0136	0.0295	-	0.0500
Antimony D-Sb	<0.00010	0.00016	0.00031	<0.00010	-	<0.00010	<0.00010	<0.00010	-	<0.00010
Arsenic D-As	0.00021	0.00045	0.00046	<0.00010	-	0.00018	0.00012	0.00012	-	0.00132
Barium D-Ba	0.00541	0.0347	0.0604	0.0244	-	0.0170	0.0164	0.0187	-	0.0197
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	-	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	-	<0.00050
Boron D-B	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010	0.015	-	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	-	0.000027	<0.000020	<0.000020	-	<0.000020
Calcium D-Ca	11.5	13.4	15.6	4.44	-	26.3	20.2	9.18	-	15.3
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	0.00067	-	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	-	<0.00010
Copper D-Cu	0.00104	0.00080	0.00057	0.00074	-	0.00440	0.00107	0.00308	-	0.00049
Iron D-Fe	<0.030	0.080	<0.030	0.084	-	0.100	<0.030	0.150	-	<0.030
Lead D-Pb	0.000103	0.000052	<0.000050	0.000068	-	<0.000050	<0.000050	<0.000050	-	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	-	<0.0050
Magnesium D-Mg	0.417	3.83	6.36	1.68	-	2.77	1.84	2.82	-	2.03
Manganese D-Mn	0.00302	0.00501	0.00478	0.00418	-	0.00824	0.00118	0.00157	-	0.00910
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	-	<0.000010
Molybdenum D-Mo	0.000130	0.000941	0.000519	0.000352	-	0.00226	0.00191	0.000723	-	0.000431
Nickel D-Ni	<0.00050	<0.00050	0.00071	<0.00050	-	0.00054	<0.00050	0.00272	-	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	-	<0.30
Potassium D-K	0.144	0.581	0.474	0.949	-	0.442	0.251	0.611	-	0.330
Selenium D-Se	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	-	<0.00050
Silicon D-Si	1.17	2.59	1.67	6.94	-	2.95	2.61	4.00	-	1.09
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	-	<0.000010
Sodium D-Na	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	-	<2.0
Strontium D-Sr	0.0212	0.0617	0.0787	0.0189	-	0.128	0.0716	0.0344	-	0.0647
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	-	<0.00010
Tin D-Sn	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	-	<0.00010
Titanium D-Ti	<0.010	<0.010	<0.010	<0						

**Appendix 3.1-1
Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	HC-3-2	JC-2	SKC-1	SKC-3	SKC-4	MC-1-1	MC-1-2	MC-2	MC-10	MT-1
Date Sampled	16/07/2007	16/07/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007
Time Sampled										
ALS Sample ID	L532539-2	L532539-3	L545970-1	L545970-2	L545970-3	L545970-4	L545970-5	L545970-6	L545970-7	L545970-8
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	47.9	12.9	70.6	96.5	104	48.1	60.7	99.9	92.9	30.5
Colour (CU)	<5.0	<5.0	<5.0	5.3	7.2	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	96.5	28.9	150	189	213	99.9	98.6	201	185	62.7
pH	7.97	7.45	7.84	8.11	8.15	8.06	8.08	8.06	8.05	8.03
Total Dissolved Solids	70.0	40.0	92.0	102	123	53.0	51.0	110	100	37.0
Total Suspended Solids	134	91.6	10.7	5.2	16.7	144	189	67.2	56.7	7.7
Turbidity (NTU)	146	53.2	9.43	0.84	1.86	102	106	64.7	53.7	13.7
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	<1.0	1.1	2.7	1.8	1.6	5.0	4.6	2.2	2.4	4.9
Alkalinity, Total CaCO ₃	40.9	12.6	49.3	91.0	88.1	40.0	39.5	89.7	82.7	31.3
Bromide Br	<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	0.70	<0.50	<0.50
Fluoride F	<0.020	0.064	0.025	0.038	0.043	<0.020	<0.020	0.022	0.025	<0.020
Sulfate SO ₄	5.73	0.78	17.6	4.50	19.5	7.55	7.52	12.9	11.7	0.51
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	<0.050	<0.050	0.178	0.167	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrate N	0.0135	0.0253	0.0078	0.0417	0.0427	<0.0050	<0.0050	0.0182	0.0201	<0.0050
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	<0.05	<0.05	<0.05	0.22	0.21	<0.05	<0.05	<0.05	0.05	<0.05
Total Phosphate P	0.116	0.0488	0.0126	0.0053	0.0287	0.150	0.208	0.0923	0.0481	0.0143
Cyanides										
Total Cyanide CN	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010
Total Metals										
Aluminum T-Al	4.71	1.62	0.247	0.0100	0.0176	3.18	3.30	2.14	2.11	0.360
Antimony T-Sb	0.00014	<0.00010	<0.00010	0.00011	<0.00010	0.00053	0.00054	0.00050	0.00044	<0.00010
Arsenic T-As	0.00425	0.00040	0.00073	0.00012	0.00034	0.00524	0.00412	0.00282	0.00265	0.00033
Barium T-Ba	0.0482	0.0498	0.0108	0.00885	0.0149	0.104	0.0988	0.106	0.0946	0.00723
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	0.016	<0.010
Cadmium T-Cd	0.000063	0.000023	0.000036	<0.000020	<0.000020	0.000051	0.000064	0.000062	0.000036	<0.000020
Calcium T-Ca	17.7	5.15	25.4	31.7	34.0	13.7	12.5	22.7	22.3	11.6
Chromium T-Cr	0.0167	0.00089	0.00071	<0.00050	<0.00050	0.00690	0.00700	0.00420	0.00375	0.00114
Cobalt T-Co	0.00564	0.00049	0.00030	<0.00010	<0.00010	0.00340	0.00268	0.00156	0.00131	0.00032
Copper T-Cu	0.0163	0.00325	0.00216	0.00028	0.00066	0.00621	0.00575	0.00493	0.00412	0.00238
Iron T-Fe	5.02	1.29	0.332	0.042	0.105	5.27	4.63	2.57	2.21	0.235
Lead T-Pb	0.00132	0.000792	0.000192	<0.000050	<0.000050	0.000821	0.000591	0.000729	0.000599	0.000058
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	7.13	0.905	2.03	4.02	5.07	9.09	8.59	12.1	10.8	0.804
Manganese T-Mn	0.147	0.0526	0.0270	0.00906	0.0159	0.129	0.0956	0.0984	0.0724	0.0145
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000019	0.000021	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.000452	0.00200	0.000574	0.000442	0.000725	0.000621	0.000693	0.000826	0.000791	0.000174
Nickel T-Ni	0.0140	0.00067	<0.00050	<0.00050	<0.00050	0.0149	0.0121	0.00818	0.00624	0.00107
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	1.23	0.831	0.285	0.257	0.368	1.39	1.47	1.24	1.23	0.159
Selenium T-Se	0.00069	0.00061	0.00066	<0.00050	0.00053	0.00076	0.00056	0.00075	0.00081	<0.00050
Silicon T-Si	9.73	3.61	2.33	3.29	3.37	5.93	6.87	4.83	5.24	1.59
Silver T-Ag	0.000029	0.000012	<0.000010	<0.000010	<0.000010	0.000029	0.000035	0.000023	0.000020	<0.000010
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.6	2.4	<2.0
Strontium T-Sr	0.0767	0.0343	0.0447	0.0578	0.0724	0.0877	0.0851	0.126	0.114	0.0225
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	0.00015	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	0.211	0.079	<0.010	<0.010	<0.010	0.088	0.111	0.065	0.070	<0.010
Uranium T-U	0.000076	0.00121	0.000181	0.000143	0.000154	0.000114	0.000112	0.000119	0.000113	0.000021
Vanadium T-V	0.0162	0.0023	0.0015	<0.0010	<0.0010	0.0101	0.0097	0.0059	0.0054	0.0012
Zinc T-Zn	0.0147	<0.0050	0.0032	<0.0010	<0.0010	0.0135	0.0131	0.0102	<0.0070	0.0011
Dissolved Metals										
Aluminum D-Al	0.108	0.0835	0.0069	0.0047	0.0042	0.0600	0.370	0.0332	0.0231	0.0972
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00020	0.00023	0.00034	0.00028	<0.00010
Arsenic D-As	0.00130	0.00016	0.00038	0.00011	0.00032	0.00045	0.00281	0.00054	0.00060	0.00022
Barium D-Ba	0.0203	0.0221	0.00965	0.00887	0.0147	0.0490	0.0921	0.0770	0.0704	0.00483
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	0.013	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Calcium D-Ca	15.7	4.45	25.3	32.0	33.5	10.1	12.5	21.8	21.4	11.5
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	0.00070	0.00051	<0.00050	<0.00030	<0.00070	<0.00030	0.00386	<0.00090	<0.00040	<0.00050
Iron D-Fe	0.074	0.039	<0.030	<0.030	<0.030	0.031	2.98	<0.030	<0.030	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000560	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	2.12	0.442	1.82	4.06	4.98	5.66	7.17	11.1	9.60	0.418
Manganese D-Mn	0.0101	0.00733	0.00595	0.000199	0.000186	0.00110	0.102	0.0147	0.00633	0.00127
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.000414	0.00204	0.000914	0.000489	0.000723	0.000585	0.000193	0.000774	0.000746	0.000169
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00613	0.00116	0.00064	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.342	0.269	0.258	0.261	0.424	0.275	0.341	0.534	0.496	0.121
Selenium D-Se	<0.00050	<0.00050	0.00108	<0.00050	0.00065	0.00053	0.00071	<0.00050	<0.00050	<0.00050
Silicon D-Si	1.21	0.752	2.09	3.25	3.34	0.988	1.37	1.42	1.63	1.05
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.5	2.3	<2.0
Strontium D-Sr	0.0656	0.0276	0.0439	0.0581	0.0715	0.0739	0.0776	0.122	0.108	0.0213
Thallium D-Tl	<0.00010									

**Appendix 3.1-1
Schaff Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	HC-2	HC-3	SC-1	SC-3	SC-4-1	SC-4-2	JC-1	JC-2	SC-6	MC-5
Date Sampled	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007
Time Sampled										
ALS Sample ID	L545970-9	L545970-10	L545970-11	L545970-12	L545970-13	L545970-14	L545970-15	L545970-16	L545970-17	L546751-1
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	32.8	36.6	25.5	40.2	35.6	36	9.36	13.7	35.2	55.9
Colour (CU)	<5.0	<5.0	5.7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	65.6	75.1	53.5	84.8	71.4	72.1	20.6	29.9	73.3	119
pH	7.88	7.87	7.95	7.88	7.23	8.03	8.02	7.76	7.87	7.94
Total Dissolved Solids	38.0	55.0	67.0	61.0	49.0	48.0	15.0	21.0	56.0	99.0
Total Suspended Solids	27.2	30.2	259	105	107	102	35.7	57.2	71.7	76.0
Turbidity (NTU)	45.2	42.4	179	90.5	81.6	75.5	21.2	26.4	77.4	62.1
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	2.0	2.0	1.7	2.2	8.9	5.8	3.5	1.8	2.0	3.2
Alkalinity, Total CaCO ₃	27.3	29.8	22.0	35.4	31.2	30.3	8.3	12.6	30.4	48.6
Bromide Br	<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
Fluoride F	<0.020	<0.020	<0.020	<0.020	0.027	0.026	0.068	0.064	<0.020	0.064
Sulfate SO ₄	4.89	5.89	2.28	4.88	3.70	3.72	<0.50	0.97	4.63	7.48
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	0.0187	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrate N	<0.0050	<0.0050	0.0055	<0.0050	<0.0050	<0.0050	0.0135	<0.0050	<0.0050	0.0057
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Phosphate P	0.0485	0.0391	0.401	0.144	0.136	0.139	0.0232	0.0339	0.0951	0.0682
Cyanides										
Total Cyanide CN	0.0132	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	2.06	2.01	8.32	4.57	4.64	2.37	0.631	0.563	2.98	2.99
Antimony T-Sb	<0.00010	<0.00010	0.00015	0.00014	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00020
Arsenic T-As	0.00264	0.00271	0.00260	0.00244	0.00185	0.00154	0.00028	0.00030	0.00208	0.00195
Barium T-Ba	0.0349	0.0314	0.164	0.0979	0.0916	0.0808	0.0184	0.0324	0.0712	0.0726
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	0.000060	0.000027	0.000090	0.000062	0.000046	0.000057	<0.000020	<0.000020	0.000051	0.000049
Calcium T-Ca	11.0	13.3	14.0	16.0	13.6	13.4	3.49	5.09	13.1	16.9
Chromium T-Cr	0.00386	0.00653	0.00543	0.00536	0.00546	0.00287	<0.00050	0.00125	0.00394	0.00342
Cobalt T-Co	0.00147	0.00197	0.00409	0.00255	0.00238	0.00143	0.00017	0.00019	0.00186	0.00149
Copper T-Cu	0.00704	0.00895	0.0242	0.0139	0.0122	0.0105	0.00093	0.00151	0.0107	0.00683
Iron T-Fe	1.40	1.72	7.91	3.97	3.94	2.02	0.438	0.456	2.62	2.76
Lead T-Pb	0.000564	0.000666	0.00225	0.00116	0.00110	0.000984	0.000349	0.000369	0.000912	0.00148
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	3.22	3.78	4.68	4.20	3.72	2.68	0.384	0.662	3.27	5.50
Manganese T-Mn	0.0528	0.0560	0.254	0.127	0.122	0.0911	0.0220	0.0236	0.0883	0.0973
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011
Molybdenum T-Mo	0.000177	0.000387	0.00177	0.00236	0.00266	0.00228	0.00207	0.00240	0.00107	0.00160
Nickel T-Ni	<0.0040	0.00721	<0.0050	<0.0050	<0.0050	<0.0030	<0.00050	<0.00050	<0.0040	0.00375
Phosphorus T-P	<0.30	<0.30	0.43	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.600	0.700	2.15	1.40	1.42	0.920	0.452	0.393	1.00	1.37
Selenium T-Se	0.00074	0.00082	0.00065	0.00079	0.00101	0.00088	<0.00050	<0.00050	0.00095	0.00117
Silicon T-Si	4.34	4.87	16.2	10.3	10.3	5.30	1.72	1.79	6.56	8.13
Silver T-Ag	<0.000010	0.000015	0.000042	0.000023	0.000022	0.000014	<0.000010	<0.000010	0.000014	0.000034
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.0602	0.0614	0.0907	0.0910	0.0793	0.0748	0.0153	0.0331	0.0715	0.0840
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	0.00015	0.00010	0.00014	0.00013	0.00018	<0.00010	<0.00010	0.00012	0.00015
Titanium T-Ti	0.063	0.077	0.444	0.231	0.236	0.101	0.029	0.024	0.134	0.136
Uranium T-U	0.000043	0.000037	0.000623	0.000357	0.000651	0.000618	0.00116	0.00119	0.000219	0.000466
Vanadium T-V	0.0053	0.0062	0.0209	0.0116	0.0109	0.0058	<0.0010	<0.0010	0.0079	0.0067
Zinc T-Zn	0.0101	<0.0090	0.0266	0.0158	0.0129	0.0111	0.0014	0.0016	0.0130	0.0134
Dissolved Metals										
Aluminum D-Al	0.126	0.131	0.179	0.121	0.189	0.171	0.0959	0.0886	0.186	0.149
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012
Arsenic D-As	0.00110	0.00132	0.00021	0.00057	0.00048	0.00050	0.00023	0.00018	0.00074	0.00052
Barium D-Ba	0.0212	0.0186	0.0475	0.0482	0.0431	0.0437	0.00829	0.0190	0.0383	0.0432
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	0.000033	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Calcium D-Ca	10.00	11.5	8.54	13.1	11.7	11.8	3.34	4.70	11.3	15.4
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	<0.00060	<0.00080	<0.00080	<0.00070	0.00106	<0.00080	<0.00040	<0.00050	<0.00090	0.00077
Iron D-Fe	0.054	0.080	0.085	0.070	0.094	0.086	0.044	0.035	0.102	0.082
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	0.000065	<0.000050	<0.000050	<0.000050	<0.000050	0.000060
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	1.88	1.92	1.02	1.84	1.53	1.56	0.246	0.476	1.70	4.22
Manganese D-Mn	0.00775	0.00741	0.0154	0.0129	0.00917	0.00798	0.00434	0.00396	0.0152	0.00542
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.000155	0.000354	0.00159	0.00218	0.00248	0.00259	0.00237	0.00257	0.00114	0.00144
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.213	0.272	0.298	0.353	0.357	0.357	0.271	0.247	0.340	0.545
Selenium D-Se	<0.00050	<0.00050	0.00066	0.00062	<0.00050	0.00063	<0.00050	<0.00050	<0.00050	0.00061
Silicon D-Si	0.748	1.07	0.736	1.15	1.24	1.20	0.796	0.818	1.07	2.37
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium D-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium D-Sr	0.0539	0.0524	0.0536	0.0703	0.0617	0.0628	0.0137	0.0305	0.0597	0.0738
Thallium D-Tl	<0.00010	<0.000								

**Appendix 3.1-1
Schaff Creek Project Stream Water Quality Raw Data, 2007 (continued)**

Sample ID	MC-9	SC-5	SC-7	TRAVEL BLANK	ST-1	ST-2	WC-1	YC-1	FIELD BLANK
Date Sampled	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007
ALS Sample ID	L546751-2	L546751-3	L546751-4	L546751-5	L546751-6	L546751-7	L546751-8	L546751-9	L546751-10
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Hardness CaCO ₃	62.6	38.3	35.2	<0.50	71.3	63.9	33.9	38.1	<0.50
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	117	78.5	74.7	<2.0	157	143	89.9	86.7	<2.0
pH	7.82	7.92	8.05	5.46	8.03	8.06	7.78	8.05	5.52
Total Dissolved Solids	87.0	64.0	59.0	11.0	100	91.0	67.0	54.0	<10
Total Suspended Solids	167	105	93.0	<3.0	42.5	144	6.5	10.5	<3.0
Turbidity (NTU)	100	73.4	73.8	<0.10	49.7	75.2	3.25	14.0	<0.10
Dissolved Anions									
Acidity (to pH 8.3) CaCO ₃	5.5	2.6	3.8	2.0	4.8	3.4	3.3	3.7	1.8
Alkalinity, Total CaCO ₃	47.8	36.0	33.5	<2.0	62.2	56.3	31.6	35.4	<2.0
Bromide Br	<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
Fluoride F	0.076	0.029	0.030	<0.020	0.046	0.059	0.153	0.026	<0.020
Sulfate SO ₄	6.51	3.65	3.42	<0.50	18.2	13.9	11.8	6.89	<0.50
Nutrients									
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	0.0139	<0.0050	<0.0050	<0.0050	0.0121
Total Kjeldahl Nitrogen N	0.063	0.05	<0.050	<0.050	0.113	0.055	<0.050	<0.050	<0.050
Nitrate N	0.0067	<0.0050	0.0055	<0.0050	0.0067	0.0053	<0.0050	0.0112	<0.0050
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.07	0.05	<0.05	<0.05	0.12	0.06	<0.05	<0.05	<0.05
Total Phosphate P	0.126	0.115	0.0893	<0.0020	0.0353	0.142	0.0179	0.0219	0.0024
Cyanides									
Total Cyanide CN	<0.0010	<0.0010	<0.0010	<0.0010	0.0021	0.0017	<0.0010	<0.0010	<0.0010
Total Metals									
Aluminum T-Al	3.91	3.97	3.73	<0.0010	2.37	3.06	0.160	0.203	<0.0010
Antimony T-Sb	0.00016	<0.00010	0.00010	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00165	0.00157	0.00148	<0.00010	0.00093	0.00128	0.00012	0.00034	<0.00010
Barium T-Ba	0.0679	0.0870	0.0822	<0.000050	0.0576	0.0668	0.00467	0.0288	<0.000050
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	0.000095	0.000036	0.000038	<0.000020	0.000031	0.000049	0.000035	<0.000020	<0.000020
Calcium T-Ca	18.4	14.6	13.3	<0.020	20.5	19.8	8.27	12.8	<0.020
Chromium T-Cr	0.00496	0.00488	0.00407	<0.00050	0.00500	0.00501	<0.00050	<0.00050	<0.00050
Cobalt T-Co	0.00216	0.00224	0.00193	<0.00010	0.00117	0.00190	<0.00010	0.00017	<0.00010
Copper T-Cu	0.00767	0.0107	0.00908	<0.00010	0.00477	0.00730	0.00030	0.00143	<0.00010
Iron T-Fe	3.96	3.43	3.15	<0.030	2.37	3.49	0.104	0.216	<0.030
Lead T-Pb	0.00134	0.00114	0.00106	<0.000050	0.000752	0.00116	0.000053	0.000195	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	6.00	3.44	3.13	<0.0050	6.18	6.08	3.21	1.81	<0.0050
Manganese T-Mn	0.115	0.116	0.104	<0.000050	0.0528	0.102	0.0741	0.0119	<0.000050
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00160	0.00198	0.00208	<0.000050	0.000856	0.00111	0.000457	0.000915	<0.000050
Nickel T-Ni	0.00587	0.00481	0.00382	<0.00050	0.00566	0.00610	<0.00050	0.00100	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	1.61	1.25	1.26	<0.050	1.10	1.31	1.33	0.718	<0.050
Selenium T-Se	0.00086	0.00099	0.00056	<0.00050	0.00065	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	10.5	9.00	8.99	<0.50	7.75	9.00	8.73	1.64	<0.50
Silver T-Ag	0.000035	0.000016	0.000016	<0.000010	0.000022	0.000026	<0.000010	<0.000010	<0.000010
Sodium T-Na	3.3	<2.0	<2.0	<2.0	2.7	2.9	3.5	<2.0	<2.0
Strontium T-Sr	0.0895	0.0760	0.0710	<0.00010	0.143	0.119	0.0354	0.0606	<0.00010
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	0.00014	<0.00010	0.00013	<0.00010	0.00010	0.00012	<0.00010	<0.00010	<0.00010
Titanium T-Ti	0.224	0.185	0.176	<0.010	0.087	0.152	<0.010	<0.010	<0.010
Uranium T-U	0.000539	0.000738	0.000655	<0.000010	0.000160	0.000336	0.000071	0.000362	<0.000010
Vanadium T-V	0.0094	0.0097	0.0083	<0.0010	0.0061	0.0080	<0.0010	<0.0010	<0.0010
Zinc T-Zn	0.0187	0.0105	0.0098	<0.0010	<0.0010	0.0121	0.0065	0.0017	<0.0010
Dissolved Metals									
Aluminum D-Al	1.83	0.305	0.224	-	0.0783	0.110	0.0460	0.0571	-
Antimony D-Sb	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Arsenic D-As	0.00127	0.00045	0.00047	-	0.00026	0.00034	0.00010	0.00026	-
Barium D-Ba	0.0704	0.0455	0.0433	-	0.0288	0.0306	0.00368	0.0238	-
Beryllium D-Be	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-
Boron D-B	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	-
Cadmium D-Cd	0.000059	<0.000020	<0.000020	-	<0.000020	<0.000020	<0.000020	<0.000020	-
Calcium D-Ca	16.7	12.7	11.7	-	19.6	17.9	8.30	12.5	-
Chromium D-Cr	0.00292	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-
Cobalt D-Co	0.00205	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Copper D-Cu	<0.00070	0.00089	0.00099	-	0.00097	0.00090	0.00023	0.00039	-
Iron D-Fe	3.03	0.161	0.114	-	0.047	0.068	<0.030	<0.030	-
Lead D-Pb	0.00142	0.000062	0.000098	-	0.000056	<0.000050	<0.000050	0.000104	-
Lithium D-Li	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	-
Magnesium D-Mg	5.07	1.56	1.46	-	5.43	4.66	3.20	1.69	-
Manganese D-Mn	0.136	0.00586	0.00254	-	0.000795	0.00175	0.00223	0.000972	-
Mercury D-Hg	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	-
Molybdenum D-Mo	0.000612	0.00196	0.00200	-	0.000758	0.00102	0.000530	0.00105	-
Nickel D-Ni	0.00520	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	-
Phosphorus D-P	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	<0.30	-
Potassium D-K	0.900	0.401	0.367	-	0.516	0.635	1.33	0.678	-
Selenium D-Se	0.00051	<0.00050	<0.00050	-	0.00057	<0.00050	<0.00050	<0.00050	-
Silicon D-Si	5.14	1.78	1.45	-	3.10	2.98	8.57	1.52	-
Silver D-Ag	0.000012	<0.000010	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	-
Sodium D-Na	2.7	<2.0	<2.0	-	2.5	2.5	3.5	<2.0	-
Strontium D-Sr	0.0800	0.0614	0.0590	-	0.136	0.107	0.0350	0.0595	-
Thallium D-Tl	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Tin D-Sn	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	-
Titanium D-Ti	0.072	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	-
Uranium D-U	0.000553	0.000451	0.000433	-	0.000104	0.000222	0.000053	0.000321	-
Vanadium D-V	0.0060	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	-
Zinc D-Zn	0.0104	<0.0010	<0.0020	-	<0.0020	<0.0010	<0.0030	<0.0010	-
Organic Parameters									
COD	30	30	20	<20	<20	30	<20	<20	<20
Total Organic Carbon C	1.00	1.38	1.09	0.57	2.48	1.77	1.13	0.67	0.58

Results are expressed as milligrams per litre except where noted
 < = Less than the detection limit indicated.

(continued)

Appendix 3.1-1

Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	SC-6-1	SC-6-2	SKC-1	FIELD BLANK	TRAVEL BLANK	SKC-4	WC-1	MT-1	SC-1	SC-4
Date Sampled	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007
Time Sampled										
ALS Sample ID	L561241-1	L561241-2	L561241-3	L561241-4	L561241-5	L561257-1	L561257-2	L561257-3	L561257-4	L561257-5
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO3	57	57.7	69.6	<0.50	<0.50	104	43.6	66.2	41.4	59.4
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	127	126	151	<2.0	<2.0	214	109	135	84.8	123
pH	8.28	8.23	8.05	5.57	5.46	8.15	8.00	8.14	8.12	8.03
Total Dissolved Solids	74.0	75.0	91.0	<10	<10	133	80.0	71.0	47.0	70.0
Total Suspended Solids	3.3	3.8	3.3	<3.0	<3.0	<3.0	<3.0	<3.0	9.3	9.8
Turbidity (NTU)	8.32	8.03	1.26	<0.10	<0.10	0.76	1.06	1.35	10.6	5.58
Dissolved Anions										
Acidity (to pH 8.3) CaCO3	<1.0	1.3	3.4	2.3	2.4	2.6	3.5	2.7	2.4	3.3
Alkalinity, Bicarbonate CaCO3	53.0	52.8	54.3	<2.0	<2.0	88.4	42.7	68.0	34.8	55.3
Alkalinity, Carbonate CaCO3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide CaCO3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total CaCO3	53.0	52.8	54.3	<2.0	<2.0	88.4	42.7	68.0	34.8	55.3
Bromide Br	<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
Fluoride F	<0.020	<0.020	0.024	<0.020	<0.020	0.036	0.171	<0.020	0.021	0.051
Sulfate SO4	10.9	10.9	20.2	<0.50	<0.50	21.2	12.6	3.34	7.50	8.82
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	0.0075	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	<0.050	<0.050	<0.050	<0.050	0.211	0.05	<0.050	<0.050	<0.050
Nitrate N	<0.0050	<0.0050	0.0096	<0.0050	<0.0050	0.0394	<0.0050	<0.0050	0.0101	0.0072
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	0.05	<0.05	<0.05	<0.05
Total Phosphate P	0.0095	0.0093	0.0096	<0.0020	<0.0020	0.0026	0.0119	0.0029	0.0117	0.0105
Cyanides										
Total Cyanide CN	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0021	0.0012	0.0013	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	0.346	0.375	0.0107	<0.0010	<0.0010	0.0076	0.171	0.0343	0.576	0.304
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00096	0.00099	0.00032	<0.00010	<0.00010	0.00032	0.00016	0.00026	0.00044	0.00067
Barium T-Ba	0.0566	0.0605	0.00800	<0.000050	<0.000050	0.0138	0.00481	0.00884	0.0811	0.0657
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000022	<0.000020	<0.000020	0.000025
Calcium T-Ca	17.5	17.6	24.6	<0.020	<0.020	33.9	10.3	24.6	11.9	21.6
Chromium T-Cr	0.00056	0.00066	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00070
Cobalt T-Co	0.00022	0.00024	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00020	0.00016
Copper T-Cu	0.00149	0.00147	0.00055	<0.00010	<0.00010	0.00048	0.00035	0.00093	0.00151	0.00107
Iron T-Fe	0.149	0.143	<0.030	<0.030	<0.030	0.089	0.110	0.034	0.230	0.207
Lead T-Pb	0.000093	0.000086	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000134	0.000085
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	3.44	3.47	1.82	<0.0050	<0.0050	5.25	4.17	1.32	2.42	3.35
Manganese T-Mn	0.0111	0.0110	0.0101	<0.000050	<0.000050	0.0115	0.0488	0.00398	0.0129	0.0205
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00257	0.00265	0.000801	<0.000050	<0.000050	0.000704	0.000570	0.000828	0.00423	0.00662
Nickel T-Ni	<0.00050	0.00053	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.525	0.544	0.282	<0.050	<0.050	0.413	1.51	0.209	0.591	0.658
Selenium T-Se	0.00054	<0.00050	0.00093	<0.00050	<0.00050	0.00094	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	1.72	1.72	2.63	<0.050	<0.050	3.70	10.6	2.72	1.36	2.26
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.109	0.112	0.0432	<0.00010	<0.00010	0.0752	0.0464	0.0484	0.118	0.128
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016
Uranium T-U	0.000307	0.000305	0.000075	<0.000010	<0.000010	0.000149	0.000101	0.000031	0.000484	0.00113
Vanadium T-V	0.0014	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0018	0.0010
Zinc T-Zn	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0049	0.0019	0.0011	0.0017
Dissolved Metals										
Aluminum D-Al	0.0318	0.0338	0.0053	-	-	<0.0050	0.0383	0.0086	0.0707	0.0205
Antimony D-Sb	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00084	0.00092	0.00030	-	-	0.00027	0.00013	0.00023	0.00038	0.00053
Barium D-Ba	0.0539	0.0549	0.00749	-	-	0.0137	0.00407	0.00883	0.0729	0.0605
Beryllium D-Be	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	<0.010	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	-	-	<0.000020	0.000022	<0.000020	<0.000020	<0.000020
Calcium D-Ca	17.5	17.6	24.8	-	-	33.1	10.4	24.4	12.6	19.0
Chromium D-Cr	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	<0.00070	<0.00080	<0.00070	-	-	<0.00060	<0.00040	<0.00080	<0.00040	<0.00030
Iron D-Fe	<0.030	<0.030	<0.030	-	-	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	3.26	3.32	1.83	-	-	5.12	4.27	1.29	2.41	2.91
Manganese D-Mn	0.00326	0.00328	0.00317	-	-	0.000393	0.00246	0.00244	0.00359	0.0115
Mercury D-Hg	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.00274	0.00281	0.000904	-	-	0.000725	0.000658	0.000816	0.00479	0.00592
Nickel D-Ni	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	-	-	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.467	0.482	0.286	-	-	0.417	1.57	0.204	0.492	0.489
Selenium D-Se	<0.00050	0.00078	0.00094	-	-	<0.00050	<0.00050	<0.00050	<0.00050	0.00091
Silicon D-Si	1.49	1.52	2.53	-	-	3.49	10.2	2.57	0.893	1.70
Silver D-Ag	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010	<0.000010	

Appendix 3.1-1

Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	HC-3	JC-2	MC-10	MC-5	SC-5	HC-2	HC-3	JC-1	JC-2-1	JC-2-2
Date Sampled	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007
Time Sampled										
ALS Sample ID	L561264-1	L561264-2	L561264-3	L561264-4	L561264-5	L581748-1	L581748-2	L581748-3	L581748-4	L581748-5
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	60	27.7	135	77.6	60	85.1	94.9	27.2	44.5	43.9
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	130	61.5	266	163	128	181	196	63.9	99.4	99.3
pH	8.04	8.06	7.36	8.05	8.10	8.09	8.09	7.79	7.89	7.9
Total Dissolved Solids	77.0	38.0	115	128	76.0	93	109	36	52	54
Total Suspended Solids	6.3	6.8	11.3	10.3	13.8	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity (NTU)	12.4	5.89	9.42	7.15	6.57	1.42	0.82	0.65	0.48	0.76
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	3.3	2.7	6.1	3.3	2.8	1.3	1.4	1.6	1.6	1.6
Alkalinity, Bicarbonate CaCO ₃	49.8	27.6	133	84.1	63.5	82.6	89.6	30	45.8	45.8
Alkalinity, Carbonate CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total CaCO ₃	49.8	27.6	133	84.1	63.5	82.6	89.6	30	45.8	45.8
Bromide Br	<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	1.11	<0.50	<0.50	<0.50	<0.50	<0.50	0.67	0.68
Fluoride F	<0.020	0.127	0.033	0.078	0.048	<0.020	0.208	0.153	0.153	0.153
Sulfate SO ₄	13.7	2.74	18.4	11.5	7.99	16.4	18.2	1.9	4.37	4.36
Nutrients										
Ammonia Nitrogen N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.081	0.108	0.128
Nitrate N	<0.0050	0.0069	0.0308	0.0077	0.0128	0.0306	0.0311	0.0888	0.132	0.132
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.17	0.24	0.26
Total Phosphate P	0.0102	0.0045	0.0104	0.0101	0.0190	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanides										
Total Cyanide CN	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals										
Aluminum T-Al	0.243	0.152	0.0639	0.237	0.303	0.0518	0.0291	0.0285	0.0219	0.0184
Antimony T-Sb	<0.00010	<0.00010	0.00026	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00155	0.00037	0.00113	0.00061	0.00059	0.00159	0.00117	0.00032	0.00022	0.00022
Barium T-Ba	0.0327	0.0428	0.104	0.0706	0.0771	0.0481	0.0374	0.029	0.0733	0.0743
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	0.021	0.012	<0.010	0.01	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	<0.000020	0.000022	<0.000020	0.000022	<0.000020	<0.000020	<0.000020	0.000022	0.00002	<0.000020
Calcium T-Ca	18.1	9.63	27.9	23.0	20.7	25.6	30.7	9.72	14.7	14.4
Chromium T-Cr	0.00091	<0.00050	<0.00050	<0.00050	0.00055	0.00088	0.00089	<0.00050	<0.00050	<0.00050
Cobalt T-Co	0.00027	<0.00010	0.00022	0.00016	0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper T-Cu	0.00198	0.00060	0.00085	0.00110	0.00157	0.00058	0.0008	0.00011	0.00022	0.00023
Iron T-Fe	0.180	0.100	0.331	0.269	0.334	0.044	<0.030	<0.030	<0.030	<0.030
Lead T-Pb	0.000135	0.000104	0.00072	0.000156	0.000137	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	3.50	1.13	14.0	6.81	5.28	1.13	4.97	0.827	1.95	1.87
Manganese T-Mn	0.00937	0.00579	0.0364	0.0342	0.0352	0.00205	0.0012	0.00386	0.00158	0.00152
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.000575	0.00571	0.000684	0.00253	0.00396	0.000378	0.00106	0.00855	0.00643	0.00641
Nickel T-Ni	0.00069	<0.00050	0.00187	0.00071	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.404	0.479	0.620	0.781	0.563	0.4	0.558	0.655	0.559	0.546
Selenium T-Se	0.00064	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	1.81	1.74	2.66	3.34	2.56	1.76	2.65	2.29	2.68	2.81
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	<2.0	3.8	2.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.0889	0.0643	0.153	0.121	0.111	0.132	0.127	0.0383	0.0986	0.0979
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00030	0.00262	0.000108	0.000626	0.00101	0.000044	0.000046	0.00354	0.00276	0.00269
Vanadium T-V	0.0014	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc T-Zn	0.0044	0.0011	<0.0010	0.0027	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals										
Aluminum D-Al	0.0381	0.0333	<0.0060	0.0231	0.0143	0.0121	0.0053	0.0084	0.0058	0.0056
Antimony D-Sb	<0.00010	<0.00010	0.00023	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.00132	0.00045	0.00074	0.00042	0.00041	0.0015	0.00114	0.00029	0.0002	0.0002
Barium D-Ba	0.0315	0.0366	0.104	0.0619	0.0687	0.0466	0.0369	0.0271	0.0745	0.0727
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	0.022	0.010	<0.010	0.01	<0.010	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000021	<0.000020	<0.000020
Calcium D-Ca	18.5	9.33	29.8	20.9	19.5	25.4	29.9	9.55	14.6	14.4
Chromium D-Cr	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0008	0.00079	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	<0.00050	<0.00050	<0.00040	<0.00040	<0.00040	<0.00060	<0.00090	<0.00015	<0.00030	<0.00030
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	3.39	1.07	14.6	6.16	5.29	1.13	4.97	0.827	1.95	1.87
Manganese D-Mn	0.00187	0.00122	0.0276	0.0204	0.0216	0.000656	0.000366	0.00317	0.00107	0.00105
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.000665	0.00582	0.000940	0.00254	0.00391	0.000379	0.0011	0.00865	0.00646	0.00655
Nickel D-Ni	<0.00050	<0.00050	0.00149	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	0.397	0.417	0.654	0.665	0.458	0.395	0.555	0.636	0.555	0.542
Selenium D-Se	<0.00050	<0.00050	0.00074	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon D-Si	1.50	1.50	2.42	3.0						

Appendix 3.1-1

Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	MC-1	MC-5	MC-9	MC-10	MT-1	SC-1	SC-3	SC-4	SC-5	SC-6	SC-7
Date Sampled	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007
Time Sampled											
ALS Sample ID	L581748-6	L581748-7	L581748-8	L581748-9	L581748-10	L581748-11	L581748-12	L581748-13	L581748-14	L581748-15	L581748-16
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Hardness CaCO ₃	172	113	110	191	69.4	61.3	106	93.9	94.9	91.1	96.5
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	328	244	246	387	142	128	218	193	196	184	194
pH	8.22	8.15	8.2	8.19	8.09	7.46	8.01	8.07	8.1	8.12	8.05
Total Dissolved Solids	160	136	141	205	80	78	120	105	109	103	110
Total Suspended Solids	<3.0	3	4.5	4.5	<3.0	<3.0	<3.0	8.5	<3.0	<3.0	<3.0
Turbidity (NTU)	1.61	2.05	4.37	1.5	0.83	0.79	0.97	1.25	1.13	0.66	1.01
Dissolved Anions											
Acidity (to pH 8.3) CaCO ₃	<1.0	1.4	1.2	1.7	1.3	2.9	2.1	1.7	1.6	1.4	1.7
Alkalinity, Bicarbonate CaCO ₃	153	119	120	191	70.1	47.8	99.8	86.9	94	81.5	91.9
Alkalinity, Carbonate CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total CaCO ₃	153	119	120	191	70.1	47.8	99.8	86.9	94	81.5	91.9
Bromide Br	<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	0.97	0.97	2.59	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride F	0.034	0.095	0.147	0.04	<0.020	0.031	0.023	0.059	0.049	<0.020	0.056
Sulfate SO ₄	32.9	16.5	15	22.2	4.1	18.3	16.9	13	11.5	15.9	11.7
Nutrients											
Ammonia Nitrogen N	<0.0050	0.0055	<0.0050	0.0164	<0.0050	<0.0050	<0.0050	<0.0050	0.0079	<0.0050	0.0085
Total Kjeldahl Nitrogen N	<0.050	0.101	0.136	0.113	<0.050	0.059	0.07	0.081	0.115	<0.050	0.105
Nitrate N	0.0279	0.0486	0.0543	0.0866	0.0147	0.0409	0.0402	0.0591	0.0555	0.0304	0.0646
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.05	0.15	0.19	0.2	0.06	0.1	0.11	0.14	0.17	0.05	0.17
Total Phosphate P	0.0021	0.0041	0.0183	0.0067	0.0034	0.0022	0.0021	0.0052	<0.0020	<0.0020	0.002
Cyanides											
Total Cyanide CN	<0.0010	0.0011	0.0013	0.0012	0.0014	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	0.0013
Total Metals											
Aluminum T-Al	0.0356	0.0396	0.126	0.0141	0.0248	0.046	0.0216	0.0509	0.0273	0.0286	0.0302
Antimony T-Sb	0.00125	0.00011	<0.00010	0.00026	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00049	0.00048	0.00048	0.00113	0.00036	0.00032	0.00052	0.00052	0.00041	0.00069	0.00047
Barium T-Ba	0.0592	0.0801	0.0593	0.137	0.0101	0.0913	0.112	0.103	0.101	0.0932	0.111
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	0.02	0.022	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000022	0.000025	0.000021	<0.000020	<0.000020	<0.000020
Calcium T-Ca	27.9	30.7	28.5	45.1	25.7	18.7	33.9	29.9	31.3	27.4	31.4
Chromium T-Cr	<0.00050	<0.00050	0.0006	0.00053	0.00067	<0.00050	0.00053	<0.00050	<0.00050	0.0007	<0.00050
Cobalt T-Co	<0.00010	<0.00010	0.00011	0.00024	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011
Copper T-Cu	0.00034	0.00046	0.00083	0.00055	0.00097	0.00024	0.00062	0.0008	0.00058	0.00045	0.00063
Iron T-Fe	0.042	0.142	0.176	0.184	<0.030	0.035	0.036	0.091	0.17	<0.030	0.238
Lead T-Pb	<0.000050	<0.000050	0.000076	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	23.6	9.15	9.32	19.8	1.57	3.6	5.46	4.41	5.22	4.45	4.30
Manganese T-Mn	0.00348	0.0501	0.027	0.0793	0.000886	0.00126	0.0277	0.0269	0.0799	0.00213	0.111
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.00001
Molybdenum T-Mo	0.001	0.00222	0.00198	0.00119	0.00109	0.000955	0.000955	0.00091	0.00416	0.0045	0.00541
Nickel T-Ni	0.00097	<0.00050	0.00054	0.00315	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.823	0.909	1.49	0.87	0.229	0.606	0.6	0.603	0.587	0.634	0.607
Selenium T-Se	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	1.71	5.01	6.96	3.9	3.39	1.18	2.76	2.84	3.56	2.17	3.38
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	4.5	7.5	6.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.22	0.146	0.144	0.21	0.0536	0.173	0.185	0.16	0.146	0.16	0.145
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.000242	0.000591	0.000601	0.000133	0.000031	0.000865	0.000501	0.00128	0.00112	0.000531	0.00112
Vanadium T-V	<0.0010	<0.0010	0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc T-Zn	<0.0010	<0.0010	0.0011	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals											
Aluminum D-Al	0.0013	0.0044	0.0038	0.0018	0.0062	0.0203	0.0053	0.0064	0.0035	0.0089	0.0037
Antimony D-Sb	0.00126	0.00011	<0.00010	0.00025	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.0003	0.00035	0.00039	0.00079	0.00032	0.0003	0.00046	0.0004	0.00029	0.00067	0.00033
Barium D-Ba	0.0589	0.0773	0.0552	0.136	0.00978	0.0941	0.108	0.099	0.0984	0.0926	0.109
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	0.019	0.023	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000028	0.000027	<0.000020	<0.000020	<0.000020
Calcium D-Ca	28.2	30.5	28.8	44.3	25.3	18.6	33.6	30.3	30.8	27.7	31.6
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	0.00018	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper D-Cu	<0.00020	<0.00040	<0.00060	<0.00070	<0.00080	<0.00030	<0.00050	0.0017	<0.00050	<0.00040	<0.00070
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.052
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	24.6	8.96	9.33	19.4	1.53	3.62	5.39	4.45	4.37	5.31	4.38
Manganese D-Mn	0.000933	0.0445	0.0188	0.0731	0.000076	0.000384	0.0257	0.021	0.077	0.00144	0.107
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.00001						

Appendix 3.1-1

Schaft Creek Project Stream Water Quality Raw Data, 2007 (continued)

Sample ID	SKC-1	SKC-4	ST-2	WC-1	YC-1-1	FIELD BLANK	TRAVEL BLANK	YC-1-2	SKC-1	SKC-4
Date Sampled	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	13/12/2007	13/12/2007
Time Sampled										
ALS Sample ID	L581748-17	L581748-18	L581748-19	L581748-20	L581748-21	L581748-22	L581748-23	L581748-24	L589037-1	L589037-2
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	81.8	111	98.1	51.7	58.9	<0.50	<0.50	59.2	80.6	103
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.2
Conductivity (mS/cm)	170	225	208	133	128	<2.0	<2.0	128	183	231
pH	7.96	8.1	8.12	7.96	7.98	5.46	5.47	7.97	8	8.1
Total Dissolved Solids	99	126	129	86	72	<10	<10	69	101	134
Total Suspended Solids	<3.0	<3.0	3	<3.0	<3.0	<3.0	<3.0	<3.0	3	<3.0
Turbidity (NTU)	0.28	0.53	3.09	0.53	1.28	<0.10	<0.10	1.06	0.75	0.73
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1.9	1.7	1.5	1.9	1.7	1.7	1.6	1.7	1.4	1.2
Alkalinity, Bicarbonate CaCO ₃	67.7	93.2	88.7	59.4	60.4	<2.0	<2.0	64.3	62.8	90.4
Alkalinity, Carbonate CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total CaCO ₃	67.7	93.2	88.7	59.4	60.4	<2.0	<2.0	64.3	62.8	90.4
Bromide Br	<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
Fluoride F	0.026	0.037	0.063	0.191	0.035	<0.020	<0.020	0.033	0.026	0.036
Sulfate SO ₄	21.4	22.6	19.5	13.2	10.2	<0.50	<0.50	10.1	21.1	22
Nutrients										
Ammonia Nitrogen N	<0.0050	0.0088	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0129
Total Kjeldahl Nitrogen N	<0.050	0.136	0.099	0.095	0.096	<0.050	<0.050	0.086	0.087	0.177
Nitrate N	0.0306	0.0845	0.0315	0.045	0.0644	<0.0050	<0.0050	0.0641	0.0332	0.0734
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.06	0.22	0.13	0.14	0.16	<0.05	<0.05	0.15	0.12	0.25
Total Phosphate P	<0.0020	0.0025	0.0075	0.0163	0.0024	<0.0020	<0.0020	0.0028	0.0065	0.0033
Cyanides										
Total Cyanide CN	<0.0010	0.0021	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019
Total Metals										
Aluminum T-Al	0.005	0.0062	0.0749	0.0446	0.0544	<0.0010	<0.0010	0.0537	0.0409	0.0157
Antimony T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00024	0.00023	0.00026	0.00016	0.00034	<0.00010	<0.00010	0.00034	0.00041	0.00028
Barium T-Ba	0.00968	0.0144	0.0391	0.00497	0.0298	<0.00050	<0.00050	0.0298	0.0101	0.014
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Calcium T-Ca	29.1	34.9	26.9	12.5	18.9	<0.020	<0.020	18.8	28.8	32.4
Chromium T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt T-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper T-Cu	0.00052	<0.00060	0.00093	0.00024	0.00066	<0.00010	<0.00010	0.00068	0.0009	0.00049
Iron T-Fe	0.051	0.096	0.1	0.048	0.036	<0.030	<0.030	0.053	0.183	0.134
Lead T-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	2.21	5.66	7.91	5.14	2.98	<0.0050	<0.0050	2.99	1.98	5.03
Manganese T-Mn	0.0179	0.013	0.00842	0.0101	0.00175	<0.00050	<0.00050	0.00174	0.0217	0.0222
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.000857	0.000755	0.000965	0.000888	0.00116	<0.00050	<0.00050	0.00119	0.000741	0.000793
Nickel T-Ni	<0.00050	<0.00050	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00067
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.319	0.45	0.744	1.71	0.763	<0.050	<0.050	0.753	0.321	0.45
Selenium T-Se	0.00079	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00075	0.00096
Silicon T-Si	3.04	4.8	4.95	11.5	2.76	<0.050	<0.050	2.78	2.83	3.98
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	<2.0	3.8	3.9	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium T-Sr	0.0485	0.0775	0.171	0.0575	0.0926	<0.00010	<0.00010	0.092	0.0418	0.0677
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.000136	0.000154	0.000224	0.000126	0.000429	<0.000010	<0.000010	0.000429	0.000149	0.000145
Vanadium T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc T-Zn	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals										
Aluminum D-Al	0.0011	0.0028	0.0074	0.0208	0.0094	-	-	0.0083	<0.0010	0.0026
Antimony D-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010
Arsenic D-As	0.0002	0.00022	0.00022	0.00019	0.0003	-	-	0.00029	0.00025	0.00022
Barium D-Ba	0.00945	0.014	0.0373	0.00465	0.0295	-	-	0.0292	0.00949	0.0139
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050
Boron D-B	<0.010	<0.010	<0.010	<0.010	<0.010	-	-	<0.010	<0.010	<0.010
Cadmium D-Cd	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	-	-	<0.000020	<0.000020	<0.000020
Calcium D-Ca	29.1	35.3	26.4	12.4	18.7	-	-	18.8	29	33
Chromium D-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	<0.00050
Cobalt D-Co	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	<0.00010	<0.00010	<0.00010
Copper D-Cu	<0.00050	<0.00050	<0.00070	<0.00030	<0.00060	-	-	<0.00060	<0.00050	<0.00050
Iron D-Fe	<0.030	0.031	<0.030	<0.030	<0.030	-	-	<0.030	<0.030	0.031
Lead D-Pb	<0.000050	<0.000050	<0.000050	0.000073	<0.000050	-	-	<0.000050	<0.000050	<0.000050
Lithium D-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	<0.0050	<0.0050	<0.0050
Magnesium D-Mg	2.2	5.6	7.9	5.04	2.98	-	-	2.97	1.97	5.07
Manganese D-Mn	0.0143	0.0096	0.00455	0.00814	0.000373	-	-	0.000347	0.000325	0.01
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000010
Molybdenum D-Mo	0.000898	0.000709	0.00102	0.000888	0.00119	-	-	0.0012	0.0013	0.000863
Nickel D-Ni	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	<0.00050	0.00062
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	-	-	<0.30	<0.30	<0.30
Potassium D-K	0.322	0.453	0.721	1.69	0.751	-	-	0.749	0.32	0.454
Selenium D-Se	0.00087	<0.00050	<0.00050	<0.00050	<0.00050	-	-	<0.00050	0.00094	<0.00050
Silicon D-Si	2.91	4.29	4.54	11.4	2.68	-	-	2.56	2.77	3.94
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	<0.000010	<0.000010	<0.000

Appendix 3.1-1

Schaft Creek Project Stream Water Quality Raw Data, 2007 (completed)

Sample ID	MC-5	MC-10	HC-3-1	HC-3-2	SC-4	FIELD BLANK	JC-2	WC-1	TRAVEL BLANK
Date Sampled	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007
Time Sampled									
ALS Sample ID	L589037-3	L589037-4	L589037-5	L589037-6	L589037-7	L589037-8	L589037-9	L589037-10	L589037-11
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Hardness CaCO ₃	106	196	86	86.9	96.8	<0.50	44.3	49	<0.50
Colour (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Conductivity (mS/cm)	249	425	198	199	215	<2.0	105	138	<2.0
pH	8.19	8.2	8.07	8.06	8.2	5.69	8.01	8.01	5.57
Total Dissolved Solids	141	230	124	125	134	11	69	104	<10
Total Suspended Solids	4	<3.0	<3.0	<3.0	3.5	<3.0	<3.0	21	<3.0
Turbidity (NTU)	1.27	0.79	1.08	0.99	0.89	<0.10	0.45	2.06	<0.10
Dissolved Anions									
Acidity (to pH 8.3) CaCO ₃	<1.0	1.3	1.3	1.2	<1.0	1.7	<1.0	1.3	1.8
Alkalinity, Bicarbonate CaCO ₃	108	207	79	78.8	94	<2.0	45.1	51.8	<2.0
Alkalinity, Carbonate CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Hydroxide CaCO ₃	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, Total CaCO ₃	108	207	79	78.8	94	<2.0	45.1	51.8	<2.0
Bromide Br	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride Cl	0.93	2.93	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50
Fluoride F	0.088	0.038	<0.020	<0.020	0.045	<0.020	0.151	0.191	<0.020
Sulfate SO ₄	15.5	22	18	18.2	14.5	<0.50	4.4	12.3	<0.50
Nutrients									
Ammonia Nitrogen N	<0.0050	0.0161	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen N	0.119	0.113	0.073	0.053	0.084	<0.050	ERROR	0.101	<0.050
Nitrate N	0.0513	0.0769	0.037	0.0374	0.0556	<0.0050	0.141	0.0592	<0.0050
Nitrite N	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nitrogen N	0.17	0.19	0.14	0.09	0.14	<0.05	0.26	0.16	<0.05
Total Phosphate P	0.0071	0.002	0.0035	0.0032	0.01	<0.0020	<0.0020	0.0451	<0.0020
Cyanides									
Total Cyanide CN	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals									
Aluminum T-Al	0.0371	0.0121	0.0415	0.0397	0.0599	<0.0010	0.0255	0.227	<0.0010
Antimony T-Sb	<0.00010	0.00027	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic T-As	0.00039	0.00077	0.00131	0.00134	0.00049	<0.00010	0.00017	0.0002	<0.00010
Barium T-Ba	0.0662	0.119	0.0358	0.0365	0.0886	<0.00050	0.0672	0.00844	<0.00050
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron T-B	0.02	0.056	0.013	0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium T-Cd	<0.000020	<0.000020	<0.000020	<0.000020	0.000032	<0.000020	<0.000020	0.000025	<0.000020
Calcium T-Ca	29.6	44.1	27.2	27.5	31.2	<0.020	14.8	12.2	<0.020
Chromium T-Cr	<0.00050	<0.00050	0.00096	0.00095	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt T-Co	<0.00010	0.00023	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00031	<0.00010
Copper T-Cu	0.0004	0.00039	0.00074	0.0007	0.00069	<0.00010	0.00015	0.00042	<0.00010
Iron T-Fe	0.112	0.156	0.047	0.049	0.127	<0.030	<0.030	0.511	<0.030
Lead T-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000159	<0.000050
Lithium T-Li	<0.0050	0.0056	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium T-Mg	8.02	20	4.68	4.59	4.3	<0.0050	4.59	4.59	<0.0050
Manganese T-Mn	0.0287	0.0727	0.00215	0.00217	0.0284	<0.000050	0.00195	0.0547	<0.000050
Mercury T-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.00283	0.000936	0.0011	0.00105	0.00888	<0.000050	0.00607	0.000568	<0.000050
Nickel T-Ni	<0.00050	0.00344	0.00052	0.00057	<0.00050	<0.00050	<0.00050	0.00057	<0.00050
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	0.892	0.91	0.588	0.589	0.604	<0.050	0.549	1.71	<0.050
Selenium T-Se	<0.00050	<0.00050	<0.00050	0.00059	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon T-Si	4.38	3.61	2.54	2.54	2.63	<0.050	2.68	10.8	<0.050
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium T-Na	4.6	7.6	<2.0	<2.0	<2.0	<2.0	<2.0	5.6	<2.0
Strontium T-Sr	0.131	0.199	0.108	0.107	0.15	<0.00010	0.0905	0.0509	<0.00010
Thallium T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010
Uranium T-U	0.000632	0.000138	0.00004	0.00004	0.00113	<0.000010	0.00265	0.000171	<0.000010
Vanadium T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010
Zinc T-Zn	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0047	<0.0010
Dissolved Metals									
Aluminum D-Al	0.0049	<0.0010	0.004	0.0037	0.005	-	0.0052	0.023	-
Antimony D-Sb	<0.00010	0.00027	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Arsenic D-As	0.00029	0.00062	0.00123	0.00128	0.00038	-	0.00016	0.00016	-
Barium D-Ba	0.0644	0.119	0.0354	0.0359	0.088	-	0.0664	0.00451	-
Beryllium D-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Bismuth D-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Boron D-B	0.019	0.055	0.012	0.012	<0.010	-	<0.010	<0.010	-
Cadmium D-Cd	0.000023	<0.000020	<0.000020	<0.000020	0.000035	-	<0.000020	<0.000020	-
Calcium D-Ca	29.4	44.9	27	27.2	31.6	-	14.7	12.1	-
Chromium D-Cr	<0.00050	<0.00050	0.00091	0.00098	<0.00050	-	<0.00050	<0.00050	-
Cobalt D-Co	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Copper D-Cu	<0.00050	<0.00040	<0.00050	<0.00050	<0.00050	-	<0.00020	<0.00030	-
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	-	<0.030	<0.030	-
Lead D-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium D-Li	<0.0050	0.0058	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	-
Magnesium D-Mg	7.84	20.5	4.52	4.61	4.34	-	4.59	4.59	-
Manganese D-Mn	0.0165	0.0635	0.000133	0.000107	0.0165	-	0.000625	0.000356	-
Mercury D-Hg	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Molybdenum D-Mo	0.0031	0.000972	0.00114	0.00108	0.00937	-	0.00609	0.00093	-
Nickel D-Ni	<0.00050	0.00346	0.0005	0.00064	<0.00050	-	<0.00050	<0.00050	-
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	-
Potassium D-K	0.878	0.909	0.579	0.574	0.616	-	0.534	1.68	-
Selenium D-Se	<0.00050	0.0005	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Silicon D-Si	4.2	3.48	2.43	2.45	2.42	-	2.53	10.4	-
Silver D-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium D-Na	4.5	7.5	<2.0	<2.0	<2.0	-	<2.0	5.5	-
Strontium D-Sr	0.13	0.199	0.107	0.107	0.15	-	0.0888	0.0503	-
Thallium D-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Tin D-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010	-
Uranium D-U	0.000607	0.000131	0.000036	0.000036	0.0011	-	0.00259	0.000133	-
Vanadium D-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Zinc D-Zn	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Organic Parameters									
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Organic Carbon C	0.63	0.53	0.58	0.86	<0.50				

**APPENDIX 3.1-2
SCHAFT CREEK PROJECT STREAM WATER QUALITY
DETECTION LIMITS, 2007**

**Appendix 3.1-2
Schaff Creek Project Stream Water Quality Detection Limits, 2007**

Sample ID	WC-1-1	WC-1-2	SC-2	SC-3	SC-4	HC-1	MC-7	FIELD BLANK	TRAVEL BLANK
Date Sampled	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007	02/02/2007
Time Sampled									
ALS Sample ID	L476549-1	L476549-2	L476549-3	L476549-4	L476549-5	L476549-6	L476549-7	L476549-8	L476549-9
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	10	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions									
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients									
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides									
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals									
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals									
Aluminum D-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Boron D-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	-	-
Calcium D-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Copper D-Cu	0.0004	0.0004	0.0006	0.0007	0.0003	0.0004	0.0001	-	-
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	-
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Lithium D-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Magnesium D-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0008	-	-
Phosphorus D-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-
Potassium D-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-
Silicon D-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Sodium D-Na	2	2	2	2	2	2	2	-	-
Strontium D-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Thallium D-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Tin D-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-
Titanium D-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-
Uranium D-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-
Vanadium D-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Zinc D-Zn	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
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

(continued)

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SKC-1	SKC-3	F-LINE	B-LINE	SKC-1	SKC-3	F-LINE	B-LINE	HC-1	SC-2
Date Sampled	02/02/2007	02/02/2007	02/02/2007	02/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007
Time Sampled										
ALS Sample ID	L476549-10	L476549-11	L476549-12	L476549-13	L481886-1	L481886-2	L481886-3	L481886-4	L481886-5	L481886-6
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	10	10	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients										
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides										
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals										
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0011	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals										
Aluminum D-Al	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	-	-	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	-	-	0.02	0.02	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0004	0.0002	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron D-Fe	0.03	0.03	-	-	0.03	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	-	-	0.3	0.3	0.3	0.3	0.3	0.3
Potassium D-K	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	2	-	-	2	2	2	2	2	2
Strontium D-Sr	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium D-Tl	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin D-Sn	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium D-Ti	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01
Uranium D-U	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium D-V	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001
Zinc D-Zn	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
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

(continued)

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SC-3	SC-4	MC-2	MC-7	WC-1-1	WC-1-2	FIELD BLANK	TRAVEL BLANK	MC-2	MC-5	MC-9	MC-7-1
Date Sampled	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	23/02/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007
Time Sampled												
ALS Sample ID	L481886-7	L481886-8	L481886-9	L481886-10	L481886-11	L481886-12	L481886-13	L481886-14	L490267-1	L490267-2	L490267-3	L490267-4
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness CaCO ₃	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 (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate 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												
Total Cyanide CN	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 T-Al	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 T-Sb	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 T-As	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 T-Ba	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 T-Be	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 T-Bi	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 T-B	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 T-Cd	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 T-Ca	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 T-Cr	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 T-Co	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 T-Cu	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 T-Fe	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 T-Pb	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 T-Li	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 T-Mg	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 T-Mn	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 T-Hg	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 T-Mo	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 T-Ni	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 T-P	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 T-K	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 T-Se	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 T-Si	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 T-Ag	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 T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	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 T-Tl	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 T-Sn	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 T-Ti	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 T-U	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 T-V	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 T-Zn	0.001	0.001	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.001
Dissolved Metals												
Aluminum D-Al	0.001	0.001	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	-	-	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	0.02	0.02	0.02	0.02	-	-	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	0.03	-	-	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	0.3	0.3	0.3	0.3	-	-	0.3	0.3	0.3	0.3
Potassium D-K	0.05	0.05	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	2	2	2								

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	MC-7-2	WC-1	HC-1	SKC-1	SKC-3	FIELD BLANK	TRAVEL BLANK	SC-2	SC-3	SC-4	B-LINE	F-LINE
Date Sampled	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007	24/03/2007
Time Sampled												
ALS Sample ID	L490267-5	L490267-6	L490267-7	L490267-8	L490267-9	L490267-10	L490267-11	L490267-12	L490267-13	L490267-14	L490267-15	L490267-16
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	-	-	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate 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												
Total Cyanide CN	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 T-Al	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 T-Sb	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 T-As	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 T-Ba	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 T-Be	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 T-Bi	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 T-B	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 T-Cd	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 T-Ca	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 T-Cr	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 T-Co	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 T-Cu	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 T-Fe	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 T-Pb	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 T-Li	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 T-Mg	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 T-Mn	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 T-Hg	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 T-Mo	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 T-Ni	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 T-P	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 T-K	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 T-Se	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 T-Si	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 T-Ag	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 T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	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 T-Tl	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 T-Sn	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 T-Ti	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 T-U	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 T-V	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 T-Zn	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 D-Al	0.001	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	-	-	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	0.02	0.02	0.02	-	-	0.02	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	-	-	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	0.3	0.3	0.3	-	-	0.3	0.3	0.3	0.3	0.3
Potassium D-K	0.05	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	2	2	2	2	-						

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	WC-1	FIELD BLANK	TRAVEL BLANK	SC-2-1	SC-2-2	SC-3	SC-4	SC-5	SKC-1	SKC-3	ST-2	B-LINE
Date Sampled	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007	26/04/2007
Time Sampled												
ALS Sample ID	L500494-1	L500494-2	L500494-3	L500496-1	L500496-2	L500496-3	L500496-4	L500496-5	L500501-1	L500501-2	L500501-3	L500501-4
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness CaCO ₃	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 (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate 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												
Total Cyanide CN	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 T-Al	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 T-Sb	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 T-As	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 T-Ba	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 T-Be	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 T-Bi	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 T-B	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 T-Cd	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 T-Ca	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 T-Cr	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 T-Co	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 T-Cu	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 T-Fe	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 T-Pb	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 T-Li	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 T-Mg	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 T-Mn	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 T-Hg	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 T-Mo	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 T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0008	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	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 T-K	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 T-Se	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 T-Si	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 T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00004	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	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 T-Tl	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 T-Sn	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 T-Ti	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 T-U	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 T-V	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 T-Zn	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.003	0.001	0.001	0.001	0.001
Dissolved Metals												
Aluminum D-Al	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	-	-	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	-	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron D-Fe	0.03	-	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0007	0.00005	0.00005
Mercury D-Hg	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	-	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium D-K	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	-	-	2	2	2	2</					

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	ST-1	ST-2	WC-1-1	WC-1-2	B-LINE	MC-10-1	MC-10-2	YC-1	FIELD BLANK	TRAVEL BLANK	JC-2
Date Sampled	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	19/05/2007	26/05/2007
Time Sampled											
ALS Sample ID	L508063-20	L508063-21	L508063-22	L508063-23	L508063-24	L508063-25	L508063-26	L508063-27	L508063-28	L508063-29	L510791-1
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	1	1	1	1	1	1	1	1	1	1	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions											
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients											
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.02	0.02	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides											
Total Cyanide CN	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 T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0006	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.001	0.00005	0.00005	0.00005	0.001	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	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 D-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005
Boron D-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	-	-	0.00002
Calcium D-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001
Copper D-Cu	0.0001	0.0001	0.0005	0.0004	0.0001	0.0005	0.0005	0.0001	-	-	0.0001
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-	-	0.03
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005
Lithium D-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-	0.005
Magnesium D-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	-	-	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	-	-	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005
Phosphorus D-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-	-	0.3
Potassium D-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-	0.05
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-	-	0.0005
Silicon D-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-	0.05
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001
Sodium D-Na	2	2	2	2	2	2	2	2	-	-	2
Strontium D-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001
Thallium D-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001
Tin D-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	0.0001
Titanium D-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-	0.01
Uranium D-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	-	-	0.00001
Vanadium D-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	-	0.001
Zinc D-Zn	0.001	0.001	0.001								

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SC-5-2	HC-3	TRAVEL BLANK	WC-1	JC-2	SKC-4	SCH CA	SCH CA IT	FIELD BLANK	WC-1	JC-2	MC-5
Date Sampled	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	02/06/2007	10/06/2007	10/06/2007	10/06/2007
Time Sampled												
ALS Sample ID												
Nature	L514177-4	L514177-5	L514177-6	L514177-7	L514177-8	L514177-9	L514177-10	L514177-11	L514177-12	L516807-1	L516807-2	L516807-3
Physical Tests												
Hardness CaCO ₃	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 (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate 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												
Total Cyanide CN	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 T-Al	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 T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
Arsenic T-As	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 T-Ba	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 T-Be	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 T-Bi	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 T-B	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 T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00007	0.00003	0.00004
Calcium T-Ca	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 T-Cr	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 T-Co	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 T-Cu	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 T-Fe	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 T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0006	0.0005	0.00005
Lithium T-Li	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 T-Mg	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 T-Mn	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 T-Hg	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 T-Mo	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 T-Ni	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 T-P	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 T-K	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 T-Se	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 T-Si	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 T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00004	0.00001	0.00003
Sodium T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	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 T-Tl	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 T-Sn	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 T-Ti	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 T-U	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 T-V	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 T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.012	0.004	0.008
Dissolved Metals												
Aluminum D-Al	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0002	0.0005	0.0006
Barium D-Ba	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	-	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	-	0.00002	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	-	0.02	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001
Copper D-Cu	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0004	0.0007	0.0001
Iron D-Fe	0.03	0.03	-	0.03	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	-	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	-	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00003	0.00003	0.00003
Molybdenum D-Mo	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	-	0.3	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3
Potassium D-K	0.05	0.05	-	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	-	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001
Sodium D-Na	2	2	-	2	2	2	2	2				

Appendix 3.1-2
Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	MC-10	FIELD BLANK	WC-1	JC-2	MC-5	MC-10	MT-1	FIELD BLANK	B-LINE	F-LINE	D-LINE	SKC-4
Date Sampled	10/06/2007	10/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007	16/06/2007
Time Sampled												
ALS Sample ID	L516807-4	L516807-5	L519867-1	L519867-2	L519867-3	L519867-4	L519867-5	L519867-6	L519867-7	L519867-8	L519867-9	L519867-10
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness CaCO ₃	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 (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate 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												
Total Cyanide CN	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 T-Al	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 T-Sb	0.0006	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	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 T-Ba	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 T-Be	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 T-Bi	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 T-B	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 T-Cd	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	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 T-Cr	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 T-Co	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 T-Cu	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 T-Fe	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 T-Pb	0.0007	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	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 T-Mg	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 T-Mn	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 T-Hg	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 T-Mo	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 T-Ni	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 T-P	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 T-K	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 T-Se	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 T-Si	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 T-Ag	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	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 T-Tl	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 T-Sn	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 T-Ti	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 T-U	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 T-V	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 T-Zn	0.006	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 D-Al	0.001	-	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0008	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	-	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	-	0.00002	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	-	0.02	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0009	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Iron D-Fe	0.03	-	0.03	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	-	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	-	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00003	-	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	-	0.3	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	0.3
Potassium D-K	0.05	-	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	-	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	-	2	2	2	2	2	-	2	2	2	2
Strontium D-Sr	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Thallium D-Tl	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Tin D-Sn	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	0.0001
Titanium D-Ti	0.01	-	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	0.01
Uranium D-U	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	0.00001
Vanadium D-V	0.001	-	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	0.001
Zinc D-Zn	0.001	-	0.001</									

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	HC-3 16/06/2007	TRAVEL BLANK 16/06/2007	SC-1 16/06/2007	SC-4 16/06/2007	SC-5 16/06/2007	SC-6 16/06/2007	SKC-1-1 16/06/2007	SKC-1-2 16/06/2007	SC-1 16/07/2007	SC-4 16/07/2007	SC-5 16/07/2007	SC-6 16/07/2007
Date Sampled												
Time Sampled												
ALS Sample ID	L519867-11	L519867-12	L519867-13	L519867-14	L519867-15	L519867-16	L519867-17	L519867-18	L532433-1	L532433-2	L532433-3	L532433-4
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness CaCO ₃	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 (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.1	0.1	0.1	0.1
Cyanides												
Total Cyanide CN	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 T-Al	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Iron T-Fe	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 T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Mercury T-Hg	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 T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Phosphorus T-P	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 T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05
Selenium T-Se	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 T-Si	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 T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Titanium T-Ti	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 T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001
Dissolved Metals												
Aluminum D-Al	0.001	-	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001
Antimony D-Sb	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Boron D-B	0.01	-	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Cadmium D-Cd	0.00002	-	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	-	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02
Chromium D-Cr	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Copper D-Cu	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001
Iron D-Fe	0.03	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Lithium D-Li	0.005	-	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005
Magnesium D-Mg	0.005	-	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005
Manganese D-Mn	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium D-K	0.05	-	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05
Selenium D-Se	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	-	0.00001	0.00001	0.00001	0.00						

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SKC-1	MT-1	MC-5	MC-10	WC-1	FIELD BLANK	B-LINE	F-LINE	D-LINE	TRAVEL BLANK	HC-3-1	HC-3-2
Date Sampled	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007	16/07/2007
Time Sampled												
ALS Sample ID	L532433-5	L532434-1	L532434-2	L532434-3	L532434-4	L532434-5	L532535-1	L532535-2	L532535-3	L532535-4	L532539-1	L532539-2
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness CaCO ₃	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 (CU)	5	5	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	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
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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 SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients												
Ammonia Nitrogen 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
Total Kjeldahl Nitrogen 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
Nitrate 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 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 Nitrogen 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
Total Phosphate P	0.002	0.002	0.01	0.01	0.002	0.002	0.01	0.002	0.002	0.002	0.02	0.02
Cyanides												
Total Cyanide CN	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 T-Al	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 T-Sb	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 T-As	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 T-Ba	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 T-Be	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 T-Bi	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 T-B	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 T-Cd	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 T-Ca	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 T-Cr	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 T-Co	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 T-Cu	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 T-Fe	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 T-Pb	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 T-Li	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 T-Mg	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 T-Mn	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 T-Hg	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 T-Mo	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 T-Ni	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 T-P	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 T-K	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 T-Se	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 T-Si	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 T-Ag	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 T-Na	2	2	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	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 T-Tl	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 T-Sn	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 T-Ti	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 T-U	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 T-V	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 T-Zn	0.001	0.008	0.001	0.001	0.001	0.001	0.001	0.004	0.001	0.001	0.001	0.001
Dissolved Metals												
Aluminum D-Al	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.001	-	0.001	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	-	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	-	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	-	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	-	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	-	0.0005	0.0005
Boron D-B	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	0.01	-	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002	0.00002	-	0.00002	0.00002
Calcium D-Ca	0.02	0.02	0.02	0.02	0.02	-	0.02	0.02	0.02	-	0.02	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	-	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	-	0.0001	0.0001
Copper D-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	0.0001	-	0.0001	0.0001
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	-	0.03	0.03	0.03	-	0.03	0.03
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	-	0.00005	0.00005
Lithium D-Li	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	-	0.005	0.005
Magnesium D-Mg	0.005	0.005	0.005	0.005	0.005	-	0.005	0.005	0.005	-	0.005	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	-	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	-	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	0.00005	-	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	-	0.0005	0.0005
Phosphorus D-P	0.3	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	-	0.3	0.3
Potassium D-K	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	-	0.05	0.05
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	0.0005	-	0.0005	0.0005
Silicon D-Si	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	0.05	-	0.05	0.05
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	0.00001	-	0.00001	0.00001
Sodium D-Na	2	2	2	2	2	-						

Appendix 3.1-2
Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SC-4-1	SC-4-2	JC-1	JC-2	SC-6	MC-5	MC-9	SC-5	SC-7
Date Sampled	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007
Time Sampled									
ALS Sample ID	L545970-13	L545970-14	L545970-15	L545970-16	L545970-17	L546751-1	L546751-2	L546751-3	L546751-4
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	10	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions									
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients									
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides									
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals									
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.005	0.003	0.0005	0.0005	0.004	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals									
Aluminum D-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0001	0.0008	0.0004	0.0005	0.0009	0.0001	0.0007	0.0001	0.0001
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium D-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	2	2	2	2	2	2	2	2
Strontium D-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium D-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin D-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium D-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium D-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium D-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc D-Zn	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.002
Organic Parameters									
COD	20	20	20	20	20	20	20	20	20
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

(continued)

**Appendix 3.1-2
Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)**

Sample ID	TRAVEL BLANK	ST-1	ST-2	WC-1	YC-1	FIELD BLANK
Date Sampled	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007	21/08/2007
Time Sampled						
ALS Sample ID	L546751-5	L546751-6	L546751-7	L546751-8	L546751-9	L546751-10
Nature	Water	Water	Water	Water	Water	Water
Physical Tests						
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5
Conductivity (mS/cm)	2	2	2	2	2	2
pH	0.01	0.01	0.01	0.01	0.01	0.01
Total Dissolved Solids	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions						
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1
Alkalinity, Total CaCO ₃	2	2	2	2	2	2
Bromide Br	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
Fluoride F	0.02	0.02	0.02	0.02	0.02	0.02
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients						
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides						
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals						
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.01	0.001	0.001	0.001	0.001
Dissolved Metals						
Aluminum D-Al	-	0.001	0.001	0.001	0.001	-
Antimony D-Sb	-	0.0001	0.0001	0.0001	0.0001	-
Arsenic D-As	-	0.0001	0.0001	0.0001	0.0001	-
Barium D-Ba	-	0.00005	0.00005	0.00005	0.00005	-
Beryllium D-Be	-	0.0005	0.0005	0.0005	0.0005	-
Bismuth D-Bi	-	0.0005	0.0005	0.0005	0.0005	-
Boron D-B	-	0.01	0.01	0.01	0.01	-
Cadmium D-Cd	-	0.00002	0.00002	0.00002	0.00002	-
Calcium D-Ca	-	0.02	0.02	0.02	0.02	-
Chromium D-Cr	-	0.0005	0.0005	0.0005	0.0005	-
Cobalt D-Co	-	0.0001	0.0001	0.0001	0.0001	-
Copper D-Cu	-	0.0001	0.0001	0.0001	0.0001	-
Iron D-Fe	-	0.03	0.03	0.03	0.03	-
Lead D-Pb	-	0.00005	0.00005	0.00005	0.00005	-
Lithium D-Li	-	0.005	0.005	0.005	0.005	-
Magnesium D-Mg	-	0.005	0.005	0.005	0.005	-
Manganese D-Mn	-	0.00005	0.00005	0.00005	0.00005	-
Mercury D-Hg	-	0.00001	0.00001	0.00001	0.00001	-
Molybdenum D-Mo	-	0.00005	0.00005	0.00005	0.00005	-
Nickel D-Ni	-	0.0005	0.0005	0.0005	0.0005	-
Phosphorus D-P	-	0.3	0.3	0.3	0.3	-
Potassium D-K	-	0.05	0.05	0.05	0.05	-
Selenium D-Se	-	0.0005	0.0005	0.0005	0.0005	-
Silicon D-Si	-	0.05	0.05	0.05	0.05	-
Silver D-Ag	-	0.00001	0.00001	0.00001	0.00001	-
Sodium D-Na	-	2	2	2	2	-
Strontium D-Sr	-	0.0001	0.0001	0.0001	0.0001	-
Thallium D-Tl	-	0.0001	0.0001	0.0001	0.0001	-
Tin D-Sn	-	0.0001	0.0001	0.0001	0.0001	-
Titanium D-Ti	-	0.01	0.01	0.01	0.01	-
Uranium D-U	-	0.00001	0.00001	0.00001	0.00001	-
Vanadium D-V	-	0.001	0.001	0.001	0.001	-
Zinc D-Zn	-	0.002	0.001	0.003	0.001	-
Organic Parameters						
COD	20	20	20	20	20	20
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

(continued)

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SC-6-1	SC-6-2	SKC-1	FIELD BLANK	TRAVEL BLANK	SKC-4	WC-1	MT-1	SC-1	SC-4
Date Sampled	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007	28/09/2007
Time Sampled										
ALS Sample ID	L561241-1	L561241-2	L561241-3	L561241-4	L561241-5	L561257-1	L561257-2	L561257-3	L561257-4	L561257-5
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	10	10	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate CaCO ₃	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate CaCO ₃	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide CaCO ₃	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients										
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides										
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals										
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals										
Aluminum D-Al	0.001	0.001	0.001	-	-	0.005	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	-	-	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	0.02	-	-	0.02	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0007	0.0008	0.0007	-	-	0.0006	0.0004	0.0008	0.0004	0.0003
Iron D-Fe	0.03	0.03	0.03	-	-	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	0.3	-	-	0.3	0.3	0.3	0.3	0.3
Potassium D-K	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	2	2	-	-	2	2	2	2	2
Strontium D-Sr	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium D-Tl	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Tin D-Sn	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium D-Ti	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01	0.01
Uranium D-U	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium D-V	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001	0.001
Zinc D-Zn	0.001	0.001	0.001	-	-	0.002	0.004	0.001	0.001	0.001
Organic Parameters										
COD	20	20	20	20	20	20	20	20	20	20
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

(continued)

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (continued)

Sample ID	SKC-4	ST-2	WC-1	YC-1-1	FIELD BLANK	TRAVEL BLANK	YC-1-2	SKC-1	SKC-4	MC-5
Date Sampled	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	21/11/2007	13/12/2007	13/12/2007	13/12/2007
Time Sampled										
ALS Sample ID	L581748-18	L581748-19	L581748-20	L581748-21	L581748-22	L581748-23	L581748-24	L589037-1	L589037-2	L589037-3
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	10	10	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions										
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate CaCO ₃	2	2	2	2	2	2	2	2	2	2
Alkalinity, Carbonate CaCO ₃	2	2	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide CaCO ₃	2	2	2	2	2	2	2	2	2	2
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients										
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides										
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals										
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0006	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals										
Aluminum D-Al	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Boron D-B	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	-	-	0.00002	0.00002	0.00002	0.00002
Calcium D-Ca	0.02	0.02	0.02	0.02	-	-	0.02	0.02	0.02	0.02
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Copper D-Cu	0.0005	0.0007	0.0003	0.0006	-	-	0.0006	0.0005	0.0005	0.0005
Iron D-Fe	0.03	0.03	0.03	0.03	-	-	0.03	0.03	0.03	0.03
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Lithium D-Li	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005
Magnesium D-Mg	0.005	0.005	0.005	0.005	-	-	0.005	0.005	0.005	0.005
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	-	-	0.00005	0.00005	0.00005	0.00005
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Phosphorus D-P	0.3	0.3	0.3	0.3	-	-	0.3	0.3	0.3	0.3
Potassium D-K	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	-	-	0.0005	0.0005	0.0005	0.0005
Silicon D-Si	0.05	0.05	0.05	0.05	-	-	0.05	0.05	0.05	0.05
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001
Sodium D-Na	2	2	2	2	-	-	2	2	2	2
Strontium D-Sr	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Thallium D-Tl	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Tin D-Sn	0.0001	0.0001	0.0001	0.0001	-	-	0.0001	0.0001	0.0001	0.0001
Titanium D-Ti	0.01	0.01	0.01	0.01	-	-	0.01	0.01	0.01	0.01
Uranium D-U	0.00001	0.00001	0.00001	0.00001	-	-	0.00001	0.00001	0.00001	0.00001
Vanadium D-V	0.001	0.001	0.001	0.001	-	-	0.001	0.001	0.001	0.001
Zinc D-Zn	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
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

(continued)

Appendix 3.1-2

Schaft Creek Project Stream Water Quality Detection Limits, 2007 (completed)

Sample ID	MC-10	HC-3-1	HC-3-2	SC-4	FIELD BLANK	JC-2	WC-1	TRAVEL BLANK
Date Sampled	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007	13/12/2007
Time Sampled								
ALS Sample ID	L589037-4	L589037-5	L589037-6	L589037-7	L589037-8	L589037-9	L589037-10	L589037-11
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Hardness CaCO ₃	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Colour (CU)	5	5	5	5	5	5	5	5
Conductivity (mS/cm)	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
Total Dissolved Solids	10	10	10	10	10	10	10	10
Total Suspended Solids	3	3	3	3	3	3	3	3
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Anions								
Acidity (to pH 8.3) CaCO ₃	1	1	1	1	1	1	1	1
Alkalinity, Bicarbonate CaCO ₃	2	2	2	2	2	2	2	2
Alkalinity, Carbonate CaCO ₃	2	2	2	2	2	2	2	2
Alkalinity, Hydroxide CaCO ₃	2	2	2	2	2	2	2	2
Alkalinity, Total CaCO ₃	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
Chloride Cl	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
Sulfate SO ₄	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Nutrients								
Ammonia Nitrogen N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Total Kjeldahl Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nitrate N	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrite N	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Nitrogen N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Phosphate P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Cyanides								
Total Cyanide CN	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals								
Aluminum T-Al	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Antimony T-Sb	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Arsenic T-As	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Barium T-Ba	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Beryllium T-Be	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth T-Bi	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Boron T-B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cadmium T-Cd	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Calcium T-Ca	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Chromium T-Cr	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cobalt T-Co	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Copper T-Cu	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Iron T-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead T-Pb	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Lithium T-Li	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Magnesium T-Mg	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Manganese T-Mn	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Mercury T-Hg	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum T-Mo	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel T-Ni	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Phosphorus T-P	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potassium T-K	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Selenium T-Se	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Silicon T-Si	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silver T-Ag	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium T-Na	2	2	2	2	2	2	2	2
Strontium T-Sr	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Thallium T-Tl	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin T-Sn	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Titanium T-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Uranium T-U	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Vanadium T-V	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc T-Zn	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Metals								
Aluminum D-Al	0.001	0.001	0.001	0.001	-	0.001	0.001	-
Antimony D-Sb	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	-
Arsenic D-As	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	-
Barium D-Ba	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	-
Beryllium D-Be	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	-
Bismuth D-Bi	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	-
Boron D-B	0.01	0.01	0.01	0.01	-	0.01	0.01	-
Cadmium D-Cd	0.00002	0.00002	0.00002	0.00002	-	0.00002	0.00002	-
Calcium D-Ca	0.02	0.02	0.02	0.02	-	0.02	0.02	-
Chromium D-Cr	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	-
Cobalt D-Co	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	-
Copper D-Cu	0.0004	0.0005	0.0005	0.0005	-	0.0002	0.0003	-
Iron D-Fe	0.03	0.03	0.03	0.03	-	0.03	0.03	-
Lead D-Pb	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	-
Lithium D-Li	0.005	0.005	0.005	0.005	-	0.005	0.005	-
Magnesium D-Mg	0.005	0.005	0.005	0.005	-	0.005	0.005	-
Manganese D-Mn	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	-
Mercury D-Hg	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	-
Molybdenum D-Mo	0.00005	0.00005	0.00005	0.00005	-	0.00005	0.00005	-
Nickel D-Ni	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	-
Phosphorus D-P	0.3	0.3	0.3	0.3	-	0.3	0.3	-
Potassium D-K	0.05	0.05	0.05	0.05	-	0.05	0.05	-
Selenium D-Se	0.0005	0.0005	0.0005	0.0005	-	0.0005	0.0005	-
Silicon D-Si	0.05	0.05	0.05	0.05	-	0.05	0.05	-
Silver D-Ag	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	-
Sodium D-Na	2	2	2	2	-	2	2	-
Strontium D-Sr	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	-
Thallium D-Tl	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	-
Tin D-Sn	0.0001	0.0001	0.0001	0.0001	-	0.0001	0.0001	-
Titanium D-Ti	0.01	0.01	0.01	0.01	-	0.01	0.01	-
Uranium D-U	0.00001	0.00001	0.00001	0.00001	-	0.00001	0.00001	-
Vanadium D-V	0.001	0.001	0.001	0.001	-	0.001	0.001	-
Zinc D-Zn	0.001	0.001	0.001	0.001	-	0.001	0.001	-
Organic Parameters								
COD	20	20	20	20	20	20	20	20
Total Organic Carbon C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Results are expressed as milligrams per litre except where noted

**APPENDIX 3.1-3
SCHAFT CREEK PROJECT RELATIVE PERCENT
DIFFERENCE (RPD) RESULTS FOR STREAM WATER
QUALITY, 2007**

**Appendix 3.1-3
Schaft Creek Project Relative Percent Difference (RPD) Results for Stream Water Quality, 2007**

Sample ID Date Sampled Time Sampled ALS Sample ID Nature	WC-1-1 02/02/2007		WC-1-2 02/02/2007		WC-1-1 23/02/2007		WC-1-2 23/02/2007		MC-7-1 24/03/2007		MC-7-2 24/03/2007		SC-2-1 26/04/2007		SC-2-2 26/04/2007	
	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %	RPD %
Physical Tests																
Hardness CaCO ₃	48.6	48.6	0	51	49.9	2	262	267	2	105	106	1				
Colour (CU)	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*	
Conductivity (mS/cm)	129	129	0	131	131	0	480	478	0	213	214	0				
pH	8.00	7.99	0	8.06	8.03	0	8.25	8.25	0	8.24	8.24	0				
Total Dissolved Solids	90.0	88.0	2	91.0	90.0	1	269	274	2	125	118	6				
Total Suspended Solids	1.5	1.5	*	1.5	1.5	*	1.5	1.5	*	1.5	1.5	*				
Turbidity (NTU)	0.57	0.60	5	0.65	0.60	8	1.08	1.17	8	0.91	0.83	9				
Dissolved Anions																
Acidity (to pH 8.3) CaCO ₃	2.5	2.4	*	2.1	2.2	*	0.5	0.5	*	0.5	0.5	*				
Alkalinity, Total CaCO ₃	58.2	56.3	3	56.7	56.7	0	244	231	5	78.8	78.6	0				
Bromide Br	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*				
Chloride Cl	0.25	0.25	*	0.25	0.25	*	1.33	1.32	*	0.25	0.25	*				
Fluoride F	0.179	0.181	1	0.205	0.208	1	0.038	0.043	*	0.026	0.025	*				
Sulfate SO ₄	12.0	12.0	0	12.5	12.5	0	36.1	36.0	0	18.4	18.4	0				
Nutrients																
Ammonia Nitrogen N	0.0025	0.0025	*	0.0025	0.0025	*	0.0079	0.0081	*	0.0025	0.0025	*				
Total Kjeldahl Nitrogen N	0.075	0.025	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*				
Nitrate N	0.0647	0.0656	1	0.0422	0.0439	4	0.107	0.106	1	0.0424	0.0441	4				
Nitrite N	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*				
Total Nitrogen N	0.14	0.10	*	0.08	0.08	*	0.12	0.12	*	0.07	0.08	*				
Total Phosphate P	0.0204	0.0207	1	0.0194	0.0199	3	0.001	0.0029	*	0.0027	0.0035	*				
Cyanides																
Total Cyanide CN	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0012	0.0013	*				
Total Metals																
Aluminum T-Al	0.0449	0.0437	3	0.0431	0.0414	4	0.0021	0.0015	*	0.0127	0.0314	85				
Antimony T-Sb	0.00005	0.00005	*	0.00005	0.00005	*	0.00067	0.00071	6	0.00005	0.00005	*				
Arsenic T-As	0.00017	0.00016	*	0.00018	0.00017	*	0.00050	0.00049	*	0.00054	0.00057	5				
Barium T-Ba	0.00476	0.00471	1	0.00494	0.00493	0	0.0885	0.0895	1	0.0876	0.0876	1				
Beryllium T-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*				
Bismuth T-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*				
Boron T-B	0.010	0.010	*	0.011	0.011	*	0.015	0.015	*	0.013	0.014	*				
Cadmium T-Cd	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*				
Calcium T-Ca	11.6	11.5	1	12.2	12.0	2	46.4	47.1	1	32.5	33.0	2				
Chromium T-Cr	0.00025	0.00025	*	0.00025	0.00073	*	0.00025	0.00025	*	0.00075	0.00103	*				
Cobalt T-Co	0.00005	0.00005	*	0.00005	0.00005	*	0.00018	0.00018	*	0.00005	0.00005	*				
Copper T-Cu	0.00019	0.00018	*	0.00022	0.00024	*	0.00017	0.00018	*	0.00064	0.00102	46				
Iron T-Fe	0.041	0.036	*	0.032	0.036	*	0.241	0.241	0	0.044	0.085	*				
Lead T-Pb	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000025	*				
Lithium T-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*				
Magnesium T-Mg	4.85	4.76	2	5.01	4.89	2	33.2	32.1	3	5.28	5.39	2				
Manganese T-Mn	0.00641	0.00625	3	0.00607	0.00622	2	0.0333	0.0335	1	0.0186	0.0257	32				
Mercury T-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*				
Molybdenum T-Mo	0.000835	0.000827	1	0.000949	0.000957	1	0.000338	0.000367	8	0.0132	0.0128	3				
Nickel T-Ni	0.00025	0.00025	*	0.00025	0.00025	*	0.00070	0.00074	*	0.00025	0.00025	*				
Phosphorus T-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*				
Potassium T-K	1.69	1.67	1	1.76	1.73	2	0.689	0.697	1	0.648	0.668	3				
Selenium T-Se	0.00025	0.00025	*	0.00025	0.00025	*	0.00082	0.00074	*	0.00025	0.00051	*				
Silicon T-Si	10.6	10.4	2	10.8	10.7	1	2.09	2.09	0	2.68	2.63	2				
Silver T-Ag	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*				
Sodium T-Na	5.9	5.6	*	6.1	6.1	*	4.0	4.1	*	1	1	*				
Strontium T-Sr	0.0518	0.0519	0	0.0551	0.0542	2	0.301	0.306	2	0.161	0.163	1				
Thallium T-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*				
Tin T-Sn	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*				
Titanium T-Ti	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*				
Uranium T-U	0.000126	0.000120	5	0.000135	0.000136	1	0.000248	0.000239	4	0.000352	0.000469	29				
Vanadium T-V	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*				
Zinc T-Zn	0.0016	0.0013	*	0.0013	0.0016	*	0.0005	0.0005	*	0.0005	0.0005	*				
Dissolved Metals																
Aluminum D-Al	0.0179	0.0203	13	0.0164	0.0163	1	0.0005	0.0005	*	0.0053	0.0053	0				
Antimony D-Sb	0.00005	0.00005	*	0.00005	0.00005	*	0.00066	0.00068	3	0.00005	0.00005	*				
Arsenic D-As	0.00015	0.00017	*	0.00017	0.00017	*	0.00032	0.00032	*	0.00048	0.00049	*				
Barium D-Ba	0.00458	0.00456	0	0.00486	0.00473	3	0.0878	0.0888	1	0.0871	0.0868	0				
Beryllium D-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*				
Bismuth D-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*				
Boron D-B	0.011	0.010	*	0.011	0.011	*	0.015	0.016	*	0.013	0.014	*				
Cadmium D-Cd	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*				
Calcium D-Ca	11.6	11.5	1	12.3	12.0	2	48.2	49.5	3	33.0	33.4	1				
Chromium D-Cr	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*				
Cobalt D-Co	0.00005	0.00005	*	0.00005	0.00005	*	0.00017	0.00017	*	0.00005	0.00005	*				
Copper D-Cu	0.0002	0.0002	*	0.00028	0.00031	*	0.00012	0.00013	*	0.00076	0.00072	5				
Iron D-Fe	0.015	0.015	*	0.015	0.015	*	0.015	0.015	*	0.015	0.015	*				
Lead D-Pb	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000025	*				
Lithium D-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*				
Magnesium D-Mg	4.79	4.81	0	4.96	4.86	2	34.3	34.8	1	5.34	5.40	1				
Manganese D-Mn	0.00155	0.00161	4	0.00120	0.00121	1	0.0332	0.0337	1	0.0220	0.0222	1				
Mercury D-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*				
Molybdenum D-Mo	0.000905	0.000940	4	0.000990	0.00103	4	0.000386	0.000403	4	0.0130	0.0131	1				
Nickel D-Ni	0.00025	0.00025	*	0.00025	0.00025	*	0.00072	0.00077	*	0.00025	0.00025	*				
Phosphorus D-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*				
Potassium D-K	1.69	1.68	1	1.76	1.74	1	0.721	0.746	3	0.659	0.673	2				
Selenium D-Se	0.00025	0.00058	*	0.00056	0.00052	*	0.00100	0.00								

Appendix 3.1-3

Schaft Creek Project Relative Percent Difference (RPD) Results for Stream Water Quality, 2007 (continued)

Sample ID	WC-1-1	WC-1-2		MC-10-1	MC-10-2		SKC-4-1	SKC-4-2		SC-5-1	SC-5-2	
Date Sampled	19/05/2007	19/05/2007		19/05/2007	19/05/2007		26/05/2007	26/05/2007		02/06/2007	02/06/2007	
Time Sampled			RPD %			RPD %			RPD %			RPD %
ALS Sample ID	L508063-22	L508063-23		L508063-25	L508063-26		L510791-5	L510791-6		L514177-3	L514177-4	
Nature	Water	Water		Water	Water		Water	Water		Water	Water	
Physical Tests												
Hardness CaCO ₃	61.6	61.9	0	159	159	0	63.4	63.3	0	54.8	54.7	0
Colour (CU)	5.1	5.1	*	5.9	5.7	*	24.4	24.6	*	12.9	12.9	*
Conductivity (mS/cm)	148	148	0	306	306	0	129	129	0	118	118	0
pH	8.00	7.99	0	8.02	8.01	0	8.04	8.05	0	8.07	8.03	0
Total Dissolved Solids	85	83.6	2	169	169	0	92.0	89.0	3	78.0	78.0	0
Total Suspended Solids	6.0	4.0	*	36.7	30.7	18	23.7	20.7	14	85.5	78.0	9
Turbidity (NTU)	2.96	2.87	3	17.6	14.0	23	1.55	1.62	4	23.7	23.0	3
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1.8	1.8	*	2.7	2.7	*	4.3	4.1	*	2.7	2.7	*
Alkalinity, Total CaCO ₃	67.6	65.3	3	151	152	1	60.7	59.2	3	65.8	53.4	21
Bromide Br	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*
Chloride Cl	0.25	0.25	*	1.46	1.46	*	0.25	0.25	*	0.25	0.25	*
Fluoride F	0.202	0.200	1	0.039	0.037	*	0.025	0.022	*	0.043	0.044	*
Sulfate SO ₄	12.4	12.4	0	14.6	14.6	0	8.14	8.14	0	5.50	5.52	0
Nutrients												
Ammonia Nitrogen N	0.0025	0.0025	*	0.0061	0.0084	*	0.0025	0.0025	*	0.0025	0.0025	*
Total Kjeldahl Nitrogen N	0.1	0.1	*	0.195	0.187	*	0.228	0.218	*	0.151	0.173	*
Nitrate N	0.0025	0.0025	*	0.175	0.173	1	0.112	0.112	0	0.129	0.117	10
Nitrite N	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Total Nitrogen N	0.10	0.10	*	0.37	0.36	3	0.34	0.33	3	0.28	0.29	4
Total Phosphate P	0.0249	0.0191	26	0.0362	0.0570	45	0.0173	0.0221	24	0.0880	0.0741	17
Cyanides												
Total Cyanide CN	0.0015	0.0005	*	0.0026	0.0029	*	0.0055	0.0060	9	0.0037	0.0040	*
Total Metals												
Aluminum T-Al	0.122	0.157	25	0.380	0.266	35	0.0792	0.0852	7	0.309	0.323	4
Antimony T-Sb	0.00005	0.00005	*	0.00029	0.00025	*	0.00005	0.00005	*	0.00005	0.00005	*
Arsenic T-As	0.00019	0.00021	*	0.00371	0.00338	9	0.00029	0.00030	*	0.00063	0.00063	0
Barium T-Ba	0.00676	0.00677	0	0.143	0.140	2	0.0100	0.0104	4	0.0674	0.0680	1
Beryllium T-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Bismuth T-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Boron T-B	0.013	0.013	*	0.030	0.030	*	0.005	0.005	*	0.005	0.005	*
Cadmium T-Cd	0.00001	0.000021	*	0.000024	0.00001	*	0.00001	0.00001	*	0.00001	0.000023	*
Calcium T-Ca	14.5	15.6	7	40.2	40.4	0	20.2	20.4	1	18.9	18.8	1
Chromium T-Cr	0.00025	0.00025	*	0.00115	0.00084	*	0.00025	0.00025	*	0.00076	0.00071	*
Cobalt T-Co	0.00005	0.00005	*	0.00115	0.00100	14	0.00013	0.00014	*	0.00039	0.00038	*
Copper T-Cu	0.00055	0.0003	*	0.00234	0.00204	14	0.00166	0.00163	2	0.00367	0.00414	12
Iron T-Fe	0.198	0.220	11	2.21	2.00	14	0.207	0.207	4	0.635	0.640	1
Lead T-Pb	0.000062	0.000073	*	0.000250	0.000218	*	0.000071	0.000100	*	0.000295	0.000277	6
Lithium T-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Magnesium T-Mg	5.70	6.23	9	16.8	17.0	1	3.33	3.36	1	2.56	2.63	3
Manganese T-Mn	0.0224	0.0219	2	0.209	0.205	2	0.0180	0.0213	17	0.0468	0.0503	7
Mercury T-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Molybdenum T-Mo	0.000900	0.0005	*	0.00129	0.00130	*	0.000429	0.000454	6	0.00319	0.00303	5
Nickel T-Ni	0.00025	0.00025	*	0.00428	0.00383	11	0.00134	0.00141	*	0.00091	0.00086	*
Phosphorus T-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*
Potassium T-K	1.94	2.09	7	0.989	0.943	5	0.436	0.435	0	0.537	0.528	2
Selenium T-Se	0.00025	0.00065	*	0.00090	0.00061	*	0.00025	0.00025	*	0.00063	0.00025	*
Silicon T-Si	10.6	10.4	2	3.63	3.50	4	3.49	3.44	1	2.66	2.65	0
Silver T-Ag	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Sodium T-Na	6.7	6.7	*	4.4	4.4	*	1	1	*	1	1	*
Strontium T-Sr	0.0583	0.0615	5	0.168	0.169	1	0.0451	0.0460	2	0.0902	0.0885	2
Thallium T-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Tin T-Sn	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Titanium T-Ti	0.005	0.005	*	0.011	0.005	*	0.005	0.005	*	0.012	0.011	*
Uranium T-U	0.000179	0.000196	9	0.000106	0.000101	5	0.000072	0.000079	9	0.000791	0.000771	3
Vanadium T-V	0.0005	0.0005	*	0.0018	0.0013	*	0.0005	0.0005	*	0.0012	0.0012	*
Zinc T-Zn	0.0025	0.0033	*	0.0031	0.0028	*	0.0011	0.0005	*	0.0005	0.0005	*
Dissolved Metals												
Aluminum D-Al	0.0266	0.0266	0	0.0015	0.0015	*	0.0211	0.0206	2	0.0497	0.0475	5
Antimony D-Sb	0.00005	0.00005	*	0.00020	0.00020	*	0.00005	0.00005	*	0.00005	0.00005	*
Arsenic D-As	0.00017	0.00016	*	0.00109	0.00111	2	0.00021	0.00020	*	0.00033	0.00035	*
Barium D-Ba	0.00585	0.00588	1	0.130	0.128	2	0.00896	0.00904	1	0.0566	0.0566	0
Beryllium D-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Bismuth D-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Boron D-B	0.013	0.013	*	0.028	0.028	*	0.005	0.005	*	0.005	0.005	*
Cadmium D-Cd	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*
Calcium D-Ca	14.9	14.9	0	37.7	37.8	0	20.1	20.0	0	18.1	18.0	1
Chromium D-Cr	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Cobalt D-Co	0.00005	0.00005	*	0.00039	0.00037	*	0.00005	0.00005	*	0.00005	0.00005	*
Copper D-Cu	0.00025	0.0002	*	0.00025	0.00025	*	0.00119	0.00110	8	0.00160	0.00156	3
Iron D-Fe	0.015	0.015	*	0.015	0.015	*	0.052	0.048	*	0.053	0.052	*
Lead D-Pb	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000025	*
Lithium D-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Magnesium D-Mg	5.89	5.96	1	15.7	15.7	0	3.21	3.24	1	2.35	2.37	1
Manganese D-Mn	0.00630	0.00635	1	0.141	0.138	2	0.00523	0.00525	0	0.00530	0.00533	1
Mercury D-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Molybdenum D-Mo	0.000976	0.000967	1	0.00125	0.00128	2	0.000455	0.000443	3	0.00329	0.00323	2
Nickel D-Ni	0.00025	0.00025	*	0.00203	0.00198	*	0.00104	0.00094	*	0.00025	0.00025	*
Phosphorus D-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*
Potassium D-K	2.00	2.02	1	0.820	0.823	0	0.422	0.417	1	0.472	0.475	1
Selenium D-Se	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00057	*	0.00025	0.00062	*
Silicon D-Si	10.4	10.4	0	3.20	3.14	2	3.33	3.34	0	2.25	2.24	0
Silver D-Ag	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Sodium D-Na	6.8	6.7	*	4.5	4.4	*	1	1	*	1	1	*
Strontium D-Sr	0.0598	0.0604	1	0.163	0.162	1	0.0445	0.0445	0	0.0865	0.0845	2
Thallium D-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Tin D-Sn	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Titanium D-Ti	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*
Uranium D-U	0.000172	0.000172	0	0.000093	0.000090	3	0.000064	0.000066	3	0.000711	0.000694	2
Vanadium D-V	0.0005	0.0005	*	0.00005	0.00005	*	0.0005	0.0005	*	0.0005		

Appendix 3.1-3

Schaft Creek Project Relative Percent Difference (RPD) Results for Stream Water Quality, 2007 (continued)

Sample ID	SKC-1-1	SKC-1-2		HC-3-1	HC-3-2		MC-1-1	MC-1-2		SC-4-1	SC-4-2	
Date Sampled	16/06/2007	16/06/2007		16/07/2007	16/07/2007		21/08/2007	21/08/2007		21/08/2007	21/08/2007	
Time Sampled			RPD %			RPD %			RPD %			RPD %
ALS Sample ID	L519867-17	L519867-18		L532539-1	L532539-2		L545970-4	L545970-5		L545970-13	L545970-14	
Nature	Water	Water		Water	Water		Water	Water		Water	Water	
Physical Tests												
Hardness CaCO ₃	75	74.3	*	46.6	47.9	3	48.1	60.7	23	35.6	36	1
Colour (CU)	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*
Conductivity (mS/cm)	157	158	1	96.9	96.5	0	99.9	98.6	1	71.4	72.1	1
pH	7.98	7.98	0	7.96	7.97	0	8.06	8.08	0	7.23	8.03	10
Total Dissolved Solids	92.0	89.0	3	83.0	70.0	17	53.0	51.0	4	49.0	48.0	*
Total Suspended Solids	4.8	3.8	*	122	134	9	144	189	27	107	102	5
Turbidity (NTU)	2.36	2.18	8	145	146	1	102	106	4	81.6	75.5	8
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	1.4	1.4	*	1.0	0.5	*	5.0	4.6	*	8.9	5.8	42
Alkalinity, Total CaCO ₃	66.5	68.7	3	40.9	40.9	0	40.0	39.5	1	31.2	30.3	3
Bromide Br	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*
Chloride Cl	0.25	0.25	*	0.25	0.25	*	0.25	0.25	*	0.25	0.25	*
Fluoride F	0.01	0.022	*	0.01	0.01	*	0.01	0.01	*	0.027	0.026	*
Sulfate SO ₄	15.5	15.5	0	5.74	5.73	0	7.55	7.52	0	3.70	3.72	1
Nutrients												
Ammonia Nitrogen N	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Total Kjeldahl Nitrogen N	0.059	0.071	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*
Nitrate N	0.0612	0.0595	3	0.0147	0.0135	*	0.0025	0.0025	*	0.0025	0.0025	*
Nitrite N	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Total Nitrogen N	0.12	0.13	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*
Total Phosphate P	0.0101	0.0048	*	0.144	0.116	22	0.150	0.208	32	0.136	0.139	2
Cyanides												
Total Cyanide CN	0.0018	0.0019	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Total Metals												
Aluminum T-Al	0.0755	0.0822	8	3.75	4.71	23	3.18	3.30	4	4.64	2.37	65
Antimony T-Sb	0.00005	0.00005	*	0.00012	0.00014	*	0.00053	0.00054	2	0.00010	0.00005	*
Arsenic T-As	0.00044	0.00043	*	0.00389	0.00425	9	0.00524	0.00412	24	0.00185	0.00154	18
Barium T-Ba	0.0109	0.0107	2	0.0457	0.0482	5	0.104	0.0988	5	0.0916	0.0808	13
Beryllium T-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Bismuth T-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Boron T-B	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*
Cadmium T-Cd	0.00001	0.00001	*	0.000061	0.000063	*	0.000051	0.000064	*	0.000046	0.000057	*
Calcium T-Ca	26.5	17.1	2	17.9	17.7	1	13.7	12.6	9	13.6	13.4	1
Chromium T-Cr	0.00025	0.00025	*	0.0136	0.0167	20	0.00690	0.00700	1	0.00546	0.00287	62
Cobalt T-Co	0.00005	0.00005	*	0.00482	0.00564	16	0.00340	0.00268	24	0.00238	0.00143	50
Copper T-Cu	0.00159	0.00182	13	0.0154	0.0163	6	0.00621	0.00575	8	0.0122	0.0105	15
Iron T-Fe	0.128	0.140	*	4.11	5.02	20	5.27	4.63	13	3.94	2.02	64
Lead T-Pb	0.000025	0.000025	*	0.00127	0.00132	4	0.000821	0.000591	33	0.00110	0.000984	11
Lithium T-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Magnesium T-Mg	2.19	2.21	1	6.27	7.13	13	9.09	8.59	6	3.72	2.68	33
Manganese T-Mn	0.0105	0.00999	5	0.133	0.147	10	0.129	0.0956	30	0.122	0.0911	29
Mercury T-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000019	0.000021	*	0.000005	0.000005	*
Molybdenum T-Mo	0.000759	0.000729	4	0.000463	0.000452	2	0.000621	0.000693	11	0.00266	0.00228	15
Nickel T-Ni	0.00025	0.00025	*	0.0119	0.0140	16	0.0149	0.0121	21	0.0025	0.0015	*
Phosphorus T-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*
Potassium T-K	0.315	0.323	3	1.04	1.23	17	1.39	1.47	6	1.42	0.920	43
Selenium T-Se	0.00051	0.00069	*	0.00025	0.00069	*	0.00076	0.00056	*	0.00101	0.00088	*
Silicon T-Si	2.54	2.60	2	7.91	9.73	21	5.93	6.87	15	10.3	5.30	64
Silver T-Ag	0.000005	0.000005	*	0.000028	0.000029	*	0.000029	0.000035	*	0.000022	0.000014	*
Sodium T-Na	1	1	*	1	1	*	1	1	*	1	1	*
Strontium T-Sr	0.0476	0.0476	0	0.0772	0.0767	1	0.0877	0.0851	3	0.0793	0.0748	6
Thallium T-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Tin T-Sn	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00013	0.00018	*
Titanium T-Ti	0.005	0.005	*	0.160	0.211	27	0.088	0.111	23	0.236	0.101	80
Uranium T-U	0.000219	0.000227	4	0.000071	0.000076	7	0.000114	0.000112	2	0.000651	0.000618	5
Vanadium T-V	0.0005	0.0005	*	0.0129	0.0162	23	0.0101	0.0097	4	0.0109	0.0058	61
Zinc T-Zn	0.0011	0.0012	*	0.0130	0.0147	12	0.0135	0.0130	3	0.0129	0.0111	15
Dissolved Metals												
Aluminum D-Al	0.0069	0.0074	7	0.0500	0.108	73	0.0600	0.370	144	0.189	0.171	10
Antimony D-Sb	0.00005	0.00005	*	0.00005	0.00005	*	0.00020	0.00023	*	0.00005	0.00005	*
Arsenic D-As	0.00029	0.00031	*	0.00132	0.00130	2	0.00045	0.00281	*	0.00048	0.00050	*
Barium D-Ba	0.0101	0.0103	2	0.0197	0.0203	3	0.0490	0.0921	61	0.0431	0.0437	1
Beryllium D-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Bismuth D-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Boron D-B	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*
Cadmium D-Cd	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.000025	*	0.000033	0.00001	*
Calcium D-Ca	26.6	26.3	1	15.3	15.7	3	10.1	12.5	21	11.7	11.8	1
Chromium D-Cr	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00150	*	0.00025	0.00025	*
Cobalt D-Co	0.00005	0.00005	*	0.00005	0.00010	*	0.00005	0.00179	*	0.00005	0.00005	*
Copper D-Cu	0.00110	0.00124	12	0.00049	0.00070	*	0.00015	0.00386	*	0.00106	0.0004	*
Iron D-Fe	0.015	0.015	*	0.015	0.074	*	0.031	2.98	*	0.094	0.086	*
Lead D-Pb	0.000025	0.000025	*	0.000025	0.000025	*	0.000025	0.000560	*	0.000065	0.000025	*
Lithium D-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Magnesium D-Mg	2.09	2.10	0	2.03	2.12	4	5.56	7.17	25	1.53	1.56	2
Manganese D-Mn	0.00197	0.00211	7	0.00910	0.0101	10	0.00110	0.102	196	0.00917	0.00798	14
Mercury D-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Molybdenum D-Mo	0.000768	0.000789	3	0.000431	0.000414	4	0.000585	0.000193	*	0.00248	0.00259	4
Nickel D-Ni	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00613	*	0.00025	0.00025	*
Phosphorus D-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*
Potassium D-K	0.306	0.313	2	0.330	0.342	4	0.275	0.341	21	0.357	0.357	0
Selenium D-Se	0.00082	0.00064	*	0.00025	0.00025	*	0.00053	0.00071	*	0.00025	0.00063	*
Silicon D-Si	2.42	2.42	0	1.09	1.21	10	0.988	1.37	32	1.24	1.20	3
Silver D-Ag	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000014	*	0.000005	0.000005	*
Sodium D-Na	1	1	*	1	1	*	1	1	*	1	1	*
Strontium D-Sr	0.0474	0.0475	0	0.0647	0.0656	1	0.0739	0.0776	5	0.0617	0.0628	2
Thallium D-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Tin D-Sn	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Titanium D-Ti	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*
Uranium D-U	0.000215	0.000212	1	0.000022	0.000022	*	0.000058	0.000078	29	0.000419	0.000417	0
Vanadium D-V	0.0005	0.0005	*	0.0005	0.0005	*	0.00029					

Appendix 3.1-3

Relative Percent Difference (RPD) Duplicate Results for Stream Water Quality (completed)

Sample ID	SC-6-1	SC-6-2		JC-2-1	JC-2-2		YC-1-1	YC-1-2		HC-3-1	HC-3-2	
Date Sampled	28/09/2007	28/09/2007		21/11/2007	21/11/2007		21/11/2007	21/11/2007		13/12/2007	13/12/2007	
Time Sampled												
ALS Sample ID	L561241-1	L561241-2	RPD %	L581748-4	L581748-5	RPD %	L581748-21	L581748-24	RPD %	L589037-5	L589037-6	RPD %
Nature	Water	Water		Water	Water		Water	Water		Water	Water	
Physical Tests												
Hardness CaCO ₃	57	57.7	*	44.5	43.9	*	58.9	59.2	1	86	86.9	1
Colour (CU)	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*	2.5	2.5	*
Conductivity (mS/cm)	127	126	1	99.4	99.3	0	128	128	0	198	199	1
pH	8.28	8.23	1	7.89	7.9	0	7.98	7.97	0	8.07	8.06	0
Total Dissolved Solids	74.0	75.0	1	52	54	4	72	69	4	124	125	1
Total Suspended Solids	3.3	3.8	*	1.5	1.5	*	1.5	1.5	*	1.5	1.5	*
Turbidity (NTU)	8.32	8.03	4	0.48	0.76	*	1.28	1.06	19	1.08	0.99	9
Dissolved Anions												
Acidity (to pH 8.3) CaCO ₃	0.5	1.3	*	1.6	1.6	*	1.7	1.7	*	1.3	1.2	*
Alkalinity, Bicarbonate CaCO ₃	53.0	52.8	0	45.8	45.8	0	60.4	64.3	6	79	78.8	0
Alkalinity, Carbonate CaCO ₃	1	1	*	1	1	*	1	1	*	1	1	*
Alkalinity, Hydroxide CaCO ₃	1	1	*	1	1	*	1	1	*	1	1	*
Alkalinity, Total CaCO ₃	53.0	52.8	0	45.8	45.8	0	60.4	64.3	6	79	78.8	0
Bromide Br	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*	0.025	0.025	*
Chloride Cl	0.25	0.25	*	0.67	0.68	*	0.25	0.25	*	0.25	0.25	*
Fluoride F	0.01	0.01	*	0.153	0.153	0	0.035	0.033	*	0.01	0.01	*
Sulfate SO ₄	10.9	10.9	0	4.37	4.36	0	10.2	10.1	1	18	18.2	1
Nutrients												
Ammonia Nitrogen N	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Total Kjeldahl Nitrogen N	0.025	0.025	*	0.108	0.128	*	0.096	0.086	*	0.073	0.053	*
Nitrate N	0.0025	0.0025	*	0.132	0.132	0	0.0644	0.0641	0	0.037	0.0374	1
Nitrite N	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Total Nitrogen N	0.025	0.025	*	0.24	0.26	*	0.16	0.15	*	0.11	0.09	*
Total Phosphate P	0.0095	0.0093	*	0.001	0.001	*	0.0024	0.0028	*	0.0035	0.0032	*
Cyanides												
Total Cyanide CN	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Total Metals												
Aluminum T-Al	0.346	0.375	8	0.0219	0.0184	17	0.0544	0.0537	1	0.0415	0.0397	4
Antimony T-Sb	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Arsenic T-As	0.00096	0.00099	3	0.00022	0.00022	*	0.00034	0.00034	*	0.00131	0.00134	2
Barium T-Ba	0.0566	0.0605	7	0.0733	0.0743	1	0.0298	0.0298	0	0.0358	0.0365	2
Beryllium T-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Bismuth T-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Boron T-B	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.013	0.012	*
Cadmium T-Cd	0.00001	0.00001	*	0.00002	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*
Calcium T-Ca	17.5	17.6	1	14.7	14.4	2	18.9	18.8	1	27.2	27.5	1
Chromium T-Cr	0.00056	0.00066	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00096	0.00095	*
Cobalt T-Co	0.00022	0.00024	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Copper T-Cu	0.00149	0.00147	1	0.00022	0.00023	*	0.00066	0.00068	3	0.00074	0.0007	6
Iron T-Fe	0.149	0.143	*	0.015	0.015	*	0.036	0.053	*	0.047	0.049	*
Lead T-Pb	0.00093	0.00086	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Lithium T-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Magnesium T-Mg	3.44	3.47	1	1.95	1.87	4	2.98	2.99	0	4.68	4.69	2
Manganese T-Mn	0.0111	0.0110	1	0.00158	0.00152	4	0.00175	0.00174	1	0.00215	0.00217	1
Mercury T-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Molybdenum T-Mo	0.00257	0.00265	3	0.00643	0.00641	0	0.00116	0.00119	3	0.0011	0.00105	5
Nickel T-Ni	0.00025	0.00053	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00052	0.00057	*
Phosphorus T-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*
Potassium T-K	0.525	0.544	4	0.559	0.546	2	0.763	0.753	1	0.588	0.589	0
Selenium T-Se	0.00054	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00059	*
Silicon T-Si	1.72	1.72	0	2.68	2.81	5	2.76	2.78	1	2.54	2.54	0
Silver T-Ag	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Sodium T-Na	1	1	*	1	1	*	1	1	*	1	1	*
Strontium T-Sr	0.109	0.112	3	0.0986	0.0979	1	0.0926	0.092	1	0.108	0.107	1
Thallium T-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Tin T-Sn	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Titanium T-Ti	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*
Uranium T-U	0.000307	0.000305	1	0.00276	0.00269	3	0.00429	0.00429	0	0.00004	0.00004	*
Vanadium T-V	0.0014	0.0014	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Zinc T-Zn	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*	0.0005	0.0005	*
Dissolved Metals												
Aluminum D-Al	0.0318	0.0338	6	0.0058	0.0056	4	0.0094	0.0083	12	0.004	0.0037	*
Antimony D-Sb	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Arsenic D-As	0.00084	0.00092	9	0.0002	0.0002	*	0.00029	0.00029	*	0.00123	0.00128	4
Barium D-Ba	0.0539	0.0549	2	0.0745	0.0727	2	0.0295	0.0292	1	0.0354	0.0359	1
Beryllium D-Be	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Bismuth D-Bi	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Boron D-B	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.012	0.012	*
Cadmium D-Cd	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*	0.00001	0.00001	*
Calcium D-Ca	17.5	17.6	1	14.6	14.4	1	18.7	18.8	1	27.2	27.2	1
Chromium D-Cr	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00091	0.00098	*
Cobalt D-Co	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Copper D-Cu	0.00035	0.0004	*	0.00015	0.00015	*	0.0003	0.0003	*	0.00025	0.00025	*
Iron D-Fe	0.015	0.015	*	0.015	0.015	*	0.015	0.015	*	0.015	0.015	*
Lead D-Pb	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Lithium D-Li	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*	0.0025	0.0025	*
Magnesium D-Mg	3.26	3.32	2	1.95	1.9	3	2.98	2.97	0	4.52	4.61	2
Manganese D-Mn	0.00326	0.00328	1	0.00107	0.00105	2	0.000373	0.000347	7	0.00133	0.00107	*
Mercury D-Hg	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Molybdenum D-Mo	0.00274	0.00281	3	0.00646	0.00655	1	0.00119	0.0012	1	0.00114	0.00108	5
Nickel D-Ni	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*	0.0005	0.00064	*
Phosphorus D-P	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*	0.15	0.15	*
Potassium D-K	0.467	0.482	3	0.555	0.542	2	0.751	0.749	0	0.579	0.574	1
Selenium D-Se	0.00025	0.00078	*	0.00025	0.00025	*	0.00025	0.00025	*	0.00025	0.00025	*
Silicon D-Si	1.49	1.52	2	2.67	2.74	3	2.68	2.56	5	2.43	2.45	1
Silver D-Ag	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*	0.000005	0.000005	*
Sodium D-Na	1	1	*	1	1	*	1	1	*	1	1	*
Strontium D-Sr	0.110	0.111	1	0.0971	0.0968	0	0.0912	0.0919	1	0.107	0.107	0
Thallium D-Tl	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Tin D-Sn	0.00014	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*	0.00005	0.00005	*
Titanium D-Ti	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*	0.005	0.005	*
Uranium D-U	0.000293	0.000294	0	0.00278								

**APPENDIX 3.1-4
MESS CREEK AND TRIBUTARIES GUIDELINE EXCEEDANCE
(%) SUMMARY FOR STREAM WATER QUALITY, 2007**

**Appendix 3.1-4
Mess Creek and Tributaries Guideline Exceedance (%) for Stream Water Quality, 2007**

Guideline n	SITE	BC Max								BC 30-d MEAN								CCME								
		4	5	5	5	11	17	12	5	4	5	5	5	11	17	12	5	4	5	5	5	11	17	12	5	
	Hardness	CaCO3																								
	pH																									
	Chloride	Cl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Fluoride	F	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Sulphate	SO4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Ammonia Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Nitrate Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Nitrite Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total Cyanide	CN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Aluminum	T-Al																50	0	40	60	64	59	67	100	
	Antimony	T-Sb	0	0	0	0	0	0	0																	
	Arsenic	T-As	25	0	0	0	9	0	0									25	0	0	0	9	0	0	0	
	Barium	T-Ba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
	Beryllium	T-Be	0	0	0	0	0	0	0																	
	Boron	T-B	0	0	0	0	0	0	0																	
	Cadmium	T-Cd	50	0	0	0	0	24	25	20								50	0	0	0	0	24	25	20	
	Chromium	T-Cr	50	0	20	60	45	0	50	80								50	0	20	60	45	0	50	80	
	Cobalt	T-Co	0	0	0	0	0	0	0	0	0	0	0	0	0	8	40									
	Copper	T-Cu	0	0	0	20	9	0	8	40	50	0	20	60	36	0	50	60	50	0	20	60	45	0	50	80
	Iron	T-Fe	50	40	100	20	82	35	67	80								50	40	100	20	82	35	67	80	
	Lead	T-Pb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	20	
	Lithium	T-Li	0	0	0	0	0	0	0																	
	Manganese	T-Mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
	Mercury	T-Hg	0	0	0	0	0	0	0	25	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	
	Molybdenum	T-Mo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Nickel	T-Ni	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	
	Selenium	T-Se								0	0	0	0	0	0	0	0	0	20	20	0	0	0	8	0	
	Silver	T-Ag	0	0	0	0	0	8	0	0	0	0	20	9	6	8	0	0	0	0	0	0	0	8	0	
	Thallium	T-Tl	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	
	Titanium	T-Ti	25	0	0	0	9	0	25	60																
	Uranium	T-U	0	0	0	0	0	0	0																	
	Zinc	T-Zn	0	0	0	0	0	0	0	50	0	0	0	9	12	25	40	0	0	0	0	0	0	8	20	
	Aluminum	D-Al	25	0	0	20	0	0	17	20	50	0	0	40	0	29	33	20								
	Antimony	D-Sb	0	0	0	0	0	0	0																	
	Arsenic	D-As	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	
	Barium	D-Ba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
	Beryllium	D-Be	0	0	0	0	0	0	0																	
	Boron	D-B	0	0	0	0	0	0	0																	
	Cadmium	D-Cd	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	
	Chromium	D-Cr	25	0	0	0	0	0	20									25	0	0	0	0	0	0	20	
	Cobalt	D-Co	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
	Copper	D-Cu	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	
	Iron	D-Fe	25	0	0	0	0	0	20									25	0	0	0	0	0	0	20	
	Lead	D-Pb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Lithium	D-Li	0	0	0	0	0	0	0																	
	Manganese	D-Mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
	Mercury	D-Hg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Molybdenum	D-Mo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Nickel	D-Ni	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	
	Selenium	D-Se								0	0	0	0	0	0	0	0	0	60	0	0	0	0	0	0	
	Silver	D-Ag	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Thallium	D-Tl	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	
	Titanium	D-Ti	0	0	0	0	0	0	0																	
	Uranium	D-U	0	0	0	0	0	0	0																	
	Zinc	D-Zn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	

For dissolved metals, CCME guideline for total metals was used in calculations.

**APPENDIX 3.1-5
SCHAFT CREEK, STIKINE RIVER, AND YEHINIKO CREEK
GUIDELINE EXCEEDANCE (%) SUMMARY FOR STREAM
WATER QUALITY, 2007**

**Appendix 3.1-5
Schaft Creek, Stikine River, and Yehiniko Creek Guideline Exceedance (%) for Stream Water Quality, 2007**

Guideline n		BC Max										BC 30-d MEAN									
		6	7	5	7	12	3	10	2	4	4	6	7	5	7	12	3	10	2	4	4
SITE		SC-1	SC-6	SC-2	SC-3	SC-4	SC-7	SC-5	ST-1	ST-2	YC-1	SC-1	SC-6	SC-2	SC-3	SC-4	SC-7	SC-5	ST-1	ST-2	YC-1
Hardness	CaCO3																				
pH																					
Chloride	Cl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluoride	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulphate	SO4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cyanide	CN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	25
Aluminum	T-Al																				
Antimony	T-Sb	0	0	0	0	0	0	0	0	0	0										
Arsenic	T-As	17	14	0	0	8	0	0	0	0	0										
Barium	T-Ba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	T-Be	0	0	0	0	0	0	0	0	0	0										
Boron	T-B	0	0	0	0	0	0	0	0	0	0										
Cadmium	T-Cd	33	29	0	14	25	33	10	0	25	0										
Chromium	T-Cr	50	43	20	14	33	67	40	100	75	25										
Cobalt	T-Co	0	0	0	0	0	0	0	0	0	0	33	14	0	0	8	0	10	0	25	0
Copper	T-Cu	50	29	0	14	25	33	20	0	25	25	50	43	0	14	33	33	60	100	75	25
Iron	T-Fe	50	43	0	29	33	67	90	100	75	25										
Lead	T-Pb	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0
Lithium	T-Li	0	0	0	0	0	0	0	0	0	0										
Manganese	T-Mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	T-Hg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molybdenum	T-Mo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	T-Ni	0	0	0	0	0	0	0	0	0	0										
Selenium	T-Se											0	0	0	0	0	0	0	0	0	0
Silver	T-Ag	0	0	0	0	0	0	0	0	0	0	17	14	0	0	8	0	10	0	0	0
Thallium	T-Tl	0	0	0	0	0	0	0	0	0	0										
Titanium	T-Ti	50	43	0	14	25	33	30	0	75	0										
Uranium	T-U	0	0	0	0	0	0	0	0	0	0										
Zinc	T-Zn	17	0	0	0	8	0	0	0	0	0	50	29	0	14	25	33	20	50	50	0
Aluminum	D-Al	50	43	0	14	33	33	20	0	25	0	67	43	0	14	33	33	30	100	25	50
Antimony	D-Sb	0	0	0	0	0	0	0	0	0	0										
Arsenic	D-As	0	0	0	0	0	0	0	0	0	0										
Barium	D-Ba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	D-Be	0	0	0	0	0	0	0	0	0	0										
Boron	D-B	0	0	0	0	0	0	0	0	0	0										
Cadmium	D-Cd	0	0	0	0	0	0	0	0	0	0										
Chromium	D-Cr	0	0	0	0	0	0	0	0	0	0										
Cobalt	D-Co	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Copper	D-Cu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Iron	D-Fe	0	0	0	0	0	0	0	0	0	0										
Lead	D-Pb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lithium	D-Li	0	0	0	0	0	0	0	0	0	0										
Manganese	D-Mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	D-Hg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molybdenum	D-Mo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	D-Ni	0	0	0	0	0	0	0	0	0	0										
Selenium	D-Se											0	0	0	0	0	0	0	0	0	0
Silver	D-Ag	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	D-Tl	0	0	0	0	0	0	0	0	0	0										
Titanium	D-Ti	0	0	0	0	0	0	0	0	0	0										
Uranium	D-U	0	0	0	0	0	0	0	0	0	0										
Zinc	D-Zn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

For dissolved metals, CCME guideline for total metals was used in calculations.

(continued)

Appendix 3.1-5

Schaft Creek, Stikine River, and Yehiniko Creek Guideline Exceedance (%) for Stream Water Quality, 2007 (completed)

Guideline	n	CCME									
		6	7	5	7	12	3	10	2	4	4
SITE		SC-1	SC-6	SC-2	SC-3	SC-4	SC-7	SC-5	ST-1	ST-2	YC-1
Hardness	CaCO3										
pH		0	0	0	0	0	0	0	0	0	0
Chloride	Cl										
Fluoride	F										
Sulphate	SO4										
Ammonia Nitrogen	N	0	0	0	0	0	0	0	0	0	0
Nitrate Nitrogen	N	0	0	0	0	0	0	0	0	0	0
Nitrite Nitrogen	N	0	0	0	0	0	0	0	0	0	0
Total Cyanide	CN	0	0	0	0	0	0	0	50	0	25
Aluminum	T-Al	67	71	0	29	42	67	90	100	75	50
Antimony	T-Sb										
Arsenic	T-As	17	14	0	0	8	0	0	0	0	0
Barium	T-Ba										
Beryllium	T-Be										
Boron	T-B										
Cadmium	T-Cd	33	29	0	14	25	33	10	0	25	0
Chromium	T-Cr	50	43	20	14	33	67	40	100	75	25
Cobalt	T-Co										
Copper	T-Cu	50	43	0	29	42	67	70	100	75	25
Iron	T-Fe	50	43	0	29	33	67	90	100	75	25
Lead	T-Pb	50	14	0	14	17	33	20	0	25	0
Lithium	T-Li										
Manganese	T-Mn										
Mercury	T-Hg	0	0	0	0	0	0	0	0	0	0
Molybdenum	T-Mo	0	0	0	0	0	0	0	0	0	0
Nickel	T-Ni	0	0	0	0	0	0	0	0	0	0
Selenium	T-Se	0	0	0	0	8	0	0	0	0	0
Silver	T-Ag	0	0	0	0	0	0	0	0	0	0
Thallium	T-Tl	0	0	0	0	0	0	0	0	0	0
Titanium	T-Ti										
Uranium	T-U										
Zinc	T-Zn	17	0	0	0	8	0	0	0	0	0
Aluminum	D-Al										
Antimony	D-Sb										
Arsenic	D-As	0	0	0	0	0	0	0	0	0	0
Barium	D-Ba										
Beryllium	D-Be										
Boron	D-B										
Cadmium	D-Cd	0	0	0	0	0	0	0	0	0	0
Chromium	D-Cr	0	0	0	0	0	0	0	0	0	0
Cobalt	D-Co										
Copper	D-Cu	0	0	0	0	0	0	0	0	0	25
Iron	D-Fe	0	0	0	0	0	0	0	0	0	0
Lead	D-Pb	0	0	0	0	0	0	0	0	0	0
Lithium	D-Li										
Manganese	D-Mn										
Mercury	D-Hg	0	0	0	0	0	0	0	0	0	0
Molybdenum	D-Mo	0	0	0	0	0	0	0	0	0	0
Nickel	D-Ni	0	0	0	0	0	0	0	0	0	0
Selenium	D-Se	0	0	0	0	0	0	0	0	0	0
Silver	D-Ag	0	0	0	0	0	0	0	0	0	0
Thallium	D-Tl	0	0	0	0	0	0	0	0	0	0
Titanium	D-Ti										
Uranium	D-U										
Zinc	D-Zn	0	0	0	0	0	0	0	0	0	0

For dissolved metals, CCME guideline for total metals was used in calculations.

**APPENDIX 3.1-6
TAILING FACILITY OPTION A, B, AND C GUIDELINE
EXCEEDANCE (%) SUMMARY FOR STREAM WATER
QUALITY, 2007**

**Appendix 3.1-6
Tailing Facility Option A, B, and C Guideline Exceedance (%) for Stream Water Quality, 2007**

Guideline n	SITE	BC Max								BC 30-d MEAN							
		3	4	11	12	6	9	3	11	3	4	11	12	6	9	3	11
	Hardness	CaCO3															
	pH																
	Chloride	Cl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fluoride	F	0	0	0	0	0	0	33	0							
	Sulphate	SO4	0	0	0	0	0	0	0	0							
	Ammonia Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Nitrate Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Nitrite Nitrogen	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Cyanide	CN	33	0	0	0	0	0	0	33	0	0	0	0	22	0	0
	Aluminum	T-Al															
	Antimony	T-Sb	0	0	0	0	0	0	0								
	Arsenic	T-As	0	0	0	0	0	0	0								
	Barium	T-Ba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Beryllium	T-Be	0	0	0	0	0	0	0								
	Boron	T-B	0	0	0	0	0	0	0								
	Cadmium	T-Cd	33	0	18	8	0	0	9								
	Chromium	T-Cr	33	50	36	8	0	0	9								
	Cobalt	T-Co	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0
	Copper	T-Cu	33	0	27	8	0	0	9	33	0	55	8	0	0	0	18
	Iron	T-Fe	33	0	36	17	0	0	33	55							
	Lead	T-Pb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Lithium	T-Li	0	0	0	0	0	0	0								
	Manganese	T-Mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mercury	T-Hg	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0
	Molybdenum	T-Mo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Nickel	T-Ni	0	0	0	0	0	0	0								
	Selenium	T-Se								0	0	0	0	0	0	0	0
	Silver	T-Ag	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Thallium	T-Tl	0	0	0	0	0	0	0								
	Titanium	T-Ti	0	0	18	0	0	0	0								
	Uranium	T-U	0	0	0	0	0	0	0								
	Zinc	T-Zn	0	0	0	0	0	0	0	33	0	18	8	0	0	0	0
	Aluminum	D-Al	33	0	18	0	0	0	18	33	0	45	0	0	0	33	55
	Antimony	D-Sb	0	0	0	0	0	0	0								
	Arsenic	D-As	0	0	0	0	0	0	0								
	Barium	D-Ba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Beryllium	D-Be	0	0	0	0	0	0	0								
	Boron	D-B	0	0	0	0	0	0	0								
	Cadmium	D-Cd	0	0	0	0	0	0	0								
	Chromium	D-Cr	0	25	0	0	0	0	0								
	Cobalt	D-Co	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Copper	D-Cu	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0
	Iron	D-Fe	0	0	0	0	0	0	0								
	Lead	D-Pb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Lithium	D-Li	0	0	0	0	0	0	0								
	Manganese	D-Mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mercury	D-Hg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Molybdenum	D-Mo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Nickel	D-Ni	0	0	0	0	0	0	0								
	Selenium	D-Se								0	0	0	0	0	0	0	0
	Silver	D-Ag	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Thallium	D-Tl	0	0	0	0	0	0	0								
	Titanium	D-Ti	0	0	0	0	0	0	0								
	Uranium	D-U	0	0	0	0	0	0	0								
	Zinc	D-Zn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

For dissolved metals, CCME guideline for total metals was used in calculations.

(continued)

**Appendix 3.1-6
Tailing Facility Option A, B, and C Guideline Exceedance (%) for Stream Water Quality, 2007 (completed)**

Guideline n	SITE	CCME						
		4	11	12	6	9	3	11
		HC-1	HC-3	SKC-1	SKC-3	SKC-4	JC-1	JC-2
Hardness	CaCO3							
pH		0	0	0	0	0	0	0
Chloride	Cl							
Fluoride	F							
Sulphate	SO4							
Ammonia Nitrogen	N	0	0	0	0	0	0	0
Nitrate Nitrogen	N	0	0	0	0	0	0	0
Nitrite Nitrogen	N	0	0	0	0	0	0	0
Total Cyanide	CN	0	0	0	0	22	0	0
Aluminum	T-Al	0	64	17	0	0	33	64
Antimony	T-Sb							
Arsenic	T-As	0	0	0	0	0	0	0
Barium	T-Ba							
Beryllium	T-Be							
Boron	T-B							
Cadmium	T-Cd	0	18	8	0	0	0	9
Chromium	T-Cr	50	36	8	0	0	0	9
Cobalt	T-Co							
Copper	T-Cu	0	55	17	0	0	0	18
Iron	T-Fe	0	36	17	0	0	33	55
Lead	T-Pb	0	18	0	0	0	0	0
Lithium	T-Li							
Manganese	T-Mn							
Mercury	T-Hg	0	9	0	0	0	0	0
Molybdenum	T-Mo	0	0	0	0	0	0	0
Nickel	T-Ni	0	0	0	0	0	0	0
Selenium	T-Se	0	0	8	0	0	0	0
Silver	T-Ag	0	0	0	0	0	0	0
Thallium	T-Tl	0	0	0	0	0	0	0
Titanium	T-Ti							
Uranium	T-U							
Zinc	T-Zn	0	0	0	0	0	0	0
Aluminum	D-Al							
Antimony	D-Sb							
Arsenic	D-As	0	0	0	0	0	0	0
Barium	D-Ba							
Beryllium	D-Be							
Boron	D-B							
Cadmium	D-Cd	0	0	0	0	0	0	0
Chromium	D-Cr	25	0	0	0	0	0	0
Cobalt	D-Co							
Copper	D-Cu	0	18	0	0	0	0	0
Iron	D-Fe	0	0	0	0	0	0	0
Lead	D-Pb	0	0	0	0	0	0	0
Lithium	D-Li							
Manganese	D-Mn							
Mercury	D-Hg	0	0	0	0	0	0	0
Molybdenum	D-Mo	0	0	0	0	0	0	0
Nickel	D-Ni	0	0	0	0	0	0	0
Selenium	D-Se	0	0	17	0	0	0	0
Silver	D-Ag	0	0	0	0	0	0	0
Thallium	D-Tl	0	0	0	0	0	0	0
Titanium	D-Ti							
Uranium	D-U							
Zinc	D-Zn	0	0	0	0	0	0	0

For dissolved metals, CCME guideline for total metals was used in calculations.

**APPENDIX 3.1-7
CHAFT CREEK PROJECT STREAM SEDIMENT DATA, 2007**



**Appendix 3.1-7
Schaft Creek Project Stream Sediment Data, 2007**

RESULTS OF ANALYSIS																											
Sample ID	WC1-A		WC1-B		WC1-C		SKC4-A		SKC4-B		SKC4-C		SC7-A		SC7-B		SC7-C		HC3-A		HC3-B		Available Guideline Values	LEL	SEL	ISQG	PEL
Date Sampled	06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07		06-SEP-07						
ALS Sample ID	00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00						
Matrix	L556653-1		L556653-2		L556653-3		L556653-4		L556653-5		L556653-6		L556653-7		L556653-8		L556653-9		L556653-10		L556653-11						
Physical Tests	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil						
% Moisture																											
pH	21.1	24.1	20.5	19.8	20.7	20.6	15.5	12.2	23.4	18.1	17.9																
Anions and Nutrients	7.58	8.00	7.82	8.17	8.34	8.32	7.95	7.75	8.55	8.31	8.60																
Available Phosphate-P																											
Metals	2	2	1	<1	<1	<1	<1	<1	<1	<1	<1																
Aluminum (Al)																											
Antimony (Sb)	9670	11900	10500	9130	9470	8330	7760	7730	7530	9360	10600																
Arsenic (As)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																
Barium (Ba)	<5.0	6 ^{1,3}	5.5	<5.0	5.7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6	5.9	17													
Beryllium (Be)	84.2	102	87.0	39.9	69.2	62.7	36.8	38.0	62.6	20.4	28.7																
Bismuth (Bi)	1.71	2.08	1.82	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50																
Cadmium (Cd)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20																
Calcium (Ca)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50																
Chromium (Cr)	6450	7430	6270	7740	11900	11000	7410	7800	9910	9190	11700																
Cobalt (Co)	14.5	15.6	14.6	141 ^{3,4}	77.4 ³	69.9 ³	106 ^{3,4}	65.4 ³	77.9 ³	287 ^{3,4}	332 ^{3,4}	37.3	90														
Copper (Cu)	12.1	15.8	13.7	11.8	10.2	8.6	9.9	8.2	8.6	23.9	26.9																
Iron (Fe)	13.5	15.2	14.0	28.0	33.8	30.8	24.2	23.4	26.6	38 ³	43.7 ³	35.7	197														
Lead (Pb)	44500 ^{1,2}	52600 ^{1,2}	47800 ^{1,2}	40100 ¹	29100 ¹	26200 ¹	29500 ¹	22600 ¹	27700 ¹	42500 ¹	53900 ^{1,2}	21,200	43,766	35	91.3												
Lithium (Li)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30																
Magnesium (Mg)	7.8	9.1	7.8	7.0	8.6	7.9	6.9	6.8	7.3	5.7	7.0																
Manganese (Mn)	5430	5920	5420	11000	10300	8760	9010	8700	8180	25700	25900																
Mercury (Hg)	1050	1380	1180	444	443	386	407	293	368	426	477																
Molybdenum (Mo)	0.0271	0.0342	0.0349	<0.0050	0.0132	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.17	0.486														
Nickel (Ni)	<4.0	4.2	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0																
Phosphorus (P)	25 ¹	28.7 ¹	25.4 ¹	47.5 ¹	29.9 ¹	22.7 ¹	22.1 ¹	21.8 ¹	21.1 ¹	86.9 ^{1,2}	90.6 ^{1,2}	16	75														
Potassium (K)	828	832	798	559	742	588	524	521	599	368	391																
Selenium (Se)	1030	1170	1030	400	610	560	400	400	540	320	390																
Silver (Ag)	<3.0	<2.0	<2.0	<2.0	<3.0	<4.0	<2.0	<2.0	<3.0	<2.0	<2.0	5															
Sodium (Na)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5															
Strontium (Sr)	850	750	680	230	230	<200	<200	<200	<200	<200	<200																
Thallium (Tl)	31.1	38.5	33.9	20.9	28.1	25.8	18.3	19.3	24.0	21.4	26.8																
Tin (Sn)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0																
Titanium (Ti)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0																
Vanadium (V)	1210	1260	1170	853	770	669	661	576	658	783	990																
Zinc (Zn)	46.3	53.1	47.0	126	85.9	78.0	91.0	64.7	83.6	119	159																
Organic Parameters	140 ³	162 ³	146 ³	37.7	35.7	29.4	27.8	25.7	30.1	31.3	38.4	123	315														
Chlorophyll a																											
Organic Carbon	4.85	1.45	3.98	2.95	0.895	-	0.441	0.346	0.215	2.53	2.10																
XNo class	0.09	0.22	0.10	0.17	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01																
Total Nitrogen by LECO																											
Particle Size	0.03	0.03	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02																
% Gravel (>2mm)																											
% Sand (2.0mm – 0.063mm)	4	3	<1	15	<1	<1	29	18	2	1	5																
% Silt (0.063mm – 4um)	86	89	90	81	89	93	70	79	89	97	81																
% Clay (<4um)	7	6	6	3	10	5	<1	3	8	1	12																
	3	3	3	1	1	2	1	<1	1	1	2																

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

Appendix 3.1-7
Schaft Creek Project Stream Sediment Data, 2007 (continued)

RESULTS OF ANALYSIS															
Sample ID												Available			
Date Sampled	HC3-C	SC4-A	SC4-B	SC4-C	YC1-A	YC1-B	YC1-C	SC5-A	SC5-B	SC5-C		Guideline			
Time Sampled	06-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	07-SEP-07	00:00			
ALS Sample ID	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00			
Matrix	L556653-12	L556653-13	L556653-14	L556653-15	L556653-16	L556653-17	L556653-18	L556653-19	L556653-20	L556653-21		Values			
Physical Tests	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	LEL	SEL	ISQG	PEL
% Moisture															
pH	13.8	19.4	21.7	17.0	15.4	9.81	11.3	17.7	16.2	18.7					
Anions and Nutrients	8.48	8.16	8.20	8.49	8.33	8.29	8.33	8.30	8.41	8.34					
Available Phosphate-P															
Metals	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
Aluminum (Al)															
Antimony (Sb)	9280	8010	7790	7620	11600	12800	10000	7100	6870	7040					
Arsenic (As)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10					
Barium (Ba)	5.9 ^{1,3}	<5.0	<5.0	6.6 ^{1,3}	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		6		5.9	17
Beryllium (Be)	18.2	41.3	42.2	51.2	86.9	60.7	59.0	49.5	54.6	53.2					
Bismuth (Bi)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50					
Cadmium (Cd)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Calcium (Ca)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				0.6	3.5
Chromium (Cr)	10300	10300	10100	10100	8390	8730	6850	7900	8070	8300					
Cobalt (Co)	338 ^{3,4}	48.5 ³	83.6 ³	78.7 ³	70.8 ³	63.4 ³	48.4 ³	79.6 ³	77.3 ³	49.8 ³				37.3	90
Copper (Cu)	25.6	7.8	8.7	9.1	12.3	13.2	9.2	8.3	8.2	7.9					
Iron (Fe)	35.0	32.6	27.5	29.0	24.2	28.1	22.5	26.3	24.1	26.4				35.7	197
Lead (Pb)	53200 ^{1,2}	18400	26300 ¹	26600 ¹	24100 ¹	26000 ¹	21000	27300 ¹	26500 ¹	19700		21,200	43,766		
Lithium (Li)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30				35	91.3
Magnesium (Mg)	6.4	7.3	7.6	7.4	7.9	9.0	6.4	5.9	6.1	7.0					
Manganese (Mn)	23700	8720	8810	8880	17400	19100	12100	7680	7360	8000					
Mercury (Hg)	418	355	370	365	422	448	362	340	347	349					
Molybdenum (Mo)	<0.0050	<0.0050	0.0069	0.0217	0.0077	<0.0050	<0.0050	<0.0050	0.0054	<0.0050				0.17	0.486
Nickel (Ni)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0					
Phosphorus (P)	81.5 ^{1,2}	21.7 ¹	23.4 ¹	23.7 ¹	92.5 ^{1,2}	95.8 ^{1,2}	52.9 ¹	21.2 ¹	21.1 ¹	20.1 ¹		16	75		
Potassium (K)	358	513	537	555	646	702	595	533	540	524					
Selenium (Se)	300	500	480	460	890	950	780	450	450	450					
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<3.0	<3.0	<2.0	<2.0	<3.0	<2.0		5			
Sodium (Na)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		0.5			
Strontium (Sr)	<200	<200	<200	<200	250	350	240	<200	<200	<200					
Thallium (Tl)	22.3	23.6	22.6	23.3	34.3	32.9	35.1	21.6	22.0	20.7					
Tin (Sn)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0					
Titanium (Ti)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0					
Vanadium (V)	951	576	647	597	515	514	500	624	595	515					
Zinc (Zn)	159	51.0	80.7	79.7	55.7	58.7	49.7	81.2	78.8	52.8					
Organic Parameters	35.9	26.2	28.3	30.0	46.0	40.7	36.9	27.6	26.8	27.4				123	315
Chlorophyll a															
Organic Carbon	7.01	0.688	1.08	5.84	3.67	3.46	7.18	1.43	1.46	0.215					
XNo class	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					
Total Nitrogen by LECO															
Particle Size	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02					
% Gravel (>2mm)															
% Sand (2.0mm – 0.063mm)	13	<1	<1	<1	4	6	<1	<1	1	<1					
% Silt (0.063mm – 4um)	77	98	99	95	93	92	99	93	91	92					
% Clay (<4um)	9	1	<1	4	<1	2	<1	6	6	6					
	1	1	1	2	3	1	1	1	2	2					

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

Appendix 3.1-7
Schaft Creek Project Stream Sediment Data, 2007 (continued)

RESULTS OF ANALYSIS																					
Sample ID	MC5-A		MC5-B		MC5-C		MT1-A		MT1-B		MT1-C		SC1-A		SC1-B		SC1-C		WL8-A		Available
Date Sampled	07-SEP-07		07-SEP-07		07-SEP-07		08-SEP-07		08-SEP-07		08-SEP-07		11-SEP-07		11-SEP-07		11-SEP-07		10-SEP-07		Guideline
Time Sampled	00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00		00:00		Values
ALS Sample ID	L556653-22		L556653-23		L556653-24		L556653-25		L556653-26		L556653-27		L556653-28		L556653-29		L556653-30		L556822-1		
Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		LEL
Physical Tests	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		SEL
% Moisture																					ISQG
pH	20.2	17.8	22.4	11.9	9.39	13.9	17.5	14.8	19.6	14.3											
Anions and Nutrients	8.18	8.32	8.20	8.24	8.42	8.42	8.84	8.65	8.49	8.40											
Available Phosphate-P																					PEL
Metals	<1	<1	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
Aluminum (Al)	6520	6800	6750	16500	16700	15900	7890	7970	8140	15900											
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10											
Arsenic (As)	<5.0	<5.0	<5.0	7.2 ^{1,3}	6.1 ^{1,3}	<5.0	<5.0	<5.0	<5.0	<5.0	6	5.9	17								
Barium (Ba)	30.7	54.2	44.8	38.5	47.1	48.1	104	119	143	32.4											
Beryllium (Be)	<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											
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50											
Calcium (Ca)	5960	7440	5860	14200	13900	12900	15900	16100	17700	20200											
Chromium (Cr)	26.4	50.1 ³	92.9 ^{3,4}	96.9 ^{3,4}	91.3 ^{3,4}	84.3 ³	23.0	25.9	42.6 ³	120 ^{3,4}											
Cobalt (Co)	6.4	7.5	8.9	19.7	20.2	19.0	7.0	6.8	7.9	13.8											
Copper (Cu)	34.4	22.9	21.3	56 ³	80.9 ³	57.1 ³	40.3 ³	33.1	42 ³	72.3 ³											
Iron (Fe)	15300	20400	32800 ¹	43400 ¹	41900 ¹	39600 ¹	25100 ¹	29000 ¹	42800 ¹	48300 ^{1,2}	21,200	43,766	35.7	197							
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30											
Lithium (Li)	6.1	6.1	5.6	16.7	17.1	16.7	8.7	9.0	9.1	15.1											
Magnesium (Mg)	7300	7080	7330	22700	23600	22400	5890	6020	6220	12700											
Manganese (Mn)	355	374	414	743	765	731	408	414	451	427											
Mercury (Hg)	<0.0050	0.0110	0.0085	<0.0050	<0.0050	<0.0050	0.0121	0.0092	0.0109	<0.0050											
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0											
Nickel (Ni)	16.5	19 ¹	22.4 ¹	48.4 ¹	50.6 ¹	47.4 ¹	6.4	5.9	6.8	25.1 ¹	16	75									
Phosphorus (P)	474	510	478	1150	1170	1120	836	818	1320	992											
Potassium (K)	340	480	430	400	410	350	560	610	620	360											
Selenium (Se)	<2.0	<2.0	<3.0	<2.0	<2.0	<5.0	<2.0	<2.0	<3.0	<3.0											
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5										
Sodium (Na)	<200	<200	210	260	270	230	500	<200	220	<200											
Strontium (Sr)	14.8	19.7	19.4	32.6	37.7	30.7	32.9	34.3	36.9	61.7											
Thallium (Tl)	<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											
Titanium (Ti)	438	597	747	1310	1250	1010	484	507	604	1510											
Vanadium (V)	36.7	53.1	94.1	130	123	113	75.5	90.3	141	148											
Zinc (Zn)	26.0	34.0	37.9	59.8	63.0	58.4	29.1	31.3	34.4	37.5											
Organic Parameters																					123
Chlorophyll a	1.01	1.42	3.09	0.687	1.56	1.14	0.0518	0.228	0.156	0.213											
Organic Carbon	<0.01	<0.01	0.34	0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01											
XNo class																					
Total Nitrogen by LECO																					315
Particle Size	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02											
% Gravel (>2mm)	<1	<1	7	2	28	1	<1	<1	<1	4											
% Sand (2.0mm – 0.063mm)	97	95	92	82	55	79	82	84	57	77											
% Silt (0.063mm – 4um)	1	3	<1	15	14	18	15	14	40	19											
% Clay (<4um)	2	2	1	2	3	2	2	1	2	1											

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

Appendix 3.1-7
Schaft Creek Project Stream Sediment Data, 2007 (continued)

RESULTS OF ANALYSIS															
Sample ID															
Date Sampled	WL8-B	WL8-C	SKC1-A	SKC1-B	SKC1-C	SKC3-A	SKC3-B	SKC3-C	JC1-A	JC1-B	JC1-C	Available			
Time Sampled	10-SEP-07	10-SEP-07	10-SEP-07	10-SEP-07	10-SEP-07	10-SEP-07	10-SEP-07	10-SEP-07	09-SEP-07	09-SEP-07	09-SEP-07	Guideline			
ALS Sample ID	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	Values			
Matrix	L556822-2	L556822-3	L556822-4	L556822-5	L556822-6	L556822-7	L556822-8	L556822-9	L556822-10	L556822-11	L556822-12	LEL	SEL	ISQG	PEL
Physical Tests	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
% Moisture															
pH	16.3	19.5	20.1	21.7	10.3	33.3	37.3	49.1	12.5	15.2	12.1				
Anions and Nutrients	8.33	8.60	8.08	8.35	8.41	7.62	7.64	7.50	7.47	7.56	7.63				
Available Phosphate-P															
Metals	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	1				
Aluminum (Al)															
Antimony (Sb)	15200	16700	22100	22100	20600	12500	12900	11200	1510	1560	1250				
Arsenic (As)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10				
Barium (Ba)	<5.0	<5.0	37.3 ^{1,3,4}	28.2 ^{1,3,4}	13.5 ^{1,3,4}	7.3 ^{1,3,4}	8.1 ^{1,3,4}	7.4 ^{1,3,4}	<5.0	<5.0	<5.0	6		5.9	17
Beryllium (Be)	36.8	37.9	95.4	79.7	39.5	141	124	143	18.7	21.9	16.4				
Bismuth (Bi)	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	0.81	0.84	<0.50	<0.50	<0.50				
Cadmium (Cd)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20				
Calcium (Ca)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			0.6	3.5
Chromium (Cr)	22900	24100	27400	26900	14600	7070	7740	8320	1160	1140	933				
Cobalt (Co)	105 ^{3,4}	110 ^{3,4}	37.9 ³	37.4 ³	30.5	40.6 ³	39.2 ³	33.7	7.8	3.3	2.9			37.3	90
Copper (Cu)	13.2	13.5	20.8	18.4	14.5	13.5	11.3	9.6	<2.0	<2.0	<2.0				
Iron (Fe)	67.6 ³	76.6 ³	114 ³	105 ³	69.3 ³	19.0	19.2	21.9	4.6	4.8	3.5			35.7	197
Lead (Pb)	43000 ^{1,2}	46400 ^{1,2}	47700 ^{1,2}	45300 ^{1,2}	40300 ¹	37700 ¹	33700 ¹	29700 ¹	9170	5030	4420	21,200	43,766		
Lithium (Li)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30			35	91.3
Magnesium (Mg)	13.9	14.3	16.8	15.9	13.5	9.0	9.7	8.4	2.7	2.7	2.7				
Manganese (Mn)	11900	11600	16800	17200	16800	10600	9780	7050	670	679	576				
Mercury (Hg)	413	422	1770	1450	1080	2620	2150	2740	124	105	96.8				
Molybdenum (Mo)	<0.0050	<0.0050	0.0079	<0.0050	<0.0050	0.0140	0.0168	0.464 ¹	<0.0050	<0.0050	<0.0050			0.17	0.486
Nickel (Ni)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0				
Phosphorus (P)	22.3 ¹	21.8 ¹	23.8 ¹	21.5 ¹	16.5	52.8 ¹	43.7 ¹	36 ¹	<5.0	<5.0	<5.0	16	75		
Potassium (K)	939	939	1200	1170	1180	508	565	463	161	127	120				
Selenium (Se)	360	400	880	760	520	720	930	840	330	340	290				
Silver (Ag)	<3.0	<2.0	<3.0	<3.0	<2.0	<2.0	<3.0	<3.0	<2.0	<2.0	<2.0	5			
Sodium (Na)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5			
Strontium (Sr)	<200	210	270	260	<200	960	1240	1270	<200	<200	<200				
Thallium (Tl)	62.8	75.2	36.7	36.4	20.9	21.7	23.6	24.9	4.69	4.69	3.26				
Tin (Sn)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
Titanium (Ti)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0				
Vanadium (V)	1360	1670	1000	1080	682	1130	1260	1070	272	205	162				
Zinc (Zn)	133	149	121	120	108	84.6	78.1	64.4	18.3	8.2	7.3				
Organic Parameters	35.6	32.6	134 ³	123 ³	100	57.6	57.6	53.9	8.8	7.5	10.1			123	315
Chlorophyll a															
Organic Carbon	0.0332	0.146	3.29	4.01	3.18	1.82	3.57	3.78	2.98		0.287				
XNo class	<0.01	0.01	0.52	0.08	<0.01	1.14	2.29	2.78	<0.01	<0.01	<0.01				
Total Nitrogen by LECO															
Particle Size	<0.02	<0.02	0.06	0.03	0.02	0.12	0.13	0.22	0.02	0.02	0.03				
% Gravel (>2mm)															
% Sand (2.0mm – 0.063mm)	<1	8	3	8	31	4	3	11	<1	<1	3				
% Silt (0.063mm – 4um)	74	63	64	73	63	88	88	74	93	94	91				
% Clay (<4um)	22	27	29	18	5	6	7	13	6	5	5				
	4	1	4	2	1	2	2	2	1	1	1				

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

**Appendix 3.1-7
Schaft Creek Project Stream Sediment Data, 2007 (continued)**

RESULTS OF ANALYSIS																	
Sample ID													Available				
Date Sampled	JC2-A	JC2-B	JC2-C	SC3-A	SC3-B	SC3-C	MC1-A	MC1-B	MC1-C	MC2-A	MC2-B		Guideline				
Time Sampled	09-SEP-07	09-SEP-07	09-SEP-07	09-SEP-07	09-SEP-07	09-SEP-07	08-SEP-07	08-SEP-07	08-SEP-07	08-SEP-07	08-SEP-07		Values	LEL	SEL	ISQG	PEL
ALS Sample ID	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00						
Matrix	L556822-13	L556822-14	L556822-15	L556822-16	L556822-17	L556822-18	L556822-19	L556822-20	L556822-21	L556822-22	L556822-23						
Physical Tests	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
% Moisture																	
pH	17.2	13.9	18.3	20.8	19.1	16.3	17.5	16.0	13.7	23.6	18.8						
Anions and Nutrients	7.45	7.46	7.36	7.97	8.63	8.44	8.58	8.53	8.54	8.25	8.29						
Available Phosphate-P																	
Metals	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1						
Aluminum (Al)																	
Antimony (Sb)	2000	2390	1590	9980	9340	8580	8960	9560	11100	10100	9040						
Arsenic (As)	<10	<10	<10	<10	<10	<10	<10	12.0	<10	<10	<10						
Barium (Ba)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	68.5 ⁴	43.4 ⁴	43.1 ⁴	28.6 ⁴	21.8 ⁴	6			5.9	17	
Beryllium (Be)	24.3	30.1	19.0	53.7	90.5	45.0	137	221	292	273	148						
Bismuth (Bi)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50						
Cadmium (Cd)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20						
Calcium (Ca)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50					0.6	3.5
Chromium (Cr)	1370	1870	1230	14900	14600	12500	31900	29300	32600	29000	26700						
Cobalt (Co)	6.6	16.5	4.4	75.7 ³	72.9 ³	119 ^{3,4}	39.1 ³	37.8 ³	41.9 ³	51.7	43.2 ³					37.3	90
Copper (Cu)	<2.0	2.2	<2.0	11.5	10.8	12.1	28.2	22.7	24.1	19.5	17.8						
Iron (Fe)	5.3	7.9	4.1	56.2 ³	42.3 ³	37.3 ³	66.6 ³	57.8 ³	59.1 ³	49 ³	41.9 ³					35.7	197
Lead (Pb)	8740	17600	6040	27100 ¹	30900 ¹	36000 ¹	57300 ^{1,2}	47900 ^{1,2}	55100 ^{1,2}	42800 ¹	39800 ¹	21,200		43,766			
Lithium (Li)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30					35	91.3
Magnesium (Mg)	3.4	3.2	2.7	9.4	9.1	8.2	12.2	12.0	14.0	11.1	10.4						
Manganese (Mn)	1090	1250	750	11400	9340	10200	26500	23800	25700	20600	20000						
Mercury (Hg)	140	177	104	456	438	411	1080	904	1070	978	993						
Molybdenum (Mo)	<0.0050	<0.0050	<0.0050	<0.0050	0.0083	0.0051	0.226 ¹	0.181 ¹	0.226 ¹	0.0896	0.0707					0.17	0.486
Nickel (Ni)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0						
Phosphorus (P)	<5.0	<5.0	<5.0	28.6 ¹	21.1 ¹	29.1 ¹	62.5 ¹	58.7 ¹	61.2 ¹	56.1 ¹	53.9 ¹	16		75			
Potassium (K)	185	263	148	708	715	635	1250	1360	1560	1180	1050						
Selenium (Se)	360	370	300	510	620	410	890	1010	1150	1180	910						
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<4.0	<2.0	<3.0	<2.0	5					
Sodium (Na)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5					
Strontium (Sr)	<200	<200	<200	<200	<200	<200	<200	<200	<200	230	200						
Thallium (Tl)	5.33	8.14	5.01	31.6	32.3	26.1	71.6	70.3	85.1	66.4	59.7						
Tin (Sn)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						
Titanium (Ti)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0						
Vanadium (V)	239	383	215	666	686	623	162	158	194	328	246						
Zinc (Zn)	17.6	39.2	11.3	80.9	94.1	113	58.6	54.9	63.5	64.7	56.0						
Organic Parameters	9.7	12.8	7.4	31.3	31.3	30.7	71.8	62.2	62.2	67.0	55.1					123	315
Chlorophyll a																	
Organic Carbon	1.55	0.793	0.225	2.82	0.111	0.123	9.04	7.92	8.01	0.173	0.582						
XNo class	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	0.55	0.18	0.11	0.20	0.52						
Total Nitrogen by LECO																	
Particle Size	0.02	0.02	0.02	<0.02	0.02	<0.02	0.03	0.03	0.03	0.04	0.04						
% Gravel (>2mm)																	
% Sand (2.0mm - 0.063mm)	2	4	<1	1	<1	<1	<1	<1	18	<1	1						
% Silt (0.063mm - 4um)	92	84	94	97	92	99	92	85	61	84	94						
% Clay (<4um)	5	10	5	<1	7	<1	7	13	18	13	4						
	<1	1	1	2	1	1	2	2	2	3	2						

< = Less than the detection limit indicated.
 Results are expressed as milligrams per dry kilogram except where noted.
 Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

**Appendix 3.1-7
Schaft Creek Project Stream Sediment Data, 2007 (completed)**

RESULTS OF ANALYSIS

Sample ID	MC2-C	MC10-A	MC10-B	MC10-C	SC6-A	SC6-B	SC6-C	HC2-A	HC2-B	HC2-C	Available Guideline Values	LEL	SEL	ISQG	PEL
Date Sampled	08-SEP-07	08-SEP-07	08-SEP-07	08-SEP-07	11-SEP-07	11-SEP-07	11-SEP-07	11-SEP-07	11-SEP-07	11-SEP-07					
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					
ALS Sample ID	L556822-24	L556822-25	L556822-26	L556822-27	L556822-28	L556822-29	L556822-30	L556822-31	L556822-32	L556822-33					
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Physical Tests															
% Moisture															
pH	17.7	22.5	23.1	25.3	13.6	20.6	19.4	18.3	19.0	20.2					
Anions and Nutrients															
Available Phosphate-P	8.35	8.13	8.15	8.19	8.35	8.46	8.80	8.30	8.03	7.90					
Metals	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
Aluminum (Al)															
Antimony (Sb)	8730	10600	11000	10800	9470	8210	8390	19900	23000	20300					
Arsenic (As)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10					
Barium (Ba)	19.4 ⁴	35.2 ⁴	38 ⁴	34.9 ⁴	<5.0	<5.0	<5.0	38.4 ⁴	14.8	20.9 ⁴	6			5.9	17
Beryllium (Be)	235	317	338	295	80.9	80.2	86.6	80.0	70.3	63.3					
Bismuth (Bi)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	<0.50					
Cadmium (Cd)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Calcium (Ca)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				0.6	3.5
Chromium (Cr)	25600	29500	31300	28400	15500	13600	14300	19600	28800	23800					
Cobalt (Co)	57.3 ³	52.3 ³	52.4 ³	47 ³	86.9 ³	57.3 ³	73.8 ³	609 ^{3,4}	511 ^{3,4}	430 ^{3,4}				37.3	90
Copper (Cu)	18.8	20.5	21.6	20.0	11.4	9.7	10.6	30.9	30.2	27.5					
Iron (Fe)	40.8 ³	52.5 ³	56.7 ³	55.2 ³	42.7 ³	31.5	35.6	71.2 ³	62.3 ³	53.5 ³				35.7	197
Lead (Pb)	50800 ^{1,2}	45400 ^{1,2}	47700 ^{1,2}	44300 ^{1,2}	31700 ¹	23500 ¹	30400 ¹	58400 ^{1,2}	41500 ¹	44300 ^{1,2}	21,200	43,766			
Lithium (Li)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30				35	91.3
Magnesium (Mg)	10.2	11.3	12.0	11.2	9.2	8.6	8.8	13.6	16.5	14.6					
Manganese (Mn)	21500	21800	22300	20800	9600	8930	8980	37000	48600	39200					
Mercury (Hg)	1030	1020	1090	1030	426	403	417	920	949	844					
Molybdenum (Mo)	0.0416	0.120	0.0801	0.105	0.0102	0.0055	0.0124	0.0161	0.0080	<0.0050				0.17	0.486
Nickel (Ni)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0					
Phosphorus (P)	56.7 ¹	63.3 ¹	65.9 ¹	61.3 ¹	21.4 ¹	20.2 ¹	19.3 ¹	218 ^{1,2}	296 ^{1,2}	228 ^{1,2}	16	75			
Potassium (K)	1040	1300	1380	1250	790	585	837	1260	1700	1360					
Selenium (Se)	780	1210	1250	1260	600	530	530	770	800	680					
Silver (Ag)	<2.0	<4.0	<2.0	<3.0	<3.0	<2.0	<4.0	<4.0	<2.0	<2.0	5				
Sodium (Na)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5				
Strontium (Sr)	<200	260	270	250	<200	<200	<200	290	290	270					
Thallium (Tl)	60.3	70.1	75.4	69.7	32.6	29.4	30.6	51.9	78.2	62.6					
Tin (Sn)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0					
Titanium (Ti)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0					
Vanadium (V)	343	324	349	316	681	493	546	1110	1020	1020					
Zinc (Zn)	80.1	66.4	70.4	64.4	92.6	62.6	85.6	160	121	126					
Organic Parameters															
Chlorophyll a														123	315
Organic Carbon	0.0338	0.472	0.665	1.73	0.666	0.525	0.131	0.534	2.02	0.946					
XNo class	0.42	0.49	0.54	0.81	0.05	0.02	<0.01	0.11	0.11	0.04					
Total Nitrogen by LECO															
Particle Size	0.03	0.05	0.04	0.04	0.03	<0.02	<0.02	<0.02	0.02	<0.02					
% Gravel (>2mm)															
% Sand (2.0mm – 0.063mm)	7	3	12	4	2	<1	<1	7	<1	1					
% Silt (0.063mm – 4um)	90	54	45	52	92	95	80	70	98	95					
% Clay (<4um)	2	39	39	40	6	5	18	19	1	2					
	2	4	4	4	1	<1	1	4	1	1					

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

APPENDIX 3.1-8
SCHAFT CREEK PROJECT STREAM PERIPHYTON DATA,
2007

**Appendix 3.1-8
Schaft Creek Project Stream Periphyton Data, 2007**

Taxon		MC1-A		MC1-B		MC1-C		MC2-A		MC2-B		MC2-C		MC5-A		MC5-B		MC5-C	
		cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²
CYANOPHYTA																			
<i>Lyngbya limnetica</i>	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oscillatoria</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA																			
<i>Scenedesmus</i> sp.		0.00	0.00	23.61	1.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																			
<i>Diceras</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>		0.00	0.00	118.06	5.90	133.57	6.68	9.07	0.45	0.00	0.00	0.00	0.00	0.00	88.54	4.43	774.67	38.73	
CHRYSOPHYTA - DIATOMS																			
<i>Achnanthes flexella</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	3.84	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>		14.99	1.05	460.43	32.23	336.22	23.54	108.78	7.61	22.14	1.55	395.27	27.67	13.35	0.93	188.89	13.22	20.39	1.43
<i>Achnanthes</i> sp.		7.49	0.60	5.90	0.47	0.00	0.00	0.00	0.00	7.38	0.59	0.00	0.00	1.74	0.14	5.90	0.47	0.00	0.00
<i>Amphora ovalis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	3.49	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.		0.00	0.00	0.00	0.00	27.63	16.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	1.14	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.37	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		562.12	101.18	478.14	86.07	313.19	56.37	95.19	17.13	354.18	63.75	395.27	71.15	38.89	7.00	147.57	26.56	96.83	17.43
<i>Diploneis decipiens</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>		0.00	0.00	35.42	24.44	13.82	9.53	0.00	0.00	0.00	0.00	17.44	12.03	1.16	0.80	0.00	0.00	15.29	10.55
<i>Fragilaria</i> sp.		247.33	61.83	182.99	45.75	105.93	26.48	63.46	15.86	132.82	33.20	93.01	23.25	5.80	1.45	11.81	2.95	5.10	1.27
<i>Gomphonema olivaceum</i>		14.99	7.20	64.93	31.17	0.00	0.00	0.00	0.00	22.14	10.63	0.00	0.00	0.00	0.00	17.71	8.50	0.00	0.00
<i>Gomphonema</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.12	13.06	0.00	0.00	20.39	10.19
<i>Hannaea arcus</i>		89.94	170.88	35.42	67.29	9.21	17.50	0.00	0.00	0.00	0.00	0.00	0.00	1.74	3.31	0.00	0.00	5.10	9.68
<i>Meridion circulare</i>		7.49	3.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.		7.49	1.80	17.71	4.25	0.00	0.00	13.60	3.26	14.76	3.54	17.44	4.19	0.58	0.14	0.00	0.00	0.00	0.00
<i>Rhizosolenia eriensis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>		0.00	0.00	0.00	0.00	0.00	0.00	4.53	28.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.41	119.53	11.63	20.93	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>		37.47	111.67	0.00	0.00	13.82	41.18	0.00	0.00	22.14	65.97	0.00	0.00	1.16	3.46	0.00	0.00	5.10	15.19
<i>Tabellaria fenestrata</i>		22.48	33.73	23.61	35.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>		14.99	13.49	0.00	0.00	0.00	0.00	0.00	0.00	29.51	26.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																			
<i>Chroomonas acuta</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL		1026.78	507.10	1446.22	334.41	953.39	197.86	294.63	72.68	671.48	325.32	941.68	166.55	93.44	31.80	460.42	56.13	942.87	104.47
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

(continued)

Appendix 3.1-8

Schaft Creek Project Stream Periphyton Data, 2007 (continued)

Taxon	MC10-A		MC10-B		MC10-C		MT1-A		MT1-B		MT1-C		HC2-A		HC2-B		HC2-C	
	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²
CYANOPHYTA																		
<i>Lyngbya limnetica</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.89	227.37	0.00	0.00	0.00	0.00
<i>Oscillatoria sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	13.37	1.34	13.37
CHLOROPHYTA																		
<i>Scenedesmus sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																		
<i>Diceras sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA - DIATOMS																		
<i>Achnanthes flexella</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>	67.99	4.76	11.99	0.84	11.90	0.83	89.24	6.25	22.14	1.55	23.36	1.64	277.72	19.44	0.00	0.00	0.00	0.00
<i>Achnanthes sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	313.55	25.08	46.50	3.72	52.32	4.19
<i>Amphora ovalis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>	0.00	0.00	6.00	7.26	5.95	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella sp.</i>	0.00	0.00	0.00	0.00	17.85	10.71	0.00	0.00	0.00	0.00	0.00	0.00	53.75	32.25	34.88	20.93	23.25	13.95
<i>Cymbella ventricosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.38	4.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue v. elongatum</i>	135.98	24.48	41.97	7.55	136.83	24.63	74.36	13.39	36.89	6.64	15.58	2.80	0.00	0.00	5.81	1.05	34.88	6.28
<i>Diploneis decipiens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	4.01
<i>Fragilaria sp.</i>	45.33	11.33	41.97	10.49	53.54	13.39	37.18	9.30	22.14	5.53	0.00	0.00	2320.28	580.07	377.83	94.46	255.76	63.94
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.88	12.90	0.00	0.00	0.00	0.00
<i>Gomphonema sp.</i>	22.66	11.33	185.87	92.94	232.01	116.01	7.44	3.72	0.00	0.00	0.00	0.00	0.00	0.00	5.81	2.91	34.88	17.44
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.96	17.02	5.81	11.04	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sp.</i>	0.00	0.00	11.99	2.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.96	2.15	0.00	0.00	5.81	1.40
<i>Rhizosolenia eriensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra sp.</i>	0.00	0.00	6.00	10.79	29.75	53.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	29.98	89.34	5.95	17.73	0.00	0.00	7.38	21.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	29.75	26.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																		
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	271.96	51.90	335.77	222.09	493.78	244.04	237.97	59.43	95.93	40.43	38.94	4.44	3010.10	688.91	476.64	134.11	412.71	111.21
TOTAL mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.89	227.37	1.34	13.37	1.34	13.37

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

(continued)

Appendix 3.1-8

Schaft Creek Project Stream Periphyton Data, 2007 (continued)

Taxon	HC3-A		HC3-B		HC3-C		YC1-A		YC1-B		YC1-C		SKC1-A		SKC1-B		SKC1-C	
	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²
CYANOPHYTA																		
<i>Lyngbya limnetica</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oscillatoria</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA																		
<i>Scenedesmus</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																		
<i>Diceras</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.	5.81	7.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>	0.00	0.00	143.14	7.16	849.34	42.47	24.37	1.22	23.43	1.17	58.58	2.93	314.79	15.74	188.34	9.42	0.00	0.00
CHRYSOPHYTA - DIATOMS																		
<i>Achnanthes flexella</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>	29.06	2.03	5.73	0.40	14.64	1.03	420.34	29.42	310.45	21.73	70.29	4.92	188.87	13.22	104.63	7.32	46.86	3.28
<i>Achnanthes</i> sp.	11.63	0.93	5.73	0.46	0.00	0.00	73.10	5.85	0.00	0.00	0.00	0.00	20.99	1.68	10.46	0.84	0.00	0.00
<i>Amphora ovalis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.86	7.09	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	42.64	25.59	5.86	3.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>	0.00	0.00	0.00	0.00	7.32	3.59	0.00	0.00	0.00	0.00	0.00	0.00	10.49	5.14	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>	0.00	0.00	5.73	3.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.93	13.39	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	48.73	8.77	52.72	9.49	29.29	5.27	10.49	1.89	20.93	3.77	0.00	0.00
<i>Diploneis decipiens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	5.73	3.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.72	8.08
<i>Fragilaria</i> sp.	87.19	21.80	469.48	117.37	593.08	148.27	475.16	118.79	175.73	43.93	146.44	36.61	20.99	5.25	20.93	5.23	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00	51.25	25.63	268.04	134.02	222.59	111.29	0.00	0.00	157.39	78.70	52.32	26.16	0.00	0.00
<i>Hannaea arcus</i>	5.81	11.04	0.00	0.00	0.00	0.00	140.11	266.21	41.00	77.91	35.15	66.78	52.46	99.68	62.78	119.28	11.72	22.26
<i>Meridion circulare</i>	23.25	11.39	0.00	0.00	0.00	0.00	24.37	11.94	0.00	0.00	11.72	5.74	0.00	0.00	0.00	0.00	46.86	22.96
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia eriensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	6.09	18.15	5.86	17.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																		
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	162.75	54.75	635.54	133.00	1515.63	220.99	1522.95	619.96	837.64	286.49	357.33	129.34	776.47	221.30	481.32	185.41	117.16	56.58
TOTAL mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

(continued)

Appendix 3.1-8

Schaft Creek Project Stream Periphyton Data, 2007 (continued)

Taxon	SKC3-A		SKC3-B		SKC3-C		SKC4-A		SKC4-B		SKC4-C		SC1-A		SC1-B		SC1-C	
	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²
CYANOPHYTA																		
<i>Lyngbya limnetica</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oscillatoria</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA																		
<i>Scenedesmus</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																		
<i>Diceras</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	782.14	39.11
CHRYSOPHYTA - DIATOMS																		
<i>Achnanthes flexella</i>	0.00	0.00	7.73	5.10	9.52	6.28	0.00	0.00	17.99	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>	59.03	4.13	46.40	3.25	199.89	13.99	20.99	1.47	20.99	1.47	35.69	2.50	17.85	1.25	142.78	9.99	0.00	0.00
<i>Achnanthes</i> sp.	7.38	0.59	15.47	1.24	38.07	3.05	26.98	2.16	11.99	0.96	59.49	4.76	0.00	0.00	11.90	0.95	0.00	0.00
<i>Amphora ovalis</i>	0.00	0.00	7.73	23.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>	22.14	19.92	262.95	236.65	237.96	214.17	3.00	2.70	3.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>	0.00	0.00	0.00	0.00	9.52	11.52	8.99	10.88	0.00	0.00	14.87	18.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>	0.00	0.00	0.00	0.00	0.00	0.00	6.00	38.19	0.00	0.00	2.97	18.95	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.	0.00	0.00	7.73	4.64	0.00	0.00	20.99	12.59	20.99	12.59	11.90	7.14	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.95	2.92	0.00	0.00	0.00	0.00	14.76	7.23
<i>Diatoma hiemale</i>	7.38	4.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.97	8.63	38.67	6.96	0.00	0.00	1427.78	257.00	0.00	0.00
<i>Diploneis decipiens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	26.98	18.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	26.98	18.62	8.99	6.21	11.90	8.21	0.00	0.00	23.80	16.42	0.00	0.00
<i>Fragilaria</i> sp.	29.51	7.38	23.20	5.80	19.04	4.76	26.98	6.75	26.98	6.75	47.59	11.90	0.00	0.00	285.56	71.39	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	29.51	14.76	46.40	23.20	171.33	85.67	149.90	74.95	677.54	338.77	23.80	11.90	17.85	8.92	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	9.52	4.66	0.00	0.00	0.00	0.00	2.97	1.46	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	3.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	3.00	1.50	0.00	0.00	5.95	2.97	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	7.73	12.22	19.04	30.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	3.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.99	4.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia eriensis</i>	0.00	0.00	7.73	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	9.52	17.13	0.00	0.00	29.98	53.96	2.97	5.35	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	54.14	161.33	0.00	0.00	8.99	26.80	8.99	26.80	5.95	17.73	0.00	0.00	11.90	35.46	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	41.97	62.96	14.99	22.48	5.95	8.92	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	6.00	5.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																		
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	154.95	51.50	487.21	492.10	723.41	391.31	380.75	288.39	905.39	501.41	276.62	129.67	35.70	10.17	1903.72	391.21	796.90	46.34
TOTAL mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

(continued)

Appendix 3.1-8

Schaft Creek Project Stream Periphyton Data, 2007 (continued)

Taxon	SC3-A		SC3-B		SC3-C		SC4-A		SC4-B		SC4-C		SC5-A		SC5-B		SC5-C		
	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	
CYANOPHYTA																			
<i>Lyngbya limnetica</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oscillatoria</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA																			
<i>Scenedesmus</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																			
<i>Diceras</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>	661.13	33.06	64.43	3.22	0.00	0.00	369.03	18.45	702.91	35.15	1129.04	56.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA - DIATOMS																			
<i>Achnanthes flexella</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>	0.00	0.00	17.57	1.23	0.00	0.00	0.00	0.00	162.55	11.38	0.00	0.00	327.20	22.90	5.90	0.41	0.00	0.00	0.00
<i>Achnanthes</i> sp.	35.42	2.83	23.43	1.87	0.00	0.00	5.86	0.47	0.00	0.00	0.00	0.00	5.95	0.48	0.00	0.00	2.86	0.23	0.00
<i>Amphora ovalis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.39	2.15	21.97	10.76	0.00	0.00	0.00	0.00	2.86	1.40	0.00
<i>Diatoma hiemale</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.95	3.81	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>	11.81	2.13	11.72	2.11	7.21	1.30	11.72	2.11	553.54	99.64	8.79	1.58	690.09	124.22	5.90	1.06	0.00	0.00	0.00
<i>Diploneis decipiens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.39	3.03	0.00	0.00	23.80	16.42	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	265.63	66.41	64.43	16.11	21.63	5.41	29.29	7.32	65.90	16.47	21.97	5.49	83.29	20.82	17.71	4.43	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	17.71	8.85	5.86	2.93	0.00	0.00	0.00	0.00	0.00	0.00	4.39	2.20	41.64	20.82	47.22	23.61	11.45	5.73	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	7.21	13.70	0.00	0.00	4.39	8.35	17.57	33.39	41.64	79.12	47.22	89.72	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia eriensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.73	17.06
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																			
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	991.70	113.28	187.44	27.47	36.05	20.41	415.90	28.35	1498.07	176.17	1203.73	109.87	1219.56	288.59	123.95	119.23	22.90	24.42	0.00
TOTAL mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

(continued)

Appendix 3.1-8

Schaft Creek Project Stream Periphyton Data, 2007 (continued)

Taxon	SC6-A		SC6-B		SC6-C		SC7-A		SC7-B		SC7-C		JC1-A		JC1-B		JC1-C	
	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²
CYANOPHYTA																		
<i>Lyngbya limnetica</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oscillatoria</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	20.05	0.00	0.00	0.00	0.00
CHLOROPHYTA																		
<i>Scenedesmus</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																		
<i>Diceras</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>	592.26	29.61	34.88	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1255.57	62.78	0.00	0.00	11.72	0.59
CHRYSOPHYTA - DIATOMS																		
<i>Achnanthes flexella</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>	0.00	0.00	5.81	0.41	41.00	2.87	2.95	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes</i> sp.	12.09	0.97	0.00	0.00	35.15	2.81	8.85	0.71	5.77	0.46	5.77	0.46	0.00	0.00	8.72	0.70	11.72	0.94
<i>Amphora ovalis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.44	10.46	0.00	0.00
<i>Cocconeis placentula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>	6.04	2.96	5.81	2.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.72	4.27	8.72	4.27	5.86	2.87	
<i>Diatoma hiemale</i>	6.04	3.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>	0.00	0.00	0.00	0.00	538.89	97.00	0.00	0.00	0.00	0.00	0.00	0.00	34.88	6.28	17.44	3.14	0.00	0.00
<i>Diploneis decipiens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	11.72	8.08	0.00	0.00	0.00	0.00	0.00	0.00	17.44	12.03	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	586.22	146.55	197.64	49.41	35.15	8.79	5.90	1.48	11.54	2.88	8.65	2.16	61.03	15.26	17.44	4.36	11.72	2.93
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	29.06	14.53	0.00	0.00	2.95	1.48	0.00	0.00	25.96	12.98	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	12.09	22.97	5.81	11.04	5.86	11.13	0.00	0.00	5.77	10.96	0.00	0.00	61.03	115.97	8.72	16.57	0.00	0.00
<i>Meridion circulare</i>	12.09	5.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia eriensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	23.25	34.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																		
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	1226.83	212.85	302.26	114.86	667.77	130.68	20.65	3.88	23.08	14.30	40.38	15.60	1438.67	216.59	78.48	39.50	41.02	7.33
TOTAL mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	20.05	0.00	0.00	0.00	0.00

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

(continued)

Appendix 3.1-8
Schaft Creek Project Stream Periphyton Data, 2007 (completed)

Taxon	JC2-A		JC2-B		JC2-C		WC1-A		WC1-B		WC1-C		WL8-A		WL8-B		WL8-C	
	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²	cells x 10 ⁶ /m ²	u ³ x10 ⁹ /m ²
CYANOPHYTA																		
<i>Lyngbya limnetica</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.21	66.07	31.11	155.55	0.00	0.00	0.00	0.00	0.00	0.00
<i>Lyngbya sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oscillatoria sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA																		
<i>Scenedesmus sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA																		
<i>Diceras sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.33	1.30	0.00	0.00	0.00
<i>Dinobryon sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hydrurus foetidus</i>	26.16	1.31	0.00	0.00	533.61	26.68	2.91	0.15	2239.65	111.98	334.31	16.72	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSOPHYTA - DIATOMS																		
<i>Achnanthes flexella</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>	0.00	0.00	14.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes sp.</i>	8.72	0.70	0.00	0.00	7.21	0.58	8.72	0.70	313.55	25.08	306.45	24.52	0.00	0.00	5.81	0.47	7.16	0.57
<i>Amphora ovalis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.40	27.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella sp.</i>	8.72	5.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>	69.75	34.18	28.63	14.03	36.05	17.67	0.00	0.00	0.00	0.00	18.57	9.10	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	223.97	143.34	529.32	338.77	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue v. elongatum</i>	8.72	1.57	7.16	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	1.05	0.00	0.00
<i>Diploneis decipiens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.29	14.58	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	8.72	6.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria sp.</i>	34.88	8.72	7.16	1.79	14.42	3.61	26.16	6.54	627.10	156.78	501.46	125.37	8.65	2.16	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema sp.</i>	0.00	0.00	100.19	50.10	7.21	3.61	5.81	2.91	0.00	0.00	18.57	9.29	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	113.35	215.37	42.94	81.59	237.96	452.13	110.44	209.84	3561.05	6765.99	1123.65	2134.93	8.65	16.44	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	2.85	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia eriensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra sp.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.65	12.98	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA																		
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	0.58	0.00	0.00
TOTAL	279.02	273.10	200.39	149.80	836.46	504.28	154.04	220.14	6987.72	7230.27	2841.62	2673.28	30.28	32.88	23.24	4.95	7.16	0.57
TOTAL mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.21	66.07	31.11	155.55	0.00	0.00	0.00	0.00	0.00	0.00

* inorganic sediment (SC1-A)

** preserved with formalin (SC5-C)

**APPENDIX 3.1-9
SCHAFT CREEK PROJECT STREAM PERIPHYTON BIOMASS
DATA, 2007**

Appendix 3.1-9
Schaft Creek Project Stream Periphyton Biomass Data, 2007

Site	Chlorophyll a (µg)	Area Sampled (cm ²)	Chlorophyll a (µg/cm ²)
JC1	2.98	5.73	0.520069808
JC1	0.287	5.73	0.05008726
JC1	-	-	-
JC2	1.55	5.73	0.270506108
JC2	0.793	5.73	0.138394415
JC2	0.225	5.73	0.039267016
HC2	0.534	5.73	0.093193717
HC2	2.02	5.73	0.352530541
HC2	0.946	5.73	0.165095986
HC3	2.53	5.73	0.441535777
HC3	2.10	5.73	0.366492147
HC3	7.01	5.73	1.223385689
MC1	9.04	5.73	1.577661431
MC1	7.92	5.73	1.382198953
MC1	8.01	5.73	1.397905759
MC2	0.173	5.73	0.030191972
MC2	0.582	5.73	0.101570681
MC2	0.0338	5.73	0.005898778
MT1	0.687	5.73	0.119895288
MT1	1.56	5.73	0.272251309
MT1	1.14	5.73	0.19895288
MC10	0.472	5.73	0.082373473
MC10	0.665	5.73	0.116055846
MC10	1.73	5.73	0.301919721
WC1	4.85	5.73	0.846422339
WC1	1.45	5.73	0.253054101
WC1	3.98	5.73	0.694589878
MC5	1.01	5.73	0.176265271
MC5	1.42	5.73	0.247818499
MC5	3.09	5.73	0.539267016
YC1	3.67	5.73	0.640488656
YC1	3.46	5.73	0.603839442
YC1	7.18	5.73	1.253054101
SKC1	3.29	5.73	0.57417103
SKC1	4.01	5.73	0.69982548
SKC1	3.18	5.73	0.554973822
SKC3	1.82	5.73	0.317626527
SKC3	3.57	5.73	0.623036649
SKC3	3.78	5.73	0.659685864
SKC4	2.95	5.73	0.514834206
SKC4	0.895	5.73	0.156195462
SKC4	-	-	-
SC1	0.0518	5.73	0.00904014
SC1	0.228	5.73	0.039790576
SC1	0.156	5.73	0.027225131
WL8	0.213	5.73	0.037172775
WL8	0.0332	5.73	0.005794066
WL8	0.146	5.73	0.02547993
SC6	0.666	5.73	0.116230366
SC6	0.525	5.73	0.091623037
SC6	0.131	5.73	0.022862129
SC3	2.82	5.73	0.492146597
SC3	0.111	5.73	0.019371728
SC3	0.123	5.73	0.021465969
SC4	0.688	5.73	0.120069808
SC4	1.08	5.73	0.188481675
SC4	5.84	5.73	1.019197208
SC7	0.441	5.73	0.076963351
SC7	0.346	5.73	0.060383944
SC7	0.215	5.73	0.037521815
SC5	1.43	5.73	0.2495637
SC5	1.46	5.73	0.254799302
SC5	0.215	5.73	0.037521815

**APPENDIX 3.1-10
SCHAFT CREEK PROJECT STREAM BENTHIC
INVERTEBRATE DATA, 2007**

APPENDIX 3.1-11
SCHAFT CREEK PROJECT BRAY-CURTIS SIMILARITY
VALUES FOR STREAM BENTHIC INVERTEBRATE DATA, 2007

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007**

TAXON	STAGE	No. of Individuals	ref coll	MC1-A	MC1-B	MC1-C	MC1-D	MC1-E	MC2-A	MC2-B	MC2-C	MC2-D	MC2-E	MC5-A	MC5-B
PLATYHELMINTHES															
<i>Polycelis coronata</i>	A	128													
NEMATODA															
Nematoda indet.	A	6453												1	3
ANNELIDA															
Oligochaeta															
Oligochaeta indet.	J	128													
Enchytraeidae															
Enchytraeidae indet.	J	1528													
Enchytraeidae indet.	A	1090													
Naididae															
<i>Chaetogaster diaphanus</i>	J	672													
Naididae indet. Group 3															
<i>Pristinella jenkinsae</i>	A	16													
Naididae indet. Group 5															
<i>Nais communis</i>	J	24													
<i>Nais simplex</i>	A	4													
Lumbriculidae															
<i>Rhynchelmis</i> spp.	A	320													
Tubificidae															
Tubificidae indet. Group 5															
<i>Limnodrilus</i> sp.	J	262													
<i>Limnodrilus</i> sp.	A	128													
MOLLUSCA															
Gastropoda															
Planorbidae															
<i>Gyraulus</i> spp.	A	64													
Valvatidae															
<i>Valvata sincera sincera</i>	A	4													
Bivalvia															
Sphaeriidae															
<i>Pisidium casertanum</i>	A	192													
<i>Pisidium</i> spp.	J	144													
ARTHROPODA															
ARACHNIDA															
Hydrachnida															
Hydracarina indet.	L	532			1						1				
Libertiidae															
<i>Libertia</i> sp.	A	240													
Oribatidae															
Oribatidae indet.	L	752													
Oribatidae indet.	A	6													
Sperchontidae															
<i>Sperchon</i> sp.	A	1616													
Torrenticolidae															
<i>Torrenticola</i> sp.	A	64													
CRUSTACEA															
Copepoda															
Cyclopoida															
Cyclopoida indet.	cpp	218													
Harpacticoida															
Harpacticoida indet.	cpp	2601			1										
Ostracoda															
Ostracoda indet. 2	J	19336													
Candonidae															
Candonidae indet.	A	48													
Cladocera															
Bosminidae															
Bosminidae indet.	J	1885													
Chydoridae															
Chydoridae indet.	J	8													
Daphnidae															
Daphnidae indet.	J	7								1					
Amphipoda															
Amphipoda indet.	J	194													
Gammaridae															
<i>Gammarus</i> sp.	A	48													
COLLEMBOLA															
Collembola indet.	L	274													
INSECTA															
Ephemeroptera															
Ephemeroptera indet.	N	20905	1	3	3									3	3
Ephemeroptera indet.	A	68													
Ameletidae															
<i>Ameletus</i> sp.	N	6862													
Baetidae															
Baetidae indet.	N	2757			1				1					1	
<i>Baetis bicaudatus</i>	N	9473					2	1	1					15	5
<i>Baetis tricaudatus</i>	N	400													
Ephemerellidae															
Ephemerellidae indet.	N	1463							1	2					
<i>Drunella coloradensis</i>	N	211												1	
<i>Drunella doddsii</i>	N	268				2			1						3
<i>Drunella</i> sp.	N	132													
<i>Seratella</i> sp.	N	221													1
Heptageniidae															
Heptageniidae indet.	N	7185		3	1						3			1	17
<i>Cinygmula</i> sp.	N	4055		4	8		2	1	1		3			5	
<i>Epeorus deceptivus</i>	N	855		16	19		4	2							2
<i>Epeorus grandis</i>	N	1						1							
<i>Epeorus longimanus</i>	N	742			1		1								
<i>Epeorus</i> sp.	N	101		1				1							
<i>Rithrogena</i> sp.	N	25182		2	18	20	11	13	1		1			8	21
Leptophebiidae															
<i>Paraleptophebia</i> sp.	N	8584													
Plecoptera															
Plecoptera indet.	N	270610	8	35	35	6	9	9	9	12	28	3		50	26
Capnidae															
Capnidae indet.	N	1080													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of													
		Individuals	ref coll	MC1-A	MC1-B	MC1-C	MC1-D	MC1-E	MC2-A	MC2-B	MC2-C	MC2-D	MC2-E	MC5-A	MC5-B
Chloroperlidae															
Chloroperlidae indet.	N	33581		7		3	6	7	8	19	79	3	2	20	14
<i>Suwallia</i> sp.	N	4539				4		4			1				
<i>Sweltsa</i> sp.	N	2550													
Nemouridae															
Nemouridae indet.	N	180													
<i>Visoka</i> sp.	N	128													
<i>Zapada columbiana</i>	N	560			3	4	6								
<i>Zapada</i> sp.	N	5369													1
Perlidae															
Perlidae indet.	N	56													
<i>Hesperoperla pacifica</i>	N	192													
Perlodidae															
Perlodidae indet.	N	11224			2	12	1	2	12	9	14	1		9	6
<i>Isoperla</i> sp.	N	214					4	1	1						
<i>Megarcys</i> sp.	N	2258			1	4		1						2	
<i>Setvena</i> sp.	N	64													
<i>Skwala</i> sp.	N	2890													
Taeniopterygidae															
Taeniopterygidae indet.	N	20968													
Hemiptera															
Hemiptera indet.	A	128													
Trichoptera															
Trichoptera indet.	L	687													1
Brachycentridae															
<i>Micrasema</i> sp.	L	24													
Glossosomatidae															
Glossosomatidae indet.	L	4													
<i>Glossosoma</i> sp.	L	1249					1								1
Hydropsychidae															
Hydropsychidae indet.	L	64													
<i>Arctopsyche</i> sp.	L	192													
<i>Parapsyche</i> sp.	L	32													
Limnephilidae															
Limnephilidae indet.	L	4													
<i>Dicosmoecus</i> sp.	L	24													
<i>Ecclisomyia</i> sp.	L	72													
Rhyacophilidae															
Rhyacophilidae indet.	L	4													
<i>Rhyacophila brunnea/venna</i> Group	L	4													2
<i>Rhyacophila hyalinata</i> Group	L	76													
<i>Rhyacophila</i> sp.	L	1714				1	1								
Diptera															
Diptera indet.	P	160													
Blephariceridae															
<i>Agathon</i> sp.	L	11													5
Ceratopogonidae															
Ceratopogonidae indet.	L	1864													
Chironomidae															
Chironomidae indet.	L	120275			1	1	7	1	2	8	40	6	5	16	12
Chironomidae indet.	P	8517			1										1
Chironomidae indet.	A	2791						8	1			1			
Chironominae															
Chironominae indet.	L	2344													
<i>Micropsectra</i> sp.	L	154													
Diamesinae															
<i>Diamesa</i> sp.	L	123028					12								6
<i>Pseudodiamesa</i> sp.	L	1051													
Orthocladinae															
Orthocladinae indet.	L	672													
<i>Corynoneura</i> sp.	L	230													
<i>Orthocladus</i> sp.	L	7362							2	3				3	5
<i>Paracricotopus</i> sp.	L	4													
<i>Rheocricotopus</i> sp.	L	1985													1
Tanypodinae															
Tanypodinae indet.	L	2024													
Ephydriidae															
Ephydriidae indet.	L	64													
Empididae															
Empididae indet.	L	132													
Empididae indet.	P	416													
<i>Chelifera/Metachela</i> sp.	L	192													
<i>Oreogeton</i> sp.	L	73				1									
Simuliidae															
Simuliidae indet.	L	296									1			1	
Simuliidae indet.	P	660													
Tipulidae															
Tipulidae indet.	L	200													
<i>Dicranota</i> sp.	L	957									1				
<i>Gonomyodes</i> sp.	L	24													
<i>Pilaria</i> sp.	L	448													
<i>Rhabdomastix</i> sp.	L	133													3
<i>Tipula</i> sp.	L	128													
Total Number of Organisms		765385		19	90	119	64	52	41	54	172	14	7	136	139
Total Number of Taxa		30286		3	9	11	11	9	7	5	7	3	2	9	16
MEMO															
Araneae indet.	A	28													
Diptera indet.	A	1699													
Homoptera indet.	L	32			5	3		1							
Homoptera indet.	A	64													
Hymenoptera indet.	L	52													
Hymenoptera indet.	A	1050					2								
Invertebrate eggs	mass	1									1				
Thysanoptera indet.	L	8													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of Individuals	ref coll	MC5-C	MC5-D	MC5-E	MC10-A	MC10-B	MC10-C	MC10-D	MC10-E	JC1-A	JC1-B	JC1-C	JC1-D
PLATYHELMINTHES															
<i>Polycelis coronata</i>	A	64													
NEMATODA															
Nematoda indet.	A	3225										9	2	6	9
ANNELIDA															
Oligochaeta															
Oligochaeta indet.	J	64													
Enchytraeidae															
Enchytraeidae indet.	J	764					1	2			1				
Enchytraeidae indet.	A	545					1			1		1			
Naididae															
<i>Chaetogaster diaphanus</i>	J	336													
Naididae indet. Group 3															
<i>Pristinella jenkinsae</i>	A	8													
Naididae indet. Group 5															
<i>Nais communis</i>	J	12													
<i>Nais simplex</i>	A	2													
Lumbriculidae															
<i>Rhynchelmis</i> spp.	A	160													
Tubificidae															
Tubificidae indet. Group 5															
<i>Limnodrilus</i> sp.	J	131					1	1		1					
<i>Limnodrilus</i> sp.	A	64													
MOLLUSCA															
Gastropoda															
Planorbidae															
<i>Gyraulus</i> spp.	A	32													
Valvatidae															
<i>Valvata sincera sincera</i>	A	2													
Bivalvia															
Sphaeriidae															
<i>Pisidium casertanum</i>	A	96													
<i>Pisidium</i> spp.	J	72													
ARTHROPODA															
ARACHNIDA															
Hydrachnida															
Hydracarina indet.	L	265								1					
Libertiidae															
<i>Libertia</i> sp.	A	120													
Oribatidae															
Oribatidae indet.	L	376													
Oribatidae indet.	A	3											1		
Sperchontidae															
<i>Sperchon</i> sp.	A	808													
Torrenticolidae															
<i>Torrenticola</i> sp.	A	32													
CRUSTACEA															
Copepoda															
Cyclopoida															
Cyclopoida indet.	cpp	109					11								
Harpacticoida															
Harpacticoida indet.	cpp	1300					31	8	2		2				
Ostracoda															
Ostracoda indet. 2	J	9668													
Candonidae															
Candonidae indet.	A	24													
Cladocera															
Bosminidae															
Bosminidae indet.	J	942													
Chydoridae															
Chydoridae indet.	J	4													
Daphnidae															
Daphnidae indet.	J	3					2			1					
Amphipoda															
Amphipoda indet.	J	97					1								
Gammaridae															
<i>Gammarus</i> sp.	A	24													
COLLEMBOLA															
Collembola indet.	L	137													1
INSECTA															
Ephemeroptera															
Ephemeroptera indet.	N	10446		2	3			2			2			1	
Ephemeroptera indet.	A	34													
Ameletidae															
<i>Ameletus</i> sp.	N	3431								2		1			
Baetidae															
Baetidae indet.	N	1377		1							2				
<i>Baetis bicaudatus</i>	N	4724		2	2	3						1			
<i>Baetis tricaudatus</i>	N	200													
Ephemerellidae															
Ephemerellidae indet.	N	730		1			12	8	2		1				
<i>Drunella coloradensis</i>	N	105		1											
<i>Drunella doddsii</i>	N	131			1	2									
<i>Drunella</i> sp.	N	66		2											
<i>Seratella</i> sp.	N	110					12	12	6	7	9				
Heptageniidae															
Heptageniidae indet.	N	3580		5	2	1	1	2	1			2			
<i>Cinygmula</i> sp.	N	2015				1	1		1	10					
<i>Epeorus deceptivus</i>	N	406					2								
<i>Epeorus grandis</i>	N														
<i>Epeorus longimanus</i>	N	370													
<i>Epeorus</i> sp.	N	49		1											
<i>Rithrogena</i> sp.	N	12544		3	7	11						1			
Leptophebiidae															
<i>Paraleptophebia</i> sp.	N	4292													
Plecoptera															
Plecoptera indet.	N	135195		13	6	49	71	47	38	27	32	8	2	7	4
Capnidae															
Capnidae indet.	N	540													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of Individuals	ref coll	MC5-C	MC5-D	MC5-E	MC10-A	MC10-B	MC10-C	MC10-D	MC10-E	JC1-A	JC1-B	JC1-C	JC1-D
Chloroperlidae															
Chloroperlidae indet.	N	16706		8	19	5	23	5	15	2	5	11		1	
<i>Suwallia</i> sp.	N	2265													
<i>Sweltsa</i> sp.	N	1275													
Nemouridae															
Nemouridae indet.	N	90													
<i>Visoka</i> sp.	N	64													
<i>Zapada columbiana</i>	N	273			1										
<i>Zapada</i> sp.	N	2684													
Perlidae															
Perlidae indet.	N	28													
<i>Hesperoperla pacifica</i>	N	96													
Perlodidae															
Perlodidae indet.	N	5578		3	7		51	23	10	14	10	2			
<i>Isoperla</i> sp.	N	104													
<i>Megarcys</i> sp.	N	1125			1										
<i>Setvena</i> sp.	N	32													
<i>Skwala</i> sp.	N	1445				1	2		1		1	4		1	
Taeniopterygidae															
Taeniopterygidae indet.	N	10484										23	1	6	
Hemiptera															
Hemiptera indet.	A	64													
Trichoptera															
Trichoptera indet.	L	343													
Brachycentridae															
<i>Micrasema</i> sp.	L	12													
Glossosomatidae															
Glossosomatidae indet.	L	2													
<i>Glossosoma</i> sp.	L	624		2											
Hydropsychidae															
Hydropsychidae indet.	L	32													
<i>Arctopsyche</i> sp.	L	96													
<i>Parapsyche</i> sp.	L	16													
Limnephilidae															
Limnephilidae indet.	L	2													
<i>Dicosmoecus</i> sp.	L	12													
<i>Ecclisomyia</i> sp.	L	36													
Rhyacophilidae															
Rhyacophilidae indet.	L	2													
<i>Rhyacophila brunnea/vemna</i> Group	L	1				1									
<i>Rhyacophila hyalinata</i> Group	L	38													
<i>Rhyacophila</i> sp.	L	856													
Diptera															
Diptera indet.	P	80													
Blephariceridae															
<i>Agathon</i> sp.	L	3			1	2									
Ceratopogonidae															
Ceratopogonidae indet.	L	932													
Chironomidae															
Chironomidae indet.	L	60088		26	6	7	119	39	51	39	21	22	13	10	25
Chironomidae indet.	P	4257										17	6	9	15
Chironomidae indet.	A	1391										2	1	2	2
Chironominae															
Chironominae indet.	L	1172													
<i>Micropsectra</i> sp.	L	77				1									
Diamesinae															
<i>Diamesa</i> sp.	L	61505		2	1	3					2	126	42	56	35
<i>Pseudodiamesa</i> sp.	L	526													
Orthocladinae															
Orthocladinae indet.	L	336													
<i>Corynoneura</i> sp.	L	115													
<i>Orthocladus</i> sp.	L	3675		4	2	4									
<i>Paracricotopus</i> sp.	L	2													
<i>Rheocricotopus</i> sp.	L	992													
Tanypodinae															
Tanypodinae indet.	L	1012													
Ephydriidae															
Ephydriidae indet.	L	32													
Empididae															
Empididae indet.	L	66													
Empididae indet.	P	208													
<i>Chelifera/Metachela</i> sp.	L	96													
<i>Oreogeton</i> sp.	L	36													
Simuliidae															
Simuliidae indet.	L	147						1							
Simuliidae indet.	P	330													
Tipulidae															
Tipulidae indet.	L	100													
<i>Dicranota</i> sp.	L	478		1											
<i>Gonomyodes</i> sp.	L	12										4	3	1	
<i>Pilaria</i> sp.	L	224													
<i>Rhabdomastix</i> sp.	L	65		1											
<i>Tipula</i> sp.	L	64													
Total Number of Organisms		382239		78	58	92	342	150	128	104	88	235	70	101	90
Total Number of Taxa		15097		11	8	12	12	9	7	9	7	11	4	8	3
MEMO															
Araneae indet.	A	14		1											
Diptera indet.	A	845													
Homoptera indet.	L	16											2		
Homoptera indet.	A	32													
Hymenoptera indet.	L	26													
Hymenoptera indet.	A	524													
Invertebrate eggs	mass														
Thysanoptera indet.	L	4													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of Individuals	JC1-E	JC2-A	JC2-B	JC2-C	JC2-D	JC2-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
PLATYHELMINTHES															
<i>Polycelis coronata</i>	A	32													
NEMATODA															
Nematoda indet.	A	1597	5		6	1			1			5			
ANNELIDA															
Oligochaeta															
Oligochaeta indet.	J	32													
Enchytraeidae															
Enchytraeidae indet.	J	380													
Enchytraeidae indet.	A	271		1							1		1	12	12
Naididae															
<i>Chaetogaster diaphanus</i>	J	168													
Naididae indet. Group 3															
<i>Pristinella jenkiniae</i>	A	4													
Naididae indet. Group 5															
<i>Nais communis</i>	J	6													
<i>Nais simplex</i>	A	1									1				
Lumbriculidae															
<i>Rhynchelmis</i> spp.	A	80													
Tubificidae															
Tubificidae indet. Group 5															
<i>Limnodrilus</i> sp.	J	64													
<i>Limnodrilus</i> sp.	A	32													
MOLLUSCA															
Gastropoda															
Planorbidae															
<i>Gyraulus</i> sp.	A	16													
Valvatidae															
<i>Valvata sincera sincera</i>	A	1									1				
Bivalvia															
Sphaeriidae															
<i>Pisidium casertanum</i>	A	48													
<i>Pisidium</i> spp.	J	36													
ARTHROPODA															
ARACHNIDA															
Hydrachnida															
Hydrachnida indet.	L	132													
Libertiidae															
<i>Libertia</i> sp.	A	60													
Oribatidae															
Oribatidae indet.	L	188													
Oribatidae indet.	A	1						1							
Sperchontidae															
<i>Sperchon</i> sp.	A	404													
Torrenticolidae															
<i>Torrenticola</i> sp.	A	16													
CRUSTACEA															
Copepoda															
Cyclopoida															
Cyclopoida indet.	cpp	49							4	2	3	12	8		
Harpacticoida															
Harpacticoida indet.	cpp	628									2	2	4	24	18
Ostracoda															
Ostracoda indet. 2	J	4834			1				16		22	12	31	468	102
Candonidae															
Candonidae indet.	A	12													12
Cladocera															
Bosminidae															
Bosminidae indet.	J	471							80		34	43	74		
Chydoridae															
Chydoridae indet.	J	2													
Daphnidae															
Daphnidae indet.	J														
Amphipoda															
Amphipoda indet.	J	48													
Gammaridae															
<i>Gammarus</i> sp.	A	12													
COLLEMBOLA															
Collembola indet.	L	68													
INSECTA															
Ephemeroptera															
Ephemeroptera indet.	N	5218						2	54	13	23	48	18	936	18
Ephemeroptera indet.	A	17		1											
Ameletidae															
<i>Ameletus</i> sp.	N	1714			1				1					48	24
Baetidae															
Baetidae indet.	N	687		1											
<i>Baetis bicaudatus</i>	N	2357	2		4				1	4	4	7	3	24	12
<i>Baetis tricaudatus</i>	N	100													
Ephemerellidae															
Ephemerellidae indet.	N	353								1					48
<i>Drunella coloradensis</i>	N	52													
<i>Drunella doddsii</i>	N	64													
<i>Drunella</i> sp.	N	32													
<i>Serratella</i> sp.	N	32													
Heptageniidae															
Heptageniidae indet.	N	1783			1		2						4		
<i>Cinygmula</i> sp.	N	1001			2		1		6	7	20	19	4	60	54
<i>Epeorus deceptivus</i>	N	202							2						
<i>Epeorus grandis</i>	N														
<i>Epeorus longimanus</i>	N	185			1										
<i>Epeorus</i> sp.	N	24													
<i>Rithrogena</i> sp.	N	6261			9	1	8	9	5	2	3	12	4	12	18
Leptophlebiidae															
<i>Paraleptophlebia</i> sp.	N	2146												780	
Plecoptera															
Plecoptera indet.	N	67444	3	1	7	3	19	18	101	24	109	209	155		738
Capnidae															
Capnidae indet.	N	270				1	2		1	1		12	5		

(continued)

Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)

TAXON	STAGE	No. of													
		Individuals	JC1-E	JC2-A	JC2-B	JC2-C	JC2-D	JC2-E	SKC1-A	SKC1-B	SKC1-C	SKC1-D	SKC1-E	SKC3-A	SKC3-B
Chlorperilidae															
Chlorperilidae indet.	N	8306			3		2	4	4	16	11	67	5		102
<i>Suwalla</i> sp.	N	1133						9		3	15	58	40		
<i>Sweltsa</i> sp.	N	637							33	15	5	26	2		12
Nemouridae															
Nemouridae indet.	N	45											1		
<i>Visoka</i> sp.	N	32													
<i>Zapada columbiana</i>	N	136									7	3			66
<i>Zapada</i> sp.	N	1342													
Perlidae															
Perlidae indet.	N	14													
<i>Hesperoperla pacifica</i>	N	48													
Perlodidae															
Perlodidae indet.	N	2729							2		1				
<i>Isoperla</i> sp.	N	52													
<i>Megarcys</i> sp.	N	562								2					
<i>Setvena</i> sp.	N	16													
<i>Skwala</i> sp.	N	717							2	1		2			
Taeniopterygidae															
Taeniopterygidae indet.	N	5227			6	1	1				3				
Hemiptera															
Hemiptera indet.	A	32													
Trichoptera															
Trichoptera indet.	L	171									1	2			
Brachycentridae															
<i>Micrasema</i> sp.	L	6													6
Glossosomatidae															
Glossosomatidae indet.	L	1								1					
<i>Glossosoma</i> sp.	L	311									2	5			
Hydropsychidae															
Hydropsychidae indet.	L	16													
<i>Arctopsyche</i> sp.	L	48													
<i>Parapsyche</i> sp.	L	8													
Limnephilidae															
Limnephilidae indet.	L	1								1					
<i>Dicosmoecus</i> sp.	L	6													6
<i>Ecclisomyia</i> sp.	L	16	4												
Rhyacophilidae															
Rhyacophilidae indet.	L	1								1					
<i>Rhyacophila brunnea/vemna</i> Group	L														
<i>Rhyacophila hyalinata</i> Group	L	19							3						
<i>Rhyacophila</i> sp.	L	428										6	36		66
Diptera															
Diptera indet.	P	40													
Blephariceridae															
<i>Agathon</i> sp.	L														
Ceratopogonidae															
Ceratopogonidae indet.	L	466													
Chironomidae															
Chironomidae indet.	L	29844	21	4	30	6	39	13	89	14	29	194	98	2160	108
Chironomidae indet.	P	2092	26	18	34	12	23		18	10	34	7	8	24	
Chironomidae indet.	A	691	2		4			3	4			5	1	12	
Chironominae															
Chironominae indet.	L	586													144
<i>Micropsectra</i> sp.	L	38													
Diamesinae															
<i>Diamesa</i> sp.	L	30543	152	33	231	61	73	30	30	14	31	12	22		228
<i>Pseudodiamesa</i> sp.	L	261	4	4	20	39	11	3			3	5			
Orthoclaadiinae															
Orthoclaadiinae indet.	L	168													
<i>Corynoneura</i> sp.	L	57							1			2			
<i>Orthocladus</i> sp.	L	1832	1						19	4	40	29	16		48
<i>Paracricotopus</i> sp.	L	1								1					
<i>Rheocricotopus</i> sp.	L	496													
Tanypodinae															
Tanypodinae indet.	L	506													
Ephydriidae															
Ephydriidae indet.	L	16													
Empididae															
Empididae indet.	L	33									1				
Empididae indet.	P	104													
<i>Chelifera/Metachela</i> sp.	L	48													
<i>Oreogeton</i> sp.	L	18							2						
Simuliidae															
Simuliidae indet.	L	73						1							
Simuliidae indet.	P	165			1										
Tipulidae															
Tipulidae indet.	L	50													
<i>Dicranota</i> sp.	L	238							1	2	2	5	2	2	24
<i>Gonomyodes</i> sp.	L	1	2								1				6
<i>Pilaria</i> sp.	L	112													
<i>Rhabdomastix</i> sp.	L	32													
<i>Tipula</i> sp.	L	32													
Total Number of Organisms		190240	222	63	361	125	182	93	481	140	404	806	515	4620	1848
Total Number of Taxa		7494	8	5	12	6	8	6	18	18	20	19	16	11	17
MEMO															
Araneae indet.	A	6										2			
Diptera indet.	A	421	1			1									
Homoptera indet.	L	8													
Homoptera indet.	A	16													
Hymenoptera indet.	L	13									1				12
Hymenoptera indet.	A	262													
Invertebrate eggs	mass														
Thysanoptera indet.	L	2													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of													
		Individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E
PLATYHELMINTHES															
<i>Polycelis coronata</i>	A	16													
NEMATODA															
Nematoda indet.	A	780	24	30	216		3	3			1		1		
ANNELIDA															
Oligochaeta															
Oligochaeta indet.	J	16													
Enchytraeidae															
Enchytraeidae indet.	J	178	24	12											
Enchytraeidae indet.	A	122		6	12		3	1							
Naididae															
<i>Chaetogaster diaphanus</i>	J	84			84										
Naididae indet. Group 3															
<i>Pristinella jenkinsae</i>	A	2													
Naididae indet. Group 5															
<i>Nais communis</i>	J	3					3								
<i>Nais simplex</i>	A														
Lumbriculidae															
<i>Rhynchelmis</i> spp.	A	40													
Tubificidae															
Tubificidae indet. Group 5	J	32													
<i>Limnodrilus</i> sp.	A	16													
MOLLUSCA															
Gastropoda															
Planorbidae															
<i>Gyraulus</i> spp.	A	8													
Valvatidae															
<i>Valvata sincera sincera</i>	A														
Bivalvia															
Sphaeriidae															
<i>Pisidium casertanum</i>	A	24				24									
<i>Pisidium</i> spp.	J	18					18								
ARTHROPODA															
ARACHNIDA															
Hydrachnida															
Hydracarina indet.	L	66			12				2	1				1	
Libertiidae															
<i>Libertia</i> sp.	A	30				24			2						
Oribatidae															
Oribatidae indet.	L	82	24	18	12										
Oribatidae indet.	A														
Sperchontidae															
<i>Sperchon</i> sp.	A	202													
Torrenticolidae															
<i>Torrenticola</i> sp.	A	8													
CRUSTACEA															
Copepoda															
Cyclopoida															
Cyclopoida indet.	cpp	10					6								
Harpacticoida															
Harpacticoida indet.	cpp	277	24	84	180		9								
Ostracoda															
Ostracoda indet. 2	J	1611	960	348	1056	48		1							
Candonidae															
Candonidae indet.	A														
Cladocera															
Bosminidae															
Bosminidae indet.	J	120				120									
Chydoridae															
Chydoridae indet.	J	1						1							
Daphnidae															
Daphnidae indet.	J														
Amphipoda															
Amphipoda indet.	J	24			24										
Gammaridae															
<i>Gammarus</i> sp.	A	6		6											
COLLEMBOLA															
Collembola indet.	L	34												1	
INSECTA															
Ephemeroptera															
Ephemeroptera indet.	N	1981	144	150	48		63	56	2				1	1	
Ephemeroptera indet.	A	8													
Ameletidae															
<i>Ameletus</i> sp.	N	820			12										
Baetidae															
Baetidae indet.	N	343					84	21	10						
<i>Baetis bicaudatus</i>	N	1137	24	6			3			4					
<i>Baetis tricaudatus</i>	N	50					21	2	3						
Ephemerellidae															
Ephemerellidae indet.	N	92	120	24				4							
<i>Drunella coloradensis</i>	N	26		12											
<i>Drunella doddsii</i>	N	32													
<i>Drunella</i> sp.	N	16													
<i>Seratella</i> sp.	N	16													
Heptageniidae															
Heptageniidae indet.	N	876	24						3		1				
<i>Cinygmula</i> sp.	N	414													
<i>Epeorus deceptivus</i>	N	100		72	24										
<i>Epeorus grandis</i>	N														
<i>Epeorus longimanus</i>	N	92													
<i>Epeorus</i> sp.	N		24												
<i>Rithrogena</i> sp.	N	3089							1		1				
Leptophebiidae															
<i>Paraleptophebia</i> sp.	N	683					3								
Plecoptera															
Plecoptera indet.	N	31338	3384	1692	264		207	36	11	12			2	2	
Capnidae															
Capnidae indet.	N	124													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of Individuals	SKC3-C	SKC3-D	SKC3-E	SKC4-A	SKC4-B	SKC4-C	SKC4-D	SKC4-E	SC1-A	SC1-B	SC1-C	SC1-D	SC1-E
Chloroperlidae															
Chloroperlidae indet.	N	4046		54			6	12	2	2					
<i>Suwallia</i> sp.	N	504													
<i>Sweltsa</i> sp.	N	272													
Nemouridae															
Nemouridae indet.	N	22					18	3		1					
<i>Visoka</i> sp.	N	16													
<i>Zapada columbiana</i>	N	30		24											
<i>Zapada</i> sp.	N	671					75	10							
Perlidae															
Perlidae indet.	N	7					6	1							
<i>Hesperoperla pacifica</i>	N	24					24								
Pertodidae															
Pertodidae indet.	N	1363		6			3	2		1					
<i>Isoperla</i> sp.	N	26				24		2							
<i>Megarcys</i> sp.	N	280													
<i>Setvena</i> sp.	N	8													
<i>Skwala</i> sp.	N	356													
Taeniopterygidae															
Taeniopterygidae indet.	N	2608													
Hemiptera															
Hemiptera indet.	A	16													
Trichoptera															
Trichoptera indet.	L	60	48												
Brachycentridae															
<i>Micrasema</i> sp.	L														
Glossosomatidae															
Glossosomatidae indet.	L														
<i>Glossosoma</i> sp.	L	152		24											
Hydropsychidae															
Hydropsychidae indet.	L	8													
<i>Arctopsysche</i> sp.	L	24													
<i>Parapsyche</i> sp.	L	4													
Limnephilidae															
Limnephilidae indet.	L														
<i>Dicosmoecus</i> sp.	L														
<i>Eccilsomyia</i> sp.	L	8													
Rhyacophilidae															
Rhyacophilidae indet.	L														
<i>Rhyacophila brunnea/vemna</i> Group	L														
<i>Rhyacophila hyalinata</i> Group	L	8													
<i>Rhyacophila</i> sp.	L	136	48	24											
Diptera															
Diptera indet.	P	20													
Blephariceridae															
<i>Agathon</i> sp.	L														
Ceratopogonidae															
Ceratopogonidae indet.	L	233													
Chironomidae															
Chironomidae indet.	L	12186	2688	666	1164	1464	291	115	20	16	4	5	4	6	4
Chironomidae indet.	P	928	48				12	1			12	1	1		3
Chironomidae indet.	A	331											1		
Chironominae															
Chironominae indet.	L	77	288	72						1					
<i>Micropsectra</i> sp.	L	19					12		1						
Diamasinae															
<i>Diamasa</i> sp.	L	14889		96			6	1	1		204	44	43	75	51
<i>Pseudodiamasa</i> sp.	L	88													
Orthoclaadiinae															
Orthoclaadiinae indet.	L	84													
<i>Corynoneura</i> sp.	L	27					3								
<i>Orthocladus</i> sp.	L	742	192				39	5	1	1					
<i>Paracricotopus</i> sp.	L														
<i>Rheocricotopus</i> sp.	L	248													
Tanypodinae															
Tanypodinae indet.	L	253				240	9	2		1					
Ephydriidae															
Ephydriidae indet.	L	8													
Empididae															
Empididae indet.	L	16													
Empididae indet.	P	52													
<i>Chelifera/Metachela</i> sp.	L	24													
<i>Oreogeton</i> sp.	L	8													
Simuliidae															
Simuliidae indet.	L	36						4							
Simuliidae indet.	P	82													
Tipulidae															
Tipulidae indet.	L	25			12				1						
<i>Dicranota</i> sp.	L	97					9								
<i>Gonomyodes</i> sp.	L														
<i>Pilaria</i> sp.	L	56													
<i>Rhabdomastix</i> sp.	L	16													
<i>Tipula</i> sp.	L	16													
Total Number of Organisms		86257	8088	3426	3120	1944	936	291	53	40	222	50	52	85	60
Total Number of Taxa		3663	12	16	12	6	19	16	7	8	3	1	3	4	3
MEMO															
Araneae indet.	A	2													
Diptera indet.	A	210													
Homoptera indet.	L	4													
Homoptera indet.	A	8													
Hymenoptera indet.	L														
Hymenoptera indet.	A	130													
Invertebrate eggs	mass														
Thysanoptera indet.	L	1													

(continued)

Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)

TAXON	STAGE	No. of														
		Individuals	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D	SC4-E	SC5-A	SC5-B	SC5-C	SC5-D
PLATYHELMINTHES																
<i>Polycelis coronata</i>	A	8														
NEMATODA																
Nematoda indet.	A	263		1		1										
ANNELIDA																
Oligochaeta																
Oligochaeta indet.	J	8														
Enchytraeidae																
Enchytraeidae indet.	J	83													1	
Enchytraeidae indet.	A	50										2				
Naididae																
<i>Chaetogaster diaphanus</i>	J															
Naididae indet. Group 3																
<i>Pristinella jenkinsae</i>	A	1													1	
Naididae indet. Group 5																
<i>Nais communis</i>	J															
<i>Nais simplex</i>	A															
Lumbriculidae																
<i>Rhynchelmis</i> spp.	A	20														
Tubificidae																
Tubificidae indet. Group 5	J	16														
<i>Limnodrilus</i> sp.	A	8														
MOLLUSCA																
Gastropoda																
Planorbidae																
<i>Gyraulus</i> spp.	A	4														
Valvatidae																
<i>Valvata sincera sincera</i>	A															
Bivalvia																
Sphaeriidae																
<i>Pisidium casertanum</i>	A															
<i>Pisidium</i> spp.	J															
ARTHROPODA																
ARACHNIDA																
Hydrachnida																
Hydracarina indet.	L	25								1						
Libertiidae																
<i>Libertia</i> sp.	A	2														
Oribatidae																
Oribatidae indet.	L	26														
Oribatidae indet.	A															
Sperchontidae																
<i>Sperchon</i> sp.	A	101											1			
Torrenticolidae																
<i>Torrenticola</i> sp.	A	4														
CRUSTACEA																
Copepoda																
Cyclopoida																
Cyclopoida indet.	opp	2														
Harpacticoida																
Harpacticoida indet.	opp	2														
Ostracoda																
Ostracoda indet. 2	J	79													1	
Cladocera																
Bosminidae																
Bosminidae indet.	J															
Chydoridae																
Chydoridae indet.	J															
Daphnidae																
Daphnidae indet.	J															
Amphipoda																
Amphipoda indet.	J															
Gammaridae																
<i>Gammarus</i> sp.	A															
COLLEMBOLA																
Collembola indet.	L	16	1													
INSECTA																
Ephemeroptera																
Ephemeroptera indet.	N	830				2		4					10			
Ephemeroptera indet.	A	4														
Ameletidae																
<i>Ameletus</i> sp.	N	404										1		1		
Baetidae																
Baetidae indet.	N	114														
<i>Baetis bicaudatus</i>	N	561	2					2	1	4	9	8	2	1	2	
<i>Baetis tricaudatus</i>	N	12														
Ephemerellidae																
Ephemerellidae indet.	N	32														
<i>Drunella coloradensis</i>	N	7														
<i>Drunella doddsii</i>	N	16										1		1		
<i>Drunella</i> sp.	N	8														
<i>Seratella</i> sp.	N	8														
Heptageniidae																
Heptageniidae indet.	N	436			1		1		1			2		2	1	
<i>Cinygmula</i> sp.	N	159										1		6	3	
<i>Epeorus deceptivus</i>	N	50												2		
<i>Epeorus grandis</i>	N															
<i>Epeorus longimanus</i>	N	46														
<i>Epeorus</i> sp.	N															
<i>Rithrogena</i> sp.	N	1543	1					1		1		4	29	15		
Leptophebiidae																
<i>Paraleptophebia</i> sp.	N	340														
Plecoptera																
Plecoptera indet.	N	14544	24	19	38	21	43	15	3	5	7	12	48	44	5	2
Capnidae																
Capnidae indet.	N	62														

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of														
		Individuals	SC3-A	SC3-B	SC3-C	SC3-D	SC3-E	SC4-A	SC4-B	SC4-C	SC4-D	SC4-E	SC5-A	SC5-B	SC5-C	SC5-D
Chloroperlidae																
Chloroperlidae indet.	N	1983	4	12	19	27	65	1	5	15	13	20	3	2	4	2
<i>Suwallia</i> sp.	N	251	2				6					1				
<i>Sweltsa</i> sp.	N	136														
Nemouridae																
Nemouridae indet.	N															
<i>Visoka</i> sp.	N	8														
<i>Zapada columbiana</i>	N	3									1			1		
<i>Zapada</i> sp.	N	293												1		
Perlidae																
Perlidae indet.	N															
<i>Hesperoperla pacifica</i>	N															
Perlodidae																
Perlodidae indet.	N	675	1	1		1										9
<i>Isoperla</i> sp.	N															
<i>Megarcys</i> sp.	N	140												1		5
<i>Setvena</i> sp.	N	4														
<i>Skwala</i> sp.	N	178														
Taeniopterygidae																
Taeniopterygidae indet.	N	1304										5				
Hemiptera																
Hemiptera indet.	A	8														
Trichoptera																
Trichoptera indet.	L	30														
Brachycentridae																
<i>Micrasema</i> sp.	L															
Glossosomatidae																
Glossosomatidae indet.	L															
<i>Glossosoma</i> sp.	L	64														
Hydropsychidae																
Hydropsychidae indet.	L	4														
<i>Arctopsyche</i> sp.	L	12														
<i>Parapsyche</i> sp.	L	2														
Limnephilidae																
Limnephilidae indet.	L															
<i>Dicosmoecus</i> sp.	L															
<i>Ecclesomyia</i> sp.	L	4														
Rhyacophilidae																
Rhyacophilidae indet.	L															
<i>Rhyacophila brunnea/vemna</i> Group	L															
<i>Rhyacophila hyalinata</i> Group	L	4														
<i>Rhyacophila</i> sp.	L	56														
Diptera																
Diptera indet.	P	10														
Blephariceridae																
<i>Agathon</i> sp.	L															
Ceratopogonidae																
Ceratopogonidae indet.	L	116	1													
Chironomidae																
Chironomidae indet.	L	4210	7	12	55	22	25	171	3	31	41	6	6	13	3	7
Chironomidae indet.	P	449										1	1		1	
Chironomidae indet.	A	165					1									
Chironominae																
Chironominae indet.	L	2			2											
<i>Micropsectra</i> sp.	L	3												1		
Diamesinae																
<i>Diamesa</i> sp.	L	7183	2	4	6					7	6		1	5		
<i>Pseudodiamesa</i> sp.	L	44														
Orthoclaadiinae																
Orthoclaadiinae indet.	L	42														
<i>Corynoneura</i> sp.	L	12														
<i>Orthocladus</i> sp.	L	347	2		2					6		22	6	1		
<i>Paracricotopus</i> sp.	L															
<i>Rheocricotopus</i> sp.	L	124														
Tanypodinae																
Tanypodinae indet.	L		1													
Ephydriidae																
Ephydriidae indet.	L	4														
Empididae																
Empididae indet.	L	8														
Empididae indet.	P	26														
<i>Chelifera/Metachela</i> sp.	L	12														
<i>Oreogeton</i> sp.	L	4														
Simuliidae																
Simuliidae indet.	L	16														
Simuliidae indet.	P	41													1	
Tipulidae																
Tipulidae indet.	L	6														
<i>Dicranota</i> sp.	L	44														
<i>Gonomyodes</i> sp.	L															
<i>Pilaria</i> sp.	L	28														
<i>Rhabdomastix</i> sp.	L	8														
<i>Tipula</i> sp.	L	8														
Total Number of Organisms		37965	48	49	123	74	141	215	13	70	88	87	116	106	15	16
Total Number of Taxa		1778	9	4	5	5	3	4	4	6	5	9	9	12	3	6
MEMO																
Araneae indet.	A	1														
Diptera indet.	A	105														
Homoptera indet.	L	2		1		1										
Homoptera indet.	A	4														
Hymenoptera indet.	L															
Hymenoptera indet.	A	64	2													
Invertebrate eggs	mass															
Thysanoptera indet.	L		1													

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of														
		Individuals	SC5-E	SC6-A	SC6-B	SC6-C	SC6-D	SC6-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	WC1-A	WC1-B	WC1-C
PLATYHELMINTHES																
<i>Polycelis coronata</i>	A	4														
NEMATODA																
Nematoda indet.	A	122	17	1		3	1				1					10
ANNELIDA																
Oligochaeta																
Oligochaeta indet.	J	4														
Enchytraeidae																
Enchytraeidae indet.	J	41											1			
Enchytraeidae indet.	A	24														
Naididae																
<i>Chaetogaster diaphanus</i>	J															
Naididae indet. Group 3																
<i>Pristinella jenkinsae</i>	A															
Naididae indet. Group 5																
<i>Nais communis</i>	J															
<i>Nais simplex</i>	A															
Lumbriculidae																
<i>Rhynchelmis</i> spp.	A	10												9		1
Tubificidae																
Tubificidae indet. Group 5																
<i>Limnodrilus</i> sp.	J	8														
<i>Limnodrilus</i> sp.	A	4														
MOLLUSCA																
Gastropoda																
Planorbidae																
<i>Gyraulus</i> spp.	A	2														
Valvatidae																
<i>Valvata sincera sincera</i>	A															
Bivalvia																
Sphaeriidae																
<i>Pisidium casertanum</i>	A															
<i>Pisidium</i> spp.	J															
ARTHROPODA																
ARACHNIDA																
Hydrachnida																
Hydracarina indet.	L	12			1									2		3
Libertiidae																
<i>Libertia</i> sp.	A	1					1									
Oribatidae																
Oribatidae indet.	L	13												1		
Oribatidae indet.	A															
Sperchontidae																
<i>Sperchon</i> sp.	A	50													1	2
Torrenticolidae																
<i>Torrenticola</i> sp.	A	2													1	1
CRUSTACEA																
Copepoda																
Cyclopoida																
Cyclopoida indet.	cpp	1									1					
Harpacticoida																
Harpacticoida indet.	cpp	1														1
Ostracoda																
Ostracoda indet. 2	J	39													7	12
Candonidae																
Candonidae indet.	A															
Cladocera																
Bosminidae																
Bosminidae indet.	J															
Chydoridae																
Chydoridae indet.	J															
Daphnidae																
Daphnidae indet.	J															
Amphipoda																
Amphipoda indet.	J															
Gammaridae																
<i>Gammarus</i> sp.	A															
COLLEMBOLA																
Collembola indet.	L	8														
INSECTA																
Ephemeroptera																
Ephemeroptera indet.	N	406	2			4		2		2	1	2	2	35	24	47
Ephemeroptera indet.	A	2														
Ameletidae																
<i>Ameletus</i> sp.	N	200	2			4				1	1	1		6		21
Baetidae																
Baetidae indet.	N	57						1		2	2					
<i>Baetis bicaudatus</i>	N	266		2	2	14	1	1	2	3	3	4		3	1	
<i>Baetis tricaudatus</i>	N	6														
Ephemerellidae																
Ephemerellidae indet.	N	16														
<i>Drunella coloradensis</i>	N	3	1											1		1
<i>Drunella doddsii</i>	N	7												1		
<i>Drunella</i> sp.	N	4														
<i>Seratella</i> sp.	N	4														
Heptageniidae																
Heptageniidae indet.	N	213	2									1				1
<i>Cinygmula</i> sp.	N	72	5													
<i>Epeorus deceptivus</i>	N	24				5			7	21	12	7	2	4	1	3
<i>Epeorus grandis</i>	N															
<i>Epeorus longimanus</i>	N	23												1		4
<i>Epeorus</i> sp.	N															
<i>Rithrogena</i> sp.	N	744	5		1				1					3	16	2
Leptophebiidae																
<i>Paraleptophebia</i> sp.	N	170										46				
Plecoptera																
Plecoptera indet.	N	7108	66	64	36		35	90	20	8	46		19	143	155	214
Capnidae																
Capnidae indet.	N	31									1					

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of														
		Individuals	SC5-E	SC6-A	SC6-B	SC6-C	SC6-D	SC6-E	SC7-A	SC7-B	SC7-C	SC7-D	SC7-E	WC1-A	WC1-B	WC1-C
Chloroperlidae																
Chloroperlidae indet.	N	894	7	2	13	10	16	3	5	14	17	5	1	7	71	33
<i>Suwallia</i> sp.	N	122									8				1	1
<i>Sweltsa</i> sp.	N	68												1		1
Nemouridae																
Nemouridae indet.	N															
<i>Visoka</i> sp.	N	4														
<i>Zapada columbiana</i>	N		1													
<i>Zapada</i> sp.	N	146				3					2			3	3	1
Perlidae																
Perlidae indet.	N															
<i>Hesperoperla pacifica</i>	N															
Perlodidae																
Perlodidae indet.	N	327	10			1	6	4	1	9	16	8	3	5	6	2
<i>Isoperla</i> sp.	N															
<i>Megarcys</i> sp.	N	67							2	2					3	1
<i>Setvena</i> sp.	N	2														
<i>Skwala</i> sp.	N	86	1	3	1	15				1		4		1		1
Taeniopterygidae																
Taeniopterygidae indet.	N	652														
Hemiptera																
Hemiptera indet.	A	4														
Trichoptera																
Trichoptera indet.	L	15				2									3	1
Brachycentridae																
<i>Micrasema</i> sp.	L															
Glossosomatidae																
Glossosomatidae indet.	L															
<i>Glossosoma</i> sp.	L	32												9	5	3
Hydropsychidae																
Hydropsychidae indet.	L	2														1
<i>Arctopsyche</i> sp.	L	6													1	
<i>Parapsyche</i> sp.	L	1														
Limnephilidae																
Limnephilidae indet.	L															
<i>Dicosmoecus</i> sp.	L															
<i>Eccilsomyia</i> sp.	L	2														
Rhyacophilidae																
Rhyacophilidae indet.	L															
<i>Rhyacophila brunnea/vemna</i> Group	L															
<i>Rhyacophila hyalinata</i> Group	L	2												2		
<i>Rhyacophila</i> sp.	L	28												4		4
Diptera																
Diptera indet.	P	5									1					
Blephariceridae																
<i>Agathon</i> sp.	L															
Ceratopogonidae																
Ceratopogonidae indet.	L	58					1									3
Chironomidae																
Chironomidae indet.	L	1907	1	11	14	26	18	10	3	38	5	151	157	19	6	136
Chironomidae indet.	P	223		24	9	29	17	7	1							6
Chironomidae indet.	A	82					6	2								
Chironominae																
Chironominae indet.	L															
<i>Micropsectra</i> sp.	L	1									1					
Diamesinae																
<i>Diamesa</i> sp.	L	3577		12	13	33	15	23		3	2			12	2	36
<i>Pseudodiamesa</i> sp.	L	22														
Orthoclaadiinae																
Orthoclaadiinae indet.	L	4														
<i>Corynoneura</i> sp.	L	6				1			1							
<i>Orthocladus</i> sp.	L	155		1			15	1							9	15
<i>Paracricotopus</i> sp.	L															
<i>Rheocricotopus</i> sp.	L	62														
Tanypodinae																
Tanypodinae indet.	L															
Ephydriidae																
Ephydriidae indet.	L	2														
Empididae																
Empididae indet.	L	4														
Empididae indet.	P	13				2		1								
<i>Chelifera/Metachela</i> sp.	L	6														
<i>Oreogeton</i> sp.	L	2														
Simuliidae																
Simuliidae indet.	L	8												2	1	5
Simuliidae indet.	P	20										1				3
Tipulidae																
Tipulidae indet.	L	3							1			1				
<i>Dicranota</i> sp.	L	22														2
<i>Gonomyodes</i> sp.	L															
<i>Pilaria</i> sp.	L	14														
<i>Rhabdomastix</i> sp.	L	4														
<i>Tipula</i> sp.	L	4														
Total Number of Organisms		18366	120	120	90	152	133	144	44	104	120	233	185	294	311	575
Total Number of Taxa		847	9	6	6	11	8	6	7	7	10	10	5	20	12	23
MEMO																
Araneae indet.	A		1													
Diptera indet.	A	52														
Homoptera indet.	L															
Homoptera indet.	A	2														
Hymenoptera indet.	L															
Hymenoptera indet.	A	32														
Invertebrate eggs	mass															
Thysanoptera indet.	L															

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of													
		Individuals	WC1-D	WC1-E	HC2-A	HC2-B	HC2-C	HC2-D	HC2-E	HC3-A	HC3-B	HC3-C	HC3-D	HC3-E	YC1-A
PLATYHELMINTHES															
<i>Polycelis coronata</i>	A	2													
NEMATODA															
Nematoda indet.	A	52	2		1	2	1	4	1	1		3	1		5
ANNELIDA															
Oligochaeta															
Oligochaeta indet.	J	2													
Enchytraeidae															
Enchytraeidae indet.	J	20													2
Enchytraeidae indet.	A	12		1											1
Naididae															
<i>Chaetogaster diaphanus</i>	J														
Naididae indet. Group 3															
<i>Pristinella jenkinsae</i>	A														
Naididae indet. Group 5															
<i>Nais communis</i>	J														
<i>Nais simplex</i>	A														
Lumbriculidae															
<i>Rhynchelmis</i> spp.	A														
Tubificidae															
Tubificidae indet. Group 5															
<i>Limnodrilus</i> sp.	J	4													
<i>Limnodrilus</i> sp.	A	2													
MOLLUSCA															
Gastropoda															
Planorbidae															
<i>Gyraulus</i> spp.	A	1													
Valvatidae															
<i>Valvata sincera sincera</i>	A														
Bivalvia															
Sphaeriidae															
<i>Pisidium casertanum</i>	A														
<i>Pisidium</i> spp.	J														
ARTHROPODA															
ARACHNIDA															
Hydrachnida															
Hydracarina indet.	L	3			3										
Libertiidae															
<i>Libertia</i> sp.	A														
Oribatidae															
Oribatidae indet.	L	6													
Oribatidae indet.	A														
Sperchontidae															
<i>Sperchon</i> sp.	A	22	3	14	3			4						1	
Torrenticolidae															
<i>Torrenticola</i> sp.	A														
CRUSTACEA															
Copepoda															
Cyclopoida															
Cyclopoida indet.	cpp														
Harpacticoida															
Harpacticoida indet.	cpp														
Ostracoda															
Ostracoda indet. 2	J	10			1									1	1
Candonidae															
Candonidae indet.	A														
Cladocera															
Bosminidae															
Bosminidae indet.	J														
Chydoridae															
Chydoridae indet.	J														
Daphnidae															
Daphnidae indet.	J														
Amphipoda															
Amphipoda indet.	J														
Gammaridae															
<i>Gammarus</i> sp.	A														
COLLEMBOLA															
Collembola indet.	L	4						1				1			
INSECTA															
Ephemeroptera															
Ephemeroptera indet.	N	131	25	38	26	10			2	7					
Ephemeroptera indet.	A	1		1											
Ameletidae															
<i>Ameletus</i> sp.	N	81	4	15	8	14		2							2
Baetidae															
Baetidae indet.	N	11	30					11							
<i>Baetis bicaudatus</i>	N	114	2	1	11	1	2	2		11	28	13	6	11	
<i>Baetis tricaudatus</i>	N	3			2				1						
Ephemerellidae															
Ephemerellidae indet.	N	8					3								3
<i>Drunella coloradensis</i>	N		1												
<i>Drunella doddsii</i>	N	3			1										
<i>Drunella</i> sp.	N	2													
<i>Seratella</i> sp.	N	2													
Heptageniidae															
Heptageniidae indet.	N	103	5	1	45	29	21	2		2					
<i>Cinygmula</i> sp.	N	7		1	1	1		2							
<i>Epeorus deceptivus</i>	N	3	3	1							1		1		1
<i>Epeorus grandis</i>	N														
<i>Epeorus longimanus</i>	N	8	2	1	1					1	1	1		1	
<i>Epeorus</i> sp.	N														
<i>Rithrogena</i> sp.	N	351	17	6	30	13	27	106	37	11	10	4	3	20	3
Leptophebiidae															
<i>Paraleptophebia</i> sp.	N	62													
Plecoptera															
Plecoptera indet.	N	3033	212	107	401	100	127	252	69	58	106	19	27	39	178
Capnidae															
Capnidae indet.	N	15					5								

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of													
		Individuals	WC1-D	WC1-E	HC2-A	HC2-B	HC2-C	HC2-D	HC2-E	HC3-A	HC3-B	HC3-C	HC3-D	HC3-E	YC1-A
Chloroperlidae															
Chloroperlidae indet.	N	344	9	11	11	10	8	64	11	2	3	10		15	68
<i>Suwallia</i> sp.	N	56							4						9
<i>Sweltsa</i> sp.	N	33													7
Nemouridae															
Nemouridae indet.	N														
<i>Visoka</i> sp.	N	2													
<i>Zapada columbiana</i>	N														
<i>Zapada</i> sp.	N	52	30	10	7			26			1		1	3	
Perlidae															
Perlidae indet.	N														
<i>Hesperoperla pacifica</i>	N														
Perlodidae															
Perlodidae indet.	N	126	14	3	34	2		24	2	13	24	6		8	
<i>Isoperla</i> sp.	N														
<i>Megarcys</i> sp.	N	27	5	1	6	2	3	6		1	4			2	
<i>Setvena</i> sp.	N		2												
<i>Skwala</i> sp.	N	30				3		2	1	1	18	1		1	
Taeniopterygidae															
Taeniopterygidae indet.	N	326			67	20	26	82	13	16	31			25	6
Hemiptera															
Hemiptera indet.	A	2													
Trichoptera															
Trichoptera indet.	L	4	1	3											
Brachycentridae															
<i>Micrasema</i> sp.	L														
Glossosomatidae															
Glossosomatidae indet.	L														
<i>Glossosoma</i> sp.	L	6	3	6											
Hydropsychidae															
Hydropsychidae indet.	L		1												
<i>Arctopsyche</i> sp.	L	2	1	2											
<i>Parapsyche</i> sp.	L		1												
Limnephilidae															
Limnephilidae indet.	L														
<i>Dicosmoecus</i> sp.	L														
<i>Ecclesomyia</i> sp.	L	1					1								
Rhyacophilidae															
Rhyacophilidae indet.	L														
<i>Rhyacophila brunnea/vemna</i> Group	L														
<i>Rhyacophila hyalinata</i> Group	L														
<i>Rhyacophila</i> sp.	L	9	2	7											
Diptera															
Diptera indet.	P	2													
Blephariceridae															
<i>Agathon</i> sp.	L														
Ceratopogonidae															
Ceratopogonidae indet.	L	27		5			19		3						
Chironomidae															
Chironomidae indet.	L	639	35	11	46	28	22	50	17	17	11	9	6	5	22
Chironomidae indet.	P	59	12	7	4	1		12		2	2	3		2	4
Chironomidae indet.	A	37			1	2		6		5	6	3	1	11	
Chironominae															
Chironominae indet.	L														
<i>Micropsectra</i> sp.	L														
Diamesinae															
<i>Diamesa</i> sp.	L	1688	50	33	24	32	21	8	8	54	43	18	9	2	
<i>Pseudodiamesa</i> sp.	L	11			3		2			4		2			
Orthoclaadiinae															
Orthoclaadiinae indet.	L	2													
<i>Corynoneura</i> sp.	L	2													
<i>Orthocladus</i> sp.	L	52	10	8	17	2	9	4		2					4
<i>Paracricotopus</i> sp.	L														
<i>Rheocricotopus</i> sp.	L	31		29	1										1
Tanypodinae															
Tanypodinae indet.	L														
Ephydriidae															
Ephydriidae indet.	L	1													
Empididae															
Empididae indet.	L	2													
Empididae indet.	P	5			1	1	1								1
<i>Chelifera/Metachela</i> sp.	L	3							1						
<i>Oreogeton</i> sp.	L	1			1										
Simuliidae															
Simuliidae indet.	L														
Simuliidae indet.	P	7	2	3											
Tipulidae															
Tipulidae indet.	L		1												
<i>Dicranota</i> sp.	L	10						6							1
<i>Gonomyodes</i> sp.	L														
<i>Pilaria</i> sp.	L	7		2	2	1	2								
<i>Rhabdomastix</i> sp.	L	2						2							
<i>Tipula</i> sp.	L	2													
Total Number of Organisms		7688	485	328	759	279	307	666	170	208	289	94	54	148	318
Total Number of Taxa		348	20	20	20	14	15	15	9	11	10	10	5	12	13
MEMO															
Araneae indet.	A														
Diptera indet.	A	26					1								1
Homoptera indet.	L														
Homoptera indet.	A	1		1											
Hymenoptera indet.	L														
Hymenoptera indet.	A	16													
Invertebrate eggs	mass														
Thysanoptera indet.	L														

(continued)

**Appendix 3.1-10
Schaft Creek Project Stream Benthic Invertebrate Data, 2007 (continued)**

TAXON	STAGE	No. of														
		Individuals	YC1-B	YC1-C	YC1-D	YC1-E	MT1-A	MT1-B	MT1-C	MT1-D	MT1-E	WL8-A	WL8-B	WL8-C	WL8-D	WL8-E
PLATYHELMINTHES																
<i>Polycelis coronata</i>	A	1				1										
NEMATODA																
Nematoda indet.	A	16	1								15			1		
ANNELIDA																
Oligochaeta																
Oligochaeta indet.	J	1								1						
Enchytraeidae																
Enchytraeidae indet.	J	9									1	5			3	
Enchytraeidae indet.	A	5									1	1			3	
Naididae																
<i>Chaetogaster diaphanus</i>	J															
Naididae indet. Group 3																
<i>Pristinella jenkinsae</i>	A															
Naididae indet. Group 5																
<i>Nais communis</i>	J															
<i>Nais simplex</i>	A															
Lumbriculidae																
<i>Rhynchelmis</i> spp.	A															
Tubificidae																
Tubificidae indet. Group 5	J	2											2			
<i>Limnodrilus</i> sp.	A	1									1					
<i>Limnodrilus</i> sp.	A															
MOLLUSCA																
Gastropoda																
Planorbidae																
<i>Gyraulus</i> spp.	A		1													
Valvatidae																
<i>Valvata sincera sincera</i>	A															
Bivalvia																
Sphaeriidae																
<i>Pisidium casertanum</i>	A															
<i>Pisidium</i> spp.	J															
ARTHROPODA																
ARACHNIDA																
Hydrachnida																
Hydrachnida indet.	L															
Libertiidae																
<i>Libertia</i> sp.	A															
Oribatidae																
Oribatidae indet.	L	3									1	2				
Oribatidae indet.	A															
Sperchontidae																
<i>Sperchon</i> sp.	A															
Torrenticolidae																
<i>Torrenticola</i> sp.	A															
CRUSTACEA																
Copepoda																
Cyclopoida																
Cyclopoida indet.	cpp															
Harpacticoida																
Harpacticoida indet.	cpp															
Ostracoda																
Ostracoda indet. 2	J	3	1		2								1			
Candonidae																
Candonidae indet.	A															
Cladocera																
Bosminidae																
Bosminidae indet.	J															
Chydoridae																
Chydoridae indet.	J															
Daphnidae																
Daphnidae indet.	J															
Amphipoda																
Amphipoda indet.	J															
Gammaridae																
<i>Gammarus</i> sp.	A															
COLLEMBOLA																
Collembola indet.	L	1							1							
INSECTA																
Ephemeroptera																
Ephemeroptera indet.	N	21	6		5	8	4			3					1	
Ephemeroptera indet.	A															
Ameletidae																
<i>Ameletus</i> sp.	N	17	6		1		3	2	2		9					
Baetidae																
Baetidae indet.	N															
<i>Baetis bicaudatus</i>	N	13	2		1		2	4	3	1		1	1			
<i>Baetis tricaudatus</i>	N															
Ephemerellidae																
Ephemerellidae indet.	N	1							1							
<i>Drunella coloradensis</i>	N															
<i>Drunella doddsii</i>	N	1			1											
<i>Drunella</i> sp.	N	1						1								
<i>Seratella</i> sp.	N	1			1											
Heptageniidae																
Heptageniidae indet.	N		3													
<i>Cinygmula</i> sp.	N															
<i>Epeorus deceptivus</i>	N		1													
<i>Epeorus grandis</i>	N															
<i>Epeorus longimanus</i>	N	1					1									
<i>Epeorus</i> sp.	N															
<i>Rithrogena</i> sp.	N	36	9	1	3		4	9	12	5	1				1	
Leptophlebiidae																
<i>Paraleptophlebia</i> sp.	N	31											31			
Plecoptera																
Plecoptera indet.	N	735	80	6	76	166	51	30	73	271	25	11		18	8	
Capnidae																
Capnidae indet.	N	5							5							

(continued)

**APPENDIX 3.2-1
SCHAFT CREEK PROJECT WETLAND AND LAKE WATER
QUALITY DATA, 2007**

Appendix 3.2-1
Schaft Creek Project Wetland and Lake Water Quality Data, 2007

Sample ID	WL7	WL10	WL3	WL1	WL4	WL9	WL6	WL5	WL11	WL2	AIRSTRIP
Date Sampled	08-AUG-07	07-AUG-07	05-AUG-07	03-AUG-07	02-AUG-07	04-AUG-07	08-AUG-07	02-AUG-07	02-AUG-07	05-AUG-07	03-AUG-07
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	L541193-8	L541193-1	L541193-2	L541193-7	L541193-6	L541212-9	L541193-9	L541193-5	L541193-4	L541212-5	L541212-3
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Hardness (as CaCO3)	42.3	152	25.3	52	62.7	100	80.3	105	164	277	9.97
Colour, True	46.0	6.6	<5.0	<5.0	<5.0	<5.0	8.8	6.9	24.3	8.2	50.5
Conductivity	78.9	301	53.9	110	134	204	150	205	361	1330	20.8
pH	7.84	7.59	7.75	7.86	7.73	8.12	7.91	8.25	8.45	8.34	7.34
Total Dissolved Solids	75.0	183	38.0	66.0	83.0	105	87.0	115	256	889	36.0
Total Suspended Solids	<3.0	6.5	11.5	<3.0	<3.0	<3.0	10	<3.0	3.0	3.0	<3.0
Turbidity	1.58	45.9	15.4	3.15	0.84	0.36	13.2	2.51	1.77	1.78	1.71
Anions and Nutrients											
Ammonia as N	0.0138	0.0058	<0.0050	<0.0050	<0.0050	<0.0050	0.0364	0.0233	0.0642	0.0169	0.0115
Acidity (as CaCO3)	1.7	7.0	1.6	1.9	2.5	1.2	2.0	<1.0	<1.0	<1.0	2.3
CaCO3)	38.4	158	26.6	54.3	45.2	92.5	74.9	105	176	399	9.3
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.72	50.5	<0.50
Fluoride (F)	0.041	0.062	0.057	0.025	0.025	0.031	0.027	0.042	0.219	0.692	<0.020
Sulfate (SO4)	1.64	<0.50	0.79	1.74	18.3	12.1	4.08	2.89	17.3	260	<0.50
Nitrate (as N)	<0.0050	<0.0050	0.0065	<0.0050	0.0339	0.0219	<0.0050	<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
Total Kjeldahl Nitrogen	0.491	0.159	0.075	0.075	0.070	0.076	0.203	0.184	0.865	0.264	0.281
Total Nitrogen	0.36	0.09	<0.05	<0.05	<0.05	<0.05	0.18	0.11	0.81	0.19	0.21
Total Phosphate as P	0.011	0.0022	0.0070	0.0031	<0.0020	<0.0020	0.0209	0.0035	0.0071	0.0070	0.018
Cyanides											
Cyanide, Total	0.0098	0.0046	0.0010	0.0013	<0.0010	0.0010	0.0026	0.0026	0.0104	0.0044	0.0064
Total Metals											
Aluminum (Al)-Total	0.0240	0.0017	0.669	0.0427	0.0335	0.0017	0.198	0.0206	<0.0060	0.0302	0.133
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00017	0.00013	<0.00010	<0.00020	<0.00010
Arsenic (As)-Total	0.00012	0.00035	0.00020	0.00044	0.00037	0.00048	0.00420	0.00484	0.00015	0.00142	0.00014
Barium (Ba)-Total	0.0191	0.337	0.0612	0.0936	0.00586	0.0509	0.107	0.365	0.0313	0.0851	0.00143
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Boron (B)-Total	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.105	1.23	<0.010
Cadmium (Cd)-Total	<0.000020	<0.000020	<0.000020	<0.000020	0.000026	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020
Calcium (Ca)-Total	10.5	52.3	8.84	20.5	22.5	20.1	20.0	23.5	36.9	67.8	3.51
Chromium (Cr)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Cobalt (Co)-Total	<0.00010	<0.00010	0.00018	0.00011	<0.00010	<0.00010	0.00030	<0.00010	<0.00010	<0.00020	<0.00010
Copper (Cu)-Total	0.00273	0.00015	<0.00070	0.00060	0.00141	0.00021	0.00134	0.00044	<0.00050	0.00085	0.00092
Iron (Fe)-Total	0.271	6.81	0.717	0.567	0.051	0.135	1.46	0.576	0.046	0.121	0.677
Lead (Pb)-Total	<0.000050	<0.000050	0.000237	<0.000050	<0.000050	<0.000050	0.000099	<0.000050	<0.000050	<0.00010	0.000052
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0113	0.178	<0.0050
Magnesium (Mg)-Total	3.62	5.99	1.23	2.23	1.55	12.1	7.25	11.5	18.4	27.0	0.414
Manganese (Mn)-Total	0.00312	0.199	0.0769	0.0900	0.00487	0.0128	0.0583	0.00988	0.00885	0.0209	0.0123
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
Molybdenum (Mo)-Total	0.000679	0.000791	0.00139	0.000514	0.000965	0.00205	0.000497	0.000328	0.000061	0.00195	0.000120
Nickel (Ni)-Total	0.00240	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00153	<0.00050	<0.00050	<0.0010	<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
Potassium (K)-Total	0.690	1.76	0.626	0.363	0.262	1.14	0.613	0.636	0.350	8.22	0.116
Selenium (Se)-Total	<0.00050	<0.00050	<0.00050	<0.00050	0.00089	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Total	2.77	4.81	2.17	2.55	2.19	1.93	1.88	2.01	6.58	6.27	1.68

(continued)

**Appendix 3.2-1
Schaft Creek Project Wetland and Lake Water Quality Data, 2007 (continued)**

Sample ID	WL7	WL10	WL3	WL1	WL4	WL9	WL6	WL5	WL11	WL2	AIRSTRIP
Date Sampled	08-AUG-07	07-AUG-07	05-AUG-07	03-AUG-07	02-AUG-07	04-AUG-07	08-AUG-07	02-AUG-07	02-AUG-07	05-AUG-07	03-AUG-07
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	L541193-8	L541193-1	L541193-2	L541193-7	L541193-6	L541212-9	L541193-9	L541193-5	L541193-4	L541212-5	L541212-3
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Silver (Ag)-Total	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	0.000017
Sodium (Na)-Total	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	18.6	186	<2.0
Strontium (Sr)-Total	0.0461	0.265	0.0520	0.0894	0.0380	0.105	0.0857	0.128	0.639	1.20	0.00827
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010
Tin (Sn)-Total	<0.00010	<0.00010	0.00202	<0.00010	<0.00010	<0.00010	0.00185	<0.00010	0.00210	<0.00020	0.00185
Titanium (Ti)-Total	<0.010	<0.010	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	<0.000010	0.000281	0.000814	0.000104	0.000160	0.000088	0.000022	0.000014	<0.000010	0.000630	<0.000010
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
Zinc (Zn)-Total	0.0027	0.0011	<0.0060	<0.0010	0.0012	<0.0010	<0.0030	<0.0010	<0.0030	<0.0020	0.0125
Dissolved Metals											
Aluminum (Al)-Dissolved	0.0179	<0.0010	0.0268	0.0028	0.0035	<0.0010	0.0016	0.0025	0.0049	0.0028	0.0995
Antimony (Sb)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	0.00013	<0.00010	<0.00020	<0.00010
Arsenic (As)-Dissolved	0.00013	0.00010	<0.00010	0.00020	0.00029	0.00033	0.00091	0.00283	0.00015	0.00129	0.00012
Barium (Ba)-Dissolved	0.0191	0.299	0.0481	0.0848	0.00548	0.0513	0.105	0.355	0.0301	0.0846	0.00138
Beryllium (Be)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Boron (B)-Dissolved	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.104	1.21	<0.010
Cadmium (Cd)-Dissolved	0.000046	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020
Calcium (Ca)-Dissolved	10.9	51.1	8.31	17.7	22.6	20.3	19.9	23.1	35.6	66.6	3.30
Chromium (Cr)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Cobalt (Co)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010
Copper (Cu)-Dissolved	0.00273	0.00013	0.00012	0.00048	0.00078	0.00035	0.00052	0.00056	<0.00050	0.00082	0.00070
Iron (Fe)-Dissolved	0.158	<0.030	0.064	<0.030	<0.030	<0.030	<0.030	0.033	<0.030	<0.030	0.383
Lead (Pb)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.00010	<0.000050
Lithium (Li)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0115	0.179	<0.0050
Dissolved	3.69	5.93	1.11	1.88	1.50	12.1	7.41	11.4	18.3	26.8	0.418
Dissolved	0.000435	0.160	0.0417	0.0272	0.00267	0.00486	0.000441	0.000095	0.000425	0.00013	0.00982
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
Dissolved	0.000692	0.000834	0.00137	0.000355	0.000994	0.00216	0.000397	0.000343	<0.000050	0.00202	0.000055
Nickel (Ni)-Dissolved	0.00252	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00066	<0.00050	0.00097	<0.0010	<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	0.716	1.73	0.339	0.368	0.250	1.14	0.570	0.618	0.326	8.20	0.106
Selenium (Se)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	0.00089	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Dissolved	2.78	4.51	1.17	2.31	2.04	1.95	1.62	1.93	6.93	6.21	1.58
Silver (Ag)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010
Sodium (Na)-Dissolved	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	20.2	188	<2.0
Strontium (Sr)-Dissolved	0.0478	0.259	0.0484	0.0760	0.0372	0.106	0.0868	0.125	0.628	1.20	0.00768
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010
Tin (Sn)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<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	<0.000010	0.000238	0.000608	0.000091	0.000148	0.000084	0.000017	0.000014	<0.000010	0.000622	<0.000010
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<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	0.0015
Organic Parameters											
COD	40	<20	<20	<20	<20	<20	<20	<20	60	<20	30
Total Organic Carbon	15.8	4.42	<0.50	0.76	0.72	<0.50	3.11	3.14	20.1	4.55	9.01

(continued)

**Appendix 3.2-1
Schaft Creek Project Wetland and Lake Water Quality Data, 2007 (continued)**

Sample ID	L6	L3	L1	L2	L2, DUP	L5	L4	ALS FIELD BLANK	TRAVEL BLANK
Date Sampled	06-AUG-07	04-AUG-07	05-AUG-07	07-AUG-07	07-AUG-07	06-AUG-07	03-AUG-07		
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00		
ALS Sample ID	L541212-1	L541212-2	L541212-6	L541212-8	L541212-7	L541212-4	L541193-3	L541193-10	L541212-10
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Hardness (as CaCO3)	15.4	79.2	78.4	95.8	94.1	69.8	91.4	<0.50	<0.50
Colour, True	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	<5.0	<5.0
Conductivity	36.4	159	167	198	198	149	180	<2.0	<2.0
pH	7.68	8.07	8.16	8.17	8.16	7.94	8.23	5.60	5.60
Total Dissolved Solids	24.0	98.0	106	121	123	95.0	108	<10	<10
Total Suspended Solids	<3.0	<3.0	15.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	0.21	2.32	32.6	0.34	0.33	9.30	0.91	<0.10	<0.10
Anions and Nutrients									
Ammonia as N	<0.0050	<0.0050	<0.0050	0.0120	0.0073	0.0115	0.0186	<0.0050	<0.0050
Acidity (as CaCO3)	1.2	1.2	<1.0	<1.0	<1.0	1.5	<1.0	1.6	1.6
CaCO3)	15.4	<2.0	77.1	82.4	82.0	57.5	87.6	<2.0	<2.0
Bromide (Br)	<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
Fluoride (F)	<0.020	<0.020	0.069	0.039	0.038	<0.020	0.056	<0.020	<0.020
Sulfate (SO4)	1.40	13.1	11.1	18.0	17.8	17.8	3.67	<0.50	<0.50
Nitrate (as N)	<0.0050	<0.0050	0.0243	0.0912	0.0856	0.0232	<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
Total Kjeldahl Nitrogen	0.087	<0.050	0.051	0.108	0.097	0.079	0.284	<0.050	<0.050
Total Nitrogen	<0.05	<0.05	<0.05	0.20	0.21	0.07	0.27	<0.05	<0.05
Total Phosphate as P	0.0026	<0.0020	0.0132	0.0022	<0.0020	0.0044	0.0039	<0.0020	<0.0020
Cyanides									
Cyanide, Total	<0.0010	0.0012	0.0011	0.0016	0.0018	<0.0010	0.0034	<0.0050	<0.0010
Total Metals									
Aluminum (Al)-Total	0.0055	0.0270	1.12	0.0087	0.0065	0.321	0.0032	<0.0010	<0.0010
Antimony (Sb)-Total	<0.00010	<0.00010	0.00034	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	<0.00010	<0.00010	0.00185	0.00018	0.00018	0.00088	0.00017	<0.00010	<0.00010
Barium (Ba)-Total	0.00775	0.0473	0.0677	0.0111	0.0112	0.0114	0.0229	<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
Bismuth (Bi)-Total	<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	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	<0.000020	<0.000020	0.000030	<0.000020	<0.000020	<0.000020	0.000023	<0.000020	<0.000020
Calcium (Ca)-Total	4.43	16.6	19.8	30.6	30.9	25.4	27.8	<0.020	<0.020
Chromium (Cr)-Total	<0.00050	<0.00050	0.00199	<0.00050	<0.00050	0.00085	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Total	<0.00010	<0.00010	0.00067	<0.00010	<0.00010	0.00028	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total	0.00011	0.00028	0.00398	0.00058	0.00053	0.00287	0.00050	<0.00010	<0.00010
Iron (Fe)-Total	<0.030	0.044	1.07	<0.030	<0.030	0.497	<0.030	<0.030	<0.030
Lead (Pb)-Total	<0.000050	<0.000050	0.000695	<0.000050	<0.000050	0.000185	<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
Magnesium (Mg)-Total	1.01	8.79	7.63	4.04	4.04	1.67	4.51	<0.0050	<0.0050
Manganese (Mn)-Total	0.00170	0.00299	0.0514	0.00403	0.00384	0.0218	0.00384	<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
Molybdenum (Mo)-Total	0.000793	0.00168	0.000738	0.000652	0.000652	0.000950	0.00175	<0.000050	<0.000050
Nickel (Ni)-Total	<0.00050	<0.00050	0.00259	<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
Potassium (K)-Total	0.183	0.312	0.990	0.339	0.342	0.305	0.557	<0.050	<0.050
Selenium (Se)-Total	<0.00050	<0.00050	0.00081	<0.00050	<0.00050	0.00101	<0.00050	<0.00050	<0.00050
Silicon (Si)-Total	1.12	1.32	3.49	2.84	2.81	2.15	3.09	<0.050	<0.050

(continued)

Appendix 3.2-1
Schaft Creek Project Wetland and Lake Water Quality Data, 2007 (completed)

Sample ID	L6	L3	L1	L2	L2, DUP	L5	L4	ALS FIELD BLANK	TRAVEL BLANK
Date Sampled	06-AUG-07	04-AUG-07	05-AUG-07	07-AUG-07	07-AUG-07	06-AUG-07	03-AUG-07		
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00		
ALS Sample ID	L541212-1	L541212-2	L541212-6	L541212-8	L541212-7	L541212-4	L541193-3	L541193-10	L541212-10
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water
Silver (Ag)-Total	<0.000010	<0.000010	0.000030	<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	2.1	<2.0	<2.0
Strontium (Sr)-Total	0.0151	0.267	0.0930	0.0591	0.0599	0.0409	0.0657	<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
Tin (Sn)-Total	<0.00010	<0.00010	0.00270	<0.00010	<0.00010	0.00300	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	<0.010	<0.010	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	<0.000010	0.000080	0.000105	0.000146	0.000147	0.000197	0.000050	<0.000010	<0.000010
Vanadium (V)-Total	<0.0010	<0.0010	0.0030	<0.0010	<0.0010	0.0018	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	<0.0010	<0.0010	0.0077	<0.0010	<0.0010	<0.0060	0.0011	<0.0010	<0.0010
Dissolved Metals									
Aluminum (Al)-Dissolved	0.0014	0.0042	0.0403	0.0041	0.0044	0.0083	0.0038	-	-
Antimony (Sb)-Dissolved	<0.00010	<0.00010	0.00026	<0.00010	<0.00010	<0.00010	<0.00010	-	-
Arsenic (As)-Dissolved	0.00011	0.00013	0.00062	0.00018	0.00018	0.00048	0.00016	-	-
Barium (Ba)-Dissolved	0.00769	0.0482	0.0560	0.0113	0.0113	0.00965	0.0235	-	-
Beryllium (Be)-Dissolved	<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	-	-
Boron (B)-Dissolved	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	-	-
Cadmium (Cd)-Dissolved	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	-	-
Calcium (Ca)-Dissolved	4.48	17.2	19.1	31.7	31.0	25.3	29.0	-	-
Chromium (Cr)-Dissolved	<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	-	-
Copper (Cu)-Dissolved	<0.00090	0.00032	0.00187	0.00049	0.00049	0.00072	<0.00070	-	-
Iron (Fe)-Dissolved	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	-	-
Lead (Pb)-Dissolved	0.000091	<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	-	-
Dissolved	1.01	8.77	7.44	4.04	4.03	1.62	4.65	-	-
Dissolved	0.000214	0.000172	0.0187	0.000097	0.000107	0.000275	0.000117	-	-
Mercury (Hg)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-
Dissolved	0.000347	0.00186	0.000722	0.000676	0.000648	0.000929	0.00191	-	-
Nickel (Ni)-Dissolved	<0.00050	<0.00050	0.00068	<0.00050	<0.00050	<0.00050	0.00062	-	-
Phosphorus (P)-Dissolved	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	-
Potassium (K)-Dissolved	0.195	0.317	0.566	0.347	0.342	0.250	0.580	-	-
Selenium (Se)-Dissolved	<0.00050	<0.00050	<0.00050	0.00055	0.00063	0.00057	<0.00050	-	-
Silicon (Si)-Dissolved	1.13	1.26	1.88	2.86	2.80	1.82	3.08	-	-
Silver (Ag)-Dissolved	<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	2.1	-	-
Strontium (Sr)-Dissolved	0.0150	0.274	0.0891	0.0603	0.0597	0.0411	0.0688	-	-
Thallium (Tl)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-
Tin (Sn)-Dissolved	<0.00010	<0.00030	<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	-	-
Uranium (U)-Dissolved	<0.000010	0.000088	0.000084	0.000155	0.000148	0.000188	0.000053	-	-
Vanadium (V)-Dissolved	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-
Zinc (Zn)-Dissolved	<0.0010	<0.0010	0.0021	<0.0010	<0.0010	<0.0010	0.0025	-	-
Organic Parameters									
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Organic Carbon	<0.50	0.61	0.61	2.27	2.40	0.97	6.48	<0.50	<0.50

**APPENDIX 3.2-2
SCHAFT CREEK PROJECT WETLAND AND LAKE
WATER QUALITY DETECTION LIMITS, 2007**

Appendix 3.2-2 Schaft Creek Project Wetland and Lake Water Quality Detection Limits, 2007

Sample ID	WL7	WL10	WL3	WL1	WL4	WL9	WL6	WL5	WL11	WL2	AIRSTRIP	L6	L3	L1	L2	L2, DUP	L5	L4	BLANK	BLANK
Date Sampled	07	07	07	07	07	07	07	07	07	07	07	07	07	07	07	07	07	07		
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	00:00	00:00	00:00
ALS Sample ID	L541193-8	L541193-1	L541193-2	L541193-7	L541193-6	L541212-9	L541193-9	L541193-5	L541193-4	L541212-5	L541212-3	1	2	6	8	L541212-7	4	3	L541193-10	L541212-10
Matrix	Water	Water	Water	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	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	5	5	5
Conductivity	2	2	2	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	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	10	10	10
Total Suspended Solids	3	3	3	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	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	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	1	1	1
Alkalinity, Total (as CaCO3)	2	2	2	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	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	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	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	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	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	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	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	0.05	0.05	0.05
Total Phosphate as P	0.01	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	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	0.001	0.005	0.001
Total Metals																				
Aluminum (Al)-Total	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.002	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	0.0002	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	0.0002	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	0.0001	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	0.001	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	0.001	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	0.02	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	0.00004	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	0.04	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	0.001	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	0.0002	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	0.0007	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0002	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	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	0.0001	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	0.01	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	0.01	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	0.0001	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	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	0.0001	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	0.001	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	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	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
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	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	0.05	0.05	0.05

(continued)

**APPENDIX 3.2-3
SCHAFT CREEK PROJECT RELATIVE PERCENT
DIFFERENCE (RPD) RESULTS FOR LAKE WATER QUALITY
DATA, 2007**

Appendix 3.2-3
Schaft Creek Project Relative Percent Difference
(RPD) Duplicate Results for Lake Water Quality, 2007

Sample ID	L2	L2, DUP	
Date Sampled	07-AUG-07	07-AUG-07	
Time Sampled	00:00	00:00	
ALS Sample ID	L541212-8	L541212-7	RPD %
Physical Tests			
Hardness (as CaCO3)	95.8	94.1	1.79
Colour, True	<5.0	<5.0	-
Conductivity	198	198	0.00
pH	8.17	8.16	0.12
Total Dissolved Solids	121	123	1.64
Total Suspended Solids	<3.0	<3.0	-
Turbidity	0.34	0.33	-
Anions and Nutrients			
Ammonia as N	0.0120	0.0073	-
Acidity (as CaCO3)	<1.0	<1.0	-
Alkalinity, Total (as CaCO3)	82.4	82.0	0.49
Bromide (Br)	<0.050	<0.050	-
Chloride (Cl)	<0.50	<0.50	-
Fluoride (F)	0.039	0.038	-
Sulfate (SO4)	18.0	17.8	1.12
Nitrate (as N)	0.0912	0.0856	6.33
Nitrite (as N)	<0.0010	<0.0010	-
Total Kjeldahl Nitrogen	0.108	0.097	-
Total Nitrogen	0.20	0.21	-
Total Phosphate as P	0.0022	<0.0020	75.00
Cyanides			
Cyanide, Total	0.0016	0.0018	-
Total Metals			
Aluminum (Al)-Total	0.0087	0.0065	28.95
Antimony (Sb)-Total	<0.00010	<0.00010	-
Arsenic (As)-Total	0.00018	0.00018	-
Barium (Ba)-Total	0.0111	0.0112	0.90
Beryllium (Be)-Total	<0.00050	<0.00050	-
Bismuth (Bi)-Total	<0.00050	<0.00050	-
Boron (B)-Total	<0.010	<0.010	-
Cadmium (Cd)-Total	<0.000020	<0.000020	-
Calcium (Ca)-Total	30.6	30.9	0.98
Chromium (Cr)-Total	<0.00050	<0.00050	-
Cobalt (Co)-Total	<0.00010	<0.00010	-
Copper (Cu)-Total	0.00058	0.00053	9.01
Iron (Fe)-Total	<0.030	<0.030	-
Lead (Pb)-Total	<0.000050	<0.000050	-
Lithium (Li)-Total	<0.0050	<0.0050	-
Magnesium (Mg)-Total	4.04	4.04	0.00
Manganese (Mn)-Total	0.00403	0.00384	4.83
Mercury (Hg)-Total	<0.000010	<0.000010	-
Molybdenum (Mo)-Total	0.000652	0.000652	0.00
Nickel (Ni)-Total	<0.00050	<0.00050	-
Phosphorus (P)-Total	<0.30	<0.30	-
Potassium (K)-Total	0.339	0.342	0.88
Selenium (Se)-Total	<0.00050	<0.00050	-
Silicon (Si)-Total	2.84	2.81	1.06
Silver (Ag)-Total	<0.000010	<0.000010	-
Sodium (Na)-Total	<2.0	<2.0	-
Strontium (Sr)-Total	0.0591	0.0599	1.34
Thallium (Tl)-Total	<0.00010	<0.00010	-
Tin (Sn)-Total	<0.00010	<0.00010	-
Titanium (Ti)-Total	<0.010	<0.010	-
Uranium (U)-Total	0.000146	0.000147	0.68
Vanadium (V)-Total	<0.0010	<0.0010	-
Zinc (Zn)-Total	<0.0010	<0.0010	-
Dissolved Metals			
Aluminum (Al)-Dissolved	0.0041	0.0044	-
Antimony (Sb)-Dissolved	<0.00010	<0.00010	-
Arsenic (As)-Dissolved	0.00018	0.00018	-
Barium (Ba)-Dissolved	0.0113	0.0113	0.00
Beryllium (Be)-Dissolved	<0.00050	<0.00050	-
Bismuth (Bi)-Dissolved	<0.00050	<0.00050	-
Boron (B)-Dissolved	<0.010	<0.010	-
Cadmium (Cd)-Dissolved	<0.000020	<0.000020	-
Calcium (Ca)-Dissolved	31.7	31.0	2.23

(continued)

Appendix 3.2-3
Relative Percent Difference (RPD) Duplicate
Results for Lake Water Quality, 2007 (completed)

Sample ID	L2	L2, DUP	
Date Sampled	07-AUG-07	07-AUG-07	
Time Sampled	00:00	00:00	
ALS Sample ID	L541212-8	L541212-7	RPD %
Chromium (Cr)-Dissolved	<0.00050	<0.00050	-
Cobalt (Co)-Dissolved	<0.00010	<0.00010	-
Copper (Cu)-Dissolved	0.00049	0.00049	-
Iron (Fe)-Dissolved	<0.030	<0.030	-
Lead (Pb)-Dissolved	<0.000050	<0.000050	-
Lithium (Li)-Dissolved	<0.0050	<0.0050	-
Magnesium (Mg)-Dissolved	4.04	4.03	0.25
Manganese (Mn)-Dissolved	0.000097	0.000107	-
Mercury (Hg)-Dissolved	<0.000010	<0.000010	-
Molybdenum (Mo)-Dissolved	0.000676	0.000648	4.23
Nickel (Ni)-Dissolved	<0.00050	<0.00050	-
Phosphorus (P)-Dissolved	<0.30	<0.30	-
Potassium (K)-Dissolved	0.347	0.342	1.45
Selenium (Se)-Dissolved	0.00055	0.00063	-
Silicon (Si)-Dissolved	2.86	2.80	2.12
Silver (Ag)-Dissolved	<0.000010	<0.000010	-
Sodium (Na)-Dissolved	<2.0	<2.0	-
Strontium (Sr)-Dissolved	0.0603	0.0597	1.00
Thallium (Tl)-Dissolved	<0.00010	<0.00010	-
Tin (Sn)-Dissolved	<0.00010	<0.00010	-
Titanium (Ti)-Dissolved	<0.010	<0.010	-
Uranium (U)-Dissolved	0.000155	0.000148	4.62
Vanadium (V)-Dissolved	<0.0010	<0.0010	-
Zinc (Zn)-Dissolved	<0.0010	<0.0010	-
Organic Parameters			
COD	<20	<20	-
Total Organic Carbon	2.27	2.40	-

**APPENDIX 3.2-4
SCHAFT CREEK PROJECT LIMNOLOGY DEPTH PROFILE
DATA, 2007**

**Appendix 3.2-4
Schaft Creek Project Limnology Depth Profile Data, 2007**

Lake	Sample Date	Max Sample Depth (m)	Secchi Depth (m)	Surface pH	Conductivity (µS)	Depth (m)	DO (mg/L)	Temp (°C)
						0	8.00	10.70
						1	7.60	10.30
						2	7.90	10.10
						3	8.00	9.60
						4	7.90	9.50
						5	8.20	9.50
						6	8.10	9.40
						7	8.50	9.40
L1	05-Aug-07	17	0.2	8.30	150.00	8	8.30	9.50
						9	8.20	9.40
						10	8.50	9.30
						11	8.20	9.30
						12	8.40	9.30
						13	8.70	9.30
						14	8.20	9.20
						15	8.20	9.10
						16	8.20	9.10
						0	8.80	13.50
						1	8.80	13.20
						2	8.40	13.20
						3	9.00	12.90
						4	9.20	12.40
						5	9.40	12.00
						6	9.50	11.40
						7	9.50	10.70
						8	9.60	9.70
						9	9.20	8.20
						10	9.80	7.30
						11	9.50	6.00
						12	9.30	5.50
L2	07-Aug-07	28	-	-	-	13	8.30	5.00
						14	8.50	4.80
						15	8.40	4.80
						16	8.40	4.70
						17	8.10	4.60
						18	7.90	4.50
						19	7.40	4.50
						20	7.50	4.40
						21	7.20	4.40
						22	6.90	4.30
						23	7.00	4.30
						24	7.10	4.30
						25	7.20	4.30
						26	6.40	4.20
						27	4.8	4.4
						0	9.10	7.80
						1	9.00	7.70
						2	9.50	7.60
						3	9.20	7.50
						4	8.80	7.40
L3	04-Aug-07	7.2	3	8.60	160.00	5	8.50	7.30
						6	8.60	7.30
						7	10.20	7.30
						8	9.80	6.90
						9	9.50	6.80
						10	9.40	6.40
						11	9.70	6.00
						0	8.30	-
						1	8.20	16.40
						2	7.90	16.30
						3	8.00	16.20
						4	8.40	15.80
						5	8.60	15.50
						6	8.80	14.60
L4	03-Aug-07	15	11	8.20	180.00	7	10.40	11.90
						8	9.10	9.20
						9	8.10	8.20
						10	6.60	7.90
						11	4.40	7.60
						12	3.80	7.40
						13	3.00	7.20
						14	2.70	7.10
L5	06-Aug-07	1.5	1	8.00	140.00	0	8.30	13.50
						1	8.70	12.50
						0	9.3	3.5
						1	9.6	3.1
						2	9.8	3
						3	9.9	2.9
						4	10	2.9
L6	06-Aug-07	11.5	10.5	8.8	30	5	10.1	2.9
						6	10.3	2.9
						7	10.1	3
						8	10.2	3
						9	10.4	3
						10	10.5	3.2

**APPENDIX 3.2-5
SCHAFT CREEK PROJECT WETLAND AND LAKE SEDIMENT
DATA, 2007**

**Appendix 3.2-5
Schaft Creek Project Wetland and Lake Sediment Data, 2007**

Sample ID	L6 - A	L6 - B	L6 - C	L2, DUP - A	L2, DUP - B	L2, DUP - C	WL2 - A	WL2 - B	WL2 - C	WL10 - A	WL10 - B	Avaliable Guideline Values	LEL	SEL	ISQG	PEL
Date Sampled	06-AUG-07	06-AUG-07	06-AUG-07	07-AUG-07	07-AUG-07	07-AUG-07	05-AUG-07	05-AUG-07	05-AUG-07	07-AUG-07	07-AUG-07					
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	L541209-1	L541209-2	L541209-3	L541209-4	L541209-5	L541209-6	L541209-7	L541209-8	L541209-9	L541209-10	L541209-11					
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Physical Tests																
% Moisture	78.9	75.2	73.9	80.5	93.4	84.2	70.2	69.4	61.7	83.9	79.5					
pH	6.59	6.32	6.11	7.14	7.02	7.31	7.97	8.09	8.01	6.20	6.49					
Anions and Nutrients																
Available Phosphate-P	3	2	2	3	<1	2	<1	<1	<1	<1	<1					
Metals																
Aluminum (Al)	27400	25000	30300	26500	27800	30500	11400	11400	7690	1470	440					
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<20	<30	<30					
Arsenic (As)	32.3 ^{1,3,4}	19.4 ^{1,3,4}	8.3 ^{1,3}	89.2 ^{1,3,4}	7.3 ^{1,3}	157 ^{1,3,4}	6.4 ^{1,3}	6.6 ^{1,3}	<10	<15	<15	6			5.9	17
Barium (Ba)	399	441	368	294	144	485	132	136	112	780	1480					
Beryllium (Be)	1.03	0.96	1.05	0.94	0.87	0.83	1.62	1.61	1.4	<1.5	<1.5					
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<40	<60	<60					
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<3.0	<4.0				0.6	3.5
Calcium (Ca)	6530	7210	7290	14500	15800	16300	133000	141000	217000	19700	6610					
Chromium (Cr)	47.4 ³	48.3 ³	61 ³	55.9 ³	68.6 ³	64 ³	13.1	12.6	7.8	<33	<45				37.3	90
Cobalt (Co)	26.7	28.3	17.6	21.7	17.6	24.6	8.0	8.5	6.5	<6.0	<6.0					
Copper (Cu)	45.2 ³	41.2 ³	40.3 ³	113 ³	128 ³	167 ³	18.9	17.3	13.1	11.3	11.7				35.7	197
Iron (Fe)	97800 ^{1,2}	79200 ^{1,2}	56300 ^{1,2}	63200 ^{1,2}	56700 ^{1,2}	78400 ^{1,2}	24800 ¹	26200	20000	369000 ^{1,2}	502000 ^{1,2}	21,200	43,766		35	91.3
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<60	<90	<90					
Lithium (Li)	9.0	8.4	9.6	15.0	15.1	16.8	11.2	11.3	<4.0	<6.0	<6.0					
Magnesium (Mg)	10700	10900	10200	17300	15300	18400	7590	7500	6160	1320	490					
Manganese (Mn)	7230	17100	661	3410	874	9390	935	1010	959	1620	955					
Mercury (Hg)	0.0214	0.0233	0.0275	0.106	0.0806	0.109	0.0605	0.0426	0.0439	0.0105	0.0273				0.17	0.486
Molybdenum (Mo)	15.2	12.2	<4.0	<4.0	6.3	5.2	<4.0	<4.0	<8.0	16	33					
Nickel (Ni)	31 ¹	32.8 ¹	34.2 ¹	74.4 ¹	77.3 ^{1,2}	97.2 ^{1,2}	18.5 ¹	16.9	15.0	<15	<15	16	75			
Phosphorus (P)	1770	1360	1380	1700	859	2010	732	695	580	250	<150					
Potassium (K)	1300	1250	1360	1390	1530	1500	1480	1370	1020	<600	<600					
Selenium (Se)	<2.0	<2.0	<2.0	<6.0	<10	<9.0	<2.0	<2.0	<4.0	<6.0	7.5 ¹	5				
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<6.0	<6.0	0.5				
Sodium (Na)	790	890	900	350	370	390	1590	1770	2030	<600	<600					
Strontium (Sr)	47.9	52.4	49.4	54.6	60.3	78.0	1080	1180	1850	72.4	134					
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	<10	<15	<15					
Titanium (Ti)	2200	2390	2610	1260	973	1130	749	893	856	85.0	25.3					
Vanadium (V)	134	140	176	102	112	121	28.0	30.0	20.2	60.9	78.1					
Zinc (Zn)	89.0	89.3	94.6	103	119	129	93.0	89.9	65.5	15.1	5.3				123	315
Organic Parameters																
Organic Carbon	1.81	1.78	2.81	5.27	15.0	7.58	7.16	5.16	5.75	8.43	4.88					
XNo class																
Phosphorus, Total	1680	1470	1550	1820	1000	2040	680	700	550	240	170					
Total Nitrogen by LECO	0.24	0.24	0.36	0.46	1.34	0.65	0.64	0.48	0.50	0.48	0.27					
Particle Size																
% Gravel (>2mm)	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1					
% Sand (2.0mm - 0.063mm)	1	9	7	2	2	2	13	13	31	14	4					
% Silt (0.063mm - 4um)	71	76	73	72	74	61	61	63	56	70	64					
% Clay (<4um)	28	15	20	26	24	38	26	24	14	15	32					

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

**Appendix 3.2-5
Schaft Creek Project Wetland and Lake Sediment Data, 2007 (continued)**

Sample ID	WL10 - C	L2 - A	L2 - B	L2 - C	WL1 - A	WL1 - B	WL1 - C	WL1, DUP - A	WL1, DUP - B	WL1, DUP - C	Available Guideline Values	LEL	SEL	ISQG	PEL
Date Sampled	07-AUG-07	07-AUG-07	07-AUG-07	07-AUG-07	03-AUG-07	03-AUG-07	03-AUG-07	03-AUG-07	03-AUG-07	03-AUG-07					
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					
ALS Sample ID	L541209-12	L541209-13	L541209-14	L541209-15	L541209-16	L541209-17	L541209-18	L541209-19	L541209-20	L541209-21					
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Physical Tests															
% Moisture	59.3	77.2	92.8	84.6	65.6	71.7	65.2	64.6	69.4	66.1					
pH	7.78	7.21	7.08	7.34	7.25	6.84	6.67	7.14	6.80	6.73					
Anions and Nutrients															
Available Phosphate-P	<1	2	<1	2	<1	<1	<1	<1	<1	<1					
Metals															
Aluminum (Al)	3960	28400	28300	29300	21800	16300	22600	21700	21200	22400					
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10					
Arsenic (As)	<5.0	88.4 ^{1,3,4}	9.1 ^{1,3}	171 ^{1,3,4}	16.9 ^{1,3,4}	19.4 ^{1,3,4}	34.1 ^{1,3,4}	18.9 ^{1,3,4}	31.9 ^{1,3,4}	30.4 ^{1,3,4}	6			5.9	17
Barium (Ba)	272	317	141	517	292	254	357	296	347	336					
Beryllium (Be)	<0.50	1.01	0.84	0.78	0.69	0.54	0.71	0.69	0.72	0.71					
Bismuth (Bi)	<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				0.6	3.5
Calcium (Ca)	57900	13800	15200	15700	14000	9070	13200	14400	11400	13200					
Chromium (Cr)	7.2	61.6 ³	68 ³	60.9 ³	51.3 ³	35.4	48.9 ³	52 ³	47.8 ³	49.2 ³				37.3	90
Cobalt (Co)	3.5	22.5	17.3	23.6	21.2	16.1	22.0	22.3	22.2	21.8					
Copper (Cu)	15.3	122 ³	125 ³	162 ³	87.3 ³	58.8 ³	84.5 ³	87.2 ³	79.3 ³	84.7 ³				35.7	197
Iron (Fe)	39600 ¹	64600 ^{1,2}	55600 ^{1,2}	78600 ^{1,2}	62600 ^{1,2}	52500 ^{1,2}	78100 ^{1,2}	64500 ^{1,2}	70400 ^{1,2}	74600 ^{1,2}	21,200	43,766			
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30				35	91.3
Lithium (Li)	<2.0	17.2	15.2	16.2	15.1	11.0	16.0	15.1	14.7	15.8					
Magnesium (Mg)	3310	17800	15100	17300	18300	13200	18700	18900	17700	18700					
Manganese (Mn)	880	3840	852	10200	2410	2250	2990	2440	3040	2810					
Mercury (Hg)	0.0100	0.120	0.0705	0.102	0.0241	0.0206	0.0280	0.0195	0.0241	0.0253				0.17	0.486
Molybdenum (Mo)	<4.0	<4.0	6.1	5.3	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0					
Nickel (Ni)	<5.0	79.8 ^{1,2}	76.2 ^{1,2}	92.6 ^{1,2}	35.1 ¹	24.1 ¹	34.5 ¹	35.9 ¹	33.1 ¹	35.2 ¹	16	75			
Phosphorus (P)	417	1720	833	2010	1020	729	1040	1040	1000	1020					
Potassium (K)	660	1500	1680	1510	2140	1580	2260	2030	2040	2160					
Selenium (Se)	<2.0	<7.0	<9.0	9.4 ¹	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	5				
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5				
Sodium (Na)	<200	390	380	400	740	540	770	730	700	750					
Strontium (Sr)	75.9	60.8	61.2	77.9	56.1	40.2	57.0	55.7	52.2	55.3					
Thallium (Tl)	<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					
Titanium (Ti)	244	1320	1020	1100	1300	865	1260	1260	1180	1250					
Vanadium (V)	26.4	108	111	117	91.3	66.0	93.2	91.9	88.2	92.5					
Zinc (Zn)	24.3	109	116	123 ³	74.7	57.5	78.8	77.5	76.5	79.1				123	315
Organic Parameters															
Organic Carbon	4.20	5.30	14.7	7.89	1.97	2.99	2.90	2.15	3.26	2.79					
XNo class															
Phosphorus, Total	400	1800	980	2280	1070	1020	1010	1020	1050	1040					
Total Nitrogen by LECO	0.39	0.49	1.26	0.62	0.20	0.26	0.24	0.20	0.26	0.26					
Particle Size															
% Gravel (>2mm)	<1	<1	-	<1	<1	<1	<1	<1	<1	<1					
% Sand (2.0mm – 0.063mm)	60	1	-	1	7	6	6	5	8	6					
% Silt (0.063mm – 4um)	35	57	-	69	56	52	50	55	52	51					
% Clay (<4um)	5	42	-	30	36	42	45	40	40	43					

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

**Appendix 3.2-5
Schaft Creek Project Wetland and Lake Sediment Data, 2007 (continued)**

Sample ID	WL6 - A	WL6 - B	WL6 - C	AIRSTRIP - A	AIRSTRIP - B	AIRSTRIP - C	WL7 - A	WL7 - B	WL7 - C	L1 A	Available Guideline Values			
Date Sampled	08-AUG-07	08-AUG-07	08-AUG-07	08-AUG-07	08-AUG-07	08-AUG-07	08-AUG-07	08-AUG-07	08-AUG-07	05-AUG-07	LEL	SEL	ISQG	PEL
Time Sampled	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00				
ALS Sample ID	L541209-22	L541209-23	L541209-24	L541209-25	L541209-26	L541209-27	L541209-28	L541209-29	L541209-30	L541091-1				
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Physical Tests														
% Moisture	63.3	74.2	63.2	93.5	92.0	60.9	94.0	91.9	94.2	40.4				
pH	6.32	6.87	7.12	5.40	6.00	6.33	6.52	7.05	6.80	8.02				
Anions and Nutrients														
Available Phosphate-P	1	1	<1	-	-	<1	-	<1	3					
Metals														
Aluminum (Al)	22300	21900	19800	6760	10800	7320	4980	5210	4000	13700				
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10				
Arsenic (As)	96.1 ^{1,3,4}	66.7 ^{1,3,4}	69.2 ^{1,3,4}	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	41.4 ^{1,3,4}	6		5.9	17
Barium (Ba)	287	335	274	31.1	43.2	46.1	99.9	85.7	75.1	359				
Beryllium (Be)	0.63	0.71	0.61	0.73	0.98	1.40	<0.50	0.55	<0.50	1.41				
Bismuth (Bi)	<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			0.6	3.5
Calcium (Ca)	7280	10100	11700	5580	7600	2240	11500	7600	8230	21200				
Chromium (Cr)	69.2 ³	66.1 ³	62.5 ³	10.7	18.0	4.6	26.1	14.7	14.7	44.3 ³			37.3	90
Cobalt (Co)	25.9	26.3	24.8	<2.0	4.3	<2.0	4.0	2.8	<2.0	20.1				
Copper (Cu)	73.7 ³	93.4 ³	76.2 ³	13.2	15.0	4.0	268 ^{3,4}	77.4 ³	39.4 ³	51.1 ³			35.7	197
Iron (Fe)	62400 ^{1,2}	51000 ^{1,2}	51600 ^{1,2}	17300	12500	11400	11100	15800	6050	54500 ^{1,2}	21,200	43,766		
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30			35	91.3
Lithium (Li)	14.4	13.9	12.7	<2.0	2.5	5.1	<2.0	<2.0	<2.0	7.4				
Magnesium (Mg)	24200	22400	22400	858	1930	1180	2170	1690	2030	19600				
Manganese (Mn)	948	807	910	82.7	106	177	164	146	94.8	1490				
Mercury (Hg)	0.0895	0.130	0.101	0.126	0.0869	0.0125	0.119	0.0242	0.0445	0.0810			0.17	0.486
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	6.0	7.4	4.3	<4.0				
Nickel (Ni)	99.4 ^{1,2}	98.7 ^{1,2}	87.5 ¹	7.0	10.6	<5.0	60 ¹	33.6 ¹	23 ¹	58.1 ¹	16	75		
Phosphorus (P)	900	867	1000	730	659	231	557	297	383	1120				
Potassium (K)	2840	2850	2620	600	670	1960	550	750	400	1710				
Selenium (Se)	<2.0	<2.0	<3.0	<2.0	<3.0	<2.0	<4.0	<2.0	<3.0	<2.0	5			
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5			
Sodium (Na)	350	320	340	510	670	3280	230	1080	290	380				
Strontium (Sr)	35.0	41.4	44.1	22.3	29.2	11.2	49.1	73.8	45.8	65.6				
Thallium (Tl)	<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	16.4	<5.0	<5.0				
Titanium (Ti)	132	132	191	217	563	939	243	340	237	544				
Vanadium (V)	78.7	90.2	82.7	20.2	31.7	9.7	14.2	11.8	10.1	68.5				
Zinc (Zn)	87.3	84.5	83.5	15.7	34.1	42.7	31.4	34.8	27.3	154 ³			123	315
Organic Parameters														
Organic Carbon	3.43	5.86	2.42	25.0	15.5	3.87	25.2	11.0	18.1	0.99				
XNo class														
Phosphorus, Total	930	900	1100	780	580	230	550	290	400	1140				
Total Nitrogen by LECO	0.31	0.43	0.22	1.49	1.22	0.28	1.71	0.96	1.39	0.09				
Particle Size														
% Gravel (>2mm)	<1	<1	<1	<1	<1	1	<1	-	-	<1				
% Sand (2.0mm - 0.063mm)	3	5	6	13	28	91	5	-	-	12				
% Silt (0.063mm - 4um)	35	39	49	52	42	5	59	-	-	74				
% Clay (<4um)	63	56	44	35	30	3	36	-	-	14				

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

**Appendix 3.2-5
Schaft Creek Project Wetland and Lake Sediment Data, 2007 (continued)**

Sample ID	L1 B	L1 C	WL3 A	WL3 B	WL3 C	L5 A	L5 B	L5 C	L3 A	L3 B	L3 C	Available Guideline Values	LEL	SEL	ISQG	PEL
Date Sampled	05-AUG-07	05-AUG-07	05-AUG-07	05-AUG-07	05-AUG-07	06-AUG-07	06-AUG-07	06-AUG-07	04-AUG-07	04-AUG-07	04-AUG-07					
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	L541091-2	L541091-3	L541091-4	L541091-5	L541091-6	L541091-7	L541091-8	L541091-9	L541091-10	L541091-11	L541091-12					
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Physical Tests																
% Moisture	44.1	34.8	48.5	32.1	58.1	74.3	78.6	68.1	54.5	48.8	44.8					
pH	8.18	8.12	6.64	6.73	6.13	7.33	7.24	7.20	8.30	8.23	8.22					
Anions and Nutrients																
Available Phosphate-P																
Metals																
Aluminum (Al)	13900	13200	6430	3990	8900	35700	34800	34500	20600	18000	18100					
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10					
Arsenic (As)	42.2 ^{1,3,4}	43.5 ^{1,3,4}	<5.0	<5.0	6.3	75.2 ^{1,3,4}	35.3 ^{1,3,4}	120 ^{1,3,4}	21.8 ^{1,3,4}	24 ^{1,3,4}	26.6 ^{1,3,4}	6			5.9	17
Barium (Ba)	364	388	192	94.9	242	107	105	126	276	248	255					
Beryllium (Be)	1.14	1.01	<0.50	<0.50	0.68	0.60	0.60	0.60	<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	0.77 ³	0.9 ³	0.97 ³	<0.50	<0.50	<0.50				0.6	3.5
Calcium (Ca)	17600	20100	2170	1520	2470	11500	11500	13500	9750	11300	12200					
Chromium (Cr)	47.2 ³	50.4 ³	7.4	4.9	7.1	71.8 ³	71.3 ³	65.8 ³	144 ^{3,4}	130 ^{3,4}	110 ^{3,4}				37.3	90
Cobalt (Co)	22.2	21.8	4.6	2.6	5.4	28.4	25.9	29.9	27.7	29.3	29.2					
Copper (Cu)	59.9 ³	58.4 ³	9.3	5.3	12.2	192 ³	199 ^{3,4}	205 ^{3,4}	61.7 ³	63.6 ³	67.3 ³				35.7	197
Iron (Fe)	51800 ^{1,2}	53600 ^{1,2}	28300 ¹	14900	42000 ¹	74300 ^{1,2}	62800 ^{1,2}	75600 ^{1,2}	53700 ^{1,2}	56100 ^{1,2}	55400 ^{1,2}	21,200	43,766			
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30				35	91.3
Lithium (Li)	8.8	8.0	7.9	4.7	10.5	22.2	21.3	20.2	16.2	14.8	15.1					
Magnesium (Mg)	21400	21400	3360	2200	3950	27700	27300	26300	22300	22800	22300					
Manganese (Mn)	1510	1340	536	278	710	1770	1170	2460	947	1140	1160					
Mercury (Hg)	0.105	0.0927	0.0103	0.0104	0.0154	0.0154	0.0219	0.0215	0.0377	0.0446	0.0583				0.17	0.486
Molybdenum (Mo)	<4.0	<4.0	<4.0	<4.0	6.9	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0					
Nickel (Ni)	67.1 ¹	64.9 ¹	<5.0	<5.0	<5.0	46.1 ¹	46.1 ¹	43.2 ¹	89.3 ^{1,2}	85.6 ^{1,2}	75.7 ^{1,2}	16	75			
Phosphorus (P)	1070	1190	487	280	432	1200	1180	1450	700	890	943					
Potassium (K)	1380	1360	1210	850	2030	2020	1820	1720	3500	2470	2310					
Selenium (Se)	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<6.0	<6.0	<2.0	<2.0	<2.0	5				
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5				
Sodium (Na)	270	300	230	<200	470	470	460	490	<200	<200	<200					
Strontium (Sr)	59.4	67.8	21.1	12.8	25.2	36.2	36.7	42.0	66.0	68.4	74.0					
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)	313	500	456	307	587	1010	1060	1250	196	159	156					
Vanadium (V)	66.2	70.0	24.0	14.7	27.1	166	165	166	74.0	69.4	66.0					
Zinc (Zn)	130 ³	121	36.7	23.0	45.3	231 ³	218 ³	217 ³	77.4	79.6	83.4				123	315
Organic Parameters																
Organic Carbon	0.70	0.70	0.38	0.16	1.48	3.57	5.60	2.77	0.67	0.47	0.66					
XNo class																
Phosphorus, Total	1030	1060	480	230	470	1180	1120	1280	660	790	850					
Total Nitrogen by LECO	0.06	0.05	0.04	0.02	0.10	0.42	0.44	0.30	0.06	0.05	0.04					
Particle Size																
% Gravel (>2mm)	<1	<1	-	<1	-	<1	-	<1	<1	<1	<1					
% Sand (2.0mm – 0.063mm)	2	9	-	64	-	1	-	2	<1	<1	1					
% Silt (0.063mm – 4um)	71	74	-	30	-	45	-	58	56	63	66					
% Clay (<4um)	27	17	-	6	-	54	-	40	44	36	34					

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

Appendix 3.2-5

Schaft Creek Project Wetland and Lake Sediment Data, 2007 (continued)

Sample ID	WL9 A	WL9 B	WL9 C	L4 A	L4 B	L4 C	WL5 A	WL5 B	WL5 C	WL4 A	WL4 B	Avaliable Guideline Values	LEL	SEL	ISQG	PEL
Date Sampled	04-AUG-07	04-AUG-07	04-AUG-07	03-AUG-07	03-AUG-07	03-AUG-07	02-AUG-07	02-AUG-07	02-AUG-07	02-AUG-07	02-AUG-07					
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	L541091-13	L541091-14	L541091-15	L541091-16	L541091-17	L541091-18	L541091-19	L541091-20	L541091-21	L541091-22	L541091-23					
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Physical Tests																
% Moisture	76.7	74.8	49.4	95.9	95.1	95.6	93.3	88.0	88.9	77.7	77.6					
pH	6.23	7.60	7.22	6.96	6.92	7.39	7.55	7.91	7.69	6.94	7.13					
Anions and Nutrients																
Available Phosphate-P																
Metals																
Aluminum (Al)	9670	8290	9410	10700	9820	10500	8650	10300	6970	34900	35200					
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10					
Arsenic (As)	518 ^{1,3,4}	236 ^{1,3,4}	35.8 ^{1,3,4}	<5.0	<5.0	<5.0	330 ^{1,3,4}	88 ^{1,3,4}	110 ^{1,3,4}	71 ^{1,3,4}	46.4 ^{1,3,4}	6		5.9	17	
Barium (Ba)	290	248	139	130	180	223	1280	1480	1730	99.5	86.5					
Beryllium (Be)	0.56	<0.50	<0.50	0.91	1.03	1.27	<0.50	<0.50	<0.50	0.87	0.95					
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	0.7 ³			0.6	3.5	
Calcium (Ca)	6520	28900	16600	12600	13900	15900	45000	99200	115000	14700	13000					
Chromium (Cr)	22.0	31.6	36.1	31.4	25.9	26.9	24.4	31.1	20.8	71.6 ³	89.9 ³			37.3	90	
Cobalt (Co)	18.7	14.3	17.7	6.8	6.4	6.9	12.3	11.8	8.4	28.6	31.3					
Copper (Cu)	46.7 ³	32.4	40.8 ³	82 ³	93.4 ³	108 ³	35.6	30.5	20.1	277 ^{3,4}	267 ^{3,4}				35.7	197
Iron (Fe)	98300 ^{1,2}	58900 ^{1,2}	44900 ^{1,2}	11100	13000	14200	92600 ^{1,2}	43800 ^{1,2}	41200 ¹	56800 ^{1,2}	60000 ^{1,2}	21,200	43,766			
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30				35	91.3
Lithium (Li)	8.4	5.4	7.4	2.1	2.5	2.3	3.5	5.2	2.7	21.6	26.3					
Magnesium (Mg)	8990	14800	22400	5130	4330	4900	12200	15300	11400	22100	27900					
Manganese (Mn)	643	538	655	493	589	552	1270	888	837	1200	1070					
Mercury (Hg)	0.0997	0.0697	0.0626	0.0806	0.103	0.0633	0.0518	0.0864	0.0594	0.0723	0.0809				0.17	0.486
Molybdenum (Mo)	8.4	<4.0	<4.0	15.0	19.1	17.1	<4.0	<4.0	<4.0	5.0	6.3					
Nickel (Ni)	36 ¹	45.2 ¹	43.8 ¹	67.3 ¹	75.1 ^{1,2}	85.4 ^{1,2}	52.2 ¹	48.5 ¹	33.5 ¹	42.1 ¹	60.5 ¹	16	75			
Phosphorus (P)	1460	1030	1150	919	751	874	810	580	531	1250	1440					
Potassium (K)	1590	1100	850	470	530	520	1770	1710	1490	1460	1650					
Selenium (Se)	<4.0	6.1 ¹	2.3	<4.0	<4.0	<5.0	<2.0	<3.0	<3.0	6.7 ¹	8.3 ¹	5				
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5				
Sodium (Na)	<200	<200	<200	330	380	350	250	270	250	280	330					
Strontium (Sr)	41.9	75.6	62.2	38.5	37.4	43.0	116	193	211	48.5	48.9					
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)	61.6	105	162	339	505	422	93.2	80.5	64.1	1260	1410					
Vanadium (V)	46.6	41.4	50.6	22.3	25.6	26.4	40.8	35.2	24.9	165	177					
Zinc (Zn)	98.1	62.9	66.7	52.1	54.0	59.0	47.6	42.0	30.9	151 ³	195 ³				123	315
Organic Parameters																
Organic Carbon	5.42	6.63	2.84	26.1	27.0	30.1	16.8	9.42	13.1	7.44	3.89					
XNo class																
Phosphorus, Total	1250	1030	1070	900	770	770	740	580	510	1220	1380					
Total Nitrogen by LECO	0.49	0.72	0.19	2.01	1.85	1.91	1.67	0.93	1.27	0.58	0.50					
Particle Size																
% Gravel (>2mm)	-	-	-	-	-	-	<1	-	-	<1	<1					
% Sand (2.0mm - 0.063mm)	-	-	-	-	-	-	4	-	-	10	1					
% Silt (0.063mm - 4um)	-	-	-	-	-	-	59	-	-	53	45					
% Clay (<4um)	-	-	-	-	-	-	37	-	-	37	53					

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

(continued)

**Appendix 3.2-5
Schaff Creek Project Wetland and Lake Sediment Data, 2007 (completed)**

Sample ID	WL4 C	WL11 A	WL11 B	WL11 C	Available Guideline Values			
Date Sampled	02-AUG-07	02-AUG-07	02-AUG-07	02-AUG-07	LEL	SEL	ISQG	PEL
Time Sampled	00:00	00:00	00:00	00:00				
ALS Sample ID	L541091-24	L541091-25	L541091-26	L541091-27				
Matrix	Soil	Soil	Soil	Soil				
Physical Tests								
% Moisture	64.6	84.6	76.1	79.8				
pH	7.01	8.03	7.91	8.11				
Anions and Nutrients								
Available Phosphate-P								
Metals								
Aluminum (Al)	37500	600	380	7610				
Antimony (Sb)	<10	<20	<20	<10				
Arsenic (As)	62.7 ^{1,3,4}	<10	<10	<5.0	6		5.9	17
Barium (Ba)	94.7	186	171	43.6				
Beryllium (Be)	1.03	<1.0	<1.0	1.54				
Bismuth (Bi)	<20	<40	<40	<20				
Cadmium (Cd)	0.77 ³	<1.0	<1.0	<0.50			0.6	3.5
Calcium (Ca)	13700	246000	253000	1840				
Chromium (Cr)	88.7 ³	<4.0	<4.0	4.0			37.3	90
Cobalt (Co)	35.1	<4.0	<4.0	<2.0				
Copper (Cu)	317 ^{3,4}	2.1	<2.0	4.1			35.7	197
Iron (Fe)	68200 ^{1,2}	2990	1810	11500	21,200	43,766		
Lead (Pb)	<30	<60	<60	<30			35	91.3
Lithium (Li)	27.4	<10	<11	5.4				
Magnesium (Mg)	28800	4580	5610	1150				
Manganese (Mn)	1220	1120	1060	188				
Mercury (Hg)	0.0927	0.0137	0.0121	0.0107			0.17	0.486
Molybdenum (Mo)	5.0	<8.0	<8.0	<4.0				
Nickel (Ni)	63 ¹	<10	<10	<5.0	16	75		
Phosphorus (P)	1490	270	360	219				
Potassium (K)	1670	<400	<400	1960				
Selenium (Se)	<5.0	<4.0	<4.0	<2.0	5			
Silver (Ag)	<2.0	<4.0	<4.0	<2.0	0.5			
Sodium (Na)	370	570	490	3170				
Strontium (Sr)	54.8	2030	1500	10.4				
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0				
Tin (Sn)	<5.0	<10	<10	<5.0				
Titanium (Ti)	1690	35.6	29.2	790				
Vanadium (V)	192	<4.0	<4.0	9.1				
Zinc (Zn)	199 ³	6.7	6.1	42.5			123	315
Organic Parameters								
Organic Carbon	3.00	8.86	10.6	7.52				
XNo class								
Phosphorus, Total	1390	390	270	210				
Total Nitrogen by LECO	0.38	0.83	0.86	0.66				
Particle Size								
% Gravel (>2mm)	<1	<1	<1	<1				
% Sand (2.0mm – 0.063mm)	2	8	4	4				
% Silt (0.063mm – 4um)	52	64	64	64				
% Clay (<4um)	46	28	32	32				

< = Less than the detection limit indicated.

Results are expressed as milligrams per dry kilogram except where noted.

Total Organic Carbon results are expressed as percent, dry weight basis.

1, 2, 3, 4 indicate guidelines exceeded by the metal concentration: 1 - BC LEL, 2 - BC SEL, 3 - CCME ISQG, 4 - CCME PEL

**APPENDIX 3.2-6
SCHAFT CREEK PROJECT RELATIVE PERCENT
DIFFERENCE (RPD) RESULTS FOR WETLAND AND LAKE
SEDIMENT DATA, 2007**

Appendix 3.2-6

Schaft Creek Project Relative Percent Difference (RPD) Results for Wetland and Lake Sediment Data, 2007

Sample ID	L2 - A	L2, DUP - A	RPD %	L2 - B	L2, DUP - B	RPD %	L2 - C	L2, DUP - C	RPD %	WL1 - A
Date Sampled	07-AUG-07	07-AUG-07		07-AUG-07	07-AUG-07		07-AUG-07	07-AUG-07		03-AUG-07
% Moisture	77.2	80.5	4.2	92.8	93.4	0.6	84.6	84.2	0.5	65.6
pH	7.21	7.14	1.0	7.08	7.02	0.9	7.34	7.31	0.4	7.25
Aluminum (Al)	28400	26500	6.9	28300	27800	1.8	29300	30500	4.0	21800
Antimony (Sb)	5	5	*	5	5	*	5	5	*	5
Arsenic (As)	88.4	89.2	0.9	9.1	7.3	*	171	157	8.5	16.9
Barium (Ba)	317	294	7.5	141	144	2.1	517	485	6.4	292
Beryllium (Be)	1.01	0.94	7.2	0.84	0.87	3.5	0.78	0.83	6.2	0.69
Bismuth (Bi)	10	10	*	10	10	*	10	10	*	10
Cadmium (Cd)	0.25	0.25	*	0.25	0.25	*	0.25	0.25	*	0.25
Calcium (Ca)	13800	14500	4.9	15200	15800	3.9	15700	16300	3.8	14000
Chromium (Cr)	61.6	55.9	9.7	68.0	68.6	0.9	60.9	64.0	5.0	51.3
Cobalt (Co)	22.5	21.7	3.6	17.3	17.6	1.7	23.6	24.6	4.1	21.2
Copper (Cu)	122	113	7.7	125	128	2.4	162	167	3.0	87.3
Iron (Fe)	64600	63200	2.2	55600	56700	2.0	78600	78400	0.3	62600
Lead (Pb)	15	15	*	15	15	*	15	15	*	15
Lithium (Li)	17.2	15.0	13.7	15.2	15.1	0.7	16.2	16.8	3.6	15.1
Magnesium (Mg)	17800	17300	2.8	15100	15300	1.3	17300	18400	6.2	18300
Manganese (Mn)	3840	3410	11.9	852	874	2.5	10200	9390	8.3	2410
Mercury (Hg)	0.120	0.106	12.4	0.0705	0.0806	13.4	0.102	0.109	6.6	0.0241
Molybdenum (Mo)	2	2	*	6.1	6.3	3.2	5.3	5.2	1.9	2
Nickel (Ni)	79.8	74.4	7.0	76.2	77.3	1.4	92.6	97.2	4.8	35.1
Phosphorus (P)	1720	1700	1.2	833	859	3.1	2010	2010	0.0	1020
Potassium (K)	1500	1390	7.6	1680	1530	9.3	1510	1500	0.7	2140
Selenium (Se)	3.5	3	*	4.5	5	*	9.4	4.5	*	1
Silver (Ag)	1	1	*	1	1	*	1	1	*	1
Sodium (Na)	390	350	10.8	380	370	2.7	400	390	2.5	740
Strontium (Sr)	60.8	54.6	10.7	61.2	60.3	1.5	77.9	78.0	0.1	56.1
Thallium (Tl)	0.5	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	*	2.5
Titanium (Ti)	1320	1260	4.7	1020	973	4.7	1100	1130	2.7	1300
Vanadium (V)	108	102	5.7	111	112	0.9	117	121	3.4	91.3
Zinc (Zn)	109	103	5.7	116	119	2.6	123	129	4.8	74.7
Organic Carbon	5.30	5.27	0.6	14.7	15.0	2.0	7.89	7.58	4.0	1.97
Phosphorus, Total	1800	1820	1.1	980	1000	2.0	2280	2040	11.1	1070
Total Nitrogen by LECO	0.49	0.46	6.3	1.26	1.34	6.2	0.62	0.65	4.7	0.20

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 <5 times the detection limit.

RED values have a RPD % equal to or greater than 20%.

Appendix 3.2-6

Schaft Creek Project Relative Percent Difference (RPD) Results for Wetland and Lake Sediment Data, 2007 (completed)

Sample ID	WL1, DUP - A	RPD %	WL1 - B	WL1, DUP - B	RPD %	WL1 - C	WL1, DUP - C	RPD %
Date Sampled	03-AUG-07		03-AUG-07	03-AUG-07		03-AUG-07	03-AUG-07	
% Moisture	64.6	1.5	71.7	69.4	3.3	65.2	66.1	1.4
pH	7.14	1.5	6.84	6.80	0.6	6.67	6.73	0.9
Aluminum (Al)	21700	0.5	16300	21200	26.1	22600	22400	0.9
Antimony (Sb)	5	*	5	5	*	5	5	*
Arsenic (As)	18.9	11.2	19.4	31.9	*	34.1	30.4	11.5
Barium (Ba)	296	1.4	254	347	30.9	357	336	6.1
Beryllium (Be)	0.69	0.0	0.54	0.72	*	0.71	0.71	*
Bismuth (Bi)	10	*	10	10	*	10	10	*
Cadmium (Cd)	0.25	*	0.25	0.25	*	0.25	0.25	*
Calcium (Ca)	14400	2.8	9070	11400	22.8	13200	13200	0.0
Chromium (Cr)	52.0	1.4	35.4	47.8	29.8	48.9	49.2	0.6
Cobalt (Co)	22.3	5.1	16.1	22.2	31.9	22.0	21.8	0.9
Copper (Cu)	87.2	0.1	58.8	79.3	29.7	84.5	84.7	0.2
Iron (Fe)	64500	3.0	52500	70400	29.1	78100	74600	4.6
Lead (Pb)	15	*	15	15	*	15	15	*
Lithium (Li)	15.1	0.0	11.0	14.7	28.8	16.0	15.8	1.3
Magnesium (Mg)	18900	3.2	13200	17700	29.1	18700	18700	0.0
Manganese (Mn)	2440	1.2	2250	3040	29.9	2990	2810	6.2
Mercury (Hg)	0.0195	*	0.0206	0.0241	*	0.0280	0.0253	10.1
Molybdenum (Mo)	2	*	2	2	*	2	2	*
Nickel (Ni)	35.9	2.3	24.1	33.1	*	34.5	35.2	2.0
Phosphorus (P)	1040	1.9	729	1000	31.3	1040	1020	1.9
Potassium (K)	2030	5.3	1580	2040	25.4	2260	2160	4.5
Selenium (Se)	1	*	1	1	*	1	1.5	*
Silver (Ag)	1	*	1	1	*	1	1	*
Sodium (Na)	730	1.4	540	700	*	770	750	2.6
Strontium (Sr)	55.7	0.7	40.2	52.2	26.0	57.0	55.3	3.0
Thallium (Tl)	0.5	*	0.5	0.5	*	0.5	0.5	*
Tin (Sn)	2.5	*	2.5	2.5	*	2.5	2.5	*
Titanium (Ti)	1260	3.1	865	1180	30.8	1260	1250	0.8
Vanadium (V)	91.9	0.7	66.0	88.2	28.8	93.2	92.5	0.8
Zinc (Zn)	77.5	3.7	57.5	76.5	28.4	78.8	79.1	0.4
Organic Carbon	2.15	8.7	2.99	3.26	8.6	2.90	2.79	3.9
Phosphorus, Total	1020	4.8	1020	1050	2.9	1010	1040	2.9
Total Nitrogen by LECO	0.20	0.0	0.26	0.26	0.0	0.24	0.26	8.0

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 <5 times the detection limit.

RED values have a RPD % equal to or greater than 20%.

**APPENDIX 3.2-7
SCHAFT CREEK PROJECT WETLAND PHYTOPLANKTON
DATA, 2007**

Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007

TAXON	WL7-A		WL7-B		WL7-C		WL10-A		WL10-B		WL10-C		WL3-A	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00		0.00		0.00		0.50		10.04		0.00		0.00
<i>Aphanocapsa elachista</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Aphanocapsa</i> sp.		0.00		78.27		0.16		35.79		0.07		0.00		0.00
<i>Chroococcus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeocapsa</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeothece</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia elegans</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia glauca</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia tenuissima</i>		50.74		0.10		56.62		0.11		98.86		0.20		0.00
CHLOROPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus falcatus</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Closterium</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cosmarium</i> sp.		0.00		0.00		0.00		0.00		0.00		0.84		2.10
<i>Cosmarium</i> sp. 1		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Crucigenia rectangularis</i>		0.00		0.00		0.00		8.52		0.34		0.00		0.00
<i>Elakatothrix gelatinosa</i>		5.92		0.36		11.66		0.70		5.11		0.31		0.00
<i>Elakatothrix</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Euastrum</i> sp.		0.00		0.00		0.83		2.50		0.85		2.56		0.00
<i>Gloeocystis</i> sp.		3.38		0.17		0.00		0.00		0.00		0.00		0.00
<i>Oedogonium</i> sp.	/mm	0.00		0.00		0.00		0.00		0.00		0.25		17.62
<i>Oocystis</i> sp.		6.76		0.68		0.00		0.00		0.00		0.00		0.00
<i>Rhabdoderma</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Scenedesmus</i> sp.		3.38		0.20		6.66		0.40		10.23		0.61		0.00
<i>Schroederia setigera</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Staurastrum</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHRYSTOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Diceras</i> sp.		2.54		0.76		7.49		2.25		0.85		0.26		0.00
<i>Dinobryon</i> spp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Mallomonas</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Chromonas</i> sp.		3.38		0.17		0.00		0.00		0.00		0.00		0.00
CHRYSTOPHYTA - DIATOMS		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Achnanthes flexella</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Achnanthes minutissima</i>		3.38		0.24		0.00		0.00		0.84		0.06		0.84
<i>Achnanthes</i> sp.		0.85		0.07		3.33		0.27		2.56		0.20		0.00
<i>Amphipleura pellucida</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Amphora ovalis</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anomooneis vitrea</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Asterionella formosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cocconeis placentula</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cyclotella comita</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cyclotella</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella caespitosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella cistula</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella ventricosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Diatoma hiemale</i>		0.85		0.54		0.00		0.00		0.00		0.00		0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Diatoma vulgare</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Epithemia sorex</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Epithemia turgida</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	WL7-A		WL7-B		WL7-C		WL10-A		WL10-B		WL10-C		WL3-A	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.58	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	0.85	0.21	0.83	0.21	5.97	1.49	0.00	0.00	0.00	0.00	1.68	0.42	1.67	0.42
<i>Fragilaria vaucheriae</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.83	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.85	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.58
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	1.22
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00	0.85	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.85	0.42	0.00	0.00	3.41	1.70	0.00	0.00	0.00	0.00	0.00	0.00	2.50	1.25
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia dissipata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.85	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.20
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.85	2.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	3.38	0.34	14.99	1.50	19.60	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cryptomonas erosa</i>	6.76	6.76	14.16	14.16	53.69	53.69	0.00	0.00	0.00	0.00	0.84	0.84	0.00	0.00
<i>Cryptomonas ovata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	0.00	0.00	1.67	1.00	0.85	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	93.87	11.22	197.34	24.93	248.84	67.17	0.00	0.00	1.68	0.64	4.20	3.42	10.00	4.79
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.50	10.04	0.25	17.62	0.38	26.43	0.00

(continued)

Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)

TAXON	WL3-B		WL3-C		WL1-A		WL1-B		WL1-C		WL4-A		WL4-B	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Aphanocapsa elachista</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Aphanocapsa</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Chroococcus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeocapsa</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeothece</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia elegans</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia glauca</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia tenuissima</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHLOROPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus falcatus</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Closterium</i> sp.		0.00		0.00		0.00		0.86		5.15		0.85		5.11
<i>Cosmarium</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cosmarium</i> sp. 1		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Crucigenia rectangularis</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Elakatothrix gelatinosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Elakatothrix</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Euastrum</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeocystis</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Oedogonium</i> sp.	/mm	0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Oocystis</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Rhabdoderma</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Scenedesmus</i> sp.		0.00		0.00		6.76		0.41		0.00		0.00		0.00
<i>Schroederia setigera</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Staurastrum</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHRYSTOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Diceras</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Dinobryon</i> spp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Mallomonas</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ochromonas</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHRYSTOPHYTA - DIATOMS		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Achnanthes flexella</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Achnanthes minutissima</i>		0.00		0.85		0.06		0.00		2.58		0.18		0.85
<i>Achnanthes</i> sp.		0.86		0.07		1.70		0.14		1.69		0.14		1.69
<i>Amphipleura pellucida</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Amphora ovalis</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anomooneis vitrea</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Asterionella formosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cocconeis placentula</i>		0.00		0.00		0.00		0.00		0.85		0.77		0.00
<i>Cyclotella comta</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cyclotella</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella caespitosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella cistula</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cymbella ventricosa</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Diatoma hiemale</i>		0.00		0.00		0.00		0.00		0.00		0.85		0.54
<i>Diatoma tenue v. elongatum</i>		0.86		0.15		0.00		0.00		0.00		0.00		1.69
<i>Diatoma vulgare</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.30
<i>Epithemia sorex</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Epithemia turgida</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	WL3-B		WL3-C		WL1-A		WL1-B		WL1-C		WL4-A		WL4-B	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	3.44	2.40	3.41	2.39	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	2.58	0.64	0.85	0.21	0.85	0.21	0.86	0.21	1.70	0.43	0.00	0.00	1.69	0.42
<i>Fragilaria vaucheriae</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	1.69	0.81	1.72	0.82	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.86	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.83	0.00	0.00
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.85	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia dissipata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.85	0.94	0.00	0.00	0.00	0.00	0.00	0.00	2.54	2.79	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	2.58	0.62	1.70	0.41	4.23	1.01	2.58	0.62	1.70	0.41	0.00	0.00	0.85	0.20
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.85	2.54	0.85	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	1.69	0.17	0.00	0.00	0.00	0.00	0.85	0.08	0.85	0.08
<i>Cryptomonas erosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.86	3.41	3.41	0.00	0.00	0.00	0.00
<i>Cryptomonas ovata</i>	0.86	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	8.60	4.40	7.65	4.73	17.76	5.27	12.90	10.24	12.77	12.58	7.63	4.37	13.53	2.58
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)

TAXON	WL4-C		WL9-A		WL9-B		WL9-C		WL6-A		WL6-B		WL6-C	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	6.23	0.00	0.00	0.00	0.00
<i>Aphanocapsa elachista</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Aphanocapsa</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroococcus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeocapsa</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeothece</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia elegans</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia glauca</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia tenuissima</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ankistrodesmus falcatus</i>		0.87	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ankistrodesmus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	0.39	1.70	0.26	0.00	0.00
<i>Closterium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cosmarium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cosmarium</i> sp. 1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Crucigenia rectangularis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elakatothrix gelatinosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elakatothrix</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Euastrum</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeocystis</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oedogonium</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oocystis</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhabdoderma</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scenedesmus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Schroederia setigera</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Staurastrum</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSTOPHYTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diceras</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73	2.25	0.00	0.00	0.00	0.00
<i>Mallomonas</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46	3.12	0.00	0.00	0.00	0.00
<i>Ochromonas</i> sp.		0.00	0.00	2.58	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSTOPHYTA - DIATOMS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes flexella</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>		0.87	0.06	5.15	0.36	8.33	0.58	9.45	0.66	0.00	0.00	1.70	0.12	5.11
<i>Achnanthes</i> sp.		4.33	0.35	1.72	0.14	1.67	0.13	8.59	0.69	0.00	0.00	0.85	0.07	2.56
<i>Amphipleura pellucida</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amphora ovalis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Anomoeoneis vitrea</i>		0.00	0.00	0.00	0.00	0.83	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.77
<i>Cyclotella comta</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cyclotella</i> sp.		0.00	0.00	0.00	0.00	0.83	0.08	1.72	0.17	0.87	0.09	0.00	0.00	0.00
<i>Cymbella caespitosa</i>		0.87	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.		0.00	0.00	0.00	0.00	1.67	1.00	1.72	1.03	0.00	0.00	0.00	0.85	0.51
<i>Cymbella ventricosa</i>		0.00	0.00	0.86	0.42	0.00	0.00	0.00	0.00	0.00	0.85	0.42	0.85	0.42
<i>Diatoma hiemale</i>		0.87	0.55	3.44	2.20	0.00	0.00	2.58	1.65	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma vulgare</i>		0.00	0.00	1.72	2.83	0.00	0.00	2.58	4.25	0.00	0.00	0.00	0.00	0.00
<i>Epithemia sorex</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Epithemia turgida</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)

TAXON	WL4-C		WL9-A		WL9-B		WL9-C		WL6-A		WL6-B		WL6-C	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	13.32	2.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	1.72	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	1.73	0.43	0.86	0.21	7.49	1.87	6.01	1.50	0.87	0.22	5.11	1.28	4.26	1.07
<i>Fragilaria vaucheriae</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	1.73	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.82	3.41	1.64
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00	1.67	0.83	3.44	1.72	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	2.50	1.22	0.86	0.42	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.32
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.31	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.87	0.43	2.58	1.29	2.50	1.25	1.72	0.86	0.00	0.00	0.00	0.00	1.70	0.85
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.83	1.32	0.00	0.00	0.87	1.37	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.09	0.87	0.10	0.00	0.00	1.70	0.19
<i>Nitzschia dissipata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.67	8.44	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.43
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	2.50	0.60	0.86	0.21	5.19	1.25	0.00	0.00	4.26	1.02
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	3.08
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	17.04
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.53
<i>Synedra ulna</i>	3.46	10.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	2.54	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	0.00	0.00	0.86	0.09	1.67	0.17	1.72	0.17	83.98	8.40	10.23	1.02	2.56	0.26
<i>Cryptomonas erosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149.77	149.77	10.23	10.23	2.56	2.56
<i>Cryptomonas ovata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.12	18.18	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.73	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.52	0.00	0.00	0.00	0.00
TOTAL	15.60	14.11	21.49	8.86	45.81	11.93	42.11	13.42	264.94	188.70	40.89	25.20	35.77	32.25
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	6.23	0.00	0.00	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	WL5-A		WL5-B		WL5-C		WL11-A		WL11-B		WL11-C		WL2-A	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Aphanocapsa elachista</i>		0.00		0.00	106.58	0.21		0.00		0.00		0.00		0.00
<i>Aphanocapsa</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Chroococcus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeocapsa</i> sp.		0.00		0.00		0.00	10.15	0.51	41.95	2.10		0.00		0.00
<i>Gloeothece</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia elegans</i>		0.00		0.00		0.00		0.00		0.00	13.64	0.07		0.00
<i>Merismopedia glauca</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia tenuissima</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHLOROPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus falcatus</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus</i> sp.		1.68		0.25		0.00		0.00		0.00		0.00		0.00
<i>Closterium</i> sp.		0.00		0.00		0.00		0.85	5.07		0.00	0.00		0.00
<i>Cosmarium</i> sp.		0.00		0.00		0.83	2.08		0.00	1.68	4.20	4.26	10.65	0.00
<i>Cosmarium</i> sp. 1		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Crucigenia rectangularis</i>		0.00		0.00		0.00		0.00	6.71	0.27	6.82	0.27		0.00
<i>Elakatothrix gelatinosa</i>		0.00		0.00		0.00		4.23	0.25	3.36	0.20	3.41	0.20	0.00
<i>Elakatothrix</i> sp.		0.00		0.00		0.00		0.00	5.03	1.01	1.70	0.34		0.00
<i>Euastrum</i> sp.		0.00		0.00		0.00		1.69	5.07	5.03	15.10	0.00		0.00
<i>Gloeocystis</i> sp.		0.00		27.49	1.37			0.00	0.00		0.00	0.00		0.00
<i>Oedogonium</i> sp.	/mm	0.00		0.00		0.00		0.00	0.00		0.22	15.51		0.00
<i>Oocystis</i> sp.		0.00		1.72	0.17			5.92	0.59	1.68	0.17	6.82	0.68	0.00
<i>Rhabdoderma</i> sp.		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Scenedesmus</i> sp.		0.00		3.44	0.21	9.99	0.60	15.22	0.91	10.07	0.60	6.82	0.41	0.00
<i>Schroederia setigera</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Staurastrum</i> sp.		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
CHRYSTOPHYTA		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Diceras</i> sp.		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Dinobryon</i> spp.		0.00		0.00		0.83	1.08		0.00		0.00	0.00		0.00
<i>Mallomonas</i> sp.		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Ochromonas</i> sp.		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
CHRYSTOPHYTA - DIATOMS		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Achnanthes flexella</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Achnanthes minutissima</i>		0.84	0.06	1.72	0.12	3.33	0.23	2.54	0.18	0.84	0.06	1.70	0.12	1.70
<i>Achnanthes</i> sp.		0.00		0.00		4.16	0.33	12.68	1.01	5.03	0.40	5.11	0.41	6.82
<i>Amphipleura pellucida</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Amphora ovalis</i>		0.00		0.00		0.00		0.00	0.00		0.85	2.56		0.00
<i>Anomooneis vitrea</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Asterionella formosa</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Cocconeis placentula</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Cyclotella comita</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Cyclotella</i> sp.		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Cymbella caespitosa</i>		0.00		0.86	1.04			0.00	0.00		1.70	2.06	0.85	1.03
<i>Cymbella cistula</i>		0.00		0.00		0.00		0.00	0.00		2.56	16.29		0.00
<i>Cymbella</i> sp.		0.00		0.00		0.00		1.69	1.01	0.84	0.50	4.26	2.56	0.00
<i>Cymbella ventricosa</i>		0.00		0.00		0.00		0.00	0.00	3.36	1.64	0.00		0.00
<i>Diatoma hiemale</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Diatoma tenue v. elongatum</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Diatoma vulgare</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Epithemia sorex</i>		0.00		0.00		0.00		0.00	0.00		0.00	0.00		0.00
<i>Epithemia turgida</i>		0.00		0.00		0.00		0.00	1.68	10.07	0.00	0.00		0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	WL5-A		WL5-B		WL5-C		WL11-A		WL11-B		WL11-C		WL2-A	
	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	1.72	5.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.91	4.26	0.77	3.41	0.61
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	3.36	0.84	6.87	1.72	3.33	0.83	2.54	0.63	11.75	2.94	5.97	1.49	2.56	0.64
<i>Fragilaria vaucheriae</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	2.58	1.29	0.00	0.00	0.00	0.00	0.84	0.42	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.83	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.84	0.42	2.58	1.29	1.67	0.83	3.38	1.69	5.03	2.52	4.26	2.13	2.56	1.28
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.19
<i>Nitzschia dissipata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	1.72	1.89	0.00	0.00	2.54	2.79	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	1.72	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.19	21.88
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	8.52
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.19	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.86	5.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	1.67	4.96	0.85	2.52	0.00	0.00	2.56	7.62	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	13.43	1.34	7.73	0.77	7.49	0.75	39.74	3.97	30.21	3.02	2.56	0.26	0.00	0.00
<i>Cryptomonas erosa</i>	9.23	9.23	9.45	9.45	13.32	13.32	7.61	7.61	4.20	4.20	3.41	3.41	14.49	14.49
<i>Cryptomonas ovata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.41	5.11
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	1.68	3.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	2.52	1.51	7.73	4.64	2.50	1.50	7.61	4.57	0.84	0.50	0.85	0.51	4.26	2.56
TOTAL	33.58	17.01	78.19	34.90	156.53	27.98	119.24	38.38	145.16	50.83	84.37	54.00	133.80	56.98
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	15.51	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON		WL2-B		WL2-C		Airstrip-A		Airstrip-B		Airstrip-C		L6-A		L6-B	
		cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA			0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Aphanocapsa elachista</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Aphanocapsa</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.33	0.05	0.00	0.00	0.00	0.00
<i>Chroococcus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeocapsa</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeothece</i> sp.		0.00	0.00	0.00	0.00	13.53	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia elegans</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia glauca</i>		0.00	0.00	0.00	0.00	0.00	0.00	10.39	0.04	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia tenuissima</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.70	0.11	0.00	0.00	0.00	0.00
CHLOROPHYTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ankistrodesmus falcatus</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ankistrodesmus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Closterium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cosmarium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cosmarium</i> sp. 1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.68	0.00	0.00	0.00	0.00
<i>Crucigenia rectangularis</i>		0.00	0.00	0.00	0.00	3.38	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elakatothrix gelatinosa</i>		0.00	0.00	0.00	0.00	5.07	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elakatothrix</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Euastrum</i> sp.		0.00	0.00	0.00	0.00	0.85	2.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeocystis</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oedogonium</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oocystis</i> sp.		0.00	0.00	0.00	0.00	0.85	0.08	1023.30	102.33	6.71	0.67	0.00	0.00	0.00	0.00
<i>Rhabdoderma</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.36	0.34	0.00	0.00	0.00	0.00
<i>Scenedesmus</i> sp.		0.00	0.00	6.93	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Schroederia setigera</i>		0.00	0.00	0.00	0.00	6.76	1.35	0.00	0.00	1.68	0.34	0.00	0.00	0.00	0.00
<i>Staurastrum</i> sp.		0.00	0.00	0.00	0.00	0.85	2.54	0.00	0.00	0.84	2.52	0.00	0.00	0.00	0.00
CHRYSTOPHYTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diceras</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.		0.00	0.00	0.00	0.00	0.85	1.10	0.00	0.00	45.31	58.90	1.73	2.25	3.38	4.40
<i>Mallomonas</i> sp.		0.00	0.00	0.00	0.00	2.54	2.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ochromonas</i> sp.		0.00	0.00	0.00	0.00	19.45	0.97	5.19	0.26	15.94	0.80	0.00	0.00	0.00	0.00
CHRYSTOPHYTA - DIATOMS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes flexella</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>		1.70	0.12	6.93	0.48	0.00	0.00	5.19	0.36	0.00	0.00	0.87	0.06	0.00	0.00
<i>Achnanthes</i> sp.		10.23	0.82	9.52	0.76	0.00	0.00	0.00	0.00	0.84	0.07	0.00	0.00	0.00	0.00
<i>Amphipleura pellucida</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amphora ovalis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Anomooneis vitrea</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>		0.00	0.00	0.87	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cyclotella comta</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cyclotella</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>		1.70	2.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.		0.00	0.00	0.00	0.00	0.85	0.51	0.00	0.00	0.84	0.50	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		5.97	1.07	6.93	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma vulgare</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Epithemia sorex</i>		0.85	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Epithemia turgida</i>		2.56	15.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	WL2-B		WL2-C		Airstrip-A		Airstrip-B		Airstrip-C		L6-A		L6-B	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	3.41	0.61	3.46	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.15
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46	0.66	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	1.70	0.43	0.87	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria vaucheriae</i>	4.26	1.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	1.73	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	1.70	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	2.60	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula pupula</i>	0.00	0.00	0.87	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	3.41	1.70	4.33	2.16	0.00	0.00	0.00	0.00	1.68	0.84	0.87	0.43	0.85	0.42
<i>Neidium</i> sp.	0.00	0.00	0.87	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	1.70	0.19	0.87	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia dissipata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	98.00	23.52	101.29	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Pinnularia</i> sp.	0.00	0.00	1.73	6.25	0.00	0.00	0.00	0.00	3.36	12.12	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhopalodia gibba</i>	0.85	8.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stauroneis</i> sp.	0.00	0.00	0.87	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	3.41	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.63	9.26	49.04	4.90
<i>Cryptomonas erosa</i>	16.19	16.19	12.99	12.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cryptomonas ovata</i>	6.82	10.23	4.33	6.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.69
<i>Peridinium</i> sp.	8.52	5.11	0.87	0.52	0.00	0.00	0.00	0.00	0.84	0.50	2.60	1.56	5.92	3.55
TOTAL	172.98	94.31	168.86	64.39	54.98	13.16	1044.07	102.99	160.27	79.44	102.16	14.22	60.89	15.11
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)

TAXON	L6-C		L3-A		L3-B		L3-C		L1-A		L1-B		L1-C	
	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L	cells x 10 ³ /L	u ³ x 10 ⁶ /L
CYANOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.80	15.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Aphanocapsa elachista</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Aphanocapsa</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroococcus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeocapsa</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeothece</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia elegans</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia glauca</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Merismopedia tenuissima</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHLOROPHYTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ankistrodesmus falcatus</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ankistrodesmus</i> sp.		0.00	0.00	0.00	0.00	3.38	0.51	2.50	0.37	0.00	0.00	0.00	0.00	0.00
<i>Closterium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cosmarium</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cosmarium</i> sp. 1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Crucigenia rectangularis</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elakatothrix gelatinosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elakatothrix</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Euastrum</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gloeocystis</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oedogonium</i> sp.	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oocystis</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhabdoderma</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scenedesmus</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Schroederia setigera</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Staurastrum</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSTOPHYTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diceras</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dinobryon</i> spp.		0.00	0.00	0.00	0.00	0.00	0.00	2.50	3.25	0.00	0.00	0.00	0.00	0.00
<i>Mallomonas</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Ochromonas</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHRYSTOPHYTA - DIATOMS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes flexella</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Achnanthes minutissima</i>		2.58	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	0.12
<i>Achnanthes</i> sp.		0.00	0.00	0.85	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amphipleura pellucida</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amphora ovalis</i>		0.86	2.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Anomooneis vitrea</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Asterionella formosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	3.33	2.00	0.00	0.00	0.00	1.67	1.00
<i>Cocconeis placentula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cyclotella comta</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cyclotella</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella caespitosa</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.02	0.00	0.00	0.00
<i>Cymbella cystula</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>		0.00	0.00	0.00	0.00	0.85	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>		0.86	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma vulgare</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Epithemia sorex</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Epithemia turgida</i>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	L6-C		L3-A		L3-B		L3-C		L1-A		L1-B		L1-C	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	0.00	0.00	7.67	1.92	7.61	1.90	8.33	2.08	0.84	0.21	1.65	0.41	0.83	0.21
<i>Fragilaria vaucheriae</i>	1.72	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.86	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.42	0.84	0.42	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.85	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.40	0.83	0.41
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	1.25
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.85	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia dissipata</i>	1.72	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.86	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.92	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	4.93	0.83	2.48
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	12.02	1.20	4.26	0.43	0.85	0.08	1.67	0.17	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cryptomonas erosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cryptomonas ovata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	5.15	3.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	26.63	10.06	13.63	2.51	13.54	4.51	19.16	8.29	3.36	2.57	4.13	5.74	8.33	5.47
TOTAL mm	/mm	0.80	15.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	L2-A		L2-B		L2-C		L5-A		L5-B		L5-C		L4-A	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Aphanocapsa elachista</i>		0.00		0.00		0.00		0.00		0.00		0.00	1223.85	2.45
<i>Aphanocapsa</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Chroococcus</i> sp.		5.07	0.51	38.90	3.89	9.99	1.00	0.00	0.00	0.00	0.00	0.00	63.85	6.39
<i>Gloeocapsa</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Gloeothece</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia elegans</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia glauca</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Merismopedia tenuissima</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHLOROPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus falcatus</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ankistrodesmus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Closterium</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cosmarium</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Cosmarium</i> sp. 1		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Crucigenia rectangularis</i>		0.00		0.00		1.67	0.07	0.00	0.00	0.00	0.00	0.00	42.57	1.70
<i>Elakatothrix gelatinosa</i>		1.69	0.10	3.38	0.20	3.33	0.20	1.68	0.10	0.00	0.00	5.03	0.30	10.64
<i>Elakatothrix</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Euastrum</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00	2.66	7.98
<i>Gloeocystis</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Oedogonium</i> sp.	/mm	0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Oocystis</i> sp.		3.38	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.19	6.12
<i>Rhabdoderma</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Scenedesmus</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Schroederia setigera</i>		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Staurastrum</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
CHRYSTOPHYTA		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Diceras</i> sp.		0.00		0.00		0.83	0.25	0.00	0.00	0.00	0.00	0.00	7.98	2.39
<i>Dinobryon</i> spp.		25.37	32.98	18.60	24.18	23.32	30.31	0.00	0.00	0.00	0.00	0.00	34.59	44.96
<i>Mallomonas</i> sp.		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Ochromonas</i> sp.		1.69	0.08	0.85	0.04	0.83	0.04	0.00	0.00	0.00	0.00	0.00	5.32	0.27
CHRYSTOPHYTA - DIATOMS		0.00		0.00		0.00		0.00		0.00		0.00		0.00
<i>Achnanthes flexella</i>		0.00		0.00		0.00		0.00		0.87	0.58	3.36	2.22	0.00
<i>Achnanthes minutissima</i>		13.53	0.95	1.69	0.12	1.67	0.12	0.84	0.06	10.47	0.73	16.78	1.17	0.00
<i>Achnanthes</i> sp.		0.00		0.00		0.00		0.00		6.98	0.56	4.20	0.34	0.00
<i>Amphipleura pellucida</i>		0.00		0.00		0.00		0.00		0.87	1.12	0.00	0.00	0.00
<i>Amphora ovalis</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.84	2.52	0.00
<i>Anomooneis vitrea</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.84	0.35	0.00
<i>Asterionella formosa</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Cocconeis placentula</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.84	0.76	0.00
<i>Cyclotella comta</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	10.64	11.28
<i>Cyclotella</i> sp.		5.92	0.59	3.38	0.34	5.00	0.50	0.84	0.08	1.75	0.17	1.68	0.17	0.00
<i>Cymbella caespitosa</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Cymbella cistula</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Cymbella</i> sp.		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Cymbella ventricosa</i>		0.00		0.85	0.41	0.83	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diatoma hiemale</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		0.00		0.00		0.00		0.84	0.15	0.87	0.16	0.00	0.00	0.00
<i>Diatoma vulgare</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Epithemia sorex</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00
<i>Epithemia turgida</i>		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	L2-A		L2-B		L2-C		L5-A		L5-B		L5-C		L4-A	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.30	0.00	0.00
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	2.41	1.68	1.16	0.00	0.00
<i>Fragilaria</i> sp.	0.00	0.00	2.54	0.63	1.67	0.42	5.87	1.47	12.22	3.05	18.46	4.62	15.96	3.99
<i>Fragilaria vaucheriae</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.57	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	1.69	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.20	2.01	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.36	2.18	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.66	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	2.47	0.00	0.00
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.32	3.36	5.07	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.44	3.36	1.68	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia dissipata</i>	0.85	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.92	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.36	0.81	0.00	0.00
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.66	5.32
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.84	2.50	0.87	2.60	0.84	2.50	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	2.52	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.79	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	28.75	2.88	27.90	2.79	24.15	2.41	1.68	0.17	0.00	0.00	0.00	0.00	0.00	0.00
<i>Cryptomonas erosa</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.00	0.00
<i>Cryptomonas ovata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	87.94	39.50	98.09	32.60	73.29	35.73	13.43	5.45	47.10	18.64	78.90	31.54	1481.91	93.49
TOTAL mm	/mm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(continued)

**Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (continued)**

TAXON	L4-B		L4-C	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
CYANOPHYTA		0.00		0.00
<i>Anabaena</i> sp.	/mm	0.00	0.00	0.00
<i>Aphanocapsa elachista</i>		1543.11	3.09	1246.65
<i>Aphanocapsa</i> sp.		0.00	0.00	0.00
<i>Chroococcus</i> sp.		117.06	11.71	57.14
<i>Gloeocapsa</i> sp.		0.00	0.00	0.00
<i>Gloeothece</i> sp.		0.00	0.00	0.00
<i>Merismopedia elegans</i>		0.00	0.00	0.00
<i>Merismopedia glauca</i>		0.00	0.00	0.00
<i>Merismopedia tenuissima</i>		0.00	0.00	0.00
CHLOROPHYTA		0.00	0.00	0.00
<i>Ankistrodesmus falcatus</i>		0.00	0.00	0.00
<i>Ankistrodesmus</i> sp.		0.00	0.00	0.00
<i>Closterium</i> sp.		0.00	0.00	0.00
<i>Cosmarium</i> sp.		0.00	0.00	0.00
<i>Cosmarium</i> sp. 1		0.00	0.00	0.00
<i>Crucigenia rectangularis</i>		47.89	1.92	0.00
<i>Elakatothrix gelatinosa</i>		0.00	0.00	0.00
<i>Elakatothrix</i> sp.		0.00	0.00	0.00
<i>Euastrum</i> sp.		0.00	0.00	5.19
<i>Gloeocystis</i> sp.		0.00	0.00	0.00
<i>Oedogonium</i> sp.	/mm	0.00	0.00	0.00
<i>Oocystis</i> sp.		146.33	14.63	18.18
<i>Rhabdoderma</i> sp.		0.00	0.00	0.00
<i>Scenedesmus</i> sp.		0.00	0.00	0.00
<i>Schroederia setigera</i>		0.00	0.00	0.00
<i>Staurastrum</i> sp.		0.00	0.00	0.00
CHRYSOPHYTA		0.00	0.00	0.00
<i>Diceras</i> sp.		5.32	1.60	0.00
<i>Dinobryon</i> spp.		45.23	58.80	31.17
<i>Mallomonas</i> sp.		0.00	0.00	0.00
<i>Ochromonas</i> sp.		0.00	0.00	0.00
CHRYSOPHYTA - DIATOMS		0.00	0.00	0.00
<i>Achnanthes flexella</i>		0.00	0.00	0.00
<i>Achnanthes minutissima</i>		0.00	0.00	2.60
<i>Achnanthes</i> sp.		0.00	0.00	0.00
<i>Amphipleura pellucida</i>		0.00	0.00	0.00
<i>Amphora ovalis</i>		0.00	0.00	0.00
<i>Anomooneis vitrea</i>		0.00	0.00	0.00
<i>Asterionella formosa</i>		0.00	0.00	0.00
<i>Cocconeis placentula</i>		0.00	0.00	0.00
<i>Cyclotella comta</i>		10.64	11.28	2.60
<i>Cyclotella</i> sp.		0.00	0.00	0.00
<i>Cymbella caespitosa</i>		0.00	0.00	0.00
<i>Cymbella cistula</i>		0.00	0.00	0.00
<i>Cymbella</i> sp.		0.00	0.00	0.00
<i>Cymbella ventricosa</i>		0.00	0.00	0.00
<i>Diatoma hiemale</i>		0.00	0.00	0.00
<i>Diatoma tenue</i> v. <i>elongatum</i>		0.00	0.00	0.00
<i>Diatoma vulgare</i>		0.00	0.00	0.00
<i>Epithemia sorex</i>		0.00	0.00	0.00
<i>Epithemia turgida</i>		0.00	0.00	0.00

(continued)

Appendix 3.2-7
Schaft Creek Project Wetland Phytoplankton Data, 2007 (completed)

TAXON	L4-B		L4-C	
	cells x 10 ³ / L	u ³ x 10 ⁶ / L	cells x 10 ³ / L	u ³ x 10 ⁶ / L
<i>Eunotia</i> sp.	0.00	0.00	0.00	0.00
<i>Eunotia</i> sp.1	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>construens</i>	0.00	0.00	0.00	0.00
<i>Fragilaria construens</i> v. <i>venter</i>	0.00	0.00	0.00	0.00
<i>Fragilaria crotonensis</i>	0.00	0.00	0.00	0.00
<i>Fragilaria</i> sp.	5.32	1.33	10.39	2.60
<i>Fragilaria vaucheriae</i>	0.00	0.00	0.00	0.00
<i>Gomphonema intricatum</i>	0.00	0.00	0.00	0.00
<i>Gomphonema olivaceum</i>	0.00	0.00	0.00	0.00
<i>Gomphonema</i> sp.	0.00	0.00	0.00	0.00
<i>Hannaea arcus</i>	0.00	0.00	0.00	0.00
<i>Meridion circulare</i>	0.00	0.00	0.00	0.00
<i>Navicula pupula</i>	0.00	0.00	0.00	0.00
<i>Navicula radiosa</i>	0.00	0.00	0.00	0.00
<i>Navicula</i> sp.	0.00	0.00	0.00	0.00
<i>Neidium</i> sp.	0.00	0.00	0.00	0.00
<i>Nitzschia acicularis</i>	0.00	0.00	0.00	0.00
<i>Nitzschia dissipata</i>	0.00	0.00	0.00	0.00
<i>Nitzschia palea</i>	0.00	0.00	0.00	0.00
<i>Nitzschia sigma</i>	0.00	0.00	0.00	0.00
<i>Nitzschia</i> sp.	0.00	0.00	0.00	0.00
<i>Pinnularia</i> sp.	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	5.32	10.64	0.00	0.00
<i>Rhopalodia gibba</i>	0.00	0.00	0.00	0.00
<i>Stauroneis</i> sp.	0.00	0.00	0.00	0.00
<i>Rhizosolenia</i> sp.	0.00	0.00	0.00	0.00
<i>Synedra delicatissima</i>	0.00	0.00	0.00	0.00
<i>Synedra</i> sp.	0.00	0.00	0.00	0.00
<i>Synedra ulna</i>	0.00	0.00	0.00	0.00
<i>Tabellaria fenestrata</i>	0.00	0.00	0.00	0.00
<i>Tabellaria flocculosa</i>	0.00	0.00	0.00	0.00
CRYPTOPHYTA	0.00	0.00	0.00	0.00
<i>Chroomonas acuta</i>	0.00	0.00	0.00	0.00
<i>Cryptomonas erosa</i>	0.00	0.00	0.00	0.00
<i>Cryptomonas ovata</i>	0.00	0.00	0.00	0.00
PYRRHOPHYTA	0.00	0.00	0.00	0.00
<i>Gymnodinium</i> sp.	0.00	0.00	0.00	0.00
<i>Peridinium</i> sp.	2.66	1.60	0.00	0.00
TOTAL	1928.88	116.60	1373.92	71.65
TOTAL mm /mm	0.00	0.00	0.00	0.00

**APPENDIX 3.2-8
SCHAFT CREEK PROJECT WETLAND PHYTOPLANKTON
BIOMASS DATA, 2007**

Appendix 3.2-8

Schaft Creek Project Wetland Phytoplankton Biomass Data, 2007

Site	Chlorophyll a (µg)	Volume Filtered (L)	Chlorophyll a (µg/L)
WL7 A	0.102	0.250	0.408
WL7 B	0.0987	0.2500	0.3948
WL7 C	0.219	0.250	0.876
WL10 A	0.0562	0.2000	0.281
WL10 B	0.0192	0.2500	0.0768
WL10 C	0.0192	0.2000	0.096
WL3 A	0.0202	0.2500	0.0808
WL3 B	0.00739	0.25000	0.02956
WL3 C	0.00800	0.25000	0.032
WL1 A	0.139	0.500	0.278
WL1 B	0.0399	0.2500	0.1596
WL1 C	0.0148	0.2500	0.0592
WL4 A	0.00488	0.45000	0.010844444
WL4 B	0.00428	0.25000	0.01712
WL4 C	0.00812	0.35000	0.0232
WL9 A	0.00715	0.25000	0.0286
WL9 B	0.00924	0.25000	0.03696
WL9 C	0.0302	0.2500	0.1208
WL6 A	1.13	0.25	4.52
WL6 B	0.636	0.200	3.18
WL6 C	0.280	0.200	1.4
WL5 A	0.0614	0.2500	0.2456
WL5 B	0.151	0.350	0.431428571
WL5 C	0.0984	0.2500	0.3936
WL 11 A	0.304	0.400	0.76
WL 11 B	0.0851	0.2500	0.3404
WL 11 C	0.0888	0.2500	0.3552
WL2 A	0.108	0.250	0.432
WL2 B	0.150	0.250	0.6
WL2 C	0.0621	0.2500	0.2484
AIRSTRIP A	0.243	0.250	0.972
AIRSTRIP B	0.102	0.150	0.68
AIRSTRIP C	0.122	0.150	0.813333333
L6 A	0.132	0.500	0.264
L6 B	0.166	0.500	0.332
L6 C	0.0908	0.5000	0.1816
L3 A	0.186	0.500	0.372
L3 B	0.0773	0.2500	0.3092
L3 C	0.0723	0.2500	0.2892
L1 A	0.0129	0.2500	0.0516
L1 B	0.00933	0.25000	0.03732
L1 C	0.00584	0.25000	0.02336
L2 A	0.239	0.500	0.478
L2 B	0.230	0.500	0.46
L2 C	0.227	0.500	0.454
L5 A	0.225	0.250	0.9
L5 B	0.255	0.250	1.02
L5 C	0.192	0.250	0.768
L4 A	0.322	0.500	0.644
L4 B	0.281	0.500	0.562
L4 C	0.171	0.250	0.684

**APPENDIX 3.2-9
SCHAFT CREEK PROJECT WETLAND AND LAKE BENTHIC
INVERTEBRATE DATA, 2007**



Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007

Site			1	L1	3	1	L2	3	1	L3	3
Replicate				2			2			2	
TAXON	STAGE	No. of individuals									
NEMATODA											
Nematoda indet.	A	2672									
ANNELIDA											
Oligochaeta											
Oligochaeta indet.	J	14	14								
Enchytraeidae											
Enchytraeidae indet.	J	96									
Enchytraeidae indet.	A	555									
Naididae											
Naididae indet. Group 4											
<i>Slavina appendiculata</i>	A	8									
Naididae indet. Group 5											
<i>Nais communis</i>	J	8									
<i>Nais communis</i>	A	152									
<i>Nais simplex</i>	A	392									
Lumbriculidae											
<i>Lumbriculus</i> spp.	A	1844			4						
Tubificidae											
Tubificidae indet. Group 2	J	467	28		80						
Tubificidae indet. Group 2	A	3849	24	7	268	6		17			
<i>Ilyodrilus templetoni</i>	A	108									
<i>Rhyacodrilus coccineus</i>	A	59									
<i>Tasserkidrilus</i> nr. <i>americanus</i>	A	26	2								
Tubificidae indet. Group 5	J	168									
<i>Limnodrilus hoffmeisteri</i>	A	1125	50	4							
<i>Limnodrilus udekemianus</i>	J	4									
<i>Limnodrilus udekemianus</i>	A	1220									
<i>Limnodrilus</i> spp.	J	1364	58	3	84						
<i>Limnodrilus</i> spp.	A	2676	100	6	84	1					
Hirudinea											
Hirudinea indet.	J	960									
Hirudinea indet.	A	50									
Glossophoniidae											
Glossophoniidae indet.	J	192									
<i>Helobdella stagnalis</i>	A	2156									
MOLLUSCA											
Gastropoda											
Gastropoda indet.	J	305									
Gastropoda indet.	A	136								1	
Planorbidae											
<i>Gyraulus circumstriatus</i>	A	58									
<i>Gyraulus</i> spp.	A	96									
Valvatidae											
Valvatidae indet.	J										
Valvatidae indet.	A	432									
<i>Valvata sincera sincera</i>	J	112									
<i>Valvata sincera sincera</i>	A	748				1				2	
Bivalvia											
Bivalvia indet.	A	327				1					
Sphaeriidae											
Sphaeriidae indet.	J	1417					1				
Sphaeriidae indet.	A	5694	4								
<i>Pisidium casertanum</i>	J	493			4			8			
<i>Pisidium casertanum</i>	A	5768	56	35	28	67		70		3	
<i>Pisidium</i> spp.	J	4102	16	7	2	14		14			
<i>Pisidium</i> spp.	A	2124		9	4	25					
ARTHROPODA											
ARACHNIDA											
Hydracarina											
Hydracarina indet.	L	258									
Arrenuridae											
<i>Arrenurus</i> sp.	A	176									
Hygrobatidae											
Hygrobatidae indet.	A	63									
Libertiidae											
<i>Libertia</i> sp.	A	8					1				
Mideopsidae											
Mideopsidae indet.	A	96									
Oxidae											
<i>Frontipoda</i> sp.	A	48									
Sperchontidae											
<i>Sperchan</i> sp.	A	46									
CRUSTACEA											
Copepoda											
Calanoida											
Calanoida indet.	cpp	569									
Cyclopoida											
Cyclopoida indet.	cpp	3738									
Ostracoda											
Ostracoda indet.	J	1276									
Candonidae											
Candonidae indet.	A	1123	54	6		1					
Cyclocypridae											
<i>Cyclocypris</i> sp.	A	720									

(continued)

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site	L1				L2			L3										
Replicate	1	2	3	1	2	3	1	2	3									
TAXON	No. of individuals																	
STAGE																		
Amphipoda																		
Amphipoda indet.	J	12831																
Amphipoda indet.	A	4																
Crangonyctidae																		
<i>Hyalella azteca</i>	A	3315																
Gammaridae																		
Gammaridae indet.	A	16																
<i>Gammarus</i> sp.	A	67																
Cladocera																		
Cladocera indet.	J	192																
Bosminidae																		
Bosminidae indet.	J	128																
Chydoridae																		
Chydoridae indet.	J	10049																
Chydoridae indet.	A	146																
<i>Eurycercus</i> sp.	A	496																
Daphniidae																		
Daphniidae indet.	J	1368																
<i>Daphnia</i> sp.	A	101																
INSECTA																		
Ephemeroptera																		
Ephemeroptera indet.	N	73	1															
Ameletidae																		
Ameletidae indet.	N	72																
<i>Ameletus</i> sp.	N	288																
Caenidae																		
Caenidae indet.	N	480																
Odonata																		
Odonata indet.	L	48																
Anisoptera (sub-family)																		
Anisoptera indet.	L	24																
Cordullidae indet.	L	288																
Zygoptera (sub-family)																		
Zygoptera indet.	L	192																
Trichoptera																		
Trichoptera indet.	N	5																
Hydroptilidae																		
<i>Agraylea</i> sp.	N	8																
Limnephilidae																		
<i>Ecclisomyia</i> sp.	N	25																
Phryganeidae																		
<i>Banksiola</i> sp.	N	192																
Coleoptera																		
Dytiscidae																		
<i>Neoclypeodytes/Liodessus</i> sp.	A	10																
<i>Rhantus</i> sp.	A	96																
Diptera																		
Ceratopogonidae																		
Ceratopogonidae indet.	L	524																
<i>Bezzia</i> sp.	L	1216																
<i>Culicoides</i> sp.	L	1629																
Chironomidae																		
Chironomidae indet.	L	41210	2		2		1		3		2		1					
Chironomidae indet.	P	3855																
Chironomidae indet.	A	128																
Chironominae																		
<i>Chironomus</i> sp.	L	745	12		1		1											
<i>Cryptochironomus</i> sp.	L	120																
<i>Microspectra</i> sp.	L	2236			51		66											
<i>Microtendipes</i> sp.	L	1128																
<i>Phaenopsectra</i> sp.	L	2618			2		18						2					
<i>Polypedilum</i> sp.	L	1288																
<i>Tanytarsus</i> sp.	L	52086			3													
Diamesinae																		
Diamesinae indet.	L	2																
<i>Monodiamesa</i> sp.	L	8																
<i>Protanypus</i> sp.	L	24	1		1		2											
<i>Pseudodiamesa</i> sp.	L	283																
Orthoclaidiinae																		
<i>Corynoneura</i> sp.	L	8																
<i>Eukiefferiella</i> sp.	L	62																
<i>Orthocladus</i> sp.	L	4001																
Tanypodinae																		
Tanypodinae indet.	L	963																
<i>Procladius</i> sp.	L	12707	4		2		16		6		8		17		2		23	
Dolichopodidae																		
Dolichopodidae indet.	L	48																
Tabanidae																		
Tabanidae indet.	L	48																
BRYOZOA																		
Bryozoa indet.	A	712																
Total Number of Organisms	423544		422	86	578	178	5	212	26	10	29							
Total Number of Taxa	3724		6	8	6	10	3	7	3	2	2							
MEMO																		
Araneae indet. (spider)	A	48																
Epiphytes on <i>Pisidium casertanum</i>		6																
Hymenoptera indet.	L	96																
Invertebrate eggs	mass	528	4															
<i>Lumbriculus</i> spp. posterior fragment		24																

Note: Taxonomic name change: Please note for 2006 data (*Pisidium ferrugineum*) is equivalent to 2007 *Pisidium casertanum*.

(continued)

Better specimens and collaboration between taxonomists has resolved our internal query from 2006.

Taxonomic name change: Please note for 2006 data (*Valvata lewisii*) is equivalent to 2007 *Valvata sincera*.

New reference material and collaborative effort has also clarified this identification on your behalf.

A = adult, J = juvenile, L = larvae, N = nymph, and cpp = copepodite

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			1	L4	3	1	L5	3	1	L6	3
Replicate				2			2			2	
TAXON	STAGE	No. of individuals									
NEMATODA											
Nematoda indet.	A	1336					5			1	18
ANNELIDA											
Oligochaeta											
Oligochaeta indet.	J										
Enchytraeidae											
Enchytraeidae indet.	J	48									
Enchytraeidae indet.	A	278									
Naididae											
Naididae indet. Group 4											
<i>Slavina appendiculata</i>	A	4									
Naididae indet. Group 5											
<i>Nais communis</i>	J	4									
<i>Nais communis</i>	A	76									
<i>Nais simplex</i>	A	196									
Lumbriculidae											
<i>Lumbriculus</i> spp.	A	920				8	10	10			
Tubificidae											
Tubificidae indet. Group 2	J	179					5				
Tubificidae indet. Group 2	A	1763				3		10			96
<i>Ilyodrilus templetoni</i>	A	54									
<i>Rhyacodrilus coccineus</i>	A	29									
<i>Tasserkidrilus</i> nr. <i>americanus</i>	A	12									12
Tubificidae indet. Group 5	J	84									
<i>Limnodrilus hoffmeisteri</i>	A	536									
<i>Limnodrilus udekemianus</i>	J	2									
<i>Limnodrilus udekemianus</i>	A	610									
<i>Limnodrilus</i> spp.	J	610									
<i>Limnodrilus</i> spp.	A	1242					10				
Hirudinea											
Hirudinea indet.	J	480									
Hirudinea indet.	A	25									
Glossophoniidae											
Glossophoniidae indet.	J	96									
<i>Helobdella stagnalis</i>	A	1078									
MOLLUSCA											
Gastropoda											
Gastropoda indet.	J	153					10				
Gastropoda indet.	A	67					5				
Planorbidae											
<i>Gyraulus circumstriatus</i>	A	29									
<i>Gyraulus</i> spp.	A	48									
Valvatidae											
Valvatidae indet.	J										
Valvatidae indet.	A	216									
<i>Valvata sincera sincera</i>	J	56				4	14	4			
<i>Valvata sincera sincera</i>	A	372				12	29	25			
Bivalvia											
Bivalvia indet.	A	163									
Sphaeriidae											
Sphaeriidae indet.	J	708	1							2	
Sphaeriidae indet.	A	2845						1		16	
<i>Pisidium casertanum</i>	J	240					5	6			
<i>Pisidium casertanum</i>	A	2753			3	26	115	39	18		
<i>Pisidium</i> spp.	J	2024			2	5	34	20	14		6
<i>Pisidium</i> spp.	A	1043			1	1	48	13	2		45
ARTHROPODA											
ARACHNIDA											
Hydracarina											
Hydracarina indet.	L	129				1					
Arrenuridae											
<i>Arrenurus</i> sp.	A	88									
Hygrobatidae											
Hygrobatidae indet.	A	32									
Libertiidae											
<i>Libertia</i> sp.	A	4									
Mideopsidae											
Mideopsidae indet.	A	48									
Oxidae											
<i>Frontipoda</i> sp.	A	24									
Sperchontidae											
<i>Sperchon</i> sp.	A	23				1					
CRUSTACEA											
Copepoda											
Calanoida											
Calanoida indet.	cpp	285									
Cyclopoida											
Cyclopoida indet.	cpp	1869				2	14				
Ostracoda											
Ostracoda indet.	J	638					5	4			
Candonidae											
Candonidae indet.	A	531						60			
Cyclocypridae											
<i>Cyclocypris</i> sp.	A	360									

(continued)

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			1	L4	3	1	L5	3	1	L6	3
Replicate		No. of individuals		2			2			2	
TAXON	STAGE										
Amphipoda											
Amphipoda indet.	J	6414					38	1	2	2	
Amphipoda indet.	A	2				2					
Crangonyctidae											
<i>Hyalella azteca</i>	A	1658					10				
Gammaridae											
Gammaridae indet.	A	7			2				1		6
<i>Gammarus</i> sp.	A	34						4		1	
Cladocera											
Cladocera indet.	J	96									
Bosminidae											
Bosminidae indet.	J	64									
Chydoridae											
Chydoridae indet.	J	5024									
Chydoridae indet.	A	72	2								
<i>Eurycercus</i> sp.	A	248									
Daphniidae											
Daphniidae indet.	J	684									
<i>Daphnia</i> sp.	A	48	5								
INSECTA											
Ephemeroptera											
Ephemeroptera indet.	N	36									
Ameletidae											
Ameletidae indet.	N	36									
<i>Ameletus</i> sp.	N	144									
Caenidae											
Caenidae indet.	N	240									
Odonata											
Odonata indet.	L	24									
Anisoptera (sub-family)											
Anisoptera indet.	L	12									
Cordullidae indet.	L	144									
Zygoptera (sub-family)											
Zygoptera indet.	L	96									
Trichoptera											
Trichoptera indet.	N	3									
Hydroptilidae											
<i>Agraylea</i> sp.	N	4									
Limnephilidae											
<i>Ecclisomyia</i> sp.	N	12					5	1			
Phryganeidae											
<i>Banksiola</i> sp.	N	96									
Coleoptera											
Dytiscidae											
<i>Neoclypeodytes/Liodessus</i> sp.	A	5					5				
<i>Rhantus</i> sp.	A	48					5	1			
Diptera											
Ceratopogonidae											
Ceratopogonidae indet.	L	262									
<i>Bezzia</i> sp.	L	608									
<i>Culicoides</i> sp.	L	814									
Chironomidae											
Chironomidae indet.	L	20600					14	4	7	17	57
Chironomidae indet.	P	1928				1	10		3	1	90
Chironomidae indet.	A	64									
Chironominae											
<i>Chironomus</i> sp.	L	366							2		
<i>Cryptochironomus</i> sp.	L	60									
<i>Micropsectra</i> sp.	L	1059				22	48	9			135
<i>Microtendipes</i> sp.	L	564									
<i>Phaenopsectra</i> sp.	L	1298				31	14	61	68	18	219
<i>Polypedilum</i> sp.	L	644									
<i>Tanytarsus</i> sp.	L	26041				5	34	3			276
Diamesinae											
Diamesinae indet.	L	1							1		
<i>Monodiamesa</i> sp.	L	4				4					
<i>Protanypus</i> sp.	L	10							10		
<i>Pseudodiamesa</i> sp.	L	141									
Orthoclaadiinae											
<i>Corynoneura</i> sp.	L	4									
<i>Eukiefferiella</i> sp.	L	28									
<i>Orthocladus</i> sp.	L	2001									
Tanypodinae											
Tanypodinae indet.	L	482									
<i>Procladius</i> sp.	L	6314				51	38	80	7	13	
Dolichopodidae											
Dolichopodidae indet.	L	24									
Tabanidae											
Tabanidae indet.	L	24									
BRYOZOA											
Bryozoa indet.	A	356									
Total Number of Organisms		204390	6607	0	6611	6781	528	6962	6740	6678	960
Total Number of Taxa		1836	3	0	2	12	16	12	6	5	7
MEMO											
Araneae indet. (spider)	A	24									
Epiphytes on <i>Pisidium casertanum</i>		3									
Hymenoptera indet.	L	48									
Invertebrate eggs	mass	262									
<i>Lumbriculus</i> spp. posterior fragment		12									

Note: Taxonomic name change: Please note for 2006 data (*Pisidium ferrugineum*) is equivalent to 2007 *Pisidium casertanum*.

(continued)

Better specimens and collaboration between taxonomists has resolved our internal query from 2006.

Taxonomic name change: Please note for 2006 data (*Valvata lewisii*) is equivalent to 2007 *Valvata sincera sincera*.

New reference material and collaborative effort has also clarified this identification on your behalf.

A = adult, J = juvenile, L = larvae, N = nymph, and cpp = copepodite

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			1	WL1	3	1	WL2	3	1	WL3	3
Replicate		No. of individuals		2			2			2	
TAXON	STAGE										
NEMATODA											
Nematoda indet.	A	656					72	18	2		
ANNELIDA											
Oligochaeta											
Oligochaeta indet.	J										
Enchytraeidae											
Enchytraeidae indet.	J	24									
Enchytraeidae indet.	A	137			3						
Naididae											
Naididae indet. Group 4											
<i>Slavina appendiculata</i>	A			4							
Naididae indet. Group 5											
<i>Nais communis</i>	J			4							
<i>Nais communis</i>	A	36		4							
<i>Nais simplex</i>	A	96		4							
Lumbriculidae											
<i>Lumbriculus</i> spp.	A	431	10	16	5						3
Tubificidae											
Tubificidae indet. Group 2	J	87					12		42		
Tubificidae indet. Group 2	A	805	2	28	14		12		48		3
<i>Ilyodrilus templetoni</i>	A	27									27
<i>Rhyacodrilus coccineus</i>	A	15									
<i>Tasserkidrilus</i> nr. <i>americanus</i>	A										
Tubificidae indet. Group 5	J	42					36	6			
<i>Limnodrilus hoffmeisteri</i>	A	267			2					3	
<i>Limnodrilus udekemianus</i>	J	1								1	
<i>Limnodrilus udekemianus</i>	A	305								2	3
<i>Limnodrilus</i> spp.	J	304			2		12	12			
<i>Limnodrilus</i> spp.	A	608	1	12	5		108	96		3	12
Hirudinea											
Hirudinea indet.	J	240									
Hirudinea indet.	A	12	1								
Glossophoniidae											
Glossophoniidae indet.	J	48									
<i>Helobdella stagnalis</i>	A	534	10								
MOLLUSCA											
Gastropoda											
Gastropoda indet.	J	54	9	8	18						
Gastropoda indet.	A	24	3	4	8						
Planorbidae											
<i>Gyraulus circumstriatus</i>	A			8	21						
<i>Gyraulus</i> spp.	A	24									
Valvatidae											
Valvatidae indet.	J										
Valvatidae indet.	A	108									
<i>Valvata sincera sincera</i>	J		5	24	5						
<i>Valvata sincera sincera</i>	A	21	54	128	83				3	6	
Bivalvia											
Bivalvia indet.	A	81	1						5		12
Sphaeriidae											
Sphaeriidae indet.	J	352			2		12				
Sphaeriidae indet.	A	1414									
<i>Pisidium casertanum</i>	J	103	4	12	8						3
<i>Pisidium casertanum</i>	A	1178	39	88	72				47	63	
<i>Pisidium</i> spp.	J	956	7	8	18	96	12	108	16	24	
<i>Pisidium</i> spp.	A	448	15		23			150	14	54	
ARTHROPODA											
ARACHNIDA											
Hydracarina											
Hydracarina indet.	L	64									
Arrenuridae											
<i>Arrenurus</i> sp.	A	44									
Hygrobatidae											
Hygrobatidae indet.	A	15	1						2		
Libertiidae											
<i>Libertia</i> sp.	A	1	1								
Mideopsidae											
Mideopsidae indet.	A	24									
Oxidae											
<i>Frontipoda</i> sp.	A	12									
Sperchontidae											
<i>Sperchon</i> sp.	A	7		8				6	1		
CRUSTACEA											
Copepoda											
Calanoida											
Calanoida indet.	cpp	142			2						
Cyclopoida											
Cyclopoida indet.	cpp	917	7	8	3	24		12			
Ostracoda											
Ostracoda indet.	J	310	7		3	72		42	4	3	
Candonidae											
Candonidae indet.	A	222	11	4	12		60	162			
Cyclocypridae											
<i>Cyclocypris</i> sp.	A	180				24	24	36			

(continued)

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			1	WL1	3	1	WL2	3	1	WL3	3
Replicate		No. of individuals		2			2			2	
TAXON	STAGE										
Amphipoda											
Amphipoda indet.	J	3182	3	4							
Amphipoda indet.	A										
Crangonyctidae											
<i>Hyalella azteca</i>	A	824									
Gammaridae											
Gammaridae indet.	A										
<i>Gammarus</i> sp.	A		12	12	5						
Cladocera											
Cladocera indet.	J	48									
Bosminidae											
Bosminidae indet.	J	32									
Chydoridae											
Chydoridae indet.	J	2512						72	1		
Chydoridae indet.	A	36									
<i>Eurycercus</i> sp.	A	124									
Daphniidae											
Daphniidae indet.	J	342				72					
<i>Daphnia</i> sp.	A	24									
INSECTA											
Ephemeroptera											
Ephemeroptera indet.	N	18						6			
Ameletidae											
Ameletidae indet.	N	18				12					
<i>Ameletus</i> sp.	N	72									
Caenidae											
Caenidae indet.	N	120									
Odonata											
Odonata indet.	L	12									
Anisoptera (sub-family)											
Anisoptera indet.	L	6									
Cordullidae indet.	L	72									
Zygoptera (sub-family)											
Zygoptera indet.	L	48									
Trichoptera											
Trichoptera indet.	N	1									
Hydroptilidae											
<i>Agraylea</i> sp.	N			4							
Limnephilidae											
<i>Ecclisomyia</i> sp.	N	3									
Phryganeidae											
<i>Banksiola</i> sp.	N	48									
Coleoptera											
Dytiscidae											
<i>Neoclypeodytes/Liodessus</i> sp.	A										
<i>Rhantus</i> sp.	A	21									
Diptera											
Ceratopogonidae											
Ceratopogonidae indet.	L	131						6	5		
<i>Bezzia</i> sp.	L	304									
<i>Culicoides</i> sp.	L	407									
Chironomidae											
Chironomidae indet.	L	10147	37	140	30	204	144	540	4	3	12
Chironomidae indet.	P	910			3		12	6	4		
Chironomidae indet.	A	32									
Chironominae											
<i>Chironomus</i> sp.	L	181			2				1		
<i>Cryptochironomus</i> sp.	L	30									
<i>Micropectra</i> sp.	L	388	15	12	42	24	48	90	4	45	
<i>Microtendipes</i> sp.	L	282									
<i>Phaenopsectra</i> sp.	L	420	12	24	11			30	80		132
<i>Polypedium</i> sp.	L	322									
<i>Tanytarsus</i> sp.	L	12776	12	160						27	36
Diamesinae											
Diamesinae indet.	L										
<i>Monodiamesa</i> sp.	L										
<i>Protanytus</i> sp.	L										
<i>Pseudodiamesa</i> sp.	L	71									
Orthoclaadiinae											
<i>Corynoneura</i> sp.	L			4							
<i>Eukiefferiella</i> sp.	L	14									
<i>Orthocladus</i> sp.	L	1000				2					
Tanypodinae											
Tanypodinae indet.	L	240			2						
<i>Procladius</i> sp.	L	3031	13	32	18	48	108	12	79	102	12
Dolichopodidae											
Dolichopodidae indet.	L	12									
Tabanidae											
Tabanidae indet.	L	12									
BRYOZOA											
Bryozoa indet.	A	178							178		
Total Number of Organisms		83831	6900	764	416	576	672	1410	7160	369	216
Total Number of Taxa		864	15	19	16	7	9	14	16	10	5
MEMO											
Araneae indet. (spider)	A	12									
Epiphytes on <i>Pisidium casertanum</i>			3								
Hymenoptera indet.	L	24									
Invertebrate eggs	mass	108		28	18	72		24			
<i>Lumbriculus</i> spp. posterior fragment		6									

Note: Taxonomic name change: Please note for 2006 data (*Pisidium ferrugineum*) is equivalent to 2007 *Pisidium casertanum*.

(continued)

Better specimens and collaboration between taxonomists has resolved our internal query from 2006.

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Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			1	WL4	3	1	WL5	3	1	WL6	3
Replicate		No. of individuals		2			2			2	
TAXON	STAGE										
NEMATODA											
Nematoda indet.	A	276	7	4	1		24	28	24		3
ANNELIDA											
Oligochaeta											
Oligochaeta indet.	J										
Enchytraeidae											
Enchytraeidae indet.	J	12									
Enchytraeidae indet.	A	68	1								
Naididae											
Naididae indet. Group 4											
<i>Slavina appendiculata</i>	A										
Naididae indet. Group 5											
<i>Nais communis</i>	J										
<i>Nais communis</i>	A	18									
<i>Nais simplex</i>	A	48									
Lumbriculidae											
<i>Lumbriculus</i> spp.	A	199	13	10	7	12	24	4			3
Tubificidae											
Tubificidae indet. Group 2	J	16	1								
Tubificidae indet. Group 2	A	356	20	2	8		12	12			9
<i>Ilyodrilus templetoni</i>	A										
<i>Rhyacodrilus coccineus</i>	A		15								
<i>Tasserkidrilus nr. americanus</i>	A										
Tubificidae indet. Group 5	J										
<i>Limnodrilus hoffmeisteri</i>	A	132								12	
<i>Limnodrilus udekemianus</i>	J										
<i>Limnodrilus udekemianus</i>	A	150				24		8			3
<i>Limnodrilus</i> spp.	J	140									
<i>Limnodrilus</i> spp.	A	193			3		12	4			6
Hirudinea											
Hirudinea indet.	J	120									
Hirudinea indet.	A	6				6					
Glossophoniidae											
Glossophoniidae indet.	J	24									
<i>Helobdella stagnalis</i>	A	266		2				4	12		
MOLLUSCA											
Gastropoda											
Gastropoda indet.	J	27									27
Gastropoda indet.	A	12									
Planorbidae											
<i>Gyraulus circumstriatus</i>	A										
<i>Gyraulus</i> spp.	A	12									
Valvatidae											
Valvatidae indet.	J										
Valvatidae indet.	A	54									6
<i>Valvata sincera sincera</i>	J										
<i>Valvata sincera sincera</i>	A	6									6
Bivalvia											
Bivalvia indet.	A	32						8			
Sphaeriidae											
Sphaeriidae indet.	J	170									
Sphaeriidae indet.	A	707									
<i>Pisidium casertanum</i>	J	50									
<i>Pisidium casertanum</i>	A	534				12	12	20			30
<i>Pisidium</i> spp.	J	350					48	8			
<i>Pisidium</i> spp.	A	115				12	12	12			3
ARTHROPODA											
ARACHNIDA											
Hydracarina											
Hydracarina indet.	L	32							12	12	
Arrenuridae											
<i>Arrenurus</i> sp.	A	22									
Hygrobatidae											
Hygrobatidae indet.	A	6	1								
Libertiidae											
<i>Libertia</i> sp.	A		1								
Mideopsidae											
Mideopsidae indet.	A	12					12				
Oxidae											
<i>Frontipoda</i> sp.	A	6									
Sperchontidae											
<i>Sperchon</i> sp.	A										
CRUSTACEA											
Copepoda											
Calanoida											
Calanoida indet.	cpp	71					12				
Cyclopoida											
Cyclopoida indet.	cpp	440	1				12		204	48	15
Ostracoda											
Ostracoda indet.	J	91			7	18			12	36	3
Candonidae											
Candonidae indet.	A										
Cyclocypridae											
<i>Cyclocypris</i> sp.	A	48								48	

(continued)

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			1	WL4	3	1	WL5	3	1	WL6	3
Replicate		No. of individuals		2			2			2	
TAXON	STAGE										
Amphipoda											
Amphipoda indet.	J	1591				18	24	24			
Amphipoda indet.	A										
Crangonyctidae											
<i>Hyalella azteca</i>	A	412						8			
Gammaridae											
Gammaridae indet.	A										
<i>Gammarus</i> sp.	A										
Cladocera											
Cladocera indet.	J	24							24		
Bosminidae											
Bosminidae indet.	J	16									
Chydoridae											
Chydoridae indet.	J	1220				12	72	16	60		
Chydoridae indet.	A	18									18
<i>Eurycercus</i> sp.	A	62				6					
Daphniidae											
Daphniidae indet.	J	135				6			96	24	
<i>Daphnia</i> sp.	A	12					12				
INSECTA											
Ephemeroptera											
Ephemeroptera indet.	N	6				6					
Ameletidae											
Ameletidae indet.	N	3									
<i>Ameletus</i> sp.	N	36					24	12			
Caenidae											
Caenidae indet.	N	60					36	24			
Odonata											
Odonata indet.	L	6				6					
Anisoptera (sub-family)											
Anisoptera indet.	L	3									
Cordullidae indet.	L	36									
Zygoptera (sub-family)											
Zygoptera indet.	L	24					12	12			
Trichoptera											
Trichoptera indet.	N				1						
Hydroptilidae											
<i>Agraylea</i> sp.	N										
Limnephilidae											
<i>Ecclosomyia</i> sp.	N		1	2							
Phryganeidae											
<i>Banksiola</i> sp.	N	24									
Coleoptera											
Dytiscidae											
<i>Neoclypeodytes/Liodessus</i> sp.	A										
<i>Rhantus</i> sp.	A	10		2							
Diptera											
Ceratopogonidae											
Ceratopogonidae indet.	L	60				12					
<i>Bezzia</i> sp.	L	152				6	48	32			3
<i>Culicoides</i> sp.	L	204					60	44			
Chironomidae											
Chironomidae indet.	L	4590	36	16	8	156	312	200	144	108	81
Chironomidae indet.	P	440	7		1	24	132	52	24	12	30
Chironomidae indet.	A	16									
Chironominae											
<i>Chironomus</i> sp.	L	90				90					
<i>Cryptochironomus</i> sp.	L	15							12		3
<i>Micropsectra</i> sp.	L	89									
<i>Microtendipes</i> sp.	L	141									141
<i>Phaenopsectra</i> sp.	L	89					48				9
<i>Polypedilum</i> sp.	L	161					72				9
<i>Tanytarsus</i> sp.	L	6090	240	164	129	180		100	12	24	141
Diamesinae											
Diamesinae indet.	L										
<i>Monodiamesa</i> sp.	L										
<i>Protanytus</i> sp.	L										
<i>Pseudodiamesa</i> sp.	L	32	3		4						
Orthoclaudiinae											
<i>Corynoneura</i> sp.	L										
<i>Eukiefferiella</i> sp.	L		12	2							
<i>Orthocladus</i> sp.	L	500									6
Tanypodinae											
Tanypodinae indet.	L	120									
<i>Procladius</i> sp.	L	1260	12	70	68	120	60	36	108	12	69
Dolichopodidae											
Dolichopodidae indet.	L	6									
Tabanidae											
Tabanidae indet.	L	6									
BRYOZOA											
Bryozoa indet.	A										
Total Number of Organisms		36272	372	274	237	726	1092	668	744	336	624
Total Number of Taxa		387	12	9	8	14	19	15	10	7	18
MEMO											
Araneae indet. (spider)	A	6									
Epiphytes on <i>Pisidium casertanum</i>											
Hymenoptera indet.	L	12								12	
Invertebrate eggs	mass	6									6
<i>Lumbriculus</i> spp. posterior fragment		3									

Note: Taxonomic name change: Please note for 2006 data (*Pisidium ferrugineum*) is equivalent to 2007 *Pisidium casertanum*.

(continued)

Better specimens and collaboration between taxonomists has resolved our internal query from 2006.

Taxonomic name change: Please note for 2006 data (*Valvata lewisii*) is equivalent to 2007 *Valvata sincera sincera*.

New reference material and collaborative effort has also clarified this identification on your behalf.

A = adult, J = juvenile, L = larvae, N = nymph, and cpp = copepodite

**Appendix 3.2-9
Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)**

Site Replicate			1	WL7 2	3	1	WL9 2	3	1	WL10 2	3
TAXON	STAGE	No. of individuals									
NEMATODA											
Nematoda indet.	A	85	12		15			15	8		2
ANNELIDA											
Oligochaeta											
Oligochaeta indet.	J										
Enchytraeidae											
Enchytraeidae indet.	J	6						6			
Enchytraeidae indet.	A	34				8		24			2
Naididae											
Naididae indet. Group 4											
<i>Slavina appendiculata</i>	A										
Naididae indet. Group 5											
<i>Nais communis</i>	J										
<i>Nais communis</i>	A	9						9			
<i>Nais simplex</i>	A	24						24			
Lumbriculidae											
<i>Lumbriculus</i> spp.	A	75			6			27			
Tubificidae											
Tubificidae indet. Group 2	J	8				8					
Tubificidae indet. Group 2	A	162				56		45		20	7
<i>Ilyodrilus templetoni</i>	A										
<i>Rhyacodrilus coccineus</i>	A										
<i>Tasserkidrilus nr. americanus</i>	A										
Tubificidae indet. Group 5	J										
<i>Limnodrilus hoffmeisteri</i>	A	60						12			
<i>Limnodrilus udekemianus</i>	J										
<i>Limnodrilus udekemianus</i>	A	56			3						8
<i>Limnodrilus</i> spp.	J	70				40		6			
<i>Limnodrilus</i> spp.	A	81			9	80					1
Hirudinea											
Hirudinea indet.	J	60									
Hirudinea indet.	A										
Glossophoniidae											
Glossophoniidae indet.	J	12									
<i>Helobdella stagnalis</i>	A	125									
MOLLUSCA											
Gastropoda											
Gastropoda indet.	J										
Gastropoda indet.	A	6					6				
Planorbidae											
<i>Gyraulus circumstriatus</i>	A										
<i>Gyraulus</i> spp.	A	6									
Valvatidae											
Valvatidae indet.	J										
Valvatidae indet.	A	24									
<i>Valvata sincera sincera</i>	J										
<i>Valvata sincera sincera</i>	A										
Bivalvia											
Bivalvia indet.	A	12									
Sphaeriidae											
Sphaeriidae indet.	J	64	15		27					4	
Sphaeriidae indet.	A	298	36		75				8	2	
<i>Pisidium casertanum</i>	J	25					18				1
<i>Pisidium casertanum</i>	A	230					114	3			2
<i>Pisidium</i> spp.	J	147					72	3			5
<i>Pisidium</i> spp.	A	38					6				
ARTHROPODA											
ARACHNIDA											
Hydracarina											
Hydracarina indet.	L	4									
Arrenuridae											
<i>Arrenurus</i> sp.	A	11							8		
Hygrobatidae											
Hygrobatidae indet.	A	3						3			
Libertiidae											
<i>Libertia</i> sp.	A										
Mideopsidae											
Mideopsidae indet.	A										
Oxidae											
<i>Frontipoda</i> sp.	A		6								
Sperchontidae											
<i>Sperchon</i> sp.	A										
CRUSTACEA											
Copepoda											
Calanoida											
Calanoida indet.	cpp	26			6						
Cyclopoida											
Cyclopoida indet.	cpp	64	9	24		8			8		
Ostracoda											
Ostracoda indet.	J	11				8		3			
Candonidae											
Candonidae indet.	A										
Cyclocypridae											
<i>Cyclocypris</i> sp.	A										

(continued)

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site			WL7			WL9			WL10		
Replicate			1	2	3	1	2	3	1	2	3
TAXON	STAGE	No. of individuals									
Amphipoda											
Amphipoda indet.	J	665	9	60	126			9			
Amphipoda indet.	A										
Crangonyctidae											
<i>Hyalella azteca</i>	A	160	3		81						
Gammaridae											
Gammaridae indet.	A										
<i>Gammarus</i> sp.	A										
Cladocera											
Cladocera indet.	J										
Bosminidae											
Bosminidae indet.	J	8				8					
Chydoridae											
Chydoridae indet.	J	509		24	18						
Chydoridae indet.	A										
<i>Eurycerus</i> sp.	A	28									
Daphniidae											
Daphniidae indet.	J				9						
<i>Daphnia</i> sp.	A										
INSECTA											
Ephemeroptera											
Ephemeroptera indet.	N										
Ameletidae											
Ameletidae indet.	N		3								
<i>Ameletus</i> sp.	N										
Caenidae											
Caenidae indet.	N										
Odonata											
Odonata indet.	L										
Anisoptera (sub-family)											
Anisoptera indet.	L		3								
Cordullidae indet.	L	12	9		3						
Zygoptera (sub-family)											
Zygoptera indet.	L										
Trichoptera											
Trichoptera indet.	N										
Hydroptilidae											
<i>Agraylea</i> sp.	N										
Limnephilidae											
<i>Ecclisomyia</i> sp.	N										
Phryganeidae											
<i>Banksiola</i> sp.	N	12									
Coleoptera											
Dytiscidae											
<i>Neoclypeodytes/Liodessus</i> sp.	A										
<i>Rhantus</i> sp.	A	5									
Diptera											
Ceratopogonidae											
Ceratopogonidae indet.	L	24									
<i>Bezzia</i> sp.	L	24	6		9						
<i>Culicoides</i> sp.	L	35	9	12	9					2	
Chironomidae											
Chironomidae indet.	L	1566	258	132	66	32	54	39		6	5
Chironomidae indet.	P	77	9		3		72	3		2	
Chironomidae indet.	A	8							8		
Chironominae											
<i>Chironomus</i> sp.	L										
<i>Cryptochironomus</i> sp.	L										
<i>Micropsectra</i> sp.	L	37	12		3	16					
<i>Microtendipes</i> sp.	L										
<i>Phaenopsectra</i> sp.	L	16				16					
<i>Polypedium</i> sp.	L	40				24					
<i>Tanytarsus</i> sp.	L	2756	117		3	672	1554	390			
Diamesinae											
Diamesinae indet.	L										
<i>Monodiamesa</i> sp.	L										
<i>Protanypus</i> sp.	L										
<i>Pseudodiamesa</i> sp.	L	16				16					
Orthoclaadiinae											
<i>Corynoneura</i> sp.	L										
<i>Eukiefferiella</i> sp.	L										
<i>Orthocladus</i> sp.	L	242	9				12	60			
Tanypodinae											
Tanypodinae indet.	L	60									
<i>Procladius</i> sp.	L	309	168	24	45		30	9		4	
Dolichopodidae											
Dolichopodidae indet.	L	3									
Tabanidae											
Tabanidae indet.	L	3								2	1
BRYOZOA											
Bryozoa indet.	A										
Total Number of Organisms		15299	693	276	516	992	1932	696	40	42	6670
Total Number of Taxa		136	13	5	14	11	5	14	5	5	7
MEMO											
Araneae indet. (spider)	A	3									
Epiphytes on <i>Pisidium casertanum</i>											
Hymenoptera indet.	L										
Invertebrate eggs	mass										
<i>Lumbriculus</i> spp. posterior fragment			3								

Note: Taxonomic name change: Please note for 2006 data (*Pisidium ferrugineum*) is equivalent to 2007 *Pisidium casertanum*.

(continued)

Better specimens and collaboration between taxonomists has resolved our internal query from 2006.

Taxonomic name change: Please note for 2006 data (*Valvata lewisii*) is equivalent to 2007 *Valvata sincera*.

New reference material and collaborative effort has also clarified this identification on your behalf.

A = adult, J = juvenile, L = larvae, N = nymph, and cpp = copepodite

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (continued)

Site				WL11			Airstrip WL		
Replicate			1	2	3	1	2	3	
TAXON	STAGE	No. of individuals							
NEMATODA									
Nematoda indet.	A	18		24		6		12	
ANNELIDA									
Oligochaeta									
Oligochaeta indet.	J								
Enchytraeidae									
Enchytraeidae indet.	J								
Enchytraeidae indet.	A								
Naididae									
Naididae indet. Group 4									
<i>Slavina appendiculata</i>	A								
Naididae indet. Group 5									
<i>Nais communis</i>	J								
<i>Nais communis</i>	A								
<i>Nais simplex</i>	A								
Lumbriculidae									
<i>Lumbriculus</i> spp.	A	24					24		
Tubificidae									
Tubificidae indet. Group 2	J								
Tubificidae indet. Group 2	A	17						17	
<i>Ilyodrilus templetoni</i>	A								
<i>Rhyacodrilus coccineus</i>	A								
<i>Tasserkidrilus</i> nr. <i>americanus</i>	A								
Tubificidae indet. Group 5	J								
<i>Limnodrilus hoffmeisteri</i>	A	24					24		
<i>Limnodrilus udekemianus</i>	J								
<i>Limnodrilus udekemianus</i>	A	24					24		
<i>Limnodrilus</i> spp.	J	12					12		
<i>Limnodrilus</i> spp.	A								
Hirudinea									
Hirudinea indet.	J	30				30			
Hirudinea indet.	A								
Glossophoniidae									
Glossophoniidae indet.	J	6				6			
<i>Helobdella stagnalis</i>	A	24	9		68	24			
MOLLUSCA									
Gastropoda									
Gastropoda indet.	J								
Gastropoda indet.	A								
Planorbidae									
<i>Gyraulus circumstriatus</i>	A								
<i>Gyraulus</i> spp.	A		6						
Valvatidae									
Valvatidae indet.	J								
Valvatidae indet.	A	12					12		
<i>Valvata sincera sincera</i>	J								
<i>Valvata sincera sincera</i>	A								
Bivalvia									
Bivalvia indet.	A				12				
Sphaeriidae									
Sphaeriidae indet.	J	30				18	12		
Sphaeriidae indet.	A	144				108	36		
<i>Pisidium casertanum</i>	J		6						
<i>Pisidium casertanum</i>	A	12	15	72				12	
<i>Pisidium</i> spp.	J		3	24	40				
<i>Pisidium</i> spp.	A				32				
ARTHROPODA									
ARACHNIDA									
Hydracarina									
Hydracarina indet.	L				4				
Arrenuridae									
<i>Arrenurus</i> sp.	A		3						
Hygrobatidae									
Hygrobatidae indet.	A								
Libertiidae									
<i>Libertia</i> sp.	A								
Mideopsidae									
Mideopsidae indet.	A								
Oxidae									
<i>Frontipoda</i> sp.	A								
Sperchontidae									
<i>Sperchan</i> sp.	A								
CRUSTACEA									
Copepoda									
Calanoida									
Calanoida indet.	cpp	13				6		7	
Cyclopoida									
Cyclopoida indet.	cpp	18		12		6	12		
Ostracoda									
Ostracoda indet.	J								
Candonidae									
Candonidae indet.	A								
Cyclocypridae									
<i>Cyclocypris</i> sp.	A								

(continued)

Appendix 3.2-9

Schaft Creek Project Benthos Data from Lakes and Wetlands, Schaft Creek Project, 2007 (completed)

Site			1	WL11	3	1	Airstrip WL	3
Replicate				2			2	
TAXON	STAGE	No. of individuals						
Amphipoda								
Amphipoda indet.	J		108	324	224			
Amphipoda indet.	A							
Crangonyctidae								
<i>Hyalella azteca</i>	A				160			
Gammaridae								
Gammaridae indet.	A							
<i>Gammarus</i> sp.	A							
Cladocera								
Cladocera indet.	J							
Bosminidae								
Bosminidae indet.	J							
Chydoridae								
Chydoridae indet.	J	14	12	312	156		12	2
Chydoridae indet.	A							
<i>Eurycercus</i> sp.	A				28			
Daphniidae								
Daphniidae indet.	J							
<i>Daphnia</i> sp.	A							
INSECTA								
Ephemeroptera								
Ephemeroptera indet.	N							
Ameletidae								
Ameletidae indet.	N							
<i>Ameletus</i> sp.	N							
Caenidae								
Caenidae indet.	N							
Odonata								
Odonata indet.	L							
Anisoptera (sub-family)								
Anisoptera indet.	L							
Cordullidae indet.	L				12			
Zygoptera (sub-family)								
Zygoptera indet.	L							
Trichoptera								
Trichoptera indet.	N							
Hydroptilidae								
<i>Agraylea</i> sp.	N							
Limnephilidae								
<i>Ecclisomyia</i> sp.	N							
Phryganeidae								
<i>Banksiola</i> sp.	N	6				6		
Coleoptera								
Dytiscidae								
<i>Neoclypeodytes/Liodessus</i> sp.	A							
<i>Rhantus</i> sp.	A	2						2
Diptera								
Ceratopogonidae								
Ceratopogonidae indet.	L	12					12	
<i>Bezzia</i> sp.	L	12						12
<i>Culicoides</i> sp.	L	14			4			14
Chironomidae								
Chironomidae indet.	L	655	60	48	12	96	300	259
Chironomidae indet.	P							
Chironomidae indet.	A							
Chironominae								
<i>Chironomus</i> sp.	L							
<i>Cryptochironomus</i> sp.	L							
<i>Microspectra</i> sp.	L	2	12		4			2
<i>Microtendipes</i> sp.	L							
<i>Phaenopsectra</i> sp.	L							
<i>Polypedium</i> sp.	L				16			
<i>Tanytarsus</i> sp.	L	67	6			36	24	7
Diamesinae								
Diamesinae indet.	L							
<i>Monodiamesa</i> sp.	L							
<i>Protanytus</i> sp.	L							
<i>Pseudodiamesa</i> sp.	L							
Orthoclaadiinae								
<i>Corynoneura</i> sp.	L							
<i>Eukiefferiella</i> sp.	L							
<i>Orthocladus</i> sp.	L	79	12				48	31
Tanypodinae								
Tanypodinae indet.	L			60				
<i>Procladius</i> sp.	L	114	18		20	78		36
Dolichopodidae								
Dolichopodidae indet.	L		3					
Tabanidae								
Tabanidae indet.	L							
BRYOZOA								
Bryozoa indet.	A							
Total Number of Organisms		1493	273	876	792	420	552	521
Total Number of Taxa		31	11	6	10	8	10	13
MEMO								
Araneae indet. (spider)	A		3					
Epiphytes on <i>Pisidium casertanum</i>								
Hymenoptera indet.	L							
Invertebrate eggs	mass							
<i>Lumbriculus</i> spp. posterior fragment								

Note: Taxonomic name change: Please note for 2006 data (*Pisidium ferrugineum*) is equivalent to 2007 *Pisidium casertanum*.

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Taxonomic name change: Please note for 2006 data (*Valvata lewisii*) is equivalent to 2007 *Valvata sincera*.

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A = adult, J = juvenile, L = larvae, N = nymph, and cpp = copepodite

APPENDIX 3.2-10
SCHAFT CREEK PROJECT LAKE ZOOPLANKTON DATA, 2007

**Appendix 3.2-10
Schaft Creek Project Lake Zooplankton Data, 2007**

Site	Replicate	No. of	1	L1	3	1	L2	3	1	L3	3	1	L4	3	1	L5	3	1	L6	3		
Taxon	Stage	Individuals		2		2			2			2			2			2				
ROTIFERA																						
Rotifera indet.		1		1																		
<i>Brachionidae</i>																						
<i>Kellicottia longispina</i>		38316	1	1		19000	2250	16000	11	2			10	20	1	10			700	280	30	
<i>Conochilidae</i>																						
<i>Conochilus sp.</i>	colony	1680				1600	80															
<i>Lecanidae</i>																						
<i>Lecane sp.</i>		2		1	1																	
<i>Trichotriidae</i>																						
<i>Trichotria sp.</i>		2		2																		
ARTHROPODA																						
CRUSTACEA																						
Cladocera																						
Daphnidae																						
Daphnidae indet.	juvenile	1	1																			
<i>Daphnia middendorffiana</i>		4403				210	70	1100		3	1	3000	10	9								
Bosminidae																						
<i>Bosmina longirostris</i>		21	1	5	5											6	4					
Chydoridae																						
<i>Chydorus sphaericus</i>		10		7	3																	
Copepoda																						
Calanoida																						
Calanoida indet.	nauplius	30264	3	5	1	12000	1800	15000	3	2			1200			4	40	1	30	150	25	
Diaptomidae																						
<i>Hesperodiaptomus eiseni</i>	M	1																		1		
<i>Hesperodiaptomus eiseni</i>	F	1																		1		
<i>Hesperodiaptomus eiseni</i>	CIII	19																		10	9	
<i>Hesperodiaptomus eiseni</i>	CII	707																		340	360	7
<i>Hesperodiaptomus eiseni</i>	CI	801																		280	510	11
<i>Leptodiaptomus pribilofensis</i>	M	1519				310	280	560	2	1		60	90	210	1	4	1					
<i>Leptodiaptomus pribilofensis</i>	F	2184				650	300	1000		2	1	70	70	80		5	6					
<i>Leptodiaptomus sp.</i>	CV	689				140	60	90		1		120	150	100	2	8	18					
<i>Leptodiaptomus sp.</i>	CIV	2397				200	10					600	590	960	2	16	19					
<i>Leptodiaptomus sp.</i>	CIII	3646		1		600	350	1100				800	280	510		4	1					
<i>Leptodiaptomus sp.</i>	CII	5817				2000	1250	1600	1	3		800	30	130		3						
<i>Leptodiaptomus sp.</i>	CI	7978				3000	950	3700		2		300		20		3	2	1				
Temoridae																						
<i>Heterocope septentrionalis</i>	M	407				150	5	80				81	54	36	1							
<i>Heterocope septentrionalis</i>	F	358				100	4	70				78	68	37					1			
<i>Heterocope septentrionalis</i>	CV	1					1															
Cyclopoida																						
Cyclopoida indet.	copepodite	9303	12	60	11	3300	1300	2200	17	12	2300					25	10	15	20	20	1	
Cyclopoida indet.	nauplius	144298	11	93	5	93000	2600	43000	21	34	1100	1300		30	152	700	40	1900	310		2	
<i>Cyclopidae</i>																						
<i>Cyclops bicuspidatus thomasi</i>	M	895	1	3					23	18	800								40	9	1	
<i>Cyclops bicuspidatus thomasi</i>	F	697	1	1					17	12	500								140	26		
<i>Cyclops capillatus</i>	M	1									1											
<i>Cyclops capillatus</i>	F	1																			1	
<i>Cyclops scutifer</i>	M	1417				800		600	1	2					13		1					
<i>Cyclops scutifer</i>	F	6400				4500	260	1600	1	3			10		17	1	8					
Harpacticoida																						
Harpacticoida indet.	nauplius	14		3	1											10						
Amphipoda																						
Gammaridae																						
<i>Gammarus lacustris</i>		83				1	1	21				58	2									
INSECTA																						
Diptera																						
<i>Chaoborus sp.</i>	L	972				260	33	410		2		255	12									
TOTALS		265306	31	183	27	141821	11604	88131	97	99	4703	8722	1376	2142	227	817	112	3462	1675	77		

Note: C = copepodite stages 1(I) through 5(V), L = larvae, M = male, and F = female

**APPENDIX 3.2-11
SCHAFT CREEK PROJECT LAKE ZOOPLANKTON FIELD
NOTES, 2007**

Appendix 3.2-11
Schaft Creek Project Zooplankton Field Notes

Site	Rep	# of hauls composited	Haul Depth (m)	Hor/Vert	Position in Lake
L1	a	3	8.5	Vert	E centre
	b	3	15	Vert	N end
	c	3	13	Vert	S end
L2	a	3	25	Vert	NE end
	b	3	5.5	Vert	SE end
	c	3	17.5	Vert	SW end
L3	a	3	5.5	Vert	SE end
	b	3	4.5	Vert	centre
	c	3	9.5	Vert	S end
L4	a	3	13	Vert	N end
	b	3	5	Vert	S end
	c	3	3.5	Vert	centre
L5	a	3	2	Hor	SE end
	b	3	2	Hor	W centre
	c	3	2	Hor	NW end
L6	a	3	9.5	Vert	centre
	b	3	9	Vert	NE end
	c	3	2	Hor	N end

Hor = horizontal haul; Vert = vertical haul